DJIBOUTI URBAN
EMERGENCY FOOD SECURITY ASSESSMENT

October 2008

Mark Gordon (OMJ)
Kayo Takenoshita (OMJ)

Acknowledgment

The authors of this report would like to thank the following people for all their time and support provided during the preparation, data collection, analysis and report writing:

Mamo Desta, Officer in Charge, WFP Djibouti
Giorgia Testolin, Head of Programme, WFP Djibouti
Halima Houssain, Programme, WFP Djibouti
Aline Mutagorama, Programme, WFP Djibouti
Taghrid Mohamed, Programme, WFP Djibouti
Rachid Ilmi Hersi, FEWSNET Country Representative, Djibouti
Sylvie Montembault, Assessment, OMJ – WFP
Ali Mohamed Ali , Chargé Adjoint de la cellule de gestion des catastrophes

The Enumerators, Data Entry Clerks and Drivers
And all the people that responded to the questionnaires

Executive Summary

Over the past 14 months, prices of staple foods in Djibouti have constantly increased. In Mach 2008 staple food costs were 46 percent above the five-year average in Djibouti city[1] and in July 2008, the cost of basic expenditure basket was about 97% above the lowest paid salaries in urban areas[2]. A rapid EFSA by WFP in May 2008 identified 70,000 people in need of assistance in the rural areas, and recommended an urban assessment to analyze the impact of high food prices on household food security of the poor urban population. Based on this, WFP Djibouti with support from OMJ and in partnership with FEWSNET and the Government of Djibouti, Ministry of the Interior conducted a rapid Urban Emergency Food Security Assessment (EFSA) aiming:

1. To understand the impact of high prices on the urban population;
2. To provide information to enable:
    a. Estimate the number of people affected and response options;
    b. Estimate the extent to which they been affected by the price rise; and
    c. Understand the households' resilience/coping mechanism.

The results presented in this document are based on data collected between the 7th to 12th of October, 2008 in Djibouti city and suburbs. A total of 328 households in all of the 5 arrondissement of the capital were interviewed. A further 24 key informant interviews and 16 trader surveys were conducted.

The study aimed to be statistically representative for the poorest areas of the capital area and indicative of 'mixed' poor areas. The assessment methodology was based on the Food and Nutrition Security Conceptual Framework which guided the overall analysis. In order to capture the impact of the current price increases on the poor urban population, three instruments were used: i) Household survey, ii) Key informant interviews, and iii) Traders survey.

The results of the Urban EFSA 2008 have shown that the high food prices have in general impacted Djiboutian households ability to access enough food to meet their needs at all times by reducing the quantity of food that households can purchase from the market. The impact is more acutely felt by 'poor' and 'very poor' households who are no longer able to allocate enough income to purchase a standard food basket. In response to the high food prices, households are smoothing their consumption by reducing the quantity, quality of the meals or substituting their traditional diets (e.g. rice) with cheaper alternatives (e.g. bread).

Based on the dietary diversity, under nutrition of children under five years old, food expenditure, and coping strategies engaged, this study has classified the sampled households into four food security categories: 'highly food insecure', 'moderately food insecure', 'moderately food secure', and 'food secure'. This rapid EFSA estimates that 10% of the sample was classified as highly food insecure, 56% as moderately food insecure, 14% moderately food secure, and 20% as food secure. The estimated number of households in the highly food insecure category is 7,500 in Djibouti town and surrounding areas, and the number of moderately food insecure household is estimated to be 42,000 in the Djibouti urban areas.

Based on the results of this study, it is recommended that first a limited food intervention for the next 6-12 months to support the 'highly food insecure' households. Second this report proposes that programs should be initiated to allow households to reduce essential non-food expenditure in favour of food. For example, new initiatives could introduce activities that would reduce household expenditure on cooking fuels by 50-75 percent. Similarly the extension of public drinking fountains would reduce the cost households pay per month for water. These would equate to savings equivalent to what a household of seven would spend on rice for the entire month. Third, to reduce household expenditure on food there is anecdotal evidence of children being retracted from school due to the associated costs, a school feeding programme should be initiated to provide a 'mid-day' snack to the primary school children in all the urban primary schools. Fourth, WFP with its partners should investigate community canteens to support the high proportion of malnourished children identified in the 2006 and 2007 nutritional studies.

[1] FEWS report May 8, 2008
[2] calculated based on figures from FEWS report August, 2008

Table of Contents

1. Background and Objectives

Over the past 14 months the price of staple foods in Djibouti has increased constantly. According to FEWSNET, in May 2008 staple food costs were 46 percent above the five-year average in Djibouti city[3]; since then, the cost of the expenditure basket for poor urban households has increased further. A rapid EFSA by WFP and partners was conducted in May 2008. The study identified 70,000 people in need of assistance in the rural areas, and recommended a joint urban assessment with FEWSNET to analyze the impact of the high food prices on household food security of the poor urban population. Resultantly, WFP Djibouti with support from OMJ and in partnership with FEWSNET conducted a rapid Urban Emergency Food Security Assessment (EFSA) aiming:

1. To understand the impact of high prices on the urban population;
2. To provide information to enable:
    a. Estimate the number of people affected and response options;
    b. Estimate the extent to which they been affected by the price rise; and
    c. Understand the households' resilience/coping mechanism.

The 2008 Urban EFSA report consists of six sections. The first section provides a general overview of the methodology used for this assessment and is followed by a brief overview of the current economic situation in Djibouti. The second section summarizes the main food security developments between 2007 and 2008 in urban areas. The third section summarised the key secondary data used by this study and the key findings for the trader survey. The fourth section elaborates the main findings. The fifth and sixth sections summarize the main conclusions and puts forward some preliminary estimations of the number of people affected by the different shocks.

2. Methodology

As indicated above the purpose of the Djibouti Urban EFSA was to understand the impact of the high food prices on household food security. The study employed a combination of household, key informant, trader and focus group tools. The study sought to provide results that were representative for the quarters in the Balbala area which has the highest concentration of poor and extremely poor households; and indicative results in the centre area of Djibouti town for 'poor' and 'very poor' households[4].

To measure the impact of high food prices and drought on urban food security, the report draws upon the results of three household studies undertaken between 2003 and 2006. These are the 2002 EIDM-IS2 poverty study by the World Bank and the Government of Djibouti, the 2003 FEWS Urban Livelihood Baseline and the 2006 Multiple Indicator Cluster Survey (MICS). These three studies collected extensive household information in the urban areas pertaining to household access and utilisation of food.

2.1 Conceptual Framework

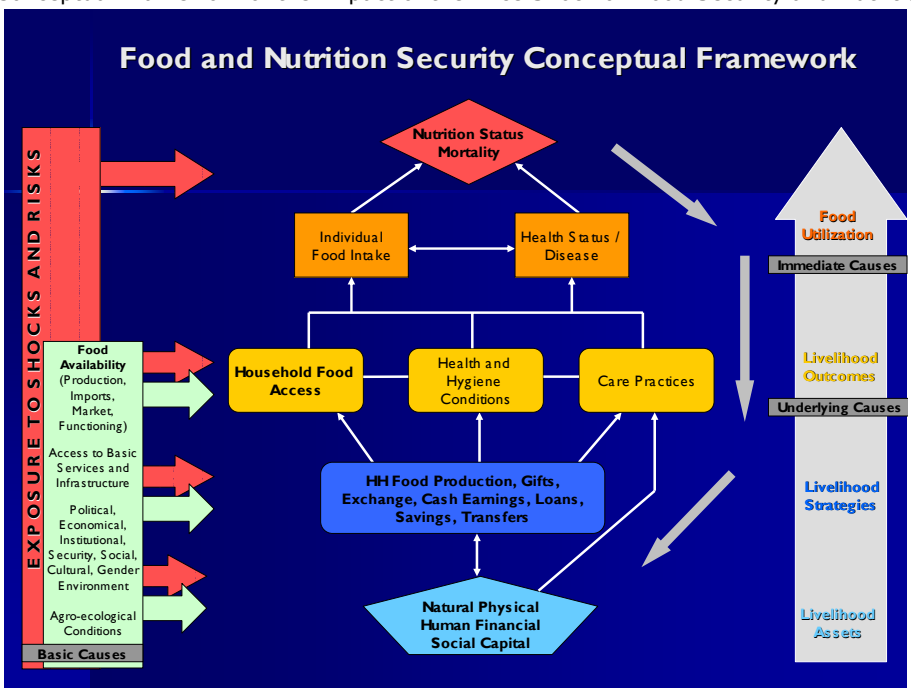
The conceptual framework presented below in figure 1 outlines the various levels this study will explore in order to measure the impact of the shocks of high food prices on household food security. In general, as indicated in the framework, first, this study will look at the underlying and structural factors impacting on household food security. Through the creation of strata profiles and market information, this report will set the stage describing the current livelihoods, household access to the 5 livelihood capitals and general availability of food and non-food items to households in the market, the economic activities that household pursue in urban areas, assets and wealth, and how households have been impacted by the shocks of high food prices. Third, the report will investigate how households access their food and non-food through expenditure, consumption and coping to measure the impact, at the

[3] FEWS report May 8, 2008

[4] The sampling is discussed in more detail in the *Stratification and Sampling* section of this report and in annex 2.

household level, of high food prices and drought. Finally, this study will use the Mid-Upper Arm Circumference (MUAC) measurements of all the children between 6 and 59 months in the household to understand how high food prices have filtered through livelihood strategies and outcomes to affect individual nutritional status at the household lever. It must be noted here that the study was not designed to provide the prevalence of under-nutrition. Instead, the MUAC information colleted will be used at a household level to understand the impact of reduced access on individual nutritional status.

Figure 1: Conceptual Framework of the Impact of the Price Shock on Food Security and Nutrition



2.2 Tools

In order to measure the impact of the high food prices on the urban poor a number of methods were used. The team reviewed secondary data, met with stakeholders and key informants and carried out rapid primary data collection in the poorest districts of Djibouti Ville and its surroundings. The primary data collection employed both qualitative and quantitative data collection methods, using four instruments: i) Key Informant Interview, ii) Focus Group Discussions, iii) Household Survey and iv) Trader Survey (see annex 3 for details.) Each of these instruments will be discussed briefly below.

Household questionnaire
Household questionnaires provided a foundation for measuring the impact of higher food prices on household food security and the forecast the impact of prolonged high food prices on food security into the next 6 months.

Key Informant questionnaire
Key informants were administered with quarter administrators and religious representatives to better understand the impact of high food prices on income activities, access to social services, market prices and shocks.

Trader questionnaire
The traders' questionnaire provided information on food access and availability at the different types of trader. It also provided information on access to credit for traders as well as on access to credit for their customers. Moreover, discussions with traders helped to better understand how the current market

functions and the behaviour of customers in urban areas and the impact of high food prices on these communities.

