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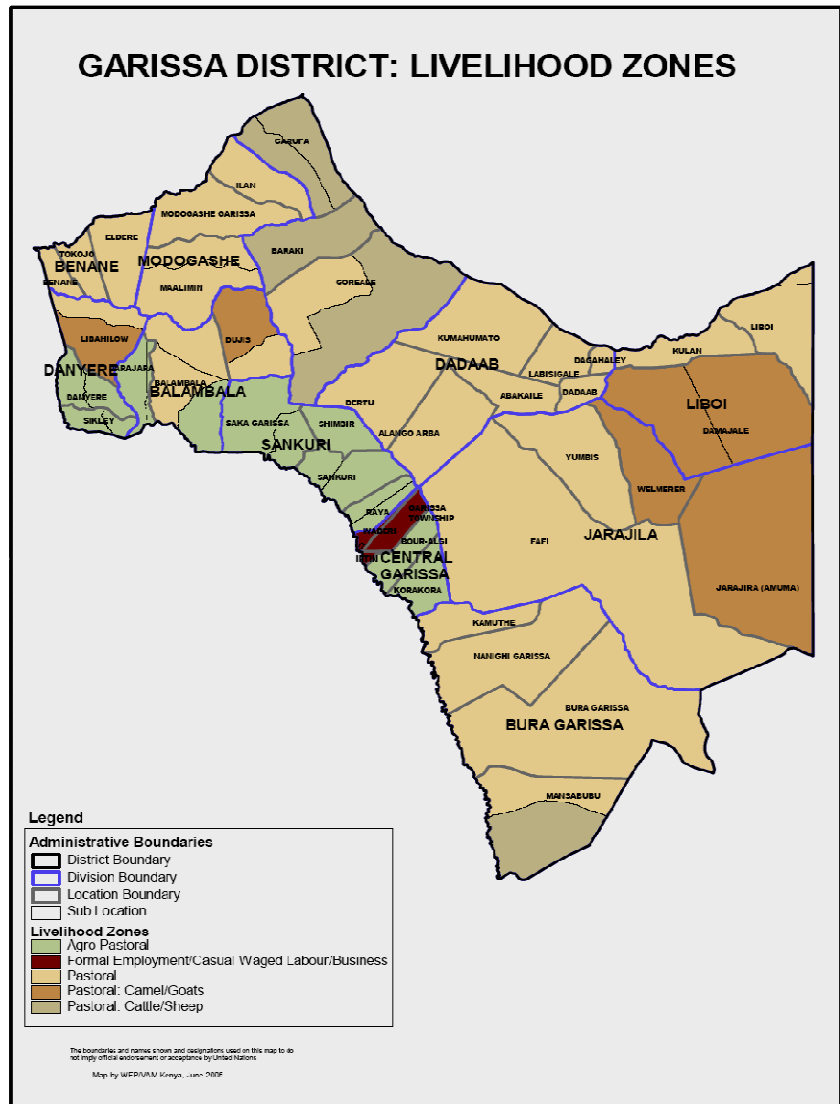
Ministry of Public health
and Sanitation



Ministry of Medical
Services



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The nutrition and food security survey was conducted from 21st to 29th April 2011 in the four districts of Garissa County namely Garissa, Fafi, Lagdera and Ijara. The survey presents data on 748 children aged 6-59 months from 700 households. The number of children aged 0-23 months assessed for IYCF was 397.

The survey results showed a critical Global Acute Malnutrition levels (GAM) rate of 16.20% (95% C.I: 13.54-18.82) Severe Acute Malnutrition (SAM) rate of 3.21% (95% C.I: 1.95- 4.47). From the survey, the under five mortality rate is 0.70 /10,000/day (95% CI: 0.14-1.26) and crude mortality rate of 0.56 (95% CI: 0.31-0.81).

From the survey results, the following has been recommended;

1. Scale up and fill the existing gaps in SFP and OTP programs.
2. Need to improve access to health services through community sensitization on importance of improved health seeking behaviour through use of community health workers (CHWs) and outreach services. This would ensure improved immunization, vitamin A coverage and referral of untreated medical cases.
3. Intensify the promotion of IYCF practices
4. Ensure the households access more clean water through strategies like sinking of more boreholes.
5. Promote the construction and use of sanitary facilities to improve on the hygiene standards.
6. Need for continued promotion of hand washing practice
7. Scale up distribution of mosquito nets
8. Increase the supplementation of Zinc among children suffering from diarrhoea and Iron for pregnant mothers.

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ACRONYMS AND ABBREVIATIONS

ALRMP	Arid Lands Resource Management Project
ANC	Ante-natal clinic
ASAL	Arid and Semi-Arid Lands
BSFP	Blanket Supplementary Feeding Programme
CSB	Corn-Soya Blend
CTC	Community Therapeutic Care
DNOs	District Nutrition Officers
ENA	Emergency Nutrition Assessment
FGDs	Focused Group Discussions
GAM	Global Acute Malnutrition
GFD	General Food Distribution
HDSD	Household Dietary Diversity Score
IYCF	Infant and Young Child Feeding
MUAC	Middle Upper Arm Circumference
NGOs	Non-governmental Organizations
OTP	Outpatient therapeutic Programme
SC	Stabilization Centre
SFP	Supplementary Feeding Programme
SMART	Standardized Monitoring and Assessment of Relief and Transition
WFH	Weight for Height
WFP	World Food Programme
WHO	World Health Organization

EXECUTIVE SUMMARY

Introduction

This is a report on the outcomes of a nutrition survey undertaken in April 2011 in Garissa County. The survey aimed at estimating the level of acute malnutrition and food security situation among children aged 6-59 months of age.

The objectives of this survey were to:

1. Determine the prevalence of Global Acute Malnutrition (GAM) and Severe Acute Malnutrition (SAM) among children aged 6-59 months.
2. Estimate both under five and crude mortality rates three months prior to survey.
3. Establish the immunization coverage among children.
4. Determine IYCF practices.
5. Determine the prevailing levels of household food security and common coping mechanisms.
6. Establish water, sanitation and hygiene (WASH) practices at household level, presence and use of latrine, hand washing, water storage and usage.
7. Assess the practice of high impact nutrition interventions (HINI).
8. Recommend practical and sustainable interventions based on the survey findings to improve the nutrition status of the population.

Methodology

The Emergency Nutrition Assessment (ENA) for Standardized Monitoring and Assessment of Relief and Transitions (SMART) methodology for nutritional assessment in emergency situations was used in this survey. ENA software 2010 was used to plan and collect information on nutritional status from children aged 6-59 months from 700 households in Garissa County.

Data on nutritional status was collected on children aged 6-59 months while data on immunization, vitamin A supplementation coverage and morbidity were collected on children aged 0-59 months from the selected 700 households. Mortality data was collected from all the households. Information on infant and young child feeding practices (IYCF) was collected on all the 0-23 children (397); 115 being children aged 0-6 months and 282 children aged 6-23 months. Data on availability and usage of insecticide-treated mosquito nets (ITNs), high impact nutrition interventions, food security and consumption, water and hygiene and sanitation were also collected. Nutrition status was collected for women of reproductive age (15-49 years).

A two-stage cluster sampling methodology based on proportion to population size was used. 35 clusters in Garissa County were sampled using the planning platform for ENA for SMART. The clusters were selected from a comprehensive list of the smallest geographical unit (sub-locations) for which population statistics was available. Data was collected from 700 households in Garissa County.

ENA for SMART was used for planning, training for data entry and analysis of anthropometry data. Data on immunization, vitamin A, morbidity, de-worming, water, hygiene and sanitation, IYCF practices, ITNs and food security were entered and analyzed using SPSS version 16.0 and Epi info.

Focus group discussions were conducted among women from the community to solicit their perceptions on the causes and possible solutions to the problems of health and nutrition, as well as on the food security situation in Garissa County.

