SUMMARY OF FOOD SECURITY AND VULNERABILITY IN SELECTED URBAN CENTERS OF ETHIOPIA

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Executive Summary

The food security and vulnerability study for urban Ethiopia has largely been necessitated by the new increased food insecurity stemming largely from the global economic downturn and high food prices, which has been translated to the country partly through high inflation rates. The impact of inflation has been one key element that has 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 increases resulted in the Government initiating an urban grain market stabilization programme in 2007. This urban study analyses the impact of the price increases on food security status from the conventional lenses of food availability, access and absorption. Availability in urban settings, is largely a function of market forces, whilst access is determined by the purchasing power (which in turn is an outcome of household income and market prices) and absorption is a function of health, sanitation and hygiene. With a shock such as the price increases experienced in 2008, a food insecure household resort to a series of coping mechanisms to temporarily address food insecurity, hence the study also addresses this. Finally, the study examined the public interventions to mitigate these issues. The study uses both secondary and primary information. The primary survey was conducted at household level and trader levels supplemented with qualitative focus group and key informant interviews. This study was conducted in 18 selected urban centres spread across the country, covering eight regions including: Addis Ababa and Dire Dawa cities; Harar town; and selected towns in Tigray, Amhara, Oromiya, Somali and Afar regions.

Socio-Economic Background Characteristics

The age and sex characteristics of the study areas largely follow that of a typical developing country, with a flat base population, owing to high fertility rates and low life expectancy. The sex ratios in the studied areas, is such that the female population is slightly higher than the males particularly in the smaller towns. This could be largely due to male-selective migration from these urban areas, as the stream of migration is not only from rural to urban areas but also from small urban centres to larger ones. Migration into urban centres has added to their congestion levels, which is evident from high crowding (measured in terms of number of persons sharing a room). Majority of the households did not have a separate kitchen. Furthermore, over half of the households use wood as the primary source of cooking fuel, while another 40 percent use charcoal. Thus, general quality of life in the studied urban areas was found to be low.

Almost all (over 95 percent) of the sampled population were found to be working in the tertiary sector. Majority of these were either employed in government and private sector or were self-employed or ran small enterprises. The daily wage labourers form a highly vulnerable section of the population and it was observed that a fair proportion of the population worked as non-agricultural wage workers. A fair proportion (over a quarter) of children in the studied urban areas stayed alone, away from both the parents, the proportion being higher in larger cities - a pointer to children staying away for work or education.

Status of Food Security

Food Availability

Over 80 percent of surveyed households were found to be dependent upon markets – the proportion being equally distributed among large shops and roadside vendors and tuck shops. However, over the last six months preceding the survey there has been an increased tendency among the households to move away from formal shops towards *kebele* shops, food assistance and more significantly buying food on credit or borrowing, largely on account of high prices. The traders have pointed out high prices and decline in demand from consumers as major factors hampering their business. On an average, the traders felt that their sells have declined by over 1/3rd compared to previous year and over 20 percent compared to their usual sells.

Nevertheless, the market supply response (increase in supplies in the event of increase in demand) was found to be good with majority of traders assuring that there would be a commensurate increase in supplies within

two weeks in case the demands increase. However, supply response was found to be relatively less for pulses. The traders also expressed high optimism on food availability in markets in the ensuing seasons. However, a good proportion of traders in some of the urban centres like Bahir Dar, Dessie, Gondar and Jimma admitted to hold stocks, indicating tendencies to hoard food commodities to artificially increase the prices.

The role of home gardens in household-level food availability was found to be negligible with a miniscule proportion of households growing vegetables or cereals.

Food Access

Access to food in urban areas is largely a function of household incomes and market prices, which together determine the purchasing power. Increase in food prices at the source was cited as a major obstacle in market functioning by the traders. The present study reiterates the increase observed in food prices at the aggregate secondary level with all the urban centres experiencing high increase in food prices. The increase had become more noticeable in the last one year preceding the survey. Over the last one year there also has been an increase in the number of members earning an income in a household, however there hasn't been a commensurate increase in total household income – indicating thereby that additional household members have got involved in less profitable occupations, increasing disguised unemployment. A fair proportion of households were reported to sell their household assets to temporarily solve food insecurity; remarkably such incidences were higher among asset-poor households.

At the aggregate national level, there has been a remarkable increase in proportion of expenditure on food in urban areas (as against a decline in rural areas). This is a strong pointer towards increasing vulnerability of urban areas, largely on account of high food prices. In the study areas, food expenditure formed over 70 percent of total expenditure, within which over 2/3rd was spent on cereals alone.

An increase in market prices coupled with decline in net income levels (due to stagnant income and increase in expenditure) is an indication of decline in purchasing power of the households. Resultantly, majority of households resorted to credit – either borrowing food from the shops or borrowing money to buy food. Over 60 percent of traders observed an increase in number of credit seekers in the market and also in the size of borrowings. Most of households had borrowed money from friends and relatives while only 15 percent of the respondents in total had a bank account.

Among other factors affecting access, literacy, which is considered to be the pivot of food security, was estimated at over 70 percent for the surveyed populations. Significantly, the enrolment ratio was found to be much higher for the girl child in most of the towns. However, at higher education levels the males enrolment tended to be higher – pointing to high dropout among girls which was empirically verified by the study, both at secondary and primary levels. Even dependency ratio was found to be high, compared to urban areas in general. In fact the proportion of dependents was higher than non-dependents in Zalambesa.

The impact of lack of access to food is readily observed in the consumption patterns, which has changed both in terms of quantity as well as quality in the last one year. The food basket has changed in favour of less expensive commodities (like from white teff to red teff, and from red teff to maize). The composite change in food consumption is evident from a significant decline in Food Consumption Score (indicator of dietary diversity, frequency of intake and nutritional density of food items). More remarkably, the decline in this score is more prominent among the households lying in poor consumption category as compared to those in good consumption category. Thus, it can be safely inferred that the vulnerability of already food insecure groups has further increased.

Food Absorption

Access to safe drinking water, sanitation and adequate health facilities are important determinants of food absorption – a critical dimension of food security. The latest secondary information states that at aggregate level only 1/3rd of country's population has access to safe drinking water. Though piped water was found to be the most popular source of drinking water in the study areas, over 2/3rd of households sourced drinking water from communal taps (*bono*) or from taps outside the houses. Further, a very negligible proportion of households treated water before drinking. From sanitation point of view, maintenance of personal hygiene and using safe toilet facilities was not found to be popular.

The impact of lack of access to safe drinking water and sanitation is readily observed in the morbidity status of the surveyed population. At least 7 percent of the total population suffered from one disease or the other in the last one year, a small proportion being sick for over three months. An analysis of common diseases inflicting the people puts forward a close correspondence with water and sanitation deficiencies. For example, towns with very low water sand sanitation facilities have high incidences of diarrhoea.

A fair proportion of respondents had no access to formal health facility or chose not to visit one. Given the fact, that among the health care systems that the respondents preferred to go for treatment, the public health facilities were found to be the most popular, has high implications for enhancing public health facilities.

Mapping Food Security in Urban Ethiopia

To analyse differences in levels of food security across space, a set of composite indices was developed to map food security status, which has wide policy implications in terms of prioritisation of efforts to mitigate vulnerability. The index of food availability was largely based on market factors affecting food availability, besides an indicator on sustainability of food security. Zalambesa, Addis Ababa, Michew, etc. were found to be secure in this index while Bahir Dar, Dessie, Jijiga, etc. were insecure.

The index of food access captures a set of sub-indices – index of educational attainment, index of gender parity and index of economic status. These sub-indices were combined with dependency ratio and market prices to derive the access index, where Gondar, Harar, Dessie, etc. appeared as secure while Zalambesa, Adigrat, Adwa, etc. turned up as insecure.

The index of food absorption was composited from access to safe drinking water, sanitation, health care and morbidity status. Adwa, Mekele and Dire Dawa were found to be secure while Moyale, Nekemte and Addis Ababa appeared as insecure.

Combining all the indicators under consideration an overall food security index was developed. This comprehensive index placed Mekele, Dire Dawa, Adwa etc. in secure category while Gode, Jijiga, Nekemte were found in insecure categories. These indicators are largely the policy interventions that go as *inputs* to food security. To determine the levels of food security from an *output* point of view, another index was developed based on Food Consumption Score, Coping Strategy Index and proportion of household consumption expenditure on food. In this output index Zalambesa and Logiya turned up as secure whereas Jijiga, Adwa, Nekemte, etc. were found as insecure. Correlating the input indices with output indices shows that availability and absorption factors are significantly related with the output index.

Further, to extract the significant factors determining food security a multi-variate regression model was computed. Most of the variables cited for each of the food security outputs are amenable to direct policy intervention. For instance, access to safe sanitation, provision of adequate and easily accessible health care, special provision for women empowerment, easy credit availability (micro-finance) and market supply response (through provisioning and public distribution and checking hoarding tendencies) can be influenced through direct policy interventions. Conversely, there are variables which can be only indirectly influenced. These include eradicating extreme poverty, containing market prices and so on. Further, factors like dependency ratio can be influenced negatively through adequate family planning campaigns and positively through better employment opportunities and properly planned retirement and safety net programmes.

Shocks and Coping Strategies

Food insecurity in its extreme form is depicted by malnutrition, but households under livelihood stress or facing food insecurity due to a shock adopt coping mechanisms to cushion the household. The study show loss in purchasing power, either due to loss of income or increase in expenditure, as the most common shock being faced by the households. Over 45 percent of the households reported high prices as the primary shock being suffered by them in the last six months. Another 20 percent of respondents counted reduction in income or loss of employment while 15 percent cited high fuel or transportation prices as the shock they were experiencing. Over 2/3rd of households in total reported a loss of income due to shocks, the proportion being over 85 percent in the cases of Addis Ababa, Harar and all towns of Tigray region. Almost 1/3rd of households reported worsening of their living standards owing to declining purchasing power.

Change in consumption behaviour is the most common strategy adopted by the households to cope with the declining purchasing power. Among the strategies of consumption change, the most common one was to switch to less preferred and less expensive food. Reduction in portion of meals was the second most common coping strategy followed by reduction in number of meals in a single day (skipping breakfast or lunch), what has been commonly known as 5/11 meaning breakfast late in the morning and lunch/supper at 5pm or one meal known in Amharic as "*kumra*" (breakfast, lunch and supper combined) at around 2pm. In another common strategy, the adults in a household cut-short their portions to allow children to have more food. A small proportion of respondents, (higher in Jijiga and Moyale) reported skipping meals for the whole day to cope with high food prices and low incomes.

Even from the traders' perspective, almost all the consumers changed their purchasing behaviour in the last one year. Majority of the consumers had started buying smaller quantities of cheaper commodities than usual while only a small proportion of traders observed purchasing in bulk than usual.

A Coping Strategy Index was developed to assess the change in vulnerability of households. The average value of index was found to have increased significantly over time – a pointer to increased vulnerability of the sample households, reiterating a decline in Food Consumption Score. At the disaggregated level, the CSI increased by 85 percent in the capital city of Addis Ababa. The highest increase has been observed in the cases of Harar and Adwa, where the index has more than doubled. Zalambesa is observed as the only urban centre that has remained stagnant in terms of change in CSI, probably on account of large food assistance programmes in the region.

Public Interventions

An attempt was made to examine the functioning of major public interventions in the study areas and to assess their popularity and perceived utility among the surveyed households. In terms of access to such programmes and safety nets, on an average, nearly 40 percent of households in the study area indicated had access to subsidized wheat? . While over 90 percent of sample households in Nazareth reported to have access to subsidized wheat the proportion was negligible in Jijiga, Logiya and Zalambesa as the cities are not among the selected distribution points.

A quick snapshot of various assistance programmes availed by the households since January-2008 to the time of the survey reveals that the programmes targeting household food security were found to be more common than those targeted specific sections of population (like children, PLHIV, etc.). Thus, while food and cash for work programmes were hugely common in all the study areas (an overwhelmingly high proportion of households in Zalambesa - almost 80 percent - was found to have availed the Food for Work programme while almost 60 percent had participated in the cash for work), programmes aimed at alleviating the nutritional levels of children and women (like supplementary feeding for young children and pregnant and nursing women under Mother and Child Health and Nutrition programmes) were not common.

In terms of perceived utility of programmes, almost a quarter of the households wanted subsidised food as the primary assistance that could help them cope with shocks. This was followed by income generating activities in the form of better jobs desired by over 20 percent of the households. Another 16 percent of the households, probably the most food insecure, wanted to be assisted through direct food assistance programmes.

Policy Implications

The study has brought forth the vital significance of markets in assuring food availability in urban areas. Food access, on its part, largely suffers from paucity of purchasing power which is a function of income level and prevailing prices. Hence, income enhancement through both short term (employment opportunities, micro-finance schemes, etc.) and long term (vocational education and training) measures needs to be done. Access to existing public interventions needs to be strengthened and health and other infrastructures need to be improved and made easily accessible. Finally, proper environment for enhancing educational levels, particularly among females, should be developed an awareness created for personal hygiene and sanitation. In sum, a life-cycle approach to food and nutrition security should be promoted by providing horizontal linkages among vertically structured programmes.

1. Background and Introduction

1.1 Urban Food Security: An Introduction

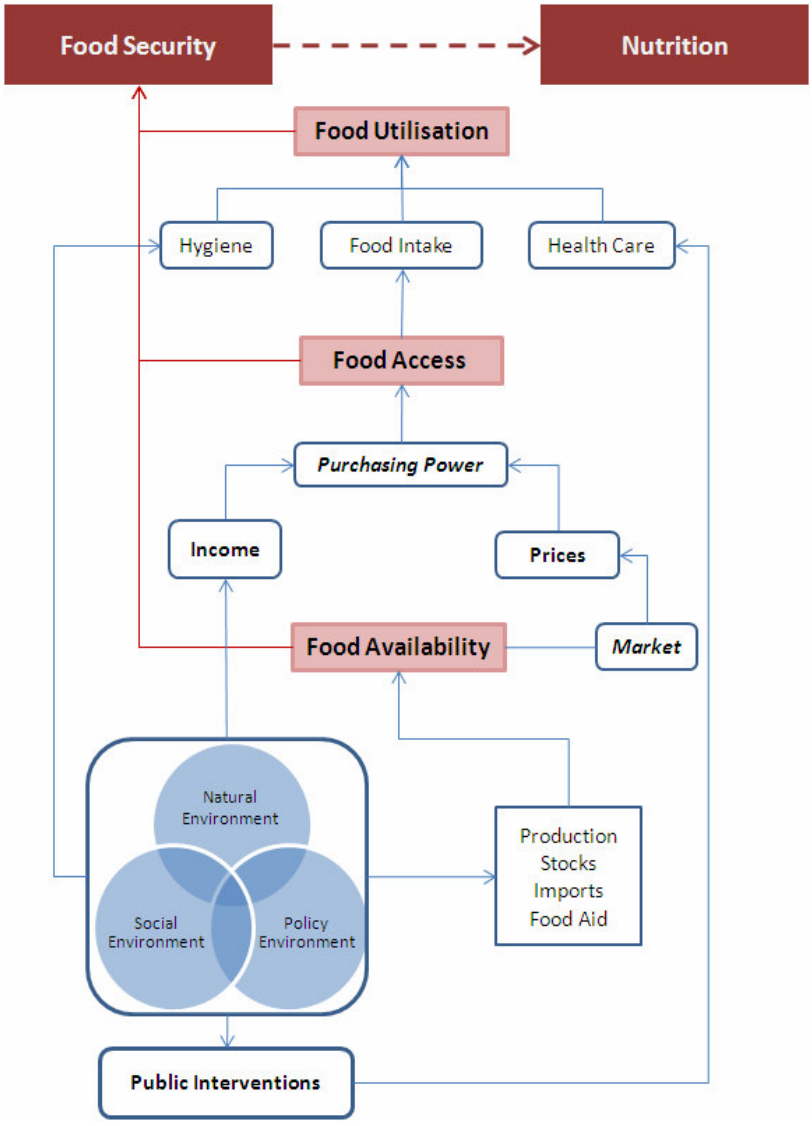
The world is home to over 1 billion undernourished people[1], over 98 percent of which live in the developing world. It has been estimated that, of these, almost 2/3rd are contributed by seven countries : India, China, the Democratic Republic of the Congo, Bangladesh, Indonesia, Pakistan and Ethiopia (FAO, 2008).

Over the last two years, new dimensions to food insecurity emerged which has brought attention to urban areas. These factors have largely been due to the global food and financial crises. The vast majority of urban households rely on food purchases for most of their food (unlike in most populations in rural areas who benefit from self-production). Hence, the high food prices impact the most the urban population and the rural poor who rely on markets for their food. These urban poor not only suffer from low access to food, but also have to face a series of challenges including poor housing, water, sanitation, education, health care and on – all of which affect their food security status in one way or the other.

There are three sets of factors that affect food security[2] in an urban context:

1. Food Availability – food suplies into markets
2. Food Access – purchasing power, access to markets
3. Food Absorption (or utilisation) – health and morbidity status

Fig 1.1: Conceptual Framework of Urban Food Security



Source: Based on basic concepts of food security

[1] Latest estimates by FAO stated that over 100 million people were pushed into hunger in 2009, taking the number of hungry people from 915 to 1012 million.

[2] *'Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life'* (FAO, 1996).

Food security stands on the tripod of these three sets of factors and the analytical framework can be depicted as in Fig 1.1.

The social and economic status of any State is determined by the interplay of natural, social and policy environments. Such environments determine food availability at the aggregate level through agricultural production and stocks, imports and as in the case of most developing countries - food aid. The interplay of these factors also determine incomes and hygiene at the household level. Similarly, food availability in markets affects the prevailing prices (presuming the prices are not controlled). Household purchasing power is determined by its income level and the prevailing prices – the former having direct relation while the latter having inverse relation with purchasing power. A household with 'necessary and sufficient' purchasing power has access to food. Individual food access, on the other hand, depends on intra-household food distribution and gender parity in practice.

The final utilisation of food by an individual, besides the actual food intake, is also a function of access to safe water and sanitation hygiene and health care. Provision of basic health facilities in a developing coutnry is determined the level and nature of public interventions.

Finally, the three components of availability, access and absorption (utilisation) together determine the household food security. The household food security is affected by shocks, forcing the households to adopt various coping strategies.

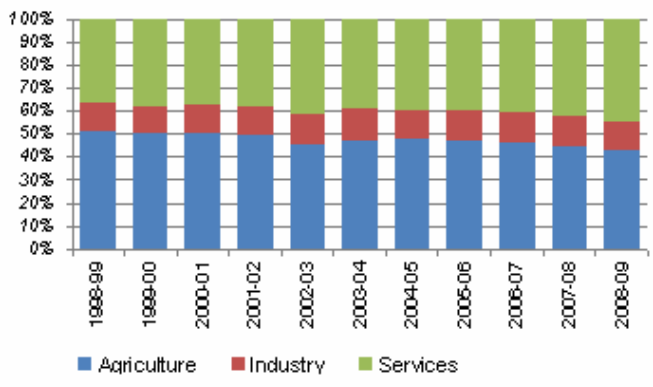
Nutritional status of an individual can be used as the final outcome measurement of food security, particularly to determine the food security status at the individual levels. Commonly used nutritional indicators reflecting food security status are largely anthropometric measures, viz. Underweight, stunting and wasting in case of children and body mass index (BMI) in case of adults.

In the case of urban areas, when populations are grouped together, the higher income brackets overshadow the overall food security status to one which is always better for urban compared to rural population. While availability of services and amenities may indeed be greater in urban areas, there access is skewed – in favour of the richer urban dwellers. Conversely, the urban poor are exposed to uniquely urban problems such as, insecure living tenure, pollution, water and sanitation problems and so on. Most of these features disproportionately affect the poor and have a significant impact on food security and nutritional well-being.

1.2 Locating Urban Ethiopia: Socio-Economic Dimensions

With a population of 74 million, Ethiopia is the second most populous country in Africa, with the existing population increasing at the rate of 2.6 percent per annum. The country has experienced steady economic growth exceeding 11 percent over the last five years (at constant prices). The economy is largely agrarian with the agricultural sector which has varied but showing some decline since 2000 contribute 47 percent of the GDP followed by the services (tertiary) sector has increased since 2000 and accounts for 39 percent of GDP. The industrial (secondary) sector has remained stagnant at an average of 13 percent (Fig 1.2.)

Fig 1.2 : Sectoral Contribution to GDP in Ethiopia, 1998-2008



Source: Ministry of Finance and Economic Development

Interestingly, labour factor productivity in the country is quite uneven with 93 percent of the labour force employed in the agricultural sector while

only 3 percent and 5 percent involved in the secondary and tertiary sectors respectively – a pointer towards high 'hidden unemployment' in the agricultural sector.

The recent high growth in services sector could be a pointer to the 'informalisation' of economy, as is the case of most developing countries, particularly in the case of urban areas. It has been estimated that over 40 percent of non-agricultural workers (largely in urban areas) in Ethiopia are employed in the informal sector, as of 2004 (UNDP, 2007). Nevertheless, the fastest growing sub-sectors over the last five years are retail and wholesale trade (78 percent growth between 2003-04 and 2007-08) and real estate, renting and business (66 percent. These two sub-sectors together accounted for nearly 45 percent of the tertiary sector GDP.

Table 1.1: Trade Balance for Cereals, 2001 – 2007

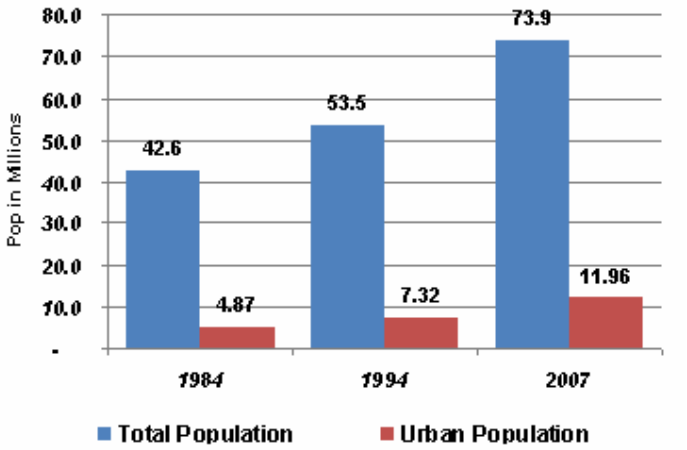
	Export	Import	Trade Balance
2001	15.9	815.4	-799.4
2002	31.0	441.1	-410.1
2003	15.2	1,635.7	-1,620.4
2004	23.9	608.6	-584.7
2005	36.5	880.0	-843.5
2006	8.00	403.6	-395.6
2007	3.00	432.9	-429.9

Source: Ministry of Finance and Economic Development
(Figures in '000 metric tons)

The Ethiopian economy is also marked by a high dependence on imports for domestic consumption and an increasingly high negative trade balance (Table 1.1). The deficit total trade balance has grown six-fold from -6410.7 million birr in 2000 to -40,532.6 million in 2007. Remarkably, even though the economy is highly dependent upon agricultural sector, the country has been importing on average about a million mt of cereals in the last four years[3] for domestic consumption – a pointer to domestic production not keeping pace with rising demand.

A predominant agrarian economy has its implications on the population structure. Ethiopian population has predominantly remained rural, even after a three-fold increase in urban population between 1984 (1st census) and 2007 (latest census) – from 4.87 million to 11.96 million – only 16.2 percent of the national population is urban [Fig.1.3]. Between the last two censuses (1994 and 2007) urban population has increased at an average annual growth rate of 4.9 percent. It has been estimated that even at the end of 2015 only 19 percent of the population would be urban (World Bank, 2009). Nevertheless, there are spatial variations to the concentration of urban population. For instance, besides Addia Ababa City that is entirely urban, Dire Dawa and Harari regions have more

Fig 1.3: Total and Urban Population in last three Censuses



Source: Population and Housing Census Reports of 1984, 1994 and 2007
(Population in millions)

[3] Estimates med from CFSAM report 2008

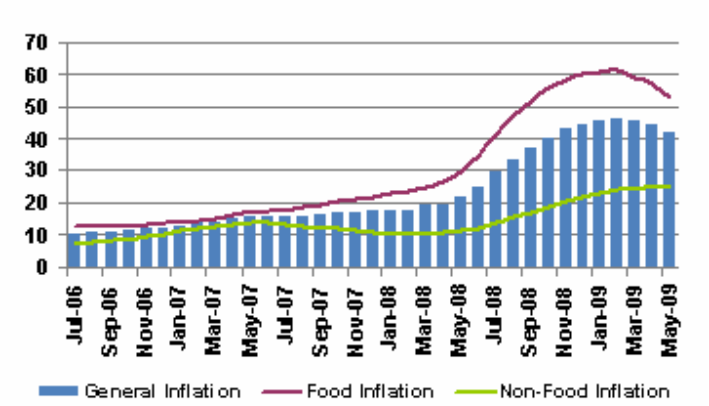
than 50 percent of their population as urban, whereas, Tigray region has 19.5 percent and Gambella region at least 25 percent is urban and the remaining regions; SNNP, Amhara, Oromiya, Afar, Somali and Bensihngul Gumuz have less than 15 percent of population in urban areas[4].

1.3 Background and Justification for the Study

Ethiopia is home to over 35 million undernourished people that account for almost half of the total population (FAO, *op cit*). FAO also lists Ethiopia among countries 'most at risk of deteriorating food security due to high food prices'.

The urban areas of Ethiopia have experienced rising food prices since mid 2005. Though non-food index in Consumer Price Index (CPI) has a weight of 43 percent, it is the food index that has pulled the general inflation over the last couple of years. General inflation has increased by four-times from 10 percent in mid-2006 to 42 percent in May-2009. The food inflation, on its part has increased from 13 percent to 53 percent over the same period. The non-food inflation has relatively remained stagnant [Fig. 1.4].

Fig1.4: General, Food and Non-Food Inflation,Jul-06*-May-09



Source: Country & Regional Level Consumer Price Indices, CSA

High food prices specifically affect those who depend on markets for consumption. It is therefore, evident that it is the urban areas, and within the urban areas the urban poor, who are the worst affected by the rising food prices. This has resulted in the Government instituting an urban market stabilization programme in 2007, where subsidized wheat has been sold to urban consumers.

The global increase of cereal and pulses prices and the global financial crisis has put further challenges on food insecurity status of urban Ethiopia. Added to this is the problem of droughts which are cyclical in Ethiopia, it has been estimated that chances of children under five getting malnourished increases by 41 percent in Ethiopia if they are born during a drought – this translates to 2 million additional malnourished children in 2005 drought (UNDP, 2007). The increase in food prices has also been attributed to a significant increase in money circulation, structural changes in rural economies that have resulted in increased cash crop sales and holding of cereals for domestic consumption, undue competition among different participants in grain trade and finally rapidly increasing demand due to population increases and urbanisation.

These issues have necessitated the need to pay necessary attention to urban food security in general and urban poor in particular. It is therefore, vital to analyse and assess the level of vulnerability food insecurity resulting from the changes as well as steps to be taken to address the growing food insecurity. Timely actions in will lead to mitigating the above challenges, lest shocks and hazards adversely affecting urban food security may lead to famine in the extreme end which in turn may lead to social unrest in urban areas, as recently witnessed in the cases of Egypt, Cote d'Ivoire, Indonesia and Sierra Leone. This stucy is, therefore, expected to raise provide information for policy and programme decision making.

[4] CSA 2007 Census

1.4. Objectives of the Study

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

The specific objectives are:

1. To identify food security and livelihoods problems, constraints, strategies and coping mechanisms among different social and economic groups in the urban areas.
2. To define the predisposing factors to food and livelihoods insecurity in the urban areas in order to inform policy and programme design.
3. To outline household food expenditure and food access patterns among different socioeconomic groups in the urban areas.
4. 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.
5. Examine the linkages between food security, education, nutrition and health
6. Understand the impact of soaring food prices on food security and livelihoods
7. Identify appropriate food and non food interventions and policy implications

1.5. Methodology

The CSA, in principle, defines an urban area as a locality with 2000 or more inhabitants. More specifically, an urban area is defined as:

(i) all administrative capitals (regional capitals, zonal capitals and *Wereda* capitals), or

(ii) localities with Urban Dwellers' Association (UDA) that are not included in (i), or

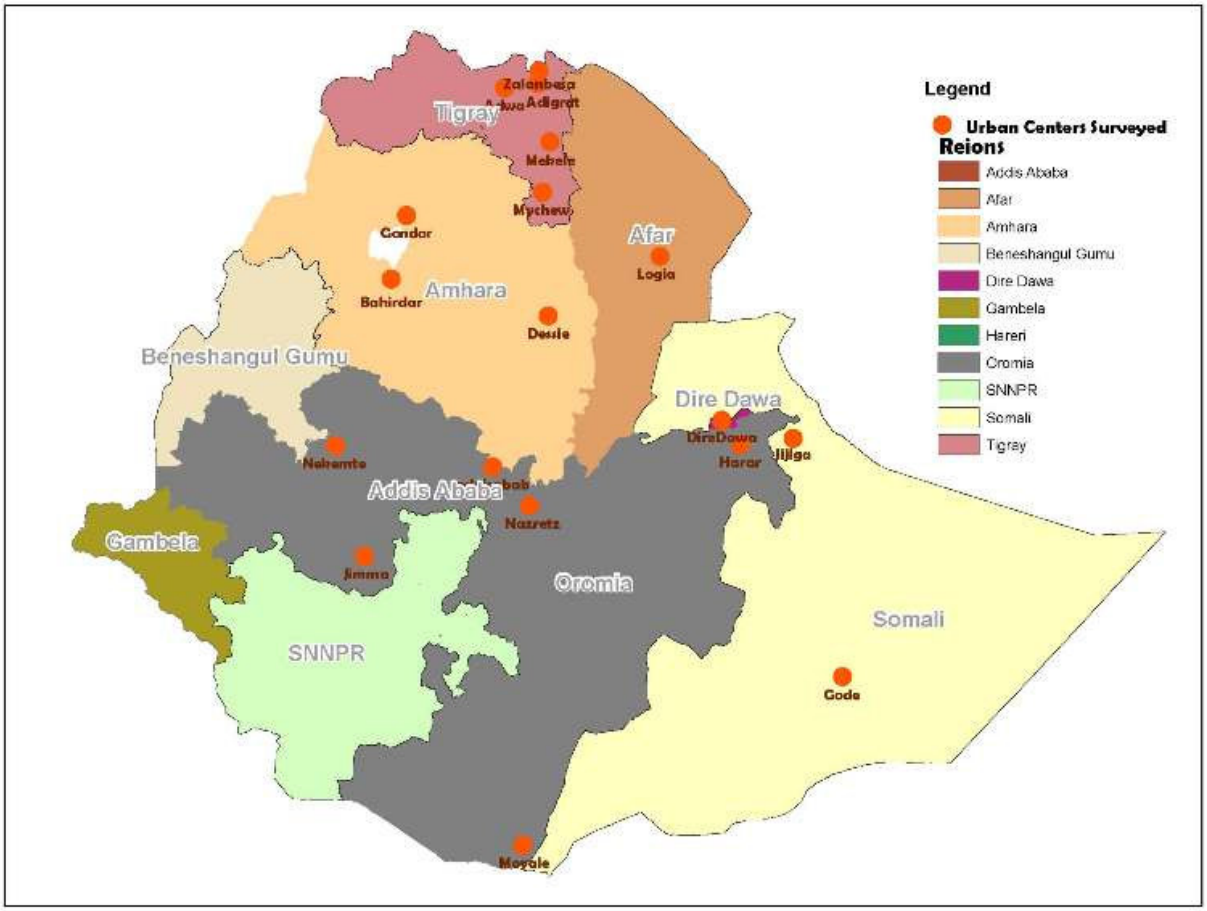
(iii) all localities which are not included either in (i) or (ii) with a population of 1000 or more, primarily engaged in non-agricultural activities.