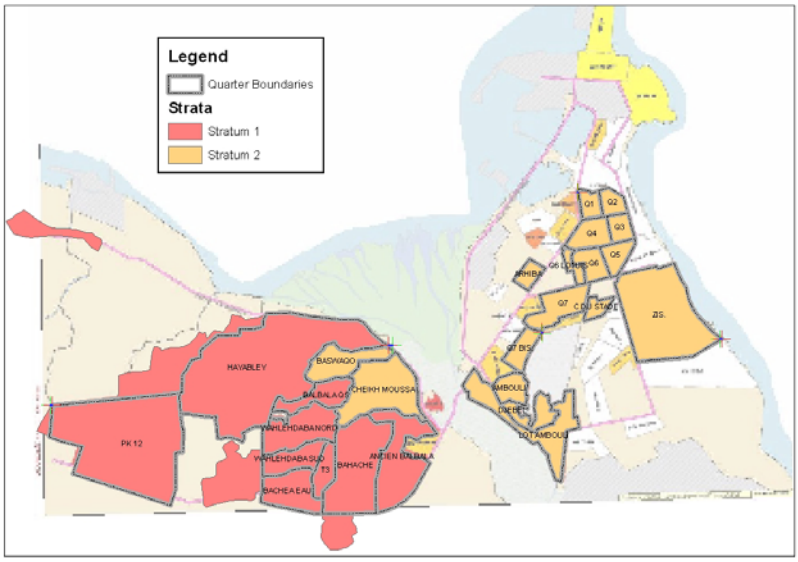
2.3 Stratification and Sampling[5]

As indicated above, the study sought to provide guidance on urban interventions to address acute food insecurity due to high food prices and prolonged drought. Administratively there are 91 quarters within the city and surrounding areas of Djibouti-Ville. Drawing upon the 2002 Government of Djibouti and World Bank analysis it was estimated that approximately 70 percent of the population in and environs around the City of Djibouti lived below the poverty line of 200,000 DJF per adult per year[6].

However, there are a significant variation in the levels of poverty between the different quarters. With the percentage of the population classified as poor ranging from less than 10 percent to greater than 75 percent. The extent of the poverty in Djibouti-city is particularly acute in the districts West of the Ambouli Wadiind (Balbala) with an incidence of monetary poverty higher than 70%[7]. This analysis largely agrees with the 2003 FEWS livelihood baseline with the majority of the poor residing in Balbala with the quarters in the city centre either being predominantly 'wealthy' or 'mixed'. Based on this evidence two unique strata were developed for the study. The two strata are as follows:

1. Stratum 1 – Balbala Poor: This stratum is composed of all the quarters in BalBala that have a poverty incidence greater than 70 percent. This includes the quarters (according to the 2002 administrative boundaries) of: PK12, Hayabley, Balbala quartier 5, Whala daba Sud, Whala daba Nord, Bache à eau, T3, Bahache, Ancien Balbala, and Quarawil. It should also be noted that since 2002 there have been migration of households from the rural area and neighbouring countries of Ethiopia, Somalia and Eriteria. Prior to the development of the sample, a WFP field team visited the area of BalBala and using a GPS identified new areas of settlements outside the 2002 administrative boundaries which were then included in the sample.
2. Stratum 2 – Djibouti City Mixed: The 'mixed' stratum is composed of middle and wealthier households. However within these quarters there are 'very poor' and 'poor' households but at a prevalence of between 20 percent and 70 percent per quarter.

A map of the sample area and the strata are presented below.



[5] A more detailed description of the stratification and sampling can be reference in Annex 2 of this report
[6] World Bank Poverty synopsis
[7] Government of Djibouti. March 2004. Poverty Reduction Strategy Paper

The sampling approach adopted for the first stratum, due to the homogeneity of the households, was a two-stage random sample. In Stratum 2 however, due to the heterogeneity of the household wealth and poverty typologies, it was decided that a purposive sample was more appropriate in order to capture the impact of high food prices and drought on poor urban households. The two approaches are described below.

Strata 1 – Random Sample

Drawing upon the published WFP EFSA sampling guidelines and using a 2-strage cluster approach, a minimum of 250 households per strata is require to provide representative results. After discussions with the Direction des Statistiques et des Enquêtes Démographiques de Djibouti (DISED), it became apparent that a standard 2-stage cluster exercise was not feasible[8] within the timeframe of this rapid EFSA.

Consequently, a grid method was used to select the households. Drawing upon the DISED 2002 estimation of the number of households in each of the 13 quarters[9] and using proportional application, the recommended sample size and a total number of household per quarter were calculated. Each quarter was then geographically subdivided into a number of equal size tiles based on the number of households calculated for the sample. Within each tile a random point was then drawn and the latitude and longitude coordinates extracted. The point then represented the location of the household, or the household closest to that point, to be surveyed.

It is acknowledged that this approach assumes a homogenous population distribution within the quarter as well as a slight bias in favour of households in sparsely populated areas. However, this bias was considered minimal as quarters with higher a population had a higher proportion of households in the sample. The GPS points were then programmed into Garmin GPS's. Based on an organsiational plan, each enumerator, using a GPS, was expected to interview between 5-6 households per day. Upon returning from their daily data collection, the location of the household points was compared with the recorded 'track' taken by the enumerator. With the GPS it was thus possible to verify that the household selected by the random point within the tile was visited by the enumerator.

Strata 2 – Purposive Sample

According to the previous work done by the World Bank and FEWS, the areas to the East of the Ambouli Wadi, the old city of Djibouti and the quarters of Sheikh Moussa and Baswado have a lower percentage of 'poor' and 'very poor' households. According to the 2003 baseline, in these 'mixed' areas 10% of the population are 'very poor' and 25% 'poor'. Thus, it was felt that a random sample approach (as applied in Stratum 1) would be inappropriate as one or two households in ten would be the target group for this study.

Household selection for this stratum used a 'snowball' sampling approach for which target the household questionnaires to the 'poor' and 'very poor' households in the quarter. To achieve this, the assessment team first administered a key informant questionnaire to the quarter administrator. Once the questionnaire was completed the team then explained to the administrator that they would like to visit 4 of the poor households in the quarter. Great lengths were taken to explain to the chief of the quarter that the assessment was interviewing households for a food security assessment and that the interviewees would not automatically become beneficiaries. Once the enumerator has administered the questionnaire to the households selected by the quarter's administrator, the household was then asked to lead the enumerator to another household in the quarter that was in the same economic situation as

[8] At the start of the development of the sample, the assessment team requested from DISED the most recent enumeration zones, their locations and lists of households. The assessment team was then informed that the most recent enumeration of the households in the city of Djibouti was the 2002 however, DISED were not able to provide more recent household lists. A second alternative was then explored by using the quarters as clusters and selecting the number of households by PPS using a list of all the households in the quarter. However, the assessment team was informed that a current list of households (less than 6 months old) was not available. Thus, a standard 2 stage clustering exercise was not possible.

[9] 2002 household figures for the 10 quarter were used for the administrative boundaries. For the 3 areas added to the study after the WFP field mission, a recent (<6 months old) high resolution image was used and the number of household structures counted. This provided an estimated number of households.

themselves. This repeated by each enumerator 2-3 times for each quarter and in 9 of the 16 quarters in Stratum 2.

2.4 Data Entry and Analysis

A data entry application was created in Microsoft Access. A half day training was given to the clerks that outlined the process of data entry and provided the clerks with the opportunity to practice with the application. Three data entry clerks entered all the 330 household questionnaires, 24 key informant and 16 trader questionnaires over a period of 4 days.

2.5 Limitations of Study

As previously mentioned, the study was designed to proved representative results for the households in the first stratum and indicative results of 'very poor' and 'poor' households in the second stratum. The trader and key informant questionnaires were administered to provide the assessment team with a general understanding of the availability of good on the market, household access to the market as well as the general condition and structural factors affecting food security in the urban quarters. The results presented in this document are based on data collected in over a period of 5 days. It should be noted that household data collection commenced seven days after the celebration of Ramadan. As a key celebration in the Islamic calendar, households tend to allocate more of their spending on clothing and food at this time. Moreover, if possible, households tend to provide gifts to less affluent households at this time. The study attempted to limit the impact of Ramadan on household by shortening the food expenditure to the seven days after the end of Ramadan. However, household expenditure and access to credit (due to gifts given during the Eid, the end of Ramadan cerebration) could cause households expenditure to be over reported.

While rigorous standards were applied to the analytical process, the following general limitations must be acknowledged:

- Threat to external validity: Limitations in the ability to generalize the results from the sample of the general population must be acknowledged. The survey data is designed to represent the situation at a given point in time.

- Threat to internal validity: Incorrect recall and quantitative estimates may affect the validity of the results. The enumerators were trained to facilitate recall and quantitative estimates to improve internal validity. In some cases social desirability, lack of freedom of speech and expectations may have affected the responses and set patterns, especially given that the households may previously have been the object of program-oriented assessments (e.g. food aid) and responses. However, the anonymous character of the survey contributed to mitigate this bias.

- Threat to reliability: Threat to the reliability or repeatability (Kalton et al., 2005) of the results was minimized through the questionnaire design and training of the enumerators. Training in the household questionnaire was conducted to reduce individual variation in how enumerators understood the questions. The questionnaire, although designed in English, was translated into French for the enumerators to use and most cases the interviews were conducted in the local language/dialect.

3 Djibouti: Socio-Economic Background

Djibouti is one of the smallest countries in Africa with an average rainfall of only 150 mm per year for most of the country. The hot and dry climate does not allow for agricultural production. Temperature is as important as rainfall in determining patterns of livelihood, with low-lying coastal areas experiencing the highest temperatures, particularly during the summer months from May to September.

Djibouti is classified as both a least developed and a low-income, food-deficit country that is mainly dependent on imports to meet its food requirements. Djibouti only ranks 149 out of 177 countries in 2007 Human Development Index[10]. There is no accurate population data available for Djibouti. The last official census was conducted in 1983. Population numbers are estimated between 500,000 and 840,000[11]. At present the UN estimates population at 632,000[12]. 65% of the population is thought to reside in Djibouti town and 80% in all Djibouti and the 5 district towns.

Poverty is widespread, with more than 40 percent of the population living below the national poverty line[13]. Latest figures available from the World Bank show that at least 42 percent of the population lived on less than $2 per day in 2002. Extreme poverty increased from 9.6 percent in 1996 to 42.2 percent in 2002. Malnutrition among children younger than five is a silent emergency in Djibouti, with malnutrition rates well above the emergency threshold. The 2006 Multi-Indicator Cluster Survey attributes this poor nutritional status of Djibouti infants and children mainly to frequent droughts, high formal unemployment and high food prices. According to the 2007 Joint Nutrition Survey, the urban global acute malnutrition rate was estimated at 16.4 percent.

In Djibouti City, according to the secondary literature, the key factors influencing the food security and nutritional situation of households are poverty, a lack of access to basic services and poorly developed infrastructure. According to the 2002 EDAM-IS although poverty is more widespread and deeper in Djibouti's rural areas, it is in the urban areas outside Djibouti city that the largest concentration, in terms of population, of the poor households are found.

The literature highlights that the poor are characterized by absence of purchasing power, low human capital accumulation, and low standards of living. The poor (and the very-poor) differ from the rest of the population in socioeconomic and demographic characteristics, and employment status. According to the 2003 FEWS Urban Livelihood Baseline in Djibouti City substantial proportion of the population live in relative poverty by local standards, and extreme poverty by international standards, subsisting on a total income of less than 40,000 FD ($US 225) per household per month, or <200 FD (about $US 1) per person per day. Although incomes are higher in absolute terms than in any of the neighbouring countries, the cost of living is relatively high in Djibouti.

3.1 Food Security assessments and Livelihoods in Djibouti

To better frame the assessment results a summary of main food security events according to FEWS are highlighted here. In 2004, FEWS carried out a livelihoods study and identified four principal rural livelihood zones and one urban livelihood zone, Djibouti city[14:]. Drawing upon this baseline, FEWS provides food security alerts on a regular basis. The following paragraph outlines the chronology of the deterioration of urban food security.