SUMMARY OF THE FINDINGS IN GARISSA COUNTY (APRIL 2011)

Nutritional Status (Children 6-59 months of age) (WHO Standards 2006)	N=748
(WHZ) Global Acute Malnutrition (GAM)	(121) 16.20% (95% C.I: 13.54-18.82)
(WHZ) GAM- BOYS	(66) 17.23% (95% C.I: 13.45-21.01)
(WHZ) GAM- GIRLS	(55) 15.07% (95% C.I: 11.40-18.74)
(WHZ) Moderate Acute Malnutrition (MAM)	(97) 13.00% (95% C.I: 11.56-15.38)
(WHZ) Severe Acute Malnutrition (SAM)	(24) 3.21% (95% C.I: 1.95- 4.47)
Oedema	(4) : 0.5%
(MUAC) GAM	(124) 16.58% (95% C.I: 13.91- 19.25)
(MUAC) MAM	(98) 13.10% (95% C.I: 10.68- 15.52)
(MUAC) SAM	(26) 3.48% (95% C.I: 2.17- 4.79)
Plausibility Check (Data Quality)	
Overall score WHZ	6% (Acceptable)
Age Ratio	P= 0.340 (Good)
% Flags WZ	1.5 (Acceptable)
WHZ SD	1.14 (Acceptable)
Skewness	-0.06 (Good)
Kurtosis	-0.061(Acceptable)
Weight digit preference	6 (Acceptable)
Height digit preference	8(Acceptable)
Immunization Coverage	
<u>BCG: (N=863)</u>	
Card	44.7%
Scar	47.0%
Total	91.7%
<u>OPV1 (N=863)</u>	
Card	42.5%
Recall	47.5%
Total	90.0%
<u>OPV3 (N=863)</u>	
Card	42.5%
Recall	44.3%
Total	86.8%
<u>Measles (children 9 -59 months (N=692)</u>	
Card	41.1%
Recall	39.9%
Total	81.0%

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Vitamin A supplementation	N=748	
YES (Once)	218 (29.1%)	
YES (Twice)	145 (19.4%)	
Do not know	24 (3.2%)	
NO	361 (48.3%)	
Morbidity (children 6-59 months old)		
No of sick children	N=748	345 (46.1%)
Watery Diarrhoea	N=345	119 (34.5%)
Bloody Diarrhoea	N=345	27 (7.8%)
Fever	N=345	166 (48.1%)
Fever with chills	N=345	41 (11.9%)
De-worming		
Children de-wormed (12-59 months)	N=657	307 (46.7%)
Coverage of feeding programmes		
Supplementary Feeding Programme (SFP)	N=98	74 (75.5%)
Outpatient Feeding Programme (OTP)	N=26	23 (88.5%)
Infant and Young Child Feeding Practices		
<u>Breastfeeding Practices:</u>		
Timely Initiation of Breastfeeding (within 1 hour)	N=372	151 (40.6%)
Given colostrums	N=372	310 (83.3%)
Given pre-lacteal in the first 3 days	N=397	44 (11.1%)
Exclusive breastfeeding for 6 months	N=115	87 (75.7%)
Still breastfeeding	N=372	287 (77.2%)
Ever breast fed	N=397	372 (93.7%)
Food Aid		
Houses that received food aid in three months prior to the survey	N=700	362 (51.7%)
Maternal Nutritional Status (MUAC)	N=332	
Pregnant and lactating women MUAC <23cm	36 (10.84) (95% CI: 7.50-14.18)	
Mortality Rates		
Crude Death Rate (CDR)	N=3397	(19) 0.56 (95% CI: 0.31-0.81)
Under-five Death Rate (U5DR)	N=863	(6) 0.70 (95% CI: 0.14-1.26)

Conclusion

- The malnutrition levels of children in Garissa County are at critical level (GAM=16.2% and SAM=3.2) and this is unlikely to improve due to prevailing high food insecurity coupled with high morbidity rates.
- The prevalence of morbidity is high, a further aggravating factor to nutrition status.
- Health seeking behaviour is poor with most of the populations visiting the health

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facilities only when sick.

- The food security status is low as provided by a low dietary diversity score.
- There is poor access to adequate clean water. Most of the populations consume water from unprotected sources. The reported levels of diarrhoea in Garissa County (17.1%) could be attributed to the lack of adequate sanitary facilities. This could be a predisposing factor to illness.

RECOMMENDATIONS

Short term

- The GAM of 16.2 and SAM of 3.2 calls for an urgent scale up and filling the existing gaps in SFP and OTP programs (SFP is 75.5% while OTP is 88.5%). This is due to;
 - The reported cases of low food diversity (with only 32.6% of 6-23 month olds and 38.2% of 24 -59 month olds consuming > 4 food groups)
 - The coping strategy of reducing the size of the meal by 55.9% and reducing the number of meals by 50.0% is not appropriate among the under fives.
- Need to improve access to health services through;
 - Community sensitization on importance of improved health seeking behaviour
 - Increase the use of CHWs and outreach services to ensure improved immunization and vitamin A coverage. This would also ensure referral of untreated cases found to be 21.2% in the community. Only 41.4% seek medical attention at health facilities (both public and private).
- Intensify the promotion of IYCF practices
- Methods to ensure the households access more water are needed like sinking of more boreholes. The survey noted that 51.4% of the households were not accessing adequate clean water.
- Need for continued promotion of hand washing as large proportion of caregivers did not wash hands in situations like visiting the toilet (31.3%) or handling the child's bottom (40.4%).
- Scale up the distribution of mosquito nets as most of the household members did not use a net. Note 79.4% of under five children did not sleep under mosquito nets. This could be the reason for the (11.9%) of malaria reported.
- In order to increase HINI, there is need to increase the low supplementation of Zinc and Iron. The survey noted that 24.6% of pregnant women had not received iron while others were not sure whether they had received iron supplements. About 76.7% of the children with diarrhoea had not received zinc supplements.

Long term

- Initiate programs to diversify on the livelihood of pastoralists
- Initiating income generating activities

Other recommendations

- Need for nutrition survey for each of the four districts as the county is too large and thus generalization can only be done with a lot of caution due to the differences in livelihoods.

1 NUTRITION SURVEY REPORT

This report provides the findings of the nutrition and food security survey undertaken from 20th to 29th April 2011 in Garissa County in North Eastern Province, Kenya.

1.1 Background

The survey covered the four districts of Garissa County in North Eastern Province. Garissa County covers a vast area with a widely dispersed total population estimated at 462,875 based on the 2009 census projection. The area is sparsely populated. The county has four districts; Fafi, Ijara, Lagdera and Garissa. The main ethnic group is Somali who are mainly pastoralists with a few agro-pastoralists.

Mercy USA is a non- governmental organization (NGO) that has continued to provide assistance to the beneficiaries with timely and targeted services to enable them cope with repeated shocks. Based on its current presence in other districts like Kajiado, there has been good progress so far on the programs already initiated.

Mercy USA has sound experience in the health and nutrition sectors. The past program performance within emergency contexts enables the organization to provide communities in the operational areas with a comprehensive package of care based on a best practices approach and lessons learnt from past experience and in line with nationally approved guidelines and protocols.

The nutrition status of children under five in Garissa County as of December 2010, has shown a downward trend, where the number of children at risk of malnutrition has increased from 11.7% in November to 12.5% in December 2011. The nutrition condition worsened during the dry period (Arid Lands Drought Monitoring Bulletin, December 2010). The main factors underlying the current nutrition situation can be attributed to limited access to milk due to decreased productivity of livestock as a result of limited forage, poor access to safe water and general limited access to food. According to UNICEF, 2011 an estimate of 11,928 children under five were acutely malnourished. This represents approximately 18% of the total population of children under five years in the County.

The last nutrition survey in Garissa was conducted in 2008 and indicated a GAM of 15.5% (WHO standards), a critical nutrition situation. If compared to the estimated caseloads present, the nutrition situation has not improved and continues to show the need for immediate and life-saving interventions. In light of the limited nutrition information for Garissa County, there was an urgent need for a nutrition survey. This survey was conducted with the partnership of MERCY-USA and to provide information on the current nutrition situation.

