



Puntland

Food Security and Vulnerability Assessment

April 2007



World Food
Programme

WFP Somalia

Puntland Food Security and Vulnerability Assessment

Prepared by: Philip McKinney

August 2007

© World Food Programme

This report was commissioned and funded by the United Nations World Food Programme Somalia Office.

World Food Programme Somalia

PO Box 64902

Nairobi

Kenya

Photograph credits:

The photographs on the front cover were taken by Philip McKinney and may be published freely, without alteration, on the understanding that they be credited to the photographer.

Puntland

**Household Food Security and Vulnerability
Assessment**

Conducted April 2007

Table of Contents

Acknowledgments	9
Executive Summary	10
1 Scope and methods	10
2 Who are the hungry poor?	10
3 How many are they?	11
4 Where do they live?	11
5 What are the underlying causes of food insecurity?	11
6 What are the interventions recommended?	12

Part I – Assessment Objectives and Methodology

1 Introduction	13
2 Puntland assessment objectives	13
3 Definitions, terminology and concepts	14
3.1 Food security.....	14
3.2 Vulnerability.....	14
4 Sources of data	15
4.1 Secondary data review.....	15
4.2 Primary data collection.....	15
4.2.1 Survey instruments.....	15
4.2.2 Survey teams and supervision.....	16
4.2.3 Sampling procedures.....	16
4.2.3.1 Universe.....	17
4.2.3.2 Stratification.....	17
4.2.3.3 Number of clusters.....	17
4.2.3.4 Modifications during field work.....	17
4.2.3.5 Second stage sampling (household selection).....	18
4.2.4 Data entry and statistical analysis.....	18
5 Limitations to the assessment	20
5.1 Map disclaimers.....	21
6 Coordination of assessment	22

Part II – Background and Overview of Socio-Economic Issues

1 General historical and political context	23
2 Geography, climate and natural resources	23
3 Population and livelihoods	24
3.1 Human capital.....	25
3.2 Population displacements.....	26
4 Economy and markets	26
4.1 Transportation and communication.....	27
4.2 Credit system and remittance.....	28
5 Literacy and education	28
6 Gender issues	29
7 Health and nutrition	30

7.1	Health.....	30
7.2	Nutrition (from UNICEF Somalia and FSAU)	31
8	Livestock and agriculture.....	31
8.1	Herds and migration.....	31
8.2	Animal welfare and veterinary issues	32
8.3	Agriculture.....	32
9	Water access.....	32
10	Intervention strategies and food security policies	33
11	Sources of food insecurity and vulnerability	34

Part III – Analysis of food security and geographical distribution

1	Livelihood food security and vulnerability profiles	35
1.1	Household food consumption profiling.....	35
1.1.1	Frequency of consumption and dietary diversity.....	35
1.1.2	Methodology for analyzing food consumption data.....	35
1.1.3	Household food consumption groups and profiles	36
1.1.4	Geographic distribution of consumption profiles	38
1.1.5	Distribution of consumption profiles across income activity groups	39
1.2	Household access profiling	39
1.2.1	Household access to food	40
1.3	Household food security and vulnerability profiling.....	41
1.3.1	Methodology for analyzing food security and vulnerability data	41
1.4	Household food security and vulnerability profiles.....	42
2	Geographic distribution of food security and vulnerability profiles	42
2.1	Geographic distribution of food security and vulnerability profiles	43
2.2	Distribution of food security and vulnerability profiles among livelihood zones and groups	44

Part IV – Community and household survey results/outcomes

1	Circumstances of the households.....	45
1.1	Demographics	45
1.2	Income activity groups (within the sample)	45
1.3	Migration.....	48
1.4	Socio-economic characteristics	49
1.4.1	Education.....	49
1.4.1.1	Adult education	49
1.4.1.2	Child education.....	50
1.4.1.3	Primary school access.....	51
1.4.2	Health	52
1.4.2.1	Important diseases	52
1.4.2.2	Health facilities.....	52
1.4.3	Access to truck road	52
1.5	Markets.....	52
1.5.1	Market access.....	52
1.5.2	Marketplace credit	53
1.5.3	Commodity prices	54
1.6	Water access	54

2 Household food security and vulnerability	57
2.1 Availability and access to food	57
2.1.1 Household Debt	57
2.1.2 Productive assets	58
2.1.3 Livestock Holding	58
2.1.4 Main activities and income sources	60
2.1.5 Household expenditures (food and non-food)	61
2.2 Food consumption.....	62
2.2.1 Food sources and diversity	62
2.3 External shocks and coping strategies.....	63
2.3.1 Covariate shocks.....	65
2.3.2 Idiosyncratic shocks	65
2.3.3 Coping strategies	66
3 Gender Issues	67
4 Priorities and intervention preference	67
5 Livelihood zone food security and vulnerability profiles.....	70
6 Geographic food security and vulnerability profiles	72

Part V – Summary and recommendations

1 Overview.....	75
1.1 Priority areas and causes of food insecurity and vulnerability	76
2 Recommendations.....	77
2.1 Food interventions by priority area and priority group/s.....	77
2.2 Non-food Interventions by Priority Area and Priority Group/s	78
2.3 Potential targeting criteria for interventions	79
2.4 Intervention Duration	79
2.5 Potential negative impacts of suggested interventions	80
Annexes	81
References	93

Figures, Maps and Tables

Figures

Figure 1:	Vulnerability and food security framework	15
Figure 2:	Comparison of food consumption profiles between livelihoods and regions.....	39
Figure 3:	Sources of food by food security group	40
Figure 4:	Distribution of food security profiles across income activity groups.....	46
Figure 5:	Differences between boys and girls attending primary school in terms of all the children in the household	51
Figure 6:	Seasonality in demand and provision of marketplace credit	53
Figure 7:	Availability of water sources throughout the year.....	54
Figure 8:	Prevalence of household water sources by region	55
Figure 9:	Household perception of their ability to satisfy food needs during the year (by food security profile)	57
Figure 10:	Seasonality of debts and expenses (% of households reporting activity in the respective month).....	58
Figure 11:	Percentage of households owning animals by region and livelihood zone (each is independent of the other i.e. the total is not 100%).....	59
Figure 12:	Percentage of households engaging in activities in the main income activity groups .	60
Figure 13:	Geographic distribution of income activity groups by region ¹⁶	61
Figure 14:	Household total and food expenditure	61
Figure 15:	Household food sources in Puntland.....	62
Figure 16:	Seasonality of own production	63
Figure 17:	Frequency of adults' and children's meals by food security group	63
Figure 18:	Meal frequency of adults and children by region	64
Figure 19:	Seasonality of the three most important shocks	64

Tables

Table 1:	Estimated numbers of food insecure people in puntland.....	11
Table 2:	Main differences between consumption profiles	36
Table 3:	Household consumption profiles for Puntland assessment (see Annex for specific details of sub-group profiles)	37
Table 4:	Description of access profiles identified in Puntland.....	40
Table 5:	Construction of the matrix to define food security profiles.....	41
Table 6:	Summary of income activity groups defined within the sample	47
Table 7:	Frequency of main diseases mentioned by communities	52
Table 8:	Percentage of households requesting different responses by region and season	68

Maps

Map 1:	Prevalence of food insecurity by region and livelihood zone	11
Map 2:	Nutrition situation map for Somalia (FSAU; January 2007)	31
Map 3:	Prevalence of the five different consumption profiles (very poor to good) within each region	38
Map 4:	Prevalence of the four different access profiles (weak to strong) within each region .	41
Map 5:	Prevalence of the four food security and vulnerability profiles within each region.....	43
Map 6:	Prevalence of the four food security and vulnerability profiles within each livelihood zone.....	44
Map 7:	Prevalence of household water sources by livelihood zone.....	56
Map 8:	Livelihood zones and location of villages sampled.	84
Map 9:	Prevalence of the five different consumption profile (very poor to good) within each livelihood zone.....	91
Map 10:	Prevalence of the four different access profiles (weak to good) within each livelihood zone.....	92

Acknowledgments

No study is possible through the work of one person alone. This assessment was successful thanks to the work of a large number of people, and the people named here are those who made particularly significant contributions.

I am very grateful for the hard work, dedication and enthusiasm of Genevieve Chicoine (VAM Officer, WFP Somalia) which have been key to the success of the Puntland Household Food Security and Vulnerability Assessment. I would also like to thank the following government agencies that made this assessment a success:

- Ministry of Planning and International Cooperation (MOPIC)
- Ministry of Local Government and Rural Development (MLGRD)
- Humanitarian Affairs and Disaster Management Agency (HADMA)

In addition, acknowledgements go to the groups and individuals listed below who provided expertise and assistance throughout the process in the following areas:

Preparation and Planning: WFP Somalia Country Office VAM (Vulnerability and Analysis Mapping) team and to the team of the WFP Bossaso Sub-Office lead by Louise Sowe and Isam Babiker, who did all the background work and preparation for this large undertaking.

Survey Implementation: WFP staff in Nairobi and Bossaso who helped in the training and who made the field work run smoothly and successfully and all the team supervisors, Ahmed Yasin Mohamed, Ali Moallim, Mohamed Hasan Dhanto, Mohamed Ali Ismail, Essa Omar Musa and Mohamud Hassan Hersi who ensured the data were collected to the best of the team's abilities; all the team members who committed one month of their time to collect the information on which this report is based; Mohamud Abdullahi for his commitment in assisting with the supervision of the field teams, despite the birth of his daughter two days prior to the trip, and for his insightful views about the current situation, his diplomacy and patience; and Abdilkadir Ali Samatar from MOPIC who assisted with survey implementation.

Data Entry and Processing: Mark Gordon (Regional VAM Officer) who directed the Data Entry Training and Process, with assistance from Daphine Hunter (Regional VAM Assistant); the Data Clerks who put a huge effort in to entering, almost flawlessly, all of the data in particularly good time.

Analysis: Mark Gordon who assistance in conducting the Principal Component Analysis (PCA) and Cluster Analysis was invaluable; Genevieve Chicoine and Mohammed Hersi (National VAM Officer) for their insights and assistance in the analysis of Access, Consumption and Food Security Profiles; the nutritionists and the food security specialists from the Food Security Analysis Unit (FSAU), UNICEF and Save the Children UK who assisted in the analysis of the consumption data; Kaija Korpi-Salmela (Regional VAM Officer) for all the efforts in analysing the seasonal data, assisting in the secondary data review and other sections; and Michele Nori for his contributions to the secondary data review.

Editing: Dominique Debonis who skilfully revised and edited this report.

For information please contact:

Consultant: Philip McKinney philipmckinney@gmail.com

WFP Somalia VAM Officer: Genevieve Chicoine Genevieve.Chicoine@wfp.org

Executive Summary

1 Scope and methods

The objectives of the survey were to assist the World Food Programme (WFP) in Somalia i) in shifting its activities from relief to recovery and rehabilitation-oriented activities, ii) in identifying criteria to help better target the food insecure population, and iii) in critically assessing if there continues to be a need for relief assistance. A random sampling strategy was used to select villages and households to provide statistical confidence at both the regional administrative level and the macro-livelihood zone. In total 1,266 households were interviewed in 116 villages and water points across rural Puntland. The field work was conducted in April 2007 at the end of the *Jilal*, the longer of the two dry seasons, meaning that much of the food insecurity observed may be related to the season in which the data was collected. Although the survey instruments did include questions on seasonal aspects of income, access to food, credit availability and shocks, this assessment looks – for the most part – at a specific point in time. Nonetheless, as the 12 months prior to the assessment were free of unusual shocks (environmental and/or political), this survey may also constitute a valuable benchmark for understanding the basic nature of food insecurity and vulnerability and its impact on normal household functioning.

2 Who are the hungry poor?

According to WFP guidelines, food security is defined by i) variety in household food consumption, or dietary diversity, and ii) household access to food (in terms of proportional expenditure of household income on food and variety of food sources). **Food insecure** households have a combination of poor or very poor food consumption patterns and weak access to food, as they basically eat little or no protein, fruit or vegetables and spend more than 70% of their total monthly expenditures – which average 200,000 SoSH per month (approximately 12 USD) - on food. The consumption or sale of their own products, usually meat and milk, is low if at all present. By contrast, **food secure** households eat protein every day, often twice daily, and spend less than 60% of their total monthly expenditures - which average 475,000 SoSH a month (approximately 28 USD) - on food. In addition, in food secure households, food products of their own production constitute a sizeable source of food and/or income.

While there are income-generating activities that are more likely to be associated with food insecure households, it should be said that all of the income-generating activity groups surveyed presented a degree of food insecurity. It is in fact difficult to establish concrete ways of identifying food insecure households for support, as in Somalia, indicators of vulnerability are not one set of clearly identified attributes (Narbeth 2001)ⁱ. Nonetheless, a few **tangible factors** have shown a significant relationship to household food security status. They are:

1. **Female-headed households** tend to be more food insecure. A significantly greater number of female-headed households reported poor or very poor food consumption patterns.
2. **Beggars, individuals dependent on community support and unskilled labourers** are more likely to be food insecure. On the other hand, **small business owners, fisher folk and skilled labourers** are less likely to be food insecure.
3. While **animal ownership** alone does not lessen the likelihood of being food insecure, **households with a higher number of animals** (especially pack camels) tend to be more food secure.

3 How many are they?

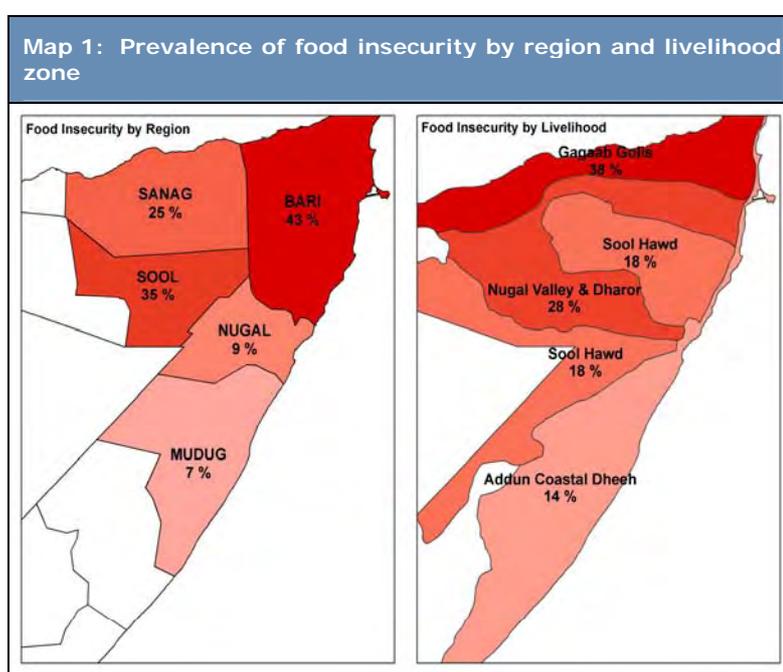
Population figures in Somalia are constantly under debate and all numbers should be used with caution. Bearing this in mind, **Table 1** shows that more than 20% of the rural population in Puntland were food insecure during the 2007 Jilal season.

Table 1. Estimated numbers of food insecure people in Puntland

Region	Estimated non-urban population (UNDP 2005) ¹	Estimated percentage of food insecure households	Estimated number of food insecure people
Bari	188,000	42.5%	79,900
Mudug	103,500	7.2%	7,500
Nugal	90,000	8.8%	7,900
Sanag	102,000	25.2%	25,700
Sool	87,000	35.2%	30,600
Puntland	570,500	23.8%	135,800

4 Where do they live?

Food security tends to be worse in the north, improving as one moves toward the south. The majority of the food insecure live in Northern Bari, Sool and Sanag, with the highest concentration in Bari and Sool. Food insecurity in Bari is mainly localised in the central and northern parts, with the coastal and southern areas being slightly less vulnerable. These findings are consistent with the Food Security Assessment Unit (FSAU) nutrition surveys in Bari which show poorer nutritional status in the northern districts. From a geographical perspective, interventions addressing food insecurity should focus on:



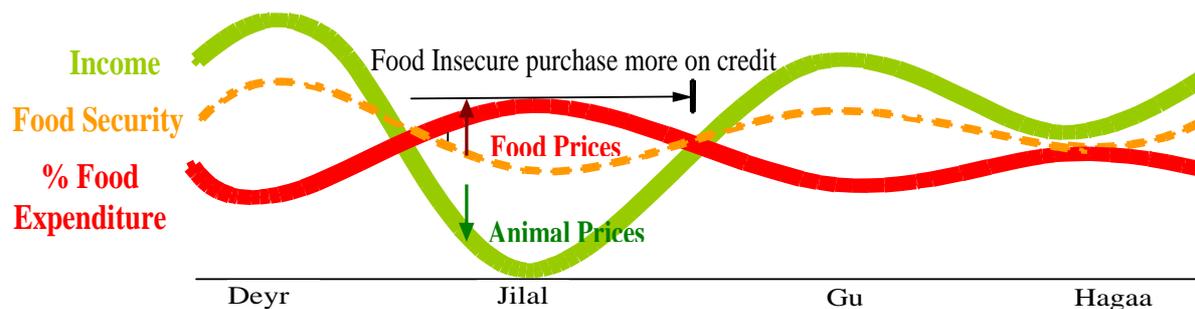
From a geographical perspective, interventions addressing food insecurity should focus on:

1. Bari (Northern and Central) - Gagaab Golis, Nugal Valley and Dharor livelihood zones
2. Sool (Central and Eastern) - Nugal Valley and Dharor livelihood zones
3. Sanag (Northern) - Gagaab Golis livelihood and Nugal Valley and Dharor zones

5 What are the underlying causes of food insecurity?

In Puntland poverty seems to be the most prominent underlying issue and root cause of food insecurity. It is also evident from the results of this survey that basic needs such as education, health and water are not being met across rural Puntland and that this lack of basic services also contributes to chronic poverty and food insecurity. Food insecurity is not just a question of who, where and why but of **when**. Although overly simplified, the following illustration is intended to demonstrate the seasonal aspect of food insecurity that is likely to be relevant in Puntland.

¹ Under the Puntland administration.



Income is reportedly lower for most income activities during the Jilal season, followed by the Hagaa season, while during both seasons market prices tend to be at their highest. As incomes fall and food prices rise, a higher proportion of total household expenditures go to food, and it would seem the quality of the diet worsens. The availability of milk and meat decreases during the dry seasons, and faced with reduced incomes and increased expenditures, it is likely that households become more food insecure during the Jilal season - and to a lesser extent the Hagaa season - especially if they have no savings or do not have good access to credit

6 What are the interventions recommended?

It is no surprise that the main priorities mentioned by the households interviewed focus on basic needs, such as improved water quality and quantity (mentioned by 45% of the households) and improved access to health (22%) and education (16%). There was little regional variation. Respondents were also asked which of the following intervention types they would prefer for each of the four seasons: water, cash, food, cash and food, or no assistance at all. Most households (40%) expressed a preference for a combination of **cash and food** interventions, while 25% expressed a preference for cash interventions alone during the Jilal and the Hagaa seasons. Interestingly, about 40% of the households stated that they did not need any assistance during the Gu and the Deyr seasons.

By and large, relief assistance is not recommended for Puntland's rural population. However, as is the case in most societies, there would appear to be a few groups of individuals who are destitute and are not able to provide for all of their food needs. For these destitute individuals, who also have particularly weak access to food, relief food assistance may be justified. Detailed and specific assessments would however be required to better identify and target such assistance needs. This assessment tends to show that recovery programmes are more appropriate for - and sought by - the vast majority of Puntland's rural population.

Considering the high percentage of food insecure households with very poor consumption profiles observed at the time of the survey, a food component intervention should help address the issue of poor dietary diversity. Cash should provide improved capacity to purchase commodities as well as pay off accumulated debt. Both food and cash interventions have the additional benefit of protecting income and providing increased ability for households to save. Cash and food-for-work activities should consider addressing water, roads, basic health and school infrastructures, as well as environmental erosion.

Activities providing food alone should focus primarily on school feeding or other targeted programmes, such as supplementary feeding and/or Mother and Child Health (MCH) Centres, as a means of supporting specific vulnerable groups (e.g., children, pregnant women, vulnerable mothers, tuberculosis patients). A current limitation of school feeding interventions in this area is that 40% of the settlements do not have access to schools. Furthermore, targeting only girls for distributed commodities in schools would not be justified as this survey revealed there are no significant differences in the attendance of girls and boys in school.

Part I – Assessment Objectives and Methodology

1 Introduction

Between 2002 and 2004, Puntland suffered from one of the worst prolonged droughts in decades, which was then followed by the tsunami of December 2004. The drought weakened and killed livestock, while the tsunami destroyed boats and fishing gear. In two years, two major livelihoods were severely affected with important losses of assets and incomes. Traditional social coping mechanisms were stretched – some households made distress sales of their few remaining livestock, while others separated as family members left to seek income elsewhere or left to decrease household food intake. Limited government and foreign investment in social sectors, particularly health and education, further compounded the impact of these natural disasters.

The United Nations World Food Programme (WFP) responded to both of these natural disasters, as well as to the many internally displaced persons (IDPs) finding their way to Puntland, and there has been a growing realisation that since 2006 the climate, livelihood mechanisms and food security conditions have improved significantly for most of the population. On the other hand, a number of underlying factors remain present across Puntland, and continue to have a crippling effect on the already rather fragile economy of the region. These factors include the environmental degradation of the land, a lack of alternative incomes, and poor or quasi-absent social services. There is also a growing concern that a certain segment of the population may have been severely impoverished by the drought and become urban destitute, migrating to the urban or semi-urban environments and relying mainly on social support networks for their survival.

This assessment, although limited to rural settlements, is designed to better understand what, who and where the food insecure and vulnerable are. It is limited in that it captures information on those within and around settlements, and is likely not to provide substantial information on true nomadic pastoralists, or on urban food security issues. However, it provides a strong, statistically sound insight into the types of livelihoods, consumption patterns, access and food security issues, shocks experienced, and coping mechanisms used within rural settlements in Puntland.

Based on the outcomes of this analysis, some guidance as to appropriate interventions is given, along with details on where and to whom such assistance should be targeted.

2 Puntland assessment objectives

The overall objectives of the assessment were to:

- Assist WFP in shifting its orientation and activities in Puntland from relief to recovery and rehabilitation interventions, which would tackle some of the underlying causes of poverty and food insecurity in Puntland;
- Critically assess if there is still a need for relief assistance for targeted socio-economic groups;
- Identify criteria to define and better target destitute and vulnerable populations susceptible to food insecurity, if any.

More specifically, it sought to collect information to:

- Provide WFP decision makers and other actors focusing on food insecurity with information on how best to integrate food assistance into suitable and feasible recovery activities, through an analysis of the food insecure and vulnerable: who they are, how many there are, where they are located, why they are food insecure, what their priority needs are, and how food or other assistance could

make a difference in reducing hunger, and supporting their livelihoods and priority needs;

- Provide a baseline, sampling frame and key indicators for subsequent WFP food security analysis and monitoring activities --i.e., food security monitoring systems and emergency food security assessments that could complement the Food Security Assessment Unit (FSAU) seasonal analysis exercise;
- Provide the Country Office (CO) with its first WFP household food security survey, which would also serve as a pilot exercise for WFP Somalia, with a view to possible replication for future recovery and rehabilitation programming initiatives in other regions, namely south central Somalia, and Somaliland.

3 Definitions, terminology and concepts

3.1 Food security

According to the 1996 World Food Summit:

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life [thus food insecurity is the inverse of this].

The food security status of any household or individual is typically determined by the interaction of a broad range of agro-environmental, socioeconomic, and biological factors. Like the concepts of health or social welfare, there is no single, direct measure of food security. However, the complexity of the food security problem can be simplified by focusing on three distinct, but interrelated dimensions of the concept: aggregate food availability, household food access, and individual food utilization.

To achieve a condition of food security all three of these separate dimensions must be addressed so as to ensure that:

- The total amount of physical supplies of food available through domestic production, commercial imports, food aid, and national stocks is sufficient;
- Household livelihoods provide adequate access for all members of the household to said food supplies whether through home production, market purchases, or transfers from other sources; and
- The utilization of said food supplies meets the specific dietary and health needs of all individuals within the household.

3.2 Vulnerability

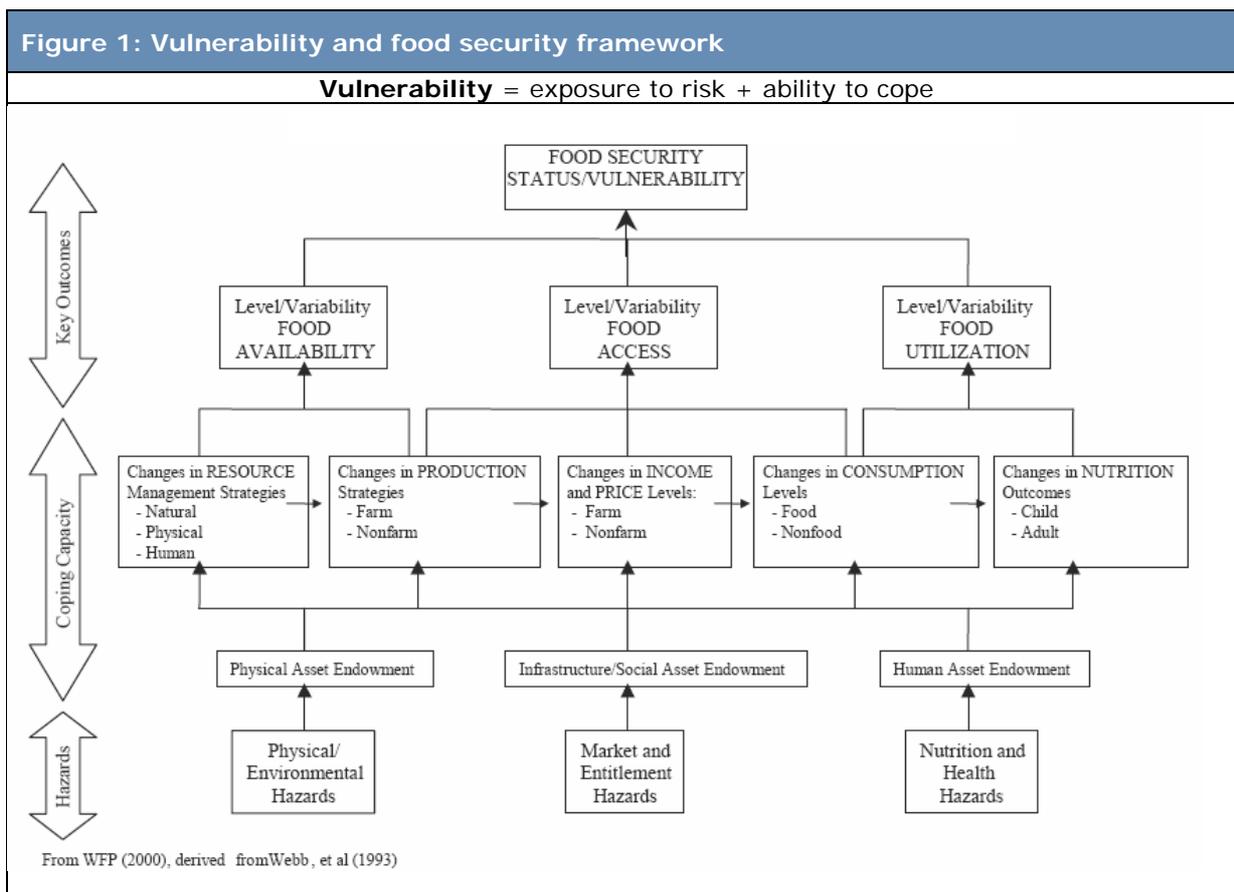
Vulnerability is another important food security-related concept. It can be defined as:

The probability of an acute decline in a household's access to food, or food consumption, often as a consequence of some critical value that defines minimum levels of human well being.

According to Robert Chambersⁱⁱ, vulnerability represents “*defencelessness, insecurity and exposure to risks, shocks and stress ... and difficulty in coping with them.*” By this definition, vulnerability is a result not only of exposure to hazards—such as drought, conflict, extreme price fluctuations, and others—but also of underlying socioeconomic processes, which serve to reduce the capacity of populations to cope with those hazards. As indicated in the following diagram, the vulnerability status of any household or individual may change over time according to a complex combination of factors. Over time, individuals may cross various thresholds of human well-being.

This definition of vulnerability highlights the important interaction between the level of household food access and the health status of individuals. This interaction ultimately influences the extent of under-nutrition within vulnerable populations, and can determine levels of starvation-related mortality.

This understanding of vulnerability can be summarized as follows:



In this framework, exposure to risk is determined by the frequency and the severity of natural and man-made hazards, as well as the socioeconomic and geographic extent of those hazards. A household’s capacity to cope then, is determined by its own levels of natural, physical, economic, and human assets, household production, income and consumption, and, importantly, its ability to diversify its income sources and consumption levels to effectively mitigate the effects of the risks being faced at any given moment.

4 Sources of data

4.1 Secondary data review

This review was compiled from numerous sources on many topics. There is a huge wealth of qualitative data available for Puntland. The quantitative data that is available is from small-scale surveys and baseline studies that have been conducted in isolated areas of Puntland. Although it is possible to extract from these sources an understanding of many of the issues that contribute to household food security, there is no one study addressing food security and vulnerability that uses household data and covers the whole of Puntland.

4.2 Primary data collection

4.2.1 Survey instruments

Following an analysis of the secondary data available in Somalia and experiences in other countries where similar studies have been conducted by the Vulnerability and Analysis Mapping (VAM) unit of WFP, a set of survey tools for this exercise were drafted.

The draft tools were circulated for comments to the WFP Puntland sub-office, FSAU, Save the Children UK (SC-UK), Horn Relief and other key experts on Somalia, as well as the individuals trained for survey supervision and enumeration. The draft tools were subsequently amended and further contextualized to capture the most appropriate information possible. During this process a translation was produced for the training, and after the contents and translation were finalised, the tools were field tested and finalised. The tools used (both of which are available upon request) in the assessment were the following:

- **Household Questionnaire:** This questionnaire was the focus of the primary data collection and was designed to provide quantitative data in the following ten areas of interest; 1) **Demographics, education and assets**, 2) **Water access**, 3) **Livestock holding**, 4) **Migration and remittance**, 5) **Income**, 6) **Shocks and coping strategies**, 7) **Expenditure**, 8) **Consumption**, 9) **Assistance**, 10) **Priority setting**. This tool was a structured questionnaire using tested response options for the enumerators to record the most likely and common responses to the questions. An “other - specify” option was used to capture less likely or uncommon responses. Response options were not read to the respondent. For several questions respondents were allowed to provide more than one response.
- **Community Questionnaire:** This questionnaire was both qualitative and quantitative, and designed to provide information that is common to the majority of the sampled village population. This was in order to reduce the duration of the household interview. Qualitative questions helped to provide context to the data provided from the household questionnaires. This questionnaire contained eight sections; 1) **Demographic information**, 2) **Migration**, 3) **Education**, 4) **Health**, 5) **Market information**, 6) **Water sources**, 7) **Livestock** and 8) **Priority setting**.

4.2.2 Survey teams and supervision

The WFP sub-office in Puntland identified 30 individuals from local and international NGOs, Government of Puntland and WFP staff to be trained on the survey tools. One day of training for the Team Supervisors was followed by six days of training for both supervisors and enumerators (including three days of field work). By the end of this training session, 18 enumerators and 6 supervisors had been identified.

Each team consisted of four members. The team supervisor was responsible for the team’s security, planning, sampling, conducting the community questionnaire, and one household interview per cluster. The team members were responsible for conducting three household interviews each per day, and all teams were provided with sufficient material and questionnaires to complete their tasks. One vehicle was assigned to each team and all UN security procedures were provided in writing to each of the team supervisors. The duration of the data collection was approximately one month for each team.

The teams were supervised over a two week period by the Team Leader, a Programme Officer from the WFP Puntland sub-office and the director of Monitoring and Evaluation Unit of the MOPIC.

4.2.3 Sampling procedures

The sampling methodology selected for the assessment was based on a complex two stage sampling procedure, so that data could be aggregated and compared across regions and livelihood zones with a specific degree of statistical confidence. The first stage, or cluster, was set at the village level, while the second stage was set at the household level. Villages were selected using the probability proportion to size (PPS) method, as per the following definitions and procedures:

4.2.3.1 Universe

1. The initial sample frame was defined as comprising all villages and water points within the area (e.g., 498);
2. Population figures used were based on the UNDP population and water point list;
3. Water points without accurate population values were assigned an average water point population, based on a calculation of the total nomadic population using the water points divided by the number of water points;
4. Village and/or peri-urban areas with a population greater than 5,000 people were not included as population centres with this number of people are not classified as rural by WFP-VAM.