In May 2008, FEWSNET issued a food security alert that indicated that the food security situation in urban livelihood area was critical due partly to high food prices. According to the report, more than 200,000 people in urban areas were estimated to be affected by high food price. The report using the change in the cost of a basic household food basket estimated that these household could satisfy only about 59 percent of their daily basic minimum food requirements (2,1000 kcals). The situation was further exacerbated by chronically high rates of malnutrition and limited dietary diversity. As previously mentioned FEWS reported that staple food costs were 46 percent above the five-year average, and the total expenditure for a poor food basket is 63 percent above the lowest paid salaries in urban areas. In September FEWS report that the household expenditure on a minimum basket of food and non-food items has increased to 97 percent above the lowest paid salaries in the urban areas.

[10] UNDP, 2008
[11] Brass, 2008
[12] See Joint Nutrition Survey, 2007
[13] United Nations Population Fund - UNFPA
[14] FEWSNET, 2004

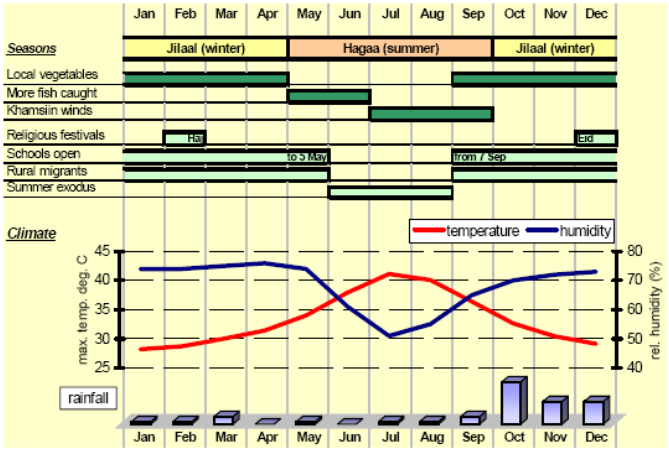
3.2 2006 Multiple Indicator Cluster Study and 2007 Joint Nutrition Survey

In 2006, The Ministry of Health with support from UNICEF undertook a Multiple Indicator Cluster Survey in the rural and urban areas of Djibouti. The objective of the study was to provide information on the health and nutritional situation of the children and the women in Republic of Djibouti. Among the indicators collected, the study measured the nutritional status of children under five and collected information on household asset. For the city of Djibouti the study visited a total of 113 clusters in both the urban centre and surrounding quarters (BalBala) The study estimated that the urban Global Acute Malnutrition rate (GAM) at 19.2 percent and Severe Acute Malnutrition at 6.7 percent; both well above the emergency threshold.

In December 2007 a joint nationwide nutrition survey confirmed that acute malnutrition for children under five remained high. At a national level, the GAM rate was measured at 16.8 percent and the SAM rate was estimated at 2.4 percent. In Djibouti city the SAM rate was estimated at 2.9 percent of children under five.

3.3 Seasonality of economic Activities

Djibouti City although an urban centre is affected by seasonal variations of income sources, expenditure, and short term migration. The calendar below from the 2003 FEWS urban livelihood baseline highlights the impact of seasonal variations on household access to employment and expenditure.



According to this baseline, the food security of households in the urban areas are vulnerable to two main shocks, namely an increase in the price of food and basic household items such as cooking fuel; and prolonged drought affecting Djibouti and the neighbouring Areas of Ethiopia, Eritrea and Somaliland responsible for a large proportion of the county's vegetables imports.

3.4 Recent Price Developments and Livestock Markets

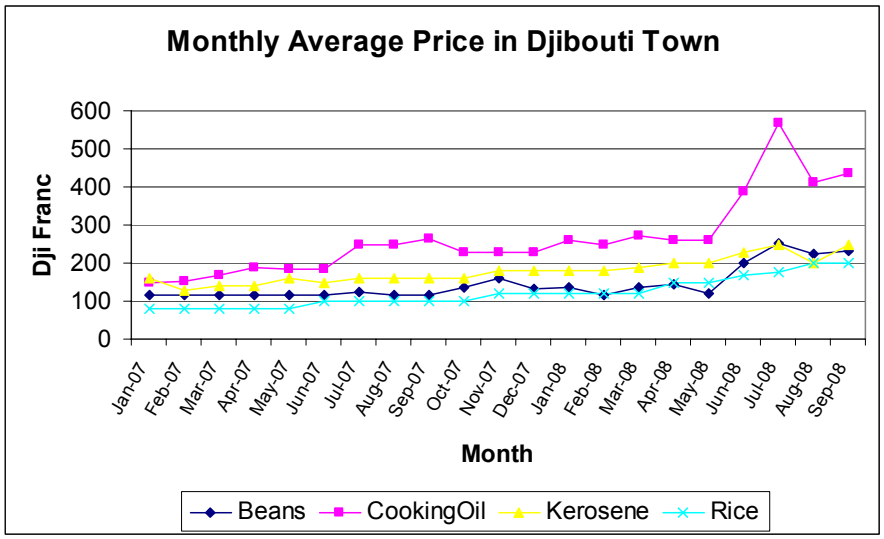
Djibouti is a net-importing country for almost all products[15]. This dependency puts Djibouti into a difficult position in relation to global price developments. Within the last two years, global market price increases for basic commodities such as cereals and oil were immediately translated in to increased prices for basic commodities on the local market[16]. As households are reliant on the market these local real price changes have translated into reduced food security nationally.

[15] FAO, 2008
[16] See FEWSNET alert 2006

3.5 Market and Prices

Prices of key commodities
Figure 2 shows the change in the price of rice, cooking oil and kerosene and beans between 2007 and October 2008. As the graph indicates, since 2007 all prices have shown a steady upward trend, which is also highlighted in FEWS food security alerts. For example vegetable oil increased by 68% and rice by almost 100 % between January 2007 and October 2008. In May 2008 FEWSNET announced that staple food costs were 46% above the five-year average. Further it was emphasized that the total expenditure basket was 63% above the lowest paid salaries in urban areas.[17] This trend can be attributed to the global price increase of food and energy prices since the beginning of 2007. All the traders interviewed indicated that prices of key food commodities increased compared to one year ago.

Figure 2: Nominal price development for selected commodities



Source: FEWSNET, 2008

In comparison, the wage for unskilled labour was reported to be the same level or lower than last year, reflecting limited demand partly owing to slowing down of port and rail activities and abundant supply as many, including newcomers from rural areas and neighbouring countries, are looking for income opportunities.

Supply, Restrictions & Credit
According to the interviewed traders the biggest trade restrictions are as follows in order of importance: i) high costs of commodities, ii) low consumer demand, and iii) lack of credit. Only three out of the 16 traders interviewed receive credit from their suppliers. The overall amount of credits taken by these who had access to credit increased while generally credit available to traders seems to be low compared to last year.

Consumer Behavior / Credit
Interviewed traders indicated that there has been a change in consuming behaviour within the last 12 months. Majority of them reported that people bought cheaper goods and in smaller portions or fewer quantities, resulting in less volume purchased. However some people purchase in smaller quantities but more frequently, resulting in no change in the total quantity purchased.

10 out of the 16 traders interviewed offer credit to the clients. Over 50% of the traders reported the request for credits has been higher compared to last year. They offer credit to salaried households and to loyal customers.

Commodities
The most heavily traded products by the interviewed traders in the last 90 days are rice, wheat flour and cooking oil. About 40% of the traders reported that the sales volume of their top two products declined compare to one year ago. The reason given was overwhelmingly that the price rise has reduced the number of customers. In general, over 60% of the traders indicated that their current sales volumes of key commodities are lower compared to last year while a few traders reported that their sales volumes

[17] FEWSNET, 2008

are higher. In general, the traders confirm that high food price is eroding the purchasing power of consumers.

Livestock Market
Livestock, in general, is a savings mechanism for urban households in Djibouti. Agriculture including livestock production contributes only 3-5% of GDP and provides only 10% of food requirements in Djibouti[18].

4 Main Findings

4.1 Strata profile

Under the 2002 administrative breakdown, Djibouti Ville and its suburbs are divided into 5 districts (arrondissement 1-5) which are further divided into 91 zones (districts). Arrondissement 1 to 3 are located to the east of the Ambouli river and are the older part of the town. Arrondissement 4 and 5 which lay to the west of the Ambouli river, developed in 1980s-90s as a rather ad-hoc settlement area for the increasing city population as well as people from the rural part of the country. The areas to the west of Ambouli, commonly referred to as Balbala, is generally poorer than the areas to the east of the river as most people in Balbala do not own the land they have settled on and live in housing constructed with less durable materials such as wood frame and corrugated iron or even carton box walls. According to the FEWSNET 2004 Baseline, the typical plot size ranges from 60-120 square meters.

The main ethnic compositions of the capital area are Somali and Afar, and broadly speaking, Arrondissement 1-3 have higher proportion of Somali speaking population as compared to Arrondissement 4-5 where relatively more AFAR speaking population reside.

The age composition of the households interviewed in this EFSA was 15.5% below 5 years old, 31.4% between 6 and 18 years old, 50.0% between 19 and 60 years old and 2.5% over 60 years old. Average age of household head in this study was 43 years old. The overall gender composition of the household studied demonstrated a normal composition, 49% male and 51% female.

4.2 Migration patterns

The EFSA study found that almost half of the household interviewed has some members of the household who live in the rural areas, which confirms that the urban-rural linkage is strong in Djibouti.

In terms of inflow of rural population to the capital area, FEWS report in September 2008 reported a mass migration of rural households to urban areas. The EFSA study found that 10%-26% of the household experienced migration into the capital area of at least one member of household. In stratum 1, in 10% of the case (26 households), the household itself moved in, while 23% (or 61) of the household received some members to join them in the household.

The origin of the immigrants varied. In the cases where household itself has moved, 50% (13 households) reported to come from Ethiopia, and 23% (6 cases) from rural area of Djibouti. In cases where households received newcomers, the majority came from Ethiopia (66% or 40 cases) and Somalia, followed by rural areas of Djibouti (18% or 11 cases). The average number of new immigrants per household was 0.8 person per household, amounting about 10% increase in their household.

4.3 Main Livelihood activities

The main livelihood activities of the capital area are casual labour, salary/ pension, petty trade (food, Qat), and commerce. There is large number of unemployed, which is estimated to be 50-60% (DISED 2002, FEWS 2004). In discussion with key informants, the perceived percentage of the salary/ pension population ranged from 0-30% in each of the quarters.

[18] Brass, 2008, page 16

4.4 Availability of basis services (WATSAN)

The main sources of water for the Balbala residents are public tap (30%), private taps in the house (17%) and reseller (17%). In addition, many access water through neighbours.

In terms of distance to the water source, 66% of HH in Balbala and 91% of the HH in the city has water access within 250m. However, 14% of Balbala reported the distance to be more than 500m. In general, water access in Balbala is worse than in the city. For example, one quarter (Parc de betail) depends 100% on resellers which in general costs four times the price paid by households connected to the ONED (the network that supplies tap water directly to houses). Although the issue was not directly brought up in the key informant interviews, according to FEWS water is being rationed in number of quarters interviewed.

The overall daily water usage per person was 26 litres, On average the cost for litre of water is 93 FD, with households in Balbala reporting a cost per about 10% more per litre. The FEWS baseline reported that in Djibouti, more than 40 percent of households have no proper drainage system for waste water. The situation is particularly acute in the densely populated areas of Djibouti-ville where most of the population lacks proper sanitation services.[19] In terms of toilet facilities, the EFSA results indicated that over 80% of the households used a traditional latrine. Small percentage of HH in Balbala used improved latrines/toilet facilities (13%). These figures shows improvement compared to the 2006 MICS report, which showed 68.8% of households using the traditional latrine or improved facility.