1.2 Problem statement

Many households in Garissa County are vulnerable to food and nutrition insecurity that is prerequisite for malnutrition and other related childhood illnesses. Poverty, illiteracy and drought have led to minimal access to essential services to the majority of the inhabitants of the County.

Inadequate food at the household and community level as a result of cyclic drought conditions coupled with long-term degradation of livelihoods and local coping strategies have further weakened the way of life of residents of the County. The combined effect of the above factors has resulted in chronic levels of acute malnutrition indicating the

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enormity of both underlying and basic causes of malnutrition.

1.3 Objectives of the survey

The objectives of this survey were to:

1. Determine the prevalence of Global Acute Malnutrition (GAM) and Severe Acute Malnutrition (SAM) among children aged 6-59 months.
2. Estimate both under five and crude mortality rates three months prior to survey.
3. Establish the immunization coverage among children.
4. Determine IYCF practices.
5. Determine the prevailing levels of household food security and common coping mechanisms.
6. Establish water, sanitation and hygiene (WASH) practices at household level, presence and use of latrine, hand washing, water storage and usage.
7. Assess the practice of high impact nutrition interventions (HINI).
8. Recommend practical and sustainable interventions based on the survey findings to improve the nutrition status of the population.

2.0 METHODOLOGY

2.1 Survey design and sampling technique

2.1.1 Survey design

Standardized Measurement and Assessments in Relief and Transition (SMART) methodology was used in both planning and carrying out the anthropometric and mortality survey.

2.1.2 Target population

The survey targeted children 0-59 months and women of reproductive age (14-49 years). The population of Garissa County is 462,875 persons (Kenya Bureau of Statistics Population census of 2009). A sub-location was used as the smallest unit for sampling as there was no population estimates at village level. The sub locations and the respective population were entered in the ENA for SMART software 2010 version for planning.

2.1.3 Sample size and sampling technique

The population of Garissa County was segregated into smaller geographical units (sub-locations) for cluster assignment. ENA for SMART software was used to determine the number of households. It was also used to randomly select the clusters based on the sampling frame outlined above.

According to ALRMP 2011, the estimated population of children under five in Garissa County is 66,267. The prevalence of malnutrition (GAM) as per 2008 nutrition survey was 15.5% (12.7 - 18.4 CI). The most appropriate precision for this survey is 4.0 and design effect of 2. By use of the planning template for sample size calculation as provided by ENA by SMART 2010 version a total of 686 households and 35 clusters were targeted. Since the survey team could cover 20 households in a day, the survey targeted 686/20 thus 35 clusters. Thus, the survey targeted 35 clusters each with 20 children making a total of 700 households.

For the mortality survey, a total of 629 households were to be investigated as determined by the ENA software. The households for mortality was based on the 2008 census

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population (462,875), crude death rate (0.67/10,000), precision (0.4), design effect (2) and a 90-day recall period. These were keyed into the planning template (mortality section) so as to determine the mortality survey sample size. Since the households for anthropometry were more, this survey assessed all the 700 households (as targeted for anthropometry) for mortality.

Table 2.1 Sample size calculation for a cross sectional anthropometric survey

		Justification
Prevalence	15.5 %	The last nutrition survey conducted in Garissa was in 2008. This was the GAM prevalence found at the time was 15.5%. (12.7 - 18.4 CI)
Precision	4%	The precision of 4% is the most appropriate precision (SMART, 2010) when the prevalence of GAM is 15.5%.
Design effect	2	A design effect of 2 will be used since the four districts in Garissa county have some variations in livelihood as the County covers a large geographical area of four districts, which are vast apart.
Household size	5.25	The household size is as derived from the last nutrition survey in 2008

2.1.4 Selection of clusters

The total number of households targeted per cluster was 20 (it is also the number of clusters that one team could cover per day). Thus, the survey targeted 35 clusters each with 20 children. The various villages (clusters) within a sub-location were listed and one cluster was randomly selected.

2.1.5 Selection of the survey teams

The survey comprised of five teams. Each team had four (4) members; supervisor, team leader and two enumerators. The supervisors were District Nutrition Officers (DNOs) in the Ministry of Health. The team leaders were health workers while enumerators were community health workers drawn from each district in Garissa County. Translation was done by the enumerators while the team leader recorded the data. The supervisors and the consultant supervised the teams.

2.1.6 Training of the survey team

Training on the SMART survey methodology, standardization of anthropometric measurements and data collection tools was conducted in a three-day training workshop prior to the survey. This was done on the 18th to 20th April 2011.

2.1.7 Pre-testing of the questionnaire

On the 3rd day of the training, pre-testing of the questionnaires was done by all the teams under supervision of the consultant. This was done in one of the clusters (Raya) not selected for the survey.

2.1.8 Selection of households

Each survey team moved to the centre of the assigned cluster. A random direction was determined by spinning a pencil to choose the direction of movement. The survey team moved in the selected direction up to the end of the cluster. At the edge of the cluster, a random direction was again selected by spinning a pencil. All households in that direction

within a radius of 45° were counted and numbers assigned up to the end of the cluster. A random number was selected by writing on papers the number of households and choosing one. The household selected was the first sampled household. All other households in the same direction were subsequently selected. All children aged between 6 and 59 months were measured from selected household until all the 20 households were covered. All households responded to the mortality questionnaire.

2.1.9 Children for determining infant and young child feeding practices (IYCF)

For the IYCF, children aged 6-23 months in the selected households in each of the clusters were targeted. A total of 863 children from Garissa of whom 115 (13.33%) were aged 0-6 months and 282 (32.68%) children aged 6-23 months participated in the IYCF practices assessment.

2.2 Variables measured

Data on anthropometric measurements (weight, height and MUAC), morbidity, vitamin A supplementation, immunization coverage for the under-fives, feeding programmes' coverage, infant and young child feeding practices, food security status of the households and household dietary diversity was obtained. In addition data on water, hygiene and sanitation as well as high impact nutrition interventions was collected.

The exact age of the child was noted in months, based on information gathered from the caregiver and confirmed with health records. Most of the caregivers had birth notification and child health cards with children's birth dates. In a few clusters where many children did not have the cards, mother's recall, use of calendar of events and the limit of 65cm to 110 cm in height were also used to determine the age.

Food security data were collected from the selected households in the clusters and was established by use of a weekly frequency.

2.3 Data quality control

Procedures to ensure quality data included: careful training of interviewers who were taken through the plausibility check tests, close supervision of actual survey and daily check of all the questionnaires for consistency, completeness and clarity of the questionnaires by the consultant. Questionnaires obtained at the end of each day were checked. Any errors, omissions in data recording were sorted and corrected. For data on Vitamin A, zinc and iron uptake, vitamin A capsules and iron sprinkles and tablets were shown to the respondents to establish if the same had been given to them.

2.4 Data analysis

Anthropometric and mortality data entry, processing and analysis were carried out based on ENA for SMART software, 2010 and WHO, 2006 standards were used to generate the results. SMART outliers were used for anthropometric data analysis. Data on immunization, vitamin A, morbidity, de-worming, infant and young child feeding (IYCF) practices, ITNs, and food security were entered and analyzed using EPI- info and SPSS version 16.0

2.5 Challenges during the survey

The survey was conducted as recommended in the SMART methodology; however there were some limitations that need to be acknowledged.

- **Questionnaires:** The questionnaires were very lengthy thus tiresome to the

respondents and interviewers.

- **Data collection:** The vast geographical areas meant that, there were large distances between households in the sampled clusters and the teams sometimes worked late hours in the evenings. There were challenges in accessing some areas.
- **Data quality:** Recall of age, vaccinations and vitamin A supplementation may have been inaccurate in some cases although every effort was made to obtain accurate data.
- **Morbidity:** Information on illnesses for some respondents was self-reported and not necessarily confirmed from health records.