4.2.3.2 Stratification

The study area was stratified along two dimensions:

- a. by livelihood zones, as below, reflecting a consolidation of the FSAU livelihood zones (done in consultation with FSAU²):
 - i. Addun Coastal Dheeh
 - ii. Gagaab Golis
 - iii. Nugal Valley and Dharor
 - iv. Sool Hawd
- b. by administrative region³:
 - i. Bari
 - ii. Mudug
 - iii. Nugal
 - iv. Sanag
 - v. Sool

4.2.3.3 Number of clusters

1. WFP sampling guidelines state that 25 clusters per stratum are required to create a sample that is representative of the larger population and to ensure a 95% confidence level (with a precision of +/- 7.5%) in analysis;
2. Based on the two stratifications, the numbers of clusters to be selected per intersection were calculated based on the relative number of clusters within the intersection, vis-à-vis the total number of clusters within the administrative boundaries. This resulted in 3 to 18 clusters per intersection being selected.
3. The clusters were then selected according to the PPS method, using a fixed interval, systematic random sampling method.
4. This resulted in each of the strata having between 19 and 27 clusters (by region) and 21 to 44 clusters (by livelihood zone). Weights for the analysis were calculated. The details of the actual settlements visited and the number of clusters per strata is detail in **Annex 3**.

4.2.3.4 Modifications during field work

The inclusion of water points in the sample frame was based on the logic that nomadic pastoralists would be included in the overall sample. However, in most cases the water points were closely associated with settlements. Where this was the case in the sample drawn, the second stage household sampling was taken from the village associated with the water point as well as the non-residents temporarily making use of the water point.

Conversely, when the water point selected was not associated with a settlement, only the households present at the water point were included for the second stage household sampling. In cases where there were no people at all around the water points, the water

² See Annex 2 for a more detailed explanation of these livelihood zones.

³ The regions of Karkare and Ayn could not be included on their own because the UNDP population data is based on the five pre-1990 regions. In this assessment Ayn is part of Sool region and Karkare is part of Bari region.

points were discarded and new ones randomly drawn from the original sample frame (taking both strata into consideration).

Additionally, where the cluster did not exist, was abandoned, was in excess of 5,000 people or was not accessible due to insecurity, the next closest village to the chosen cluster was used as a proximity replacement. This decision was taken because of the complexity of obtaining a replacement using the original selection technique and the difficulties faced with the settlement data used for the original selection.

4.2.3.5 Second stage sampling (household selection)

Households for this survey were randomly selected from a village list of the households using the following procedure:

1. Village elders were asked to produce a list of the households that were present in their settlement at the time of survey. It was requested that *all residents* present be listed, not just the perennial residents (i.e. nomadic people there for water, pasture etc.);
2. The list was then checked to ensure repetition of the households was minimised, after which each household was allocated a unique number;
3. A systematic random selection procedure was used to select the households to be interviewed – i.e., a sample interval was identified by dividing the total number of the households by the desired number of the households to be interviewed (two additional households were selected in the event that households selected refused to participate or were not present). Starting at the beginning of the list and moving down the length of the identified interval, the first household was selected from the position at the end of the interval. Applying the interval to the position of the first household identified, the second household was identified, and so on so forth;
4. The elders were then asked if the list of sampled households could be interviewed that day. If a large number of the households were not present, the list was revised to ensure that it only contained households present that day. Then the random selection was carried out again;
5. If during the data collection a selected household was empty (no household members present to answer questions), the enumerator would return later the same day. If none of the household members were present throughout the whole day, one of the spare households was selected;
6. In every case the head of household was the interviewee of preference, however, if and when the head of household was not in the village or close by, another representative of the household was interviewed, preferably the spouse.

Attaining the list was often difficult in the larger villages and led to some delay. Lists in Somalia are often associated with distributions and there is often reluctance to produce accurate ones. Over inflated lists were not considered a problem for the sampling because if households did not exist, another household that did was randomly selected. During the sampling procedure it was requested that the lists remain in clear view of the elders and that they not be removed from their view until the sampling was completed.

A total of 116 village, 123 cluster and 1,266 household interviews were conducted during this survey⁴.

4.2.4 Data entry and statistical analysis

Data was entered using a custom designed data entry tool (based on Microsoft Access[®]) developed by the team in WFP Regional Bureau and entered by a team of six locally hired data clerks working in teams of two (one reading and one entering the data). The

⁴ In some villages, there were less than 10 households while in other villages, the assessment team interviewed more than 10 households.

process took six days including one day of training. The supervisor checked the data entry for errors by selecting an entered questionnaire at random and checking all data points. If a mistake was found, it was noted and corrected in the final database. An error rate of less than 5% was set for the clerks to indicate an acceptable level of error in the data set and data entry process. There were 600 variables in the data set with 1,266 questionnaires entered. Ten percent of the questionnaires were checked and only 62 errors were noted, yielding an error rate of less than 0.1%.

Data was analysed using ADDATI 5.2c for the principal component (PCA) and cluster analysis and for the main part of the data analysis SPSS v.13 was used. Graphs were plotted using Microsoft Excel[®].

As the sampling was stratified by administrative region and livelihood zone there was a need to produce weights for any analysis across zones or regions (see

Annex 4 for details), while for data analysis using the whole data set (i.e. Puntland) no weights were applied.

5 *Limitations to the assessment*

While the assessment was conducted in the most rigorous manner possible, some limitations must be acknowledged.

- **Representativeness:** Data were collected to be representative at the regional level and livelihood zones. Although these livelihoods zones by definition reflect households with similar ways of life, variability within them remains high. Data can be used for comparison across strata but not within. As often is the case with large scale surveys, sampling error due to multi-stage sampling and ecological fallacy need to be acknowledged in interpreting the results, and one must be cautious about drawing conclusions on individual food security and vulnerability levels from aggregated data.

Settlement data used to select the clusters using PPS did not always reflect the situation of the village on the ground when it was visited. Although some of these issues could be resolved before the teams commenced their activities, many were not, and therefore a common solution was provided for each team to implement when problems arose on the ground (explained in Section 4.2.3.4). These modifications will have affected the representativeness of the sample and produced unknown biases. To prevent this in future a more thorough field review of the population data should be carried out and reviewed by key informants before carrying out the sampling procedures.

Additionally, IDPs and urban populations are not included in this sample. The specific needs of these communities are not addressed in this analysis. Inclusion of these populations would have led to under representation of rural households. Also, the differences in their needs and situations would have required different data collection tools and sampling.

- **Questionnaires:** The household questionnaire was translated into Somali to reduce individual variation in how enumerators understood the questions. Intensive training was provided to the supervisors and enumerators together and in small groups. Despite all efforts to reduce error in understanding of the concepts and individual questions contained in the questionnaires, misinterpretation of the questions contained in the survey tools is possible and may have affected the outcome of the analysis. One particular limitation of the tool was that livestock was accounted for using ranges rather than absolute values, which lead to a rather uncertain and broad estimation of herd sizes. The ranges available were also quite large and therefore it was difficult to accurately analyze the influence of livestock on household food security.
- **Data collection:** The random nature of the site selection and the large geographical areas of some of the regions surveyed meant that in some of the regions the distances between the villages sampled was large. Fatigue and human error are always factors in such studies and may also affect the reliability of the data collected.
- **Data quality:** Inaccurate recall and quantitative estimates may have affected the quality of the results. The experience of the enumerators and additional training were used to facilitate such recalls and estimates through various methods (e.g. event calendars, proportional piling and income estimation). In some cases

social desirability⁵ and respondent expectations (e.g., that they might receive food aid for example) may also have affected the responses. During the training the enumerators were briefed on the importance of ensuring that the interviewees understood that there were no direct benefits from participating in the survey and that the interview process would not result in inclusion in a future intervention. Although every effort was made to collect data from the head of household in each case, many of the respondents were instead spouses. The variability in the recall of expenditure, consumption and income between individuals may also have affected the quality of the data.

- **Concepts:** Although the data collection tools had the ability to capture community support being provided to the households interviewed, cultural perceptions of “begging” and “in-kind” support were not always well interpreted by the interviewers and interviewees. This may have affected the understanding of the importance of community support and therefore may not have yielded a complete picture of the most vulnerable households i.e. those that are most dependent on gifts and community support for their food and finances.
- **Health data:** Data gathered on disease and other health problems are based on community perceptions and are not necessarily medically or epidemiologically sound, and therefore the interpretation of this data should take this into consideration.
- **Livelihoods:** Due to the sampling framework and the random nature of the sample, some livelihoods that are known in Puntland may not appear as distinct groups in this analysis. This does not reduce their significance with regards to vulnerable groups - it simply means that further work needs to be carried out, specifically sampling from these minority populations.

It would also appear that because of the sampling methodology used, the true nomadic pastoralists are not well represented, given that they are not always well associated with the settlements that were used for the sample. These communities and households are often far from the main settlement and are therefore difficult to track and include in a given sample through a simple listing process.

- **Context:** The data was collected during late March and April, or rather, during the late stages of the dry season. Therefore, while the questions were designed to capture longer-term information about the households interviewed, the circumstances at the time of survey are likely to be reflected in the data collected. Thus interpretation of the data should consider the timing of the survey as well as the fact that there had been no significant shocks during the twelve months preceding the time of the survey.

5.1 Map disclaimers

The boundaries and names on the maps presented in this report do not imply official endorsement or acceptance by the United Nations. The regional and district boundaries reflect those endorsed by the Government of the Republic of Somalia in 1986.

More specifically, data presented in the maps on livelihoods and regions reflect only the areas sampled. The maps on livelihood zones extend beyond the boundaries of Puntland, as does the boundary for Mudug. This is a limitation of the mapping process. The data presented only represents those areas that fall under the Puntland authorities.

⁵ When a respondent answers in a way that he or she thinks will please the interviewer or result in direct benefits to himself or herself.

6 Coordination of assessment

Prior to conducting this assessment key stakeholders were contacted and presented with the draft term of reference (ToR) for the survey. For the sampling strategy and the definition of the livelihood zones FSAU was consulted to ensure that the livelihood zones used for the survey were in line with the existing zones defined by FSAU. Data collection tools were circulated to key technical individuals within WFP, individual consultants and other organisations. Finalisation of the questionnaires was done during the training in consultation with experienced programme officers from local and international NGOs and government agencies.

Once the sampling and data collection tools were drafted, a presentation was made to the Food Security and Nutrition Working group for Somalia. Comments were invited on the survey and sampling strategies proposed, and resulting discussions lead to the suggestion that a second stage of sampling be done using village household listings.

In Puntland, stakeholders were informed of the assessment and invited to assist by providing personnel to assist in the data collection. A number of organisations (local and international NGOs and government bodies) provided personnel to be trained in the data collection methods and to participate in the data collection.

Part II – Background and Overview of Socio-Economic Issues

1 *General historical and political context*

Somalia remains divided into three regions – Somaliland, which unilaterally declared its independence from Somalia in 1991, the south central region, currently lead by the Transitional Federal Government (TFG) and formed on October 2004 under the auspice of the Intergovernmental Authority on Development (IGAD), and Puntland, a semi-autonomous region that supports the TFG.

People inhabiting Puntland belong to different sub-clans or tribes of the Harti family, within the Darod clan. The main sub clans include the Warsangeli, the Dolbohante and the Marjerteen. The latter is divided into a number of sub-sub-clans. In Puntland, the majority of Marjerteen belong to the Mohammud Saleban (the Isa Muhammad, the Omar Muhammad and the Osman Muhammad).

Although Puntland was created in 1998 by the Grand Community Conference, which included major clans in the region, its history goes back to 1990-1991. During the early 90's, the Somali Salvation Democratic Front (SSDF), the organisation that Puntland was based around, had to fight a war on two fronts with the Al-Ittihad and the United Somali Congress (USC), during which it succeeded in evicting the Al-Ittihad as well as keeping the USC at bay.

In 1998, the current Puntland State Authority was given a three-year tenure. After three years, it unilaterally renewed its mandate. In 2004, the President of Puntland, Abdullahi Yusuf became the President of the current TFG, while General Adde (Mohammud Musa Hersi) became president of Puntland.

2 *Geography, climate and natural resources*

The surface area of Puntland extends 212,510 km² - approximately one third of Somalia's total geographical area - and is divided into seven regions as per the Puntland government, including two new regions of Karkare and Ayn. However, most of the official maps and documents show the pre-1990 five regions of Nugal, Bari, Mudug, Sool and Sanag.

Rainfall is the most critical factor affecting much of Somali life. Puntland is made up of arid and semi-arid agro-climatic zones experiencing high temperatures and low erratic rainfall. Average daily temperatures range from 27° to 37° Celsius and annual rainfall does not exceed 400 mm in any area. For pastoralists, the timing and amount of rainfall are crucial determinants of the adequacy of grazing and the prospect of relative prosperity. There are four seasons in Somalia: Jilal (January through March and the harshest dry season), Gu (April through June, the main rainy season), Hagaa (July through September, the second dry season) and Deyr (October through December, the second rainy season). Short-lived droughts have always been a part of the normal cycle of pastoral life in Puntland, but the continuing destruction of the environment – mainly due to the cutting of trees for charcoal production – has increased the impact of droughts on the land and significantly reduced the natural recovery period between themⁱⁱⁱ.

The most fertile areas with valuable pasturelands are located in the Hawd region in the high plateau, west of the Mudug and Sool regions, bordering Ethiopia, and in the low Nugal valley. Besides these areas, the mountain ranges in Bari are the only regions where average temperatures are mild. Frankincense trees also grow in the mountainous areas of eastern Sanag and in northern Karkare^{iv}.

Puntland potentially has vast untapped oil deposits and other mineral resources and the coast of Puntland also has rich marine resources, including salt mining and especially

fisheries. Unfortunately these have been overexploited by illegal foreign fishing trawlers and increased fishing by fisher folk from Puntland^v.

3 Population and livelihoods

The Somali population is predominantly pastoralist. However, livelihoods in northeast Somalia in recent times have been changing due to a number of factors: a large and rapid increase in the population as a result of the internal growth rate and immigration due to conflict in the south; changing dynamics in the export trade in Bossaso port which is still dominated by livestock but also high-value marine products and frankincense; issues related to central and local governance; infrastructure development, such as the completion of the Galkayo to Bossaso tarmac road and the development of Bossaso port in the late 1980's; and the expansion of mobile phone coverage.

Resulting changes in livelihoods have included: an enhanced integration of the pastoral economy in market dynamics (e.g. increasing livestock export figures and the commoditisation of camel milk); a diversification of the livelihood base, with fishing and petty trading gaining importance as income-generating opportunities; and significant increases in fixed settlements.

In the Sool/Nugal and Sanag ecosystems, the nomadic land-use system predominates alongside a strong pastoral tradition. In the Bari and Mudug regions, there are pockets of riverside forests and wetlands; providing for both pastoral and agro-pastoral land use systems, as well as opportunities for agricultural production^{vi}.

Pastoralism, fishing and trading are the three main economic activities in Puntland. These three systems are highly complementary and interdependent, and constitute the basis for the present economy. While the movement of livestock in search of water and grazing grounds characterises pastoralism, the coastal economy is characterised by the monsoon winds, which regulate access to the sea for fishing and trading purposes.

The rainy seasons are periods of relative food security for significant numbers in both the rural and urban populations and see general economic growth. In urban centres, the rainy seasons bring a greater supply of milk and other livestock products to the market, improving dietary intake and creating a high demand for non-livestock products in the rural area. Conversely, the long dry season represents the harshest period for the population and in particular for pastoral communities, as grazing lands and water for livestock become scarce, and they are forced to migrate in search of better sources. Fishing is also a seasonal activity (October through May and June) that is complementary to livestock rearing as during the main fishing season there is an influx of fishing labourers from pastoral and urban areas, who move back inland during the off-season .

Other economic activities characterize specific areas in Puntland. These include frankincense collection and trade (people in northern Karkare in particular are important producers of aromatic gum of frankincense), salt mining (practiced in the Indian Ocean coastal areas, particularly Haafun), limited farming along the Golis Mountains of Sanag, collection and sale of water, provision of building materials and other activities. Livelihood systems are strongly interlinked through trade, social networks and sharing and competition for resources^{vii}.

Diversification of income sources has become necessary for households^{viii}. Growing population figures and climatic events (prolonged droughts in the 1970s and the 1980s and the most recent one from 2001 to 2004) have forced many pastoral households to diversify their income options and seek employment along the coasts or in urban centres.

The relationships between pastoralists, rural and urban populations are symbiotic and economically supportive. Positive sentiments towards nomads continue to exist as urban

populations still identify themselves as nomads. The demand for camel milk and sheep and goat meat in the urban centres maintains the economic and social bonds between nomadic hamlets and urban centres. Settlements are also important for nomadic communities as sources of essential commodities, besides being a market for their products^{ix}. The different livelihood systems support each other depending upon seasonality, shocks affecting one or other of the livelihood systems, and the needs of particular households or relatives. To an extent it is imprecise to label a single household as 'urban' or 'pastoral' or 'coastal' since income can come to a single household from different sources. Economic diversification is a response to the various shocks each system faces and is the main strategy for buffering the seasonal limitations as well as the risks involved in 'pure' pastoralism. Diversification is complemented by a pattern of local mobility and close market ties between the different areas.

Vulnerability to risks and shocks for the different communities is buffered by temporarily transferring household members (either to work or to feed) to other livelihood systems. Additional buffering takes place during seasonal peaks and critical times. Social support networks, credit systems, and market-based networks are instrumental in transferring resources from one group to another (referred to as a 'spatial' transferral) and from one season to another (called 'temporal' transferral). While this system shows outstanding degrees of resistance and resilience, vulnerability rises when a lengthy drought or other shock strikes the area. Drought, in particular, negatively affects the pastoral and fishing economies, thus leaving both rural and urban communities with fewer options. As drought intensifies, incomes and food sources related to livestock as well as fisheries shrink, prices of staple foods and especially water increase enormously, and local financial capacities are jeopardized.

3.1 Human capital

Population figures of Puntland are contested and disparate between sources. Accurate numbers are difficult to estimate due to the lack of officially agreed upon boundaries, the highly nomadic nature of pastoralists and large migratory flows that can be both seasonal or drought-related^x. Official statistics in the Puntland State of Somalia state that the population of Puntland is 2.4 million, although UNDP estimates the figure at 1.3 million^{xi}. It is estimated that 70% of the population are under the age of 30 with a rural population growth in marginal areas estimated at 2.4%^{xii} per annum. Other demographic observations suggest that 25% of the population are under the age of five, while 1% are over the age of 65^{xiii}. An average household size of six is often quoted and used to calculate the population size of settlements, but some studies would indicate that the average household size may be as high as 8.3. Household size varies according to household wealth and ranges from six in very poor households to eleven in the better off ones^{xiv}. Although many Somalis exercise a polygamous lifestyle according to the laws of Islam, about 80% of the rural families are monogamous. Estimates of female-headed households range from 12% in rural settlements to 20% across the board. According to the FSAU baseline survey, between 30% and 37% of the population are poor, owning few or no livestock and practising casual labour as their main source of cash.^{xx,xxvii}

It is estimated by some that 65% of the rural population are nomadic, although recent studies reveal a decline in this lifestyle. Recent economic diversification implies that families are separating as some members move to urban areas or attachment villages, while others maintain a nomadic or semi-nomadic way of life. Urbanisation is on the rise in all areas. Even in more rural settings, settlements are becoming more permanent, and therefore defining a less nomadic existence.

The vast majority of the people in Puntland are Muslim and value Islamic practice and moral codes. Communities rely on the wisdom and experience of elders, who use customary and Sharia laws to resolve disputes. The clan system is the basis of the Somali society, and acts as a support system that provides protection to individuals in case of economic hardship or conflict - most of the population of Puntland find their

origins in the Darod Clan. There is also a small permanent population in the coastal areas throughout the year, often composed of minority groups (frequently marginalized), such as Bantus, Oromo and minority clans .

Khat consumption appears dramatically increased over the past decade, particularly in pastoral settlements, which were once Khat-free^{vii,ix}. Its use has deleterious side effects on labour productivity and socioeconomic activities. In some areas the high costs associated with its consumption are reportedly the main reason for not sending children to school and for high divorce rates^{vii,ix}. There is also growing evidence that Khat use has a deleterious impact on public health, causing hypertension, cardiovascular disease, and significant dental and mental problems^{xv}.

All wealth groups purchase Khat, but there is a common perception that the poor spend proportionally more money on Khat to “avoid thinking of life and its frustrations”; what is sure is that for poor households Khat chewing is a major drain on meagre household resources and often deprives women and children of basic food commodities.

In the urban area, Khat keeps a significant number of people in business, and usually not the poorest members of the community^{xvi}. Khat trade is in fact a huge business in the region. The Water and Sanitation Programme estimated that poor consumers spent USD 176 per year on their Khat habit, middle range consumers USD 330-924 per year and wealthy consumers USD 1,542. This compares to annual school fees per child of USD 33.25 for poor households and USD 50 for better-off households^{xvii}.

3.2 Population displacements

The population of the region has increased greatly since the war because of a significant number of IDPs who have fled from the southern parts of the country for security and economic reasons. In addition, some returnees recently repatriated from neighbouring countries. According to UNDP there are an estimated 60,000^{xviii} IDPs in the Northeast, who mainly depend upon the limited support of relatives^{xix} and have occupied major towns in the region particularly Bossaso, Galkayo, Garowe and Gardo . Bossaso holds the largest number of IDPs and refugees from neighbouring countries throughout the region. The main causes of the displacement seem to be insecurity (25%), economic (about 60%), political (about 4%), and tribal conflicts.

A UNDP-RRIDP (2004) stakeholder workshop identified two main IDP groups: those with no clan or kinship affiliation with the community in which they reside, and those who ethnically do belong to the Puntland regions, but who have encountered great difficulties in integrating into their host communities. IDPs try to fit into their communities by setting up businesses selling Khat, livestock and cigarettes as well as other small scale street-side businesses in the town markets; still, their household income is low.

In recent times, a slow but steady movement of young Ethiopian men crossing the border in search of short-term income generation opportunities and out-migration to other countries, has also been recorded. Ethiopian Oromo ‘refugees’ have been identified in coastal towns, fishing and doing small jobs in search for an opportunity to migrate further. These people seem particularly marginalised, as they belong to neither the Somali community nor the local communities.

4 Economy and markets

In contrast to similar production systems in other dry land areas of the globe (Sahel zone, Mongolia, etc.), the Somali system has always had a very strong commercial orientation. Considerable numbers of live animals⁶, especially sheep and goats, are sold to the Gulf States. These animals are reared and marketed over a much larger-area than Puntland itself, and Bossaso has become an important livestock market for the Horn

⁶ About two million heads in 2006 - Bossaso Port Authority (2006), Ships and Export Cargo Statistics for the Year 2005/2006.

of Africa region. Approximately 80% of foreign exchange earnings are derived from livestock exports - as is 40% of the GDP and 60% of the employment opportunities in Puntland^{ix,xviii} - while livestock and livestock product sales generate about 50% - 60% of the local income^{xx}. Recent export figures from Bossaso Port clearly show an expansion and development of the livestock trade market notwithstanding the livestock ban of Saudi Arabia^{xxi}. Revenues from the commercialization of pastoral products provide the Somali economy with the much-needed resources to purchase imported staples^{xxii}.

In recent times the expansion and urbanization of the local population has provided a formidable thrust for a rapid increase in livestock production and a substantial diversification of the pastoral economy^{xxiii,ix}. The export slaughterhouse in Galkayo is a successful example of this, as is the increase in the sale of pastoral dairy products in the region, often carried out by women, which represent an important staple for urban dwellers as well as a critical income generating activity for most pastoralists. The sale of small ruminants and milk represents the most important income source for most pastoralists, while as foods, small ruminants and milk constitute the most important protein sources for most dwellers in the region^{v,ix}. Trading in hides and skins is also practiced with the factory in Bossaso being the market outlet for the traders. Overall, the private sector is incredibly capable and efficient within Somalia^{xxiv}.

Through Bossaso not only livestock are exported, but frankincense, and high-value marine products are exported as well. These all represent a growing component of the regional economy and are vital to enable the import of primary staples. Fishing provides a good opportunity for generating cash during the fishing season, but there are constraints to optimising this activity due to poor processing and ice making facilities.

Market networks are the backbone of the local economy as they enable exchange between urban, rural and coastal areas. Petty trading frequently involves women (often from female-headed households) although women from minority groups have less access. Petty trade helps bridge short to medium-term economic difficulties for whole communities through the credit it provides, but it is also susceptible to prolonged economic hardship when traders get caught between the credit they have provided to purchasers and their own need to pay cash to wholesalers. Since rural communities rely on petty trade to supply essential staple commodities, a decline or cessation of trading has important impacts on pastoralist household access to food and income^{xxi}.

The actual prices of basic commodities have remained mostly unchanged for the past two years, largely due to an increase in competition in the transport sector, which has reduced transport costs and therefore offset commodity price increases^{xxv}. Livestock prices and terms of trade have improved overall and the purchasing power of pastoralists has shown a gradual increase over the past two years of recovery following the 2004 drought. Likewise access to food has also improved^{xxvi}.

4.1 Transportation and communication

The transportation infrastructure in the Northeast regions of Bari, Nugal and Northern Mudug was very underdeveloped prior to 1990, when the Galkayo - Bossaso road and the development of the Bossaso port (late 1980s) were completed through support of the Italian Cooperation. Still, most roads are susceptible to seasonal disruption and are in very poor condition. Some improvement work has been carried out in recent years but it tends to be limited geographically and limited to relatively short sections.

Telecommunications have, however, greatly improved through the introduction of cellular networks and the widespread availability of high frequency (HF) radios allowing isolated communities to share information on markets and supply needs. Radio also permits access to local information and news. BBC Somali broadcast regularly in the Somali language. There is also access to local satellite television broadcasts that are aired in many of the rural settlements.

4.2 Credit system and remittance

While credit systems characterize many Muslim societies, the credit system is of particular relevance to the pastoral context and especially in Somalia, where no state institution exists to support vulnerable and poor groups. Credit is the backbone of economic transactions in the region. It works as a type of delayed payment that enables flexible transfers through time. It works very well as a buffer for the seasonality that characterises the different livelihood system. Credit and debts may be accumulated over several years .

In normal times, credit enhances saving and investment mechanisms, due to the fact that it does not carry interest rates, as stipulated by Islamic rules^{xxvii}. Given the great seasonal variation in pastoralist income, petty traders would not be able to operate nor establish vital commercial networks without applying credit. Credit is also at the heart of the contractual agreement between Yemeni boats and local fisher folk . In difficult times credit also provides the economic resources to access staple foods, water and transport for livestock . Together with remittances and social support systems, credit represents an important factor in buffering local vulnerability.

The credit system hinges on trust. While in principle credit is open and accessible to all, its importance increases during harsh times, when resources shrink and access becomes more selective. Trust is by far the most important factor influencing a trader's decision to provide credit – in fact, lack of trust was reported by 95% of the traders interviewed as the main reason for which they would stop giving credit during times of stress. Family relations and/or kinship and asset ownership represent other important factors in deciding credit lines^{xxviii}, as do the lack of assets, labour force, and 'residential rights' , as these variables often determine repayment capacities. As a result, poor households with limited clan and/or social contacts have limited access to credit in terms of the absolute amount that they can obtain, which traders will grant them credit, and the length of the repayment period that they will be given .

As a general rule credit systems differ throughout the region in that credit accessibility is slightly higher in asset-rich pastoral communities, while in coastal areas it is principally provided to individuals who have 'working' family members. Herders repay debts through asset sales (livestock) or milk sales, while for fishing communities, debts are repaid through the provision of labour^{xxii,xxix} .

5 Literacy and education

There are two intertwined educational systems in Puntland: the traditional Koranic school system and the modern educational (non-Koranic) system, each having different structures and mandates (though both systems have a Lower Primary, offering grades 1 through 4, and an Upper Primary, offering grades 5 through 8). In Puntland, just over 80% of the schools are Koranic .

Puntland authorities devote less than 3% of their total budget to education and health^{xxx} and this has resulted in a widespread lack of schools, qualified teachers, and structures to facilitate formal teaching. Most of the functioning schools stem from community initiatives^{xxxi} where teachers are normally paid directly by parents and manage their own living arrangements.

A review of the post-civil war modern educational systems in Puntland would suggest that there is limited access to pre-primary education, there are few secondary schools and only emerging rudiments of tertiary education. The average gross enrolment rate at primary school level is 36% in the North East Zone (NEZ)⁷ and 34% in Sool and Sanag,

⁷ North East is Bari, Mudug Nugal. UNICEF. 2006. Survey of Primary Education in Somalia 2005/2006. Volume 1- Technical Report. Kenya.

which are amongst the lowest in the world^{xxxii} but are still above the south central zone of Somalia. Increased urbanization has raised enrolment rates. Middle-income and better off families send their children to urban areas where schools are better equipped, more stable, and of higher quality. Often, nomadic families send their children to villages or towns to stay with relatives in order to ensure access to education. Nomads regard education as necessary, and look for the opportunity to educate their children within their own communities, so that a greater retention of the younger generation is possible. Coastal communities have become more permanent and therefore provide a suitable environment for improving the education infrastructure. Hence the largest increase in enrolment in Somalia was seen in the North East Zone for the 2005-2006 academic year, when it reached 21.4%. Nonetheless, statistics suggest that there is a huge dropout between Lower Primary and Upper Primary levels, especially for girls. Furthermore, in smaller villages education is usually offered only up to the end of Lower Primary.

With 40.2% of girls enrolled, the North East Zone has the highest girl-to-boy ratio in Somalia, while girls enrolment in Sool/Sanag was at 37.7%. However and as stated above, it is important to note that the enrolment of girls drops considerably between Lower Primary and Upper Primary from 41.5% to 36.1% in the North East Zone and from 39.1 to 32.9% in Sool/Sanag.

Reasons for low school enrolment and attendance of children from the poorer households are related to the costs associated with attending school. Tuition fees are widespread and pose a significant burden for poor families, especially in Puntland. School fees range from 40,000 SoSH per child per month for a Koranic education up to 60,000 SoSH per month for primary schools. By far, the highest school fees in Somalia are paid in the North East Zone. Children who go to primary school are predominantly from the majority and better-off households but those from poorer strata still value education and strive to attend school despite being unable to pay fees – in fact, in Somalia, 36% of all pupils pay no school fees.

In terms of literacy, little information is available and the reliability of what is available is questionable. The recent UNDP and World Bank Joint Needs Assessment quotes an adult literacy rate of 27% for females compared to 50% for males in Somalia, but the original source of information is unknown^{xxxiii}. The Somalia Human Development Report (2001) states a much lower literacy rate of 22% for men and 12% for women^{xxxiv}. The recent UNICEF Multiple Indicator Cluster Survey (MICS) (currently under publication) shows that 25% of the women in Somalia are literate, but that there are strong disparities across livelihoods, e.g., while 40% of the women residing in urban areas are literate, only 10% of their rural counterparts and 4% of nomadic women are^{xxxv}.

6 Gender issues

Somali women's kinship is of an ambiguous nature - they 'belong' to both their husband's and their father's groups - and is of great importance to their social well-being. The role of women has been subject to controversial dynamics in recent decades. There has been some positive change in society as a result of the civil strife, to the extent that women enjoy an enhanced access to resources and socio-economic responsibilities like they've never before seen^{ix}. However, in 1991 when the Somali state disintegrated, the structures that had previously supported the advancement of women were reversed by the re-imposition of customary and religious rules^{xxxvi}.

Although facing a number of challenges within the current socio-economic contexts, women's roles are increasingly visible in peace-building, reconciliation and conflict resolution, economic enterprising in livestock products and petty trading, and civil associations and organizations^{v, xiv}. Gender relations are basically complementary, in that men tend to formally control resources and related access (land and livestock for example), while it is often the women who manage and use them –i.e., the management of small ruminants and dairy products are under the full control of pastoral women.

There is an important number of female-headed households all over the country. A UNICEF survey conducted in 1996 established that 40% of all households surveyed were female-headed, while more recently PDRC reports the figure is actually about 20%^{xxxvii}. Female-headed households tend to receive consistent attention and support from family and community structures .

According to the recent 2007 UNICEF MICS, the highest number of polygamous marriage in Somalia is in the North East Zone and reaches 26%.