4.5 Education

According to Annuaires Statistiques, 2007-08, there are 34 schools, serving the total of 42,231 students in the capital area. According to several key informants, school enrolment for girls has improved thanks to the government's sensitisation campaign. Others noted that some households still do not send girls to school, preferring them to do the household choirs. The MICS reported a net enrolment rate in primary schools of 66.2%, and in secondary schools of 41%. Net completion rate for primary school 20% while according to Annuaires Statistiques, the ratio of students in the public school is 52.9% boys to 47.1% girls.

The challenges for education according to the key informants are access and affordability. In some dsitricts the key informant reported that there is not enough space for students. In addition, even with free education, poorer families still can't afford some of the hidden costs such as text books, transport and clothing. 12 out of 26 key informant noted that the primary school enrolment rate dropped in the last six months as poor households are no longer able to afford education-related expenses in face of high food prices.

4.6 Health

According to the information from the key informants, hospitals and health centres are located within accessible distance. However, because medical services are not free, many poor households cannot access these facilities. For emergencies, the population in Balbala needs to access the hospital in the city centre which is 4.5km away.

The results from EFSA show that the common diseases are diarrhoea, fever, and phenomena. In addition to the cost of accessing medical services, high cost of medicine prevents poorer household from receiving treatment. On average, the household surveyed in this EFSA spent 955 FD (about 5.4 US dollars) per months per household, although the value wildly varies between the two strata, being 440 DF for the households in the city and 1085 for the households in Balbala.) In 2003 FEWS estimated the average expense on medicines by the 'very poor' was 270 DF per months, the middle spend more than twice this amount and the better off about 7-times. While the data collected by this EFSA is not able to

[19] 2004 PRSP and Crossroads of the Horn of Africa: Djibouti Poverty Assessment (WB)

suggest the cause of the increased medical expenditure to increase between the two periods, the increase in medical fees could be a contributing factor. During the interview one key informant mentioned that the cost of admission for childbirth has increased by 5 times compared to last year.

4.7 Household composition

Based on the study's result, the average household size in the capital area is 7.8 persons per household with 90% of the household having dependents. This figure is much higher that the 5.8 persons reported in MICS report 2006 but in line with the FEWS baseline result of 7-10 persons per household.

The MICS reported that 75% of households are headed by men and 25% by women. The EFSA result showed a much higher percentage of female-headed households. This difference might have been due to enumeration error or the focus of the EFSA on Balbala and poor households in the old part of town. 18% of the heads of household in this study was widow or widower.

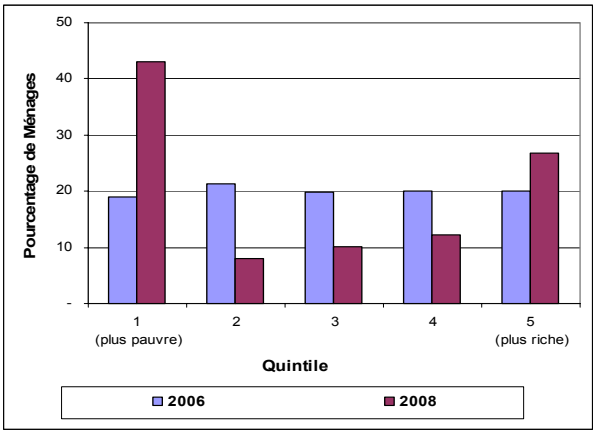
Poor households in the city are much more likely to have of orphans, chronically ill and disabled members in the household than the households in Balbara (stratum 1). However, this difference might derive from the sampling method, as for stratum 2 used purposive sampling in order to identify and interview the poorest portion of the population.

4.8 Household assets and Utilities

In both strata, over 90 percent of households responded that they were either the owner or renting their home. In general, most households are constructed with a tin roof with a cement or earthen floor and one-third of the households in both strata indicated being connected to the electrical grid.

Households seem to possess few durable or luxury assets[20]. In both strata, households indicated that they owned between 0 (36 percent) and 1 of these items (26 percent). Less than 10 percent possessed 4 of these assets or more. When asked to recall three months prior to the study how many of these assets the household owned, there was very little difference. However, 5 percent of the households indicated that they had sold of luxury assets in the previous 3 months, the reasons given were: school fees (29 percent), purchasing food (29 percent) and medical expenses (11 percent). It should be noted that a higher percentage of households in stratum 2 indicated selling of assets for medical expenses

According to the literature on poverty, wealth is the value of all natural, physical and financial assets owned by a household, reduced by its liabilities. In 2006 the MICS collected information on the number of people per room, ownership of specific assets and household water access. While measuring wealth is possible, it is requires making assumptions about the value of assets. Comparing the wealth index scores of the households between the two periods allows for changes in relative poverty to be measured. Using the same assets and household factors collected in the 2006 MICS and 2008 EFSA and employing the same factor weights and quintile thresholds it is possible to estimate the change in relative poverty between the samples.



[20] These include: radio, television, mobile phone, fixed telephone, refrigerator, motorcycle, CD player or satellite dish.

The graph above highlights the change in the level of relative household poverty between 2006 and 2008. Comparing the results of wealth index between for the two periods indicates that the number of households in the 2nd, 3rd and 4th quintiles has declined with more households (9 percent) either becoming relatively richer than in 2006 or relatively poorer (24 percent).

It is beyond the scope of this analysis to attribute the change in relative poverty to high food prices. However, as the graph does indicate that although a few of the middle quintile households (2 through 4) may have become relatively richer, many more have become relatively poorer.

In the rural areas, animals such as goats, camels and cows are a sign of wealth and can be used by households as a form of savings to cope during lean periods. In the urban strata, 8 percent of households indicated that they owned between 1 and 25 goats. Very few households (<1 percent) reporting owning any of the other types of livestock. Of the households that reporting owning goats, 28 percent indicated that they had sold one or more animals in the last 6 months to pay for school fees, purchase food and pay medical fees. The number of households is too small to be conclusive, however, anecdotally it suggests and agrees with the key informant information that in response to the higher costs of medical assistance, food and indirect school fees have caused the few households with livestock to sell some or part of these assets to meet their household expenditure needs.

4.9 Income and Credit Sources

In the 2003 FEWS baseline, households were grouped into livelihood classes and their income estimated. The table below lists the livelihood activities and associated income for the 'very poor' to 'lower middle' income classes.

Category	Estimated Income	Number of Income Sources	Activities
Very Poor	15,000-25,000 FD	1	Petty trade or casual labour
Poor	25,000-40,000 FD	1	Salary/Pension Petty Trade Combination petty trade and casual labour
Lower Middle	40,000-80,000 FD	1	Salary/Pension Petty Trade Combination of petty trade and skilled labour

The urban EFSA asked households to identify the key economic activities they undertook and the contribution these activities made to the household's total income. According to the household response, 86 percent of the households had one single source of income.

Clustering the households responses based on the declared activities identified 9 categories of economic activities. They are presented in the table below. In the questionnaire households were asked to identify which months they engaged in their key economic activities. Due in part to the limited number of activities pursued by the households there is a very small variation when, during the year, that households engage in their economic activities.

When asked, 37 percent of the households indicated that their primary economic activity had changed. No particular economic group reported a significantly high change in their economic activities. However, of the households that had changed their economic activities in the last 12 months, 43 percent indicated that their income had reduced in the last 12 months. In response to this reduced of income, households indicated that they coped by spending less on food (52 percent), and either or both reduced the quality and quantity of their food (45 and 41 percent respectively).

Economic Class	Percentage of Sample
Casual Labour	31
Salary	35
Petite Commerce	11
Selling Food	6
Skilled Labour & Domestic	5
Begging	4
Other	4
Selling Qat	2
Trader (formal)	2
Total	100

Total household expenditure is an acknowledge proxy for household income. In the following section of this report, household expenditure will be explored in further detail. However, calculating the average monthly expenditure for each economic class provides some strong parallels with the 2003 livelihoods baseline. In the table below, the average household expenditure by economic activity is compared with the FEWS livelihood presented earlier; and adjusting for inflation suggests that in the last five years more households have become poorer.

Category	Estimated Income	Income Levels 2008[21]	Activities	EFSA Activities/Average Expenditure (rounded)
Very Poor	15,000-25,000 FD	17,500-30,000	Petty trade or casual labour	Begging 28,800
Poor	25,000-40,000 FD	30,000-46,500	Salary/Pension Petty Trade Petty trade & casual labour	Skilled Labour/ Domestic 34,000 Casual Labour 38,500 Selling Food 41,500 Small Trade 44,000
Lower Middle	40,000-80,000 FD	46,500-93,000	Salary/Pension Petty Trade Combination of petty trade and skilled labour	Selling Qat 49,500 Other[22] 58,000 (driver, port officer, teacher, etc..) Salary 74,000
Upper Middle/Better Off	80,000-150,000+	93,000-175,000+	Salary Salary and Small Business Large Business	Trader (formal) 302,000

Aside from the economic activities that households engage in, it is the number of household members that are actively employed can affect the household level of income. When asked, 80 percent of the households indicated that they had one member earning money for the household. The remaining 20 percent is divided between no household members working (12 percent) and two members working (8 percent). Comparing this with the number of household members that were earning income in the previous six-months illustrates no changes.

Poor access to credit can impede a households potential for economic growth and food security. According to the FEWS baseline 'very poor' and 'poor' households had no access to formal credit. Short term informal credit is available for households but it is typically given by retailers and shopkeepers for those with a regular monthly salary. Alternatively, women involved in petty trade frequently form their own credit/savings groups, often with the assistance of a local community association. These systems are founded on each member contributing a small sum every month, with one member receiving in turn the total amount collected for the month.

[21] According to the World Bank inflation in Djibouti between 2003 and 2007 was 3.1 % per annum.

[22] Other was use here as it was indicated as an activity outside the options available. After reviewing the questionnaires, 'other' tend to be activities such as driver, bus assistant, shop assistant, etc. These individuals are employed but are not salaried nor or they casual labour

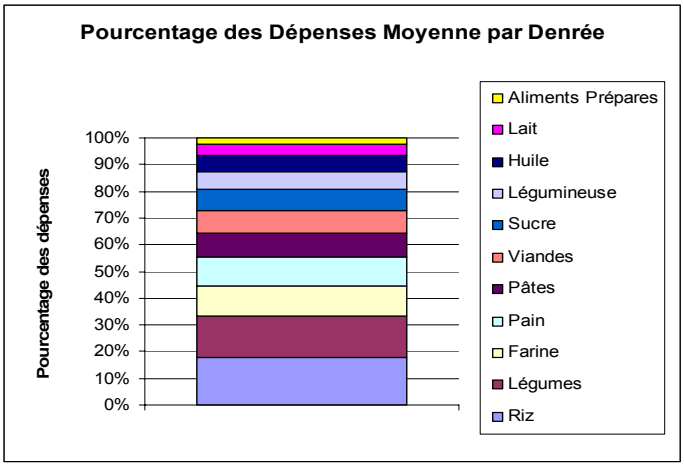
When asked, only 17 percent of households indicated that they had accessed credit in the last 3 months. When examining which economic groups accessed the credit, almost three-quarters of these households were engaged in casual labour, salary or small trader. An overwhelming proportion of households indicated that they had used the loan to buy food (69 percent). The remaining households that had borrowed in the previous three months indicated that they had borrowed money for school fees, and other activities. The sources of credit households used were family and friends (44 percent), informal lending groups (24 percent), and money lenders/traders -for commodities- (19 percent).