For this particular study, urban areas refer to the nine regional capitals, the two chartered cities (*astedader akabibi*) - Addis Ababa and Dire Dawa, seven big towns with a population of over 100,000 and with part or whole of population dependent upon non-agricultural activities [Figure 1.5 below]

The urban centres selected for the study are in no way comprehensive, they do represent typical medium to large urban characteristics of the country and hence are potent means to come out with strategies to mitigate food insecurity and vulnerability in for most urban populations in the country. The study used three instruments namely: the household questionnaire; the Focus Group Discussion and Key Informants; and Traders questionnaire.

Data collection on the household was designed to cover household income, assets, consumption, expenditure, health and sanitation. A total of 7,087 households were surveyed in the study. The trader was designed to cover the diverse aspects of food items in the respective city/town. A total of 1,840 traders were covered by the study. In a similar fashion, the Key Informant Interviews (KII) and Focus Group Discussions (FGD) supplemented information collected by the other two instruments and a total of 1,526 FGD and KII were conducted (Table 1.2). In selecting respondents care was taken to include even the minority groups like outcastes, disabilities, veterans, street child, etc.

Fig 1.5: Location of Sample Urban Centres



1.5.1. Sampling

Stratified two-stage cluster sampling was used in order 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. 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. For asn example in Mekele city, the two strata was based on the sub cities and ketenas, whilst in Addis Ababa the strata was based on Kebeles and Enumeration areas (EAs). In Mekele, all the sub cities were considered and from each sub city 3 ketenas were randomly selected (Table 1.2)

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 settlements areas, social services, business areas and others. Accordingly, they precede their sampling selection by spinning any local materials in order to select the path until the assumed households were covered. In Adds Ababa city, the household listing was done and a sample drawn from the listing of the selected EAs.

Table 1.2: Surveyed Units and FGDs by Urban Centres

	Kililoch	Centre	Population	HH Size	Sample HH	Sample Traders	FGD/KII
1	Addis Ababa	Addis Ababa	2,738,248		1,792	595	360
2	Afar	Logiya	13,416	4.0	240	60	28
3	Amhara	Bahir Dar	320,344	3.0	300	80	60
4		Gonder	206,987	3.0	320	80	60
5		Dessie	151,094	3.0	300	80	60
6	Oromiya	Nazareth	222,035	4.0	300	90	60
7		Jimma	120,600	4.0	300	90	60
8		Nekemte	76,817	4.0	300	90	60
9		Moyale	43,241	4.0	240	60	30
10	Dire Dawa	Dire Dawa	232,854	4.3	327	80	151
11	Harar	Harar	99,321	3.4	315	80	162
12	Somali	Jijiga	125,584	6.3	321	81	153
13		Gode	43,134	6.3	235	59	57
14	Tigray	Mekele	220,935	3.4	600	45	45
15		Adigrat	59,011	3.4	299	75	45
16		Zalambesa	8,226	3.4	299	45	45
17		Adwa	41,515	3.4	299	75	45
18		Michew	24,071	3.4	300	75	45
	Total		4,747,433	3.9	7,087	1,840	1,526

1.5.2 Key Indicators

The present study makes use of a set of indicators, all computed at primary level, to analyse the level and severity of food insecurity and vulnerability across sample urban centres in the country. The indicators can be categorised into sensor indicators (root cause of the problem), response indicators (that show the symptoms of the problem) and outcome indicators (that occur as a result of the problem). Some of these indicators are directly amenable to State's policy control, while the rest can be influenced only indirectly or are the outcomes of the indicators that can be directly influenced.

Food security stands on the tripod of availability, access and absorption of food. The present study follows this structure and each of these components is studied through a set of relevant indicators. A Coping Strategy Index has been developed to understand the level of coping mechanisms adopted by the households to face the shocks.

2. General Information about the Study Population

Before moving to the analyses of the food security of the surveyed population, it would be imperative to present the background characteristics of the population. The present chapter provides a summary of demographic and socio-economic characteristics of the sample households and respondents, including age, sex, livelihood patterns, occupations and housing conditions. Information on background characteristics is critical in understanding the findings of the study, besides, identifying the major factors that could determine or influence the food security status of the population and area studied.

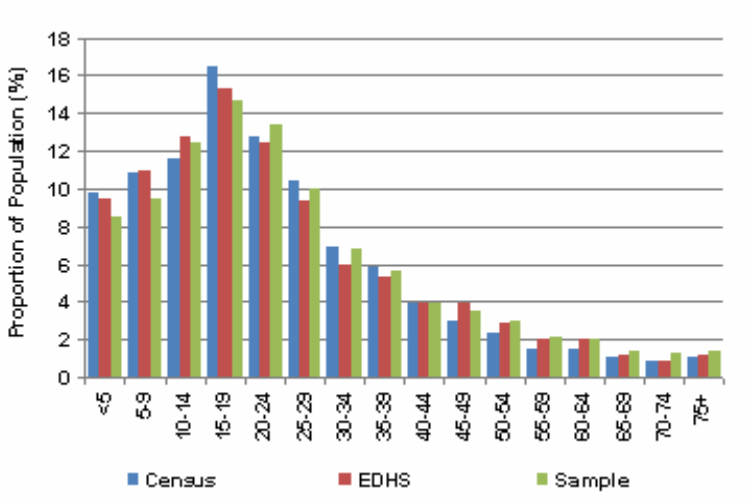
2.1 Demographic Characteristics of the Sample Population

The survey studied population who stay (eat and sleep) in the house visited and thus largely covered the *de facto* population. This was important in limiting the study to urban characteristics of food insecurity as coverage of *de jure* population could influence the findings by way of inculcating characteristics of those family members who stay in rural areas.

2.1.1 Household Population by Age and Sex

Age and sex are vital demographic factors and provide deep insights into the background characteristics of the population under study. The age structure of the population under study follows the same pattern as the Census conducted (2007) and the last Demographic and Health Survey (2005) for urban population, which seem to indicate that the sample is representative of the urban population under study (Fig 2.1). There are very minute differences – for instance the proportion of population in the lower age categories Less than 5 to 19 years) are marginally lower in the sample compared to those in the Census and DHS. However, the proportions of population in higher age categories are marginally higher in the sample. The majority of population, almost half in all the three cases is below 20 years of age. Over 60 percent of population in all three cases again is found to be belonging to the economically 'productive age group' of 15-59 years (the non-dependents[5]) while the remaining around 1/3rd of population can be classified as 'dependents'.

Fig 2.1: Variations in Age Structure of Urban Population



Sources: Census, CSA, 2007; Ethiopia Demographic and Health Survey, 2005 and Household Questionnaire

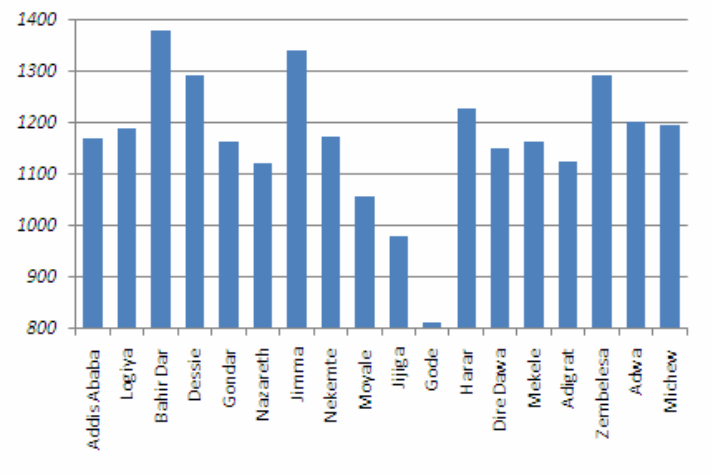
Sex ratio (defined as number of females per 1000 males) has remained consistent at 987 in Ethiopia since the first census was conducted in 1984. However in the latest census of 2007, sex ratio has declined to 982 females per 1000 males for the total population. The urban sex ratio in 2007 was 1012 mainly skewed to above 1,000 by Dire Dawa, Addis Ababa, Tigray and Amhara urban areas while rural sex ratio was only 976 females per 1000 males. A higher urban sex ratio is surprising as most developing economies experience male-selective migration from rural to urban areas. Reasons could be found in

[5] The dependency ratio (ratio between dependent and non-dependent age groups) has been analysed in detail in the section on 'Access to Food' in the next chapter.

migration of whole family, comparatively higher number of females coming to urban areas for education and work and so on.

In the study area, all the urban centres, except Gode and Jijiga, have sex ratio higher than 1000. In fact, the sex ratios in Jimma and Bahir Dar are remarkably high – over 1300 females per 1000 males. High sex ratios in highly urbanised centres could be due to in migration of whole family, comparatively higher number of females coming to urban areas for education and work, the reasons is beyond the scope of the current study.

Fig 2.2: Sex Ratios in Urban Centres



Sources: Household Questionnaire

The age and sex distribution of population has been depicted through population pyramids constructed for Census, 2007, EDHS, 2005 and for the sampled population for the present study (Figs 2.3, 2.4 and 2.5). Ethiopia, like most developing economies, has a pyramidal age-sex structure with a high base population – typical of societies with high fertility rates and low life expectancy[6]. As already pointed out, over 60 percent of population

Fig 2.3: Urban Population Pyramid of Ethiopia, 2005

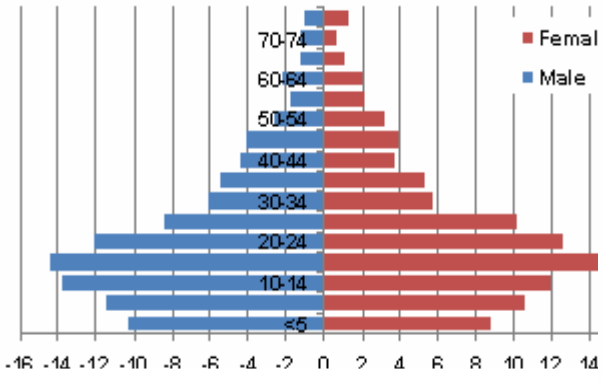


Fig 2.4: Urban Population Pyramid of Ethiopia, 2007

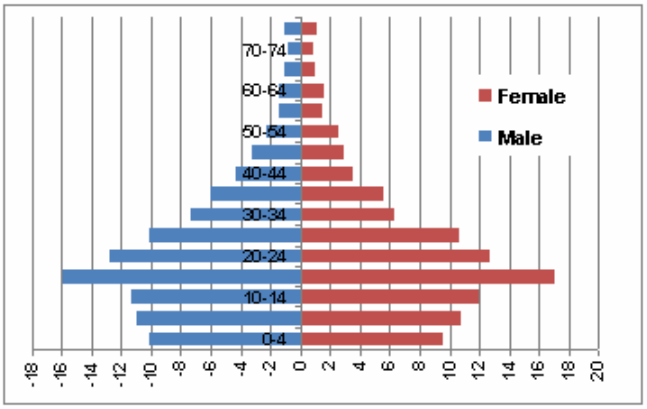
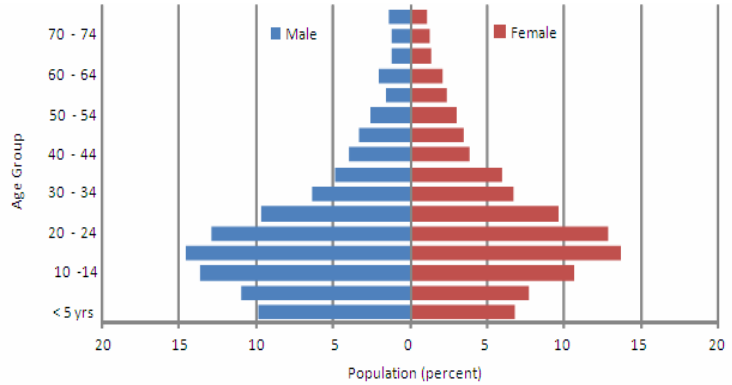


Fig 2.5: Urban Population Pyramid of Study Area, 2008



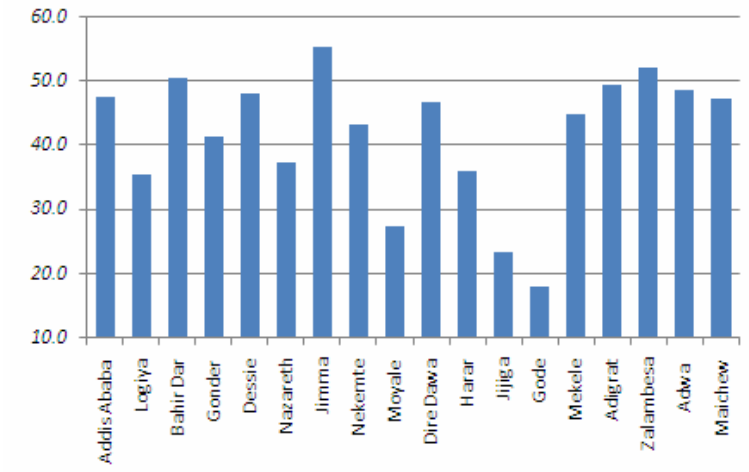
[6] Life expectancy at birth in Ethiopia - at 53 years – is one of the lowest in the world, and only marginally above the life expectancy of Sub-Saharan Africa (50 years).

lies in the age groups below 20 years while only 5 percent of the population, on an average, is above 60 years of age. The population pyramid constructed for the population under study is almost similar to those obtained from Census and EDHS population and sample respectively. It is only in the case of older population groups, particularly males, that the proportion of population is higher for the sample under study.

The sex of head of the household is a good indicator of the level of poverty and vulnerability at household level. Literature is abound with studies that show higher vulnerability of female-headed households, largely due to the fact that the female heads have to take care of household chores besides working outside, thus increasing the work load and burden on them. Many African countries have experienced a significant increase in the percentage of female-headed households in recent years. Among the main causes are male-selective out-migration, the deaths of males in civil conflicts and wars, adolescent fertility and family disruption. Evaluation studies have shown that female-headed households have a higher dependency ratio in spite of the smaller average size of the household; have fewer assets and less access to resources; and tend to have a greater history of disruption (IFAD, 1999).

Households in Ethiopia are largely male-headed with over 75 percent of households being headed by males at the aggregate level. However, in the urban areas only a little over 60 percent of households are headed by males (EDHS, 2005). This proportion is reiterated by the present study where it is found that on an average 40 percent of households were headed by females (Fig 2.6). Zalambesa, Jimma and Bahir Dar had the maximum proportion of such households where more than half of the households were female-headed. On the other hand, less than a quarter of households were headed by females in the towns of Gode, Jijiga and Moyale. It was further found that the female-headed households had a lower asset ownership as compared to the male-headed households, thus validating the presumed higher vulnerability of female-headed households.

Fig 2.6: Proportion of Female-Headed Households



Sources: Household Questionnaire

2.2 Socio-Economic Characteristics of the Sample Population

2.2.1 Children's Living Arrangements and Orphanhood

Children are the most vulnerable sections of any society and given the fact that their numerical strength in terms of proportion to total population is very high (1/3rd of population in Ethiopia is below 14 years of age), alleviating their food security status assumes high significance for development of the entire population. In this context, orphanhood increases child vulnerability on many fronts. It makes it much more likely that a child is denied schooling and other basic support (Guarcello, 2004). Therefore, children not staying with parents – either on account of their death or staying alone due to work – are found to be more vulnerable.

In Ethiopia, over 75 percent of children (under 15 years) live with both the parents while only 8.6 percent live alone (EDHS, 2005). However, in the urban areas only 53 percent of children live with both the

parents, whereas as many as 20 percent of children don't live with either of the parents. Remarkably, the proportion of children staying alone is the highest in Addis Ababa, wherein majority have both their parents alive – a pointer to the fact that they stay away from their parents at a young age either for work or education.

In the current study, around 55 percent of children (under 14 years) stay with both the parents – very close to the EDHS average of 53 percent. On the other hand, a quarter of children in the study area don't stay with either of the parents. Majority of children staying with one parent, generally stay with mother while very only a small proportion of children stays only with father – indicating that n many cases the father works outside the town. The proportion of children living with both the parents is very low in the towns of Dessie, Bahir Dar, Jimma, Gondar, Logiya and Addis Ababa.

Table 2.1: Orphanhood Status of Children

Towns	Both Parents Alive	Father Alive	Mother Alive	Father and Mother Orphaned
Addis Ababa				
Adigrat	78.0	1.4	16.0	2.4
Adwa	84.5	0.9	10.4	1.9
Bahir Dar	47.9	2.1	13.3	36.7
Dessie	44.2	2.5	13.7	39.7
Dire Dawa	62.6	0.7	17.8	18.9
Gode	82.9	1.3	10.1	5.7
Gondar	47.2	2.0	11.5	39.2
Harar	70.9	2.1	12.0	15.0
Jijiga	77.0	1.8	14.2	7.0
Jimma	43.4	3.6	15.0	38.0
Logiya	55.6	3.1	7.2	34.1
Mekele	72.2	2.9	13.6	5.3
Michew	63.7	3.7	13.5	5.7
Moyale	65.3	2.4	9.5	22.8
Nazareth	55.0	2.5	14.0	28.4
Nekemte	59.7	1.9	11.3	27.1
Zembelesa	83.4	0.1	11.1	2.3

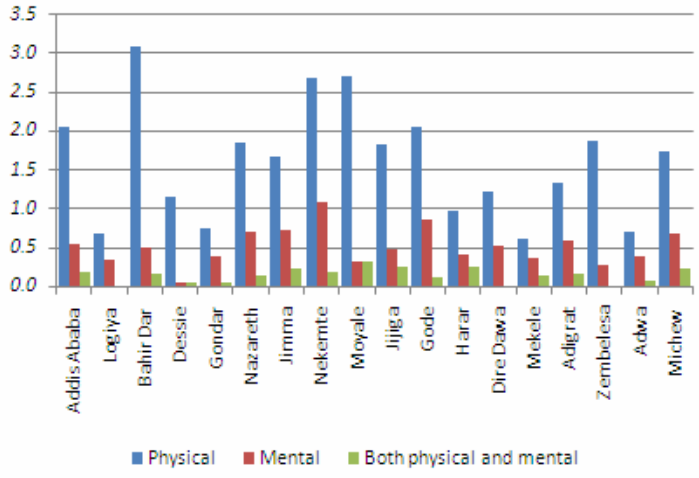
Sources: Household Questionnaire

In the study area, over 15 percent of children are found to be orphans, i.e. both the parents are dead (Table 2.1). The proportion is over 1/3rd in the towns of Dessie, Gondar, Jimma, Logiya and Bahir Dar. On the other hand, less than 5 percent of children are orphans in Adwa, Zalambesa, Adigrat and Addis Ababa. In most cases, where at least one parent is alive, it is observed that it is generally the father who is dead – proportion of children with only mother dead is less than 3 percent while those with only father dead is higher than 12 percent. On an average, 65 percent of children have both their parents alive.

2.2.2 People with Disabilities

Physically or mentally disabled persons are another vulnerable section of the society. The present study shows that only a negligible proportion (only 2.2 percent) of the sample population is disabled – a healthy sign for a developing economy (Fig 2.7). The proportion is only marginally higher in the cases of Nekemte, Bahir Dar and Moyale. While the proportion of physically disabled population is higher in Bahir Dar and Moyale that of mentally disabled is higher in Nekemte. The proportion of disabled population is extremely low – close to 1 percent in the towns of Logiya, Adwa and Gondar.

Fig 2.7: Proportion of Population with Disabilities



Sources: Household Questionnaire

2.2.3 Livelihood Classifications

Livelihood security is a critical and indispensable element of food security. As against rural areas, where subsistence agriculture is an option to cope with food insecurity, the urban areas almost entirely depend on the markets (see Fig 3.1 *Source of food in urban areas*) and hence livelihood dimension of food security assumes special significance. In the study area, almost all (above 95 percent in most cases) earn their livelihood from the service sector. This is largely consequent upon the fact that agriculture sector does not play a role in urban areas, and the industry sector is at a nascent stage in the country, contributing only a little over 13 percent to the GDP, as observed in the previous chapter.

Majority of the household members were found to be either employed in government and private sector or were self-employed or ran small enterprises (Table 2.2). The daily wage labourers form a highly vulnerable section of the population and it was observed that a fair proportion of the population worked as non-agricultural wage workers while a minute proportion worked in the agricultural sector. A very small proportion of population worked in the primary sector wherein an average of 3 percent of population was involved in farming while less than 2 percent was involved in livestock and an equivalent

proportion working as agricultural labourers. Less than 3 percent of population worked as artisans or

Table 2.2: Dominant Livelihood Groups across Urban Centres

Towns	Small business, self employed, NGO, Private company	Government salary / wages	Non-Agricultural wage labour	House rental income, pension and allowances	Assistance dependents; Remittances	Farming, Agricultural wage labour	Petty trade, Handicrafts/Artisans	Others (sale of animal/products, etc.)
Addis Ababa	**30.0**	15.0	11.0	**12.0**	8.0	2.0	**12.0**	**10.0**
Adigrat	**35.6**	17.3	17.7	6.0	**12.0**	4.0	6.3	1.0
Adwa	24.7	**19.4**	14.0	8.7	7.4	3.0	**17.1**	5.7
Bahir Dar	24.0	**22.0**	17.0	**11.0**	**13.0**	4.0	5.0	1.0
Dessie	**31.0**	**24.0**	13.0	9.0	9.0	1.0	**11.0**	2.0
Dire Dawa	27.8	15.3	18.3	**16.8**	8.9	0.3	2.7	9.8
Gode	13.3	**19.2**	2.1	1.3	**27.4**	**12.8**	1.7	**22.3**
Gonder	21.0	**22.0**	12.0	**26.0**	6.0	0.0	9.0	5.0
Harar	19.4	**29.5**	**20.0**	9.6	5.1	3.5	7.0	6.0
Jijiga	**33.9**	18.9	8.2	5.9	8.5	5.7	**14.5**	4.4
Jimma	**32.0**	10.0	**20.0**	9.0	8.0	5.0	10.0	4.0
Logiya	**35.0**	**25.0**	13.0	**13.0**	4.0	5.0	4.0	3.0
Maichew	13.7	**24.3**	10.3	**12.3**	7.3	**12.6**	**17.6**	1.6
Mekele	23.4	**19.6**	13.9	**11.2**	5.4	3.6	**19.7**	3.2
Moyale	**32.0**	**21.0**	**22.0**	3.0	8.0	3.0	5.0	5.0
Nazareth	25.0	**26.0**	9.0	**14.0**	**10.0**	3.0	9.0	3.0
Nekemte	25.0	**23.0**	**22.0**	9.0	6.0	5.0	5.0	4.0
Zalambesa	2.0	3.7	1.7	0.3	**89.3**	1.6	1.0	0.3

Source: Household Schedules

handicraft makers.

Across the urban centres, the highest proportion of population working in private companies, NGOs and government sector was found in the capital city of Addis Ababa. The proportion was also high in Nazareth and Harar. More than 30 percent of population in Logiya, Jijiga and Adigrat were found to own small enterprises or were self-employed. Except Nazareth, the proportion of non-agricultural wage labourers

was generally high in the towns of Oromiya region and also in Harar. A disproportionately high population (almost 90 percent) in Zalambesa was found to be dependent upon food assistance and safety net programmes. In the primary sector, over 10 percent of population in Gode and Michew were farmers. Another 15 percent of population in Gode was engaged in livestock and sold livestock or related products.

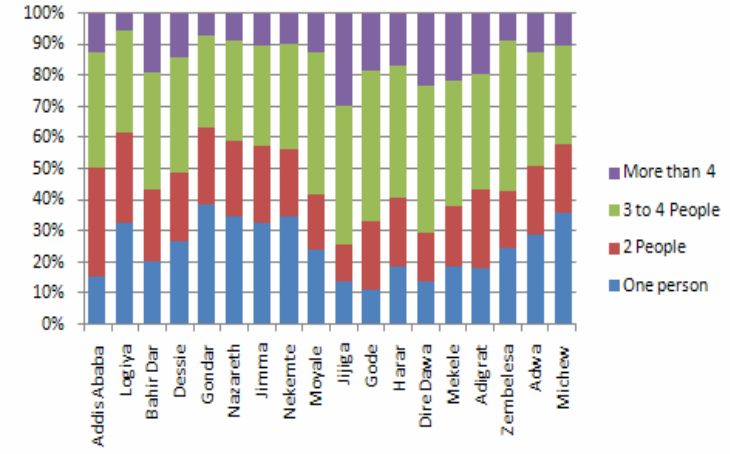
A significant finding that emerged from further analysis was the fact that the female workers were more engaged in casual or informal sector while males dominated in the relatively formal sectors of employment. Thus, while the proportion of males in government, private and NGO sectors was higher the females outnumbered males in sectors like petty trade (firewood collection, etc.), food assistance, and begging. However, females dominated in small businesses. Therefore, as in the case in rural areas, preponderance of females in insecure sectors of livelihood adds to the vulnerability of women.

2.3 Quality of Life: Housing Conditions

It has long been accepted that material wellbeing, as measured by per capita income levels, cannot alone explain the broader quality of life (QoL) in a country. Hence several other measures were studied to better reflect the true QoL (different from standard of living). Among these, housing has been regarded as a fundamental component. Housing issues can have flow-on effects for health, education and community wellbeing. Empirical researches have shown that housing characteristics do reflect community differences and reveal factors that contribute most to an urban centre's perceived QoL (Heffley and Lopez, 2002).

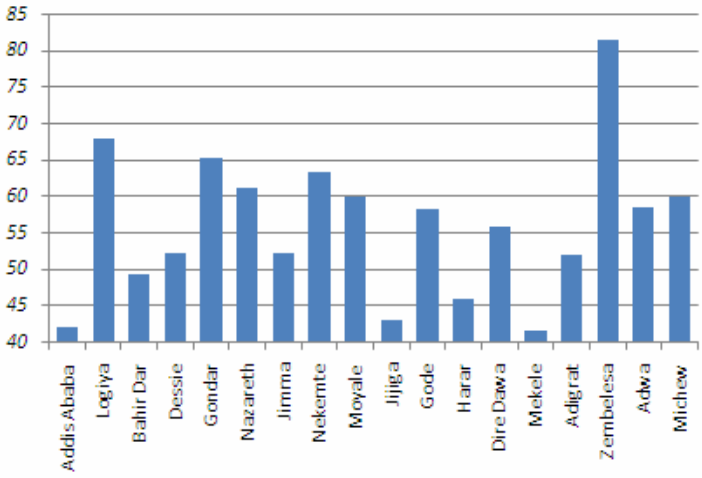
Of the several indicators of housing one of the most potent ones is the level of crowding in a city at household level. With increasing urbanisation working as nucleus of pull-factors and consequent movement of population from rural to urban centres, the household crowding, defined as number of household members living in a room, increases. The level of urbanisation in Ethiopia being only 17 percent, crowding is low. Thus, in the present study almost half of the households have only one or two members living in a room (Fig 2.8). Less than 15 percent of households were found to be having over four persons living in a single room. The level of crowding was very high in Jijiga where 30 percent of households had more

Fig 2.8: Number of Household Members per Room



Source: Household Questionnaire

Fig 2.9: Number of Households with Private Kitchen



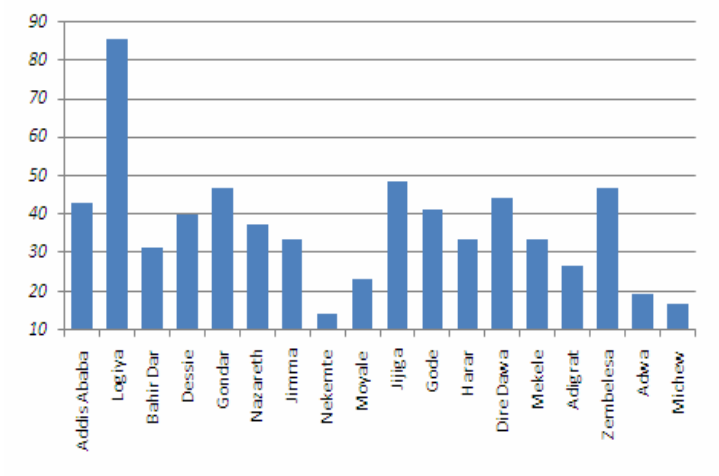
Source: Household Questionnaire

than four members sharing a common room. However, the highest level of crowding was observed for Addis Ababa where almost 40 percent of households were found to be living in single-room houses while another 1/3rd lived in two-room houses. Conversely, the least crowding level was found in the towns of Gondar, Michew, Logiya and Nazareth where over 1/3rd of household members did not share their rooms.