3.0 RESULTS

3.1 Characteristics of the survey sample

3.1.1 Household size

The mean household size was found to be 4.93 ± 1.86 members. House hold size ranged between 2-12 persons per household.

Table 3.1: Household size

Household size	n	%
2	21	3.0
3	147	21.0
4	170	24.3
5	147	21.0
6	85	12.1
7	57	8.1
8	42	6.0
9	13	1.9
10	9	1.3
11	6	0.9
12	3	0.4
Total	700	100

3.1.2 Occupation

The main occupation of the households was obtained by asking the respondents the main source of household livelihood.

Table 3.2: Occupation of the households

Type of livelihood (N=700)	n	%
Pastoralism	487	69.6
Agro-pastoralism	23	3.3
Petty trading	70	10.0
Agriculture	4	.6
Formal employment	67	9.6
Informal employment	30	4.3
Natural resource dependent	18	2.6
Merchant/trader	1	0.1

The main occupation for more than half (69.6%) of the households was pastoralism, 10% were in petty trading, 9.6% were in formal employment, 4.3% were in informal employment while 3.3% were involved in agro-pastoralism.

3.1.3 Source of income for the household

Income data was obtained by asking respondents their main sources of income in the last three months.

Table 3.3: Source of income for the households

Source of income (N= 700)	N	%
Sale of livestock	202	28.9
Sale of livestock product	132	18.9
Sale of fish	1	0.1
Sale of ration food	37	5.3

Sale of own crop	1	0.1
Wage labour	28	4.0
Remittance	5	0.7
Charcoal	3	0.4
Petty trade	66	9.4
Salary	55	7.9
No source of income	170	24.3

About 28.9% of households obtained their income from sale of livestock, 18.9% from sale of livestock products, while 9.4% from petty trade. 24.3% reported that they had no source of income at all and dependent on external help.

3.1.4 Livestock ownership

Respondents were asked the type and number of animals the household owned. Table 3.4 shows the animal ownership and the numbers owned per household.

Table 3.4: Ownership of livestock per household

	5-10		10-20		20-50		50-100		100-200		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
Cattle	163	23.3	58	8.3	30	4.3	23	3.3	0	0	274	39.1
Camel	111	15.9	53	7.6	34	4.9	26	3.7	2	0.3	226	32.3
Goats	168	24	81	11.6	76	10.9	53	7.6	19	2.7	397	56.7
Sheep	152	21.7	51	7.3	54	7.7	20	2.9	0	0	277	39.6
Chicken	119	17	17	2.4	9	1.3	0	0	0	0	145	20.7
Donkeys	70	10	6	0.9	0	0	0	0	0	0	76	10.9

Goats were owned by the highest number of the households (56.7%) followed by sheep (39.6%), cattle (39.1%), camel (32.3%), chicken (20.7%) and lastly donkeys (10.9 %). There was variation in terms of the number of livestock owned by various households with some owning 100 to 200 while others owned only 5 to 10. Among the households who owned goats 24% had 5 to 10, 11.6% had 10-20 goats, 10.9% had 20-50, and 7.6% had 50 to 100 while 2.7 % owned 100 to 200 goats.

About 15.9% owned 5 to 10 camels, 7.6% between 10 to 20, 4.9% had between 20 to 50, 3.7% had 50 to 100 while 0.3% of the household owned 100 to 200 camels. Respondents were also asked whether the size of their livestock had changed since the last rain. About 12.7% of the households reported to have had an increase, 75.2% had reduction while 9.5% of the households reported that the livestock remained the same.

The reasons for increase or decrease were established. Some of the reasons reported for increase in livestock size included; purchase of more livestock (73.0%), gifts from friends or relatives (19.0%), animals giving birth (7.9%). The reasons given for decrease in livestock include; deaths due to drought (84.5%), deaths due to diseases (11.5%) and sale (4.0%).

3.1.5 Ownership of household assets

Ownership of various household assets was established by asking the respondents to state the type of asset owned in the household.

Table 3.5: Ownership of assets per household

Household assets	N	%
Hoe	74	10.6
Axe	110	15.7
Sickle/Machete	64	9.1
Plough/Ox Plough	11	1.6
Radio (only)	228	32.6
Tape/CD player	35	5.0
Fishing net	14	2.0
Drip Bucket	17	2.4
Paraffin Stove	34	4.9
Pressure Lamp	23	3.3
Cell phone	234	33.4
Chairs/sofa	83	11.9
Ox/donkey cart	51	7.3
Water Tank	30	4.3
Grinding Mill	3	0.4
Bicycle	39	5.6
Beds	239	34.1
Food Granary	1	0.1
Oil press	9	1.3

The findings revealed that there was variation in terms of items owned by different households with some items being owned by a majority while others were owned by just a few households. Items owned by many households include beds (34.1%), cell phone (33.4%) and radio (32.6%). Other commonly owned household assets included axe (15.7%), chairs and sofa (11.9%) and hoe (10.6%). The least owned household assets included oil press (1.3%), grinding mill (0.4%) and food granary (0.1%).

3.1.6 Shelter

The survey team through observation established the type of building materials that had been used to construct the household structures.

Table 3.6: Type of material used in household structures

Roof	N	%
Straw (grass, papyrus)	505	72.1
Galvanized iron	157	22.4
Concrete	31	4.4
Plastic shelter	4	0.6
Tiles	2	0.3
Mud	1	0.1
Walls	N	%
Mud	310	44.3
Straw (grass, papyrus)	253	36.1
Concrete	93	13.3
Galvanized iron	19	2.7
Wood	4	0.6
Plastic sheets	21	3.0
Floors	N	%
Mud	453	64.7
Concrete	126	18.0

Sand	119	17.0
Plastic sheeting	1	0.1
Tiles	1	0.1

Amongst the households surveyed, majority (72.1%) used roofs made of straw (grass) while 22.4% were made of galvanized iron sheet. The proportions of households using other kinds of roof included 0.6% plastic shelter, 0.3% tiles and 0.1% mud.

In terms of the walls, about 44.3% of the walls were made of mud, while 36.1% and 13.3% were made of Straw (grass, papyrus and concrete respectively. Other types of walls included galvanized iron sheets (2.7%), plastic sheets (3.0%) and wooden (0.6%).

About 64.7 % of the household surveyed had mud floor while 18% and 17.0% had concrete and sand floors respectively. Only a small percentage (0.1%) had plastic sheeting and tiles on the floor.

3.1.7 Capacity of structures

The respondents were asked to state the capacity of the structures and the number of people accommodated within the household structures. From the household surveyed, majority (61.3%) had one structure while 21.1% and 13% had two and three structures respectively. Only a small percentage (3.3% and 1.3%) had four and five structures within the compound respectively.

The survey findings also revealed a variation in terms of the number of rooms available in every household with more than half (53.6%) having two rooms, while 34% had one room. 8.3% of the households had three rooms while only 4.7 % had four rooms. In terms of the household size, majority (52.6%) of the household were found to accommodate one to four members, 41.1% had accommodated 5 to 10 members while 6.3% had more than 11 members.

The number of wives in every household was also established. Majority (85%) of the households had one wife, while 11.7% had two wives. Only a small percentage (2.7% and 0.6%) had three and four wives respectively.

Table 3.7: Capacity of structures and household size

No of structures	N	%
One	429	61.3
Two	148	21.1
Three	91	13.0
Four	23	3.3
Five	9	1.3
No of rooms		
One	234	33.4
Two	375	53.6
Three	58	8.3
Four	33	4.7
No of people sleeping in the compound		
1-4	368	52.6
5-10	411	41.1
>11	44	6.3
No of wives in every household		
One	595	85.0
Two	82	11.7

Three	19	2.7
Four	4	0.6

3.2. Nutrition status of children

3.2.1 Anthropometric results; z- scores (based on WHO standards 2006)

Nutrition status of the children between 6 to 59 months was assessed by use of anthropometric measurements. Some anthropometric measurements were flagged thus data for nutrition status for 748 children is presented.