4.10 Expenditure

In the household questionnaire, households were asked to indicate the value of their food and non-food expenditure over the previous seven days (food), thirty days for regular non-food expenditure (e.g. Qat, water, etc…) and the previous six months for expenditure on larger food and non-food items (e.g. clothing, education, etc…). On average 59 percent of household expenditure is allocated to food. The table below is the average proportion of household expenditure over 30 days for food and other key items. These proportions are compared with the results of the EDAM and FEWS studies. As the results suggest, based on the percentage of household expenditure on food, water, education, etc. the average household in this study be classified as 'poor'.

	EFSA	EDAM-IS2 - Extremely Poor -	FEWS – Very Poor -	FEWS – Poor -
Food	59%	65%	66%	58%
Water	5%	10%	8%	6%
Education	3%	7%	8%	5%
Health	2%	2%	1%	1%
Electricity	5%	3%	0%	0%
Other (transport, clothing, rent ,etc…)	26%	13%	17%	30%
Total	100%	100%	100%	100%

Exploring further household expenditure on food illustrates that on average 65% of the household's expenditure on food is allocated to either vegetables or cereals. On average, a quarter of the total household budget allocated to food is spent on Oil (6 percent), milk (4%), animal proteins (9 percent) and pulses (7 percent). The graph to the right is the proportion of **household expenditure on food** by food item type.



In the questionnaire, households were asked to estimate over the pervious 30 days how much they had spent on Qat. Qat, is a socially acceptable and legal narcotic available in Djibouti. According to a recent World Bank study Qat can suppress appetite but is not found to be a substitute for food[23]. According to the households, on average 2 percent of the household's total expenditure is spent on Qat. Comparing this with the total amount spent on food, Qat is equivalent to 5 percent of the household's total expenditure on food.

[23] Milanovic, Branko, "QAT EXPENDITURES IN YEMEN AND DJIBOUTI: AN EMPIRICAL ANALYSIS" World Bank, 2008

Comparing the value of a selected basket of items purchased by the households in the EFSA and the 2003 FEWS baseline highlights that on average the households are spending up to twice as much per person for approximately the same quantity of the food items.

Household Expenditure (FD) per Person by Household Typology						
	Poor	Poor (per person)	Quantity (kg/month)	EFSA	EFSA (per person)	Est Quantity (kg/month)
Rice	1,800	257	22.5	4,564	634	26
Pasta	1,500	214	12.5	2,554	380	9
Flour	1,800	257	22.5	3,208	466	23
Oil	1,000	143	5.0	1,753	258	5
Bread	2,700	386	150.0	2,831	394	115
Milk Powder	1,000	143	1.0	1,651	241	1
Beans	1,200	171	12.0	1,960	281	8
Kerosene	2,400	343	30.0	3,120	449	

It should be noted that in the EFSA questionnaire, households were asked to indicate their expenditure on cooking fuel over the previous 30 days. The EFSA did not distinguish between kerosene, charcoal and firewood. According to the responding households, three-quarters indicated that the price for cooking fuel had increased. As a mechanism to cope, over half the households indicated that they had reduced their consumption. More importantly households and key informants indicated that due to the high prices for kerosene households had switched from liquid fuels to solid fuels such as charcoal and firewood which are imported from Somalia and Ethiopia.

As indicated earlier, households allocated, on average, 59 percent of their expenditure on food. In the questionnaire, households were asked to indicate in the last three months if they had reduced the amount they purchased due to high food prices. Of the regular food and non-food purchases, over half the households indicated they had reduced their consumption of: rice (62 percent), sugar (56 percent), oil, fuel, soap, bread, pasta and flour (between 53 and 50 percent) due to higher food prices. More alarming however, is that almost half (43 percent) of the sample indicated that they had reduced their consumption of water.

According to the baseline literature, there are seasonal variations in household expenditure for electricity, school fees and clothing. As indicated earlier, less than one-third of household have their households connected to the electrical grid. This study was conducted at the beginning of October when schools had restarted. Although this quarterly expenditure could over estimate the household's average expenditure, school fees were averaged over the previous 6 months, thus reducing this bias on the result. Likewise, as indicated earlier, this study was conducted soon after the celebration of Eid. This religious festival is traditionally when household purchase clothing. Although this study averaged the household estimation on clothing over the previous 6 months, there is the possibility that household expenditure on clothing is over estimated due to the Eid celebrations.

4.11 Food access gap

On average 59 percent of the household's expenditure is allocated to food. Although this has not varied significantly with the 2003 baseline, the cost per person per month has. Based on the quantities of different food items required by a 'poor' household in 2003 and updating the cost with the current market prices from the trader interviews, illustrates that households require 30 percent more for the same basket. The table to the right is the estimated cost of a standard FEWS 'poor' food basket for a family of 7. However for comparability, the estimated expenditure has been changed to per person.

Item	Quantity per Month (kg)	FD Per month per person	
		2003 FEWS	2008 EFSA
Rice	22.5	257	566
Pasta	12.5	214	482
Sorghum	15	257	461
Flour	22.5	257	443
Oil	5	143	230
Sugar	20	229	393
Bread	5	386	429
Milk Powder	1	143	161
Beans	12	171	398
Meat	3.5	250	400
Vegetables	20	343	371
Total Food		**2,650**	**4,334**

It should be noted that in 2008 the Government of Djibouti introduced price subsidies on wheat flour, rice, sugar, powered milk and oil. Consequently, the price change could be significantly higher had these policies not been put into place. Examining the average amount spent on food per person over the past thirty days by economic group and wealth ranking presents the following

Wealth Group	Economic Activity	Percent Expenditure on Food	Expenditure Per Person per month (FD)
Poor	Selling Food	58%	3,243
Poor	Skilled Labour & Domestic	67%	3,371
Poor	Petite Commerce	62%	3,410
Very Poor	Begging	69%	3,491
Lower Middle	Selling Qat	69%	3,524
Poor	Casual Labour	58%	3,620
Lower Middle	Other	59%	5,057
Lower Middle	Salary	57%	5,236
Better Off	Trader (formal)	43%	7,515

Examining the estimated expenditure per person by economic group, highlights that the majority of the 'poor' households are no longer spending as much per capita as their typical food basket in 2003 would suggest. Typically, households have different sources of food that can be accessed to meet their food requirement. However, in the case of Djibouti, 98 percent of the food that was consumed by households in the 7-days prior to the study was purchased. Households indicated that on average 56 percent of their purchased food came from a formal traders with the remaining 42 percent from roadside traders. Comparing the household food sources from their consumption in the last 7-days with the food sources from the same items in January highlights no significant change between now and ten months ago.

4.12 Household and child diets/food consumption

According to the household responses on average adults and children ate almost three times in the previous day. Comparing the average number of meals by economic activity (table below) illustrates

that, in general, as the household's total expenditure per month increases the average number of meals consumed within the household also increases.

Wealth Category	Economic Activity	Meals Male Adults	Meals Female Adults	Meals Children
Very Poor	Begging	2.7	2.5	2.8
Poor	Skilled Labour & Domestic	2.8	2.8	2.6
Poor	Casual Labour	2.9	2.7	2.8
Poor	Selling Food	2.8	2.8	3.1
Poor	Petite Commerce	2.9	2.9	3.0
Lower Middle	Selling Qat	3.0	2.6	3.1
Lower Middle	Other	3.0	2.9	2.6
Lower Middle	Salary	3.0	2.9	2.9
Better Off	Trader (forma)	3.0	3.2	3.6

As discussed earlier in this report, food consumption recall can provide insights into household access to food. Calculating a food consumption score and categorising the households as described in Annex 2 of this report results in 22 percent of the households having a consumption that would be classified as poor or borderline.

Consumption Group	Percent of Sample
Poor Consumption	8%
Borderline Consumption	14%
Adequate Consumption	78%
Total	100%

Poor Consumption:
Households with poor consumption have a very monotonous diet. Cereals, mostly bread, are consumed everyday with complements of oil and sugar every other day.

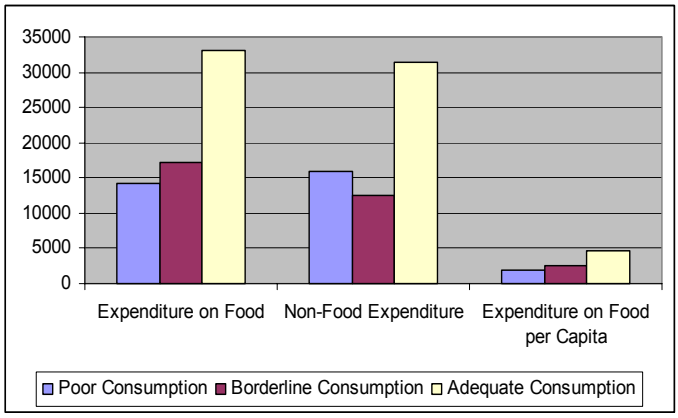
Borderline Consumption
In this category, households consume cereals, a combination of rice bread and pasta, vegetables, oils and sugar every days and meat once a week.

Adequate Consumption
Similar to the borderline consumption group in terms of their consumption of cereals, households with adequate consumption consume meat everyday. Beans and milk, unlike the other consumption groups is also consumed everyday and 3 days a week respectively.

Examining the distribution of the food security classes between the economic activities, illustrates that as the average household expenditure increases, the percentage of the household with poor or borderline consumption decreases

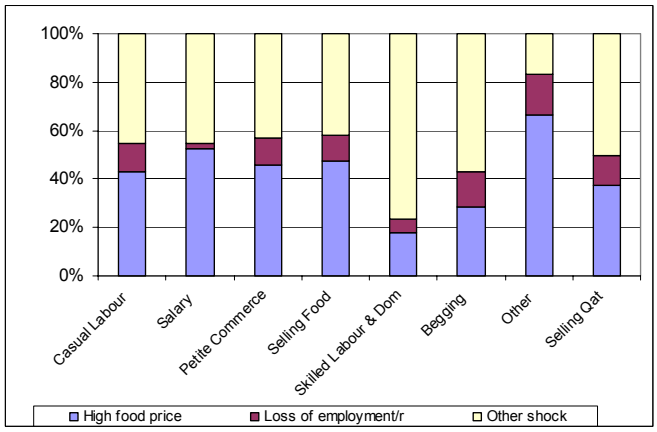
Better Off	Economic Class	Poor Consumption	Borderline Consumption	Adequate Consumption	Total
Very Poor	Begging	36%	14%	50%	100%
Poor	Skilled Labour & Domestic	6%	29%	65%	100%
Poor	Casual Labour	14%	19%	67%	100%
Poor	Selling Food	5%	11%	84%	100%
Poor	Small Trader	0%	20%	80%	100%
Lower Middle	Selling Qat	0%	13%	88%	100%
Lower Middle	Other	8%	25%	67%	100%
Lower Middle	Salary	3%	6%	91%	100%
Better Off	Trader (formal)	0%	0%	100%	100%

Looking at the average household expenditure on food, non-food and expenditure on food per capita suggests an interesting and intuitive relationship. As the graph to the right highlights, as the average household's consumption improves, the total expenditure per capita on food and total expenditure on food and non-food increases.