7 Health and nutrition

7.1 Health

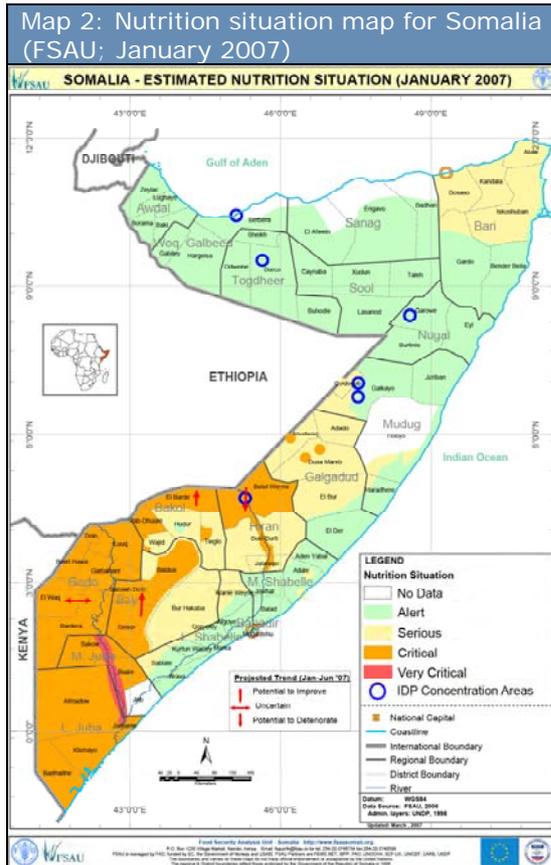
There are few health indicators for Puntland alone, as reliable statistics relate to the entire country. Infant, child and maternal mortality rates in Somalia are among the highest in the world. In 2004 in Somalia, the infant mortality rate was 133 deaths per 1,000 live births while the under-5 mortality rate was 225 per 1,000 live births^{xxxviii}. Diarrhoeal disease related dehydration, respiratory infections and malaria are the main killers of infants and young children, together accounting for more than half of all child deaths. Cholera is endemic in Somalia, with outbreaks occurring annually from December to June. The major underlying causes of diarrhoea are the lack of access to safe water and poor food and domestic hygiene. The 2000 MICS found that almost 24% of the children under five years of age in the households surveyed had had diarrhoea in the two weeks preceding the survey.

Though data is lacking, Somalia remains among the countries with the highest incidence of tuberculosis in the world. Overcrowded camps and a lack of treatment facilities, unsystematic and poor quality drugs and high rates of malnutrition keep tuberculosis as one of the main killer diseases in the country.

Neonatal tetanus and other birth-related problems contribute significantly to infant mortality, while measles and its complications result in widespread illness and numerous child deaths when outbreaks occur. Susceptibility to measles is compounded by poor nutritional status, and transmission is rapid in crowded living conditions such as congested urban and peri-urban areas and camps for displaced people. Immunization coverage is not yet sufficient to prevent measles outbreaks.

Reproductive health is a major problem in Somalia - with a maternal mortality rate of 1,600 per 100,000 births Somali women are among the most high-risk groups in the world. Haemorrhage, prolonged and obstructed labour, infections and eclampsia are the major causes of death at childbirth. Anaemia and female genital mutilation (infibulations) have a direct and aggravating impact on these conditions. Poor antenatal, delivery and postnatal care, with an almost complete lack of emergency obstetric referral care for birth complications, further contribute to these high rates of mortality and disability.

Puntland has 19 Hospitals, with approximately 600 functioning beds, and a total health staff of 1,123 of which 641 (57%) are not professionally qualified (i.e. auxiliary nurses, community health workers and traditional birth attendants). There are 72 registered doctors, operating mainly in Garowe, Bossaso and Galkayo and pharmaceutical outlets are concentrated in the urban centres. The health infrastructure is appalling with a lack of basic sanitation blocks, no maintenance, and an absence of basic equipment. The private health sector is concentrated in the major towns and provides mainly curative health care. There is one nursing school (also training midwives) in Bossaso. It is mainly funded by Islamic charities and institutions, and there is one private medical school in Galkayo. In 2006 the Galkayo University began a first year basic training for assistant physicians (as part of a 3 years course) who are meant to be deployed to rural and remote areas .



7.2 Nutrition (from UNICEF Somalia and FSAU)

Malnutrition is a chronic problem in all areas of Somalia and appears in acute form in areas of drought, flood or localized conflict. Poor availability and accessibility of food (primarily due to successive drought and conflict), quality of diet, infant feeding practices and inadequate home management practice (keeping food in safe, sterile conditions, the proper storage of water, etc.) contribute to the poor nutritional status of children.

Considerable variations exist between different areas and population groups, with the central and southern areas being the worst affected.

Micronutrient deficiencies (including iron-deficiency anaemia, vitamin A deficiency and iodine deficiency) are serious health issues facing the population. Anaemia is suspected to be high among women and adolescents, and iodine deficiency is a public health concern as access to iodized salt is extremely low. In addition, sub-clinical vitamin A deficiency is most likely a contributing factor

in morbidity (frequent sicknesses within families and disease) and mortality (death).

With reference to **Map 2**, malnutrition can be seen to be worse in the Northern parts of Bari than in other parts of Puntland. This would appear to be due to poor access to markets, which results in high food prices. This reduced access to food, along with reduced purchasing power is suggested as an underlying cause of the higher levels of acute malnutrition seen in Northern Bari as compared to the rest of Puntland.

Global acute malnutrition tends to be less than 15% in Puntland and is relatively stable. This is with the exception of the special problems experienced in IDP camps compared to other settlements where malnutrition rates are consistently higher. These settlements are mostly squalid slums lacking all basic amenities and facilities. Here malnutrition is a combination of poor access to food and high disease rates due to poor conditions and access to health care.

8 Livestock and agriculture

8.1 Herds and migration

There are about 7.1 million goats, 3.5 million sheep, 1.4 million camels and 440,000 thousand cattle in Puntland^{xxxix}. The nomadic and semi-nomadic groups in Puntland traditionally engage in seasonal migrations which constitute an important coping mechanism aimed at ensuring the survival of the livestock. Pack camels are crucial during long migrations in search of pasture and water, as they carry essential non-food items such as shelters and clothes and other valuables^{vii}. Herds tend to move towards permanent water sources during the dry seasons of *Hagaa* and *Jilal* for better access to water and pasture which may bring them as far as Ethiopia, while during the *Gu* and *Deyr* wet season they tend to move back towards their homelands^{xi}. Pastoralists living close to the coast move towards the shoreline to access the Heis rains – additional rains that hit the coastal areas before the start of the *Jilal*. Most often, abnormal migrations

are caused by poor rainfalls, causing pastoralists to go beyond their usual routes in search of pastures and water and prolonging their absence from home for long periods of time.

8.2 Animal welfare and veterinary issues

Since their introduction in Somalia by GTZ in the 1980s, trained Nomadic Animal Health Auxiliaries (NAHAs) or Community Animal Health Workers (CAHWs) have been providing primary animal health care to complement the professional services provided by qualified veterinarians. They used to accompany veterinarians in mobile clinics organized and sponsored by the former government, but since its collapse, NAHAs have been working in isolation in remote pastoral communities, replacing veterinary professionals, but without the necessary equipment, professional training or back-up support to do so^{xli}.

Besides drought, pastoralists face important risks from animal diseases, including intestinal worms, east coast fever and ticks. Rift Valley Fever virus is thought to be endemic in Nugal Valley extending across areas of Somaliland and Puntland^{xlii}. In addition, water stress and malnutrition associated with drought and low quality pasture predispose livestock to opportunistic diseases, that normally would not affect healthy animals.

There would seem to be little use of veterinary medicine in Puntland, although this may not be true in all areas. Quality veterinary services and drugs are likely to be beyond the reach of pastoralists in remote areas who are still unfamiliar and unacquainted with modern veterinary services and practices. Even when drugs are available, pastoralists do not have the necessary knowledge to make optimal use of them.

According to FSAU, localised rates of mortality within herds are around 10% - 20%, especially in Nugal valley and Hawd areas^{xliii}.

8.3 Agriculture

Agriculture is a relatively minor activity in Puntland and mainly occurs along the Golis mountains of Sanag and in parts of the Bari region. These farming systems use shallow wells, springs or canals for water sources. Average farm holdings are relatively small (2.1 ha) and activities normally peak around March to May and November and December. Tomatoes, potatoes, maize, onions, cabbages, sorghum and hot peppers are normally grown. Few farmers process their produce, and storage is also an issue with large losses being reported. There is a shortage of availability of inputs, especially seeds, seed dressing chemicals, farming tools, implements and equipment, fertilisers and pesticides. Farming skills are acquired primarily from experience as opposed to training, and sub-optimal production is reported.

9 Water access

Puntland has a serious water deficit^{xliv}. In 1998 50% of the people in the area accessed water from surface reservoirs but by 2003 the figure had fallen to 20.7%. Overall, water access has improved in urban areas following aid interventions by international agencies after the collapse of the state government, but rural areas continue to face scarcity. It is estimated that 47% of the urban population access safe drinking water, while only 14.5% of the rural and nomadic population do^{xlv}. During water shortages, water-related costs become a significant part of a household's total expenditures, though destitute and poor families traditionally do not pay for water.

There are large seasonal variations and geographical differences in water access. The Sool Plateau relies mainly on berkads⁸ where as Nugal and Mudug look to shallow wells for water during the dry season. Shallow pans and wells are communally owned and managed whereas berkads are normally privately owned, often by middle-income groups. The water from berkads is the main source for water trucking and is an important source of income during the dry season. It is often provided to households on credit. Boreholes, although present, are prone to breakdowns and low yield. Water prices increase significantly during drought periods, while the willingness to share this precious resource among sub-clans decreases, resulting in conflict over water usage and resources.

Water quality is also of concern. In the north and northeast, sub-surface water is saline. Often the only permanent source of sweet water is found in deep boreholes^v. The highest concentrations of salts occur in the dry periods^{xvi}. From a hygiene and environmental perspective, berkads can be polluted by all kinds of waste when surface waters are channelled through to refill the reservoir. One study indicated that only 50% of those interviewed said that the water from berkads was clear^{ix}. They may also contribute to an increased level of mosquito borne diseases.

The unregulated construction of water points, in particular the commercial development of berkads, also disrupts the traditional management of grazing lands, and often results in overgrazing in areas around water points. As such, newly developed water sources may have lasting implications for the future.

10 Intervention strategies and food security policies

Policy development in Puntland is relatively recent in terms of current governance structures. While a Poverty Reduction Strategy Plan (PRSP) is being formulated to address the long-term issues of poverty in Puntland - a process being lead by UNDP and the Ministry of Planning, Monitoring and Evaluation - policies and intervention strategies are generally developed and implemented by the international donor community. Many of the recent strategies in Puntland that have been applied through international and local NGOs are related to livestock, livestock health and disease control (including vaccination programmes). In a ten year period (1993-2003) 30 distinct projects have been implemented^{xlvii}. One significant achievement in the livestock sector was the development of the veterinary law code and the veterinary sector master plan in Puntland through bottom-up, participatory and consultative processes involving all categories of livestock sector stakeholders^{xlviii}.

During recent years, and as a result of the 2001-2004 drought and the 2004 tsunami, the focus of interventions implemented in Puntland has been on emergency response. Interventions have included food aid, supplementary feeding, cash relief, cash-for-work, food-for-work, veterinary services, health care services, water trucking and water point rehabilitation. In 2004 the Tsunami devastated the coastal communities that had otherwise been spared many of the problems caused by the previous drought. Interventions such as food aid, water and sanitation projects and shelter (temporary then permanent) were the main focus of interventions. Livelihood recovery projects were also implemented to assist fisher folk with fishing equipment and boats.

Towards the end of the drought UNDP formulated a strategy on livelihoods and mechanisms to mitigate the effects of drought which set out to "enhance and increase the livelihood opportunities of the populations affected by the current drought, and thereby contribute to food security and increased capacity to cope with future drought situations"^{xlix}. Achievements in this regard were to be seen in the following outcomes:

⁸ Berkads are a form of water collection whereby a large hole is dug in the ground, lined with cement and drainage channels are used to collect water from run off during the rainy season. These structures are at best clean and well constructed with covers and fences around them to protect from roaming animals.

- An improved pastoral livelihood system achieved through improved water availability and grazing resources;
- Increased incomes at household level through enhanced coping mechanisms (micro-credit, value adding and alternative income generating activities);
- Improved capacity for planning and sustainable management of local resources through capacity building and institutions strengthening; and
- Increased information sharing and knowledge to facilitate informed decision-making for planning and management of local resources.

Of interest in the context of this report, is that UNDP Lessons Learned (2003/2004) identified priority needs for Somalia as including protection, basic services, community and institutional capacity building, governance and support for livelihoods and employment generation. Any intervention strategies must target not only the nomads and pastoralists but also recognise the potential of, and opportunities for, alternative livelihoods in order to minimise the risks associated with dependence on one livelihood system alone¹.

Finally, Puntland Authorities recently published a detailed five-year development plan covering the period of 2007-2011. Some of the main strategies in this plan include:

- To strengthen civil services and other institutions so as to provide timely and high quality services;
- To enhance human capital for higher productivity;
- To create an enabling environment for the growth and development of the private sector; and
- To strengthen the policy and regulatory framework for the efficient use of human and natural resources in a ecologically sound manner.

11 Sources of food insecurity and vulnerability

Generally, chronic poverty and vulnerability in the Northeast are a result of structural and shock-related phenomena. Structural causes include the lack of effective government, poor infrastructure and the lack of basic services, continued environmental degradation of an already fragile ecosystem, and a poorly skilled population with few employment opportunities. Recent shock-related phenomena consist of drought, freezing rains, tsunami, a prolonged export livestock ban, the spread of livestock diseases coupled with poor access to drugs and veterinary services and civil insecurity.

The most recurring shock is drought and the main underlying risk factors relate to environmental degradation. These include deforestation, overgrazing, erosion and gully formation. Chronic poverty and prolonged shocks have pushed a large number of nomads and pastoralists out of their normal livelihood patterns. Many are being supported by their families and/or relatives or the diaspora, or are destitute in large urban centres, though existing safety nets such as credit and social support systems do provide some relief. A relatively strong market-based economy also provides linkages between livelihood systems, providing buffers against seasonal peaks and droughts. However, during extended crises - particularly shocks that impact the pastoral system - local safety nets are largely insufficient and markets are over-stretched to the brink of collapse. The poor state of education, health facilities and infrastructure are among the core vulnerabilities of Puntland.

Without considerable improvement in basic services and employment opportunities, as well as the adoption of concrete measures to slow down environmental degradation, the vulnerability of the households in Puntland is likely to worsen with each new and recurring shock.

Part III – Analysis of food security and geographical distribution

1 Livelihood food security and vulnerability profiles

Based on the descriptive and analytical framework of household food security provided in Part I, an analysis of household food security was carried out on the data collected, using access and consumption together, as pivotal indicators of household food security status. The process by which these indicators were determined is described below.

Food Consumption... some figures:

- 40% of the households interviewed reported having had "Poor" (16%) or "Very Poor" (24%) consumption during the seven days prior to the assessment - these households were smaller and tended to be female-headed households or to have an older head of household.
- Households with "Very Poor" consumption spend less per capita than those with "Good" consumption. 45% of the foods consumed during the week prior to the survey were purchased while 37% were bought on credit.
- Only 2% of the households had a diet that included fruit, though milk was consumed, on average, almost every day. In general, dietary diversity was poor and revolved mostly around starches and cereals.

1.1 Household food consumption profiling

Each household was asked how many times in the week prior to the interview at least one of the members of the household had eaten the foods on the list (see below).

1.1.1 Frequency of consumption and dietary diversity

Household food consumption profiling defines groups based on household-level information on dietary diversity and the frequency with which staple and non-staple foods were consumed. Dietary diversity, determined by the number of different foods from different food groups consumed in a household and their frequency of consumption, is a good proxy indicator of the access

dimension of food security and nutritional intake. Research has demonstrated that dietary diversity is highly correlated with caloric and protein adequacy, percentage of protein from animal sources (high quality protein) and household income^{li,lii}.

The foods and food groups that were included in the survey tool were the following:

Carbohydrate Sources	Oil Sources	Protein Sources	Vitamin and Mineral Sources
<ul style="list-style-type: none"> • Sorghum, Maize • Rice, Wheat • Pasta • Roots and tubers • Sugar 	<ul style="list-style-type: none"> • Vegetable oil • Animal fats 	<ul style="list-style-type: none"> • Pulses • Meat • Fish • Eggs • Milk 	<ul style="list-style-type: none"> • Sauce - Fresh vegetables • Fruits

1.1.2 Methodology for analyzing food consumption data

Consumption data in this assessment was analysed simply on the basis of the frequency with which the foods listed above were consumed e.g., if a household consumed only maize very frequently that would not constitute a good diet as it would be lacking in diversity. However, as there were 17 variables to be considered, a certain degree of complexity was introduced with regard to defining the categories for households with similar consumption profiles. This problem was overcome by using a Principal Component Analysis (PCA)⁹ which grouped households having similar consumption patterns of key foods together, on the assumption that they effectively represented distinct patterns; for example, households that had a high frequency of maize and milk consumption coupled with low meat consumption were grouped, or clustered, together.

⁹ The software used for multivariate analyses is ADDATI 5.2c, developed by Silvio Griguolo, IUAV Venice, Italy, freely available at http://cidoc.iuav.it/~silvio/addati_en.html

Clusters in this case were based not on singular variables, but on relationships between variables. A cluster analysis was run on the original 17 variables and 14 principal components were identified, which accounted for 93.5% of the variance in the original dataset. The components were not weighted nor given increased preference in the PCA.

Once the data was processed the PCA produced 20 classes of similar consumption profiles. These profiles were then grouped together into five larger consumption profiles by identifying those with the greatest similarities. This process was carried out by a group of nutritionists and food security specialists from UNICEF, FSAU, Save the Children UK and WFP to best ensure that they were grouped together correctly in the context of the Somali diet and in terms of nutritional consistency.

1.1.3 Household food consumption groups and profiles

From the PCA and related discussions, five consumption profiles were produced in relation to the average diet observed in the sample. The "Average" profile best reflects the average diet in Puntland in the seven days prior to each household interview. These profiles are presented in **Table 3** and a more detailed explanation of the classes is presented in **Annex 1**.

Table 2: Main differences between consumption profiles

Profile	Main Differences
Good	<ul style="list-style-type: none"> • Most frequent consumption of animal proteins; particularly milk. • Greatest diversity in the diet.
Fairly Good	<ul style="list-style-type: none"> • Frequency of milk consumption higher than average • Greater diversity
Average	
Poor	<ul style="list-style-type: none"> • Less milk in the diet, as is overall protein consumption. • Less diversity
Very Poor	<ul style="list-style-type: none"> • Very low protein consumption. • Little if no milk. • Poor diversity

The main differences between the consumption profiles are frequency, and to a lesser extent, diversity. Error! Reference source not found. **Table 2** helps to summarise the basic differences between the five consumption profiles that were developed (with reference to the average profile described above).

It should be noted here that the consumption profiles - due to the manner in which the data was collected - are defined by the foods consumed by the households in the seven days prior to the interview. These profiles therefore contribute to an understanding of the habits and consumption patterns of the household

members in the immediate past, which may or may not be similar to their habits at other times of the year. The perspective during the analysis of the food consumption profiles therefore is limited to the recent past. It should also be noted that consumption profiles were based on differences in *protein* consumption and that this is important to remember when considering what food insecurity is about --i.e., as largely affected by protein inadequacy.

On average, households in Puntland consumed a cereal or starchy food at least once a day and twice every other day. Pulses or meat were eaten four times a week and milk was consumed almost every day. Sugar was eaten every day. Although initially the inclusion of "sauce" in the foods list was intended to illustrate vegetable consumption, the composition of "sauce" is different throughout Puntland and may or may not contain vegetables at all; hence "sauce" was not considered to a large extent in the analysis of consumption profiles except when considering differences in diversity.

Table 3: Household consumption profiles for Puntland assessment (see Annex for specific details of sub-group profiles)

Profile	No of HHs	% HHs	Cereal and tuber	Pulse	Animal Protein	Milk Product	Oil and Fat	Sugar	Sauce (fresh vegetable) fruit
Good	240	19%	12	4	5	10	7	7	4
Fairly Good	193	15%	12	3	5	7	7	7	3
Average	315	25%	12	2	2	7	7	7	2
Poor	209	17%	10	1	1	3	7	7	3
Very Poor	308	24%	8	1	1	1	3	5	1
Total	1265	100%							

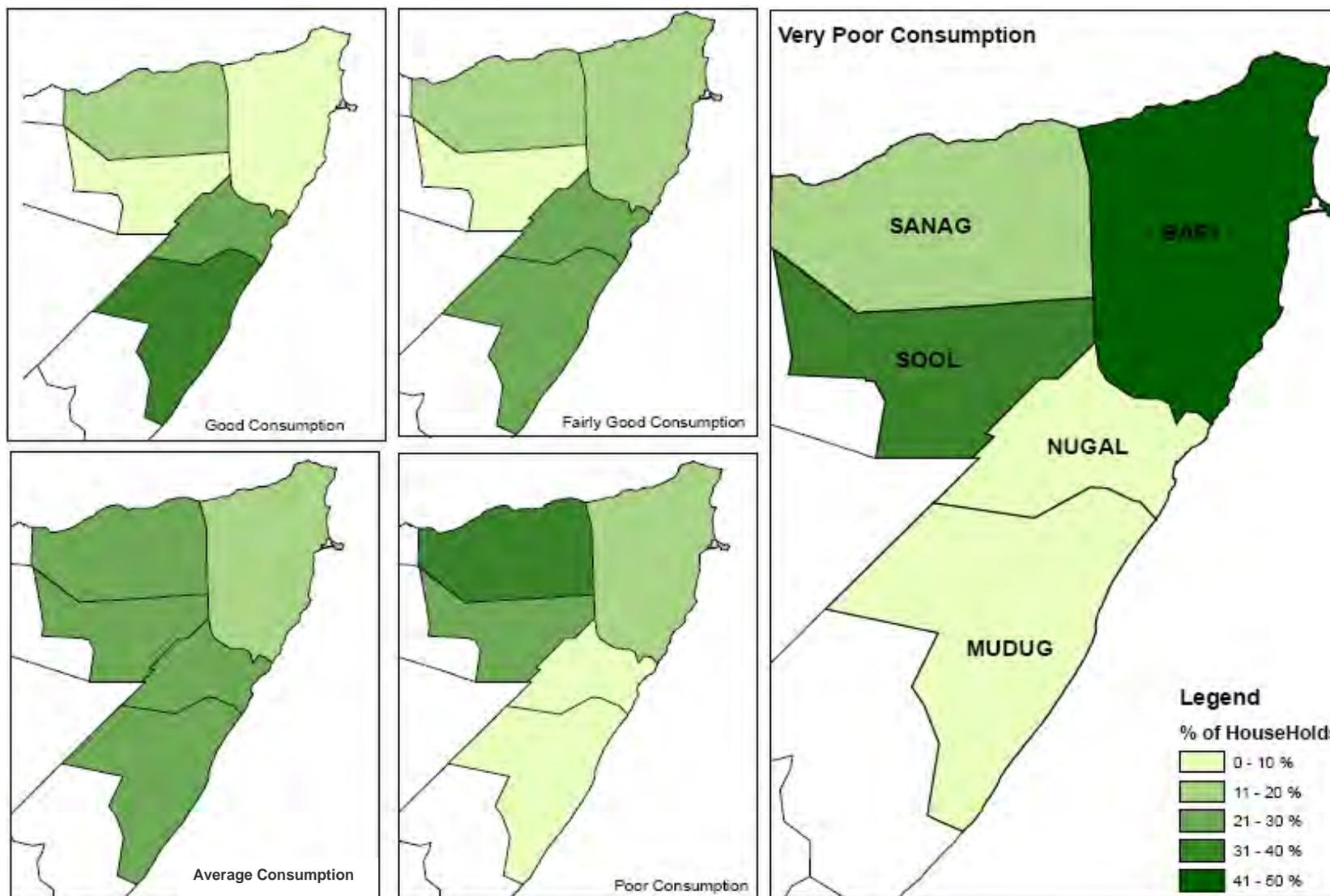
The maps on the next page show the percentages of the households in each region falling into the different consumption profiles. In Bari more than 40% of the households had very poor consumption, and in Sool almost 50% of the households had poor or very poor consumption profiles. One difference between Bari and Sool is that Bari tended to have more of the better consumption profiles whereas in Sool more than 75% of the households had average consumption profiles or worse. In addition, it is worth noting that within the very poor consumption profile, the sub-group with the lowest protein intake (no pulses or animal protein except milk drunk once a week only) was mainly found in Sool, while sub-groups with higher protein intake but low sugar and oil intake were found in Bari¹⁰. In Mudug and Nugal between 70-75% of the households had either good or fairly good consumption profiles. These differences can also be clearly seen in **Figure 2**.

Households with good consumption profiles had significantly more household members. This seems to be in accordance with FSAU 2005 baseline results which stated that the richest households tended to have more wives. The opposite is true in Sanag and Sool as well as Sool Hawd livelihood –i.e., households that had very poor consumption profiles had significantly older heads of household on average when compared to households with good profiles (except in Mudug). It is also more likely that they were female-headed households. The very poor consumption profile households in the Nugal Valley and Dharor had significantly lower per capita expenditure compared to Addun Coastal Dheeh livelihood households.

¹⁰ See Annex 1 for further details of the sub-group of each consumption profile.

1.1.4 Geographic distribution of consumption profiles

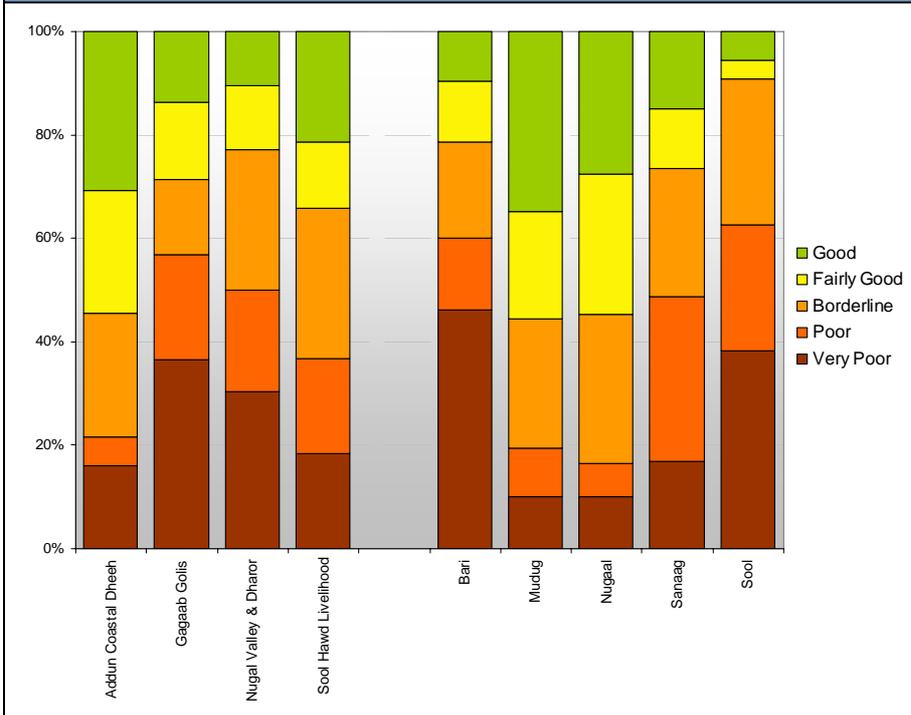
Map 3: Prevalence of the five different consumption profiles (very poor to good) within each region



1.1.5 Distribution of consumption profiles across income activity groups

The distribution of consumption profiles within livelihood zones shows that Gagaab Golis and Nugal Valley and Dharor have a higher prevalence of poor and very poor consumption profiles than the other zones (57% and 50% in the livelihood zones respectively). This contrasts with Sool Hawd and Addun Coastal livelihood zones where 35% - 55% (respectively) of the households had fairly good to good consumption profiles. **Figure 2** demonstrates these differences.

Figure 2: Comparison of food consumption profiles between livelihoods and regions



As could be expected among the people who relied on livestock and livestock products, those who had a good consumption profile drank more milk than those with a very poor profile. What is perhaps surprising is that a high number of livestock sellers and livestock-product sellers had a very poor consumption profile, with very limited protein sources. Why is it that many of those who potentially have access to milk

do not drink it? It may be that those having very poor consumption: i) had few animals and minimal production, and/or ii) were selling their milk (as opposed to consuming it) given that they also had the smallest per capita expenditure. It is also to be noted that of the households with very poor consumption (90%) most had not had any member of the family migrate with livestock in the past year. It is equally important to point out that the survey was conducted at a time of year when both milk and livestock production were at their lowest, and it was hardest to satisfy food needs.

1.2 Household access profiling

The process of producing household access profiles was similar to that used for the consumption profiling. That is, a PCA was carried out on the following components that were considered important indicators of "access" in the Puntland context:

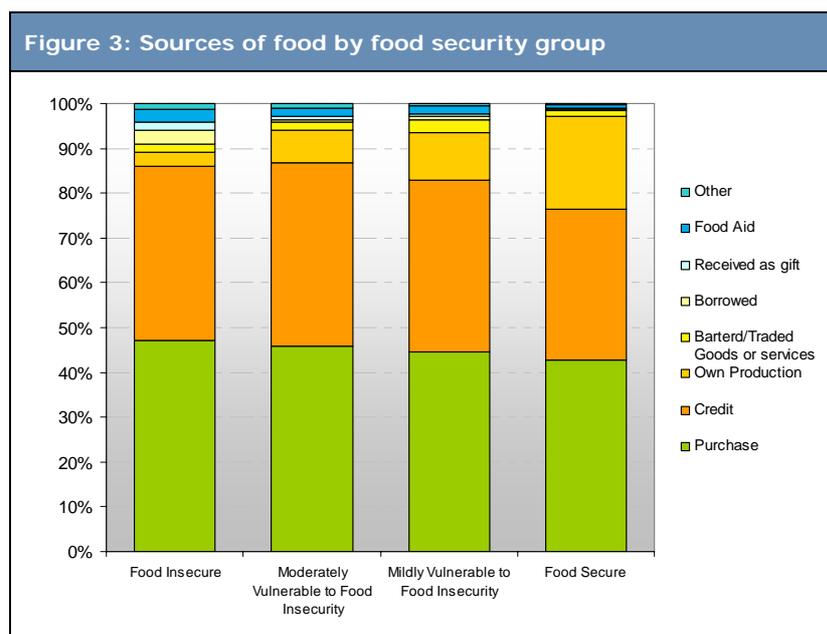
1. Total expenditure per capita.
2. Total food expenditure per capita.
3. Percentage of contribution to the food basket based of:
 - a. Food purchased or obtained through credit or barter.
 - b. Food of own production.
 - c. Food borrowed or received as a gift.
 - d. Food aid.
4. Percentage of milk – eaten and sold.
5. Percentage of meat – eaten and sold.

The above indicators help provide information on current and past year access. The analysis used ten variables to identify six factors that accounted for 83% of the variance of the original data set. The resulting 14 classes produced by the PCA were regrouped into four access profiles, as follows:

Table 4: Description of access profiles identified in Puntland

Access profile	% of Households	Description of access profile
Weak	29.1	Total expenditure and expenditure on food tend to be low or very low. There is little in the way of consumption or sale of own production. Where there is a high proportion of food expenditure compared to overall expenditure (above 70%) the contribution to the current food basket of food received as a gift, borrowed or received through aid is high.
Average	37.0	Average or slightly higher than average proportion of expenditure on food versus total household expenditures (62%). Generally little proportion of consumption or sale of own production. If there is consumption of own production there is no significant sale and low expenditure on food.
Good	16.2	Average or below average proportion of expenditure on food versus total household expenditures (57%). These households tend to consume a large percentage of the food that they produce and sell it to a much lesser degree. Where consumption and sales of own production are more balanced they are below the "Strong" profile.
Strong	17.8	Average or below average proportion of expenditure on food versus total household expenditures (54%). These households are likely to have enough food - both milk and meat - of their own production that they can eat and sell it OR they have a high total expenditure on food compared to the other groups indicating that they have good access through markets and have the income to support higher expenditure on food.