Table 3.8 Nutrition status of children (6-59 months)

Nutritional status of children 6-59 months			
Wasting(Weight/height)	All N=748	Boys N=384	Girls N=364
GAM < -2 z- score and/or oedema	(121) 16.2 % (13.9 - 18.8 95% C.I.)	(66) 17.2 % (13.4 - 22.2 95% C.I.)	(55) 15.1 % (11.6 - 19.4 95% C.I.)
MAM < -2 to > = -3z-score, No edema	(97) 13.0 % (11.0 - 15.2 95% C.I.)	(50) 13.0 % (9.9 - 17.2 95% C.I.)	(47) 12.9 % (9.7 - 16.9 95% C.I.)
SAM < -3 z- score and or oedema	(24) 3.2 % (2.1 - 5.0 95% C.I.)	(16) 4.2 % (2.5 - 7.1 95% C.I.)	(8) 2.2 % (1.1 - 4.4 95% C.I.)
UNDER WEIGHT			
Prevalence of Underweight (Weight/Age) <-2 Z-Score	(125) 16.7 % (13.4- 20.7 95% C.I.)	(83) 21.6 % (17.2 - 27.1 95% C.I.)	(42) 11.5 % (8.2 - 16.0 95% C.I.)
Moderate underweight < -2 to > = -3z-score	(89) 11.9 % (9.4 - 15.1 95% C.I.)	(59) 15.4 % (11.9 - 19.8 95% C.I.)	(30) 8.2 % (5.6 - 12.0 95% C.I.)
Severe Underweight < -3 z- score	(36) 4.8 % (3.4 - 6.8 95% C.I.)	(24) 6.3 % (4.2 - 9.3 95% C.I.)	(12) 3.3 % (1.8 - 5.8 95% C.I.)
STUNTING			
Prevalence of Stunting (Height/Age) < -2 z- score	(229) 30.6 % (24.2 - 37.8 95% C.I.)	(137) 35.7 % (28.0 - 43.7 95% C.I.)	(92) 25.3 % (19.0 - 33.0 95% C.I.)
Moderate stunting < -2 and > = -3z-score	(129) 17.2 % (13.4 - 21.9 95% C.I.)	(75) 19.5 % (15.2-24.5 95% C.I.)	(54) 14.8 % (10.2 - 21.2 95% C.I.)
Severe stunting <-3 Z score	(100) 13.4 % (10.1 - 17.5 95% C.I.)	(62) 16.1% (11.6-21.8 95% C.I.)	(38) 10.4 % (7.1- 15.2 95% C.I.)

From the survey, (121)16.2% of the children 6-59 months in Garissa County were wasted (weight for height of less than -2 SD), while (24)3.2% were classified as severely wasted using weight for height Z scores. The prevalence of wasting was found to be higher in boys (17.3%) than in girls (15.1%).

In respect to weight for age, (125)16.7% of the children had their weight for age less than -2 SD indicating they were underweight. (36) 4.8% of the children were found to be severely underweight. Boys were found to have a higher prevalence of underweight (21.6%) compared to girls (11.5%). Equally boys were found to be more severely underweight (6.3%) than girls (3.3%). These results agree with those of KDHS, 2008 which indicate that females have low prevalence of malnutrition and are less severely underweight (KDHS, 2008-2009).

The results shows that (229)30.6% of the children 6-59 months in Garissa County were stunted (height for age was less than -2 SD) while (100)13.4% were severely stunted (-3 SD). Boys were found to have higher prevalence of stunting (35.7%) compared to girls (25.3%).

Table 3.9: Prevalence of wasting by age based on weight/height z-scores

		Severe wasting (< -3 z-score)		Moderate wasting (≥ -3 and < -2 z-score)		Normal (≥ -2 z score)	
Age (mo)	Total	n	%	n	%	n	%
6-17	183	3	1.6	16	8.7	164	89.6
18-29	181	5	2.8	26	14.4	150	82.9
30-41	147	3	2.1	21	14.4	120	82.2
42-53	163	4	2.5	23	14.1	135	82.8
54-59	74	5	6.8	11	14.9	58	78.4
Total	748	20	2.7	97	13.0	627	83.8

In terms of age categories, there was almost equal distribution of the proportion of malnourished children in all the age categories.

Children were also classified as acutely malnourished based on the presence of oedema. For those with oedema, (1) 0.1% had a combination of marasmus and kwashiorkor while (3)0.4% had kwashiorkor only. The prevalence of oedema is 0.5 %.

Table 3.10: Prevalence of underweight by age, based on weight-for-height z-scores and oedema

		Severe underweight (< -3 z-score)		Moderate underweight (≥ -3 and < -2 z-score)		Normal (≥ -2 z score)		Oedema	
Age	Total	n	%	n	%	N	%	n	%
6-17	187	6	3.2	16	8.6	164	87.7	1	0.5
18-29	181	10	5.5	32	17.7	139	76.8	0	0.0
30-41	144	9	6.3	12	8.3	123	85.4	2	1.4
42-53	162	9	5.6	24	14.8	129	79.6	1	0.6
54-59	74	2	2.7	5	6.8	67	90.5	0	0.0
Total	748	36	4.8	89	11.9	622	83.2	4	0.5

The findings of the survey demonstrated that children between 30-41 months had the highest (6.3%) proportion of severe underweight while children between 54-59 months had the lowest (2.7%). It was however noted that children between 18-29 months had the highest proportion of moderate underweight compared to 6.8% of children between 54-59 months. Thus almost all (90.5%) of the children between 54-59 months had the ideal weight for age.

Table 3.11: Prevalence of stunting by age based on height-for-age z-scores

		Severe stunting (< -3 z-score)		Moderate stunting (≥ -3 and < -2 z-score)		Normal (≥ -2 z score)	
Age (mo)	Total	n	%	n.	%	n	%
6-17	184	34	18.5	27	14.7	123	66.8
18-29	182	34	18.7	33	18.1	115	63.2

30-41	145	19	13.1	21	14.5	105	72.4
42-53	163	9	5.5	41	25.2	113	69.3
54-59	74	4	5.4	7	9.5	63	85.1
Total	748	100	13.4	129	14.6	520	69.4

The prevalence of severe stunting was highest among children between 18-29 months (18.7%) and 6-17months (18.5) and lowest in children between 54-59 months (5.4%) and 42-53 months (5.5%) respectively. In terms of moderate stunting, the highest (25.2%) prevalence was found in children between 42-53 months while the lowest (9.5%) was found amongst children between 54-59 months.

3.2.2 Malnutrition by Mid Upper Arm Circumference (MUAC)

The total GAM by MUAC was 16.58 % of which 3.48% were severe malnourished (<11.5 cm) while 13.10% was moderately malnourished (11.5-<12.5cm). The proportion of children at risk was 21.5%, while 61.9% were normal.

3.12: Nutrition status by MUAC

Malnutrition by MUAC		N	%
GAM	<12.5cm	124	16.6
Moderate	11.5-12.5cm	98	13.1
Severe malnutrition	<11.5cm	26	3.48
At risk	12.5 – 13.5	161	21.5
Normal	>12.5cm	463	61.9

3.2.3 Plausibility checks

The plausibility check was performed using ENA for Smart. The results obtained are as follows

Table 3.13: Overall plausibility

Indicator	Value	Expected value	Remarks
Age Ratio	P=0.340	>0.1	Good
% Flags WZ	1.5	<10	Good
WHZ SD	1.14	<1.2	Acceptable
Skewness	-0.06	>+1	Good
Kurtosis	-0.61	>+1	Good
Weight digit preference	6	<10	Acceptable
Height digit preference	8	<10	Acceptable
Age distribution 6-17	1.2	0.8 – 1.2	As expected
18-29	1.2	0.8 – 1.2	As expected
30-41	0.84	0.8 – 1.2	As expected
42-53	1.1	0.8 – 1.2	As expected
54-59	1.1	0.8 – 1.2	As expected
Sex ratio	P=0.402	>0.1	Good
Boy /girl ratio	1.1	1	Good
Overall score WHZ	6%	<10%	Acceptable

3.3 Vitamin A Supplementation

Table 3.14: Vitamin A Supplementation coverage for Under-fives

Vitamin A supplementation	N	%
No	361	48.3
Yes recall	167	22.3
Yes card	196	26.2
Don't know	24	3.2
Total	748	100

This was assessed by asking caregiver of children between 6 to 59 months on whether the children had received vitamin A supplementation for the last six months. Vitamin A coverage was 48.5% Out of those children who had been supplemented with vitamin A, about 26.2% was indicated in the growth monitoring cards while 22.3% was through caregivers recall. About 48.3% of all under fives had not received vitamin A supplementation at all for the last six months prior to the survey. However about 3.2% were not sure whether the children had been supplemented.