4.13 Coping strategies and risks

In the household questionnaire, households were asked to identify if they had been affected by any negative events in the last three months. Three-quarters of the households indicated being affected by a shock. The most pronounced shock, reported by 43 percent of all the households in the sample, was high food prices. Other shocks included the loss of employment and illness/medical expenses. Examining the responses of the households to shocks by economic group illustrates that even among the different economic groups, high food prices followed by loss of employment were the most prevalent shocks faced by the household.



According to the households (97 percent) indicated that high food prices reduced the money they had to spend and 93 percent of the households indicated that it had reduced their household's access to food. In response the high food prices, over half the households indicated that there was nothing they could do to respond to high food prices. The remaining households indicated that they either reduced their expenditure on food (12 percent) the quantity of food (9 percent) or the quality of food (7 percent).

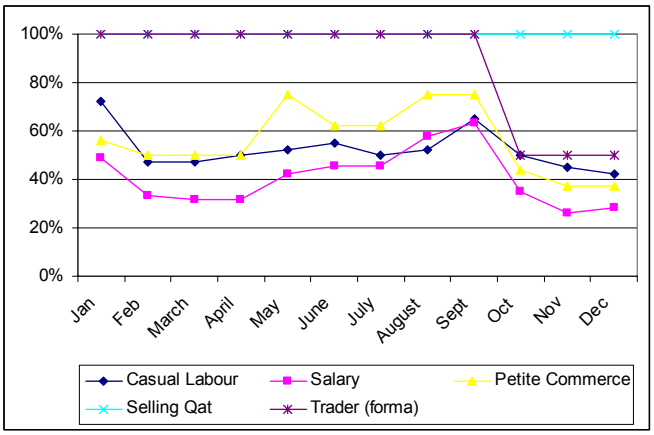
Households were also asked in the last 7-days if they had employed any traditional coping mechanisms due to difficulties in meeting their household's food needs. Of the respondents, approximately one-third of households indicated that they had not applied any coping strategies. However of the remaining 75 percent of households, 20 percent used 1 coping strategy, 17 percent 2 coping strategies and 15 percent 3 coping strategies or more.

Drawing upon the literature of measuring the impact of coping on household food security, a standardised Coping Strategies Index was created. The tables below provide the average CSI score by economic activity and food consumption group.

Economic Activity	Average CSI Score
Selling Food	10.9
Small Traders	7.0
Casual Labour	6.8
Other	5.4
Total	5.2
Begging	4.0
Selling Qat	3.9
Skilled Labour & Domestic	3.6
Salary	3.0
Trader (formal)	0.6

Food Consumption Group	Average CSI Score
Poor Consumption	7.5
Borderline Consumption	7.4
Adequate Consumption	4.6

In the study, households were also asked to identify which months they were most affected by the shock. The graph to the right depicts, for the main economic groups, which months they were most affected by high food prices As the graph highlights, for salaried, small traders and casual labour the most difficult months were between June and September. These months, as mentioned earlier in the FEWS 2004 baseline, are the months when employment opportunities are the lowest.



This study also measured the mid-upper arm circumference (MUAC) of every child between the ages of 6 and 59 months in the household. The study was not designed to provide a prevalence of under 5 malnutrition. However, drawing upon the results of the study, **the percentage of households with children** in the sample with one child or more by the following measurement is presented in the table below.

Measurement	Percentage
<110mm (red)	2.8%
>110mm and <125mm (yellow)	5.6%
>125mm (green)	91.6%

Examining the various characteristics of the households, with households that had children below 110 mm, a high proportion of these households were headed by a woman. Similarly, households with a child with a MUAC measure below 110mm had an average CSI score almost double the average for the rest of the sample. These households allocated almost 66 percent of their total expenditure to food compared to 57 percent for the rest of the sample with children and spent 1,300 FD per person per month less than households with children that were not malnourished.

5 Results

5.1 Extent of HH food insecurity

As the results in this report and preceding baselines have highlighted, in Djibouti Town, the underlying factor influencing the food security and the nutritional situation of households is poverty. Poor households are characterized by a lack of purchasing power, low human capital accumulation, and low standards of living. Examining the change in relative asset poverty between 2006 and 2008 suggests that between 2006 and 2008 24 percent of the households in the survey have become more asset poor. Comparing the wealth rankings and economic activities undertaken by households between 2003 and 2008 highlight that 'lower middle', 'poor' and 'very poor' households are allocating between 57 and 69 percent of their total expenditure to food. Comparing the cost of a basic food basket of a poor household in 2003 and 2008, illustrates that households need to spend on average over 30 percent more for the same quantity of food for a family of seven.

Drawing upon this evidence a composite household food security measure was created. The measure classified households as highly food insecure, moderately food insecure, moderately food secure and food secure. This classification was made based on the 1) the households food consumption score, 2) the percentage of household expenditure in food, 3) the households 2008 relative poverty ranking, 4) the number of food related coping strategies used by the households in the previous 7-days and 5) the presence of a malnourished child (MUAC<110mm) in the household

The result of this classification on the sample is as follows:

Food Security Classification	Percent of Households
Highly Food insecure	10%
Moderately Food Insecure	56%
Moderately Food Secure	14%
Food Secure	19%
Total	100%

5.2 Consumption

The table below indicates the number of days different components of the household's diet were consumed and the average food consumption score by food security class. As the table indicates, as the food security status of the household improves both the average food score and the number of days the basic food items are consumed, increases. Of the households that are classified as 'highly food insecure' their current consumption pattern is less than seven days for the three basic food categories (starches, pulses/proteins, vegetables and oils). However, the table also highlights that the other three categories of households are able to meet at least a minimum basket of food items.

Food Security Measure	Starches	Pulses	Vegs	Fruits	Protein	Milk	Oil	Sugar	FCS
Highly Food insecure	5.1	0.8	1.8	0.2	1.1	-	4.3	4.7	21.2
Moderately Food Insecure	7.0	3.8	6.0	0.6	3.6	2.5	6.8	6.8	60.0
Moderately Food Secure	7.0	4.6	6.7	0.4	4.3	2.9	6.9	7.0	67.0
Food Secure	7.0	5.5	6.7	1.5	5.8	3.7	6.7	6.9	80.2

5.3 Expenditure

As with the consumption analysis, as the household's food security status improves the total household expenditure and average expenditure on basic food items per capita increases. Moreover, as households have more income the percentage of their expenditure on water decreases while the reported quantity of water consumed per capita per day increases.

	Percentage Expenditure		**Expenditure Per Person Per Month (FD)**							
Food Security Measure	Food	Water	Total Expenditure	Food	Rice	Pasta	Vegetables	Meat	Oil	Milk
Highly Food insecure	57%	7%	3,600	2,138	507	129	76	88	115	36
Moderately Food Insecure	67%	5%	6,200	4,094	644	375	302	362	263	211
Moderately Food Secure	52%	4%	9,300	5,012	687	391	325	584	241	262
Food Secure	40%	5%	13,200	5,120	630	516	294	634	331	422

5.4 Economic Activities

Comparing the economic activities by the food security classification, illustrates that the highly food insecure are distributed throughout the different economic groups.

	Highly Food Insecure	Moderately Food Insecure	Moderately Food Secure	Food Secure
Casual Labour	17%	62%	15%	7%
Salary	4%	44%	16%	36%
Petite Commerce	3%	77%	9%	11%
Selling Food	11%	74%	11%	5%
Skilled Labour & Domestic	6%	59%	29%	6%
Begging	43%	36%	21%	0%
Other	8%	50%	8%	33%
Selling Qat	0%	88%	0%	13%
Trader (formal)	0%	20%	0%	80%

5.5 Household characteristics

According to the results, 10% of the households in the Djibouti-Ville area are highly food insecure. However, very few statistically significant characteristics could be found to distinguish this group from the households in other food security groups.

The households in the food insecure group are significantly more ($p<0.05$) likely to be engaged in begging than in salary or petty trading as their main livelihood activities. In addition, the number of rooms in the habitations of the highly food insecure and moderately food insecure households are significantly ($p<0.05$) fewer than those of the moderately food secure and food secure households.

Apart from these two, there is no apparent statistically significant ($p<0.05$) characteristics to separate this group from the others: indicators such as the size of household, sex of household, existence of chronic illness or disability in the household, asset ownership or migration were not significantly different among the four food security groupings . Consequently, the highly food insecure group are difficult to

be identified by visible characteristics. This suggests that underlying cause of food insecurity in the Djibouti-Ville area is primarily due to poverty, which as been exacerbated by the shock of high food prices. As the high food prices affected the whole population, but those who were already in a precarious economic situation have been hit harder, falling to become highly food insecure.

6 Recommendations and next steps

Calculation of number of beneficiaries

As discussed earlier in this report, this study sought to

1. To understand the impact of high prices on the urban population;
2. To provide information to enable:
    a. Estimate the number of people affected and response options;
    b. Estimate the extent to which they been affected by the price rise; and
    c. Understand the households' resilience/coping mechanism.

High food prices, in general, have impacted Djiboutian households ability to access enough food to meet their needs at all times by reducing the quantity of food that households can purchase from the market. However, the degree that households have been impacted is not homogenous across the population. The impact, according to the household results, is more acute for the 'poor' and 'very poor' households. As the evidence suggests, due to high prices, poor households are typically no longer to allocate enough of their income to purchase a food basket similar to the baseline in 2003.

In response, households are smoothing their consumption by reducing the quantity, quality of the meals they are consuming on a daily basis or substituting traditional component of their diets (e.g. rice) with cheaper alternatives (e.g. bread). Taking into consideration household dietary diversity, under nutrition of children under five in the household, household expenditure on food and coping, this study has classified the households in the sample as either 'highly food insecure', 'moderately food insecure', 'moderately food secure', or 'food secure'.

Based on the evidence analysed in this study, the 'highly food insecure' households due to a gap in their weekly consumption, the high proportion of their expenditure allocated to food and the number of coping strategies households are implementing to address higher food prices, require immediate support for the next 6 to 12 months as the shock of high food prices is normalised by time, improvements in household revenue and stabilisation or possible decline in the cost of basic household food item.

The 'moderately food insecure' households are currently coping with the shock of high food prices but are in a precarious situation. By adapting their consumption, allocating more of the income to food and adopting the occasional coping strategy to address high food prices, this study finds that these households are able to need a minimum consumption requirement. As indicated in the report, 'moderately food insecure' households are spending on average 500FD (<4 USD) per person per month on food less than the estimated cost of a minimum food basket for a 'poor' households.

This report predicts that if prices continue to increase beyond their currently levels it likely that households will continue to substitute their consumption with cheaper items, reduce further non-essential expenditure such as education and schooling in favour of food, as well as increase the intensity and frequency of food coping strategies. Thus this report recommends that programmes should be initiated by partner, the Government of Djibouti with WFP that allow households to reduce 'other' spending in favour of food. For example, on average households spend 2,500 FD per month on fuelwood. If new initiatives could be introduced that reduce household expenditure on cooking fuels by 50 to 75 percent or provide water fountains instead of the current use of trucked water; these would equate to saving equivalent to what a household of seven would spend on rice for the entire month.

The table below is the estimated number of households by strata. As described in the sampling section of this report, the sample was designed to provide results that are reflective of the households in the BalBala area and indicative of the poor population in the old part of Djibouti Town. Aggregating the population figures for the various quarters in each of the strata suggest a population 75,000 households in BalBala and Djibouti City.