1.2.1 Household access to food

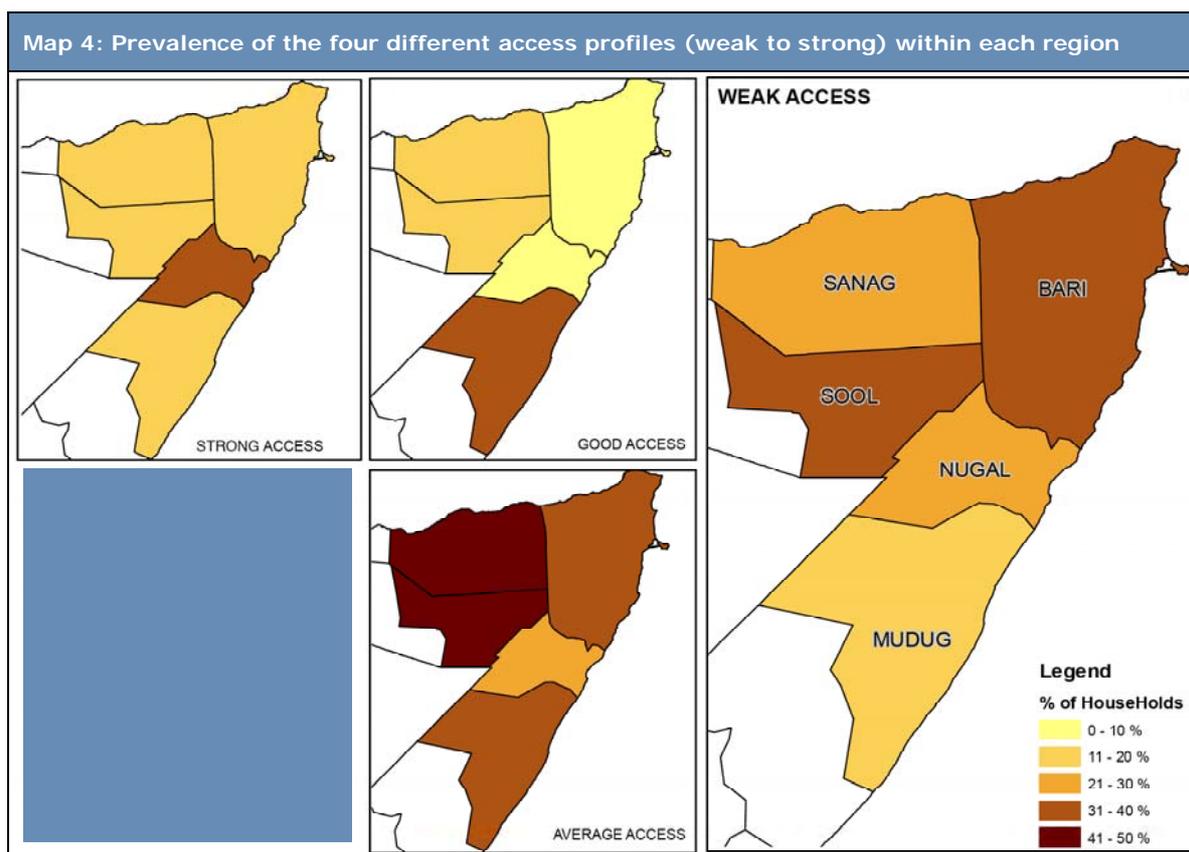


Household access to food in Puntland is typified by purchase (45%), credit (38%) and to a lesser extent own production (10%). The relationship between food sources and food security is interesting and seems to be driven by food of the households' own production in terms of improved food security. **Figure 3** demonstrates the increasing contribution of own production to food sources as food security increases. This relationship is noticeable

in Bari region where approximately 40% of the households have a weak access to food

and only 7.6% of their food is sourced from their own production. There is also minimal household food production in Sool. Conversely, a higher number of the households rely on their own production as a source of food in Nugal and Mudug. Not surprisingly, Nugal and Mudug has also the highest proportion of the households in the “Strong” and “Good” access group, about 30% of the households within the region and of all the households sampled in Puntland **Map 4**.

In addition, Bari, has the highest proportion of villages located more than 150 km away from the nearest tarmac road. In fact, more than 80% of the households lacking oil and sugar in their diet – both imported commodities – are found in Bari. This finding supports remoteness and lack of access.



1.3 Household food security and vulnerability profiling

1.3.1 Methodology for analyzing food security and vulnerability data

The food consumption profiles are a proxy for dietary diversity whereas the access profiles are a proxy for both access and availability. Once the consumption and access profiles were established they were cross tabulated with each other (**Table 5**) in order to create a type of food security indicator. Subsequently five food security profiles were established.

Table 5: Construction of the matrix to define food security profiles

		Consumption				
		Very Poor	Poor	Average	Fairly Good	Good
Access	Weak	9.9	5.8	7.6	3.6	2.2
	Average	7.9	6.7	9.6	6.3	6.5
	Good	3.6	2.1	3.7	1.6	5.1
	Strong	3.0	1.8	4.0	3.8	5.1

From **table 5** it is evident that within this analytical framework vulnerability to food insecurity is a result, and combination, of lessened access and inadequate diet. Therefore a slightly improved diet may not be enough to make households with weak access less food insecure. The figures in the table indicate the proportion of the sample falling within each of the categories.

1.4 Household food security and vulnerability profiles

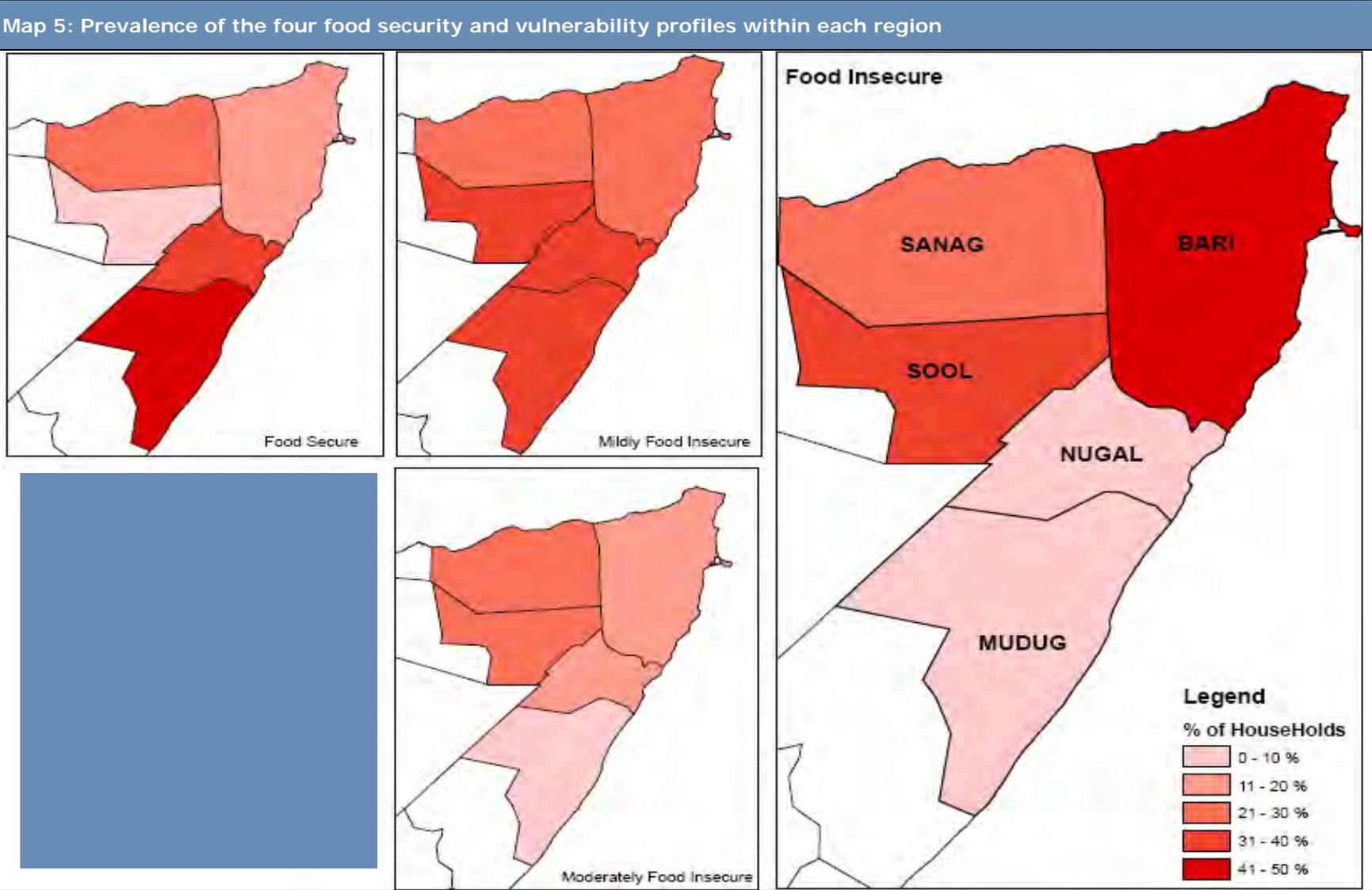
The following four categories were established to help define the degree of vulnerability of the households to food insecurity in Puntland during the time of the assessment (end of Jilal):

Food security group	% HH	Description of group
Food insecure	23.6	Households having weak or average access to food and having poor or very poor consumption.
Moderately food insecure	17.9	Households having good access to food but very poor consumption. Average and weak access is contrasted with poor or average consumption.
Mildly food insecure	32.3	Households having strong access but at worst have very poor consumption. Those having weak access are supported by very good consumption.
Food secure	26.2	Households having stronger access and better consumption. All households have either average access with good consumption or strong access with average consumption.

2 Geographic distribution of food security and vulnerability profiles

From the maps below it is clear that the distribution of food insecurity within Puntland is concentrated in Bari, Sool and Sanag. These regions contain 88% of the most food insecure households identified by the Puntland assessment. This is also clearly in contrast with the much higher proportion of the households that are identified as food secure in the southern regions of Mudug and Nugal, where 60% of all the food secure households were identified. These differences are clear and statistically significant. The percentage of the households within each of the five food security profiles and their geographic distribution is presented in **Map 5**.

2.1 Geographic distribution of food security and vulnerability profiles



2.2 Distribution of food security and vulnerability profiles among livelihood zones and groups

When considering the geographical distribution of food insecurity across livelihood zones, further insight is given by the location of the most food insecure. Again it is very clear that the food insecure reside mainly in the northern parts of Bari, Sool and Sanag. The Addun Coastal Dheeh livelihood zone is generally more food secure than the other livelihood zones, with the Sool Hawd livelihood zone being only slightly less food insecure. The Addun Coastal Dheeh livelihood zone has a higher per capita expenditure (a proxy for income) and a higher concentration of fisher folk.

Map 6: Prevalence of the four food security and vulnerability profiles within each livelihood zone.



Part IV – Community and household survey results/outcomes

1 Circumstances of the households

1.1 Demographics

The standard assumption in Somalia (and in Puntland) is that the average household size is six people per household. Throughout this assessment it was seen that the average was just over seven, though female-headed households tend to be smaller than male-headed households (6.7 compared to 7.7 people on average).

The demographics of the population in the sample were as follows: 20% were below five years of age, 37% were between 5 and 14 years of age, 39% were between 15 and 59 years of age and 4% were 60 years old or older. There was little variation between regions and livelihood zones, with the exception of the Mudug region and the Gagaab Golis livelihood zone where approximately 23% and 16% of the sample population were children under the age of 5 respectively, and in the Sanag region and Gagaab Golis livelihood zone where approximately 6% of the sample population was 60 years old or older. Generally men outlived women (1.2 men for every woman) except in Sool where the ratio of men to women was calculated at 0.8 men per woman, indicating more women in the communities. Female-headed households tend to have fewer men in them with a larger number of women 60 years of age or older.

On average 35% of the households were female-headed (though approximately 57% of the women heads-of the households were married at the time of the interview). This would rather reinforce the general interpretation of a non-patriarchal society rather than support other interpretations such as a significant loss of the men in the households. However, 13.5% of those interviewed stated that they had lost their spouses and of these, 90% were women. Only 3.5% of the household heads reported they were divorced or separated and 1.5% had never married. Spatial differences were most pronounced for female-headed households in Sool and Sanag where they constituted 40% - 50% of the households interviewed - most of the women interviewed were still married but 20% - 30% of them were widowed.

1.2 Income activity groups (within the sample)

During the survey, households were asked to identify the three main economic activities that they participated in. For the two most important of these they were asked to provide their estimated seasonal income. In the questionnaire there were 22 separate activities provided, with an option for "other". The frequency with which some of these activities occurred was often very low. There were also a number of activities that were particularly similar and could therefore be joined together in a single grouping called "*Natural Resource Utilisation*" to simplify the analysis¹¹. In addition, there was no single activity that necessarily identified a household's livelihood, so to make more sense out of the economic activities of the households in the survey, activities were analysed through a cluster analysis. This analysis also considered the seasonality of the income types by calculating the percentage contribution of each activity to household income during each season. The analysis then grouped similar households together, thus allowing analysis outputs to be grouped into a reduced, more digestible and meaningful number of income activity groups. The outputs of this analysis, presented in **Table 6** below, show the activities encompassed by each income activity group; how diverse each income activity groups is (indicating increased resistance to livelihood shocks and/or insufficient income through any one individual activity); average monthly per capita expenditure (as an indication of poverty); and an average % of total expenditure spent on food (as an additional indicator of poverty).

¹¹ These were: fodder sales, sale of building material, sale of wild fruits, etc. and firewood / charcoal sales.

Considering that the percentage of household expenditure that goes to food (versus the total amount of household expenditure in a given period) is another indicator of poverty with regards to a households' ability to satisfy its food needs, as a household approaches an income that only minimally allows it to cover food costs this percentage will be close to 100%. Households therefore with 75% food expenditure or more are likely to be very poor. The average for the sample was 62%.

When considering the different income activity groups there are a few income activity groups that clearly tend to be more food secure or food insecure. In summary the following observations showed a significant difference (**Figure 4**):

- Community support recipients were the most vulnerable to food insecurity;
- Unskilled labourers and hawkers were less likely to be food secure;
- Small business owners, fisher folk and skilled labourers were less likely to be food insecure.

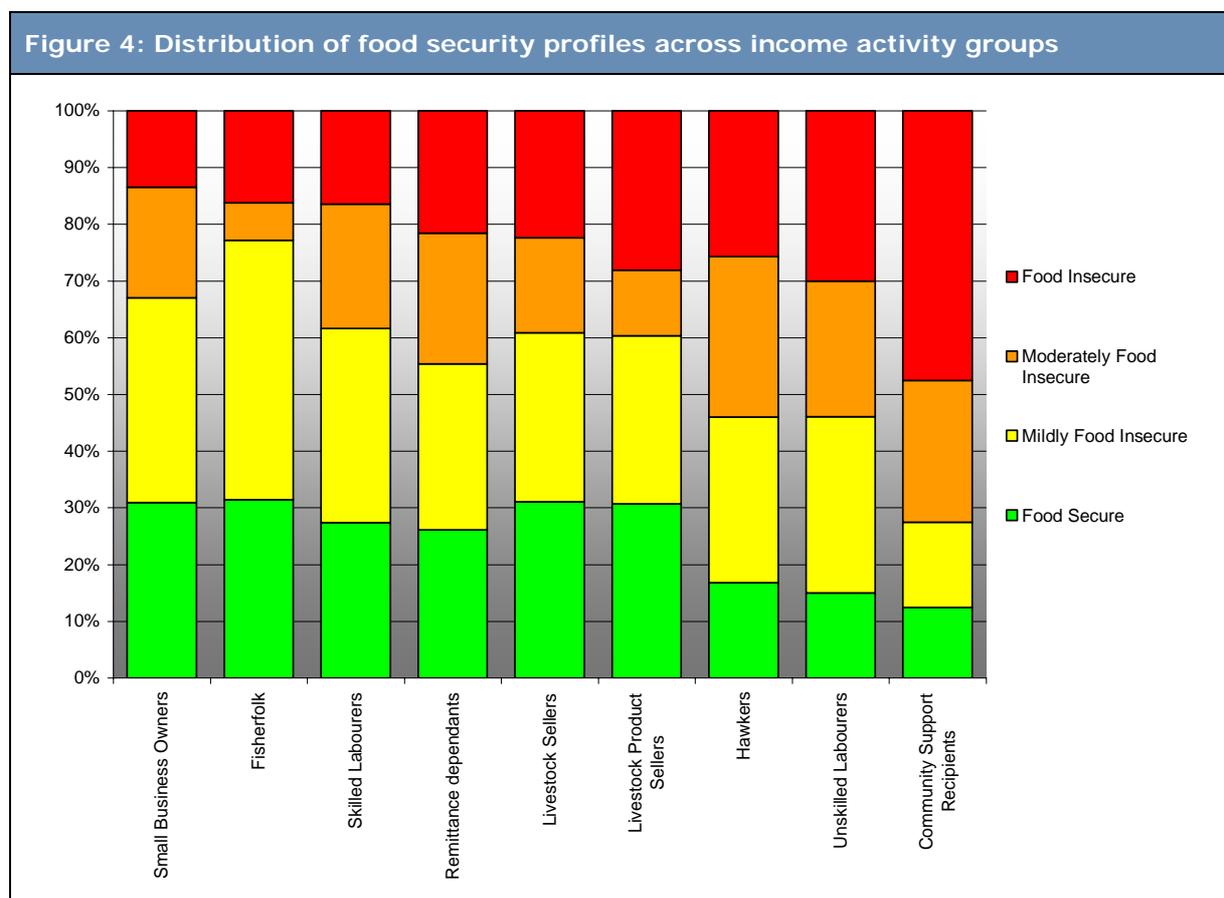


Table 6: Summary of income activity groups defined within the sample

Income activity groups: Source/s of income (diversity of incomes indicated)	% in Sample (n)	Total approx. Expenditure per capita (SoSH)	% on Food ¹²
Livestock dependents (high)	37.6% (476)	300,000	57%
<i>Sub Groups</i>			
Sales of animals and products (medium)	0.2% (2)		
<ul style="list-style-type: none"> • <i>Main income/s:</i> derived equally from the sale of livestock and animal products; income is considerably lower in the Jilal season than in the other seasons; the sale of animal products is highly seasonal. • <i>Secondary income/s:</i> the sale of water supplements income in all seasons. 			
Livestock Product Sellers (high)	24.7% (313)	300,000	68%
<ul style="list-style-type: none"> • <i>Main income/s:</i> income received from animal products is higher in the Gu and Deyr seasons. • <i>Secondary income/s:</i> the sale of natural resources, e.g. frankincense, fodder, firewood, and wild fruits, complements total income throughout the year; some households also own small businesses, are hawkers, sell water or have other minor income activities; the seasonality of income depends on the activity. 			
Livestock Sellers (medium to high)	12.7% (161)	250,000	64%
<ul style="list-style-type: none"> • <i>Main income/s:</i> the sale of livestock contributes most significantly to the total income throughout the year. • <i>Secondary income/s:</i> two classes were identified in this sub-group. The first has medium diversity in secondary income sources (mainly through unskilled labour and the sale of animal products) while the second has many more activities, of which small businesses and unskilled labour are the most important, but include also skilled wage labour, hawker trading, the sale of animal products and vegetables, remittances, handicrafts, some seasonal fishing and the sale of frankincense. 			
Small Business Owners (low)	15.3% (194)	390,000	68%
<ul style="list-style-type: none"> • <i>Main income/s:</i> usually derived from a shop with stock, which provides a constant income throughout the year. • <i>Secondary income/s:</i> the sale of livestock products provides a small amount of income throughout the year. 			
Hawkers (medium)	8.9% (113)	310,000	72%
<ul style="list-style-type: none"> • <i>Main income/s:</i> this activity provides somewhat more income in the Gu and Deyr seasons than in the others. • <i>Secondary income/s:</i> mainly derived from unskilled wage labour and the sale of livestock, which provides stable income throughout the year; a small contribution is made by the sale of animal products in some households. 			
Unskilled Labourers (low)	14.2% (180)	290,000	69%
<ul style="list-style-type: none"> • <i>Main income/s:</i> this activity provides income in every season with a slight decrease in the Jilal and Hagaa seasons. • <i>Secondary income/s:</i> the sale of livestock products provides a minor source of additional income in all seasons. 			
Fisher folk (low)	8.3% (105)	525,000	57%
<ul style="list-style-type: none"> • <i>Main income/s:</i> fishermen receive income from fishing in all seasons, although considerably more in Jilal and Deyr than in other seasons. • <i>Secondary income/s:</i> a very small additional income comes from small business 			
Skilled Labourers (low)	5.8% (73)	370,000	64%
<ul style="list-style-type: none"> • <i>Main income/s:</i> this constitutes the principle income of this group and accounts for over 90% of their income, which is constant throughout the year. • <i>Secondary income/s:</i> some small supplemental income from the sale of livestock products throughout the year. 			

¹² This is calculated as the % of the total food expenditure per capita / total expenditure per capita. This is an additional indicator of poverty.

Income activity groups: Source/s of income (diversity of incomes indicated)	% in Sample (n)	Total approx. Expenditure per capita (SoSH)	% on Food ¹²
Remittance dependents (medium)	5.2% (66)	335,000	64%
<ul style="list-style-type: none"> <i>Main income/s:</i> about 90% of the total income in this group is from remittances and tends to be a steady amount each season. <i>Secondary income/s:</i> the sale of livestock products and the running of small businesses provides the remainder of the total income for this group. 			
Community Support Recipients (low to high)	2.7% (34)	228,000	75%
<i>Sub Groups</i>			
Community Support Dependents (low)	2.3% (29)	235,000	74%
<ul style="list-style-type: none"> <i>Main income/s:</i> this contributes to almost 95% of the total income and shows strong seasonality with least support coming during Jilal and Hagaa seasons. <i>Secondary income/s:</i> a small additional income is made from the sale of animal products. 			
Community Support Recipients - with livestock (high)	0.4% (5)		
<ul style="list-style-type: none"> <i>Main income/s:</i> community support is the largest single contributor of income for these households, accounting for about 30% of their total income; there is no seasonal variation in this income. <i>Secondary income/s:</i> The remaining income is evenly distributed in the group between remittances, the sale of livestock and their products, handicrafts and to a lesser degree hawker trading; there is little seasonal variation in these incomes. 			
Water Sellers (medium)	0.6% (8)		
<ul style="list-style-type: none"> <i>Main income/s:</i> the sale of water provides 75% of the total income, with greater income in the Deyr and Jilal seasons. <i>Secondary income/s:</i> income is supplemented by the sale of livestock and their products, unskilled labour (during Jilal and Deyr) and hawker trade (during Deyr and Gu). 			
Beggars (low)	0.5% (6)		
<ul style="list-style-type: none"> <i>Main income/s:</i> begging provides the sole source of income, with strong seasonal variation (income would appear to be halved in the Jilal and Hagaa). <i>Secondary income/s:</i> None. 			
Farmers (high)	0.6% (7)		
<ul style="list-style-type: none"> <i>Main income/s:</i> the principle income is from the sale of fruit and vegetables (about 40% of the total). <i>Secondary income/s:</i> other important income activities of these households are primarily, the sale of animal products, which is strongly seasonal, and to a lesser degree, remittances, fishing and sale of frankincense; some households are also hawkers. 			
Khat Sellers (low)	0.3% (4)		
<ul style="list-style-type: none"> <i>Main income/s:</i> the sale of Khat accounts for about 85% of the total income with a small decline in income during the Gu season. <i>Secondary income/s:</i> the principle supplementary incomes of this group are daily trade (hawkers) and unskilled labour. 			

Note: At the time of the survey the approximate street exchange for 1 USD was 17,000 SoSH .

For income activity groups that are small (representing less than one percent of the sample), the per capita expenditure and percentage of food expenditure are not reported.

1.3 Migration

On the whole, only 12% of the households interviewed reported that they had migrated with livestock during the year in which the survey took place, in spite of the fact that 38% of the households surveyed stated they relied on livestock as their main source of income. On the other hand, 21% of the households interviewed reported that a household member had migrated during that period, but for other reasons –i.e., to either find work or to get a better education (both together accounting for about 25% of the migration out of the village). About 10% had reported that they had gone to live with

relatives in times of distress. The seasonality of this migration was predominately during the Jilal season of the previous year.

Unusual migration out of the villages in Puntland is a common occurrence with around 40% of the communities reporting such a phenomenon took place during the year preceding the survey. In these communities the most common reason for this movement, as reported by 50% - 60% of them, was that local pastures had dried up and that there had been a lack of water. When this happens, 60% - 70% of the households leave to seek better pastures and water elsewhere, returning home when the situation in their communities normalises.

Other reasons for out migration were rarely reported. Of note was migration to seek work, which was reported by 6% of the communities interviewed. This is interesting in that in these communities an average of 80% of the population left but only 15% subsequently returned.

In-migration (movement into these communities) was also investigated. Around 60% of the communities interviewed reported that there had been an influx of people (representing around 15% - 20% of the total population of an average village) during the course of the previous year. In about a third of the communities reporting in-migration, all the migrants had left at the time of the survey. In the other communities approximately 70% of these migrants still remained. This may have been because they were seasonal migrants (for fishing), migrants seeking resources that had not yet recharged in their communities of origin (e.g. water or pasture) or possibly were displaced from southern Somalia.

1.4 Socio-economic characteristics

1.4.1 Education

1.4.1.1 Adult education

Adult literacy is difficult to establish accurately from this survey, as the interviewee was often not able (or asked) to give the literacy of their spouse. However, approximately 50% of the household heads were literate and approximately 25% of their spouses were. These results are inline with those reported in the literature. Adult education is a key component in the success of households in developing countries and Puntland is no exception. There were significant differences observed in a number of areas, all related to education. If the head of the household was literate there was a significantly higher likelihood that the male children would be attending school. This was not so for attendance of female children but they were more likely to go to school if the spouse was also literate. Spouse literacy more significantly improves the likelihood of all children attending school. Literacy of the head of household and the spouse were significantly higher in Nugal than in Sool and Sanag while literacy of the head of household alone was higher in Bari, Mudug and Nugal than in Sool. Illiteracy of the spouse was highest in Gagaab Golis and contributes to an understanding of why the very poor consumption profile is highest in this livelihood zone. Head of household literacy was poorest in Nugal Valley and Dharor livelihood.

Significantly higher literacy of either household head or spouse was seen in the more food secure. Literacy rates of the spouse were significantly lower in the very poor consumption profile than in the other profiles.

Literacy was significantly higher among skilled labourers than among other income activity groups (75% of the heads of the households and 40% of the spouse in this category were literate). Interestingly, literacy was significantly higher among the unskilled labourers, the fisher folk and the small business owners than among the other

income activity groups (approximately 55% - 60% of the heads of household and 30% of the spouses).

1.4.1.2 Child education

This assessment considered children between the ages of 5 and 14 years of age, as those eligible for attending primary school. The head of the household or the spouse was asked how many children (boys and girls), if any, were currently attending primary school within this age group. If there were children in the household attending primary school they were also asked what type of school it was (formal, informal or Koranic).

Children's education and school attendance... some figures:

- **54%** of children do not attend school because it is too far away while **40%** do;
- **Girls** are as likely as boys to be sent to school - if all the boys in a household are sent to school, then most of the girls are also sent (true in approximately 75% of the households queried);
- Children mainly attend Koranic or formal primary school;
- While **34% of girls** do attend school, **twice** as many girls as boys do not attend school because they are needed at home.

Just under 40% of the children in that age group in Puntland were reported as attending primary school (42% boys and 34% girls). These results are similar to the 2005-2006 UNICEF survey where Puntland showed the highest increase in enrolment rate as well as highest proportion of girls in primary school across Somalia. Significantly more boys were reported attending school in Bari than in other regions (55%) **Figure 5**. For the children attending primary school about 52% were attending Koranic schools, 45% were attending formal schools and 3% were attending informal schools. For those that did not attend school the most predominant main reason given was that the school was too far away (approximately 54%, both boys and girls) and that the household could not afford to send them

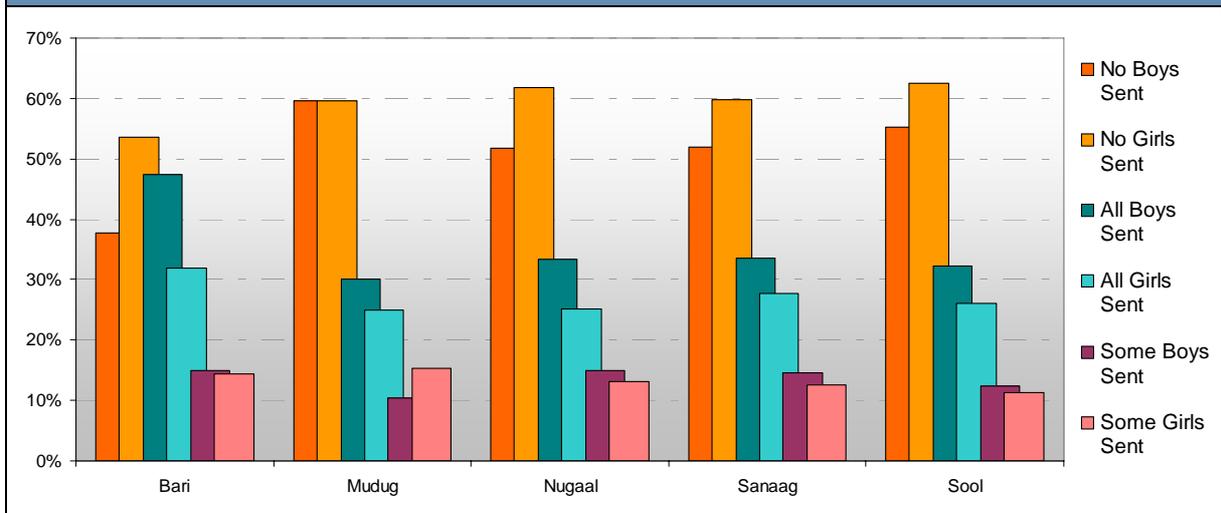
(approximately 32%)¹³. There were little differences between girls and boys in terms of reasons for not attending school, with the only exception being that for 11% of the girls the main reason for not attending school was that they were needed for work at home (as opposed to 4% of the boys).

It would appear that in Puntland there is no strong preference by gender for children to be sent to school. In households that send no female children it is as likely that they send no male children. Conversely if they send all their male children they will send most of their female children. Indeed, the slight difference between boys and girls attendance was not significant **Figure 5**. Of all five regions only in Bari did the difference between girls and boys attendance appear noteworthy and in favour of boys, though the analysis did not show a statistically significant difference between Bari and the other regions. The lack of gender preference for school attendance held true by marital status and gender of the head of household.

In this regard however, the sampled population was relatively small given that only 40% of households interviewed sent children to school. More detailed studies in collaboration with UNICEF or other specialized agencies on school enrolment and attendance by gender at a district or regional level would be required to substantiate and build upon the results of this assessment.

¹³ Highest school fee across Somalia are found in Puntland – UNICEF 2006.

Figure 5: Differences between boys and girls attending primary school in terms of all the children in the household



1.4.1.3 Primary school access

In order to understand a little more about the issues surrounding school access, the communities visited were asked about access to schools and, if there was a school present, they were also asked about any issues relating to the provision of education in their village.

It was noted that in 40% of the villages there were no primary education facilities available - with 72% of these villages reporting that the closest school was more than ½ day's travel away. According to the responses, where primary education was available, 85% of the facilities were formal or public schools. Private or informal schools accounted instead for 6% of the facilities while Koranic schools accounted for 9% of the other facilities available. This is interesting because while Koranic schools account for less than one in ten schools available, more than 50% of the attendance reported at primary school level is in Koranic facilities.

When the community was asked why children did not attend the primary school in the village responses fell into three main categories:

- 1) Infrastructural problems (lack of equipment, class rooms / facilities etc.)
- 2) Staffing quality / incentives / payment issues
- 3) Cost of sending children to school.

54% of the responses given were related to issues surrounding infrastructure, 37% related to the performance and/or payment of teachers while only 9% related to the cost of sending their children to school¹⁴.

However, when the community was asked about the principle reasons for children not attending primary school 75% of the time it was noted that it was because it was too expensive. It is difficult to reconcile these observations but may be due to the differences in how the questions were posed and the focus of the interviewees. Differences in the reasons between genders were only apparent in the responses specifying that children were either needed at home for work or had left with the livestock, and therefore could not attend school. For the first response it was about seven times more likely to be given when describing attendance of female children but only half as likely in the case of the latter response. This may indicate that housework is

¹⁴ The ability to assign these issues to the different types of education provided is not possible in this context and falls beyond the objectives of this assessment.

principally a female task in the case of children between the ages of 5 and 14 years. Unskilled labourers gave the reason that they could not afford to send their children (whether boys or girls) to school more than other groups.

Market Access:

- Access to local livestock markets is stronger than export livestock markets.
- 40% of the settlements are within 10km of local livestock markets.
- Attaining Credit and the traders ability to provide credit is most difficult during the Jilal season.

1.4.2 Health

1.4.2.1 Important diseases

Village representatives were asked to rank the most important diseases in their communities for both adults and children. The top three diseases mentioned during this exercise are listed below. It should be noted that this reflects the frequency of the occurrence of these diseases or conditions as mentioned in total and it was a multiple response exercise.

Although a large number of different diseases were mentioned during these discussions, by far the most frequently mentioned were treatable and basic infections (Table 7). What was also interesting from these discussions was that 30% of the diseases or conditions reported were related to lifestyles and/or diet (e.g. diabetes, hypertension, ulcers and anaemia).