Over 55 percent of households had their private kitchen facilities while around 40 percent shared their kitchen with other households, the remaining using their living rooms as kitchen. A high correlation is found with the level of crowding and the proportion of households not having private or separate kitchen. Thus, crowded cities like Addis Ababa, Jijiga and even Mekele have only 40 percent of households with own kitchen (Fig 2.9). On the other hand, less urbanised centres like Zambelesa and Logiya have over 2/3rd of households with private kitchen facilities. Over 15 percent of households in Dire Dawa use their living rooms for cooking food.

Majority of the households had lived in the current house for over a year. Except in the cases of Logiya and Gode, over 80 percent of the households in all the urban centres under study had stayed in the current house for more than a year. For the households that had moved into the current house in the last six months, over 1/3rd pointed out economic reasons for shifting and had moved to cheaper accommodations (Fig 2.10). The proportion of households citing such reasons was surprisingly high in Logiya (over 85 percent). In towns like Jijiga, Gondar, Zalambesa, Dire Dawa, Gode and Addis Ababa the proportion of such households was over 40 percent. Conversely, 30 percent of households also shifted to better houses, while over 10 percent of households moved due to change in jobs.

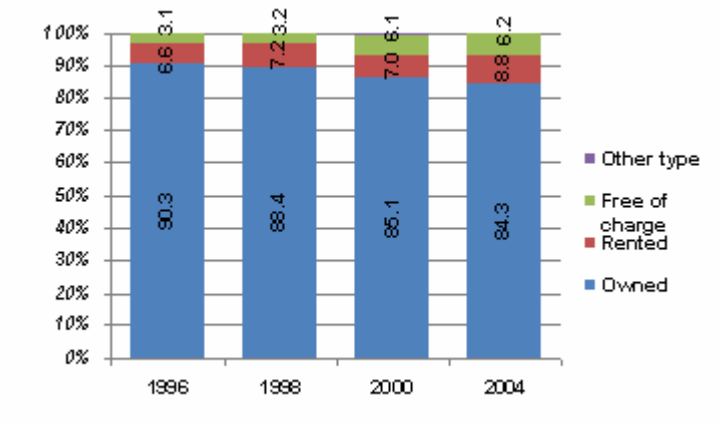
Fig 2.10: Proportion of Households Moving due to High Rents



Source: Household Questionnaire

Tenancy status is a good indicator of economic status and also QoL. In most countries house ownership rates are decreasing. This decline may be attributed to a number of factors, including higher costs of home ownership and changing population demographics. Ethiopia, at the aggregate level, concurs with this general premise. Between 1996 and 2004 across the country including rural areas the household ownership rates has declined from over 90 percent to less than 85 percent while the share of rented accommodation has increased from 7 percent to 9 percent (Fig 2.11).

Fig 2.11: Households by Type of Tenure, 1996-2004



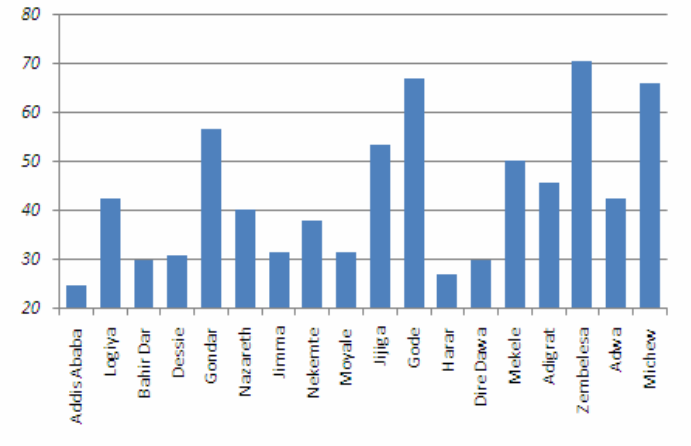
Source: WMS, CSA

In the present study, however, it was found that over 40 percent of households owned the houses they lived compared to 43% in 2004 (CSA Welfare Monitoring survey ,2004) in (Fig 2.12). The proportion of households with house-ownership was found to be higher in less urbanised centres like Gode, Zalambesa and Michew where over 2/3rd of households owned their houses. However, in highly urbanised centres like Addis Ababa, less than a quarter of the households owned their houses, this is slightly lower thatn the 35% found in 2004 because the poor and middle income areas were surveyed in Addis Ababa.

Most other households were tenants with or without written agreements, the latter being more common. Less than 5 percent of households stayed in family owned or ancestral houses while a very miniscule proportion lived in accommodation provided by the employer. Over 1/3rd of households in Addis Ababa, Bahir Dar, Nazareth, Jimma, Harar and Dire Dawa had written tenure agreements, whereas over 45 percent of households in Logiya, Adigrat and Adwa lived without an agreement.

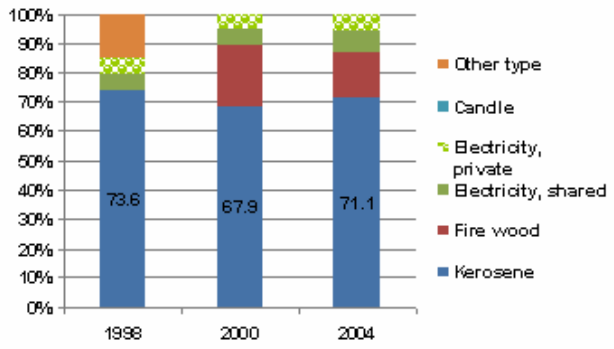
Over 20 percent of households, the proportion being higher than 80 percent in Addis Ababa admitted that they were in debt because of payment of rented houses. The arrears in many households exceeded six months – over 2/3rd of households in Addis Ababa, Moyale, Dire Dawa and Nazareth had arrears exceeding six months.

Fig 2.12: Proportion of Households Owning their Houses



Source: Household Questionnaire

Fig 2.13: Households by Sources of Lighting, 1998-2004

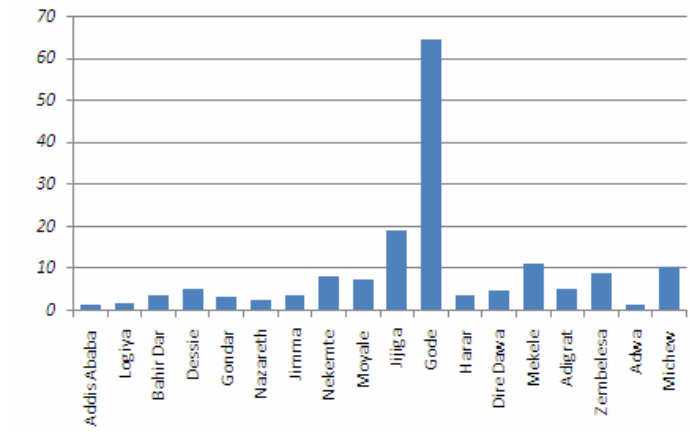


Source: WMS, CSA

2.4 Sources of Energy

Energy sources at household level, for lighting and cooking fuel are important determinants of the overall QoL. At the aggregate level, over 2/3rd of households in the country use kerosene as the main source of lighting (Fig 2.13). Electricity, both private and shared, forms only a little over 12 percent of sources of lighting. However, given the fact that this figure is inclusive of both rural and urban areas the proportion of electricity use is underestimated.

Fig 2.14: Households using non-Electricity Sources of Lighting

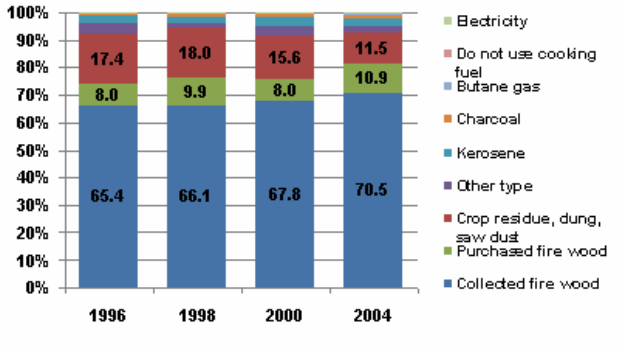


Source: Household Questionnaire

The present study finds that over 90 percent of households in most towns under study used electricity as the main source for lighting, the proportion being almost 99 percent in Addis Ababa, Logiya and Adwa (Fig 2.14). In Gode, surprisingly only 1/3rd of households use electricity while the majority (over 55 percent) use paraffin for lighting. Paraffin is also popular in Jijiga and over 10 percent of households use this for lighting, while another 7 percent use candles. A fair proportion (5 percent) of households in Nekemte use wood as the main source of lighting.

Wood is also the main source of cooking in majority of households in the country. At national level, the proportion of households using collected wood as the main source of cooking fuel gradually increased – from 2/3rd to over 70 percent, as observed between 1996 and 2004 (Fig 2.15). Together with firewood purchased from markets, wood in total accounted for close to 80 percent of cooking fuel in country in 2004. Other sources of energy only a small proportion of the total except crop residue that has decreased from 17% in 1996 to 11.5% in 2004 (Fig 2.15).

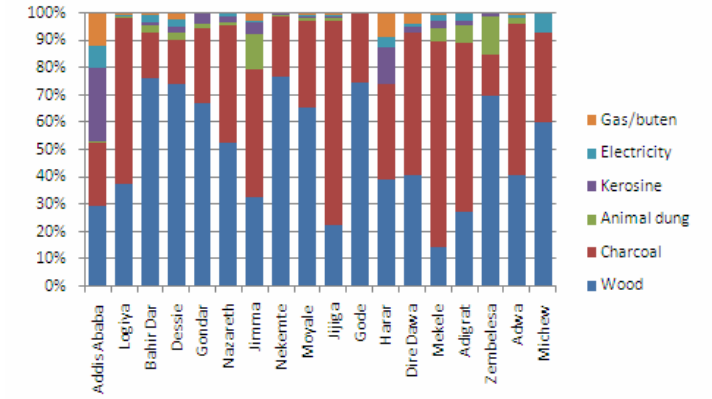
Fig 2.15: Households by Type of Cooking Fuel, 1996-2004



Source: WMS, CSA

In the urban areas, ideally the use of wood would be minimal and other more convenient fuels should be more popular. However, the present study refutes this premise. It is observed that, on an average, over 90% of the households across the urban centres use either wood or charcoal as the primary source of cooking fuel, of which close to 50 percent use wood – thus over 90 percent of the households use non-renewable sources of energy (Fig 2.16). Over 74 percent of households in Bahir Dar, Dessie, Nekemte and Gode and over 2/3rd in Gondar, Moyale and Zalambesa use wood for cooking. Similarly, over 2/3rd of households in Jijiga and Mekele and over 50 percent in Logiya, Dire Dawa, Adigrat and Adwa use charcoal as cooking fuel.

Fig 2.16: Households by Type of Cooking Fuel



Source: Household Questionnaire

The proportion of wood and charcoal is expectedly lower in Addis Ababa where over 20 percent of households use butane gas or electricity for cooking. However, over a quarter of households in this city uses kerosene which is the highest across the study areas. The use of gas or electricity is rare in other urban centres, except in Harar where almost 10 percent of households use gas.

2.5 Summing Up

The use of wood and other non-renewable sources of energy not only sheds poor light on the QoL of the households under study but also puts a question mark on ecological issues, which in turn affects the long-term sustainability of food security. The demographic and socio-economic traits of the study population are typical of a developing economy. How far these background characteristics determine the level of food security and vulnerability in the urban region is a matter of interest and has been dealt with in the ensuing chapter.

3. Status of Food Security in Urban Ethiopia

The previous chapter has summarised the background characteristics of the surveyed population. The present chapter analyses and enumerate the food security situation of the surveyed population. These factors can be clubbed under the three tripods of urban food security – availability and affordability, livelihood access and absorption. Availability is a function of production and distribution, access is a function of purchasing power while absorption (or utilisation) depends upon health, hygiene and quality of drinking water. Attempt has been made to composite the indicators into indices with a view to presenting an overview of food security levels. The important factors contributing significantly to food security have been underscored for analysed further for policy implications.

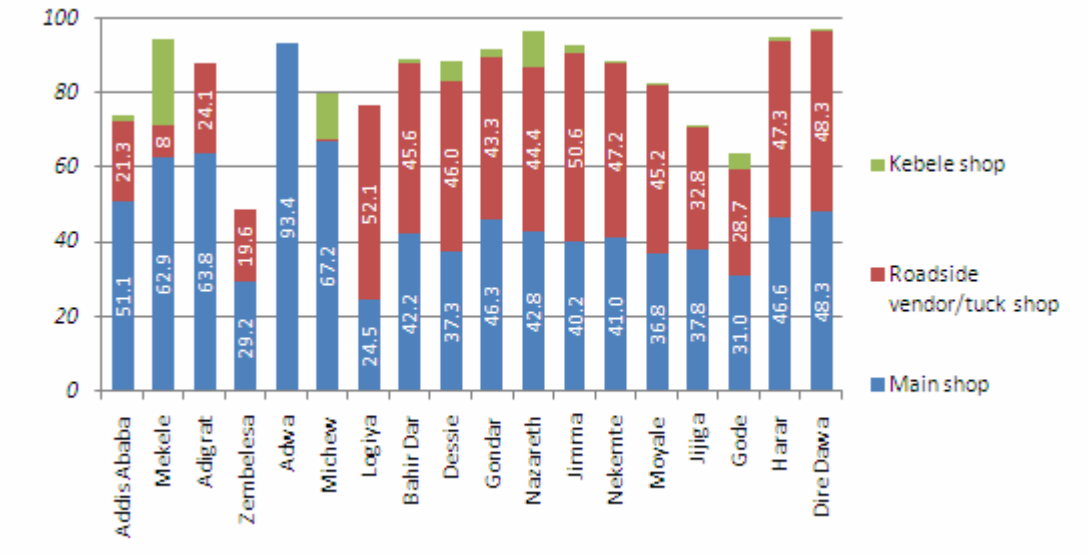
3.1. Food Availability

Urban food security is different from rural food security – in the latter household production factors take lead in determining the level of food availability while in the former it is a combination of factors such as a competitive retail network, existence of safety nets like public distribution system coupled with the supply position of the State. In normal circumstances, the wide network of retail trade takes care of availability issues in an urban area – the major issue, in general, is that of affordability. However, in the current context of food price increase and the impact of global warming and consequent climate change on production, even urban food availability is bound to get affected by food availability in the country.

3.1.1 Sources of Food in the Study Areas

To assess and validate the dependence of urban population on markets and not on self-production (as in the case of rural areas) the surveyed population was enquired about their current sources of food. In the study areas, over 40 percent of households depended on markets for their household food availability (Fig 3.1). On an average, over 80 percent of the respondents reported to be dependent upon shops or roadside vendors or tuck shops. Of these, over 90 percent of respondents in Adwa reported to purchase their food items from main shops while the proportion was over 60 percent in other towns of Tigray

Fig 3.1: Proportion of Households Depending upon Markets for Household Food Availability



Source: Household Questionnaire

region (except Zalambesa). Proportion of sample population depending on small tuck shops was higher than 50 percent in towns of Logiya and Jimma. *Kebele* shops have not been very popular among the

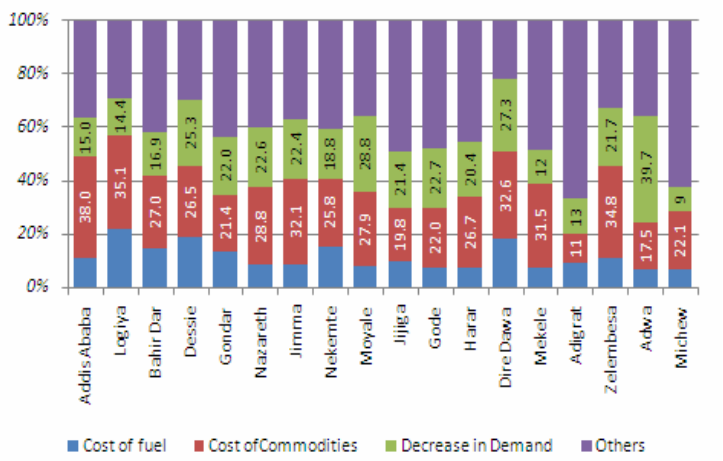
respondents, a factor that has been examined in detail in the chapter on public interventions for food security. Less than 5 percent of respondents on an average sourced their food items from these shops, except in Mekele where the proportion was four times the average. Other sources of food like self-production, begging, borrowing, food-aid, etc. were very negligible.

A temporal analysis of consumer behaviour of respondents throws some interesting pointers. The most significant one being, an increased tendency among the respondents to move away from markets over the last six months preceding the survey. Across the towns, there has been a general decline in the proportion of respondents depending on shops and a general increase in the proportion relying on *kebele* shops, self-production (through home gardens, etc.), food assistance and more significantly, buying food on credit or borrowing. This is a significant finding inasmuch as this gives evidence to impact of high prices on urban consumers. The change in consumption behaviour is largely a result of change in purchasing power - as analysed in ensuing sections.

3.1.2 Market Obstacles

The previous section has brought forward the significance of markets in urban food availability. Over the last couple of years availability dimension of food insecurity, particularly in the urban areas, has increasingly become a function of market failure[7] rather than agricultural production. The current study has done a separate survey of markets and traders, besides administering household questionnaires and qualitative surveys, in all the 18 urban centres under study.

Fig 3.2: Perception of Traders on Major Difficulties Faced in Trade



Source: Traders Questionnaire

The change in availability factors has had a cascading impact on the demand-supply driven prices in markets. The traders in the study areas were enquired about their perception on major problems faced by the markets over the last six months. Over a quarter of traders across all urban centres cited increase in prices as the most important difficulty faced by them in running their business (Fig 3.2). Another 20 percent of traders cited a decline in demand from the consumers as a factor affecting their trade, which is a related factor or a consequence of high prices. Almost 40 percent of traders in Addis Ababa and 1/3rd in the towns of Logiya, Zelembesa, Jimma, Dire Dawa and Mekele cited increase in cost of commodities they sell as the major factor hampering their trade. Similarly, 40 percent of traders in Adwa and over a quarter in Dessie, Moyale and Dire Dawa said that their trade has suffered on account of decline in demand from consumers.

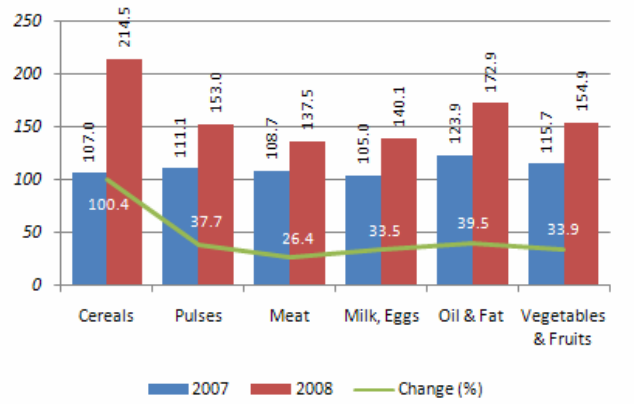
Other factors affecting the market functions, as perceived by the traders include rising cost of fuel and (hence) transportation, storage problems, increase in shop rentals, credit availability, interest rates and recovering debts from the consumers (discussed in detail in sub-section on 'Access to Credit' in the next section on 'Food Access').

[7] Market failure has been defined as 'a circumstance in which the pursuit of private interest does not lead to an efficient use of society's resources or a fair distribution of society's goods' (Weimer and Wining, 1999).

3.1.2.1 Increase in Food Prices

Increase in food prices has been cited as the most important problem plaguing the food security situation in urban Ethiopia, as cited by both the consumers (Table 4.17) as well as the traders (Fig. 3.2). It, therefore, becomes imperative to assess the empirical changes in prices of major food commodities in market. The secondary level Consumer Price Indices (CPI) data computed by the Central Statistical Agency shows a high increase in prices of all food commodities (Fig 3.3). The most noticeable increase is observed in case of cereals wherein the price more than doubled within a one year period between 2007 and 2008. The prices of other food groups like pulses, milk and eggs, oil and fat and vegetable and fruits increased by 1/3rd over the same period. Even expensive food items like meat saw a quarter jump in average prices.

Fig 3.3: Average Consumer Price Indices by Major Food Commodities, 2007 and 2008



Source: Country & Regional Level Consumer Price Indices, CSA

The present study shows that most urban centres have experienced an increase in the prices of all food commodities under consideration (Table 3.1). Among the food commodity groups the prices of cereals experienced an increase of 23 percent at the time of survey as compared to the previous year. The highest increase was observed in the Tigray region where the towns of Adigrat, Adwa and Mekele experienced a high increase in prices exceeding 45 percent, while the increase was over 30 percent in the cases of Nekemte, Jimma and Jijiga. Among the cereals, a very high increase was observed for teff grain, which is the most common staple crop in the country. While the capital city Addis Ababa had a modest increase of 10 percent in teff prices, the prices of this grain almost doubled in Adwa. The average price increase for injera was 40 percent which is very high given the fact that it forms the regular diet in the country. The average price increased from ETB 1.75 to ETB 2.5 per injera. Though the average price of wheat flour increased by 20 percent the increase was over 30 percent in the cases of Jimma, Nekemte, Jijiga, Dire Dawa and Adigrat. Similarly, rice prices increased by 1/3rd over the one year period, the increase being over 50 percent in Jijiga, Logiya, Adigrat, Zalambesa and Adwa.

Table 3.1: Change in Prices of Major Commodity Groups (2007 & 2008)

	Cereal	Pulses	Livestock	Veg/Fruits	Misc
No Change / Decline	Harar	Gode Harar Zalambesa Dire Dawa	Dire Dawa Adigrat		Gode
Low Increase	Zalambesa Dire Dawa Gode Addis Ababa Michew Gondar Nazareth Dessie Bahir Dar	Bahir Dar Addis Ababa Nazareth Jimma Moyale Dessie Gondar	Addis Ababa Michew Mekele Harar Moyale Nazareth Nekemte Gondar	Mekele Michew Addis Ababa	Harar Nazareth Addis Ababa Jimma Moyale Dire Dawa Zalambesa
Medium Increase	Logiya Moyale Jijiga Jimma	Jijiga Nekemte Logiya Michew	Bahir Dar Logiya Dessie	Dessie Bahir Dar Harar Gode Logiya Moyale Dire Dawa Nazareth	Michew Bahir Dar Dessie Nekemte Adigrat Adwa
High Increase	Nekemte Mekele Adwa Adigrat	Adigrat Mekele Adwa	Gode Jijiga Zalambesa Adwa Jimma	Jimma Zalambesa Nekemte Gondar Adwa Jijiga Adigrat	Gondar Logiya Jijiga Mekele

Source: Traders Questionnaire

The most widely cultivated food legumes, cheap sources of protein, in Ethiopia are chickpea, lentil, faba bean and field pea. These pulses serve as important protein supplements in the cereal-based diets of Ethiopians. The consumption rate of pulses increases during fasting days (approximately 140 days per year). The present study shows that prices of pulses saw an increase of 24 percent over the one year period. However, Adwa experienced a high increase exceeding 70 percent in all pulses considered – lentils, peas and beans. In fact, lentils, the most common pulses in the country, had the maximum increase in prices – while the increase in prices for beans and peas was little over 20 percent, that in lentils was over 27 percent.

The increase in prices of livestock products was over 20 percent. While the increase in prices of meat (lamb, beef, chicken and goat) was moderate and around 20 percent, there was a high increase in the prices of eggs and milk. The price of eggs increased by more than half in Logiya, Gondar, Jijiga, Harar, Zalambesa and Michew while there was a similar increase in price of milk in Jimma, Nekemte and Jijiga. The increase in prices of all livestock products in Addis Ababa was below 10 percent, except the price of chicken that increased by 15 percent. However, in other urban centres the price increase was much higher. For instance, there was an increase exceeding 50 percent for beef prices in Jijiga and lamb meat in Gode.

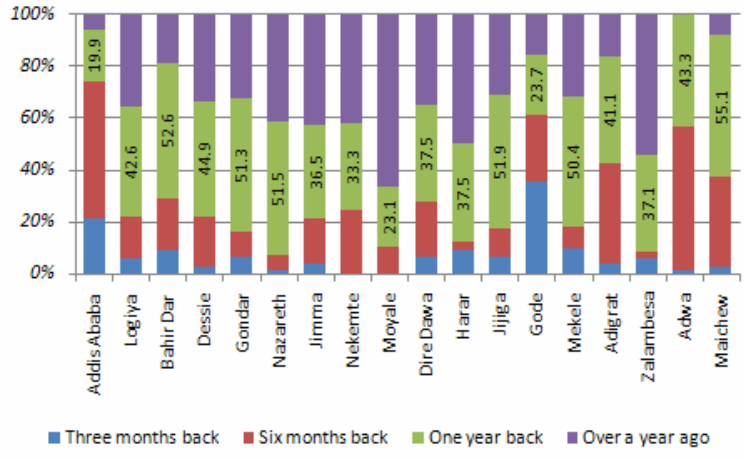
The highest average surge in prices of food commodities was observed in the case of vegetables and fruits, where the average prices increased by almost 30 percent. While the increase in prices of these perishable commodities was less than 10 percent in Addis Ababa, the increase was over 40 percent in Gondar, Jijiga, Adigrat and Adwa and by over 33 percent in Jimma, Nekemte and Zalambesa. The most common vegetable, onion, experienced the highest increase in prices across all urban centres. On an average the price of onion increased by over 50 percent, the increase by over 66 percent in Dessie, Zalambesa and Jijiga.

Among other food items, price of edible oil increased by 20 percent while the increase was over 33 precent for sugar. However, in Jijiga the price of both these commodities increased by over 60 percent. Coffee was the only commodity observed where the average increase in price was below 10 percent.

It can thus be inferred from the foregoing analyses that in general the increase in price was more for those food items which are more commonly consumed. This gets validated by observations from teff among cereals, lentils among pulses, onion among vegetable and eggs among livestock products. This puts grave concerns over the food security situation in the studied urban centres as the commonly consumed food items have low elasticity of demand, i.e. their demand does not decline with increase in prices, resulting in an increased expenditure on food.

It is observed that majority of the traders started noticing an increase in prices at least a year before, i.e. in 2007 (Fig 3.4). Over 40 percent of traders started experiencing an increase in prices starting 2007 while another 30 percent of traders had observed so over a year ago. Over half of traders in Bahir Dar, Gondar, Nazareth, Jijiga, Mekele and Michew had observed the surge in prices a year ago. Remarkably, the traders in Addis Ababa felt that food price increase in the city was only a recent phenomenon – 75 percent of traders had felt the increase in prices only in the last six months or even less. Similarly, over 1/3rd of traders in Gode had started experiencing the increase in prices only in the last three months.

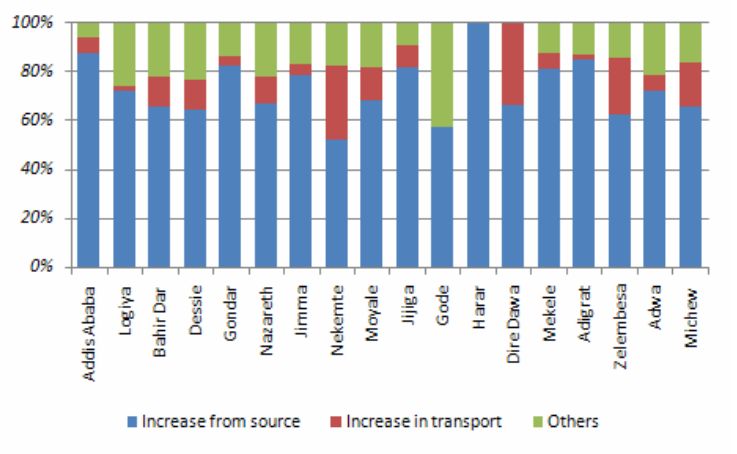
Fig 3.4: Period when Traders Started Noticing Price Increase



Source: Traders Questionnaire

Almost all traders sourced the food commodities they sold from other larger traders. It was only in the case of vegetables and fruits that a good proportion of traders bought directly from the farmers. Hence, most traders cited increase in prices from the source (mostly larger traders) as the primary cause of increase in prices in their shops (Fig 3.5). Other factors indicated by them as the cause of increase in prices included increase in transportation cost (due to increase in fuel prices), increase in interest on credits and increase in taxes.

Fig 3.5: Reasons for Increase in Prices

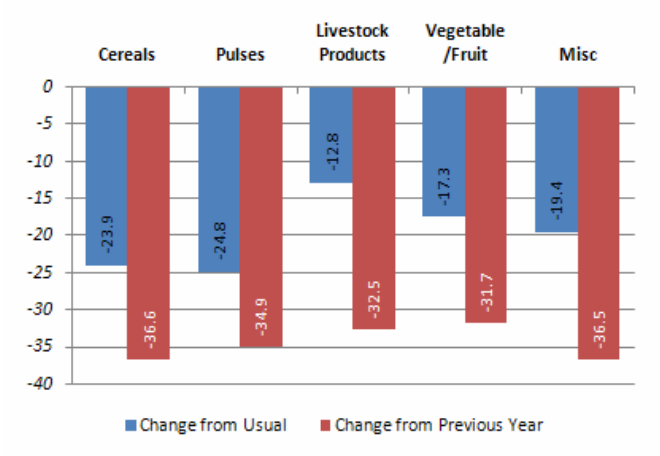


Source: Traders Questionnaire

3.1.2.2 Change in Demand

A fair proportion of traders had indicated a decline in demand for food commodities as a major problem affecting their trade. The traders could perceive a decline in demand on account of a perceptible decline in their regular sells. On an average, the traders felt that their sells have declined by over 1/3rd compared to the previous year and over 20 percent compared to their usual sells (Fig 3.6). Given the fact that the decline was much more compared to previous year than that compared to usual sells, it can be safely inferred that the decline in demand from the consumers has come to fore only in the last one year (owing to high inrease in prices in the last one year). The highest decline was observed in the case of cereals followed by regular miscellaneous commodities like oil and sugar.

Fig 3.6: Perception of Traders on Change in Quantity of Food Commodity Sold



Source: Traders Questionnaire

The decline in demand has largely remained commensurate to increase in prices. For instance, Harar, that experienced stagnant prices of cereals as compared to all other urban centres that saw a high increase in cereal prices, also saw an increase in demand of cereals. On the other hand, Adigrat experiened a decline in cereal purchases exceeding 50 percent compared both to ususal sells as that to the previous year (the centre had the highest increase in cereal prices).