Food Security Classification	450,000 people or 75,000 households	
	Percentage of Sample	Estimated Number of Households
Highly Food insecure	10%	7,500
Moderately Food Insecure	56%	42,000
Moderately Food Secure	14%	10,500
Food Secure	20%	15,000

Finally this report strongly recommends that after six-months, the Government of Djibouti, WFP and it partners conduct another assessment, more in-depth assessment, to measure how high food prices have impacted both rural and urban areas. The assessment should be more detailed and include both a quantitative measure of household food insecurity and a qualitative understanding of how household livelihoods have changed since 2004 due to repetitive drought and high food and fuel prices in the rural and urban areas.

Annex 1: Calculation of FCS and Food Weights

As indicated the in the VAM guidelines: "When creating a composite scoring system for dietary diversity (with or without the added dimension of food frequency), the choice of weights is obligatory and subjective. Weights are typically constant across analyses in order to have a better degree of standardization of the tool. … The guiding principle for determining the weights is the nutrient density of the food groups. The highest weight was attached to foods with relatively high energy, good quality protein and a wide range of micro-nutrients that can be easily absorbed.". The following weights were used for the calculations:

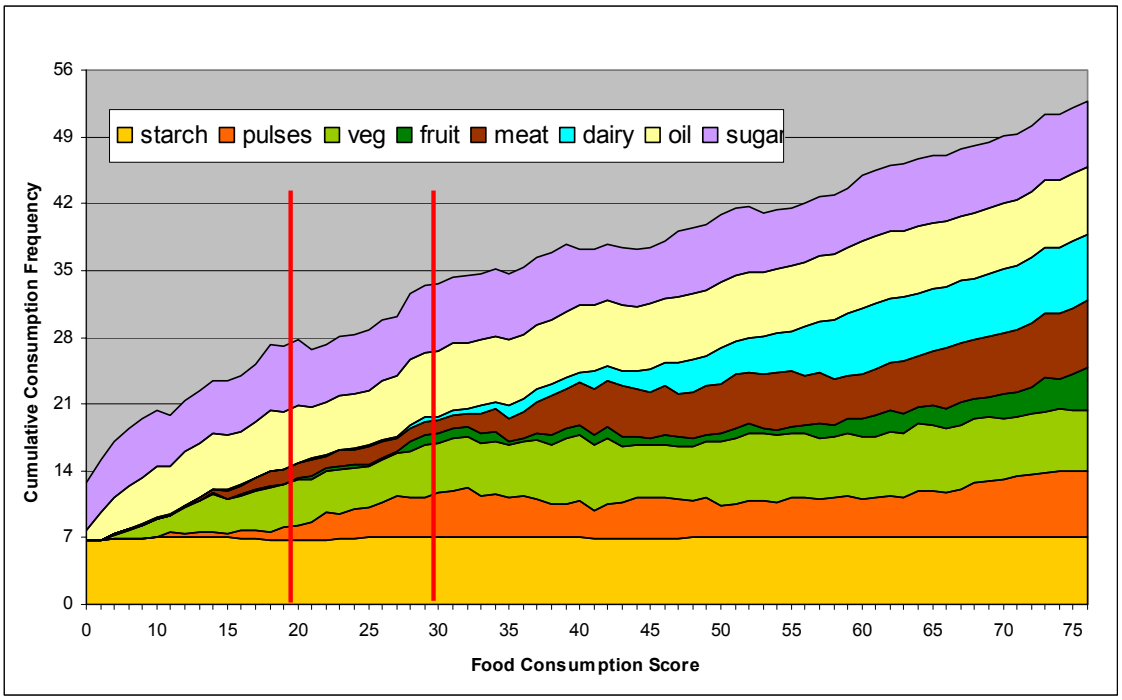
Food groups	Weight	Justification
Main staples	2	Energy dense/usually eaten in larger quantities, protein content lower and poorer quality (PER[24] less) than legumes, micro-nutrients (bound by phytates).
Pulses	3	Energy dense, high amounts of protein but of lower quality (PER less) than meats, micro-nutrients (inhibited by phytates), low fat.
Vegetables	1	Low energy, low protein, no fat, micro-nutrients
Fruit	1	Low energy, low protein, no fat, micro-nutrients
Meat and fish	4	Highest quality protein, easily absorbable micro-nutrients (no phytates), energy dense, fat. Even when consumed in small quantities, improvements to the quality of diet are large.
Milk	4	Highest quality protein, micro-nutrients, vitamin A, energy. However, milk could be consumed only in very small amounts and should then be treated as condiment and therefore re-classification in such cases is needed.
Sugar	0.5	Empty calories. Usually consumed in small quantities.
Oil	0.5	Energy dense but usually no other micro-nutrients. Usually consumed in small quantities
Condiments	0	These foods are by definition eaten in very small quantities and not considered to have an important impact on overall diet.

The FCG cut-offs are as follows:

FCS	Profiles
0-21	Poor
21.5-35	Borderline
> 35	Acceptable

Even though a commonly encountered complication is found in populations where consumption of sugar and/or oil is frequent among nearly all households surveyed, even when the consumption of other food groups is rare and the food score is otherwise low. Djiboutian population also does not display a homogenous pattern of oil and sugar consumption.

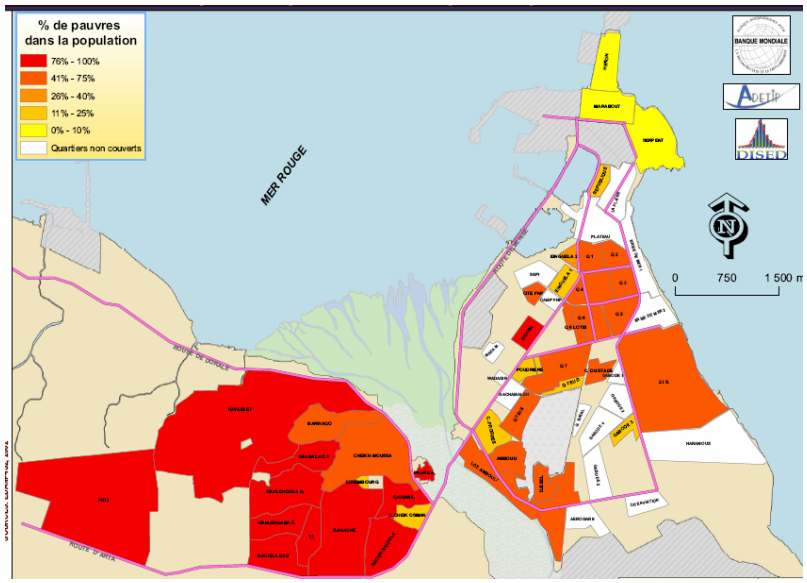
[24] PER Protein Efficiency Ratio, a measure of protein quality of food proteins.


starch
pulses
veg
fruit
meat
dairy
oil
sugar
Cumulative Consumption Frequency
0
7
14
21
28
35
42
49
56
0
10
15
20
25
30
35
40
45
50
55
60
65
70
75
Food Consumption Score

Annex 2 Stratification and Sampling

The city of Djibouti, as indicated in the literature has an estimated population of 630,000 thousand inhabitants. As indicated above, the study sought to provide guidance on urban interventions to address acute food insecurity due to high food prices and prolonged drought. Administratively there are 91 quarters within the city and surrounding areas. Drawing upon a recent Government of Djibouti and World Bank analysis using a poverty line of 198.229 FD (~4USD) per adult equivalent per annum, it was estimated that approximately 70 percent of the population in and environs around the City of Djibouti lived below the poverty line.

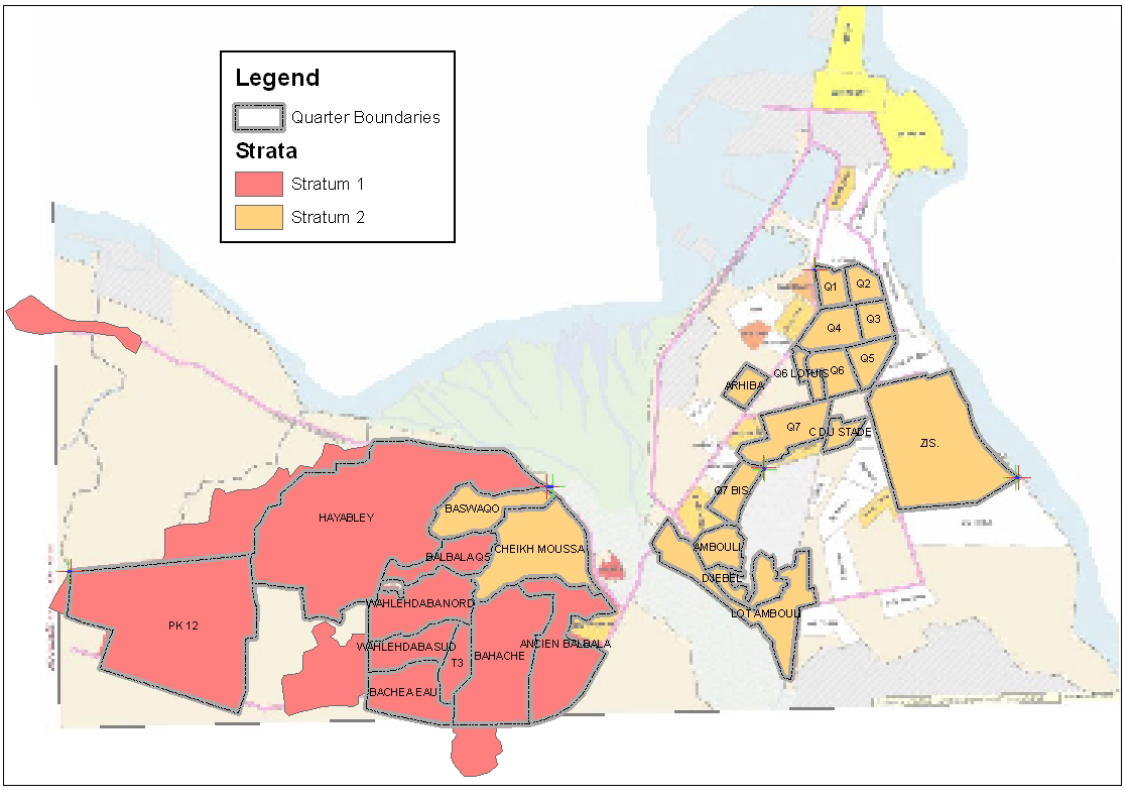
However, as the map below illustrates there is a significant variations between the different quarters. With the percentage of the population classified as poor ranging from less than 10 percent to greater than 75 percent. As the map highlights the extent of the poverty in Djibouti-city is particularly acute in the districts West of the Ambouli Wadiind (Balbera) with an incidence of monetary of poverty of higher than 70%.



Comparing this analysis with the 2003 baseline there are a significant number of similarities with Balbala having the highest concentration of poor households and the quarters in the city centre either being predominantly 'wealthy' or 'mixed'. It is beyond the scope of this section to discuss the commonalities in findings between the two reports. However, based on the results of their two previous studies, two unique strata were developed for the study. The two strata are as follows:

1. Stratum 1 – Balbala Poor: This stratum is composed of all the quarters in BalBala that have a poverty incidence greater than 70 percent. This includes the quarters (according to the 2002 administrative boundaries) of: PK12, Hayabley, Balbala quartier 5, Whala daba Sud, Whala daba Nord, Bache à eau, T3, Bahache, Ancien Balbala, and Quarawil. It should also be noted that since 2002 there have been migration of households from the rural area and neighbouring countries of Ethiopia, Somalia and Eriteria. Prior to the development of the sample, a WFP field team visited the area of BalBala and using a GPS identified new areas of settlements outside the 2002 administrative boundaries which were then included in the sample.
2. Stratum 2 – Djibouti City Mixed: The 'mixed' stratum, unlike BalBala poor with a more homogenously poor population is composed of middle and wealthier households, however within the quarters there are, 'Very Poor' and 'Poor' households. As a result, all the quarters with a poverty prevalence of between 20 percent and 70 percent were included in this stratum.