Table 7: Frequency of main diseases mentioned by communities

Adults	%	Children	%
Fever	87	Diarrhoea	78
Tuberculosis	43	Fever	69
Respiratory Infections	41	Respiratory Infections	69

1.4.2.2 Health facilities

Less than 30% of the villages visited had a health facility in them. Of those that did not have a local health facility, approximately 80% were within 30 minutes of the nearest one that did and approximately 10% were more than a day away.

Of the villages responding, the provision of service from these facilities was often as absent as it was present with approximately 45% of the facilities not providing regular service. Of note is the fact that the majority of the facilities that were present requested payment for their services (60%).

1.4.3 Access to truck road

There are only two paved truck roads in Puntland. The main arterial road runs north to south from Bossaso to Garowe, where it branches west to Hargeisa, and continues south to Mogadishu. Off this main road the road conditions range from dirt and sandy roads that can be travelled relatively quickly in the dry season to rocky roads that permit only very slow progress over mountains and across plateaus. Of the rural settlements that were sampled 20% were within 20 km of these arterial roads, 40% were between 20-100km away and more than 30% were more than 150 km away. In Bari, the least accessible region, more than 50% of the villages were more than 150 km away from a tarmac road. With such a large proportion of the population so far from good vehicular access, access to markets and commodities and their prices are affected.

1.5 Markets

1.5.1 Market access

As one would expect, access to smaller markets is generally better than access to the larger goods markets and trading centres. 70% - 80% of the settlements visited accessed local and export livestock markets as well as small goods markets. However,

only around 30% of the settlements accessed large goods markets or trading centres. 40% of the local livestock markets were within 10 km of the settlement responding whereas about 60% of the settlements were more than 150 km away from the nearest export livestock market. These markets tend to be the same regardless of season --i.e., there were no seasonal alternatives or increases in trading that would give rise to more livestock markets. However variation was seen in the frequency of visits made to livestock markets. Local livestock markets saw increased frequency in access during the Hagaa and Jilal seasons (when there was a noticeable increase in weekly visits according to 50% of the settlements). Export markets for livestock were generally less frequently visited in the Deyr.

Differences by region are interesting. Local livestock markets were accessed most frequently on a daily basis in Mudug. However, the frequency of the visits tended to fall during the rainy seasons. In Nugal, access to local livestock markets was less frequent and showed little seasonal variation. In Sool and Sanag the seasonal increase in frequency was particularly noticeable, except the seasonal changes in Sool went from weekly to daily as opposed to the monthly to weekly increase of frequency shown in Sanag. In Bari the frequency of access remained fairly constant throughout the year and most settlements accessed markets weekly. Local livestock markets tended to be furthest away for settlements in Sool.

These observations tend to hold true for export markets for livestock, except that they are furthest from settlements in Nugal. The main difference being that the frequency of these visits is reduced to monthly or seasonal. The most noticeable seasonal variation in access is in Sanag where the frequency increases to weekly from monthly (during Hagaa and Jilal seasons).

Access to small goods markets has slightly different profiles in terms of the frequency of visit. In Bari daily visits were most commonly recorded (according to 50% of the settlements) with 30% of them visiting weekly and showing no seasonal changes. This reflects the fact that 65% of these settlements were within 10 km of the markets in question. No information was however available on the type of goods found in these markets. Strong seasonal variation was demonstrated in Sanag (increased visits during the Hagaa and Jilal seasons) where visits changed from monthly to weekly. This was despite the fact that on average 50% of the settlements were within 10 km of the markets (although 35% are more than 150 km away).

Figure 6: Seasonality in demand and provision of marketplace credit



1.5.2 Marketplace credit

About 38% of the households interviewed bought their food stock on credit during the time of the assessment (end of the Jilal season), and both food secure and food insecure households alike tended to buy food stock on credit.

During the community interviews market traders were asked if and when they found it difficult to provide credit and when the highest demands for credit occurred during the

previous year. Not surprisingly, the responses were very seasonal and both were reported to be highest in the Jilal and the Hagaa seasons, coinciding with the highest reported occurrence by the households of animal related shocks and the period when incomes and livestock production are at their lowest and market prices are high.

When traders described why these seasons were the most difficult, responses commonly related to issues such as poor body conditions of the animals, which therefore would fetch an inferior price, such that normal income levels were not attained by those trading. They were then not able to get the same terms of trade for other products and required credit in order to purchase other products (whose prices were general higher).

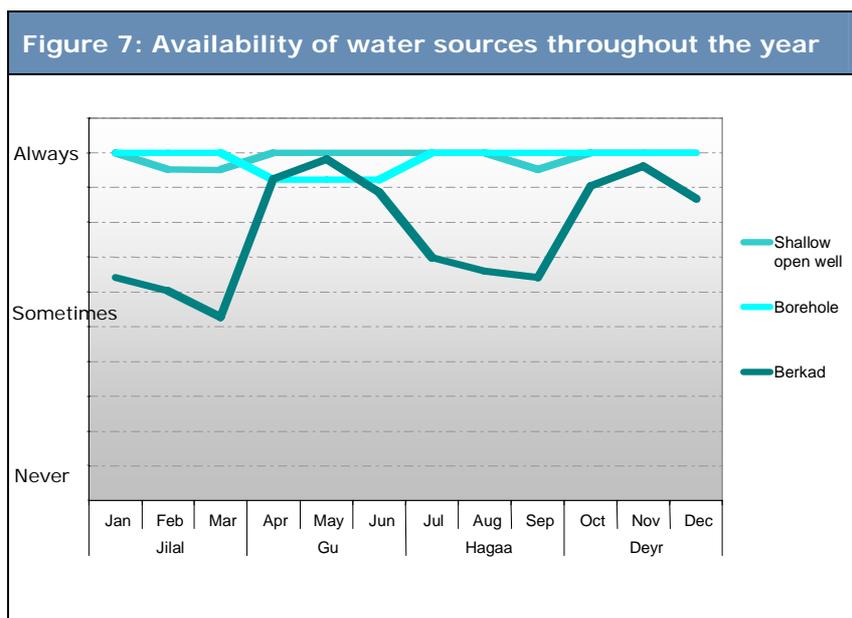
1.5.3 Commodity prices

Communities were asked to recall when market prices for a set of commodities were at their highest and lowest in the twelve months prior to the survey. There were months when communities clearly noted that prices were at their highest, the most apparent being at the end of the Jilal and beginning of the Gu when all commodities were at their most expensive; of particular note were milk and goat meat. Around a third of the communities reported that during mid Hagaa rice, wheat and sugar were at their highest price. Conversely prices were most frequently reported as being at their lowest during the Gu and the Deyr. Milk was more frequently reported as being at its lowest price in the Gu than in the Deyr, when instead water was at its lowest. Overall these observations (regardless of the price) indicated that the majority of commodities, in most of the communities, were highest during the Jilal and that this was when increased market prices were likely to be seen and to have their greatest impact.

1.6 Water access

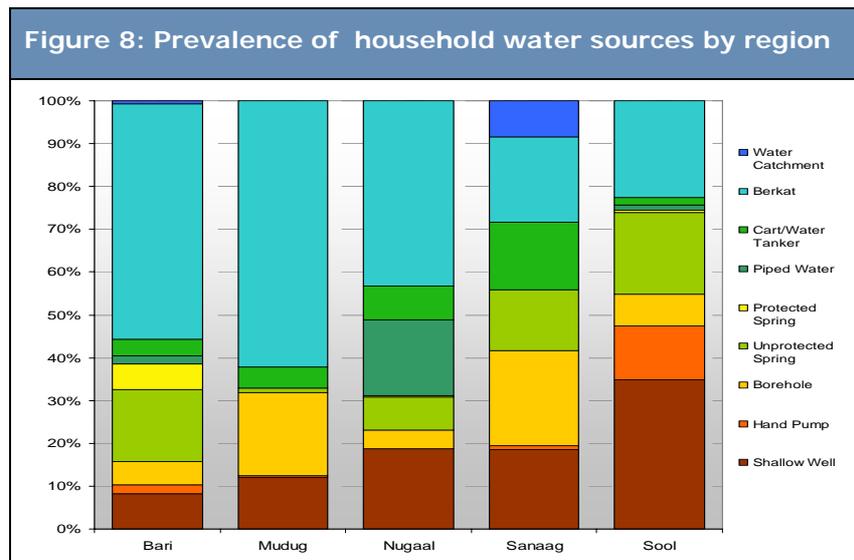
One of the limitations of the assessment tool was that it did not differentiate between the cost of water for animals and the cost of water for humans when water was collected from same source. Bearing this in mind the assessment produced some of the following results.

Overall, communities tended to have only two main sources of water (few communities reported a third source). Most of the households interviewed relied on the berkad (42%), shallow open wells (18%), boreholes (12%) and unprotected spring water sources (12%).



At both the household and community levels few reported using different sources for water gathered for their animals. Communities were asked to report on the availability of their water sources throughout the year. Seasonality of the main sources of water can be clearly seen in **Figure 7**. Note that the source of water that is most used by the population is also the most seasonal.

Based on household responses, there were clear differences in water sources between both regions and livelihood zones. These differences, for the main sources, are illustrated in **Map 7** (by livelihood zones) and in **Figure 8** (by region).

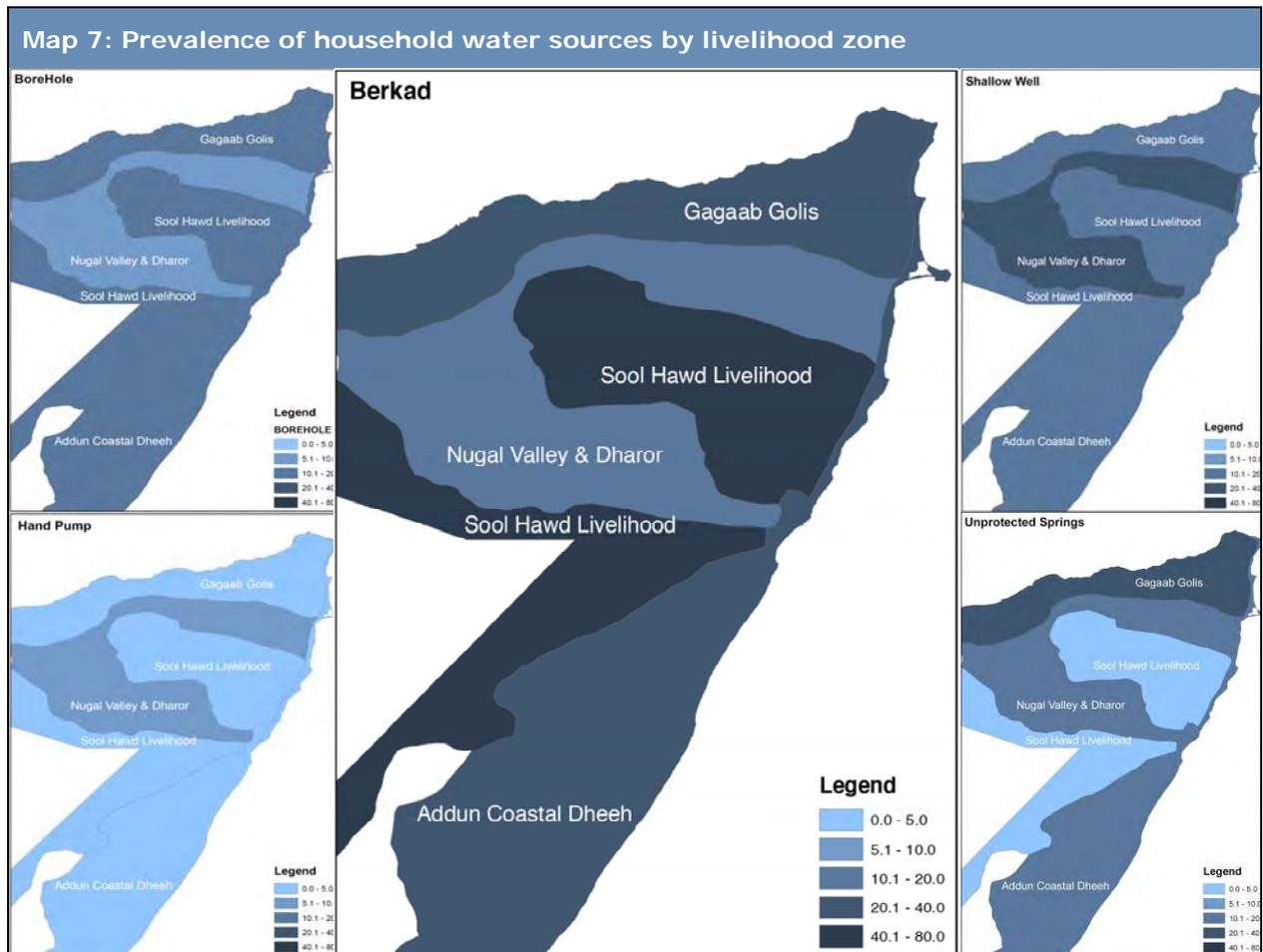


Berkads were the main source of water for households (and their animals) in Sool Hawd livelihood zone, with two third of household (66%) relying on them¹⁵. They were also an important water source in the Addun Coastal Dheeh and Gagaab Golis livelihood zones

(for 30% - 40% of the households). However, berkads were only used by 18% of the households in the Nugal Valley and Dharor livelihood zone. Berkads were used most extensively in Bari, and Mudug, followed by the Nugal region.

Spring water (whether protected or unprotected) was used by more than 20% of the households in the Gagaab Golis livelihood zone but it was not reported as a water source at all in the Sool Hawd livelihood zone. With regard to administrative region, it was mainly used in Bari, Sool and Sanag. **Shallow wells** were most often used in the Nugal Valley and Dharor livelihood zone and in Sool region, where approximately 35% of the households relied on this source. The use of shallow wells was less frequent in other regions and livelihood zones, the least frequent use occurring in Bari and Mudug (as reported by approximately 10% of the households) and around 10-15% in the other livelihood zones. **Hand pumps** were not often a main source of water but they were most reported in the Nugal Valley Dharor livelihood zone and in Sool (by about 10% of the households). The Nugal Valley and Dharor livelihood zones and the Sool region had access to the most diverse sources of water.

¹⁵ Regarding regions – Berkads are prevalent in Bari and Mudug (55-60%)



The average weekly cost of water varied greatly between regions. Households in Mudug, Nugal and Sanag paid significantly more than those in Bari (between 35,000-60,000 SoSH compared to 13,000 in Bari). More specifically it would appear that this was particular to the Sool Hawd livelihood zone, and it only seems to be affected by animal ownership in Mudug, where households spent significantly more (more than twice as much) if they had animals than if they did not.

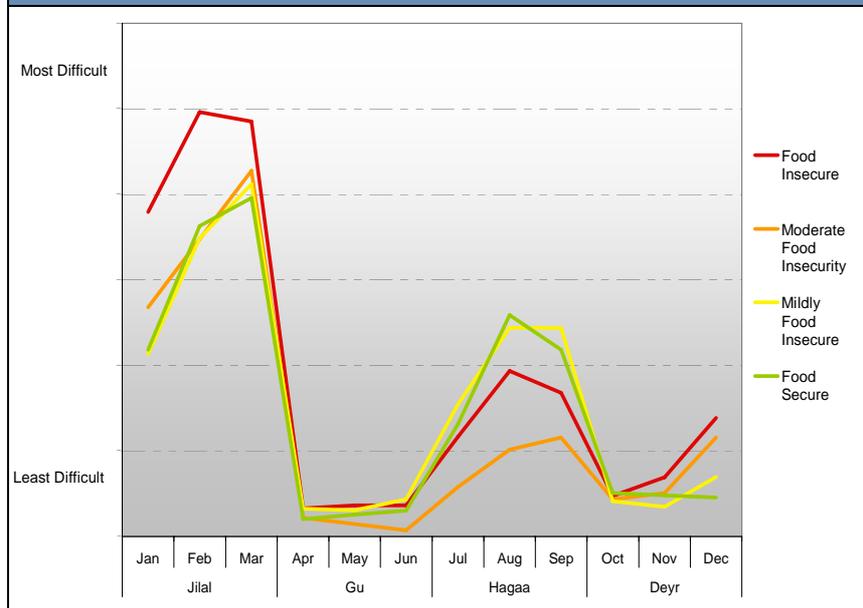
When comparing food security profiles it was noted that in Bari the moderately food insecure paid significantly more for water than the mildly food insecure. In Sool the food secure paid significantly more than the other food security profiles.

For 70% of the households, the main water source was within a 30-minute return journey of their dwelling place, while almost 90% of the households were within two hours of their main water source, 5% ranged from being two hours to half a day away and another 5% were half to one day away.

2 Household food security and vulnerability

2.1 Availability and access to food

Figure 9: Household perception of their ability to satisfy food needs during the year (by food security profile)



During the survey households were asked if they had a kitchen garden or not. Overwhelmingly 96% responded that they did not, though interestingly, there was no difference between food security groups or consumption profiles. Although no differences were evident between regions there were small but significant differences between livelihood zones (with the Gagaab Golis and Nugal Valley and Dharor livelihood

zones having significantly more than the others). However the occurrence of the gardens was still very small.

Households were asked to indicate the months when they perceived it was most difficult to satisfy their food needs. A clear seasonal trend is presented in **Figure 9**. This indicates that households find that the Jilal is the most difficult period in terms of satisfying food needs. This is also true, but to a lesser extent, during the Hagaa. The strength of this seasonal pattern is most significantly different when it comes to a comparison between food security groups. The food insecure households report more frequently that they find it most difficult to satisfy their food needs during the Jilal season compared to the food secure.

2.1.1 Household Debt

During the course of the interview the person interviewed was asked about the household's level of debt. Respondents were also asked about the amount of money that they had spent on debt repayment in the previous six months, when they had made debt repayments and when the highest level of spending had been.

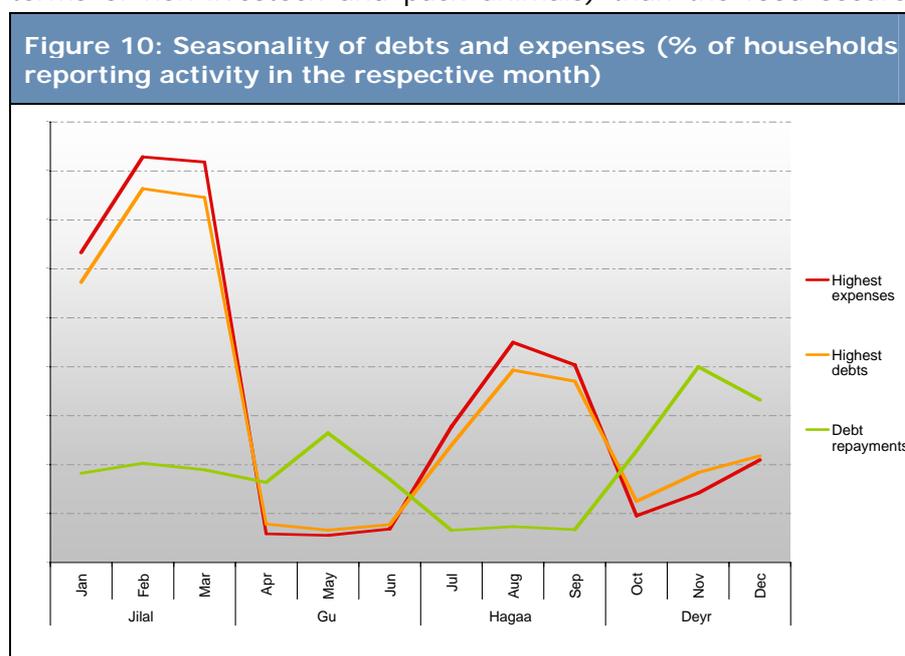
On average the reported debt load of a household in Puntland was about four million SoSH (with the median being 2,750,000 SoSH). Debt repayment in the previous six months was reportedly much less than this, with an average expenditure of 800,000 SoSH, indicating that there was an ongoing accumulation of debt in these households. There were some regional differences in reported debt levels and repayments. Households in Nugal made significantly higher total debt repayments than households in other regions (about 1.5 million SoSH), whereas households in Sanag and Mudug repaid significantly more than households in Bari (800,000 – 1 million SoSH compared to 250,000 SoSH). Mudug had the highest average household debt (approximately 5 million SoSH). Differences between livelihood zones exist with Addun Coastal Dheeh having significantly higher average debt repayments at 1.3 million compared to the other livelihood zones where households averaged between 500,000 – 800,000 SoSH. The Sool Hawd livelihood zone had significantly higher debts than the others (5 million

compared to 3-4 million SoSH). Interestingly fisher folk had significantly higher amounts of debt repayment (1.75 million) compared to other income activity groups. This group reported one of the highest levels of debt (5 million) although there were no significant differences.

Debt repayments occurred during the Gu, and to a greater extent, in the Deyr seasons. On the other hand the highest debt levels were reported during the Jilal and the Hagaa seasons (though particularly in the Jilal). The highest debts also coincided with the time during which households reported the highest level of expenditure - see **Figure 10** for the seasonality of these as reported by the households. It is clear from this figure that most of the financial pressure on the households occurs during the Jilal season.

2.1.2 Productive assets

Generally the food insecure had significantly less in the way of productive assets (in terms of non-livestock and pack animals) than the food secure. This was particularly



evident with respect to pack animals and fishing equipment. What is important to note here is that there is not a complete absence of productive assets in the food insecure. This observation suggests that household food insecurity is strongly linked to poverty, as a reduction in asset ownership (an indicator of wealth) is seen in each of

the income activity groups the more food insecure they are. Poorer consumption profiles are also related to reduced asset ownership, also pointing towards the assumption that general poverty affects consumption. When considering improved access or consumption, asset ownership (whether productive or non-productive) was more frequently reported on as these indicators improved.

Ownership of assets is well correlated with the different types of income activity groups. That is, fisher folk more frequently report owning fishing equipment or boat shareholding while skilled labourers more frequently report having carpentry tools, farmers having farming tools, water sellers having berkads and livestock dependents having pack animals. For non-productive assets it is more frequently reported that skilled labourers and small business owners own such items.

2.1.3 Livestock Holding

It should be noted that the analysis of livestock holding is limited by the categories within which the data was collected. Data was collected in this manner because it was felt that households would not provide an accurate reflection of their herd sizes if asked to give actual numbers. These categories were based on FSAU's wealth ranking data from their baseline reports. On the whole, livestock ownership in the sampled communities was very low. 43% of the respondents said that they **did not** own any

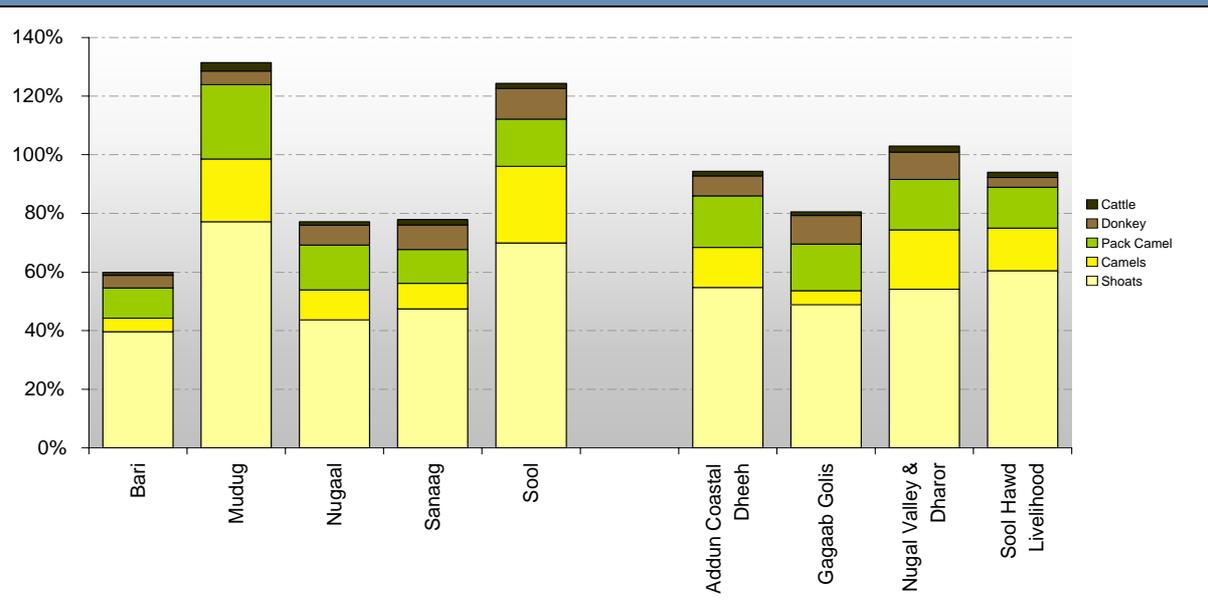
animals. However, significantly more households owned animals in Sool and Mudug than the other regions. In households that did own animals the size of the herd and variety of animals owned was low; 80% of animal owners had only one or two types of animals (considering sheep and goats as “shoats”).

Shoats: Practically all of the households with animals owned shoats, with little differences between livelihood zones and regions. This was with the exception of Bari where they reported the smallest herd sizes (75% of the households reported herd sizes of 1-40) compared to about 60% on average. Only 12% of the households reported having more than 120 shoats, with the majority of these households being in Sool Hawd and Nugal Valley and Dharor livelihood zones. Increases in shoat stocks was mostly reported during the Gu and Deyr seasons with deaths mainly reported in the Jilal season (less so in the Hagaa). Local sales of shoats were fairly consistent throughout the year with export sales taking place predominantly during the Deyr season and to a lesser degree in the Gu.

Camels and pack camels: About 15% of the households interviewed reported owning camels. The smallest herds were to be found in the Gagaab Golis parts of Sanag and Bari regions where herds were mainly between 1 and 4 animals in size (as reported by 60-75% of the households). Camel herds in 70% of the households tended to number no more than ten animals while 13% of the households reporting having more than 20 camels. Again only 15% of the households reported owning pack camels, although 70% of the households owned at least one or two animals. The greatest ownership of pack camels was seen in Nugal where more than 50% of the households had two or more of these animals. Increases and decreases (births and deaths) of camels followed the same seasonal pattern as shoats but with a more pronounced drop in local sales occurring during the Jilal.

Ownership of **other animals** was also reported but with much less frequency. About 7% of the households reported owning donkeys, of which 90% owned one or two donkeys, and less than 2% reported having cattle, though again 90% of these households reported having herd sizes of less than ten animals.

Figure 11: Percentage of households owning animals by region and livelihood zone (each is independent of the other i.e. the total is not 100%)



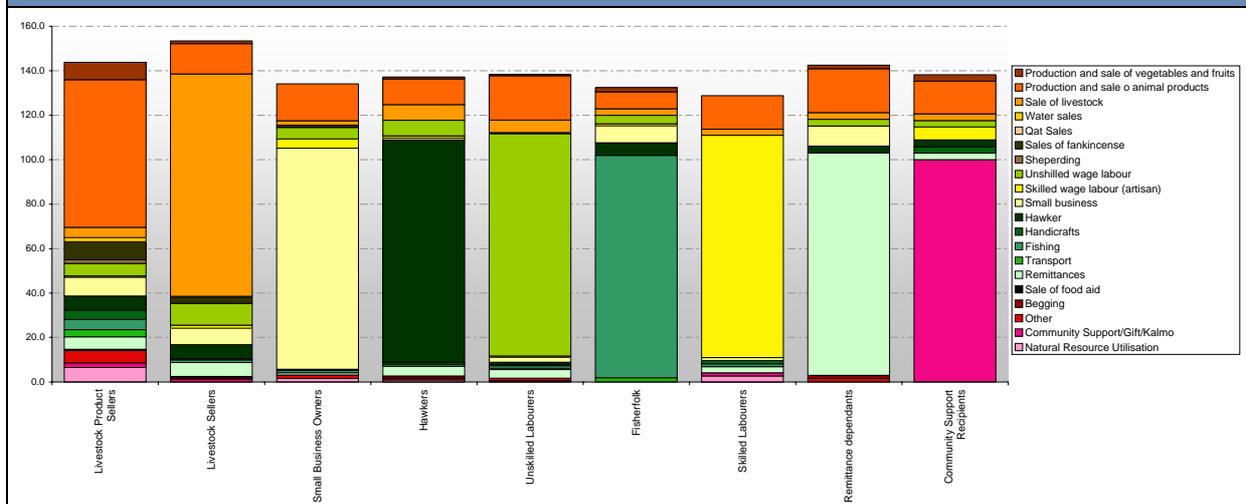
The figure above illustrates the differences in the percentages of households owning the animals stated, and shows the large differences across the different regions, with households in Mudug and Sool owning the most livestock and in Bari, the least.

2.1.4 Main activities and income sources

Income activities can be found everywhere throughout Puntland, though there are some income activity groups that appear more frequently in some regions and livelihood zones. For example there were significantly fewer livestock product sellers in Sanag than in Bari, Mudug and Sool; there were significantly fewer livestock sellers in Bari than there were in Mudug, Sanag and Sool. Small business owners were more likely to be found in Bari and Mudug than in Sanag and hawkers were more likely to be found in Sanag and Sool than in Bari and Mudug. **Figure 13** shows the percentage of income activity groups found in each region. Significant differences between livelihood zones include the fact that fisher folk were principally found in the Addun Coastal Dheeh though also, to a lesser extent, in Gagaab Golis. Livestock sellers were more often found in Nugal Valley, the Dharor and Sool Hawd livelihoods. Livestock product sellers, although found in all livelihood zones, were mainly found in the Sool Hawd livelihood zone, as were unskilled labourers.

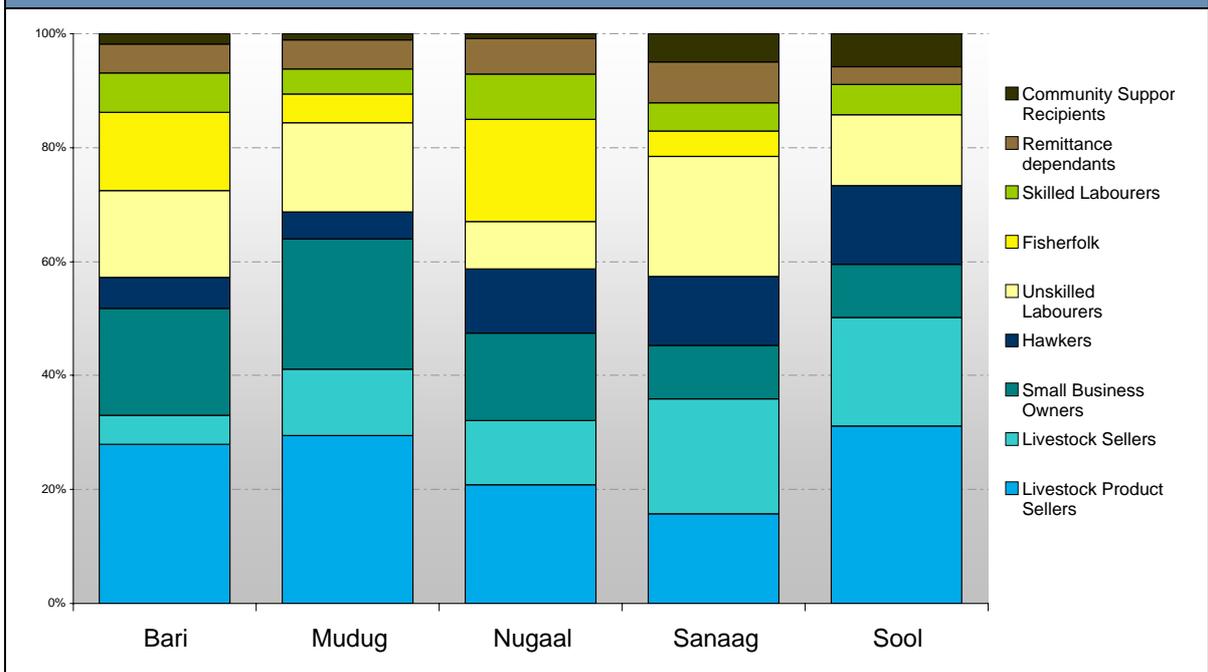
It is clear that households, no matter what their main income activity was, were involved in a variety of income generating activities. The figure below shows the percentage of the households participating in these activities within each income activity groups (**Figure 12**). There were also distinct seasonal characteristics in terms of when income was generated from these activities and differences in the amounts received between seasons – most income was earned during the Gu and Deyr seasons.

Figure 12: Percentage of households engaging in activities in the main income activity groups¹⁶



¹⁶ Note that this does not include the infrequently occurring income activity groups i.e. as reported by fewer than ten households.