Table 3.15: Vitamin A supplementation as per age categories

	6-11(N=91)		12-59(N=657)		Total (N=748)	
	n	%	n	%	n	%
None	24	26.4	337	51.3	361	48.3
Don't know	2	2.2	22	3.3	24	3.2
Yes (Once)	60	65.9	158	24.1	218	29.1
Yes (Twice)	5	5.5	140	21.3	145	19.4
Total	91	100	657	100	748	100

The survey findings reveal that 71.4% of children (6-11 months) and about 45.4 % of children (12-59 months) had been supplemented with vitamin A at least once prior to the Survey. This indicates that the highest proportion of vitamin A supplementation was among child 6-11 months. These findings were expected since this group of children is easily captured during other immunizations. The five children (6-11) who were supplemented twice could have been those who were sick.

The World Health Organization (WHO) requires that all under fives be supplemented with vitamin A every six months thus all children above one year should have been supplemented twice within 12 months prior to the survey, however only 21.3% of the children fulfilled this recommendation.

3.4 Deworming

Caregivers were asked to state children between 12 to 59 months had been de-wormed for the last six months prior to the survey. From the responses, close to half (46.7%) had been dewormed whereby 27.2% of them had been indicated on the child's card while 19.5% was through recall. About 4.1 % the caregivers were not sure whether their children had been de-wormed.

Table 3.16 Deworming coverage

Deworming	N	%
No	323	49.2
Yes recall	128	19.5
Yes card	179	27.2
Don't know	27	4.1
Total	657	100

3.5 Immunization coverage

Immunization coverage was assessed through asking the caregivers whether the children had received various immunizations. This was also verified from the health cards.

Table 3.17 BCG immunization

BCG immunization	n	%
No	62	7.2
Yes by scar	406	47.0
Yes by card	386	44.7
Don't know	9	1.0
Total	863	100

Majority (91.7%) of the children had received BCG immunization of which 44.7% had been indicated on the cards and the rest (47.0%) was verified through checking the scar 7.2% of the children had not received BCG immunization. However, 1.0% of the caregivers did not know if their children had received BCG.

Table 3.18 OPV immunization

		N	%
OPV0	No	112	13
	Yes by recall	395	45.7
	Yes by card	333	38.6
	Don't know	23	2.7
	Total	863	100
OPV1	No	66	7.7
	Yes by recall	410	47.5
	Yes by card	367	42.5
	Don't know	20	2.3
	Total	863	100
OPV2	No	39	4.5
	Yes by recall	401	46.5
	Yes by card	417	48.3
	Don't know	6	0.7
	Total	863	100
OPV3	No	91	10.5
	Yes by recall	382	44.3
	Yes by card	367	42.5
	Don't know	23	2.7

Total	863	100
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OPV coverage was also assessed. Majority (84.3 %) of the children had been given OPV at birth. 45.7% of the care givers were able to recall while the rest (38.6%) were confirmed from the child's card. However, 2.7% of the caregivers could not tell whether their children had received OPV0 or not.

Majority (90%) of the children had also received OPV1. About 42.5% were confirmed from the child's card and 47.5% was through recall. 2.3 % did not know if the children had been immunized with OPV1. Most (94.8%) of the children had received OPV2. Out of which 48.3% was verified from the card while 46.5% was through caregivers recall. About 0.7% was not able to remember if the child had been immunized with OPV 2 or not.

For OPV3, 86.8% of the children had been given. 42.5% was verified through the cards while 44.3% were through recall. About 2.7 % of the caregivers did not know if the child had received OPV3. About 13%, 7.7%, 4.5% and 10.5% of the children had not received OPV at birth, OPV1, OPV2 and OPV 3 respectively.

Table 3.19: DPT immunization

DPT1	N	%
No	91	10.5
Yes by recall	382	44.2
Yes by card	367	42.5
Don't know	23	2.6
Total	863	100
DPT2	N	%
No	68	7.9
Yes by recall	401	46.5
Yes by card	372	43.1
Don't know	22	2.5
Total	863	100
DPT3	N	%
No	89	10.3
Yes by recall	382	44.3
Yes by card	367	42.5
Don't know	25	2.9
Total	863	100

DPT immunization was also assessed by asking the care givers whether the children had been immunized with DPT and also through confirmation from the cards. For DPT1 86.7% had been immunized of which 42.5% was indicated in the child's card and 44.2% was through the caregivers recall. Only 2.6 % of the caregivers were not able to tell if the child had received DPT1 or not.

About 89.6% had received DPT2. 43.1% were verified from the cards and 46.5% was from caregivers recall. However, about 2.5% of the caregivers did not know if their children received DPT2.

Majority (86.8 %) of the children had received DPT 3. About 42.5% was verified from the child's card and 44.3% was through recall. For 2.9% of the children, their caregivers did not know if they were immunized with DPT3 or not. About 10.5%, 7.9% and 10.3%

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of the children were reported not to have received DPT1, DPT2 and DPT3 respectively.

Table 3.20 Measles coverage

Measles vaccine (N=692)	N	%
No	103	14.9
Yes by recall	276	39.8
Yes by card	284	41.1
Don't know	29	4.2
Total	692	100

Children aged between 9 to 59 months who had received measles vaccine were 81%. About 39.8% was from caregivers recall while 41.1% was verified from the cards. 4.2% of the care givers did not know if the children had received measles vaccine. The proportion of children who were fully immunized was found to be 81%.

Table 3.21: Pneumococcal vaccine (PVC10)

PVC10	N	%
No	639	74.1
Yes by recall	85	9.8
Yes by card	52	6.0
Don't know	87	10.1
Total	863	100

Majority (74.1%) of the children had not received *Pneumococcal* vaccine. For those who had been immunized, 6% was confirmed from the child's card while 9.8% was through recall. About 10.1% did not know if the child had received PVC10 or not.

3.6 Programme Coverage

Table 3.22: Coverage for supplementary feeding program (SFP) and outpatient therapeutic program (OTP)

Program coverage	N	%
SFP(N=98)	74	75.5
OTP(N=26)	23	88.5

At the time of the survey 75.5 % of moderately malnourished children were enrolled in SFP programme while 88.5% of severely malnourished children were already in OTP programme. Nutrition program coverage was 75.5% for SFP and 88.5% for OTP based on the number of malnourished cases identified. The coverage for both programs was within the acceptable levels. The gaps in coverage could be attributed to some health facilities not being targeted. The commodities for SFP (CSB and vegetable oil) are provided by WFP through Red Cross which is the lead agency. The Plumpy'Nut for OTP is directly provided by UNICEF to the districts within the County. Actual implementation of the SFP and OTP programmes is being carried out by medical staff from MOPHS and MOMS.

3.7 Infant Young Child Feeding Practices

IYCF practices were established through interviewing the caregivers on various nutrition and health practices. The IYCF practices included both breastfeeding practices and

complementary feeding practices.