Addis Ababa presents a typical case of high food price increase between 2007 and 2008, wherein the demand for cereals declined by less than 15 percent compared to usual sells but declined by over 50 percent when compared to sells in the previous year. Demand for teff grain had declined by an average of 1/3rd in all the urban centres.

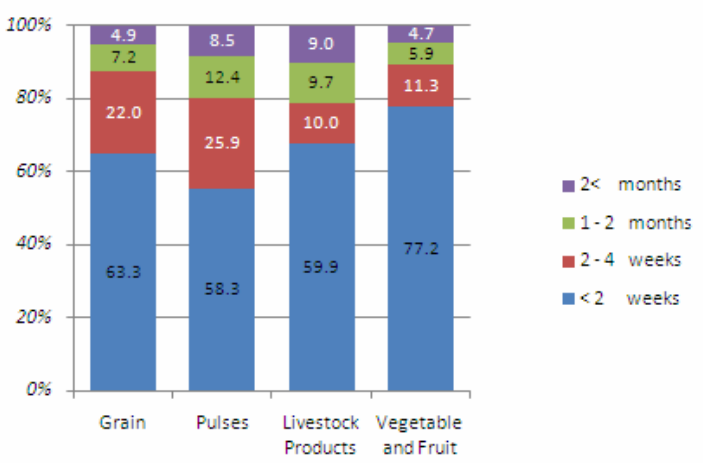
Similarly the quantity of pulses purchased had also relatively declined in all the urban centres, the decline being higher for lentils and beans compared to peas. However, among the livestock products only eggs and milk saw a decline in their purchases while the decline in demand for meat was largely modest. The reason for this anomaly can be found in the probability of consumption of these items by the economically better sections of the surveyed population whose consumption behaviour have not seen

much changes owing to prices. On the other hand, high increase in prices of cereals have had their overt impact on the demand from consumers. The related changes in consumption patterns of the consumers have been analysed in the next section on Access to Food.

3.1.2.3 Supply Response of the Market

It is expected that with a decrease in demand and hence quantity purchased from market, the traders would decrease their purchases too. However, in the event of an increase in demand from consumers due to enhanced incomes, there is a possibility of supplies not meeting the high demand – resulting in further increase in prices[8]. It is, however, encouraging to observe that majority of traders felt that they may not take more than a couple of weeks in replenishing their supplies if the demand from consumers increase (Fig 3.7). It was only in the case of pulses and livestock products that a fair proportion of traders felt that they could take more than two months in increasing supplies. The highest level of supply response was observed in the case of vegetable and fruits where over 75 percent of traders across all urban centres sought to increase the supplies within two weeks if required.

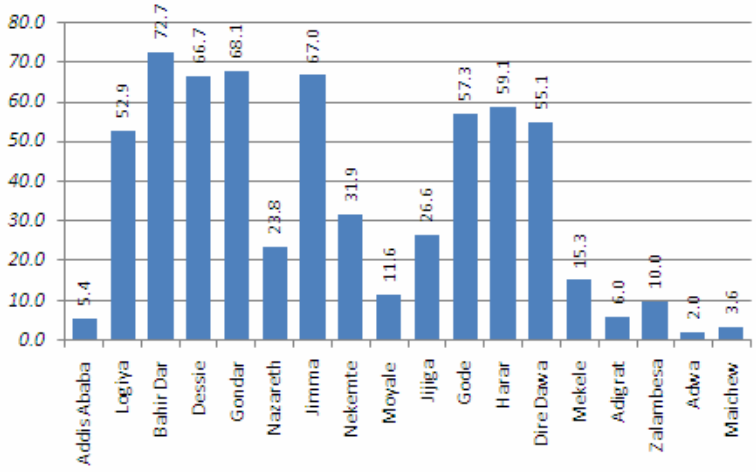
Fig 3.7: Time Taken to Increase Supplies if Demands Increase



Source: Traders Ouestionnaire

A high level of supply response from the traders has implications on tendencies to hold stocks or hoard food commodities. Widespread spatial disparities was found in terms of proportion of traders admitting to hold stocks at their end – while the proportion was negligible in Addis Ababa and Tigray regions, it was very high in Amhara region followed by Harar and Dire Dawa (Fig 3.8). Over 2/3rd of traders surveyed in Bahir Dar, Dessie, Gondar and Jimma held stocks while the proportion was over 50 percent in Gode, Harar, Dire Dawa and Logiya.

Fig 3.8: Proportion of Traders Admitting to Hold Stocks



Source: Traders Questionnaire

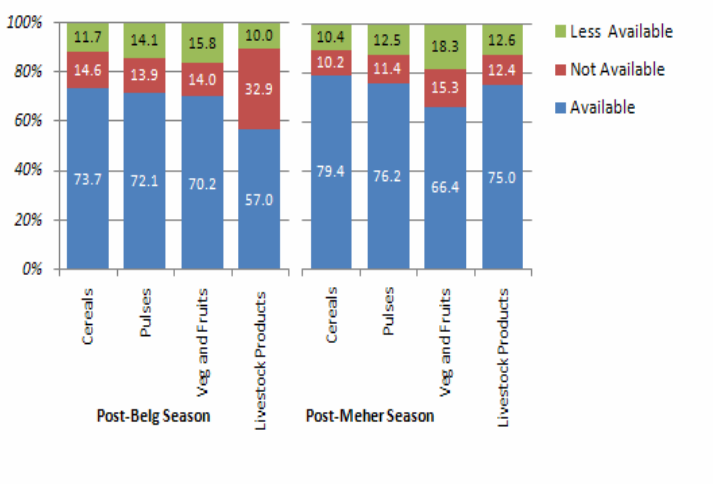
The most popular commodities in terms of hoarding were pulses followed by cereals while the holding stocks of livestock products and vegetables was not common, largely on account of their perishable nature. Over a third of such traders held stocks of pulses and

[8] A decline in demand from the consumers generally results in a spiraling lowering of purchases – from the traders, wholesalers and finally from the producers. An increase in demand, conversely, takes some time before this chain can be reversed. As a result, by the time supplies are replenished the prices peak, at least in the short run.

cereals for over a month while another quarter of traders did so only for a week. Proportion of traders holding stocks for over a month was over 50 percent in the towns of Adwa, Michew and Jijiga.

Finally, the traders also expressed optimism in terms of food availability in markets in ensuing seasons. Over 70 percent of traders on an average assured availability of food commodities in coming seasons (Fig 3.9). This is, though, exepcted as commodity availability remains assured unless the suply chain breaks due to untoward situations like natural or man-made disasters. Nevertheless, over 10 percent of traders in all urban centres expressed apprehensions that they may not be in a position to supply the required commodities in the required quantities. The proportion of traders expressing such apprehensions was over 25 percent in the towns of Bahir Dar and Moyale for cereals and in Gode, Adigrat and Zalambesa for pulses.

Fig 3.9: Traders' Perception on Food Availability in Markets by Season

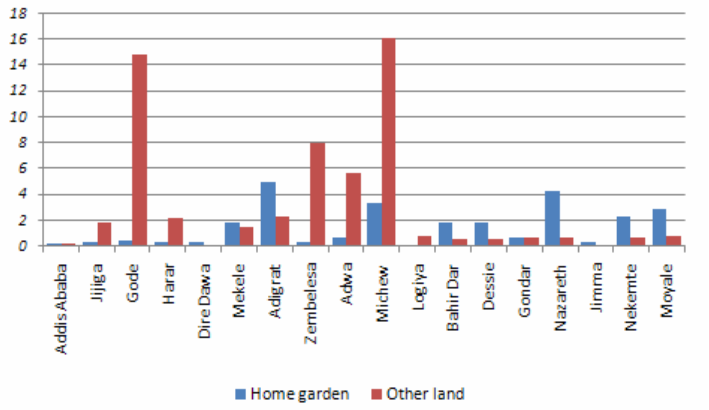


Source: Traders Questionnaire

3.1.3 Utility of Home Gardens in Urban Areas

Home gardens have a role in enhancing food security in several ways, most importantly through: 1) direct access to a diversity of nutritionally-rich foods, 2) increased purchasing power from savings on food bills, and 3) fall-back food provision during seasonal lean periods. Such home grown agricultural products have high significance in rural areas; however, they are not popular in urban areas. Nevertheless, as observed in the previous sections, the high food prices have forced the urban dwellers away from markets and towards self-production. It was found in the study area that on an average less than 2 percent of respondents cultivate home gardens ranging from 5 percent in Adigrat town to nil in Logiya (Fig 3.10). The proportion of respondents cultivating lands other than home gardens ranged from over 16 percent in Michew to nil in Dire Dawa and Jimma. In most cases, it was found that the respondents cultivating home gardens or other lands grow cereals, except in the case of Mekele where at least a third of the cultivators grew vegetables and fruits. The cultivated land, in almost all the cases, are quite small in size – less than 0.1 hectare in case of home gardens and less than 0.5 hectares in case of

Fig 3.10: Proportion of Households Cultivating Home Gardens and Other Land



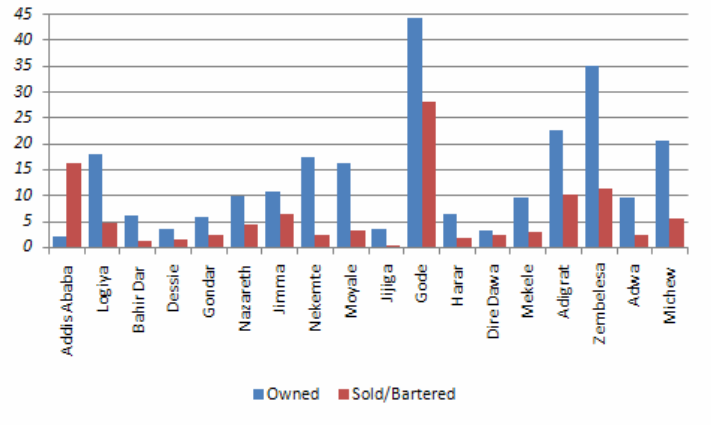
Source: Household Questionnaire

other cultivated lands. The respondents intended to cultivate the same area of land in the next season as well.

3.1.4 Livestock ownership

Though the role of livestock in urban food availability is limited (largely due to high dependence on markets for livestock products) the present study explored this factor as well. It was found that a fair proportion of households bought livestock in the last six months (Fig 3.11). However, an equally significant proportion of households also sold their livestock. For instance, the proportion of households buying livestock was negligible in Addis Ababa while those who sold exceeded 15 percent. Conversely, in Gode almost 45 percent of households bought while over a quarter of households sold livestock.

Fig 3.11: Livestock Purchased and Sold in the Last Six Months



Source: Household Questionnaire

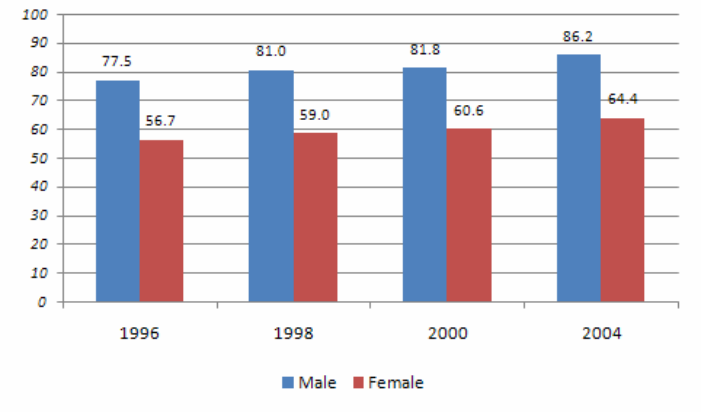
3.2 Access to Food

Access to food bears more significance than mere availability of food. It depends upon access to livelihoods and income earned, which in turn are determined by a set of factors ranging from occupation and income levels to literacy level and gender parity.

3.2.1 Level of Educational Attainment

Literacy, particularly female literacy and education, is considered to be one of the most critical factors in attaining food security. Urban literacy n Ethiopia has been quite high, as compared to most developing countries. As per the latest round of Welfare Monitoring Survey (WMS) the level of literacy among urban males is higher than 86 percent while that in urban females is nearly 65 percent (Fig 3.12). In fact, there has been a steady increase in literacy levels over the last decade. In the 15-24 years age category, total literacy rate among males is 62 percent while it is only 39 percent among females (Unicef, 2009).

Fig 3.12: Urban Literacy Levels in Ethiopia, 1996 - 2004



Source: Welfare Monitoring Survey, CSA

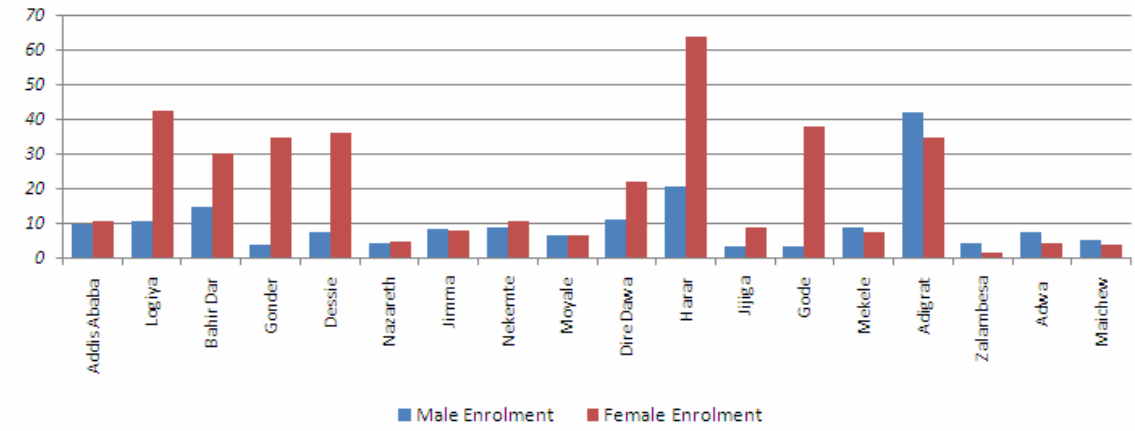
In the current study, the literacy level among males is found to be 77.2 percent while that among females is 71 percent – the former being lower than CSA figures while the latter being higher. Across towns, Harar town shows the best literacy figures, with both male and female literacy rates being higher than 85 percent. Male literacy is over 80 percent in towns of Nazareth, Dessie, Bahir Dar, Gondar, Dire Dawa, Jimma, Mekele and Adwa; the female literacy being higher than 75 percent in the cases of Dessie, Nazareth, Gondar, Bahir Dar and Logiya. In most cases, male literacy is higher than female literacy, the only exceptions being Logiya and Harar towns.

Female Literacy: The Pivot of Food Security

Research findings from 35 demographic and health surveys suggest that children of mothers with no education are more than twice as likely to die or to be malnourished compared with children of mothers who have secondary education or higher qualifications. Mothers with limited literacy and educational skills are also much less likely to receive trained support during pregnancy and childbirth. In Nigeria, for example, only 15 percent of births amongst uneducated women are assisted by trained medical personnel, compared to 56 percent of births among women who have completed primary school, and 88 percent among women who have completed higher education.

Save the Children (2008)

Fig 3.13: Differences in Male and Female Enrolment Rates



Source: Household Questionnaire

Given the significance of education in socio-economic development and overall level of food security, the level of enrolment in schools across all surveyed urban centres shows some encouraging results. Over 15 percent of the sample population were found to be enrolled in schools. However, what is more encouraging is the gender parity in enrolment – on an average the female enrolment is found to be more than twice that of male enrolment. In fact, in some of the towns the difference is remarkably high. For instance, in Harar town almost 2/3rd of females are enrolled while the share among enrolled males is only 20 percent. Similarly, in Gode as well as all towns of Amhara and Afar region, the female enrolment is significantly higher than male enrolment.

However, in terms of all higher levels of education the proportion among males is higher. Only 5 percent of females are found to have attained tertiary or higher educational levels as against over 10 percent in case of males. It is observed that Gode that has a fairly high proportion of female enrolment has only 2.5 percent of females having completed

Table 3.2: Educational Status of Respondents

Town	No Education	Still (enrolled) attending school	Some primary	Primary completed	Some secondary	Secondary completed	Tertiary or higher
Adigrat	**28.6**	**38.4**	6.3	2.1	7.4	10.9	6.2
Adwa	24.0	6.0	**29.2**	6.6	13.0	15.7	5.5
Bahir Dar	21.3	25.0	17.1	4.9	9.5	12.5	9.7
Dessie	20.4	26.4	13.7	4.7	13.4	14.9	10.0
Dire Dawa	22.6	17.5	18.5	8.9	12.1	10.5	9.8
Gode	**37.6**	23.2	12.1	4.8	7.9	6.4	8.0
Gonder	22.0	23.5	17.2	4.8	10.3	12.1	6.6
Harar	12.4	52.3	8.8	6.3	6.7	8.5	4.9
Jijiga	**48.2**	6.3	18.0	6.2	9.3	5.5	6.4
Jimma	23.4	8.4	27.5	7.4	15.0	12.4	6.0
Logiya	**26.9**	31.3	17.9	6.7	8.5	6.6	2.2
Maichew	**28.5**	4.7	17.6	9.4	18.0	13.1	8.6
Mekele	**25.2**	8.3	16.7	13.2	13.8	11.1	11.7
Moyale	23.7	6.9	26.8	13.1	11.3	10.8	7.5
Nazareth	18.5	4.8	30.7	5.6	16.7	14.9	8.8
Nekemte	**24.0**	9.9	29.6	8.0	9.0	10.1	9.5
Zalambesa	**38.8**	3.0	39.5	2.7	11.7	2.8	1.5

Source: Household Schedules

tertiary or higher level, which is much below 15 percent in case of males. Similarly in case of Dessie only 6 percent of females have completed this level of education, compared to over 17 percent in case of males. The capital city of Addis Ababa maintains a remarkable parity between male and female educational level till the secondary levels, however thereafter the males take over.

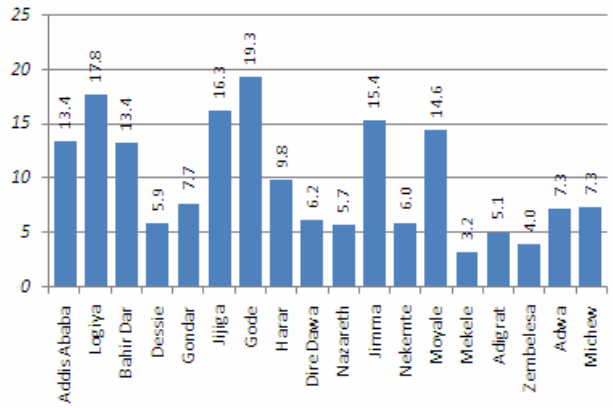
At the aggregate level as well, the latest DHS for Ethiopia (2005) also reiterates a similar story. The Gender Parity Index (GPI) developed by DHS for assessing the differences in male and female attendance rates shows that the GPI is higher at primary level as compared to that at secondary level, i.e., the female attendance rates compared to those of males are higher at primary level but decrease at higher levels.

A high enrolment rate coupled with a low level of higher education points towards high dropout rates, particularly among females. During the 2008 school calendar year (2000 EC school year), it was found that 15 percent of the surveyed population in relevant age groups either dropped out of the school or never enrolled. High enrolment and low education in Gode and Harar can now be explained by the fact that the dropout rates in both these towns (over 10 percent) are the highest among the surveyed towns. The proportion of respondents never enrolled in schools is found to be very high in Tigray region, Over 1/3rd of children in Zalambesa and over a quarter in Adigrat towns never attended a school.

The reasons for not attending or enrolling or dropping out of school are mostly economic – 22 percent of respondents cited these reasons. For instance, 1/3rd of respondents in Addis Ababa and a quarter in Jimma dropped out as they had to work for gainful activities to support their livelihood. Another 20 percent in Jimma and a quarter in Nazareth dropped out as they could not afford the education. Nearly 30 percent dropped out in Addis Ababa to assist in the household chores. Implications on school feeding programmes could be observed in a good number of cases where the respondents cited 'hunger' as a reason for not attending school.

A fair proportion of respondents cited poor health as one of the reasons for dropping out or never attending the school. Nearly 20 percent of surveyed population in Addis Ababa and Adigrat dropped out due to illness or to take care of some ill member in family. Social reasons could also be found for high dropout rates. Besides compulsion for children to leave school to attend to household activities, a small proportion (an average of 3 percent) of respondents could not complete basic education due to early marriage or pregnancy. The proportion was higher than 5 percent in the town of Nekemte. Education brings in awareness; however, lack of awareness was found as another factor adversely affecting poor education levels as an average of 10 percent of surveyed population has dropped out of schools due to lack of interest in education – the proportion being as high as 40 percent in Adwa and 15 percent in Addis Ababa.

Fig 3.14: Proportion Absent from School for 4 days per month in 2008 (EC 2000)



Source: Household Questionnaire

Even among surveyed population that attended schools, at least 10 percent did not attended school for more than four days per month in 2008 (EC 2000) school calendar year (Fig 3.14). The proportion was relatively high in the town of Gode (20 percent) and Logiya (18 percent). The primary reason in this case was poor health – more than half of children in Addis Ababa and more than a quarter in Zalambesa, Gondar, Gode, Harar, Nazareth and Adigrat did not attend school for over four days a month due to illness. Economic reasons played an active role in barring children from regularly attending schools. 20 percent of children in Dessie and over 15 percent in Adigrat had to work occasionally for food or money during their schooldays. Over 60 percent of children in Adwa and 1/3rd in Dessie had to share household work and hence could not regularly attend schools. Again, over 10 percent of children in Adwa took occasionally off from school due to lack of interest in education.

3.2.2 Dependency Ratio

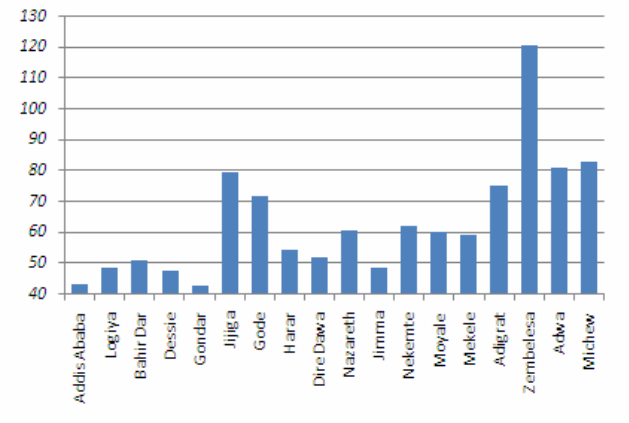
The ratio between the economically dependent part (by age - below 15 and above 60 years) of the population to the productive section (between 15 and 60 years) is a valid demographic indicator at the household level. Common as Dependency Ratio, it has varied implications for the food security situation in a region. With development, and fertility rates decline the proportion of population in the working age group increases, resulting in a 'bulge' in the working age group. A ratio lower than unity (in percentage terms, less than 100 percent) represents a positive scenario, with more productive population compared to the dependent population. This 'demographic dividend', if effectively harnessed, leads to prosperity and in turn to food security.

At the aggregate level in country, as per Census 2007, the dependency ratio is almost 100 percent – implying thereby that the population in dependent age group (36.8 million) is almost equal to that in non-dependent age group (37.1 million). However, there are high disparities across space. While the dependency ratio is almost 110 percent in rural areas it is less than 60 percent in urban areas. As against this, as per the sample statistics from Demographic and Health Survey (DHS) in 2005, the dependency ratio in the country is over 115 percent – proportion of dependents far exceeding the non-dependents. While in rural areas the ratio exceeds 125 percent in urban areas it is only 63 percent.

Such an uneven dependency ratio between urban and rural areas points towards high levels of migration from rural to urban areas, wherein people in the productive age groups migrate to urban areas in search for employment. The dependent population left behind are vulnerable as majority of them are women, children, old and infirm – every set of population having different socio-economic problems.

Given the fact that the present study targets only the urban centres, the dependency ratio is expected to be low. The average dependency ratio across towns is found to be a little over 60 percent (Fig 3.15). It is also observed that the dependency ratio is inversely proportional to the level of urbanisation in a town. Thus, while urban centres like Addis Ababa, Gondar, Bahir Dar and Dessie have very low dependency ratio, the proportion of dependents is extremely high in all the towns of Tigray region (except Mekele) and other less urbanised centres like Jijiga and Gode. The obvious inference that can be drawn from this observation is the fact that while people from surrounding rural areas move to the nearby cities, those who can afford, move from smaller urban centres to larger ones.

Fig 3.15: Dependency Ratio in Urban Centres (in %)



Source: Household Questionnaire

3.2.3 Economic Status of Surveyed Population

The previous section has pointed towards economic reasons hindering the level of educational attainment and the general level of social development. It would therefore be imperative to analyse the level of economic development of the surveyed population to assess their vulnerability and food security status. Almost 40 percent of the country's population lives below the international poverty line of US$ 1.25 per day (Unicef, 2009). In Addis Ababa alone, 57 percent of the population live below poverty line, however, they form just 4 percent of country's total poor people (World Bank, 2009). The present study uses indicators like asset ownership, income and expenditure levels and credit status to determine the economic level of the surveyed population.

3.2.3.1 Asset Ownership

Information on each household's ownership of basic assets (like household items) and productive assets (like agricultural tools, transportation, etc.) was collected. In general, the household items like basic furniture were found in most households. Among other items radios and televisions were quite common while the transportation assets (from bicycle to car) were fairly rare.

To determine the level of prosperity, asset wealth of households was calculated by counting the number of different assets owned. Though a blanket measure of asset ownership, as it secludes the heterogeneity of type of assets, summing up number of assets retains the comparability across space and gives a crude estimate of economic status of households[9]. This gets validated by the fact that there is a very strong positive correlation between asset categories and household expenditure categories, discussed in detail in the next sub-section.

Table 3.3: Household Asset Ownership

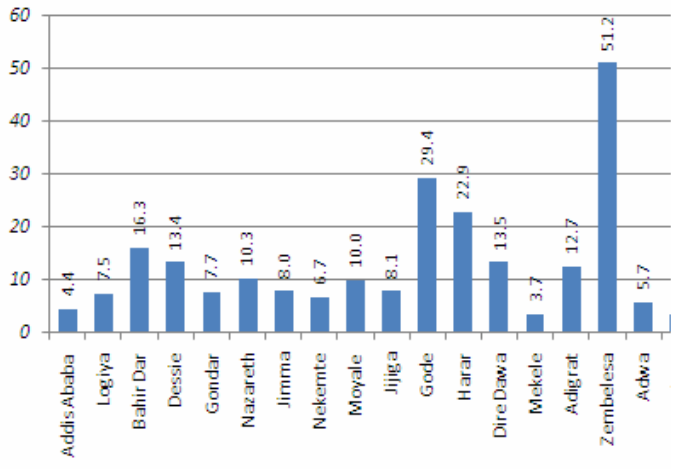
Town	Asset Poor	Aset Medium	Aset Rich
Addis Ababa	40.0	30.1	4.0
Adigrat	41.0	47.0	13.0
Adwa	43.1	42.7	16.3
Bahir Dar	36.0	43.1	13.7
Dessie	38.0	41.0	23.0
Dire Dawa	48.6	47.0	15.0
Gode	23.8	41.6	9.8
Gonder	27.0	54.5	21.7
Harar	26.7	44.0	29.0
Jijiga	49.8	49.8	23.5
Jimma	44.0	35.5	14.6
Logiya	38.0	40.0	16.0
Maichew	48.7	51.0	10.0
Mekele	38.9	39.0	12.3
Moyale	36.0	37.4	23.7
Nazareth	30.0	40.0	24.0
Nekemte	38.0	53.0	18.0
Zalambesa	65.9	47	15

Source: Household Schedules

On an average, majority (nearly 44 percent) of households were found to be in the 'asset medium' category, while 40 percent of households were categorised as 'asset poor' and only 17 percent of households could be classified as 'asset rich'. However, there are variations across space – for instance while 2/3rd of households in Zalambesa were asset poor, 30 percent of households in Gondar were found to be asset rich (Table 3.3). In fact, Gondar was found to have a remarkably high proportion of households owning electronic gadgets like CD/DVD player (62 percent), mobile phones (53 percent) and television (61 percent). Nevertheless, at least a quarter of households in all the towns could be placed in the asset poor category while at least 1/3rd of surveyed households in all towns (except Zalambesa with 30 percent) could be classified as asset medium.

To make the both ends meet many of the households were found to resort to selling their assets. It should be noted that selling of assets was more popular among the asset poor category. That over half of the households in Zalembesa, which has 2/3rd of households in asset poor category, reported to have sold their assets gives evidence to this finding. Poorer households selling their existing assets is a pointer to distress selling (Fig 3.16). This becomes validated by the fact that over 60 percent of households cited purchasing of food as the primary reason for selling their

Fig 3.16: Households who Sold Assets in Last 6 Months



Source: Household Questionnaire

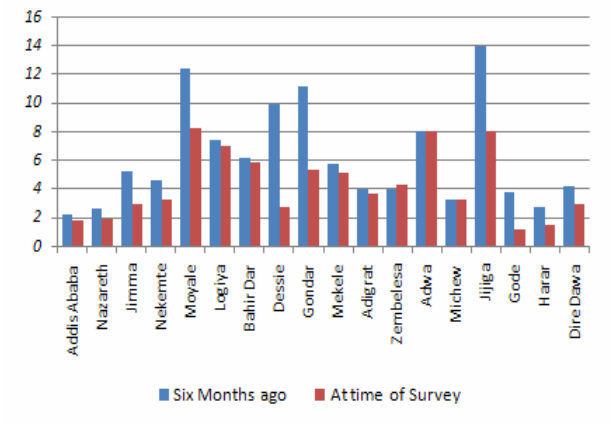
[9] The asset owned by households were categorised into 21 types. Based on the number of assets, the households were classified as 'asset poor' (0 to 4 assets), 'asset medium' (5 to 9) and 'asset rich' (10 or more assets).

household goods. The proportion of households citing this was more common in the Tigray region wherein over 80 percent of respondents in Zalembesa, Adigrat and Adwa towns sold assets to purchase food. The gravity of the situation can be ascertained from the fact that in all the towns under study at least 1/3rd of respondents sold their assets to purchase food for their households. Expenditure on medical costs was the second most important reason for selling of assets in the study regions. The highest proportion was found in Logiya (over 1/3rd of respondents selling assets for meeting medical expenses) where, as would be seen later, the morbidity levels have been relatively very high. Among other reasons, over a quarter of respondents in Gode sold assets to pay debts while over 12 percent in Addis Ababa and 10 percent in Nazareth did so to meet funeral expenses.