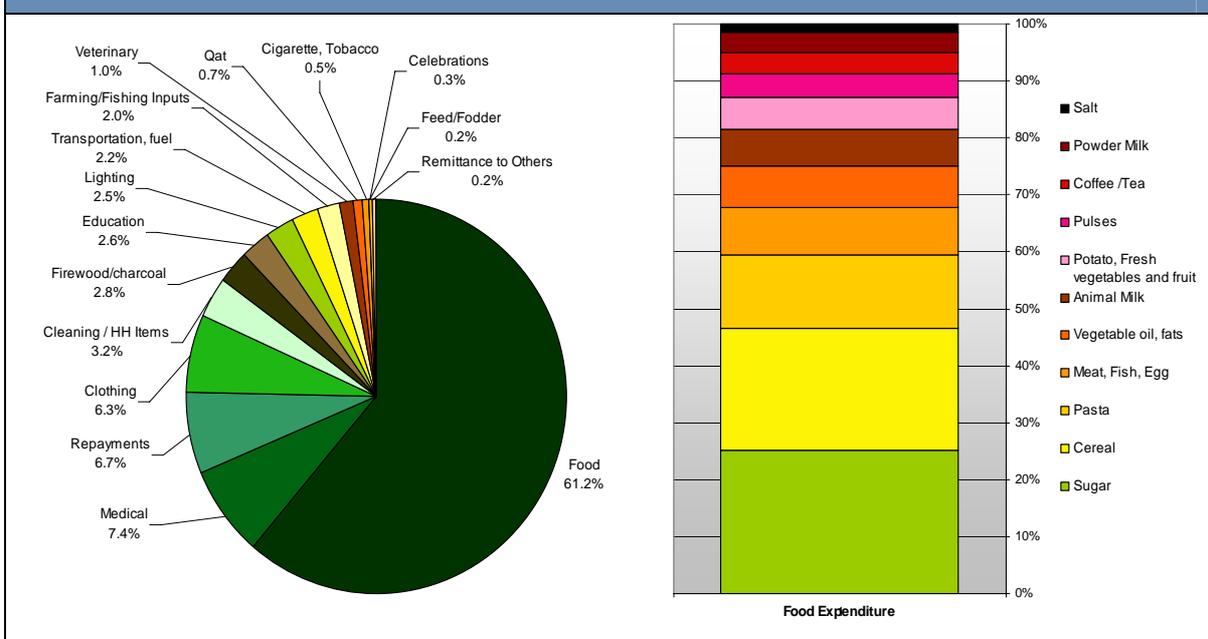
Figure 13: Geographic distribution of income activity groups by region



2.1.5 Household expenditures (food and non-food)

Figure 14 demonstrates how household expenditure was allocated on average. The slightly high average proportion allocated to food would suggest that households were relatively poor. Some of the expenditures noted were likely to reflect only particular income activity groups (e.g. fishing inputs will clearly only be by those who participate in fishing).

Figure 14: Household total and food expenditure



An observation worthy of mention is that about 15% of the household total expenditure (25% of the expenditure on food) was allocated to sugar. Given the low quality of this food it is interesting that sugar plays such an important part of the diet, at least

economically. Furthermore, it is interesting that the more food insecure the household is the **higher** the proportion of the total expenditure on food allocated to sugar, thus suggesting that the importance of sugar in the diet is preserved regardless of situation.

One additional note is that expenditure on Khat is recorded as less than 1%. This is possibly a reflection of either the lack of availability of Khat in the remote locations where the assessment was conducted, or it simply reflects the reluctance of the household to reveal the true expenditure on this narcotic. This is not surprising but it is likely to hide some of the underlying reasons for poor expenditure on quality food items such as milk and meat, and hence contribute to the overall poor consumption profiles that have been observed in Puntland.

2.2 Food consumption

2.2.1 Food sources and diversity

Dietary diversity in the Somali diet in Puntland is very poor. The diet tends to revolve around one or possibly two regular staples, sugar, milk and some small amounts of meat and/or pulses. With milk being consumed on average six days a week, it is central to people's diets. The frequency of the consumption of these basic foods is a defining characteristic of the consumption profiles described earlier, with increased frequency and diversity indicating improved consumption.

Identifying food sources helps understand the extent of households' likely vulnerability to food shocks, and also shows how food is accessed, revealing those means that are less independent (e.g. borrowing food and/or receiving food as a gift).

Figure 15 Error! Reference source not found. presents average household percentages of food sources in Puntland. The chart clearly shows that purchased food and food obtained through credit (reported by 45% and 38% of the households respectively) are the main sources of food with no significant difference between food security groups. However, there is some difference in food sources when considering households with better access profiles and consumption profiles. Households that are more food secure will tend to utilise food of their own production more often (i.e. 21% of the households in this category use their own food as compared to the general average of 11.5%). Conversely food insecure households are more likely to use food obtained through gifts, food aid and borrowing. It is of interest to note which foods were reported as consumed from households' own production - mainly dairy products, eggs, fish and meat. Very infrequently roots and tubers and legumes were sourced from household production. Access to food produced by households is also seasonal and is at its lowest during the Jilal, which was also the time of the assessment Error! Reference source not found..

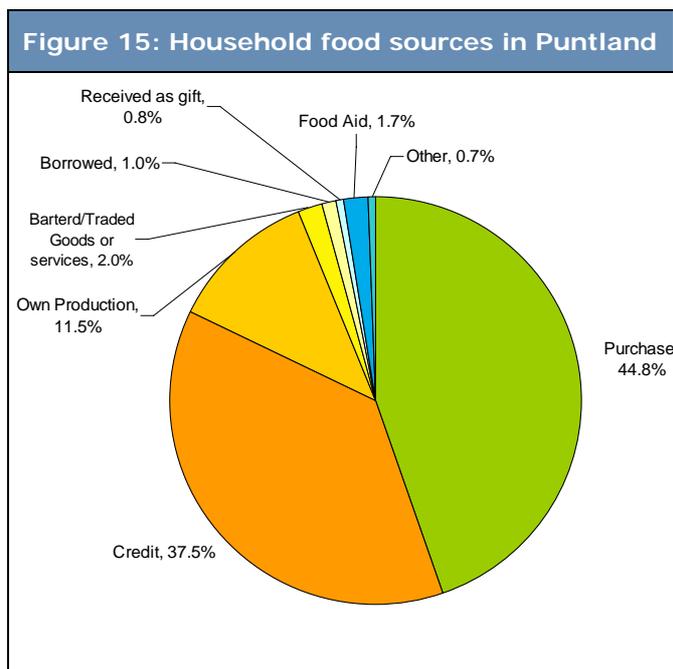
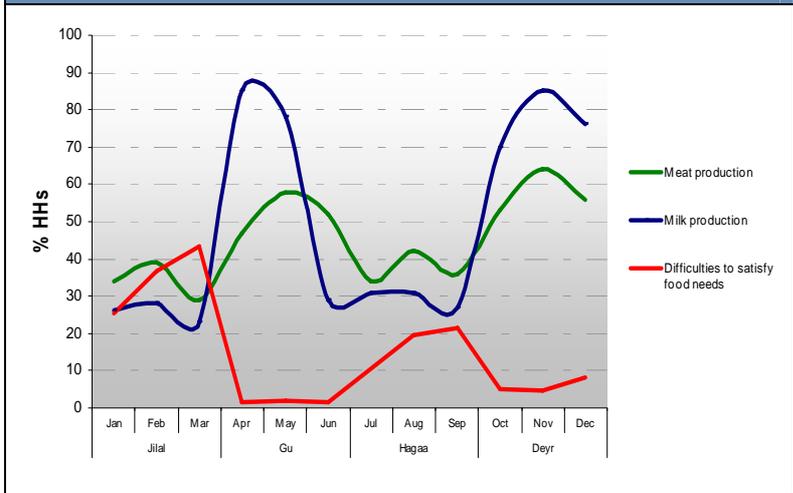


Figure 16: Seasonality of own production

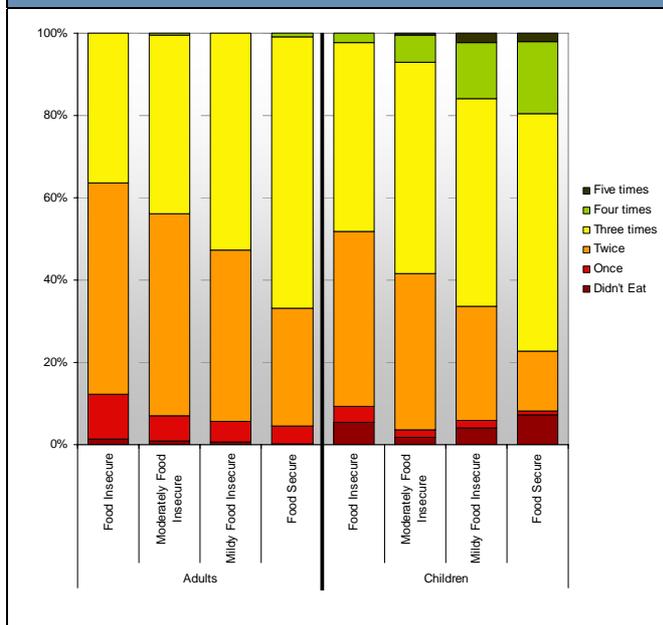


Differences exist between regions and livelihoods, where household food production varied greatly. In Nugal and Mudug and in Addun Coastal and Dheeh Gagaab Golis 15% - 17% of a households' food is acquired in this manner. Other differences are small although barter and trade tend to take place more often in Nugal Valley and the Dharor livelihood zone and in Nugal and Sool.

Food secure households tend to eat more meals a

day than food insecure households (Figure 17). Half of the households in the poorest access group ate only twice a day whereas over half (55% - 60%) of the households in the good and strong access groups ate three times a day. Half of the households with poor or very poor consumption profiles had two meals a day whereas 70% of those with good consumption profiles ate three times a day. The frequency of children's meals was less affected by the change in access but when living in households with a better food consumption profile children tended to eat more often.

Figure 17: Frequency of adults' and children's meals by food security group



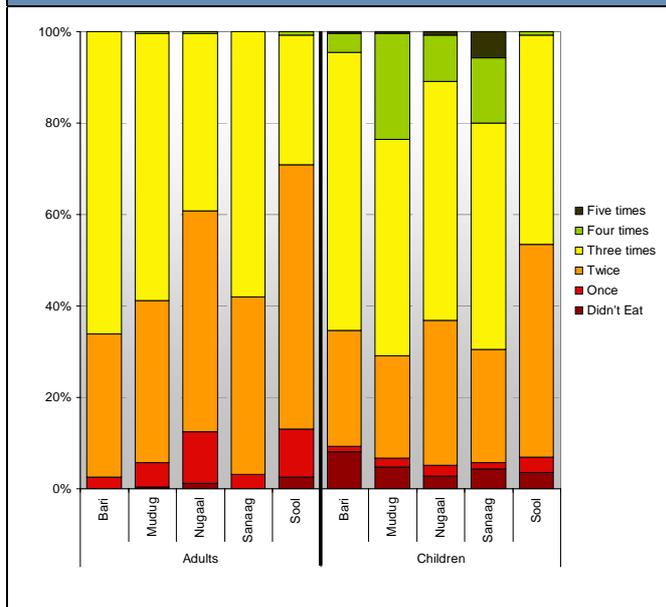
There were also regional differences. Households ate less frequently in Nugal and Sool (Nugal Valley livelihood zone) and were more likely to eat three times a day in Bari (significantly different) (Figure 18).

2.3 External shocks and coping strategies

A common distinction made in discussions on shocks and hazards is that between those that are 'co-variant' – which apply to entire communities, regions or even countries as a whole, for example price movements in markets, epidemic diseases, extreme weather, civil disorder and policy changes – and those that are 'idiosyncratic' hazards and only affect particular households or individuals, for example, accidents (domestic, workplace, transport), fire,

crime, addiction, physical disability, etc.

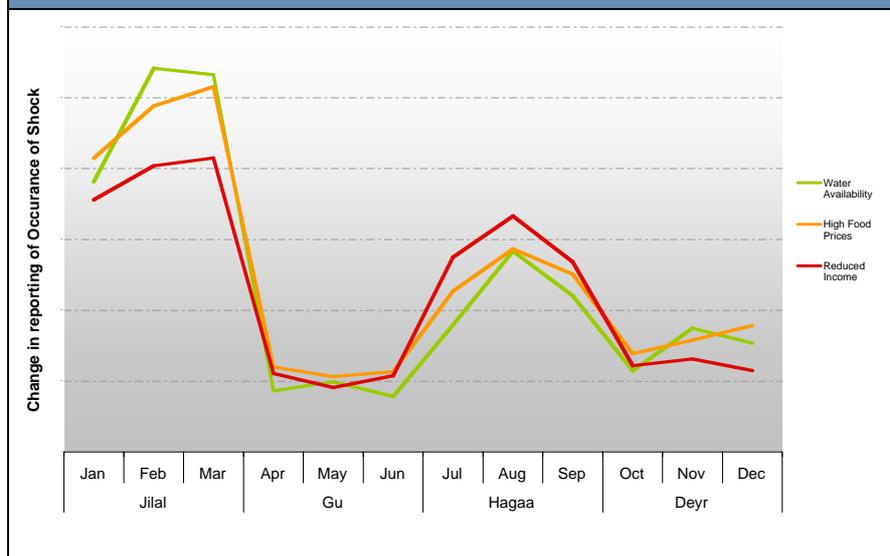
Figure 18: Meal frequency of adults and children by region



In the Puntland survey a number of specific shocks were investigated - five co-variant shocks¹⁷ and nine idiosyncratic shocks¹⁸ - and households were asked if they had experienced any of them during the year prior to the survey. They were asked to rank them in order of importance. The two main shocks were further investigated for their impact on the household, specifically for their impact on household assets and the households' ability to provide for itself, how the household responded to the shock and if it had managed to recover from it or not. These questions were posed to help gain a better understanding of the shocks experienced by the households surveyed. For much of the analysis of the covariate and idiosyncratic shocks only the households that had

experienced a shock in the twelve months prior to the survey are described (unless otherwise stated) – this to improve the understanding of the shocks experienced in Puntland, where they occur most frequently and who their victims are.

Figure 19: Seasonality of the three most important shocks



About 48% of the households responding had experienced one or more shocks in the twelve months preceding the survey. In terms of the frequency of shocks encountered by households in the previous year, households in Bari experienced significantly fewer shocks than households elsewhere in Puntland; 83% of the households did

not report a shock in the previous year. Mudug and Sanag reported that 40% - 45% of the households experienced two shocks and just over 11% of the households in Mudug reported three shocks. Both of these observations were significant. Differences were also seen between livelihood zones. This indicated that there were significantly more households that experienced more shocks during the last year in Sool Hawd livelihood than in others as 56% indicated experiencing at least one type of shock, 30% reported

¹⁷ Identified as: reduced water availability, reduced pasture or quality for grazing animals, unusually high food prices, unusually low animal prices, and insecurity.

¹⁸ Identified as: unusually high levels of livestock death, unusually high levels of livestock diseases, low level of livestock birth, reduced sale or export of livestock, unusually high level of human disease or accident, unusually high level of human deaths or death of a household member, looting of assets, reduced income of a household member, and reduced or no access to credit.

experiencing two shocks and 10% reported experiencing three shocks. The Addun Coastal Dheeh zone also revealed a significantly higher number of households reporting two shocks during the previous year (25%).

When considering the difference between the food secure and food insecure groups identified earlier in the report (across all households) it would appear that the food insecure reported significantly fewer shocks than the food secure (38% compared to 56%). This is clarified when considering that 50% of the specific shocks investigated were related to livestock. Given that a great number of food secure households have animals, it is evident that they will experience shocks related to livestock to a greater degree. There was no significant difference between food security profiles for shocks not relating to animals.

2.3.1 Covariate shocks

The two most important covariate shocks specified were related to **reduced water availability** and **high food prices**. Overall, 21% of the households responding experienced reduced water availability, though the figure rose to 31% in Sanag and almost 45% in Mudug. There were also differences across livelihood zones. Approximately 30% of the households in the Addun Coastal Dheeh and the Sool Hawd livelihood zones experienced reduced water availability, which was considerably higher than the figures reported in other livelihood zones where approximately 10% of the households did.

15% of the households surveyed had experienced high food prices during the twelve months prior to the survey, but this varied by region and livelihood zone. 35% of the households in Sanag reported experiencing high food prices, as did 20% of the households in Mudug, both of which were much higher than the other regions. This was most significantly reported in the Sool Hawd livelihood zone where almost 20% of the households reported experiencing high food prices (significantly higher than other livelihood zones). In Gagaab Golis about 16% of the households reported experiencing high food prices although this was not significantly different from other zones.

As illustrated in **Figure 19** there is a clear seasonal pattern to these shocks. It is also clear that in the Jilal season these shocks affect a greater number of households. This holds true for most of the shocks experienced in Puntland. It also reinforces the understanding that Jilal is the worst time of year for most households and that Hagaa is also a difficult time with respect to potential threat of shocks.

2.3.2 Idiosyncratic shocks

Idiosyncratic shocks were reported more frequently in Sanag than in any other region, where 57% of the households reported having experienced some form of idiosyncratic shock.

Besides the condition defined by the reduction in income of a household member – reported by 12% of the households - there are no clear ubiquitous idiosyncratic shocks being experienced in Puntland. However there were often clear regional and livelihood zone differences reported. The households least affected by a reduction in income of a household member tended to be located in Bari and Sool (about 5% of the households) with a significantly higher frequency reported in Sanag (25%). High levels of human disease was also significantly more frequently reported in Sanag (20% of the households) but hardly at all in Bari. Shocks relating to livestock were more frequently reported in Mudug (compared to Bari), with the most frequent one being specifically high levels of livestock disease (10%). This is not surprising given that this is where most households report having livestock (79%).

Between income activity groups there were significant differences between the livestock dependent groups and other groups with regards to shocks relating to livestock. It would

seem the most significant shock that beggars had experienced was the loss of a family member in the last year (reported more significantly than every other group). Fisher folk and community support dependents had experienced looting more to a greater extent than other groups, and unskilled labourers and community support dependents reported experiencing a loss in income more than the other groups in the twelve month period preceding the survey.

Although it is not possible to propose a causal relationship between the shocks experienced by these households and their food security levels, the data at hand certainly contribute to a better understanding of some of the potential causes of food insecurity in these groups.

2.3.3 Coping strategies

Households that had experienced a shock were asked to identify the main mechanisms adopted to cope with it, if any at all were used. In fact a large proportion of the households experiencing a shock reported they did nothing to mitigate its impact. This was particularly the case when dealing with idiosyncratic shocks (as reported by 46% of the households interviewed) as opposed to covariate shocks (23%). However, there is no suggestion that inaction was due to an inability to respond.

As the largest covariate shock experienced related to the reduced availability of water it is not surprising that spending more money on water was the main response of households to this particular covariate shock. Two other coping strategies that were frequently

mentioned involved reducing the quantity and frequency of purchases and purchasing on credit (reported by 28% and 18% of the households respectively). Other, more infrequently used coping strategies involved asking for support either as a gift or through borrowing (reported by 10% - 15% of the households). For idiosyncratic shocks the strategies employed were basically similar, in terms of the proportion of households using them as response mechanisms – the only response measure that was noticeably reduced was the one relating to an increased expenditure on water.

Significant differences exist when comparing coping strategies across regions and livelihood zones. For example, households in Nugal and Sool were much more likely than others to do nothing in response to a shock, but were more inclined to reduce the amount of food consumed while households in Nugal were more likely to skip meals altogether. Households in Nugal were also much more likely to remove children from school than households in other regions. Also, households in Bari were significantly more likely to resort to begging, to sell household items or to reduce expenditure on non-food items than households in Mudug and Sanag (although these responses only account for 5% - 10% of the mechanisms employed).

Nearly half of the households in Nugal Valley and Dharor reduced the amount of food as a coping mechanism – many more than in the other livelihood zones – while in Gagaab Golis, coping mechanisms included purchasing food on credit (reported by 35% of the

Understanding Coping Strategies

People adopt various coping strategies in order to spread the risk of disaster affecting household food security. While the strategies people adopt vary with their livelihoods and the type of risks they face, there are nonetheless distinct stages of coping. Early coping strategies are reversible, and cause no lasting damage, for example collection of wild foods, selling non-essential assets or sending a family member to work elsewhere. Later strategies, sometimes called crisis strategies, may permanently undermine future food security e.g. sale of land, distress migration of whole families and deforestation. When food security is prolonged more, more people will be engaged in these early strategies, until eventually they are not longer viable. It is important that food security is protected and supported before all non-damaging options are exhausted, in order to prevent destitution and loss of livelihoods (*excerpt from Sphere*)

households), selling shoats (20%) and splitting the household (16%) were employed significantly more than in the other livelihood zones.

When considering food security, the households with very poor consumption profiles made significantly more purchases on credit than those with a good consumption profile. Those with a fairly good consumption profile more frequently reported that they spent less on food and on non-food items than households with good consumption profiles. The food insecure and moderately food insecure made more purchases on credit than the food secure.

Differences between income activity groups show some intuitive observations –i.e., 20% of the livestock sellers cope by selling small livestock; remittance dependents are more likely to do nothing; community support dependents and beggars are more likely to resort to begging; and skilled labourers are more likely to reduce expenditure on non-food items.

3 Gender Issues

Gender differences are apparent in households in Puntland. When comparing female and male-headed households there are significant differences in terms of livestock ownership (47% compared to 62% respectively) and this is true for all types of animals. Differences can also be seen when comparing perception of satisfying food needs in the household. For female-headed households difficulties seem to be perceived about a month earlier than in male-headed households.

With regard to the food security indicators it is clear that there are significantly more female-headed households with weak access and very poor consumption profiles, and therefore, female-headed households are more likely to be food insecure. These food insecure female-headed households are more involved in small businesses and hawker trading (generally an activity dominated by women) than food insecure male-headed households, which are more likely to engage in unskilled labour. Farming is more likely to be taken up by women than other income activities whereas livestock based activities are more likely to be taken on by other men in the female-headed households. This is not surprising in that farming requires the constant attention of a responsible person who stays in one place (as opposed to livestock, which are mobile and are normally followed by the men). Just over a quarter (26%) of the female-headed households reported that a household member had migrated for reasons not related to livestock, which was significantly more than what was reported in this regard by male-headed households.

Per capita expenditure is not significantly different in female-headed households compared to male-headed households. However the proportion of expenditure on food is significantly higher (about 70% of total expenditure is on food in female-headed households). This alone would indicate that female-headed households are in a much more difficult financial situation and likely to be poorer than male-headed households.

4 Priorities and intervention preference

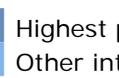
During the data collection it was clear that a number of the communities visited had been exposed to similar exercises before, and many expressed dissatisfaction with the lack of follow-up response and interventions despite repeated visits to collect information. When considering the responses given by the households in the survey about areas of priority, it is clear that there is a desire for basic needs to be met. Overall the first priorities mentioned by the households had to do with water (as reported by 45% of the households), health (22%) and education (16%), which together account for 83% of the immediate priorities identified by the households interviewed. In further detail, these priorities revolved around the construction of facilities or, in the case of water, included: i) improving access to **drinking water** (19%), ii) improving the **quantity** of water accessed (17%), and iii) rehabilitating existing services (9%).

There was little in the way of regional variation among priorities. In Nugal and Sool more households stated that employment was their first priority than households in other regions (10% - 15% of the households), while other regions thought that employment was an important priority but tended to rank it third (10% - 20% of the households interviewed).

This is entirely validated from the analysis of the community interviews, although the order of priority is slightly different. 37% of the communities stated their first priority was related to health, 22% listed education and 22% water. This remained true for the second priority, which was related to the construction of health facilities and schools and the rehabilitation of water sources, all essentially basic needs. The diversity of priorities mentioned was much less at the community level than at the household level.

Table 8: Percentage of households requesting different responses by region and season

	Jilal					Gu					Hagaa					Deyr				
	Cash	Food	Cash and Food	Water	No Assistance	Cash Only	Food Only	Cash and Food	Water	No Assistance	Cash	Food	Cash and Food	Water	No Assistance	Cash	Food	Cash and Food	Water	No Assistance
Bari	19	29	41			49	31	17			24	22	45			24	20	46		
Mudug		32	15	28		24		41	26				28	41		19		18		55
Nugal	34	42	18			53		39			36		54			42		41		
Sanag	30	34	19						85		33	15	39							82
Sool	31	48							83		29		37	20						81

 Highest percentage of households requesting this type of intervention
 Other interventions requested but to a lesser degree
(number) Represents the percentage of households requesting this intervention

Interestingly, livestock was hardly ever mentioned as a priority by the households and communities interviewed. This may suggest that either pastoral people were not represented in the discussions – likely because pastoralists are not based around settlements – or that the communities are looking for much more basic needs to be met. Additionally, it could also mean that the response types that they would like to see were not in the questionnaire.

Respondents were asked, if given the choice, about the **type of intervention** they would prefer to receive during each season. They were specifically asked about cash interventions, food interventions, a combination of food and cash interventions, water trucking assistance, other intervention types or if, in fact, they wanted any intervention at all. The seasonality of the responses provided was striking in that around 40% of the households suggested that no intervention was necessary during the Gu and Deyr seasons. This analysis however, is limited by the responses available to respondents through the questionnaire, which did not allow the recording of other specific interventions that they might have desired.

A regional map of when and where the greatest preference for each intervention type lies can be made. **Table 8** above illustrates the interventions that would be most preferred followed by others that have a significant number of households interested in them as alternatives.

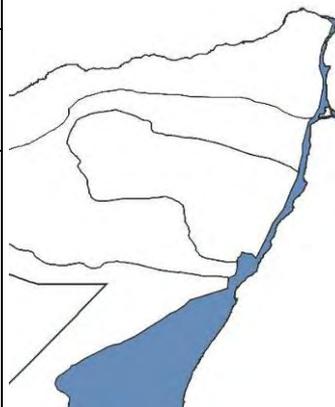
What is interesting is that Sool and Sanag are generally not interested in either cash, food or water during the Deyr or the Gu seasons, a fact stated much more strongly than

in other regions. Also interesting is that Bari households are more strongly interested in water during the Jilal than other districts, who are more interested in cash and food. Additionally it is interesting that in most cases "food only" is generally not a major request by households. With the exception of Bari during the Gu season, the request from households for food-only interventions falls below 20%.

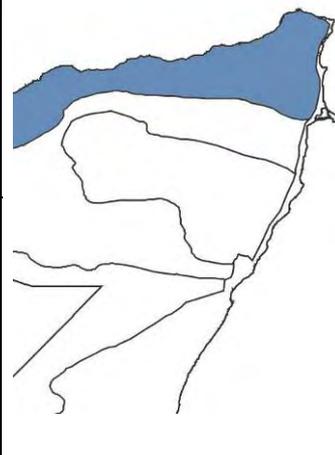
There was a difference noted in the type of response requested by gender (based on head of household responses). On the whole men more frequently requested cash or cash and food during the Gu seasons, whereas women more frequently requested no support. Men more frequently requested water trucking or no response during Hagaa seasons as opposed to the women's greater preference for cash, food or a combination of cash and food.

5 Livelihood zone food security and vulnerability profiles

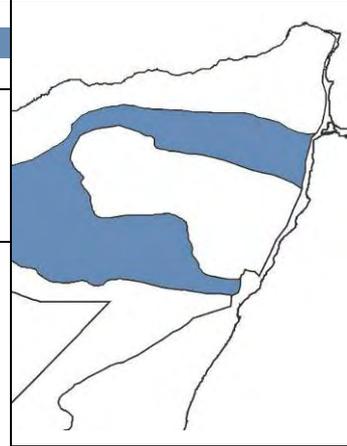
Livelihood Zone: Addun Coastal Dheeh					
No. in Sample: 147		% in Sample: 11.6			
Main income activity groups	Livestock product sellers	28.0%			
	Fisher folk	22.8%			
	Small business owners	16.8%			
	Hawkers	9.2%			
<p>This was generally a food secure livelihood zone or mildly food insecure. Per capita expenditure was significantly higher than in other livelihood zones (390,000 SoSH per capita/month) which would indicate that the income activity groups here were generally <i>better off</i> than the households in the same income activity group elsewhere. This was also reflected in a lower percentage of expenditure on food (62%). About 57% of the households here owned animals (of these 97% owned shoats, 55% owned camels or pack camels and 12% owned donkeys). The main water sources for human and animal consumption were berkads (38%) and unprotected springs (16%). Average household debt was about 4 million SoSH (although more commonly 2 million SoSH). About 30% of the households reported that they were female-headed (about average for the entire sample).</p>					
Food Security Profile	Food Insecure	Moderately Vulnerable	Mildly Food Insecure	Food Secure	
	14.0%	10.4%	38.0%	37.6%	
Access Profile	Weak	Average	Good	Strong	
	23.6%	41.6%	14.4%	20.4%	
Consumption Profile	Very Poor	Poor	Average	Fairly Good	Good
	16.0%	5.6%	24.0%	23.6%	30.8%



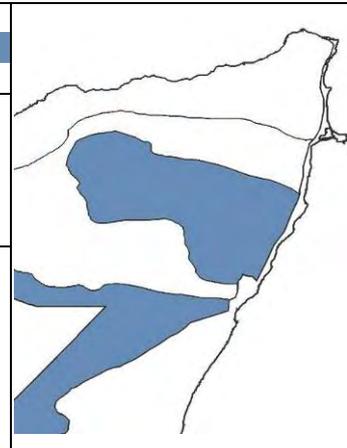
Livelihood Zone: Gagaab Golis					
No. in Sample: 272		% in Sample: 21.5			
Main income activity groups	Livestock product sellers	31.3%			
	Small business owners	14.1%			
	Unskilled labourers	13.2%			
	Livestock sellers	11.5%			
	Fisher folk	10.6%			
<p>Gagaab Golis was the most food insecure livelihood zone at the time of the survey. This is likely to be influenced by transient changes in food consumption. Weak Access was also high with few households having good or strong access. Per Capita expenditure was less than in Addun Costal Dheeh but not significantly (330,000 SoSH per capita/month). However the percentage of monthly expenditure on food was significantly higher than in other livelihood zones (73%) which may indicate the importance of the high food-price shock experienced here. About 50% of the households claimed to own animals of some sort (of these households, 97% owned shoats, 40% owned camels or pack camels and 20% owned donkeys). The main sources of water for humans and animals were berkads (33%), unprotected springs (24%) and boreholes (15%). Average household debt was about 2.8 million SoSH (more typically 2 million SoSH). It Approximately 40% of the households were female-headed, which constitutes the second highest proportion across the land and is significantly higher than in the Sool Hawd Livelihood zone.</p>					
Food Security Profile	Food Insecure	Moderately Vulnerable	Mildly Food Insecure	Food Secure	
	38.3%	16.3%	23.3%	22.0%	
Access Profile	Weak	Average	Good	Strong	
	33.9%	36.1%	13.2%	16.7%	
Consumption Profile	Very Poor	Poor	Average	Fairly Good	Good
	36.6%	20.3%	14.5%	15.0%	13.7%



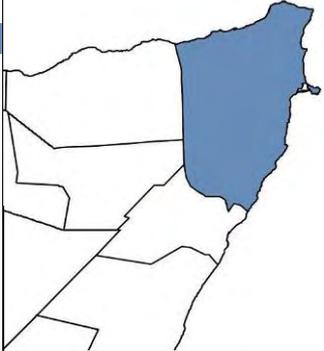
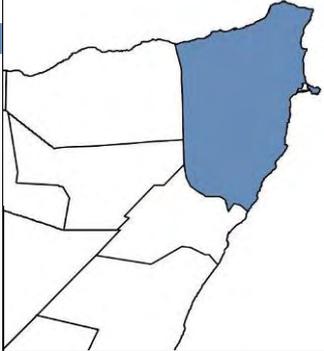
Livelihood Zone: Nugal Valley and Dharor					
No. in Sample: 349		% in Sample: 27.6			
Main income activity groups	Livestock product sellers	23.5%			
	Livestock sellers	16.1%			
	Small business owners	12.5%			
	Unskilled labourers	12.5%			
	Hawkers	11.9%			
<p>Nugal Valley and Dharor were moderately food insecure. Access is generally weak but consumption is slightly better than Gagaab Golis. Per capita expenditure is the lowest of all the livelihood zones (300,000 SoSH per month) and is significantly less than that of Addun Coastal Dheeh. However the percentage of expenditure on food is lower than Gagaab Golis (68%) and may indicate a slightly lower susceptibility to higher food prices than in Gagaab Golis. 55% of the households reported owning livestock (of these 99% owned shoats, 69% owned camels or pack camels - significantly higher than in other livelihood zones - and 17% owned donkeys). The main sources of water for humans and animals were shallow wells (33%), berkads (18%) and unprotected springs (14%). More households in this zone accessed shallow wells and hand pumps (9%) than in the other livelihood zones. Average household debt was about 3.2 million SoSH (though more typically 2.4 million SoSH). The highest percentage of female-headed households was reported here (42%).</p>					
Food Security Profile	Food Insecure	Moderately Vulnerable	Mildly Food Insecure	Food Secure	
	28.3%	23.5%	31.2%	17.0%	
Access Profile	Weak	Average	Good	Strong	
	32.4%	37.8%	11.3%	18.5%	
Consumption Profile	Very Poor	Poor	Average	Fairly Good	Good
	30.4%	19.6%	27.1%	12.5%	10.4%