A map of the sample area and the strata are presented below.



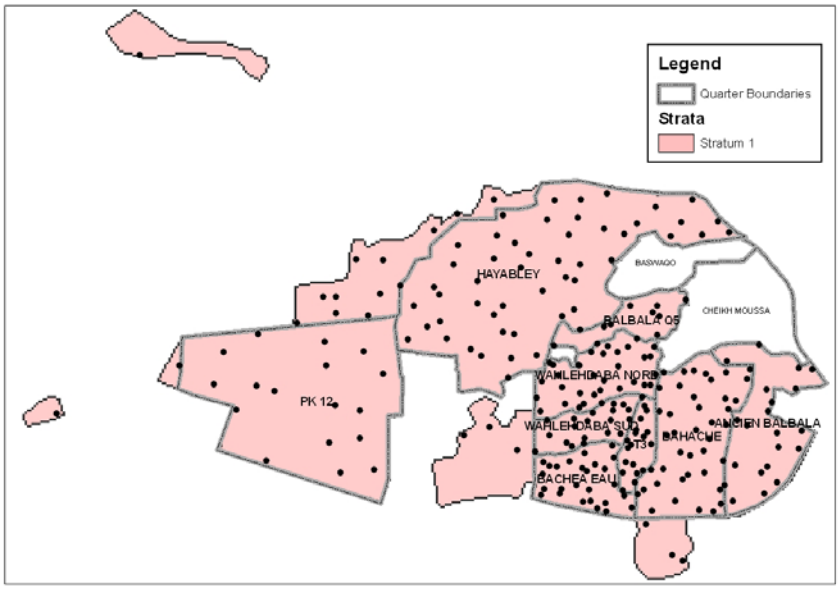
As indicated in the methodology section of this report, enumerators collected information at the household, key informant, trader and focus group level. For the first stratum, due to the homogeneity of the households according to both the World Bank poverty study and the FEWS Baseline within the geographic area of interest, a random sample approach was chosen for the selection of the households. In Stratum 2 however, due to the heterogeneity of the household wealth and poverty typologies, it was decided that a purposive sample was more appropriate in order to capture the impact of high food prices and drought on poor urban households. The sampling for the two strata are described below.

Strata 1 – Random Sample

Drawing upon the published WFP EFSA sampling guidelines, using a 2-strage cluster approach, a minimum of 250 households per strata is require to provide a representative result. After discussions with the Direction des Statistiques et des Enquêtes Démographiques de Djibouti (DISED), it became apparent that a standard 2-stage cluster exercise was not feasible[25] within the timeframe of an EFSA.

[25] At the start of the development of the sample, the assessment team requested from DISED the most recent enumeration zones, their locations and lists of households. The assessment team was then informed that the most recent enumeration of the households in the city of Djibouti was the 2002 however, DISED were not able to provide more recent household lists. A second alternative was then explored by using the quarters as clusters and selecting the number of households by PPS using a list of all the households in the quarter. However, the assessment team was informed that a current list of households (less than 6 months old) was not available. Thus, a standard 2 stage clustering exercise was not possible.

After exploring several alternatives, it was decided to employ a grid method. Using the the DISED 2002 estimation of the number of households in each of the 13 quarters[26]. Applying the recommended sample size of 250 households to the proportion of households in each of the quarters, a total number of household per quarter was calculated. Each quarter was then geographically subdivided into the appropriate number of equal size tiles. For example, based on the 2002 estimate of the number of households, the quarter Hayabley was calculated to have 20 percent of the total population within the sample. Correspondingly, 52 households from the sample needed to be selected from this quarter. Within each tile a random point was then drawn and the latitude and longitude coordinates extracted. The point then represented the location of the household, or the household closest to that point, to be surveyed. The distribution of the households in the sample is presented in the figure below.



It is acknowledged that this approach assumes a homogenous population distribution within the quarter as well as a slight bias in favour of households in sparsely populated areas. However, this bias was considered minimal as quarters with higher population had a higher proportion of households from the sample.

The GPS points were then programmed into Garmin GPS's. Based on an organisational plan, each enumerator, using a GPS, was expected to interview between 5-6 households per day. Upon returning from their daily data collection, the location of the household points was compared with the track taken by the enumerator. It was thus possible to verify that the household selected by the random point within the tile was visited by the enumerator.

Strata 2 – Purposive Sample

According to the previous work done by the World Bank and FEWS, the areas to the East of the Ambouli Wadi, the old city of Djibouti and the quarters of Sheikh Moussa and Baswado have a lower percentage of 'poor' and 'very poor' households. And although lends itself to a lower level of poverty than Balbala, this part of the city shelters quarter with poverty of rates between 25% and 40%.According to the 2003 baseline, in these 'mixed' areas, the percentage of 'very poor' and poor households is less than 10 and 25 percent respectively. Thus, it was felt that a random

[26] 2002 household figures for the 10 quarter were used for the administrative boundaries. For the 3 areas added to the study after the WFP field mission, a recent (<6 months old) high resolution image was used and the number of household structures counted. This provided an estimated number of households.

sample approach (as applied in Stratum 1) would be inappropriate as between one and 2 in ten households would be the typology for this study.

As a result, the study employed a 'snowball' sampling approach was used to target the household questionnaires to the poor and very poor households in the quarter. To achieve this, the assessment team first administered a Key Informant questionnaire to the quarter administrator. Once the questionnaire was completed the team then explained to the administrator that they would like to visit 4 of the poor households in the quarter. Great lengths were taken to explain to the chief of the quarter that the assessment was interviewing households for a food security assessment and that the interviewees would not automatically become beneficiaries. Once the enumerator has administered 1 questionnaire, the household was then asked to lead the enumerator to another household in the quarter that was in the same economic situation as themselves. This repeated by each enumerator 2-3 times for each quarter.

The process was repeated in 9 of the 16 quarters in stratum 2.

Annex 3: Field Data Collection - Methodology

Field data was collected using three different instruments i) Household Survey, ii) Key Informant Interviews and iii) Trader Survey. Household Survey collected 328 valid household data using a questionnaire designed for a quantitative analysis. In addition, 26 Key Informant interviews and 12 trader survey were conducted to gain qualitative insight into food security situation in the capital area. The following describes the detailed steps on how each instrument was applied.

General:

1. Visited sites were selected using the sampling technique outlined in the sampling section.
2. Four teams were created: three teams for stratum 1 and one team for stratum 2. Each team consisted of one team leader, three enumerators and one driver. A total of 12 enumerators focused on the household interviews while 3 focused on the key informant interviews and trader surveys. Data collection took al total of 6 days, with each enumerator visiting an average of 5 household per day.
3. Before beginning data collection in the field, a visit was paid to the arrondissment administration offices to explain the purpose of the assessment and to get permission to conduct the assessment. This step also enabled the teams to be introduced to the heads of the quarters with who key informant interviews were undertaken.

Household Survey

The household questionnaire gathered information on various aspects of food security at the household level. In addition to household composition, migration and assets holdings, detailed information on food consumption and expenditures, income and food source, and coping mechanisms were asked. In stratum 1, each enumerator was given GPS with 4-6 coordinates to visit per day. Enumerators interviewed the house at or closest to the coordinates. In case when the distance between the coordinates was large, the enumerator was taken by a vehicle. In stratum two, in each quarter three households for interviews were identified by the head of the quarter, and each household interviewed referred the enumerators to another household in a similar situation as theirs. In this way, an average of six households was interviewed per quarter.

Key Informant Survey

Key informant interview was aimed at gathering overview of the districts and to complement the household and trader questionnaires. General characteristics of the quartier, availability of services such as education, health and water access were discussed, as well as market functions and shocks were discussed. They were administered with heads of districts and one religious leader.

Traders Survey

The traders' questionnaire provided information on food availability and access in different parts of the capital area. It also provided information on access to credit for traders as well as on access to credit for their customers. Moreover, discussions with traders helped to better understand how the high food price have impacted the purchasing behaviour of customers. It is important to note that only traders in the Balbala area (stratum 1) were interviewed during the assessment.

Bibliography:

Brass, Jennifer, 2008, *The political Economy of Livestock Policy: The Case of Djibouti*, IGAD LPI Working paper No. 02-08.

Economist Intelligence Unit. May 2008. *Country Report: Djibouti.* EUI: London.

Government of Djibouti. March 2004. *Poverty Reduction Strategy Paper.*

Government of Djibouti, December 2007, Rapport Final, Enquete Djiboutienne a Indicateurs Multiples.

Kalton et al, 1996, Handling missing data in survey research, *Stat Methods Med Res.*1996; 5: 215-238

Milanovic, Branko, "QAT EXPENDITURES IN YEMEN AND DJIBOUTI: AN EMPIRICAL ANALYSIS" World Bank, 2008

USAID: FEWS NET Programme. October 2004. *Djibouti Livelihood Profiles*.

USAID: FEWS NET Programme. November 2004. *Djibouti: Food Security Watch.*

USAID: FEWS NET Programme. February 2005. *Djibouti Food Security Alert.*

USAID: FEWS NET Programme. October 2005. *Djibouti Food Security Alert.*

USAID: FEWS NET Programme. January 2006. *Djibouti Food Security Emergency.*

USAID: FEWS NET Programme. July 2006. *Djibouti: Food Security Watch.*

USAID: FEWS NET Programme. August 2006. *Djibouti Food Security Warning.*

USAID: FEWS NET Programme. December 2006. *Djibouti Food Security Watch.*

USAID: FEWS NET Programme. March 2007. *Djibouti Food Security Watch.*

USAID: FEWS NET Programme. May 2007. *Djibouti Food Security Watch.*

USAID: FEWS NET Programme. June 2007. *Djibouti Food Security Alert.*

USAID: FEWS NET Programme. August 2007. *Djibouti Food Security Alert.*

USAID: FEWS NET Programme. November 2007. *Djibouti Food Security Warning.*

USAID: FEWS NET Programme. February 2008. *Djibouti Food Security Alert.*

USAID: FEWS NET Programme. April 2008. *Djibouti Food Security Alert.*

USAID: FEWS NET Programme. May 2008. *Djibouti Food Security Alert.*

USAID: FEWS NET Programme. June 2008. *Djibouti Food Security Alert.*

USAID: FEWS NET Programme. August 2008. *Djibouti Food Security Update.*

USAID: FEWS NET Programme. September 2008. *Djibouti Food Security Alert.*

WFP, March 2005, Etude de la Vulnerabilite a la Securite Alimentaire, Djibouti

WFP, September 2006, *Djibouti Livelihood Zone In-depth Emergency Food Security Assessment*, WFP: Rome

WFP, December 2007, WFP/UNICEF Nation Joint Nutrition Survey, Djibouti

WFP, May 2008, Rapid Emergency Food Security Assessment, Djibouti

United Nations Development Programme. 2008. *Human Development Report 2008: Fighting climate change: Human solidarity in a divided world*. New York: United Nations, Palgrave-McMillan.