3.2.3.2 Income Levels

It has been earlier pointed out that majority of studied population dropped out of schools in 2008 or never enrolled due to economic reasons – mainly to work for money or food. The study shows that there has been a simultaneous increase in the number of earning family members in a household – a pointer to the fact that economic compulsions (which could in turn be related to the rising food prices and financial crisis) could have forced even the household members in the non-productive age groups to participate in economic activities, thus adversely affecting their normal development process (Fig 3.17).

Fig 3.17: Change in Non-Earning Members in Households



Source: Household Questionnaire

An increase in the number of earning members should ideally enhance the aggregate household income; however, the present study shows that in majority of cases there has been no net change in household incomes (Table 3.4). In fact, there is a positive correlation between increase in income earners and no change in incomes. Nearly half of the households in the surveyed towns reported no change in their income levels; conversely over 40 percent of households in fact reported a decline in incomes. Only 10 percent of households felt that their earnings have increased during the period. That more income earners have not led to a commensurate increase in income in a household, can be probably explained by either an increase in regular expenditure, or the fact that in most such cases the additional earners get employed in marginal sectors, thus adding to 'disguised unemployment'.

Table 3.4: Change in Income Levels of Households over Last Six Months

	No change	Increased	Decrease
Jijiga	46.1	28.3	25.5
Gode	21.7	14.0	64.3
Harar	38.1	9.2	52.7
Dire Dawa	39.4	4.3	56.3
Logiya	39.6	38.8	21.7
Bahir Dar	53.8	5.3	40.9
Dessie	46.3	7.8	45.9
Gondar	67.6	11.2	21.2
Nazareth	53.0	8.3	38.7
Jimma	47.3	8.0	44.7
Nekemte	51.3	8.0	40.7
Moyale	37.5	16.7	45.8
Mekele	53.4	6.8	39.7
Adigrat	48.3	6.7	45.0
Zembelesa	73.2	12.0	14.7
Adwa	32.8	5.0	62.2
Michew	42.0	1.3	56.7
Addis Ababa	48.8	6.6	44.7

Source: Household Questionnaire

3.2.3.3 Expenditure Levels

Average household expenditure across all towns was between Birr 700 to 1000. However, there are widespread disparities among households in terms of monthly expenditure levels (Table 3.5). At the

time of survey, over 1/3rd of households were found to be spending less than Birr 300 per month. The figures were disproportionately high for Oromiya region wherein all the surveyed towns had over 90 percent of respondents in the lowest expenditure category. On the other hand, more than half of households in Gode and Mekele were found to be spending over Birr 1000 per month.

Sorting of urban centres both by expenditure and asset categories reveals a strong positive correlation between the two. On an average, over 1/3rd of households in the lowest expenditure categories are also found in the low asset category while 60 percent of households in the asset rich category are found in the highest expenditure class.

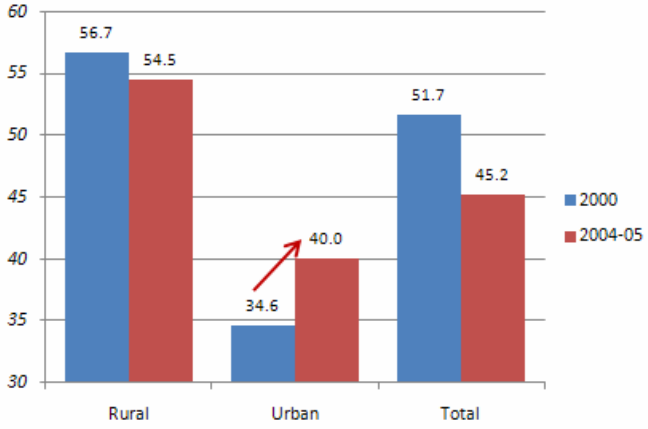
Table 3.5: Level of Expenditure (in Birr)

	Expenditure Categories (Birr/Household/Month)			
Urban Centre	<300	300 - 600	601 - 1000	>1000
Addis Ababa				
Logiya	10.4	28.8	31.3	29.6
Bahir Dar	17.2	30.0	27.8	25.0
Gonder	17.9	31.1	28.5	22.4
Dessie	25.0	28.8	24.4	21.9
Nazareth	94.3	5.4	0.3	0.0
Jimma	94.3	5.4	0.0	0.3
Nekemte	96.3	3.4	0.3	0.0
Moyale	92.4	6.8	0.8	
Dire Dawa	22.6	42.2	24.2	11.0
Harar	14.3	36.5	32.4	16.8
Jijiga	13.4	35.2	33.0	18.4
Gode	1.3	4.7	23.8	70.2
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

Source: Household Schedules

Proportion of consumption expenditure on food is considered to be one of the most significant indicators of food insecurity. A low share of expenditure on food items also indicates a higher standard of living. Food forms the largest expenditure group in Ethiopia as per Household Income and Expenditure Surveys (HICE). Over the last two rounds of HICE surveys food continues to form half of the total expenditure in the country (Fig 3.18). However, while the contribution of food to total household expenditure has a declining tendency both in rural and aggregate level – indicating an increase in the standard of living, the proportion of expenditure on food in the urban areas is seen to increase – from 35 percent to 40 percent over the last two rounds of HICE. This is a very significant finding which establishes the increasing vulnerability of urban households – in terms of high food prices and enhanced role of markets in determining urban food security.

Fig 3.18: Proportion of Expenditure on Food, 2000 & 2005

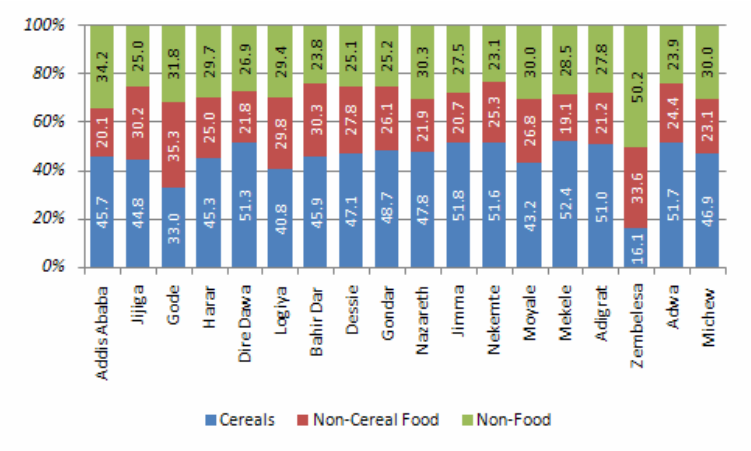


Source: Household Income Consumption and Expenditure Survey, CSA

In the study area, food forms the largest share of total household consumption expenditure. The average proportion of expenditure on food is over 70 percent, which is very high for urban areas – but could be explained by the fact that the sampling was done keeping in mind the poorer sections of urban dwellers; hence the results reflect expenditure levels of the poorer sections of the studied areas rather than urban households *per se* (Fig 3.19).

Cereals form over 2/3rd of total expenditure on food – underscoring the significance of cereals in securing food security for the households. Across the towns, the proportion of expenditure on food is found to be above 75 percent in Nekemte, Bahir Dar, Adwa, Jijiga, Dessie and Gondar. On the other hand, Zalambesa presents a typical case where the proportion is less than half – which could probably be explained by a high proportion of surveyed households depending upon food assistance and hence have a low dependence on markets.

Fig 3.19: Proportion of Household Consumption Expenditure



Source: Household Questionnaire

Zalambesa is followed by Addis Ababa where food expenditure forms 2/3rd of total consumption expenditure, which is relatively low, compared to other urban centres and could be explained by higher cost of living in the capital city. This is validated by the fact that Addis Ababa has the highest expenditure on non-food items like rent, transport and miscellaneous household items like soap and toiletries (over 20 percent in total, compared to 10 percent or less in all other towns).

Other major items of non-food expenditure include debt repayments in Michew and Zalambesa and utilities like electricity and water in Zalambesa, Jijiga and Gode. Education forms a very miniscule proportion of expenditure, the highest being less than 4 percent in Zalambesa and Dire Dawa[10]. Expenditure on non-productive items like alcohol, *chat* and tobacco was over 5 percent in Logiya and Nazareth.

[10] The higher proportionate expenditure of Zalambesa on non-food items should be read with caution given the fact that their expenditure on food items is low not because of higher expenditure on non-food items but because of the fact that a major share of their food requirements is met through food assistance.

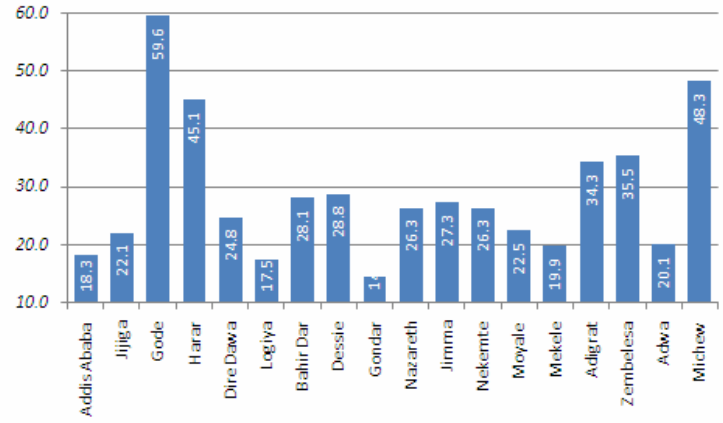
3.2.3.4 Access to Credit

Household income not keeping pace with rising expenditure forces households to resort to borrowing. It was found that on an average almost every third household has borrowed money over the last six months (Fig 3.20). The proportion was as high as 60 percent in the case of Gode and 50 percent in the case of Michew. Almost every household had borrowed money to buy food. It was only in the Tigray region that the households had also borrowed money to pay for social functions, pay for education and buy agricultural inputs. Nevertheless, food remained the dominant reason with half of the households.

The popularity of credit market in the study areas can also be judged from the responses of the traders. Almost 2/3rd of the traders in the study area admitted that they give food commodities to consumers on credit (Fig 3.21). Credit market was found to be very common in Harar where over 90 percent of traders sold commodities on credit while the proportion was over 80 percent in Zalambesa and Adwa. Credit market was not very common in urban centres where formal sector in trade have been more dominant. Thus in urban Gcentres like Addis Ababa, Bahir Dar and Gondar, only half of the traders admitted to sell commodities on credit.

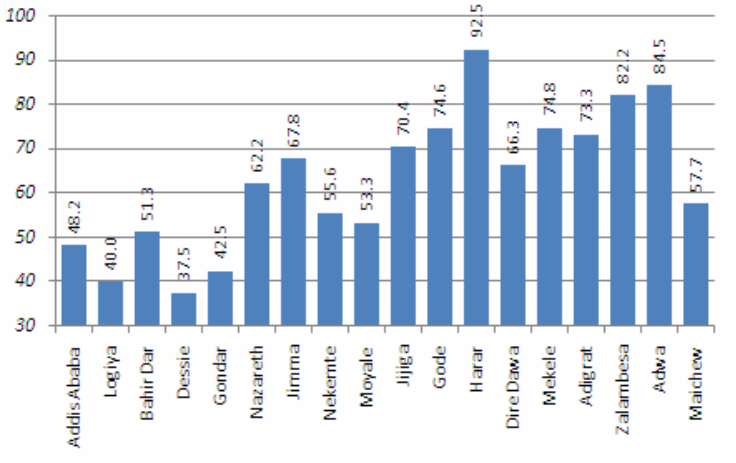
The traders also observed that there has been a perceptible increase in number of consumers seeking to buy food items on credit. Over 60 percent of traders in the urban centres cited an increase in number of consumers buying food commodities from them (Fig 3.22). Less than 18 percent of traders felt a decline in number of credit seekers while an equal proportion did not feel any change in such numbers. Proportion of traders perceiving an increase in number of credit borrowings from shops was

Fig 3.20: Proportion of Households Borrowing Money



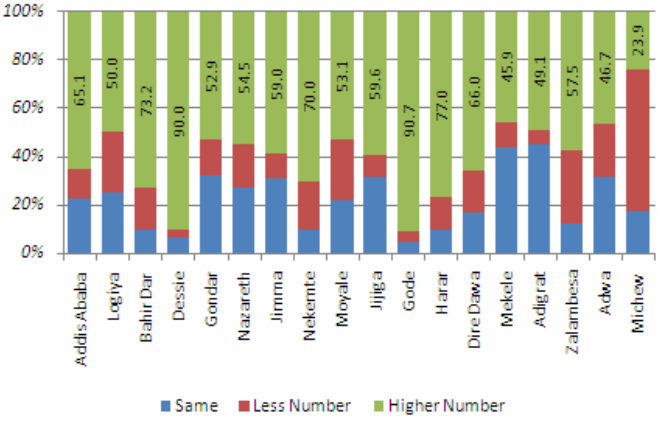
Source: Household Questionnaire

Fig 3.21: Proportion of Traders Selling Commodities on Credit



Source: Traders Questionnaire

Fig 3.22: Perception of Traders on Change in Number of Credit Seekers

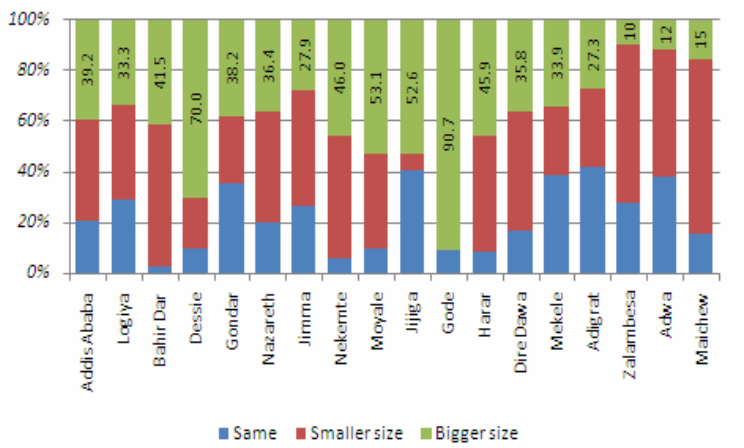


Source: Traders Questionnaire

over 90 percent in Gode and Dessie, while it was over 2/3rd in Addis Ababa, Bahir Dar, Nekemte, Harar and Dire Dawa.

Not only did the traders realise an increase in number of credit seekers in their shops but they also observed an increase in the amount of credit taken. For instance, over 40 percent of traders in the study areas saw an increase in size of borrowings from the consumers – the proportion again being over 90 percent in Gode and 70 percent in Dessie (Fig 3.23). However, an equal proportion (40 percent) of traders, on an average, also suggested a decline in the size of credits availed from their shops – probably on account of a high increase in number of credit seekers in the market (it is expected that the new entrants in credit market start with low credit sizes). The proportion of traders seeing no change in credit sizes availed was 20 percent on an average.

Fig 3.23: Perception of Traders on Change in Size of Credit Sought



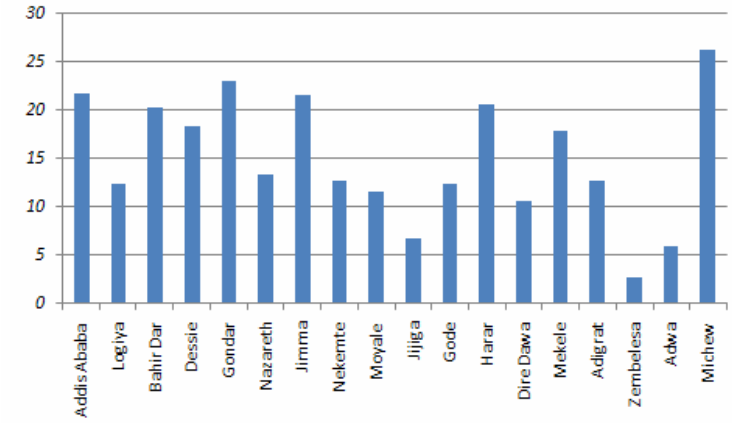
Source: Traders Questionnaire

Not only borrowing was common among households, majority of households had also not cleared their dues and credit. It was only in the case of Addis Ababa and towns in Tigray region that at least 20 percent of the households had fully paid back the borrowed money. Over 70 percent of households, on an average, had not paid their dues. Again in Addis Ababa and Tigray region at least half of the households had managed to partly pay back the dues.

The traders in the study area also showed similar concerns on non-recovery of dues from their customers. Among the major difficulties in trading as cited by them almost 10 percent of traders cited difficulties in recovering debts from consumers as a major handicap in trading (Fig 3.2). The proportion of such traders was almost 30 percent in Gode and higher than 20 percent in Harar.

Most of the households had borrowed money from friends and relatives. In fact, over 10 percent of the respondents reported to be supporting their relatives through food or cash or both – the proportion being almost 50 percent on the case of Gode. The formal credit sources like banks were not very popular, except in the case of towns in Tigray region (Fig 3.24). On an average only 15 percent of the households had a bank account which speaks poorly of the vulnerability status of the study areas. The proportion was marginally higher in the towns of Michew, Gondar, Addis Ababa, Jimma, Bahir Dar and Harar where at least 20 percent of households had a bank account. The informal saving groups were also not popular among the respondents – a little over 5 percent of households in Addis Ababa and Mekele accessed informal saving groups for credit.

Fig 3.24: Proportion of Households Having a Bank Account

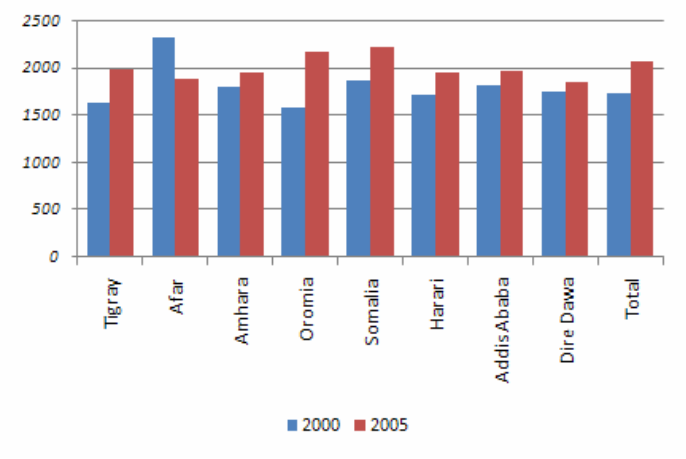


Source: Household Questionnaire

3.2.4 Change in Consumption Behaviour

The gross calorie intake[11] in Ethiopia was 2353 kcal per capita per day during 2004-05 (HICE, 2004-05). Calorie intake was lower for urban areas and was estimated at 2073 kcal. A comparison of calorie intake levels across urban regions of the country between 2000 and 2005 (last two HICE surveys) shows an average increase of 20 percent for urban Ethiopia as a whole[12] (Fig 3.25). Most regions have experienced increase in calorie intake levels, ranging from 37 percent in case of Oromiya to 6 percent in Dire Dawa. It is only in case of Afar region that a decline of 20 percent (from 2337 to 1890 kcal) is observed.

Fig 3.25: Change in Calorie Intake in Urban Regions, 2000 & 2005



Source: HICE Survey, CSA

An analysis of calorie composition indicates that cereals contribute the maximum - 62 percent to the calorie intake (63 percent for urban areas) and the urban Ethiopia derives a total of 1514 kcal per day per capita from cereals. A change in cereal consumption, therefore, is a pointer to the change in calorie consumption levels. The current study indicates that in most cases there hasn't been a significant change in cereal consumption (Table 3.6). However, there are spatial variations across sample urban centres. Thus, while more than 2/3rd of respondents in Logiya did not experience any change in their cereal consumption 65 percent of respondents in Michew reported to shift to less expensive food grains. Further, one-third of respondents in Moyale were consuming less than half of their normal consumption level a year ago while over 40 percent in Adwa had reduced their cereal consumption by 50-75 percent of that in the previous year. In general, shifting to less expensive commodities has been the popular resort by the sample population to cope with the increasing prices.

Even in terms of meat and oil, over two-third of respondents across all urban centres have reported a significant change in consumption levels. The most affected town is Adwa in Tigray region followed by Dessie in Amhara region and Addis Ababa where more than a quarter of respondents reported to have decreased their meat and oil consumption by half compared to that in previous year. A similar proportion of respondents shifted to less expensive meat and oil in the town of Zalambesa in Tigray region.

[11] Gross calorie (crude calorie) has been used in the report against net calorie (crude calorie minus inedible portion of consumption) so as to maintain comparability with the previous HICE surveys where only gross calorie was calculated.

[12] However, the increase in calorie consumption between 2000 and 2005 should be read with caution. This is consequent on the fact that the 1999-2000 survey had come up with very low levels of calorie intake and the increase between then and 2005 can be interpreted as a result of low-base.

Table 3.6: Change in Cereal Consumption over the last one year

	No change	75% to 100% of December	50% to 75% of December	Less than 50% compared to December	Increased	Changed to less expensive commodities
Addis Ababa	18.2	17.0	23.8	21.1	0.6	19.3
Logiya	70.4	6.3	6.7	12.5	0.4	3.8
Bahir Dar	31.6	22.5	13.4	21.3	0.3	10.9
Dessie	26.6	17.8	19.4	15.0	1.9	19.4
Gondar	56.1	2.2	8.3	6.1	6.1	21.2
Nazareth	30.7	9.0	17.7	18.0	1.7	23.0
Jimma	35.3	11.7	19.7	18.3	2.0	13.0
Nekemte	33.7	6.7	12.0	25.7	6.3	15.7
Moyale	28.3	5.4	15.4	32.9	8.3	9.6
Jijiga	33.6	10.3	10.0	13.7	28.3	4.0
Gode	27.7	11.9	24.7	7.7	19.6	8.5
Harar	20.3	6.0	15.9	15.6	1.6	40.6
Dire Dawa	22.6	15.6	13.5	6.4	2.4	39.4
Mekele	34.5	8.3	4.3	5.3	3.1	44.6
Adigrat	40.6	4.7	13.1	7.7	1.0	32.9
Zalambesa	57.9	8.4	3.3	1.0	2.3	27.1
Adwa	14.9	7.1	41.0	22.0		14.9
Michew	27.0	1.3	2.3	5.0		64.3

Source: Household Questionnaire

Food affordability, particularly of the lower income group depends upon income and prices. Change in consumption levels may be attributed to a variety of reasons – change in consumption habits, or change in purchasing power or a set of random factors. However, the present study points to an overwhelmingly high proportion of respondents changing their cereal consumption level due to change in purchasing power – either due to decrease in income or due to increase in cereal prices. The maximum proportion of respondents citing economic reasons was from Addis Ababa – while over half of them pointed to high prices of cereals, almost an equal proportion pointed towards low income levels. All the selected urban centres in Tigray region reported high prices of preferred cereals as the most important reason for change in cereal consumption – the proportion being over 80 percent in Zalambesa and over 60 percent in Michew, Mekele and Adwa. While, over one-third of respondents in Adigrat, Adwa, Harar, Bahir Dar, Dire Dawa and Jijiga reported low income as a reason for change in cereal consumption.

Table 3.7: Reasons for Change in Cereal Consumption

	Preferred cereal too expensive	Not enough income	Preferred cereal not in the market	More HH members	Less HH members	Other
Addis Ababa	51.4	46.7	0.7	0.6	0.4	0.2
Logiya	21.7	10.0		0.8	0.8	66.7
Bahir Dar	32.2	35.0	0.6	2.5		29.7
Dessie	37.2	26.9	0.3	0.3	0.3	35.0
Gondar	24.7	25.3	0.3	1.9		47.8
Nazareth	40.7	17.0	0.3	0.3		41.7
Jimma	31.3	30.3	1.3	1.7	1.0	34.3
Nekemte	34.0	15.7	1.3	2.0	0.3	46.7
Moyale	32.9	27.1	1.3	5.8	0.8	32.1
Jijiga	18.1	32.7	1.9	3.1	0.6	43.6
Gode	23.4	26.0	5.5	3.0	1.3	40.9
Harar	13.3	39.7	1.0	1.6	0.6	43.8

Dire Dawa	17.7	32.7	0.3	1.2		48.0
Mekele	64.5	31.0	1.1	1.1	1.1	1.1
Adigrat	55.7	41.0			1.6	1.6
Zalambesa	81.3	12.5	4.2			2.1
Adwa	61.0	39.0				
Michew	72.5	25	2.5			

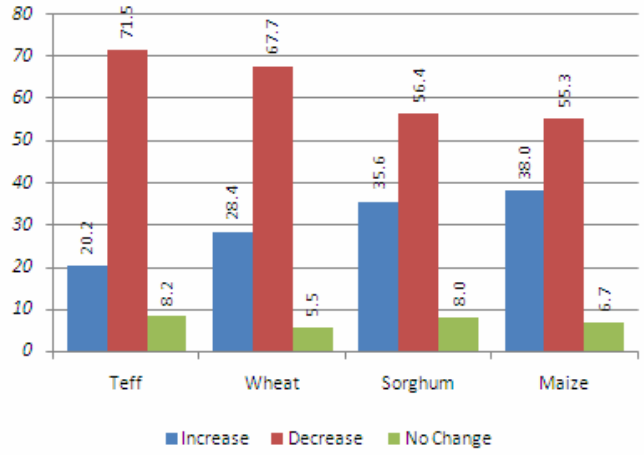
Source: Household Questionnaire

As in the case of cereals, majority of the respondents reported to change their consumption of meat and oil on account of economic reasons – either due to decline in income or increase in prices. More than 2/3rd of respondents in the towns of Harar, Adigrat, Logiya, Bahir Dar, Gondar, Nekemte and Dire Dawa cited low income as the primary reason for change in consumption while an equal proportion of respondents in Zalambesa and Michew saw high prices of meat and oil as the main reason for change in their consumption.

3.2.4.1 Change in Food Basket

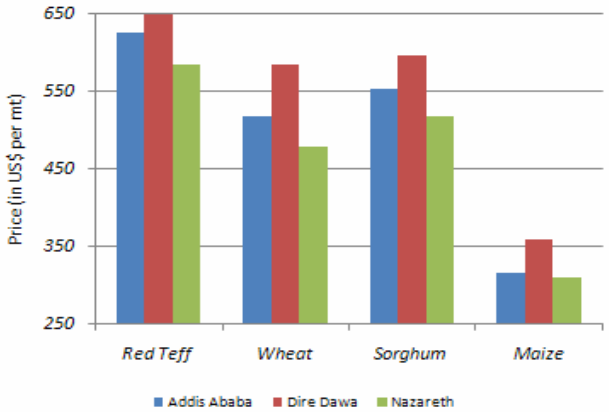
A high decline in demand for major food commodities was the second most important difficulty reported by the traders in the study areas (Fig.3.2). An analysis of change in demand for major cereals reveals that there has been a decline in demand for most cereals, as perceived by the traders. However, the change in demand has gone in favour of the cheaper cereals (Fig 3.26). Thus, while over 2/3rd of traders saw a decline in demand for relatively expensive cereals like teff and wheat over 1/3rd of traders perceived an increase in demand for cheaper cereals like maize and sorghum. Across the urban centres, at least a third of traders in every urban centre perceived a decline in demand for teff while at least 15 percent of traders in every urban centre saw an increase in demand for maize and sorghum. Majority of traders cited increase in prices as the primary reason for change in consumption behaviour.

Fig 3.26: Average Change in Demand of Major Cereals



Source: Traders Questionnaire

Fig 3.27: Price of Cereals in Major Markets



Source: WFP, Ethiopia Market Watch, 27 May 2009

The perception of traders on changing consumer demands is echoed in consumers' perceptions on their price-driven changing preferences. Of the respondents who resorted to less expensive food items to cope with decline in purchasing power, majority moved to inferior quality of *Teff* like red teff. Over 2/3rd of respondents in Makele, Gondar, Dire Dawa, Logiya, Dessie and Bahir Dar switched to red teff. Whereas, over 60 percent of respondents in Adwa, Gode and Jijiga reported to have moved to maize, the cheapest cereals available in the market. Even though not a preferred cereal in Ethiopia, over 20 percent of respondents in Addis Ababa and Adigrat towns shifted to wheat because of

its relatively low price (see Fig 3.27 for relative differences in price). Sorghum did not appear to be a popular choice among the surveyed population and was found to be consumed only by 17 percent of the respondents – the proportion being 1/3rd in Moyale and Nazareth.