Livelihood Zone: Sool Hawd					
No. in Sample: 498		% in Sample: 39.3			
Main income activity groups	Livestock product sellers	20.5%			
	Unskilled labourers	20.3%			
	Small business owners	17.2%			
	Livestock sellers	14.8%			
	Hawkers	8.2%			
<p>Sool Hawd livelihood zone was mildly food insecure at the time of the survey (i.e. end of the Jilal / beginning of the Gu). Although access is average to weak, consumption tends to be average to good. Per capita expenditure is, on average, quite low and is significantly lower than Addun Coastal Dheeh (312,000 SoSH). The percentage of expenditure on food is low (64%) and significantly lower than in Nugal Valley and Dharor and Gagaab Golis which may indicate a more chronic issue of poverty here than in the other two livelihood zones. Animal ownership is claimed by 62% of the households, of which 97% own shoats, 46% own camels or pack camels and 5% own donkeys. The main sources of water were reported by 67% of the households to be berkads (significantly higher than in the other livelihood zones), shallow wells (14%) and boreholes (13%). Average household debt was almost 5 million SoSH (although more typically 3.5 million SoSH) and significantly more than in Gagaab Golis and Nugal Valley and Dharor. Only 29% of the households were reported to be female-headed households. This zone had significantly more male-headed households than Gagaab Golis and Nugal Valley and Dharor.</p>					
Food Security Profile	Food Insecure	Moderately Vulnerable	Mildly Food Insecure	Food Secure	
	18.1%	18.6%	34.5%	28.8%	
Access Profile	Weak	Average	Good	Strong	
	27.2%	34.2%	22.3%	16.3%	
Consumption Profile	Very Poor	Poor	Average	Fairly Good	Good
	18.4%	18.4%	29.0%	12.8%	21.5%



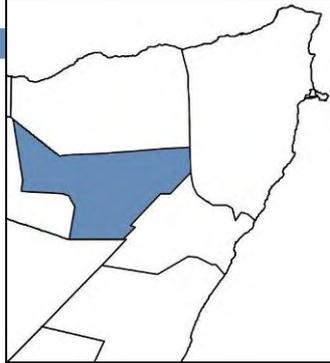
6 Geographic food security and vulnerability profiles

	Region – Bari				
	Sample Size:		380		
	Main income activity groups		Livestock product sellers	27.5%	
			Small business owners	18.6%	
			Unskilled labourers	15.0%	
			Fisher folk	13.6%	
<p>Bari was the most food insecure of the five regions. A large contribution to food insecurity comes from households with poor or very poor consumption profiles (almost 60% of the households at the time of the survey). It also has one of the lowest per capita expenditures (290,000 SoSH which is significantly lower than Nugal and Sanag) indicating that some of the poorest households are located in this region. Households in Bari also spent significantly more on food, as a percentage of total expenditure, than any other region (75%). Average household debts were the lowest in Bari (3.1 million SoSH but more typically 2 million SoSH), significantly lower than Nugal and Mudug. Only 40% of the households reported owning livestock (of these households 96% owned shoats, 36% owned camels or pack camels and 10% owned donkeys). Main water sources for human and animal consumption were berkads (reported by 55% of the households, significantly higher than in Sool and Sanag) and unprotected springs (17%). Household sizes in Bari were significantly smaller than in other regions in Puntland and about a third of the households were female-headed. Literacy rates were estimated at about 20% for spouses and 50% for the heads of households. About 28% of the households interviewed claimed that <i>all</i> their children went to school - 59% of the boys and 40% of the girls where said to be attending school at the time of the assessment.</p>					
Food Security Profile	Food Insecure	Moderately Vulnerable	Mildly Food Insecure	Food Secure	
	42.5%	14.3%	27.9%	15.4%	
Access Profile	Weak	Average	Good	Strong	
	39.6%	37.5%	6.4%	16.4%	
Consumption Profile	Very Poor	Poor	Average	Fairly Good	Good
	46.1%	13.9%	18.6%	11.8%	9.6%

	Region – Mudug				
	Sample Size:		244		
	Main income activity groups		Livestock product sellers	28.9%	
			Small business owners	22.5%	
			Unskilled labourers	15.4%	
			Livestock sellers	11.4%	
<p>Mudug was generally food secure. Access was generally average or good but consumption was generally much better than in other regions. Monthly per capita expenditure (340,000 SoSH) was just above average (320,000 SoSH). Percent expenditure on food was 63%, which was higher than in Nugal. Average household debt was about 5 million SoSH (but typically 3 million SoSH), and was significantly higher than in most other regions. Almost 80% of the households owned animals, the highest in Puntland (98% owned shoats, 60% owned camels or pack camels and 6% donkeys). Main water sources for humans and animals were reported as berkads (62%), boreholes (20%) and shallow wells (12%). About 20% of the households were female-headed (the lowest reported in the assessment). The average age of the head of household was 47, significantly higher than in Bari and Nugal. Literacy rates for heads of households was about 50% and 25% for spouses. 20% of the households claimed they sent <i>all</i> their children to school - 35% boys and 32% girls attended primary school.</p>					
Food Security Profile	Food Insecure	Moderately Vulnerable	Mildly Food Insecure	Food Secure	
	7.2%	10.0%	37.3%	45.5%	
Access Profile	Weak	Average	Good	Strong	
	14.6%	35.0%	32.1%	18.2%	
Consumption Profile	Very Poor	Poor	Average	Fairly Good	Good
	10.0%	9.3%	25.1%	20.8%	34.8%

	Region – Nugal				
	Sample Size: 200				
	Main income activity groups		Livestock product sellers	20.0%	
			Fisher folk	17.2%	
			Small business owners	14.8%	
			Livestock sellers	10.8%	
			Hawkers	10.8%	
<p>Nugal was also generally food secure. Although with slightly weaker access than Mudug, and consumption was generally as good. Per capita expenditure was the highest in Puntland (380,000 SoSH) and the proportion spent on food (59%) was significantly lower than in any other region. Average household debt was about 4.5 million SoSH (although more typically 3 million SoSH). Only 45% of the households claimed to own animals (significantly less than in Mudug and Sool). Of these 97% owned shoats, 57% own camels or pack camels and 17% own donkeys. Main water sources were berkads (43%), shallow wells (19%) and piped water (17%, though the source of the piped water was not indicated). About 30% of the households interviewed were female-headed and overall the age of the heads of household averaged 42 years of age. Literacy of both heads of household and their spouses was reported as the highest in Puntland (56% and 36% respectively). However only 20% of the households reported they were sending <i>all</i> their children to school - 40% of the boys and 30% of the girls between the ages of 5 and 14 were attending primary school.</p>					
Food Security Profile	Food Insecure	Moderately Vulnerable	Mildly Food Insecure	Food Secure	
	8.8%	14.8%	36.4%	40.0%	
Access Profile	Weak	Average	Good	Strong	
	30.0%	29.6%	8.0%	32.4%	
Consumption Profile	Very Poor	Poor	Average	Fairly Good	Good
	10.0%	6.4%	28.8%	27.2%	27.6%

	Region – Sanag				
	Sample Size: 307				
	Main income activity groups		Unskilled labourers	20.8%	
			Livestock sellers	19.9%	
			Livestock product sellers	15.5%	
			Hawkers	11.9%	
			Small business owners	9.3%	
<p>Sanag was generally moderate to mildly food insecure. Access was mainly average as was consumption. Per capita expenditure as about 350,000 SoSH per month, slightly higher than in Mudug, with the percentage of food expenditure at about 63% (significantly higher than in Nugal). Household debt was on average 3.6 million SoSH (more typically 2.3million SoSH). About 50% of the households claimed to own livestock - 97% owned shoats, 42% camels or pack camels and 17% donkeys, all significantly higher than in Mudug. There was a wide diversity among water sources for humans and animals. About 15-20% of the households got water from shallow open wells, boreholes, unprotected springs, water carts or tankers and berkads. About 43% of the households interviewed were female-headed (significantly higher than in Mudug and Nugal). 42% of the heads of households were reportedly literate whereas only 19% of their spouses were (the lowest observed in Puntland). About 20% of the households reported that they sent <i>all</i> of their children to school - 41% of the boys and 34% of the girls were reportedly at school at the time of the assessment.</p>					
Food Security Profile	Food Insecure	Moderately Vulnerable	Mildly Food Insecure	Food Secure	
	29.2%	42.0%	18.6%	10.2%	
Access Profile	Weak	Average	Good	Strong	
	29.2%	42.0%	18.6%	10.2%	
Consumption Profile	Very Poor	Poor	Average	Fairly Good	Good
	16.8%	31.9%	24.8%	11.5%	15.0%

	Region – Sool				
	Sample Size: 134				
	Main income activity groups		Livestock product sellers	30.4%	
			Livestock sellers	18.7%	
			Hawkers	13.5%	
			Unskilled labourers	12.2%	
			Small business owners	9.1%	
<p>Sool was moderately food insecure to food insecure. Access was generally average to weak with generally average to very poor consumption. Monthly per capita expenditure was the lowest reported in the Puntland survey. However it was only significantly</p> <p>lower than in Nugal. The proportion of this spent on food was about 71%, which was significantly higher than in Mudug, Nugal and Sanag. Average household debt was approximately 3.2 million SoSH (but more typically 2.5 million SoSH), which was significantly lower than in Mudug. 71% of the households claimed that they had animals (significantly higher than Bari, Nugal and Sanag). Camel ownership was significantly higher than in Bari and Sanag. 98% of the households said they owned shoats, 59% Camels or pack camels and 15% donkeys. The main water sources were shallow wells (35%), berkads (23%), unprotected springs (19%) and hand pumps (13%). Almost 50% of the households were reported to be female-headed, significantly higher than in Bari, Mudug and Nugal. Literacy rates in household heads were estimated at 32% and at 19% for their spouses. 22% of the households in Sool reportedly sent <i>all</i> their children to school - 39% of the boys and 31% of girls were reportedly attending primary school at the time of the assessment.</p>					
Food Security Profile	Food Insecure	Moderately Vulnerable	Mildly Food Insecure	Food Secure	
	35.2%	27.4%	30.9%	6.5%	
Access Profile	Weak	Average	Good	Strong	
	32.6%	41.7%	15.2%	10.4%	
Consumption Profile	Very Poor	Poor	Average	Fairly Good	Good
	38.3%	24.3%	28.3%	3.5%	5.7%

Part V – Summary and recommendations

1 Overview

When considering these findings and recommendations it is important to note that they focus on the rural communities that were the target of the data collection. Therefore issues relating to the long term and recent influx of IDPs into Puntland, although important, are not addressed in this paper, and as topics for investigation, lie outside of the scope of this assessment.

More than 20% of the households in rural settlements in Puntland are food insecure. Food insecurity is present across all walks of life and is present in all the main income activity groups to about the same extent.

- **Access is generally weak to average and consumption was often poor or very poor.**

Access is frequently poor all over Puntland (although better in the Nugal region) and reflects low per capita expenditure and low contribution to the food basket of the households' own food production. **Consumption** is often poor or very poor, as reported by 40% of the households at the time of the assessment, and reflects poor protein consumption (referring in particular to milk and meat as consumption of pulses is very low in Puntland generally). It was noted that the consumption of sugar, and expenditures on sugar, was high and remained consistently so regardless of whether or not the household was food secure or not. A preference for low quality, high priced food that contributes little to the food security of the households in Puntland is interesting. Addressing this seemingly strong cultural preference is likely to provide many challenges in terms of diverting dietary habits towards more nutritious food stuffs.

- **Female-headed households tend to be more food insecure, indicate higher poverty and poorer consumption than male-headed households.**

The more food secure households are, the larger they tend to be. About 30% of the households interviewed were reportedly female-headed households, and were smaller than male-headed households. Female-headed households also tended to be more food insecure, with consumption being the stronger contributor to their insecurity than access. These households also spent less and had poorer diets than male-headed households.

- **Animal ownership alone does not lessen the likelihood of being food insecure but the greater the number of animals owned (especially if pack camels) the better the household food security.**

Almost a quarter of the households in the livestock-dependent income activity group identified in the sample were food insecure. This is inline with the findings of other studies: poor to better-off wealth groups all rely on livestock sales and livestock products sales^{xx,xxvii}. Animal ownership alone does not lessen the likelihood of being food insecure but the higher the number of animals owned (especially if they are pack camels) the better the chances of improved household food security. It is often stated that Puntland is a predominately pastoral society. Although this may be true with regards to the nomadic population that does not settle in villages, animal ownership in the settlements sampled was generally not as high as a traditional pastoralist society would require, as less than 60% of the households responding claimed to have animals. Although this varied by region and livelihood zone, an analysis of the main income activities suggests that about 37% of the households could be considered livestock dependent. Even so, the size of their herds was likely to be quite small (75% of the households claimed to own between 1 and 40 animals). There was also considerable

diversity among the income activity groups. Of course this is not to say that there are no pastoralists in Puntland but rather that they do not constitute the majority of the households that depend solely on animals in the rural settlements.

- **The worst off are likely to be community support dependents, beggars and unskilled workers.**

These income activity groups were the most food insecure of all the income activity groups identified, though this is not to say that food insecurity was not present in high levels in the other income activity groups. The issue of poverty is underlying in all income activity groups. It is therefore hard to identify the particular income activities or income activity groups that are evidently food insecure that should be targeted for interventions.

- **The education system in rural communities is poorly supported, resourced and financed.**

Only 60% of the rural communities interviewed had access to a school. Attendance was also low as only 40% of the children were reportedly attending school at the time of the survey. However, it was also clear from the assessment that households were likely to send all their children to school, if possible. Financial constraints and distance were deterrents to school attendance. Differences in attendance by gender seemed to be localised and generally both boys and girls were sent to school without preference. UNICEF data tends to support these findings.

- **Poverty and predictable, recurrent, transient shocks are likely to be the main contributors to food insecurity in Puntland.**

Food insecurity seems to be driven by underlying poverty with recurrent and transient food shocks that push households in and out of food insecurity. The seasonal food shocks were most likely to be related to high market prices which react to a known set of market forces and are therefore predictable (within certain constraints). Water shortages were also a major shock experienced in Puntland. Again this is highly seasonal and relatively predictable, within the bounds of a normal year. The seasonal availability of resources such as milk, meat, fish and credit was also likely to account for increased seasonal vulnerability to food insecurity. The final major shock that was experienced in Puntland was a reduction of earnings in the household. As illustrated previously this was also highly seasonal with reduced income during the dry seasons.

These shocks illustrate those most likely to occur in a relatively normal year and are, for the most part, predictable shocks. Hence contingency planning can clearly target two periods of the year on the basis of the shocks reported and household vulnerability to them (in terms of income): Jilal the main dry season and Hagaa the lesser dry season.

1.1 Priority areas and causes of food insecurity and vulnerability

It is likely that in regions such as Bari and Sool or in livelihood zones like Gagaab Golis and Nugal Valley and Dharor where the prevalence of food insecurity is highest, the main issues influencing food security are actually a complicated combination of poverty and transient food insecurity caused by shocks that affect consumption patterns.

Seasonal shocks are aggravated by poor infrastructure and the lack of simple, reliable amenities and services such as education, health services and water. The resulting reduced access to markets, poor health and low levels of literacy serve to perpetuate poverty. Day to day issues faced by communities and households in Puntland include market price fluctuations and reduced dry season incomes that do not allow households to protect rainy season gains. The net effect of this is to challenge households' abilities to save, pay off debts and make investments. Puntland government currently lacks resources to assist with many of these needs, although there are projects in place to

support the government in changing this situation. For the interim period the rural population requires support in terms of social safety nets to protect both resources and income. Such safety nets include cash transfers and food transfers that would reduce the impact of recurrent seasonal shocks on household income and asset bases and/or provide assistance when no income is available.

Interventions should be timely - providing the most support possible during the dry seasons - and based on community needs –i.e., addressing water, food, and cash; all this in addition to interventions that focus on enhancing access to basic services such as health and education.

2 Recommendations

These recommendations consider both the quantitative data available from this assessment and the needs expressed by the households during the survey. There is a strong call for cash **and** food interventions, backed up also by the data analysis. Although these recommendations focus on cash **or** food separately, it is highly recommended that interventions combine transfers, e.g. cash **and** food, as a more appropriate and desired response --i.e., cash and food-for-work activities.

It is also important that there be a strong technical ability in place to review future proposals for work activities. Infrastructure, water point rehabilitation and environmental protection all require specific skills to ensure that the projects are viable, technically sound, effectively designed and correctly implemented. Field offices should have the ability and skills to carry out effective technical reviews of activity proposals so that appropriate projects are not only implemented but also followed up.

2.1 Food interventions by priority area and priority group/s

Food interventions are still justified in Puntland, and supported by the observation that approximately 20% of the population were food insecure at the time of the assessment - 75% of which furthermore, had very poor food consumption patterns. It would therefore be recommended that at least 75% of the food insecure (equivalent to approximately 100,000 people) be targeted for food interventions during the dry seasons of Jilal and Hagaa. Food interventions during these seasons would help protect income earned during the more prosperous rainy seasons and help stabilize market prices (although this assumption would need to be tested). As for the types of foods that should be distributed it is likely that foods high in protein content would be best given that diets at the end of the Jilal were poor due to reduced protein intake – however, the acceptability of the commodities intended for distribution should be investigated.

General food distribution, in very limited quantities, may well still have a place as part of other food based activities to ensure that those households that are not capable of work are provided for.

Food-for-work

Food insecurity is likely to be influenced by market prices and reduced income. The contribution that very poor infrastructure has on this is probably also significant. Therefore food-for-work (FFW) projects would seem a suitable modality for the distribution of food through a focus on roads and water structures. This type of intervention would not exclude female-headed households as there generally seemed to be only a few female-headed households that did not have any productive males in them who could participate in these activities.

Work activities are likely to be best focused on roads, health and water structures, though certainly not to the exclusion of other issues not addressed in this assessment, such as well-designed environmental protection activities.

School Feeding

Schools in rural Puntland would appear to be attended by both the food secure and the food insecure, and most of the income activity groups. Nonetheless, school attendance is poor in all regions of Puntland (although it seems to be higher in Bari). Despite there being low access to schools in rural communities, school feeding, could foster increased school enrolments and attendances. The implementation of school feeding however should be planned for schools capable of carrying out such an activity and able to accommodate eventual increased attendance. Support to teaching staff should also be provided to ensure that the quality of the education provided does not decline as a result of increased attendance.

This assessment would suggest that although there is a small difference between boys and girls attendance, it is not significant, if and when there are schools available. The latest UNICEF survey also shows that the smallest difference of enrolment by gender through out Somalia is found in the North East Zone (Puntland), where 58.5% of boys are enrolled in primary school compared to 41.5 % of girls . Overall, it would therefore not be justified to recommend take home rations for girls in Puntland, though case-by-case justifications could be made based on more specific studies on school enrolments or attendances that show significant difference in gender enrolment or/and attendance. More detailed studies in collaboration with UNICEF or other specialized agencies would be required at a district or regional levels to recommend take home ration for girls.

2.2 Non-food Interventions by Priority Area and Priority Group/s

It was requested by the majority of the households that cash play an important role in interventions, whether food was involved or not. In order to bring the recommendations out of the WFP framework other areas of priority are mentioned here.

Cash-for-work and cash transfers

Cash-for-work (CFW) or even simply cash transfers are likely to be most beneficial during the dry seasons. The increased flexibility provided by cash – and the preference for this type of intervention in some regions – would help subsidise reduced incomes during these periods, protecting households from increased market and water prices. Given that credit is also more difficult to obtain during these seasons, cash would constitute a simpler and more effective way of purchasing a wider range of goods. The timing would reduce increased debt burden if provided during the dry seasons and used to pay off some of the debt incurred prior to the intervention. During the dry season, it would also not offset or distract from the main income generating activities of the households. The timing of such interventions however is less relevant for the small number of food insecure community-support dependants and beggars. At the same time, it is likely that cash interventions provided during the dry seasons might be met with decreased purchasing power because of seasonal price increases. For this reason, cash interventions would be more effective if supplemented with food.

Water and water trucking

Overall, water was the priority most often stated by the households in this assessment. This is also likely to reflect the timing of the assessment which occurred at the end of the dry season when water shortage is most felt. Water quality was deemed as important as – if not more important than – water quantity. Water was requested (most frequently by those in Bari) as a focus of eventual interventions. Additionally, according to the frequency with which households experienced reduced water availability, Mudug would also benefit from improved water supply. Interestingly assistance with water was only specifically requested during the Jilal.

In order to mitigate problems with water during the dry seasons, water point rehabilitation and/or construction should be considered as a priority so that incomplete and leaking structures can be repaired, thus preventing unnecessary loss of water.

However, the impact of creating additional water sources should be considered carefully before implementation.

Education

The education system needs to be addressed in rural Puntland, as it suffers from a lack of qualified teachers, teacher salaries, and even school structures themselves, which are absent or insufficient in most communities.

Although it is easy to recommend more schools, the complexity of this simple statement is well appreciated. However, it would be wrong not to highlight education as a priority need throughout rural Puntland. It is clear that high levels of illiteracy are a compounding factor to poverty and food insecurity. Incentives for school attendance have been addressed in the food intervention section above but it is rather outside the scope of this assessment to detail the types of interventions required to improve the state of the education system. However, hopefully the information contained in this report will be useful, in part, to those agencies involved in this sector.

2.3 Potential targeting criteria for interventions

Given that food insecurity exists within all the income activity groups identified in this assessment it is difficult to provide a clear set of criteria for targeting. There are some groups and household profiles that are more likely to be food insecure than others. Although food-for-work activities are likely to have a degree of self-selection, in that those who need food are more likely to be prepared to work for it, other mechanisms of targeting are required for cash-based interventions.

The poorest households are known to the community, irrespective of the types of criteria that can be formulated from studies like this. Therefore community-based targeting strategies, with the involvement of community representatives (not just leaders), in identifying poor households is probably the most appropriate targeting approach. From the data presented in this report, it is clear that female-headed households are more vulnerable to food insecurity. Income activity groups such as community support dependents and beggars are also much more vulnerable than other groups. Unskilled labourers also tend to be most vulnerable to food insecurity. Not surprisingly, households with a higher number of livestock and pack camels tend to be more food secure. At the same time, there are likely to be some exclusion criteria that could be taken into consideration –i.e., ownership of a berkad, pack camels and/or livestock holdings of more than 40 shoats. These known sets of household characteristics can help assist community-based targeting in refining, identifying and confirming households most needing assistance.

This mode of targeting was also suggested by research conducted on behalf of WFP in 2001, and developing this approach for Puntland should be investigated.

2.4 Intervention Duration

Food-for-work interventions should be initiated at the onset of the Jilal and Haggaa seasons and should run for no more than three months in order not to interfere with normal market price reductions in staple foods. Cash-for-work interventions could essentially run for the duration of the year depending on the households involved. However, if implemented during the Gu and Deyr seasons they are more likely to be effective when market prices are lower but may cause problems because of competition with normal income activities during a period when they provide the greatest proportion of total income.

As the situation in Puntland is chronic and reflects basic poverty, government is not likely to be able to provide sufficient support in the short- to mid-term future. Therefore any intervention should have short- and mid-term objectives. Engaging in short, emergency style interventions are (on the whole) not appropriate for rural communities

in Puntland. Strategic activities and the finances to sustain such interventions are needed. Social support systems should be considered as opposed to short-term, discontinuous fixes.

2.5 Potential negative impacts of suggested interventions

Negative impacts are inherent in any intervention. These can be overt or less obvious and present from the outset of the intervention or appear later on. For the interventions that are suggested here, there are potential negative impacts that should be highlighted.

Cash-based interventions

The use of cash as a regular safety net may distract households from their regular income activities, particularly during the seasons when households report having improved income (Gu and Deyr). Depending on the size of the transfer and/or its regularity there could be a reduction in the diversity of minor income generating activities in the household, which could result in a reduced capacity to absorb shocks.

More information is required, particularly on market dynamics, to understand how effective cash interventions are likely to unfold as a longer-term strategy. The multiplier effects of cash interventions in economies that are dependent on predominately external sources of capital are often limited, reducing the long-term impact of cash transfers. Therefore a more thorough understanding of market dynamics should be provided. Having said this, the short-term effectiveness of cash transfers is not to be understated. Care should be taken to ensure that cash-based strategies are integrated into longer term poverty alleviation strategies designed to diversify livelihoods and improve local economic activities.

Food-based interventions

Food is a useful commodity for addressing the immediate needs of the population. It would seem that food is needed in Puntland on a very seasonal basis for a proportion of the population. However, there is a functioning food market in Puntland (even though access to markets in some regions is a particular problem). If large amounts of food are repeatedly distributed to the general population, regardless of the modality, normal market functioning could be affected and could worsen the problem when food interventions stop. Therefore during the process of designing activities the development of local markets should be considered or at least not challenged.

Water interventions

As mentioned in the secondary data review the impact of increased water points (or berkads) on the environment is not well understood. As these are the main source of water for many of the water trucking activities care should be taken in developing more of these resources. Naturally people and animals need water. However strategies to improve water availability should very seriously consider environmental implications.

Annexes

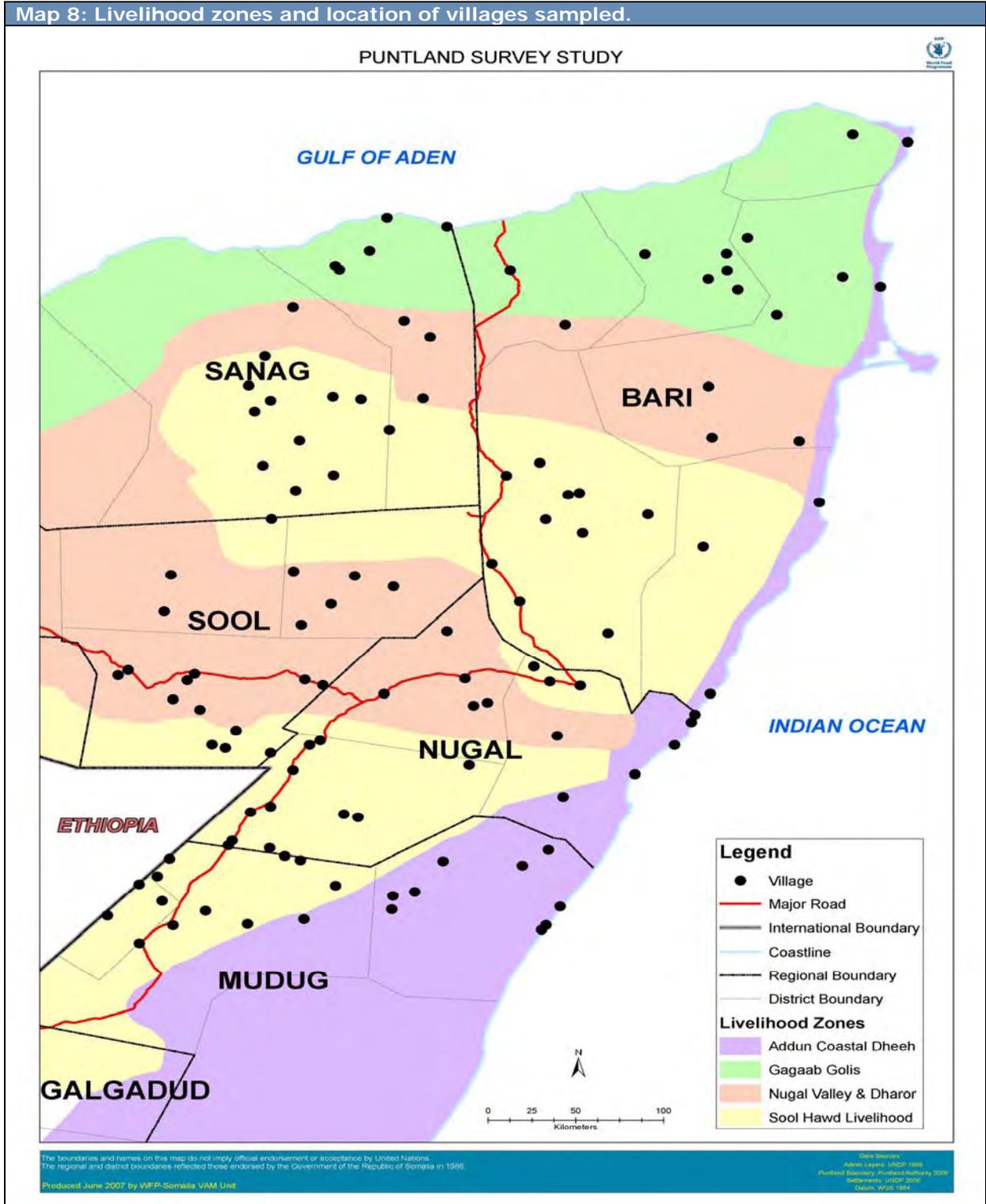
Annex 1: Detailed description of consumption profiles

Consumption Profile	No. in Group	% Sample	Description	Sub-Group Rank	No. in Sub-Group	% Sample	Defining Characteristics of Sub Group
Good	240	19.0%	Sugar is eaten 6-7days a week. Proteins are eaten 2-3 times a day. Milk contributes significantly to the diet in all cases. Where there is little meat in the diet the contribution to the total protein intake is made up by consumption of either greater frequency of milk and/or pulses. Starches and Cereals are eaten between once and twice a day. Potential Vegetable sources are eaten 2-3 times a week on average. Fruit is generally absent in this group (except sub-group 1)	1	26	2.1%	Although this sub-group eats generally less than the others in the main group, its defining characteristic is that it is the only class that has a balanced diet, in that they are the only HOUSEHOLD that consume fruit to any significant extent (4times a week). This is therefore the most diverse of all the diets profiled.
				2	62	4.9%	Higher than normal Meat and Sauce consumption
				3	66	5.2%	Higher than normal Animal Fat consumption
				4	75	5.9%	Higher than normal Milk/Fermented milk consumption
				5	7	0.6%	Higher than normal Egg Consumption
				6	4	0.3%	Highest Sorghum and Egg consumption
Fairly Good	193	15.3%	Sugar is eaten 6-7days a week. Protein is eaten 1-2times a day in this group. Milk is not consumed as often as it is in Group 1. Meat and Pulses are eaten to approximately the same extent, on average, in this group as in Group 1 but the overall protein intake is less overall due to the reduced milk intake. Starches and Cereal is consumed 1-2times a day. Fruit is completely lacking from this group and potential Vegetable sources are generally < 4 times a week.	7	55	4.3%	Higher amounts of meat are consumed in this sub-group
				8	34	2.7%	This sub-group represents the fish eaters of the sample
				9	70	5.5%	This sub-group eats significantly more Pulses and Fresh Milk than the others in this Group
				10	34	2.7%	This sub-group consumes a significantly high amount of pasta compared to the other sub-groups. This is true of the overall Starch and Cereal consumption. Conversely sauce consumption is particularly low.
Average	315	24.9%	Sugar is eaten 6-7days a week. Overall protein is still consumed 1-1.5times a day. Although mainly from milk some sub-groups consume milk less than 5times a week. Meat and Pulses are eaten 1-2times a week. Starches and Cereals are consumed 1.5-2times a day. Potential sources of Vegetables are eaten less than twice a week and fruit is virtually lacking in the diet.	11	89	7.0%	High frequency of the consumption of Powdered Milk defines this sub-group
				12	51	4.0%	This sub-group consumes Sorghum/Maize to a greater extent than any other sub-group. Fresh Milk consumption is particularly low in this sub-group
				13	121	9.6%	Rice and Wheat products are consumed slightly higher than other sub-groups as is Fresh Milk. Sauce is consumed slightly less than other sub-groups. There is also a high Vegetable oil intake.
				14	54	4.3%	Meat and Pulse consumption are poor in this group but is compensated by a significantly high frequency of Fermented Milk consumption.