3.7.1 Breastfeeding practices

Table 3.23 Proportion of children ever breastfed

Ever breastfed	N	%
Yes	372	93.7
No	25	6.3
Total	397	100

The mother/ primary caregivers were asked if the child was ever breastfed. Majority (93.7%) of the children had ever breastfed while 6.3% of the children had not been breastfed.

Table 3.24: Reason for not breastfeeding

Reason	N	%
Mother sick	15	60.0
Child refused	6	24.0
Separation	2	8.0
Mother deceased	2	8.0
Total	25	100

The reasons given for not breastfeeding at birth included mothers illness (60.0%), infants refusing to breastfeed (24.0 %), 8.0% due to separation of the children from their mothers while 8.0% was due to maternal death.

Table 3.25: Initiation of breastfeeding

Time of initiation	n	%
Immediately	151	40.6
2 to 5 hours	78	21.0
Above 5 hours	143	38.4
Total	372	100.0

Mothers/ caregivers were asked the time of initiation of breastfeeding after birth. Only 40.6 % of the children were breastfed immediately after birth (within the 1st hour). About 21.0% were breastfed between 2-5 hours after delivery while 38.4 % were put on the breast 5 hours after delivery.

Table 3. 26: Giving of colostrum in the first three days of life

Giving of Colostrum	n	%
Yes	310	83.3
No	56	15.1
Don't know	6	1.6
Total	372	100.0

Mothers/caregivers were asked if they gave the child the colostrum (fluid that comes out of the breast for the first three days). Majority (83.3%) of the children were given colostrum, 15.1% of the children were not given while 1.6% of the caregivers did not know if the children were given colostrums or not.

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Table 3.27: Giving other fluid/liquid other than breast milk within 3 days

Given other fluid/liquids	n	%
Yes	44	11.1
No	348	87.6
Don't know	5	1.3
Total	397	100

Care givers were asked if they gave the children other fluid/liquid apart from breast milk for the first three day after delivery. Majority (87.6%) of the children were not given any other fluid/liquid. About 11.1% of the care givers said that they gave other fluid/liquid while 1.3% did not know if the child received any other fluid/liquid apart from breast milk the first three days of life.

Table 3.28: children Still breastfeeding

Still breastfeeding	n	%
Yes	287	77.2
No	85	22.8
Total	372	100

Mothers were asked if the child is still breastfeeding. At the time of the survey, 77.2% of children (0-23 months who had ever been breast fed, N=372) were still breastfeeding while 22.8% had stopped breastfeeding.

3.7.2 Exclusive breastfeeding

These surveys assessed if the mothers who had not given their children anything else apart from breast milk and were between the ages of 0 to 6 months were still breast feeding. 75.7% of the children were still being breast fed and had not taking anything else apart from breast milk.

Table 3.29: Proportion of children who were exclusively breastfed

Children exclusively breastfed (0-6months)	N	%
Yes	87	75.7
No	28	24.3
Total	115	100

3.7.3 Complementary Feeding practices

The care givers were asked the type of food and drink the child (0-59 Months) and other household members consumed the previous day from the time they woke up until when they went to sleep

Table 3.30: Foods consumed by the child (0-23 months)

Food groups(N=397)	n	%
Cereals	236	59.4
Legumes, nuts and seeds	264	66.5
Oils and fats	317	79.8

Citrus fruits	63	15.9
Vitamin A rich foods	68	17.1
Red/orange vitamin A rich vegetables	48	12.1
Dark green leafy vegetables	25	6.3
Other vegetables and fruits	152	38.3
Tubers and roots	176	44.3
Sugary foods and drinks	266	67.0
Coffee/tea	243	61.2
Milk/milk products	226	56.9
Eggs	67	16.9
Fish	21	5.3
Meat	229	57.7
Seasonings	328	82.6

Oils and fats were consumed by majority (79.8%) of the children. Other food groups consumed by most children were seasonings (82.6%), legumes, nuts and seeds (66.5%), sugary foods and drinks (67.0%), coffee and tea (61.2%), cereals (59.4%), meats (57.7%), milk and milk products (56.9%), tubers and roots (44.3%). Vitamin A rich foods, citrus fruits, fish, eggs and vegetables were rarely consumed.

3.8 Children's morbidity patterns

Table 3.31: Prevalence of morbidity among the children

Morbidity (N=748)		N	%
Sick condition	Sick	345	46.1
	Not sick	403	53.9
	Total	748	100.0
Conditions	Watery diarrhoea	119	34.5
	Bloody diarrhoea	27	7.8
	Cough	52	15.1
	Fever	166	48.1
	Fever with chills (malaria)	41	11.9
	Cold	11	3.2

*Some had multiple responses, *The total number for the sick children (N) was 345

The prevalence of common illnesses was determined based on a two-week recall period prior to the survey. Morbidity information was obtained by asking caregivers whether their children had fallen sick 2 weeks prior to the survey. The caregiver was also asked to describe the nature of illness. About 46.1% of the children were sick, and out of those who were sick (N=345), 34.5% reported to have had watery diarrhoea, 7.8% with bloody diarrhoea, 15.1% had cough, 19.1% had fever, and 11.9% had fever with chills like malaria, while 8.1% had cold.

Table 3.32: Use of zinc to treat diarrhea among children

Use of zinc (N=146)	n	%
Given zinc	34	23.3
Not given	112	76.7

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Total 146 100

Use of zinc supplement to treat diarrhea was assessed. Out of 146 (42.3%) children with diarrhea only 34 (23.3%) were given zinc while 112 (76.7%) were not given. Use of zinc is recommended in management of diarrhea.

Table 3.33: Institutions where health care was sought

Action taken	N	%
Traditional Healer	35	10.1
Community health worker	23	6.7
Private clinic	16	4.6
Public health facility	127	36.8
Shop	25	7.2
Mobile clinic	34	9.9
No assistance sought	73	21.2
Herbs/home remedy	12	3.5
Total	345	100

Respondents were asked where they sought first assistance when the child got sick. 36.8% of those with sick children (N=345) took the child to the public health facility for treatment. About 21.2% did not seek any assistance while 10.1% sought traditional healers. The rest sought spiritual healing, shop, private clinics, CHWs, mobile clinics or herbal remedies at home.

3.9 Mortality

3.9.1 Crude death rate

The crude death rate (CDR) is defined as the number of people in the total population who die over a specified period of time. The crude mortality rate in Garissa County is 0.56 (0.23-1.25) 95% CI deaths/10,000/day. The CDR was within acceptable levels (<2 deaths/10,000 people/day).

3.9.2 Under five death rate

The under-fives mortality rate was 0.70 The under five death rates (U5DR) was within acceptable levels (<4 deaths/10,000 people/day).

Table 3.34: Crude and under five death Rates

Crude Death Rate (CDR)	(N=19) 0.56 (95% CI:0.31-0.81)
Under five Death Rate (U5DR)	(N=6) 0.70 (95% CI:0.14-1.26)

3.10 Maternal nutrition status

The current physiological status of the 832 women reached was established. 60.1% were not pregnant and were not breastfeeding. About 24.4% were breastfeeding 6-24 months old children, 7.7% were breastfeeding children below six months, 6.6% were pregnant while 1.2% were pregnant and still breastfeeding.

Table 3.35: Women physiological status

	Physiological status	n	%
Current status	Currently pregnant	55	6.6
	Breastfeeding (< 6 months)	64	7.7
	Breastfeeding (6-24 months)	203	24.4
	Pregnant and breastfeeding	10	1.2
	Not pregnant/ not breastfeeding	500	60.1
	Total	832	100.0
<u>Iron uptake</u> Those Pregnant (N=65)	Took iron pills	35	53.8
	Took sprinkles with iron	2	3.1
	Took iron syrup	8	12.3
	Don't know	4	6.2
	Did not take	16	24.6
	Total	65	100
Vitamin A uptake Breastfeeding (N=267)	Received Vitamin A on delivery	101	36.5
	Didn't receive Vitamin A	148	53.4
	Don't know	18	6.5
	Total	267	100

For those who were pregnant 53.8 % were taking iron pills, about 3.1% were taking sprinkles with iron while 12.3% were taking iron syrup. 24.6% did not take any iron supplement.