Table 3.8: Food Items Changed to due to High Food Prices

Urban Centre	Maize	Sorghum	Red Teff	Wheat	Others
Adigrat	36.2	1.4	40.6	21.7	
Adwa	76.4	2.1	21.0	0.5	
Bahir Dar	22.2	10.5	64.8	1.2	1.2
Dessie	21.7	9.3	65.8	3.1	
Dire Dawa	17.2	14.2	68.7		
Gode	76.3	14.4	3.6	5.8	
Gondar	20.9	5.5	73.6		
Harar	27.8	13.2	58.3		0.7
Jijiga	60.4	20.1	17.8	1.2	0.6
Jimma	28.7	27.7	22.3	11.7	9.6
Logiya	10.2	18.4	67.3	4.1	
Mekele	8.8	5.4	85.4	0.3	
Michew	18.4	24.9	54.1	2.7	
Moyale	25.9	36.2	22.4	10.3	5.2
Nazareth	14.9	35.8	26.9	3.0	19.4
Nekemte	23.7	27.1	32.2	15.3	1.7
Zembelesa	45.7	19.8	30.9	3.7	

Source: Household Questionnaire

3.2.4.1 Food Consumption Scores

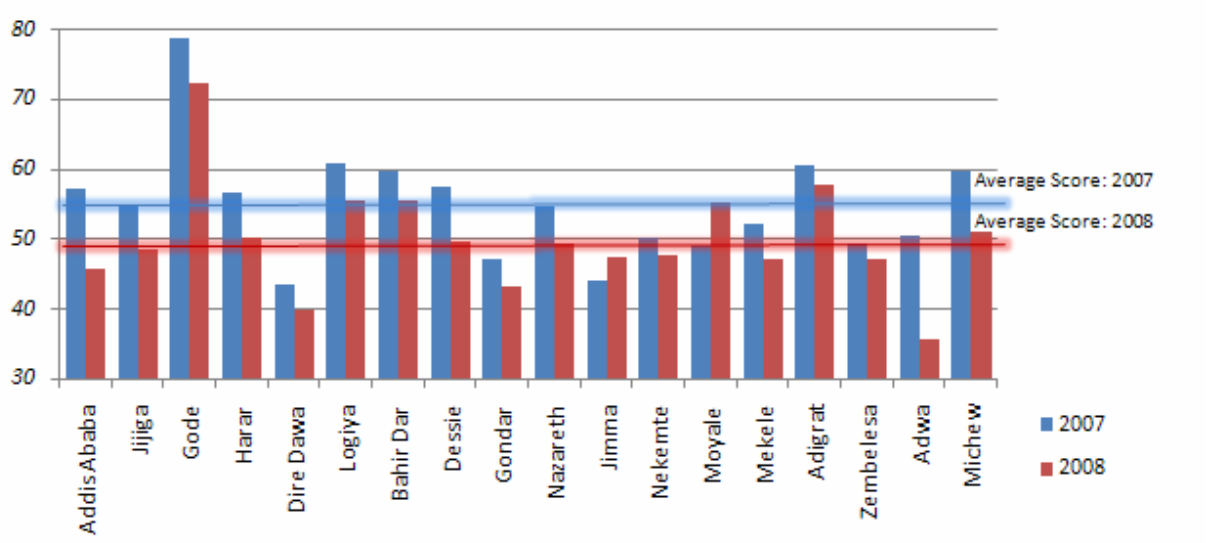
The previous sub-sections have assessed and analysed the factors contributing to and capturing food security status in the study area.

The current sub-section measures the primary outcome of access factors in the food security ladder – the actual intake of food, i.e. food consumption (Ref. Fig. 1.1). For this purpose Food Consumption Scores (FCS) for each of the urban centre under study has been computed for two comparative periods. The FCS makes use of dietary diversity, frequency of consumption and nutritional density of food items. Thus, it has been regarded as a comprehensive indicator of food consumption (See Technical Note 1.1 for details).

At the aggregate level, the average FCS is seen to be declining from 55 to 50[13] – i.e. a decline of almost 10 percent – in a period of one year at the time of survey in 2008 compared to previous year (Fig 3.28). Except in Jimma and Moyale, all the towns have witnessed a decline in their consumption scores. The highest decline has been observed in the town of Adwa (30 percent) followed by Addis Ababa (20 percent). Conversely, there are some towns where low consumption levels have remained stagnant. For instance, in the case of Dire Dawa, the decline has been quite low, but in both the periods the score *per se* was low. Thus, the urban centre has experienced a further decline in its consumption score which was already low. A similar story is observed in the case of Gondar. On the other hand, the decline in consumption score in Gode is the same as that in Dire Dawa or Gondar, but in both the periods the scores in Gode have remained relatively very high.

[13] Food Consumption Scores are dimensionless entities (always in whole numbers) and are directly proportional to food security – a higher score indicates a higher food consumption level. The scores are influenced by both quality and frequency of consumption.

Fig 3.28: Change in Food Consumption Score: 2007 and 2008



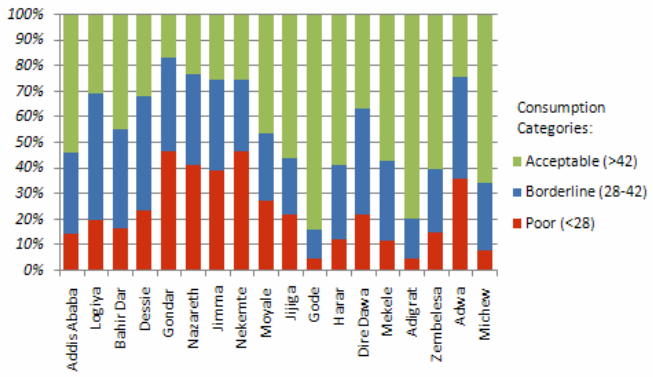
Source: Household Questionnaire

Addis Ababa is the only urban centre where the consumption score was higher than the average (across all urban centres) in 2007 but declined much below the average in 2008 – a pointer to a high decline in consumption patterns in the capital city. The urban centres of Harar and Dessie exhibit similar patterns in decline of scores.

The average consumption scores do not reveal the complete picture of consumption patterns at the household level. Therefore, the consumption score of each of the surveyed households was used to classify the households in terms of their scores – households with scores below 28 were classified as households with 'poor food consumption', those with scores between 28 and 42 were classified as 'borderline food consumption' while scores above 42 classified placed a household in 'good food consumption' category'.

Across the towns, a quarter of households were found to be in the poor consumption category, around 30 percent in the borderline while the rest were in the good consumption category (Fig 3.29). The proportion of households in poor consumption category was almost 50 percent in Nekemte and Gondar, while it was around 5 percent in Adigrat, Gode and Addis Ababa. Conversely, the proportion of households in these three towns was also the highest across all urban centres.

Fig 3.29: Proportion of Households by Consumption Categories

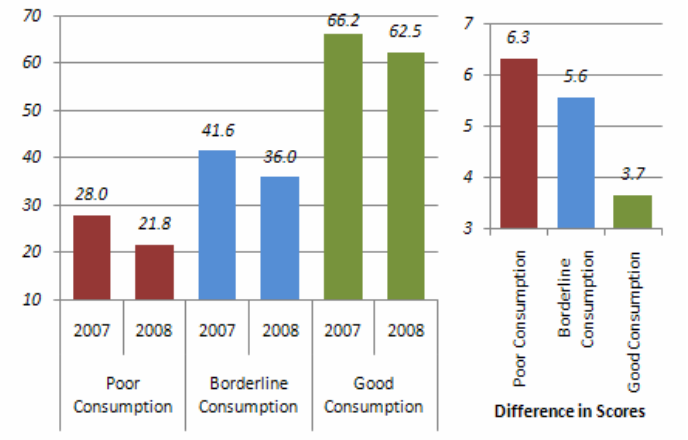


Source: Household Questionnaire

Given the fact that there was not even a single town with aggregate consumption score below 28 (the minimum was 36 in Adwa), coupled with the fact that a quarter of households in the studied region had scores below 28 – speaks of the high level of disparity in consumption levels in these urban centres.

This observation gets validated by the fact that the average consumption score for households in good consumption category was above 60 in both the periods – much above the upper limit (42) for the borderline consumption category. A temporal comparison across consumption categories shows that the decline in good consumption category has been the minimal while that in the poor consumption category is the maximum – another pointer to the vulnerable status of households in this category.

Fig 3.30: Change in Consumption Score by Consumption Categories



Source: Household Questionnaire

Across the towns, the highest decline in scores in poor consumption category is observed in the cases of Adwa, Mekele and Gode[14]. Moyale and Jimma, the only two urban centres to witness a marginal increase in scores, in fact experience a decline in scores in the poor and borderline categories, the decline being much higher in the poor consumption category(Fig 3.30). While, in the case of good consumption category, these two towns see an increase in scores exceeding 15 percent – bringing out the fact that the increase in consumption scores in these two towns was contributed only by the households in the good consumption category.

It can thus be inferred that there are widespread disparities in the urban areas wherein the households in poor consumption category are the most vulnerable, with further increase in their vulnerability due to increase in prices, as elaborated in the next chapter.

[14] Gode presents an interesting case where the average score in both the periods had remained the highest. However, at the disaggregated level, the score in poor consumption category has declined from 24 to 17, while that in good consumption category has declined from 88 to 81 – indicating a very high level of disparity in the town.

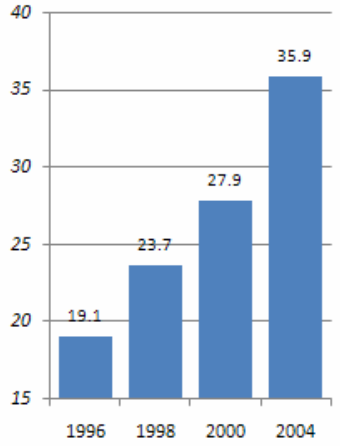
3.3 Food Absorption

Absorption, or utilisation, is an important, though relatively ignored, facet of food security. The goal of food security is to keep a person healthy through nutritious food. Just eating well does not keep a person healthy – food has to be absorbed and assimilated into the body. The ability of the body to translate food intake into nutritional status is mediated by a number of factors, some genetic and others related to hygiene and morbidity. It has been estimated that in developing countries, one out of five people do not use safe water, and roughly half are without adequate sanitation (WHO, 2007). Thus, access to safe drinking water, sanitation and adequate health facilities are crucial for food security.

3.3.1 Access to Safe Drinking Water

Reduction of proportion of people without access to safe drinking water by half has been mentioned as the seventh Millennium Development Goal. Polluted and contaminated water undermines the safety and the nutritional well-being of individuals. Studies have shown that water and sanitation accounts for a substantial portion of the difference in infant and child mortality rates experienced by the rich and the poor (Leipziger, et al. 2003). Clean and safe water supply is an essential element for achieving food security and good nutrition.

Fig 3.31: Access to Safe Drinking Water

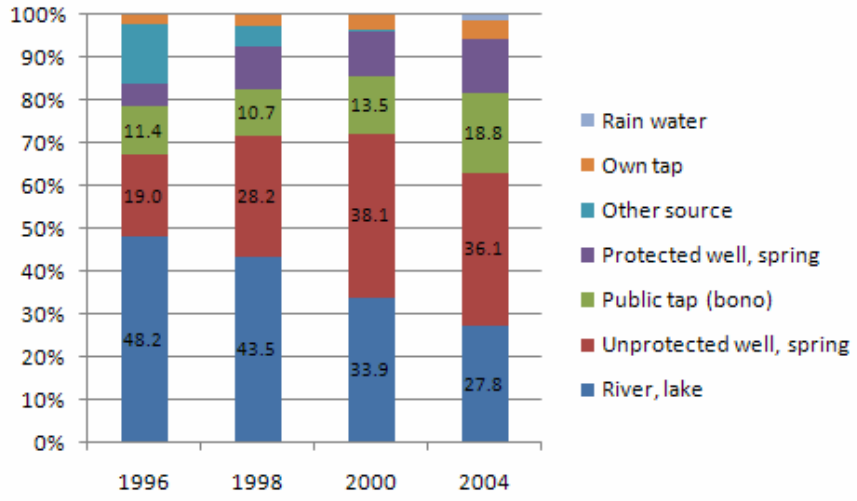


Source: WMS, CSA

Ethiopia has made considerable progress in terms of provision of safe drinking water (Fig 3.31). However, as per the last WMS by CSA, only a little over 1/3rd of households in the country have access to potable water, though as per the latest Unicef reports 42 percent of households in the country use improved drinking water sources, the proportion being higher than 95 percent in urban areas (Unicef, 2009).

A preliminary analysis of drinking water sources in the country indicates that most of the drinking water sources are not safe, for instance, less than 5 percent of households had taps inside their houses, as per the last WMS (Fig. 3.32).

Fig 3.32: Sources of Drinking Water in Ethiopia



Source: WMS, CSA

The most popular sources of drinking water, particularly in the rural areas are unprotected wells and springs followed by direct draft from rivers or lakes. The public taps (bono) have also become popular over the years.

In the study areas, the piped water is found to be the most popular means of drinking water (Table 3.9). However, only a quarter of the households have taps inside their houses whereas 1/3rd of households use taps outside their houses while another 28 percent use communal taps (*bono*).

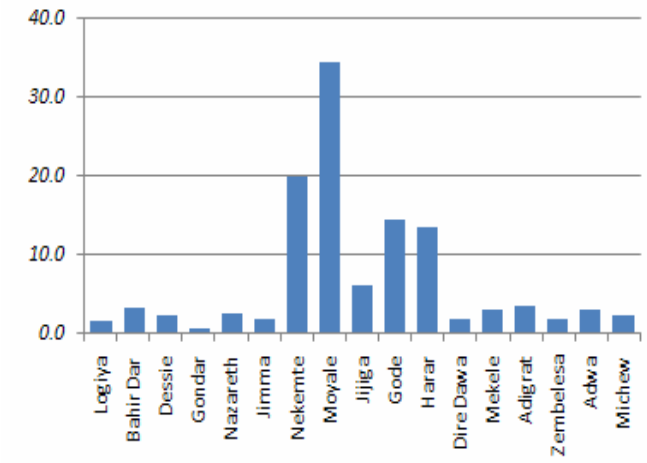
Table 3.9: Sources of Drinking Water among Households

Urban Centre	Piped water inside the house	Piped water outside the house	Communal tap (BONO) other people	Borehole protected well	Unprotected well	River,stream, pond	Other
AddisAbaba	17.0	48.0	35.0	0.0	0.0	0.0	0.3
Adigrat	66.7	13.0	13.3	2.0	0.0	0.3	0.4
Adwa	74.2	23.7	1.0	0.0	0.0	0.0	4.7
BahirDar	25.0	33.8	38.4	0.6	0.0	1.9	1.0
Dessie	11.9	45.6	39.4	0.3	0.9	0.3	1.6
DireDawa	40.4	32.1	24.5	0.0	0.0	0.6	2.4
Gode	0.9	7.2	11.1	0.0	0.0	79.1	1.7
Gonder	31.7	50.0	17.3	0.0	0.3	0.0	0.6
Harar	30.5	44.1	21.3	1.3	0.0	0.0	2.9
Jijiga	24.9	48.0	14.0	9.0	2.2	0.3	1.6
Jimma	5.0	45.0	47.0	0.7	0.7	0.0	1.7
Logiya	1.7	54.6	41.3	0.0	0.0	0.0	2.5
Maichew	55.3	19.0	14.0	2.3	0.0	1.0	8.3
Mekele	65.9	12.0	6.2	1.3	0.2	1.2	13.2
Moyale	7.9	25.8	30.4	15.8	17.1	0.0	2.9
Nazareth	14.0	40.0	40.3	1.0	2.0	0.0	2.6
Nekemte	1.7	31.7	36.0	6.0	12.0	0.0	12.7
Zalambesa	11.7	5.4	75.3	0.0	0.0	0.0	7.7

Source: Household Questionnaire

Most towns in Tigray region have high proportion (50 percent to 2/3rd) of households having taps inside their houses. The only exception is Zalambesa town where over 75 percent of households use communal taps (*bono*). Such communal taps are also popular in Nazareth, Jimma and Logiya. Households using taps outside their houses are dominant in Addis Ababa, Gondar, Logiya and Jijiga. Remarkably, almost 80 percent of households in Gode use ponds, rivers or streams for dinking water, which is bound to have serious implications on their health. Other less popular sources of drinking water include protected and unprotected wells, which are found to be quite popular in Moyale.

Fig 3.33: Proportion of Households Treating Water before Drinking



Source: Household Questionnaire

In general, it is observed that households in the study area do not use safe sources of drinking water. The need, therefore, is to treat drinking water before consumption to avoid incidences of diseases like diarrhoea and cholera. However, it is seen that treating water before drinking is not a popular practice among the surveyed households. It is only in case of Moyale town of Oromiya region

that at least 1/3rd of respondents reported to be treating water (Fig 3.33). The proportion was also relatively high in Nekemte, Gode and Harar towns (over 10 percent). Rest of the towns under consideration had negligible proportion of households treating water.

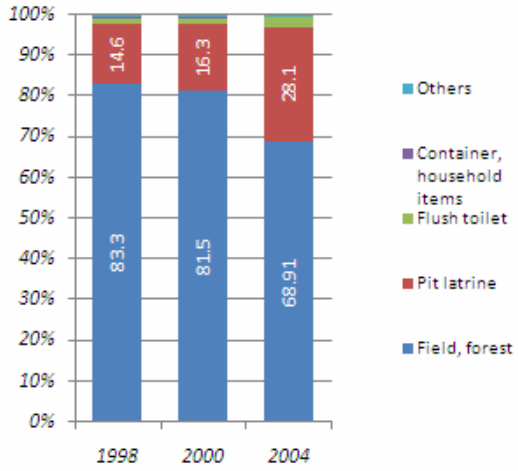
Most of the households reporting to treat water before drinking used water guards or boiled water to purify. Boiling was more popular in Tigray region while majority of households in Oromiya region used water guards.

3.3.2 Sanitation and Hygiene

Sanitation is one of the critical pillars in attaining food security. Across the globe, about three billion people lack safe sanitation. It is expected that an additional two billion people, living mainly in towns and cities in developing countries, will demand sanitation in the next two decades. Every year between two and three million people die because of inadequate sanitation, insufficient hygiene, and contaminated food and water (Esrey et al, 2001).

At the aggregate level in Ethiopia there are virtually negligible toilet facilities (Fig 3.34). It is only after the start of the current millennium that the pit toilets have become marginally popular. However, hygienic toilet facilities like flush toilets are still not popular.

Fig 3.34: Households by Type of Toilets in Ethiopia



Source: WMS, CSA

As typical of any urban area, majority of households in the study area use toilet facilities. It is only in the case of Tigray region that toilets are not very popular (Table 3.10). 1/3rd of households in Zalambesa and over a quarter in Michew and Adigrat don't use any type of toilet.

Table 3.10: Households by Type of Toilets in Urban Centres

Urban Centre	Flush private to households	Flush shared with other household	VIP private to household	VIP communal	Pit Private to household	Pit communal	None-bush	other
Adigrat	2.0	1.3	15.0	**21.0**	14.3	20.3	26.0	
Adwa	10.7	9.4	8.4	12.7	25.4	19.1	14.4	
Bahir Dar	7.8	15.9	2.5	4.4	27.5	25.3	15.0	1.6
Dessie	11.6	18.1	5.3	1.9	18.4	28.8	15.3	0.6
Dire Dawa	12.2	5.2	4.6	17.4	25.1	31.2	4.0	0.3
Gode	0.4	1.7	**39.6**	**37.9**	14.9	4.3	0.9	0.4
Gondar	3.2	2.2	11.2	3.2	41.3	32.1	6.7	
Harar	2.2	2.2	2.5	5.4	25.1	50.5	8.9	3.2
Jijiga	7.5	14.0	5.0	11.8	17.1	32.7	11.8	
Jimma	9.7	17.7	2.7	2.0	22.7	37.7	7.7	
Logiya					36.3	44.2	18.3	1.3
Mekele	8.7	9.2	9.0	20.7	22.0	14.2	16.2	
Michew	2.0		2.0	1.3	56.7	8.0	30.0	
Moyale	1.3	2.5	0.4	2.1	43.3	45.8	4.6	
Nazareth	1.7	0.7	1.3	1.0	52.7	38.3	3.7	0.7
Nekemte	2.7	1.3	2.3	1.3	60.3	27.3	4.7	
Zembelesa	1.0	1.7	40.1	8.7	14.4	1.3	32.8	

Source: Household Questionnaire

Pit toilets are the most popular toilet facility used by the households - almost 60 percent of the households use pit toilets. Another 20 percent of households use ventilated improved pit (VIP) toilets. The proportion of households using pit toilets is over 80 percent in the cases of Nazareth, Moyale, Nekemte and Logiya, whereas over 75 percent of households in Gode use VIP toilets. Hygienic forms of toilets like flush toilets were not very popular and many towns (like Logiya and

Michiew) had negligible proportion of households using such toilets. However, private flush toilets again were not found to be very popular. Even in cases of Dessie and Jimma that had almost 30 percent of households using flush toilets, only 10 percent of households had private toilets. Nevertheless, private toilets were equally popular, in general, in cases of pit and VIP toilets. In fact, in cases of Zalambesa with high proportion of VIP toilet users, majority of households had private toilets. Similarly, for pit toilets proportion of private toilets far exceeded communal toilets in the towns of Nekemte, Michew and Nazareth. On the other hand, communal VIP toilets exceeded private toilets in cases of Adigrat, Dire Dawa and Jijiga and communal pit toilets outnumbered private toilets in Addis Ababa, Harar, Jijiga, Jimma and Dessie.

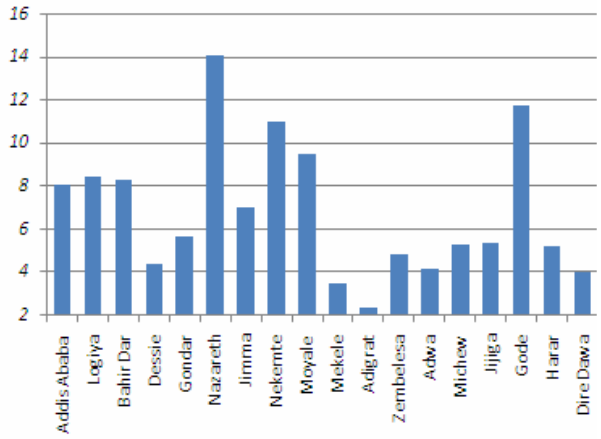
Qualitative analyses showed that the sanitation conditions, in general, have remained the same over the last five years. Of those who reported deterioration of sanitation facilities, the majority found reasons in poor water supply and unaffordable soap prices.

3.3.3 Morbidity Status

Poor water and sanitation facilities have adverse implications on health status. It is observed that at least 7 percent of the total population surveyed suffered from one disease or the other in the last one year (Fig 3.35). A small proportion of the total population, in fact, had remained sick for over three months. An analysis of common diseases inflicting the people puts forward a close correspondence with water and sanitation deficiencies. For instance, urban centres like Logiya and Zalambesa, where treating drinking water is not much in practice and toilet facilities are inadequate, have common incidences of a consequent disease like diarrhoea. Conversely, towns like Dire Dawa and Dessie that have relatively high proportion of households using private flush toilets have the least occurrences of diarrhoea and malaria.

Disproportionate occurrences of certain diseases in specific urban centres need further investigation. For instance, more than a quarter of sick people in Mekele were reported to be suffering from chronic fever, while malaria plagued over 1/3rd of respondents in Gode and headache was a common ailment among a quarter of sampled sick people in Adigrat.

Fig 3.35: Proportion of People Reporting Sick in last One Year

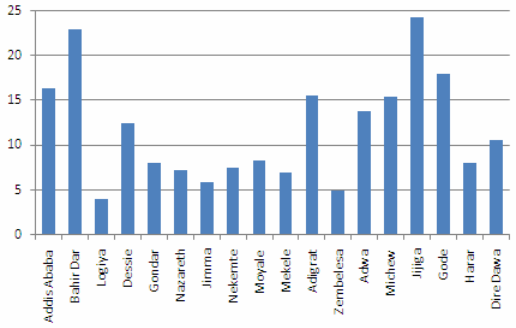


Source: Household Questionnaire

3.3.4 Health Infrastructure

High occurrences of chronic diseases necessitate access to primary health facilities. However, it is observed that a fair proportion of respondents had no access to formal health facility or chose not to visit one (Fig 3.36). Almost a quarter of population in Jijiga did not get any health care. In Bahir Dar, while a little over 10 percent of population did not get any health care, another 10 percent of population went to spiritual healers rather than a formal health care system. Across

Fig 3.36: Proportion of People without Access to Health Facility*



Source: Household Questionnaire

** Includes those who went to spiritual healers*

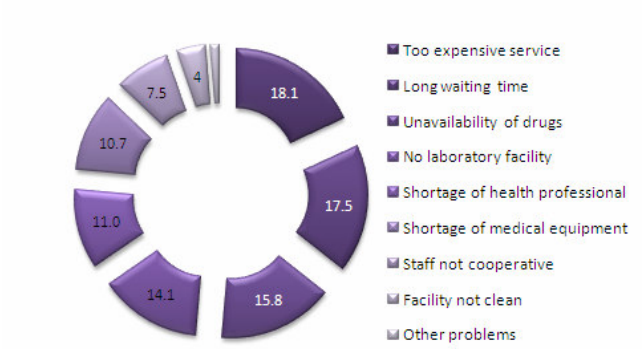
towns, at least 3-5 percent of patients visited the spiritual healers for treatment.

Among the health care systems that the respondents preferred to go for treatment, the public health facilities were found to be the most popular. Almost 90 percent of respondents in Zalambesa used public health care while the proportion was above 60 percent in almost all the urban centres under study except Logiya, Nazareth, Jimma, Jijiga and Gode, all of which had a proportion exceeding 40 percent. Of the public health infrastructure, central hospitals were found to be the most popular followed by district or municipal hospital or clinic.

The private clinics were found to be relatively quite popular in Logiya where over 1/3rd of patients visited private health care. A fair proportion of patients in Gode and Michiew were found to prefer pharmacy shops for treatment. Nazareth was the only town where mission facilities were fairly popular largely on account of the existence of a missionary hospital there.

Preference for spiritual healers, pharmacy shops and other health facilities is not only a pointer to inadequate public health facilities but also to the general awareness level of the surveyed population. At the aggregate level, the most common problem observed in any health care is the cost factor – almost 20 percent of the national population find health care in the country to be too expensive (Fig 3.37). An equally significant proportion of people avoid health care due long waiting time which has implications on number of health infrastructure and personnel.

Fig 3.37: Problems Observed in Health Care in Ethiopia, 2004



Source: WMS, CSA

The present study has come out with similar findings from the study area. An overwhelming 2/3rd of respondents cited financial problem as the primary reason for being unable to access health facility. Poor service quality and shortage of human resources was cited as another significant reason for avoiding health facilities. Urban centres where traditional and spiritual healers had a fair popularity came up with disbelief in health care as the reason.

3.4 Summing Up

The chapter has brought out the significance of markets in determining urban household food availability. The problems faced by the markets and resultant declining household access to food – evident through an increasing proportion of expenditure on food and a declining food consumption score – have brought out new dimensions in urban food security. The increase in prices of more commonly consumed food commodities, for which demands are inelastic, have put grave questions on the food security scenario.

Poor sanitation and access to safe drinking water further aggravate the problem. Thus, a holistic approach towards urban food security needs to be adopted. The ensuing chapter deals with these issues and also brings out the shocks faced by the households in the advent of food insecurity and the coping mechanisms adopted by them to deal with such scenarios.

4. Mapping Food Security in Urban Ethiopia

Having seen the background socio-economic characteristics of the selected urban centres in Chapter 2 and food security status under the lenses of availability, access and absorption (utilisation) factors in Chapter 3, it is now imperative to present a holistic view of food security status across these urban centres. Also it is essential to assess the drivers of food security in these centres. As has been mentioned at the outset, and reiterated now, these urban centres are not meant to cover all urban areas of the country. Rather, these centres represent the various hierarchies of urban areas and hence factors applicable to these centres should be deemed to be applicable to any other urban centre in the country which can be juxtaposed against any of these centres.

4.1. Levels of Food Security in Selected Urban Centres

In the ensuing sub-sections attempts have been made to initially bring out the overview picture of availability, access and absorption (utilisation) across the urban centres and then look at the overall picture of food security taking all constituent indicators into account (For method of indexing, see Technical Note – III). Further, through a multi-variate regression model, the significant factors determining food security have been brought out.

4.1.1. Index of Food Availability

As mentioned in the previous chapter, urban food security is more of a function of markets rather than production *per se*. It is for this reason that a separate trader survey was done as part of this study to analyse urban food security. To analyse a composite picture of food availability a set of four indicators has been chosen (already analysed in the previous chapter). These indicators in total determine availability of food in the markets (Table 4.1).

Table 4.1: Index of Food Availability and Constituent Indicators

	Traders to Replenish Supplies within two weeks		Cereal Availability in Ensuing Seasons		Traders Admitting to Hold Stocks		Use of Renewable Cooking Fuel		Availability Index	
	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank
Addis Ababa	0.617	7	0.737	6	0.951	3	1.000	1	0.826	2
Adigrat	0.645	5	0.644	11	0.944	4	0.597	6	0.707	4
Adwa	0.797	2	0.758	5	1.000	1	0.178	12	0.683	5
Bahir Dar	0.361	16	0.127	15	0.000	18	0.301	9	0.197	18
Dessie	0.384	15	0.037	16	0.084	15	0.347	8	0.213	17
Dire Dawa	0.512	11	0.784	4	0.249	12	0.206	10	0.438	11
Gode	0.000	18	1.000	1	0.218	13	0.004	17	0.306	15
Gondar	0.477	13	0.593	12	0.066	17	0.092	15	0.307	14
Harar	0.523	10	0.704	7	0.193	14	0.614	5	0.509	8
Jijiga	0.133	17	0.000	18	0.652	9	0.135	13	0.230	16
Jimma	0.583	8	0.674	8	0.081	16	0.758	3	0.524	7
Logiya	0.634	6	0.845	3	0.280	11	0.105	14	0.466	9
Mekele	0.457	14	0.654	9	0.812	7	0.687	4	0.652	6
Michew	0.657	4	0.879	2	0.977	2	0.419	7	0.733	3
Moyale	0.504	12	0.023	17	0.864	6	0.065	16	0.364	13
Nazareth	0.566	9	0.344	14	0.692	8	0.194	11	0.449	10
Nekemte	0.668	3	0.426	13	0.577	10	0.000	18	0.418	12
Zalambesa	1.000	1	0.646	10	0.887	5	0.809	2	0.836	1

* All indices are positive to food security

Such indicators range from traders assurances on cereal availability in markets in ensuing seasons (normal availability of food), holding of stocks by the traders (thus creating artificial scarcity in markets) and replenishing of food in markets in a short duration (longer the duration, longer the scarcity).. Besides, to track the sustainability dimension of food availability, an indicator on use of renewable energy sources has also been included. This takes care of high exploitation of non-renewable fuel sources like wood and charcoal that are quite popular even in urban areas of the country, however, their increased use puts question on sustainability of natural resources.

It is seen that the capital city Addis Ababa has fared well in terms of availability factors, largely on account of use of renewable sources of fuel (Table 4.2). Only 50 percent of households in the surveyed areas use wood or charcoal as against over 90 percent in most other towns. Zalambesa has emerged as an urban centre that has performed fairly well in all the availability indicators, except in terms of general food availability in next seasons.