Consumption Profile	No. in Group	% Sample	Description	Sub-Group Rank	No. in Sub-Group	% Sample	Defining Characteristics of Sub Group
Poor	209	16.5%	Sugar is eaten 6-7days a week. Proteins are eaten 7days a week but only just. Meat is eaten 1-1.5times a week and Milk 1.5- 3.5times a week with a small contribution from Pulses. Starches and Cereals are eaten fewer times a week in this Group but still generally once or twice a day.	15	48	3.8%	This sub-group is differentiated from the main grouping as being those that drink much less tea. Protein consumption is relatively better than the other sub-groups
				16	95	7.5%	Although this sub-group is poor in protein source frequency this is countered by more frequent Cereal and Starch consumption as well as increased frequency of sauce consumption.
				17	66	5.2%	This sub-group eats significantly less Rice and Wheat products than any other sub-group but compensates slightly with a greater consumption of Sorghum
Very Poor	308	24.3%	Sugar is eaten 6-7days a week, except in the last of the classes who report only eating sugar once every two weeks. Protein consumption generally very low and reported as 2-4times a week. Milk is not a significant source of protein but is approximately the same frequency as Meat consumption. Although in most cases Starch and Cereals are consumed daily but only just in most cases.	18	61	4.8%	This sub-group consumes much less oil than the other groups, although Cereal and Starch Consumption is higher than the other sub-groups in this group.
				19	184	14.5%	This sub-group eats significantly higher amounts of oils
				20	63	5.0%	This sub-group is significantly different in that the Starch and Cereal consumption is less than 7days a week, the sugar consumption is minimal and that oil consumption is also very poor.

Annex 2: Description of aggregated livelihood zones (summary by mohamed hersi)

Map 8: Livelihood zones and location of villages sampled.



Sool and Hawd Livelihood Zone

The Sool Hawd Pastoral livelihood zone stretches from the Sanag region border in the north all the way northeast to the eastern Bari region (spanning an area known as the Sool plateau). Covering the western side of Puntland and merging with the wider Hawd Plateau in Ethiopia it joins with the greater Hawd area stretching from the southern part of the Nugal region up to the Mudug region, bordering with Ethiopia. The Sool Hawd livelihood zone has no permanent water sources and relies mainly on man-made berkads.

In the Sool Hawd pastoral areas the main Gu rains – normally occurring in early April and lasting through early June - are followed by the Hagaa season, which is characterized by hot dry winds and extends from July to late September. The quality and conditions of grazing in this zone are considered to be very good. The livelihood zone covers a large, flat lowland area with extensive bush and shrub cover and patches of acacia forest in some areas. Camels and goats are the main types of livestock that are commonly reared in this livelihood zone. The main constraint to accessing food and income in this livelihood zone is caused by recurrent drought and/or erratic rainfalls. Livestock production and food purchases all contribute significantly to meeting food consumption needs in this area. In addition to their importance as a source of milk, butter and meat, livestock are the main source of cash income in this livelihood zone. Milk production is also an important cross-cutting cash income source for almost all wealth groups.

Nugal Valley and Dharor Livelihood Zone

The Nugal Valley and Dharor livelihood zone is a vast lowland (altitude 400-600m) located in the central segment of northern Somalia that passes through the Sanag region and continues up to the Bari region where it borders with the Gagaab Golis livelihood zone in the north. Water sources in this zone are hand dug wells, streams, natural caved holes and a limited number of boreholes.

This livelihood zone is characterized by abundant surface water. For most of Nugal and Dharor water availability had never been problematic, though the water is so hard that about 80% of the supply is not suitable for human domestic use (FSAU Baseline, 2005). Lowland alluvial plains characterize this livelihood zone.

The dominant species here are sheep and camel, while goats rarely thrive in the valley. On the basis of feeding habits and frequency of water consumption rather than their breed, camel herds are divided into two types:

- a) the **Qasaal** type, which normally browse drought resistant evergreen shrubs and salt bushes. The challenges to these camels' digestive systems that this browse represents is overcome if they have adequate and frequent access to water. It is widely believed that Qasaal herds are relatively resistant to drought events, as they have a long lactation period that sometimes exceeds 2-3 years, yet they rarely migrate outside the valley.
- b) the **Normal** type, which constitute the larger proportion of the camel population, are mainly grazers and drink water every 8-12 days. This type is also found in other agro-ecological zones.

There are two rainy seasons in the Nugal Valley, the Gu and the Deyr (secondary), and annual rainfall averages 150-200mm. Water and pasture are instead in short supply during the Hagaa and Jilal seasons. Seasonal movement of livestock depends on the season's rainfall. Camels and goats are the main source of milk production within the zone. The importance of milk production is not only for subsistence consumption in the pastoral household – milk is also sold in the urban and main villages for cash income and in exchange for food. Camels reproduce once a year whereas shoats reproduce twice a year. All livestock species reproduce in the wet season - mainly Gu - though it has

changed due to the successive droughts since 2001, and camels will reproduce for the first time this Deyr 05/06.

Gagaab Golis Livelihood Zone

This livelihood zone starts from the northeast tip and follows the mountainous chain of the Golis along the entire northwest coastal area. In the Gagaab Golis livelihood zone the major income sources come from frankincense and small numbers of shoats. Water sources in Gagaab are exclusively water catchments filled during the rainy season. Once water is exhausted, households move to either Dharor and/or Golis where water is more plentiful. Golis has permanent access to spring water. Livestock trading in Bossaso is more common here but is still limited. Food is either purchased or obtained from households' own production, and from mainly shoats. Gagaab is in between the Iskushuban and Qandala. During the dry season Gagaab pastoral men migrate to other areas leaving behind women, children and the elderly. For Golis, livestock movement is restricted to the Golis Zone. The livestock in the Golis area are small in size, especially the goats, and therefore households cannot compete on the market with other pastoral livelihood zones in Puntland. Hence goats in the Golis area are almost exclusively for local consumption.

Addun and Coastal Dheeh Livelihood Zone

Addun and Coastal Dheeh are generally known as "Guri Ari" which means home of the shoats, because they are the predominant livestock in the area. A major constraint faced by this zone is its inability to access markets as it is isolated from the major markets and roads, which translates into poor terms of trade (ToT) for herders. This is a poorer pastoral zone than most of the others, due in particular to its lack of milk marketing (inaccessibility).

Addun and Coastal Dheeh pastoralists are also characterised by low mobility – they tend to move within the same ecological zone only. This is in part due to their livestock's low resistance to ecto-parasites (e.g. ticks) – and ticks are few in their area – few predators, relatively low prices and reasonable availability of water.

During the dry season the Coastal Dheeh areas use shallow wells while in Addun water can be obtained from boreholes. Shrubs are very limited in the Coastal Dheeh while in Addun there is a sparse vegetation, consisting of shrubs and limited grass. On the other hand, Coastal Dheeh has grass suitable for grazing animals, especially sheep.

The main source of income is the sale of livestock and livestock products. For people in the Coastal Dheeh area fishing, and in particular lobsters, is an important source of income. Households in Addun, though predominantly reliant on livestock, are also involved in fishing and fish to earn supplemental income during hardship periods. The Addun pastoral area was not significantly affected by the drought in 1998 and 1999, but environmental degradation has worsened in the past twenty years and can be attributed

to the increase and expansion of settlements and berkads, especially in the areas where Addun borders with the Hawd livelihood zone.

Annex 3: List of settlements selected and then visited and of the replacements for those that did not exist or had no one there.

Original Settlement / Water point	Replacement Settlement / Water point	REGION	DISTRICT	LIVELIHOOD	Est. Population	Est. HH	No. of Clusters
Dhuudo		Bari	Bandar Beyla	Addun Coastal Dheeh	1260	210	1
Bali Khadar	Karin	Bari	Bossaso	Addun Coastal Dheeh	210	35	1
Kobdhekaad		Bari	Bossaso	Gagaab Golis	1860	310	1
Ceel-Quud		Bari	Caluula	Nugal Valley and Dharor	420	70	1
Tooxin		Bari	Caluula	Sool Hawd	300	50	1
Balidhidin		Bari	Iskushuban	Gagaab Golis	2310	385	1
Gumbax		Bari	Iskushuban	Gagaab Golis	595	99	1
Itaageer		Bari	Iskushuban	Gagaab Golis	480	80	1
Jacayl		Bari	Iskushuban	Gagaab Golis	4200	700	1
Unuun		Bari	Iskushuban	Gagaab Golis	1960	327	1
Laamiye	Iskorosaar	Bari	Iskushuban	Addun Coastal Dheeh	570	95	1
Xiiriro		Bari	Iskushuban	Addun Coastal Dheeh	2240	373	2
Buqcatooti		Bari	Qandala	Gagaab Golis	270	45	1
Gurur		Bari	Qandala	Gagaab Golis	1110	185	1
Shebaab		Bari	Qandala	Gagaab Golis	390	65	1
Tuur Masale		Bari	Qandala	Gagaab Golis	910	152	1
Xarago		Bari	Qandala	Gagaab Golis	665	111	1
Arris		Bari	Qandala	Gagaab Golis	780	130	1
Jeded		Bari	Qandala	Gagaab Golis	1440	240	1
Maygag		Bari	Qandala	Nugal Valley and Dharor	90	15	1
Habal -Reer		Bari	Qardho	Nugal Valley and Dharor	910	152	1
Libaaxar		Bari	Qardho	Gagaab Golis	1750	292	1
Qaararsoor		Bari	Qardho	Sool Hawd	1160	193	1
Qalwo		Bari	Qardho	Sool Hawd	665	111	1
Sheerbi	Gudade	Bari	Qardho	Sool Hawd	3040	507	1
Xiddo	Alhamdu	Bari	Qardho	Sool Hawd	2100	350	1
Yakayake		Bari	Qardho	Sool Hawd	2520	420	1
Adaygabgabo	Barwaqo	Mudug	Burtinle	Sool Hawd	180	30	1
Afweyn		Mudug	Gaalkacyo	Sool Hawd	2400	400	1
Bacaadweyn	Aragan	Mudug	Gaalkacyo	Sool Hawd	3850	642	1
Bayra		Mudug	Gaalkacyo	Sool Hawd	720	120	1
Berdhagaxtur	Faratoyo	Mudug	Gaalkacyo	Sool Hawd	500	83	1
Gosol		Mudug	Gaalkacyo	Sool Hawd	1760	293	1
Village-Galcadale	Qalanqal	Mudug	Gaalkacyo	Addun Coastal Dheeh	480	80	1
Xabiibo		Mudug	Gaalkacyo	Sool Hawd		0	1
Catoosh	Lasaroh	Mudug	Gaalkacyo	Sool Hawd	720	120	1
bali-abees	Farjano	Mudug	Gaalkacyo	Sool Hawd	560	93	1
Bursalah	Darasalam	Mudug	Galdogob	Sool Hawd	1920	320	1
Lanmadow		Mudug	Galdogob	Sool Hawd			1
riig-omane		Mudug	Galdogob	Sool Hawd	390	65	1
Kulub		Mudug	Jariiban	Addun Coastal Dheeh	180	30	1
Gar-Cad	Ilfoocshe	Mudug	Jariiban	Addun Coastal Dheeh		0	1
Cel-Xagar		Mudug	Jariiban	Addun Coastal Dheeh	300	50	1
Buubi		Mudug	Jariiban	Addun Coastal Dheeh	1400	233	1
Cara-Caso		Mudug	Jariiban	Sool Hawd	300	50	1

Semade		Mudug	Jariiban	Addun Coastal Dheeh	1000	167	1
Boc		Mudug	Jariiban	Addun Coastal Dheeh		0	1
Salah		Mudug	Jariiban	Addun Coastal Dheeh	900	150	1
Balanbal -1		Mudug	Jariiban	Addun Coastal Dheeh		0	1
Ballibusle		Mudug	Jariiban	Addun Coastal Dheeh	2100	350	1
Booc	Malasle	Mudug	Jariiban	Addun Coastal Dheeh	900	150	1
Cel-Berde		Mudug	Jariiban	Sool Hawd	1500	250	1
Hayanle		Mudug	Jariiban	Sool Hawd	600	100	2
ceel-laheley	Oman	Mudug	Jariiban	Addun Coastal Dheeh		0	1
Tuulo-Jalam	Meeraysane	Nugal	Burtinle	Sool Hawd	1560	260	1
Bandunbuto		Nugal	Dangarooyo	Sool Hawd	420	70	1
Hagi Khayr		Nugal	Dangarooyo	Sool Hawd	1050	175	1
Usgure		Nugal	Dangarooyo	Sool Hawd	900	150	1
Baarweyn		Nugal	Dangarooyo	Nugal Valley and Dharor	420	70	1
Garmaal		Nugal	Dangarooyo	Addun Coastal Dheeh	780	130	
Qarhis		Nugal	Eyl	Nugal Valley and Dharor	1320	220	1
Kabal		Nugal	Eyl	Addun Coastal Dheeh	2520	420	2
Marayo		Nugal	Eyl	Addun Coastal Dheeh	1260	210	1
Dhalinraqas		Nugal	Eyl	Addun Coastal Dheeh	480	80	1
Gabac		Nugal	Eyl	Addun Coastal Dheeh	3000	500	1
Bedey		Nugal	Eyl	Addun Coastal Dheeh	1680	280	1
Dhiganle		Nugal	Eyl	Addun Coastal Dheeh	900	150	1
Gadobjiran		Nugal	Eyl	Addun Coastal Dheeh	2100	350	1
Gubato		Nugal	Eyl	Nugal Valley and Dharor	180	30	1
Godbalayskutumay		Nugal	Eyl	Addun Coastal Dheeh	150	25	
Yoombays		Nugal	Garowe	Sool Hawd	780	130	1
Kala-Bayr		Nugal	Garowe	Sool Hawd	1380	230	1
Birtadheer		Nugal	Garowe	Sool Hawd	360	60	1
Quraca-Dheer	Ilmader	Nugal	Garowe	Sool Hawd	120	20	1
Lanta Hawada		Nugal	Garowe	Nugal Valley and Dharor	90	15	1
Cuun		Nugal	Garowe	Nugal Valley and Dharor	420	70	1
Qabaal		Nugal	Garowe	Nugal Valley and Dharor	252	42	1
buqtuugio	Biyo-addo	Nugal	Garowe	Nugal Valley and Dharor		0	1
Sinujiif		Nugal	Garowe	Nugal Valley and Dharor	1050	175	2
Biyo Guduud	Yube	Sanag	Ceerigaabo	Sool Hawd	900	150	1
Dacawo		Sanag	Ceerigaabo	Sool Hawd	1680	280	1
Darasalam		Sanag	Ceerigaabo	Sool Hawd	1050	175	1
Geel Wayta	Ceelaanyo	Sanag	Ceerigaabo	Gagaab Golis		0	1
Laasa Durad	Durduri	Sanag	Ceerigaabo	Gagaab Golis		0	1
Shimbiraale		Sanag	Ceerigaabo	Sool Hawd	1380	230	1
Ardaa	Carmale	Sanag	Ceerigaabo	Gagaab Golis		0	1
Damale Xagare		Sanag	Ceerigaabo	Sool Hawd	1560	260	1
Dibqarax	Sibbaaya	Sanag	Ceerigaabo	Sool Hawd		0	1
Baraagaha Qol	Goran	Sanag	Laasqorey	Sool Hawd	600	100	
Hiin-Galool		Sanag	Laasqorey	Sool Hawd	2100	350	1
Wardher		Sanag	Laasqorey	Sool Hawd	1800	300	1
Bali Busle		Sanag	Laasqorey	Sool Hawd	1200	200	1

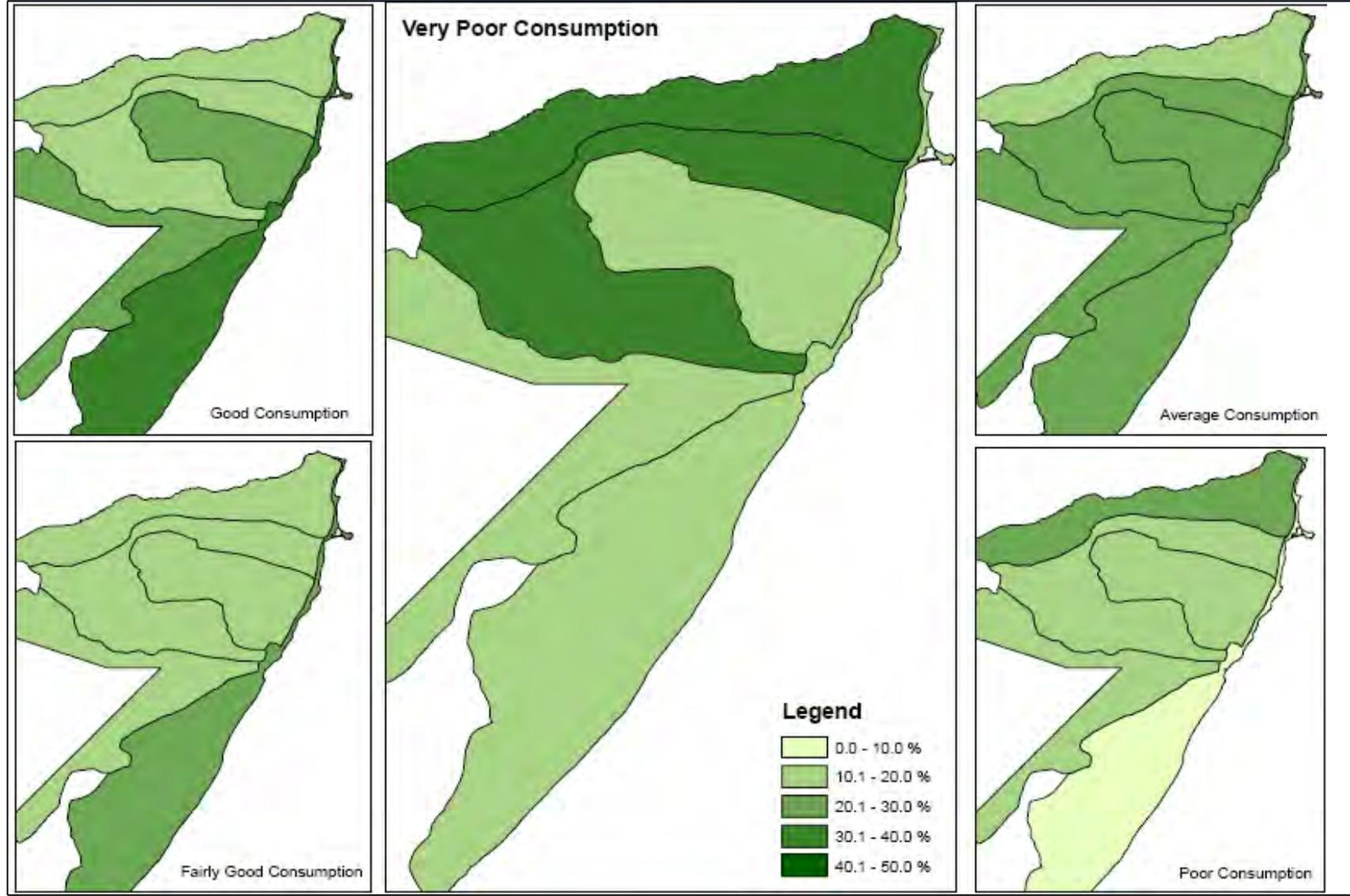
Badhan	Midigale	Sanag	Laasqorey	Gagaab Golis		0	1
Buraan		Sanag	Laasqorey	Nugal Valley and Dharor	3300	550	1
Cawsane		Sanag	Laasqorey	Nugal Valley and Dharor	840	140	
Ceel-Buh		Sanag	Laasqorey	Sool Hawd	1800	300	1
Habar Shiro		Sanag	Laasqorey	Sool Hawd	1800	300	
Hadaaftimo Village		Sanag	Laasqorey	Nugal Valley and Dharor	1320	220	1
Sac-Qooqis		Sanag	Laasqorey	Gagaab Golis	2700	450	2
Ulxeed		Sanag	Laasqorey	Gagaab Golis	270	45	1
Xabaasha-Waale		Sanag	Laasqorey	Gagaab Golis	180	30	1
Buuro-Hadal		Sool	Laas Caanood	Nugal Valley and Dharor	750	125	1
Buq Xaar	Gacandar	Sool	Laas Caanood	Nugal Valley and Dharor	300	50	1
Buulal		Sool	Laas Caanood	Sool Hawd	270	45	1
Dhumeey	Dan	Sool	Laas Caanood	Sool Hawd	960	160	1
Gol-Khatumo (Laas Caanood)	Daryale	Sool	Laas Caanood	Nugal Valley and Dharor		0	1
Halhaliye		Sool	Laas Caanood	Nugal Valley and Dharor	1050	175	1
Howl-Wadag (Laas Caanood)	Gambare	Sool	Laas Caanood	Nugal Valley and Dharor		0	1
Kal-Beyr	Fardhidin	Sool	Laas Caanood	Sool Hawd	1890	315	1
Karin-Dabayl Weyn		Sool	Laas Caanood	Sool Hawd	756	126	
Karin-Gorfood		Sool	Laas Caanood	Sool Hawd	780	130	1
Sahdheer		Sool	Laas Caanood	Sool Hawd	450	75	
Wadajir	Higlo	Sool	Laas Caanood	Nugal Valley and Dharor		0	
Sarmaanyo		Sool	Taleex	Sool Hawd	1020	170	1
Halin		Sool	Taleex	Nugal Valley and Dharor	540	90	1
Maysamo	Canjid	Sool	Taleex	Nugal Valley and Dharor	150	25	1
Arooley		Sool	Taleex	Nugal Valley and Dharor	900	150	1
Buqdher	Garaclaanoood	Sool	Taleex	Nugal Valley and Dharor	660	110	1
Kal-Cad		Sool	Taleex	Nugal Valley and Dharor	600	100	1
Lasacardin		Sool	Taleex	Sool Hawd	720	120	
Qawlo		Sool	Taleex	Nugal Valley and Dharor	1080	180	1
Taleex		Sool	Taleex	Nugal Valley and Dharor	4374	729	2
Dib-Shebel		Sool	Xudun	Nugal Valley and Dharor	450	75	1
Hudun		Sool	Xudun	Nugal Valley and Dharor	3258	543	2

Note: Settlements/water-points marked in Blue where not included in the survey due to security reasons.

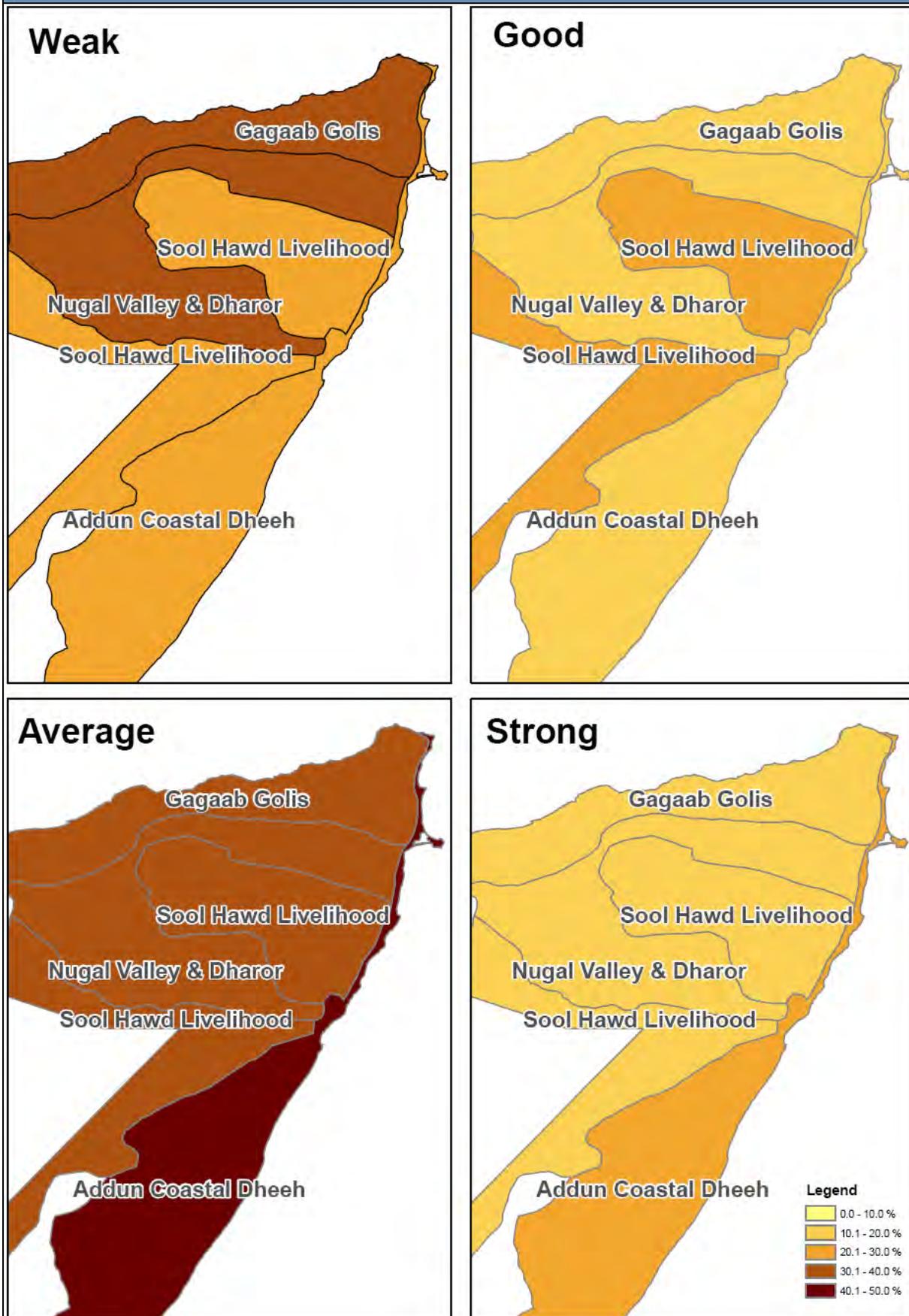
Annex 4: Number of Clusters and Weights assigned to each Strata

	Clusters	Weights
Regions		
Bari	27	1.36
Mudug	27	0.87
Nugal	23	0.80
Sanag	20	1.36
Sool	19	0.58
Livelihood Zones		
Addun Coastal Dheeh	23	0.59
Gagaab Golis	21	1.20
Nugal Valley and Dharor	28	1.04
Sool Hawd	44	1.10

Map 9: Prevalence of the five different consumption profile (very poor to good) within each livelihood zone



Map 10: Prevalence of the four different access profiles (weak to good) within each livelihood zone



References

- ⁱ Narbeth, S.; March 2001. The targeting of emergency food distribution in Somalia: vulnerability, redistribution and beneficiary participation (WFP Somalia)..
- ⁱⁱ WFP. June 2002. VAM standard Analytical Framework. Rome, Italy
- ⁱⁱⁱ Ali D, Toure F. and Kiewied T. 2005. Cash relief in a contested area. Lessons from Somalia. Commissioned and published by the Humanitarian Practice Network at ODI. Overseas Development Institute. London. UK.
- ^{iv} Gabrielle T. Nori M. 2007. Cash-Based Safety Nets for Livelihood Support In Northeastern Somalia. A feasibility Study for Save the Children UK and Horn Relief.
- ^v UNDP and World Bank. 2006. Somali Joint Need Assessment. Productive Sectors and Environment Cluster Report
- ^{vi} UNDP, October 2004. Framework Programme On Sustainable Livelihoods And Drought Mitigation In Drought-Affected Regions Of Somaliland And Puntland
- ^{vii} Horn Relief and Save the Children UK 2007, "Feasibility Study: Safety nets for Livelihood Support in Puntland and Somaliland"
- ^{viii} CARE, 2005. Puntland Livelihood Recovery Project. Baseline Survey Report
- ^{ix} UNICEF (2002) Assessing the current status of the Nomadic population in Somalia
- ^x Sardana M., Singh P. and Hommes G., 2004. Statistical data collection and statistical capacity building for Somalia. UNDP, Nairobi
- ^{xi} UNDP. 2006. Somalia Population statistic.
- ^{xii} GFA, 2004. Programme Design Study: Support to Marginal Rural Areas in Somalia Position Paper. EC delegation. Nairobi, Kenya
- ^{xiii} SRWU, 2005. An Assessment Of Internally Displaced Persons/Returnees In Bossaso, Puntland State Of Somalia Somali Reunification Women's Union - SUPPORTED BY UNDP-RRIDP
- ^{xiv} Horn Relief. 2006. Alternative Livelihoods and Area Economic Recovery in Northern Somalia. CICDA
- ^{xv} World Bank. 2006. Somalia From Resilience Towards Recovery and Development. A Country Economic Memorandum for Somalia
- ^{xvi} Save the Children UK. 2006. Baseline Study SCUUK Project Area – Karkaar Region Puntland.
- ^{xvii} WSP Somali Programme. 2001. Rebuilding Somalia: issues and possibilities for Puntland.
- ^{xviii} United Nations Development Program, 2006, Somali Reconstruction and Development Framework: Deepening Peace and Reducing Poverty
- ^{xix} SRWU. 2004. Rapid Count.
- ^{xx} FSAU. 2005. Baseline Livelihood Report – Nugal Valley Pastoral. Nairobi. Kenya
- ^{xxi} Bossaso Port Authority, 2006. Ships and Export Cargo Statistics For the year 2005/2006
- ^{xxii} Nori M., et al., 2006. Milking Drylands: the emergence of camel milk markets in stateless Somali areas. Nomadic People Magazine
- ^{xxiii} UNDP and World Bank. 2006. Somali Joint Need Assessment. The livestock sector report
- ^{xxiv} ICRC Livestock Study in the Greater Horn of Africa, 2004 - Somalia Country Profile
- ^{xxv} Progressive Interventions, 2005, East Sanag Socio-Economic Profiles
- ^{xxvi} FSAU. 2007. 2006/07 Post Deyr Analysis, V 12. March 2007
- ^{xxvii} FSAU. 2005. Baseline Livelihood Report. Sool-Sanag Plateau: Pastoral. Nairobi, Kenya

- xxviii SCF_HR, 2007. Cash-Based Safety Nets for Livelihood Support In Northeastern Somalia. Field survey report
- xxix Save the Children UK. 2006. Baseline Study SCUUK Project Area – Karkaar Region Puntland.
- xxx World Bank. 2006. Somalia From Resilience Towards Recovery and Development: A Country Economic Memorandum for Somalia
- xxxi Save the Children Alliance. 2006. Rewrite the Future. Country Plan for Somaliland / Somalia 2006-2009
- xxxii UNICEF. 2006. Survey of Primary Education in Somalia 2005/2006. Volume 1- Technical Report. Kenya.
- xxxiii UNDP and World Bank. 2006. Somali Joint Need Assessment. Social Services and Protection of Vulnerable Group Cluster Report. Nairobi.Kenya.
- xxxiv UNDP. 2001. Somalia Human Development Report 2001. Nairobi.Kenya.
- xxxv UNICEF. 2007 under publication. Multiple Indicators Cluster Survey 2006. Nairobi.Kenya.
- xxxvi UNIFEM. 1998. Somalia between peace and war. African Women for Peace series. UNIFEM Nairobi
- xxxvii PDRC. 2004. Draft Report On Socio-Economic Assessment In Puntland. PDRC Funded By UNDP/World Bank
- xxxviii UNDP. 2006. Human Development Report 2006, Somalia Data Sheet
- xxxix FSAU. 2005 (as quoted in the Somalia Livestock Sector Strategy)
- xi Vétérinaires sans Frontières Suisse, 2005. Post-Tsunami Rehabilitation and Reconstruction Program Rehabilitation and Re-Construction of Fishery and Livestock Related Infrastructures, Coastal Area
- xii CARE Somalia and VSF-Suisse, 2004. Proposal for Puntland Pastoralists Program (PPP)-Somalia
- xiii Terra Nuova, 2005. Pan African Control Of Epizootics (Pace), Somali Component - Final Technical Report, In Collaboration With Au / Ibar / Pace Cape Unit
- xiiii FSAU. February 2007. Food Security and Nutrition Special Brief.
- xliv PRDC, 2004c. Analysis of socio--economic situation in Puntland. Discussion Paper, UNDP Somalia
- xliv Anonymous. 2007. Puntland Five-Year Development Plan 2007-2011. Puntland.
- xlvi Horn Relief. 2006. Environmental Study Of Degradation In The Sool Plateau And Gebi Valley: Sanag Region Of Northern Somalia
- xlvi FAO, World Bank, European Union. 2004. Somalia: Towards a Livestock Sector Strategy, Final Report".
- xlvi Terra Nuova, 2005. Pan African Control Of Epizootics (Pace), Somali Component - Final Technical Report, In Collaboration With Au / Ibar / Pace Cape Unit
- xlvi UNDP, October 2004. Framework Programme on Sustainable Livelihoods and Drought Mitigation in Drought-Affected Regions of Somaliland and Puntland
- ¹ UNDP. 2003. CAP 2003/2004
- ⁱⁱ Ruel, Marie. 2002. Discussion Paper No. 140. Is Dietary Diversity an Indicator of Food Security or Dietary Quality? A Review of Measurement Issues and Research Needs. Washington, D.C.: International Food Policy Research Institute.
- ⁱⁱⁱ Hoddinott, John and Yisehac Yohannes. 2002. Dietary Diversity as a Food Security Indicator. Washington, D.C.: International Food Policy Research Institute.