On the other extreme, Bahir Dar and Dessie have largely suffered from poor market networks, besides high use of wood and charcoal as cooking fuels. Though Gode hasn't performed well in terms of most indicators the traders here have expressed the highest hope of having adequate stocks in the coming months (although traders here have mostly expressed inability in quickly meeting high demands).

Table 4.2: Availability Status

Insecure	Moderately Insecure	Secure
Bahir Dar	Nekemte	Mekele
Dessie	Dire Dawa	Adwa
Jijiga	Nazareth	Adigrat
Gode	Logiya	Michew
Gondar	Harar	Addis Ababa
Moyale	Jimma	Zalambesa

4.1.2. Index of Food Access

Food access is largely a function of purchasing power, but is also determined by a host of other factors like education, female empowerment, dependency ratio and so on. As these indicators are quite complex, a set of sub-indices were developed to analyse education, economic status and gender parity separately and then these were combined with market prices and dependency ratio to arrive at the overall food access scenario of the studied areas.

4.1.2.1 Index of Educational Attainment

To analyse the level of educational achievement in the study areas, the proportion of illiterates, proportion of population that had attained tertiary or higher levels and proportion of children attending school who have been absent for more than four days per month in that year were selected as indicators[15].

Some of the urban centres have thrown some interesting and critical implications on educational interventions (Table 4.3). For instance, Jijiga not only has the highest proportion of illiterates but the schoolchildren here also abstain from attending schools. Gode and Logiya also show similar trends. In fact, the proportion of schoolchildren not attending schools is also fairly high in Addis Ababa. Mekele has high proportion of illiterates but due to a good performance in higher education and school attendance has given the best performance in educational attainment. Even Dessie and Nazareth have shown consistent performances. Mekele and Zalambesa show encouraging results as the proportion of illiterates is fairly high but the school attendance is also quite high.

[15] Proportion of illiterates and tertiary educated are expected to have high negative correlation and hence should not be ideally included in a composite index due to problems of multi-collinearity. However, in this particular study the relation between these two indicators was not strong (see Harar, Gode, Gondar, etc.) and hence they have been selected.

Table 4.3: Index of Education and Constituent Indicators

	Illiteracy		Tertiary Educated		Absence from School		Education Index	
	Index	Rank	Index	Rank	Index	Rank	Index	Rank
Addis Ababa	0.728	6	0.498	11	0.367	13	0.531	12
Adigrat	0.547	15	0.461	13	0.883	3	0.630	10
Adwa	0.676	10	0.392	15	0.748	8	0.605	11
Bahir Dar	0.751	4	0.804	4	0.369	12	0.641	8
Dessie	0.777	3	0.833	2	0.830	5	0.813	2
Dire Dawa	0.715	7	0.814	3	0.813	7	0.780	4
Gode	0.296	16	0.637	8	0.000	18	0.311	16
Gonder	0.732	5	0.500	10	0.718	10	0.650	7
Harar	1.000	1	0.333	16	0.587	11	0.640	9
Jijiga	0.000	18	0.480	12	0.188	16	0.223	18
Jimma	0.693	8	0.441	14	0.242	15	0.459	14
Logiya	0.595	13	0.069	17	0.095	17	0.253	17
Mekele	0.642	12	1.000	1	1.000	1	0.881	1
Michew	0.550	14	0.696	7	0.742	9	0.663	6
Moyale	0.684	9	0.588	9	0.295	14	0.522	13
Nazareth	0.830	2	0.716	6	0.844	4	0.797	3
Nekemte	0.676	10	0.784	5	0.828	6	0.763	5
Zalambesa	0.263	17	0.000	18	0.952	2	0.405	15

* All indices are positive to food security

4.1.2.2 Index of Gender Parity

Table 4.4: Index of Gender Parity and Constituent Indicators

	Women Headed Households		Literacy Gap b/w Male and Females		Gender Index	
	Index	Rank	Index	Rank	Index	Rank
Addis Ababa	0.206	12	0.362	10	0.284	10
Adigrat	0.156	15	0.043	16	0.099	18
Adwa	0.178	14	0.319	11	0.249	13
Bahir Dar	0.126	16	0.383	8	0.254	12
Dessie	0.192	13	0.702	3	0.447	6
Dire Dawa	0.228	10	0.319	11	0.274	11
Gode	1.000	1	0.702	3	0.851	1
Gonder	0.373	7	0.511	6	0.442	7
Harar	0.519	5	0.798	2	0.659	3
Jijiga	0.853	2	0.250	14	0.552	5
Jimma	0.000	18	0.266	13	0.133	16
Logiya	0.532	4	1.000	1	0.766	2
Mekele	0.278	9	0.043	16	0.160	14
Michew	0.214	11	0.000	18	0.107	17
Moyale	0.743	3	0.521	5	0.632	4
Nazareth	0.480	6	0.367	9	0.424	8
Nekemte	0.320	8	0.468	7	0.394	9
Zalambesa	0.084	17	0.202	15	0.143	15

* All indices are positive to food security

Gender parity or equality is a significant indicator of intra-household distribution of food, given the fact that the girl child and women are discriminated against in terms of food distribution during food shortages. To assess the level of female empowerment and vulnerability of households two indicators have been selected – gap between male and female aggregate literacy level (a proxy indicator of gender inequality) and proportion of households that are headed by women (considered to be more vulnerable).

In most towns the gap between male and female literacy rates is positive, i.e. male literacy is higher than female literacy[16]. However, in two towns – Logiya and Harar – the female literacy rates are marginally higher. The highest disparity in male and female literacy rates are found in Mekele and Adigrat. In terms of households headed by women the present study shows that about 40 percent of households are headed by women. In general, urban centres with higher proportion of out-migration (which is largely male-specific) have higher proportion of households headed by women.

4.1.2.3 Index of Economic Status

The significance of economic status of a household in determining access to food can hardly be overestimated. However, the measurement of economic status is equally complex. Hence, a set of seven indicators has been selected to capture the economic status at household level. These include proportion of asset rich households, proportion of those households who sold their assets to purchase food and other items, proportion of households who admitted that they were experiencing a decline in their household income, proportion of households who spend less than ETB 300 per month, proportion of households who borrowed money and proportion of households who owned a bank account (Table 4.5). Besides, an additional indicator from traders' perspective – proportion of traders who felt an increase in purchase on credit in market – was also selected.

The ensuing analysis shows that Gondar has the highest economic position as compared to all other towns. The urban centre has shown consistent performance across all indicators and has the highest proportion of asset rich households and the lowest proportion of households who borrow. Mekele and Michew are the only two urban centres where no surveyed household reported to sell any asset. The capital city Addis Ababa lies high in the economic status – largely on account of high proportion of households with bank accounts and low proportion of households who sold assets or borrowed money.

A very high level of economic disparity could be found in Gode – while the town has the least proportion of households with expenditure below ETB 300 (i.e. most households have higher expenditure and hence are richer) it also has the highest proportion of households who borrowed money and also those households who are experiencing a decline in income and have sold assets. Zalambesa, that ranked high in availability factors, now ranks the lowest with the highest proportion of households who sold their assets and the lowest proportion of households with bank accounts and also the lowest proportion of asset rich households. Nevertheless, the least proportion of respondents in this town experienced an income decline.

[16] It should be noted that in examining the literacy gaps only the *difference* between male and female literacy is considered. The scale of literacy, i.e. high or low literacy, has not been taken into account. This is because the purpose of this analysis is to assess gender parity and not literacy level attained *per se*. Thus, Gode, where male and female literacy rates are 63 and 62 percent respectively, ranks higher than Addis Ababa, where the figures are 93 and 85 percent respectively.

Table 4.5: Index of Economic Status and Constituent Indicators

	Asset Rich HHs		HHs who sold Assets		HH Experiencing Income Decline		HH with <300 ETB Expenditure		HH who Borrow Money		HH with Bank A/c		Increase in Credit Demand		Economic Index	
	1		2†		3		4		5		6		7		8	
	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank
Addis Ababa	0.360	14	0.985	3	0.397	9	0.924	4	0.913	3	0.808	3	0.384	12	0.682	4
Adigrat	0.493	8	0.811	12	0.393	11	0.940	3	0.559	14	0.422	10	0.623	4	0.606	8
Adwa	0.388	13	0.957	4	0.037	17	0.869	7	0.874	5	0.141	17	0.659	3	0.561	9
Bahir Dar	0.760	5	0.735	15	0.471	8	0.833	10	0.697	12	0.746	6	0.262	15	0.643	6
Dessie	0.440	10	0.794	13	0.370	13	0.751	13	0.683	13	0.666	7	0.010	17	0.531	13
Dire Dawa	0.231	17	0.794	14	0.161	15	0.776	12	0.771	8	0.339	15	0.369	13	0.492	15
Gode	0.708	6	0.459	17	0.000	18	1.000	1	0.000	18	0.409	13	0.000	18	0.368	17
Gonder	1.000	1	0.915	7	0.870	2	0.825	11	1.000	1	0.862	2	0.565	6	0.863	1
Harar	0.780	4	0.596	16	0.233	14	0.863	8	0.321	16	0.759	5	0.205	16	0.537	12
Jijiga	0.425	12	0.907	9	0.781	4	0.873	6	0.830	6	0.177	16	0.465	11	0.637	7
Jimma	0.480	9	0.909	8	0.395	10	0.021	16	0.714	11	0.803	4	0.474	10	0.542	11
Logiya	0.240	16	0.919	6	0.860	3	0.904	5	0.932	2	0.415	12	0.609	5	0.697	3
Mekele	0.788	3	1.000	2	0.495	6	0.951	2	0.879	4	0.642	8	0.671	2	0.775	2
Michew	0.333	15	1.000	1	0.146	16	0.845	9	0.249	17	1.000	1	1.000	1	0.653	5
Moyale	0.800	2	0.867	10	0.372	12	0.041	15	0.821	7	0.380	14	0.563	7	0.549	10
Nazareth	0.560	7	0.860	11	0.517	5	0.021	16	0.736	9	0.450	9	0.541	8	0.526	14
Nekemte	0.440	10	0.937	5	0.476	7	0.000	18	0.736	9	0.422	11	0.310	14	0.474	16
Zalambesa	0.000	18	0.000	18	1.000	1	0.461	14	0.534	15	0.000	18	0.497	9	0.356	18

* All indices are positive to food security

† No correlation was found between proportion of asset-rich households and proportion of households who sold assets.

HH - Household

Index of Food Access

From an economic point of view, two factors determine purchasing power of a household – economic status of the household and the prevailing market prices (Fig. 1.1). Therefore, it is imperative to add prices (in the form of percentage increase in market prices of cereals) to the analysis on economic status to arrive at the purchasing power, which is a critical factor in determining food access. Besides, adjunct factors like educational status, gender relations and also dependency ratio are also added (Table 4.6).

Table 4.6: Index of Food Access and Constituent Indicators/Sub-Indices

	Economic Status Index		Price Increase Cereals		Education Index		Gender Parity Index		Dependency Ratio		Access Index	
	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank
Addis Ababa	0.643	4	0.775	5	0.468	12	0.246	10	0.992	2	0.625	4
Adigrat	0.493	8	0.000	18	0.619	10	0.000	18	0.586	14	0.340	17
Adwa	0.404	9	0.138	17	0.581	11	0.199	13	0.511	16	0.367	16
Bahir Dar	0.567	6	0.619	10	0.636	8	0.206	12	0.895	6	0.585	8
Dessie	0.344	13	0.633	9	0.897	2	0.463	6	0.939	3	0.655	3
Dire Dawa	0.268	15	0.877	3	0.847	4	0.232	11	0.883	7	0.621	5
Gode	0.023	17	0.833	4	0.134	16	1.000	1	0.626	13	0.523	11
Gonder	1.000	1	0.679	7	0.649	7	0.456	7	1.000	1	0.757	1
Harar	0.357	12	1.000	1	0.634	9	0.744	3	0.850	8	0.717	2
Jijiga	0.554	7	0.417	13	0.000	18	0.602	5	0.529	15	0.420	14
Jimma	0.368	11	0.402	14	0.358	14	0.045	16	0.927	4	0.420	15
Logiya	0.673	3	0.564	11	0.046	17	0.887	2	0.925	5	0.619	6
Mekele	0.827	2	0.172	16	1.000	1	0.081	14	0.790	9	0.574	9
Michew	0.587	5	0.731	6	0.669	6	0.010	17	0.486	17	0.496	12
Moyale	0.381	10	0.519	12	0.455	13	0.709	4	0.775	10	0.568	10
Nazareth	0.336	14	0.653	8	0.872	3	0.432	8	0.773	11	0.613	7
Nekemte	0.234	16	0.265	15	0.820	5	0.392	9	0.752	12	0.493	13
Zalambesa	0.000	18	0.886	2	0.277	15	0.059	15	0.000	18	0.244	18

* All indices are positive to food security

Addition of increase in cereal prices alters the purchasing power in many a case, for instance Gondar that ranks high in economic status ranks in middle on the scale of price increases; while a low-ranking Harar on index of economic status ranks at the top with lowest increase in market prices. Nevertheless, with a top rank in average dependency ratio Gondar ranks at the top in terms of food access, very closely followed by Harar (Table 4.7). Dessie presents a typical case where it has a modest low rank in economic status but performs well in all other indices and indicators to rank high among the urban centres. Addis Ababa evidently has a low dependency ratio, mainly on account of influx of productive population from other parts of the country[17], and hence coupled with a high rank in economic status it also finds place in the secure category of food access index.

Table 4.7: Access Status

Insecure	Moderately Insecure	Secure
Zalambesa	Nekemte	Nazareth
Adigrat	Michew	Logiya
Adwa	Gode	Dire Dawa
Jimma	Moyale	Addis Ababa
Jijiga	Mekele	Dessie
	Bahir Dar	Harar
		Gonder

On the other extreme, Zalambesa is the only urban centre with a dependency ratio higher than 100 percent (i.e. dependent population exceeds productive population). With

[17] In-migration of population in the productive age group (15-59 years), adds to the numerator and hence lowers the dependency ratio (which is the ratio between dependent and productive population).

the lowest rank in economic status and poor performance in educational attainment and gender parity it ranks the lowest in food access index, even though prices here have largely remained stable. This compares poorly with its highest rank in food availability index – a pointer to the fact that merely availability of food doesn't guarantee consumption. Similarly Adigrat and Adwa, which also ranked high in availability index, have a poor performance here, owing largely to a high increase in prices and poor performance in gender parity index and dependency ratio.

4.1.3. Index of Food Absorption

Finally, having assessed the food availability and its access, it is imperative to look at factors that determine the absorption or utilisation of food by human body. Utilisation of food to gain nutrition has implications on health status, access to safe drinking water and sanitation and proper health care, which are the indicators that have been used to calculate the index of absorption (Table 4.8).

Table 4.8: Index of Food Absorption and Constituent Indicators

	Piped Water inside the House		Flush Toilets Private to HH		Population in Good health		Population without Health Care		Absorption Index	
	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank
Addis Ababa	0.220	10	0.303	8	0.510	12	0.293	16	0.331	16
Adigrat	0.898	2	0.133	12	1.000	1	0.546	13	0.644	5
Adwa	1.000	1	0.870	3	0.849	4	0.747	11	0.867	1
BahirDar	0.329	8	0.626	6	0.492	13	0.476	14	0.481	11
Dessie	0.150	12	0.943	2	0.826	5	0.736	12	0.664	4
DireDawa	0.539	5	1.000	1	0.858	3	0.825	9	0.805	3
Gode	0.000	18	0.000	17	0.195	17	0.288	17	0.121	18
Gonder	0.421	6	0.235	9	0.720	10	0.885	5	0.565	7
Harar	0.404	7	0.152	11	0.756	7	0.848	7	0.540	8
Jijiga	0.327	9	0.597	7	0.744	9	0.000	18	0.417	12
Jimma	0.056	15	0.783	4	0.600	11	0.838	8	0.569	6
Logiya	0.010	17	-0.036	18	0.479	14	1.000	1	0.363	13
Mekele	0.887	3	0.699	5	0.906	2	0.888	4	0.845	2
Michew	0.742	4	0.133	12	0.752	8	0.403	15	0.508	9
Moyale	0.095	14	0.070	15	0.391	15	0.878	6	0.359	14
Nazareth	0.179	11	0.105	14	0.000	18	0.774	10	0.265	17
Nekemte	0.011	16	0.190	10	0.263	16	0.909	3	0.343	15
Zalambesa	0.147	13	0.049	16	0.787	6	0.981	2	0.491	10

* All indices are positive to food security

Piped water inside the house (and not communally accessed) should be deemed the safest sources of drinking water at household level. Similarly, access to private toilets act as good proxy indicators of safe sanitation. It is seen that except a few cases like Adigrat, Dessie, Jimma and Michew, both these indicators are correlated to each other – a reflection of socio-economic characteristics of households (see Fig 1.1). It should also be noted that proportion of surveyed population reporting good health also runs coterminous with these two indicators – an obverse reflection of impact of drinking water and sanitation on health conditions. Finally, access to adequate health facilities is

Table 4.9: Absorption Status

Insecure	Moderately Insecure	Secure
Gode	Logiya	Adigrat
Nazareth	Jijiga	Dessie
Addis Ababa	Bahir Dar	DireDawa
Nekemte	Zalambesa	Mekele
Moyale	Michew	Adwa
	Harar	
	Gonder	
	Jimma	

where the state-actors come into play.

It is seen that, in general, urban centres that show a good performance in water and sanitation front also rank high in overall absorption index (Table 4.9). Adwa, Mekele and Dire Dawa that rank high in absorption index show good results in terms of safe water and sanitation. On the other hand, Gode shows a poor performance in all the constituent indicators of absorption and ranks last and is closely followed by Nazareth. Surprisingly, the capital city Addis Ababa, which has remained in secure category in both availability and access indices ranks quite low in absorption index. This is more visible in terms of access to health care – a pointer to inadequate or inaccessible health infrastructure for the poorer sections of the city. Conversely, Logiya ranks very low in terms of access to safe drinking water and sanitation and hence good health, but has managed to inch into the medium category of absorption index due to a relatively excellent performance in access to health care.

4.1.4. Food Security Index

The foregoing analyses have analysed food security status from the lens of availability, access and absorption – the tripod of food security. In this sub-section, all the indicators used to compute these three indices have been indexed and combined to calculate the overall food security index. Table 4.10 presents the relative indices and corresponding ranking for each of the three indices and also the overall food security index.

Table 4.10: Index of Food Security

	Availability Index		Access Index		Absorption Index		Food Security Index	
	Index	Rank	Index	Rank	Index	Rank	Index	Rank
Addis Ababa	0.826	2	0.625	4	0.331	16	0.596	5
Adigrat	0.707	4	0.340	17	0.644	5	0.547	8
Adwa	0.683	5	0.367	16	0.867	1	0.618	3
Bahir Dar	0.197	18	0.585	8	0.481	11	0.434	15
Dessie	0.213	17	0.655	3	0.664	4	0.522	9
Dire Dawa	0.438	11	0.621	5	0.805	3	0.621	2
Gode	0.306	15	0.523	11	0.121	18	0.332	18
Gondar	0.307	14	0.757	1	0.565	7	0.559	7
Harar	0.509	8	0.717	2	0.540	8	0.598	4
Jijiga	0.230	16	0.420	14	0.417	12	0.361	17
Jimma	0.524	7	0.420	15	0.569	6	0.498	11
Logiya	0.466	9	0.619	6	0.363	13	0.493	12
Mekele	0.652	6	0.574	9	0.845	2	0.681	1
Michew	0.733	3	0.496	12	0.508	9	0.573	6
Moyale	0.364	13	0.568	10	0.359	14	0.441	14
Nazareth	0.449	10	0.613	7	0.265	17	0.455	13
Nekemte	0.418	12	0.493	13	0.343	15	0.424	16
Zalambesa	0.836	1	0.244	18	0.491	10	0.502	10

* All indices are positive to food security

There appears no consonance among the three indices as they appear to be moving in different directions in many cases. For instance and as already discussed, Addis Ababa ranks high in availability and access indices but very low in absorption index. Resultantly, it just manages to move into the secure category (Table 4.11). On the other hand, Adigrat and Adwa rank high in availability and absorption indices but fair poorly in terms of access indices and hence are placed in the moderately insecure

Table 4.11: Food Security Status

Insecure	Moderately Insecure	Secure
Gode	Nazareth	Michew
Jijiga	Logiya	Addis Ababa
Nekemte	Jimma	Harar
Bahir Dar	Zalambesa	Adwa
Moyale	Dessie	Dire Dawa
	Adigrat	Mekele
	Gondar	

category.

Except for gender parity index and traders assurance for cereal availability in ensuing seasons, Gode has remained consistent with poor performances and hence ranks last in the insecure category. Specifically, the town performs poorly in the absorption indicators. Jijiga performs similarly and presents wide opportunities for public interventions – like access to health care and education – where the town is found to be extremely lacking. It also emerges as the town where maximum proportion of traders expressed apprehensions on cereal availability in ensuing seasons – with resultant implications on urgent market interventions.

The present sub-sections have mapped the existence of food insecurity across the selected urban centres through a set of relevant indicators. Such an analysis has helped in placing these representative urban centres into categories of food security. However, though this analysis does point towards some causes of food insecurity in these regions, it doesn't explicitly bring out the underlying factors that determine the overall food security in the study areas. The ensuing section therefore essays to bring out those factors at the aggregate as well as segregated levels through a multi-variate regression model.

4.1.5. Drivers of Food Security

Before moving into examining the major contributory factors to food security it should be deemed appropriate to analyse the outputs of food security[18]. Food security measured through outputs is considered to be a more accurate measure compared to inputs. Nevertheless, measuring food security through inputs as well, as done in the sub-sections above is equally important. Food security outputs are potent means of mapping food security across space but they do not tell about the causative factors that determine such an areal differentiation. This is where food security inputs come into fore.

Three indicators have been selected to measure food security from output point of view:

1. Food Consumption Score (FCS)
2. Proportion of household consumption expenditure on food
3. Coping Strategy Index[19] (CSI)

While the FCS is directly proportional to food security (higher the FCS higher is the food security), the latter two are inversely proportional. These three indicators have been combined together, as in the case of input indicators to get the composite view of food security in the study areas (Table 4.12 and 4.13). Zalambesa emerges as the most food secure district; however, this is largely on account of large-scale food assistance programmes under operation in this centre. Therefore, food security here can best be considered externally induced and hence not fully sustainable.

On the other extreme, Jijiga has high CSI and also high proportion of food expenditure which places accords it in extremely food insecure category. Adwa presents an interesting case where CSI is very low but proportion of expenditure on food is very high (and hence very low food security) and food consumption is low. Even Dire Dawa shows similar tendency. Resultantly, they rank low in overall food security output index. Addis Ababa ranks low both in CSI and FCS. However, if one ignores food assistance to Zalambesa, Addis Ababa has the lowest proportion of expenditure on food.

Table 4.12: Food Security Output Status

Insecure	Moderately Insecure	Secure
Jijiga	Jimma	Logiya
Adwa	Gode	Zalambesa
Nekemte	Nazareth	
Bahir Dar	Addis Ababa	
Dire Dawa	Harar	
Gondar	Moyale	
Dessie	Michew	
Mekele	Adigrat	

[18] The outcomes of food security are reflected through nutritional indicators, largely measured through anthropometric measures.

[19] Coping Strategy Index (CSI) has been elaborated and analysed in the next section; the methodological details being given in the Technical Notes. CS is a temporary mechanism to avoid food insecurity and is considered negative to food security.

Table 4.13: Index of Food Security Output and Constituent Indicators

	FCS		Food Expenditure		CSI		Output Index	
	Index	Rank	Index	Rank	Index	Rank	Index	Rank
Addis Ababa	0.274	15	0.407	2	0.783	10	0.488	7
Adigrat	0.605	2	0.173	10	0.880	7	0.553	3
Adwa	0.000	18	0.028	16	1.000	1	0.343	17
Bahir Dar	0.540	4	0.025	17	0.567	16	0.377	15
Dessie	0.379	8	0.073	14	0.764	11	0.405	12
Dire Dawa	0.116	17	0.141	12	0.897	6	0.385	14
Gode	1.000	1	0.319	3	0.000	18	0.440	9
Gondar	0.203	16	0.077	13	0.929	3	0.403	13
Harar	0.395	7	0.241	7	0.837	8	0.491	6
Jijiga	0.352	10	0.070	15	0.378	17	0.266	18
Jimma	0.322	12	0.162	11	0.783	9	0.423	10
Logiya	0.542	3	0.233	8	0.907	4	0.560	2
Mekele	0.308	14	0.199	9	0.719	14	0.409	11
Michew	0.417	6	0.254	6	0.979	2	0.550	4
Moyale	0.534	5	0.255	5	0.710	15	0.500	5
Nazareth	0.374	9	0.266	4	0.761	12	0.467	8
Nekemte	0.327	11	0.000	18	0.722	13	0.350	16
Zalambesa	0.310	13	1.000	1	0.898	5	0.736	1

* All indices are positive to food security

The above analyses presents somewhat mixed picture. It therefore seems appropriate to look for relations among the various indices calculated. The correlation matrix for all these indices is presented in Table 4.14. It is seen that Food Consumption Score runs significantly coterminous with Coping Strategy Index, absorption index and also the overall food security index (composed of input indicators). On the other hand, proportion of expenditure on food has good positive correlation only with availability index. The Coping Strategy Index emerges as the most correlated index and finds good relations with availability index, absorption index and also the overall input index.

Table 4.14: Correlation among all Indices

	Expenditure	CSI	FCS	Output Index	Availability	Access	Absorption	Input Index
Expenditure	1							
CSI	.067	1						
FCS	.115	-.688(**)	1					
Output Index	.833(**)	.337	.236	1				
Availability	.565(*)	.520(*)	-.285	.598(**)	1			
Access	-.376	.008	-.004	-.262	-.454	1		
Absorption	-.241	.560(*)	-.647(**)	-.185	.236	-.095	1	
Input Index	.014	.726(**)	-.623(**)	.137	.580(*)	.182	.769(**)	1

† All indices are positive to food security; Significant correlation coefficients are shaded
* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

However, interestingly CSI has significant negative correlation with FCS (meaning thereby that an urban centre with high proportion of households resorting to coping mechanisms has high consumption). However, this can be explained by the fact that changing to less expensive food items is cited as the most common coping strategy. Therefore, though the coping mechanisms are high the

consumption *per se* doesn't change. Nevertheless, by definition this is a short term measure to retain existing consumption levels and in the long run the correlation between the two (CSI and FCS) is expected to turn positive.

It can also be seen that the access index doesn't have significant correlations with any of the other indices. This is a pointer to the fact that the availability followed by absorption factors determine food security in urban areas to a great extent.

Results of Regression Analysis

To assess the important determinants of food security a multi-variate regression model was attempted. The three indicators constituting the food security outputs were taken as dependent variables while all other indicators (after checking for multi-collinearity, autocorrelation and heteroskedasticity) were inducted in the model as independent (or explanatory variables). Without going into the details of regression results, for simplicity, Table 4.15 presents the significant indicators that influence these dependents indicators.

Table 4.15: Variables having Significant Impact on Food Security Outputs[†]

Dependent Variables →	Food Expenditure	Food Consumption Score	Coping Strategy Index
Significant Explanatory Variables (in order of significance)	Extreme Poverty: Households selling assets to meet food requirements	High dependence on credit	High supply response: quick replenishment of stocks in event of increased demand
	Hoarding: Traders who hold stock to artificially create shortage and increase prices	High supply response: quick replenishment of stocks in event of increased demand	Dependency Ratio
	Sustainability: High dependence on fossil fuels	Sanitation: Households with access to private flush toilets	Good Health: Households without access to adequate health care
	Market prices: Increase in cereal prices	Gender parity	

[†] Actual rgrression results and correlation matrices are given in Annex-1

Most of the variables cited for each of the food security outputs are amenable to direct policy intervention. For instance, access to safe sanitation, provision of adequate and easily accessible health care, special provision for women empowerment, easy credit availability (micro-finance) and market supply response (through provisioning and public distribution and checking hoarding tendencies) can be influenced through direct policy interventions. Conversely, there are variables which can be only indirectly influenced. These include eradicating extreme poverty, containing market prices and so on. Further, factors like dependency ratio can be influenced negatively through adequate family planning campaigns and positively through better employment opportunities.

Finally, for a more focussed action, the relative position of each of the urban centre was analysed (Table 4.16). The specific policy interventions that need to be taken in a particular urban centre have been listed based on their relative standings. The recommended policy action does not imply that other interventions need not be taken here – it simply prioritises the intervention to address problems specific to these areas which in turn leads to a sustained food security situation. These policy interventions have emanated largely from all foregoing analyses and can be grouped under economic interventions, market interventions and health interventions.

Table 4.16: Specific Policy Interventions in Urban Centres

Urban Centre	Policy Intervention
Addis Ababa	Adequate and accessible health care
Adigrat	Girl child literacy campaigns
Adwa	Poverty eradication
Bahir Dar	Checking market irregularities (hoarding, etc.)
Dessie	Micro-finance
Dire Dawa	Poverty eradication, Micro-finance
Gode	Market supply response, Discouraging fossil fuel, Literacy campaigns, Poverty eradication, Safe water and sanitation, Adequate and accessible health care
Gondar	Checking market irregularities (hoarding, etc.)
Harar	Micro-finance
Jijiga	Literacy campaigns, Adequate and accessible health care
Jimma	Literacy campaigns, Checking market irregularities (hoarding, etc.), women empowerment
Logiya	Safe water and sanitation
Mekele	Girl child literacy campaigns
Michew	Girl child literacy campaigns, Employment schemes
Moyale	Discouraging fossil fuel
Nazareth	Poverty eradication, Micro-finance
Nekemte	Discouraging fossil fuel, Safe water and sanitation
Zalambesa	Micro-finance, Employment schemes

4.2. Shocks and Coping Strategies

4.2.1 Shocks and Resultant Food Insecurity

It has been oft argued that the financial crisis has had little impact on the Ethiopian economy, given its less monetised nature and less dependence on banking and financial services. However, there are three definite areas in which the financial crisis is or already has impacted the country's economy – reduction in aid, investments and remittances. The global economic downturn coupled with a simultaneous problem of increasing food prices has affected all economies worldwide and for the developing economies it has come as series of shocks.

Though it is difficult to asses the impact of these shocks at the household and individual levels, the present study attempts to analyse the types of shocks afflicting the households, as reported by them, the resultant impact and the change in consumption and expenditure behaviour and other coping mechanisms. Various types of shocks reported by the households in the last six months of the survey have been clubbed into high food prices, reduced income or employment, high fuel and transport prices and illness or death in family. It is found that majority of the households (over 45 percent on an average) have reported high food prices as the most important shock that they have faced in the last six months. Another 20 percent of respondents counted reduction in income or loss of employment while 15 percent cited high fuel or transportation prices as the shock they were experiencing.

Thus, loss in purchasing power, either due to loss of income or increase in expenditure, has emerged as the most common shock being faced by the households in the study areas. Over half of respondents in Addis Ababa, Nazareth, Mekele, Bahir Dar and almost 75 percent of respondents in Logiya cited high food prices as the most significant shock that they were experiencing (Table 4.17). The proportion was above 40 percent in most other towns except in the urban centres of Somali, and Adigrat and Zalambesa towns. In Gode, only a quarter of respondents cited high food prices as a shock; the reason could be found in the fact that a high proportion (over 60 percent) of sample households in Gode did not depend on the market for domestic food availability (see Fig.3. *source of*

food). In fact, over 12 percent of households depended on food assistance programmes, which was found to be the highest among the selected urban centres.

Table 4.17: Common Shocks affecting the Households

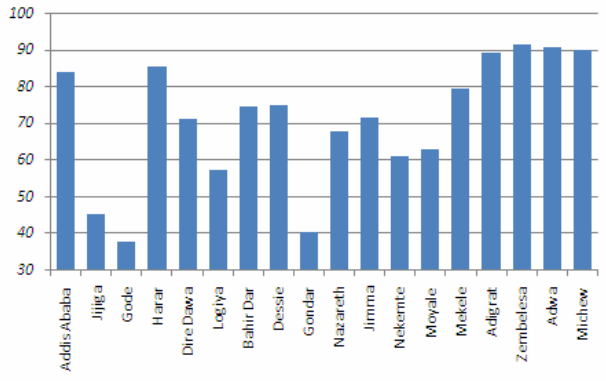
Town	Number of Responses reporting shocks	Loss of employment/ Reduced Income	Serious illness or accident of HH member	Death in the family	Unusually high food price	Unusually high fuel/ transport price	Electricity/ gas cuts	Flood/ Droughts	Theft/ Insecurity /Violence	Other e.g. Crop pests	No shock
Jijiga	593	70.1	7.1	7.6	92.9	17.0	24.6	38.8	0.9	5.4	0.4
Gode	445	21.6	6.5	7.8	73.2	18.3	11.8	73.9	43.1	24.8	9.2
Harar	607	43.8	13.0	9.9	94.2	31.8	8.2	0.7	1.4	4.1	0.7
Dire Dawa	622	42.0	9.0	6.6	94.8	36.1	16.7	0.3	1.7	8.3	0.3
Mekele	927	43.5	4.2	5.0	96.7	37.7	3.8	0.8	0.4	1.0	
Adigrat	847	74.3	5.4	7.4	98.0	54.7	28.4	10.5	6.8	0.3	0.3
Zelembesa	761	85.1	4.4	2.2	83.3	33.1	5.1	21.5	36.0	6.2	
Adwa	627	61.2	2.2	1.8	97.5	46.8	6.8	8.3	0.0	1.1	
Michew	671	79.9	1.8	2.6	96.7	56.0	4.4	4.4	0.0	0.0	
Logiya	231	8.7	9.3	2.9	98.3	12.2	2.3	0.0	0.0	0.6	
Bahir Dar	579	36.8	13.2	4.9	96.9	29.5	17.7	0.7	0.7	0.7	
Dessei	536	51.3	16.9	4.5	89.9	22.1	13.5	0.0	0.4	2.2	
Gondar	411	36.1	15.3	9.7	91.2	20.8	15.3	0.0	0.5	1.4	
Nazareth	444	45.2	7.8	2.2	92.2	7.0	1.9	0.0	1.1	1.9	5.2
Jimma	599	46.6	9.8	7.6	95.5	43.6	18.9	0.4	0.8	3.8	
Nekemte	520	50.2	17.9	6.0	90.6	34.0	10.2	7.7	0.9	3.0	0.9
Moyale	380	55.7	12.4	5.4	87.6	17.8	9.7	3.8	0.5	12.4	
Addis Ababa	3163	32.8	8.9	3.2	95.7	29.9	10.9	4.3	0.7	4.0	

Source: Household Questionnaire

Almost 1/3rd of households in Michew cited loss of income or employment as a shock that they had faced in the last six months. All the towns that saw high food prices as the most significant shock also came up with loss in income or employment as a cause of their increased vulnerability. The only exceptions were Addis Ababa and Logiya – a pointer to the fact that the decline in purchasing power in these towns was overwhelmingly high due to increase in food prices and not primarily due to loss in income. Gode again had very few respondents, along with Jijiga, that reported loss of income or expenditure as a shock. Only a small proportion of households reported personal loss in the form of death or illness of one or more of household members that came as a sock to them. The proportion of respondents reporting illness was relatively high in the towns of Gondar, Nekemte and Dessie (over 8 percent).

Natural factor-induced shocks like droughts or floods were not very common given the fact that these factors don't directly affect an urban area. However, over a quarter of respondents in Gode, and over 10 percent in Jijiga and Zalambesa reported droughts and resultant crop failures as a shock that they had faced. In fact Jijiga and Zalambesa also reported pest-infestations in crops as

Fig 4.1: Proportion of Households Experiencing Decrease in Income due to Shocks



Source: Household Questionnaire

a shock, indicating the high proportion of respondents directly depending upon agriculture in these towns – the section on livelihood patterns in Chapter 2 has already indicated a high proportion of agricultural workers in the towns of Jijiga and Gode.

To assess the impact of shocks specifically on the economic status of the households, proportion of households that experience decrease in income due to shocks was analysed. It was found that all towns that had cited increase in food prices had experienced a decrease in their income levels due to shocks (Fig 4.1). Over 2/3rd of households in total reported a loss of income due to shocks, the proportion being over 85 percent in the cases of Addis Ababa, Harar and all towns of Tigray region. The proportion was again low in Gode, probably on account of reason cited above.

Over 2/3rd of households also reported that in the last month they have been times when they found themselves unable to meet the regular necessary expenditures, including food, education, health and so on. The proportion of such households was over 80 percent in Addis Ababa, Harar, Dire Dawa, Bahir Dar, Dessie, Nazareth and Adwa. That an extremely high proportion of households in major urban centres of the country are finding it difficult to meet even their necessary regular expenditures, speaks of the high level of vulnerability of these households.

As a result of loss of purchasing power, decline in income, and inability to meet regular expenditure there has been a perceptive decline in the general standard of living of the sample households at the time of survey compared to a period six months ago. On an average less than 10 percent of the households reported no change or improvement in standard of living. On the other hand, almost 30 percent of the households reported worsening of their living standards. Of these, over half of the households in the capital city of Addis Ababa reported a high decline in standards of living while this proportion was over 1/3rd in towns of Nazareth, Dire Dawa and Dessie. Proportion of households experiencing low decline in living standards was over 2/3rd in Adwa and over 50 percent in Harar and Michew. Thus, most households that already had a low quality of life, as discussed in Chapter 2 have also experienced worsening standards of living.

Table 4.18: Households Experiencing Change in Standard of Living

	No change	Improved	Slightly Worse	Highly Worse
Low Proportion	Addis Ababa Harar Adwa Gode Dire Dawa Moyale Michew Nazareth Bahir Dar Dessie	Adwa Dessie Addis Ababa Michew Jijiga Mekele Gondar Logiya Harar Dire Dawa Adigrat Jimma Nekemte	Zalambesa Mekele Jijiga Moyale Nazareth Logiya Gode Gondar Bahir Dar Jimma	Zalambesa Adwa Adigrat Jijiga
Medium Proportion	Jimma Mekele Nekemte Jijiga Adigrat	Nazareth Gode Bahir Dar Moyale	Nekemte Dire Dawa Dessie Addis Ababa Adigrat Michew	Logiya Gondar Nekemte Moyale Michew Mekele Bahir Dar Gode Jimma Harar Dessie
High Proportion	Logiya Gondar Zalambesa	Zalambesa	Harar Adwa	Dire Dawa Nazareth Addis Ababa

4.2.2 Coping Strategies

Acquisition of food and provision of adequate nutrition are among the most basic of human endeavors. In general, people respond to conditions under which they do not have enough to eat, and various means of "coping" is what people have to do when they do not have enough—the more people have to adopt coping strategies cope, the less food secure they are. Such strategies, though may temporarily solve the issue, are an indication that things in fact are getting worse. Further, they are almost by definition unsustainable – economically, nutritionally and environmentally (Davies, 1993).

Empirical studies have shown that in an urban centre, the following mechanisms are followed to cope with high food insecurity, in order of increasing severity (Maxwell, 1995):

- Eating food that are less preferred
- Limiting portion size
- Maternal buffering[20]
- Skipping meals
- Skipping eating for whole day

Longer term strategies like migration have also been practised. In the present study the respondents were asked an open ended question on the mechanism adopted by them to cope with the shocks as listed above. The responses received have been clubbed into five major categories – change in consumption patterns (which includes all the five points as bulleted above), borrowing food or money to buy food, reduction in expenditure, migration and selling off assets (Table 4.19).

Table 4.19: Strategies Adopted by Households to Cope with Shocks

	Rely on less preferred, less expensive food	Borrow money/ food and purchase food on credit	Reduce consumption	Reduce expenditure	Increase income (sold HH assets, working long hours)	Spent saving	Worked for food only	Consumed seed stock , wild foods	Some HH members migrated
Logiya	55.0	28.8	24.4	39.4	26.9	6.3	0.6	1.3	0.0
Bahir Dar	69.0	32.7	75.0	31.3	21.1	7.7	1.4	1.4	2.5
Dessie	73.8	39.9	85.2	46.4	17.9	10.3	1.5	0.0	0.8
Gonder	75.4	24.2	88.6	27.0	3.3	4.3	3.3	0.0	0.5
Nazareth	71.4	44.3	82.0	24.7	6.3	4.3	0.4	1.2	0.8
Jimma	85.1	43.3	58.6	30.3	28.7	9.6	0.4	1.5	1.9
Nemkete	70.1	50.6	61.5	32.5	8.2	3.5	5.6	3.9	4.3
Moyale	65.7	48.9	71.3	18.5	9.0	3.4	2.2	1.1	2.8
Jijiga	47.6	68.9	59.1	29.5	16.1	0.8	26.4	0.0	5.5
Gode	70.5	74.0	27.4	80.1	15.8	13.0	1.4	5.5	4.1
Harar	65.4	76.5	58.1	26.0	15.9	11.4	6.9	0.7	1.4
DireDawa	68.4	53.7	95.4	21.8	18.6	1.1	0.4	0.0	0.0
Mekele	33.0	42.4	32.6	79.0	6.5	10.7	21.0	0.6	0.2
Adigrat	71.3	74.6	51.1	28.0	17.5	11.9	27.6	1.5	0.4
Zalembesa	81.3	72.9	63.0	15.4	30.8	1.5	4.8	0.4	0.7
Adwa	92.3	42.1	59.8	25.1	10.3	2.6	1.5	0.4	0.0
Michew	79.3	40.7	63.0	52.6	2.6	18.5	0.7	1.1	1.1
Addis Ababa	66.1	22.8	68.1	34.3	6.1	4.3	7.1	0.6	0.7

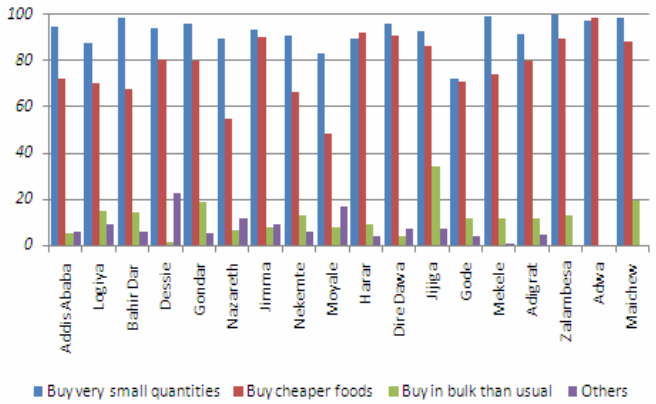
Source: Household Questionnaire

Change in consumption behaviour is the most common strategy adopted by the households to cope with the declining purchasing power. Over half of the respondents resorted to this as a coping strategy – the proportion being over 60 percent in Gondar, Nazareth, Adwa, Dire Dawa and Addis Ababa. Among the strategies of consumption change, the most common one was to switch to less preferred and less expensive food. For instance, as seen in section on availability in previous chapter, majority of population shift to red teff as the staple diet to reduce expenditure on food. Over a quarter of population in all the towns under study, except in Jijiga and Mekele, shifted to less preferred and inexpensive food. Reduction in portion of meals was the second most common coping

[20] The author found that it is generally the mother who deliberately limits her meals so that the children, usually the younger ones, get enough to eat.

strategy followed by reduction in number of meals in a single day (skipping breakfast or lunch). In another common strategy, the adults in a household cut-short their portions to allow children to have more food. A small proportion of respondents, (higher in Jijiga and Moyale) reported to skip meals for the whole day to cope with high food prices and low incomes. It is thus seen that various means of changing consumption behaviour as coping mechanisms conforms to other studies in urban areas in terms of degrees of severity. From the traders' perspective, almost all the consumers changed their purchasing pattern in the last one year. Majority of the consumers had started buying in small quantities than usual while only a small proportion of traders observed purchasing in bulk than usual. The former is evidently more common among the lower income strata groups while the latter can be resorted to only by the richer sections. Over 2/3rd of traders had observed an increased tendency among the consumers to buy cheaper varieties of the existing goods.

Fig 4.2: Changes in Buying Behaviour of Consumers in Last One Year



Among other means of coping mechanisms, borrowing, particularly purchasing food on credit, is found to be the most common. Over 10 percent of households in Jijiga, Gode, Harar, Dire Dawa, Nazareth, Nekemte, Zalambesa and Adwa reported to buy food on credit. Another 10 percent of respondents borrowed food or money to buy food, the proportion being over 15 percent in Harar, Adigrat and Zalambesa.

Migration was not found to be a very popular strategy among the sample households – probably on account of the fact that the households were already in urban areas. However, a fair proportion of households reported that their relatives from rural areas did migrate to urban areas, mostly in search of better means of livelihood. Reduction in expenditure on various items including health, education and transport was also not very common. However, on an average almost 10 percent of households reduced expenditure on non-food items like clothing. This mechanism was found to be popular in Michew with around 20 percent of households reducing expenditure on such items – the proportion being over 10 percent in Addis Ababa, Logiya and Adwa.

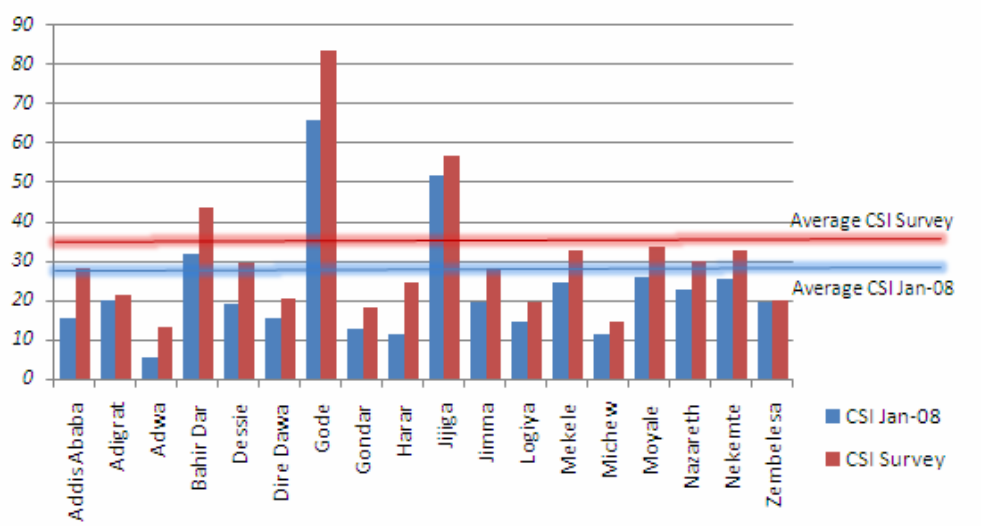
Selling of household assets as a coping mechanism was found to be a common practice in Zalambesa while a fair proportion of households across the towns spent their savings. Among other methods of coping, working for food only was quite popular, particularly in towns of Mekele, Adigrat and Jijiga with nearly 10 percent of respondents admitting to working to receive wages in kind. Some households had to resort to take children out of schools while a few increased their working hours. Some of the households who had their own house rented out part of their living space.

Coping Strategy Index

The Coping Strategy Index (CSI) is an indicator of household food security that is relatively simple and quick to use, straightforward to understand, and correlates well with more complex measures of food security (WFP and CARE, 2003). The CSI is based on one simple question:

"What do you do when you don't have enough food, and don't have enough money to buy food?"

Fig 4.3: Coping Strategy Index, January 2008 and at the time of Survey



Source: Household Questionnaire

The answers to this question have been classified and presented in the previous sub-section. This sub-section essays to construct CSI for two periods of time – one at the time of survey and the other during January-2008 through recall survey. Adequate weights, both to severity of coping mechanism and its frequency of adoption, have been given (see Technical Notes-II for details). The results of the CSIs for two periods are presented in Fig 4.3. The basic purpose for constructing CSIs for two periods was to assess the change in level of vulnerability of the surveyed households. It is observed that on an average the CSI has increased from 23 in January-2008 to 31 at the time of survey[21] - i.e. within a short span of around six months, the CSI had increased by over 33 percent.

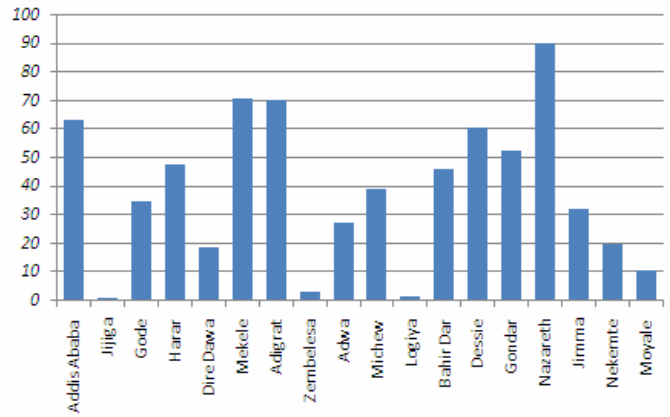
At the disaggregated level, it would be seen that the CSI has increased by 85 percent in the capital city of Addis Ababa. The highest increase has been observed in the cases of Harar and Adwa, where the index has more than doubled. Nevertheless, in all these three cities the CSI at the time of survey was below the average of 31. It is the town of Gode that emerges as the most vulnerable in terms of CSI. In both the periods the CSI has remained the highest and almost thrice the average CSI. More remarkably, in absolute terms, the increase in CSI has been the highest across the urban centres (from 66 to 84).

Zalambesa is observed as the only urban centre that has remained stagnant in terms of change in CSI – the index here has only marginally increased from 19.4 to 20.2. It thus emanates that the average CSI in both the periods have largely been driven by three urban centres – Gode, Jijiga and Bahir Dar. All the remaining towns have remained below the averages in the respective periods.

4.3 Public Interventions

Having assessed the level of food security across the urban centres under study and the coping mechanisms adopted by the food insecure households, it is imperative to examine the type and reach of interventions that influence food security in one way or the other.

Fig 4.4: Proportion of Households having Ration Cards



Source: Household Questionnaire

21 CSI is inversely proportional to food security – a higher CSI indicates low food security of the households.

4.3.1 Access to Safety Nets

To have access to subsidised wheat from *kebele* a household needs to have a ration card under the government's Grain Stabilisation Programme imitated for urban areas. There are widespread disparities across study towns in terms of ration card ownership. For instance, while over 90 percent of sample households in Nazareth reported to posses a ration card the proportion was negligible in Jijiga, Logiya and Zalambesa (Fig 4.4). On an average, nearly 40 percent of households in the study area had a ration card.

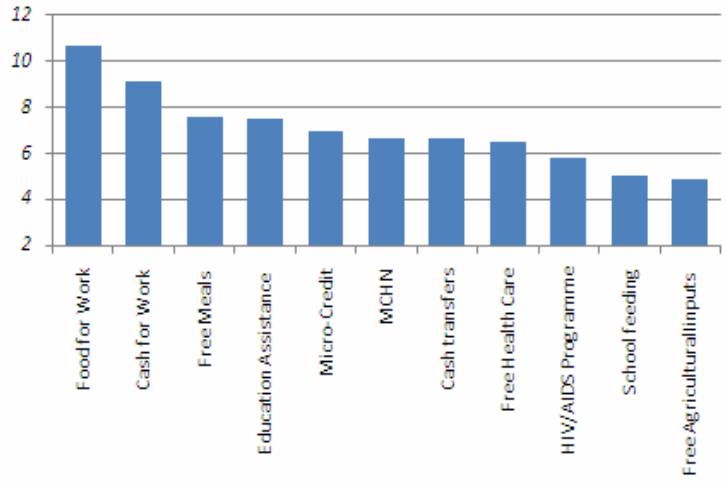
Majority of households did not have ration cards because they were not registered in their respective *kebeles* – over 75 percent of households (that did not have ration cards) in Adigrat were not registered in their *kebele,* the proportion being nearly 50 percent and 40 percent in Mekele and Nazareth respectively. A good proportion of households were either ignorant about any such scheme or were not interested – bringing into question there level of awareness, which in turn was related to level of educational attainment. Further, over 1/3rd of respondents reported to be absent during registration in Addis Ababa.

4.3.2 Assistance Programmes Availed

A quick snapshot of various assistance programmes availed by the households since January-2008 to the time of the survey reveals that the programmes targeting household food security were found to be more popular than those targeted specific sections of population (like children, PLHIV, etc.) (Fig 4.5). For instance, the Food for Work programme was found to be very popular as over 10 percent of the households reported to have benefited from this programme, while the Cash for Work programme came a close second. An overwhelmingly high proportion of households in Zalambesa (almost 80 percent) was found to have availed the Food for Work programme while almost 60 percent had participated in the cash for work[22]. Food for Work was also found to be popular in Adwa and Moyale while Cash for Work was more popular in Gode. Similarly, programmes that had provision of free meals were also popular with over 10 percent of sample households benefiting from such programmes in Adigrat, Moyale and Bahir Dar.

On the other hand, programmes aimed at alleviating the nutritional levels of children and women were not very popular. The proportion of households availing supplementary feeding for young children and pregnant and nursing women under Mother and Child Health and Nutrition (MCHN) programmes was relatively high only in Zelembesa, Gode, Bahir Dar and Jimma while in most other towns the proportion was less than 1 percent. Similarly, school feeding programmes (eaten at school or take-home) were seen to be popular only in Bahir Dar and Jimma. In both the cases, a very miniscule proportion of households reported to benefit from such vital programmes in Addis Ababa, while in most other towns it was less than 1 percent.

Fig 4.5: Types of Assistance Programmes Availed by Households



Source: Household Questionnaire

[22] The total percentages will not add up to 100 percent as many households had equally participated in several programmes.

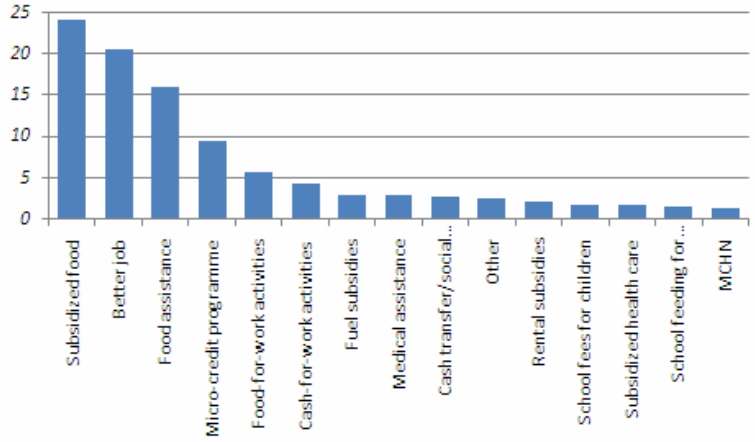
Programmes meant for financial empowerment of the population were also found to have few takers. It was only in case of Gode that over a quarter of households reported to have benefited from educational assistance programmes. Further, over 10 percent of households had participated in micro-credit programmes executed by an NGO or other agencies in Zelembesa and Bahir Dar, the latter being also the only town where a similar proportion of households had benefited from the cash transfer schemes.

Among other programmes, food for PLHIV programme was found to be popular in the towns of Jimma, Dessie and Bahir Dar while over 12 percent of households in Gode had benefited from free health care or drugs coordinated by an NGO.

4.3.3 People's Perception and Desired Interventions

The previous section had dealt with the nature and intensity of shocks experienced by the sample households, most of which had adversely affected their income and food security status due to high food prices. This becomes further validated when the nature of assistance desired by the households are analysed (Fig 4.6). On an average, almost a quarter of the households wanted subsidised food as the primary assistance that could help them cope with shocks. This was followed by income generating activities in the form of better jobs desired by over 20 percent of the households. Another 16 percent of the households, probably the most food insecure, wanted to be assisted through direct food assistance programmes.

Fig 4.6: Assistance Programmes Desired by Households



Source: Household Questionnaire

On the other extreme, as in the case of current interventions availed by the households, the MCHN, school feeding and health care programmes were given the least priority by the households, with less than 2 percent of households opting for such programmes.

Across the towns, 1/3rd of households in Addis Ababa, Mekele and Adwa and over a quarter in Gondar, Harar, Dire Dawa, Nazareth, Adigrat and Michew wanted assistance through subsidised food. A further crosscheck with the previous analysis reveals that these are also the towns where proportion of households **not** possessing a ration card is also high – with some obvious policy implications.

Over a quarter of population in Jimma, Gode, Moyale and Zalambesa demanded better jobs to take care of their poor economic conditions while a similar proportion of households in Jijiga and Gode voted for direct food assistance. Over 15 percent of households in Jijiga, Dire Dawa and Logiya, Jimma and Moyale saw the significance of micro-credit programmes to act as a buffer during crises.

Food for Work and Cash for Work programmes that were found to be the most popular schemes among the currently running ones, did not find many takers in terms of the desired programmes. It was only in the cases of Michew, Logiya and Dessie that at least 10 percent of the households demanded such assistance programmes. Thus, it can be deciphered that households don't find such

income generating activities to be more useful in meeting their shocks suffered largely on account of high food prices, or probably did not see much utility of such programmes in urban areas.

Nevertheless, as in the case of current interventions, less than 2 percent of households in most of the towns expressed desire for programmes like MCHN and school-feeding. The only exception was Jijiga, where 10 percent of households wanted MCHN programmes while another 7 percent voted for school feeding programmes.

4.4 Summing Up

The present chapter has mapped extent and nature of food security across urban centres and brought out causative factors. It should, nevertheless, be noted that every geographical area has evolved out of a specific set of socio-economic-political milieu and the drivers of food security, as analysed here, should not be considered a panacea for all factors contributing to food insecurity. Further, coping strategies adopted by the studied population as an answer to prevailing shocks should not be considered to be a sustainable solution to food insecurities suffered on account of these shocks. The need of the hour, therefore, is to strengthen public interventions and markets to address food insecurity in a sustainable manner.

5. Conclusions and Policy Implications

The undertaken study has dealt with food security and vulnerability situation in different urban centres of the country – across regions, at varied levels of urbanisation and socio-economic conditions. The food security status has been studied from the lens of food availability, food access and food absorption (utilisation), wherein food availability has been considered largely a function of market interplay, access a function of purchasing power (which in turn is determined by income level and prevailing prices) and finally absorption an outcome of health and morbidity status of the urban population. The food security status across urban centres has been mapped and contributory factors to the same brought out. Various kinds of shocks and consequent coping mechanisms adopted have also been analysed. Finally the role of the state in terms of public interventions and their outreach and performance has been assessed.

Food Availability

The analyses of the conundrum of food insecurity across these urban centres indicate wide variations in nature and extent of the problem. However, it has been largely observed that urban food insecurities are largely a product of market malfunctions, which in turn determines food availability. It has been also observed that in the absence of proper market mechanism to address high food prices, people are either shifting to low-priced commodities (which are in general less nutritious) or are moving away from the market per se. This brings into consideration the need for encouraging home gardens / backyard gardens for nutritious (vegetable) food items or community gardens, besides taking urgent steps in strengthening market functioning.

Food Access

Food access largely suffers from paucity of purchasing power which is a function of income level and prevailing prices. Hence, income enhancement through both short term (employment opportunities, micro-finance schemes, etc.) and long term (vocational education and training) measures needs to be done. A higher investment on indirect factors leading to food security, like education and health, is requried. Only 5 percent of GDP of ETH is allocated to education (Unicef, 2009). A higher level of education and low drop-out instances goes a long way in ensuring sustained food security.

From a policy point of view, a good proportion of households don't possess ration cards which bars them from availing subsidized food. Given the fact that a high proportion of such households see the significance of subsidized food in the current era of high food prices, some programme for provisioning of ration cards to genuine households can be initiated. This will assure higher outreach of existing urban food security programmes, like the Grain Stabilisation Programme. Public distribution systems should be universalised and be made self-targeting.

Food Absorption

Sanitation is found to be having an overarching impact on food security. Hence provision of adequate and safe sanitation facilities needs to be done in a mission mode. Similarly, access to safe drinking water needs to be improved and a campaign needs to be generated for encouraging treatment of water before consumption and maintaining personal hygiene.

However, a significant finding of the report has been poor access to health infrastructure. This requires both direct (creation of accessible and affordable health facilities) as well as indirect (awareness for formal systems of treatment) actions.

Finally, a holistic approach towards food security enhancement is required. A life-cycle approach to food and nutrition security should be promoted by providing horizontal linkages among vertically structured programmes.

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