For the breast feeding mothers only 36.5% had received vitamin A supplement on delivery while 53.4% had not received vitamin A supplementation. About 6.5 % of the women did not know if supplementation had been done from which some said they were given something they did not know what it was.

Table 3.36: Nutrition status of all women by MUAC

Nutrition status	n	%
Severe	27	3.3
Moderate	208	25.0
Normal	597	71.7
Total	832	100.0

About 3.3% of the women screened were severely malnourished (<18 cm) while 25% had moderate malnutrition (18 cm to 23cm).

Table 3.37: Nutrition status of pregnant and lactating women by MUAC

	n	%
Underweight (<23cm)	36	10.8
Normal (>23cm)	296	89.2
Total	332	100.0

Out of the 332 pregnant and lactating women 36 (10.8%) had a MUAC of < 23cm.

3.11 Household food consumption practices

Food diversity score was established by assessing those who consumed foods from more than 4 food groups from each age group

3.11.1 Dietary diversity of households

Table 3.38: Household consuming > 4 food groups

Age group	n	%
6 to 23 (N=282)	92	32.6
24 to 59 (N=466)	178	38.2
Above 5 years (N=2534)	1026	40.5

Among 6 to 23 months old children, only 32.6 % consumed more than 4 food groups, for children between 24 to 59 months, 38.2% consumed more than four food groups while for the above five years about 40.5% consumed more than four food groups.

3.11.2 Frequency of feeding

The survey established the frequency of feeding (Table 3.39)

Table 3.39: Number of meals consumed by the household members in the previous day

Age group	Number of meals	n	%
Number of meals consumed in households by members (>5 years)	1	139	19.9
	2	352	50.3
	3	185	26.4
	4	24	3.4
	Total	700	100.0
24 to 59	1	20	4.3
	2	108	23.1
	3	201	43.1
	4	137	29.4
	Total	466	100.0
6 to 23	1	1	0.4
	2	53	18.8
	3	122	43.3
	4	71	25.2
	5	35	12.4
Total	282	100.0	
Meals usually consumed in the household	1	84	12.0
	2	305	43.6
	3	233	33.3
	4	78	11.1
	Total	700	100.0

Half (50.3%) of children above 5 years consumed two meals. About 26.4% consumed three meals. 19.9% consumed one meal while 3.4 % consumed four meals per day. For children between 24 to 59 months 43.1% consumed three meals. Four meals were consumed by only 29.3% of children in this age category (24-59 months). The rest 23.1% and 4.4 % consumed two meals and one meal per day respectively. Similarly for the 6 to 23 months old children, 43.3% also consumed three meals per day followed by 25.2% who consumed four meals. For the entire household, the common practice was consumption of two meals by almost half (43.6%) of the household.

3.11.3 Food consumption based on 24 hour recall

The survey also assessed the commonly consumed foods. For children between 24- 59

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months the most commonly consumed foods groups were coffee/ tea (57.1%), seasonings (54.9%) and sugary foods and drinks (55.2%). Oils and fat were also consumed by half (50.0%) of the children. About 48.7% consumed cereals, 38.6% consumed milk and milk products while 31.5% consumed meats. The rest of the foods were consumed by minority of the children.

Table 3.40: Foods consumed by the child (24 to 59 months)

Food groups N=466	n	%
Cereals	227	48.7
Legumes, nuts and seeds	137	29.4
Oils and fats	233	50.0
Citrus fruits	24	5.2
Vitamin A rich foods	48	10.3
Red/orange vitamin A rich vegetables	17	3.6
Dark green leafy vegetables	82	17.6
Other vegetables and fruits	79	17.0
Tubers and roots	112	24.0
Sugary foods and drinks	257	55.2
Coffee/tea	266	57.1
Milk/milk products	180	38.6
Eggs	76	16.3
Fish	19	4.1
Meat	147	31.5
Seasonings	256	54.9

Commonly consumed foods among over five years old household members were seasonings (95.3%), coffee/tea (92.4%), Sugary foods and drinks (86.0%) and oils and fats (85.9%). Other foods consumed by a majority included Milk products (81.1%), cereals (75.4%), and legumes (72.3%).

Table 3.41: Foods consumed by household members above 5 years

Food groups	n	%
Cereals	528	75.4
Legumes, nuts and seeds	506	72.3
Oils and fats	601	85.9
Citrus fruits	32	4.6
Vitamin A rich foods	148	21.1
Red/orange vitamin A rich vegetables	49	7.0
Dark green leafy vegetables	189	27.0
Other vegetables and fruits	220	31.4
Tubers and roots	132	18.9
Sugary foods and drinks	602	86.0
Coffee/tea	647	92.4
Milk/milk products	568	81.1
Eggs	221	31.6
Fish	78	11.1

Meat	482	68.9
Seasonings	667	95.3

3.11.4 Food items purchased

Respondents were asked to state the food items they purchased the last one week and the cost for each item.

Table 3.42 Proportion of households that purchased various food items (N=700)

Food item	n	%
Milk	443	63.3
Meat	232	33.1
Poultry	25	3.6
Salt	513	73.3
Fruit	120	17.1
Fish	11	1.6
Vegetables	281	40.1
Eggs	92	13.1
Tea/coffee	329	47.0
Sugar	535	76.4
Maize	107	15.3
Beans	289	41.3
Wheat	260	37.1
Rice	441	63.0
Oil	342	48.9

Common food items purchased by majority of the households were sugar (76.4%) and salt (73.3%). Milk was purchased by 63.3 % of the households; rice was purchased by 63 % of the households while oil was purchased by 48.9% of the households. The rest of the items were purchased by minority of the households.

3.11.5 Food aid

Households were asked if they had access to food aid for the last three months.

Table 3.43: Food aid distribution

Food aid		n	%
Received food aid	Yes	362	51.7
	No	338	48.3
	Total	700	100
Frequency	1	262	72.4
	2	62	17.1
	3	38	10.5
	Total	362	100
Items received as food aid	Maize	323	89.2
	Pulses (Beans)	301	83.1
	sugar	3	0.8
	Oil	304	84
	Unimix	110	30.4
	Rice	70	19.3
	Other pulses	118	32.6

Slightly above half (51.7%) of the households had received general food aid while 48.3% had not received any food aid for the last three months. For the households that had received food aid most (72.4%) had received only once for the last three months, 17.1 % had received twice while 10.5% had received three times.

For the food commodities received, maize was received by most (89.2%) of the households, 84% of the households received oil, beans were received by 83.1% of the households. About 32.6 % received pulses; unimix was received by 30.4% households while 19.3% received rice.

Table 3.44: Uses for food aid received

	Maize (323)		Oils (304)		Unimix (110)		Pulses (419)	
	N	%	N	%	N	%	N	%
Sold	39	12.1	4	1.3	0	0	93	79.0
Bartered	23	7.1	0	0	0	0	5	4.0
Shared	102	31.6	44	14.4	31	28.2	24	20.0
Consumed in the HH	154	47.7	256	84.2	79	71.8	297	70.9
Given to animals	5	1.5	0	0	0	0	0	0.0

For most of the households that received the food aid, almost half of them (47.4%) consumed the maize while 31.6% shared with neighbours and relatives. Oils, unimix and pulses consumed within the household were 84.2%, 71.8% and 70.9% respectively. However, maize were sold by most (12.1%) of the households.

3.11.6 Coping strategies

Table 3.45 Distribution of households using various coping strategies

Coping strategies N=700	n	%
Reduction in the number of meals per day	350	50.0
Skip food consumption for an entire day	300	42.9
Reduction in size of meals	391	55.9
Restrict consumption of adults to allow more for children	321	45.9
Swapped consumption to less preferred or cheaper foods	322	46.0
Hunting and gathering	49	7.0
Engaging in casual labour	190	27.1
Borrow food from a friend or relative	326	46.6
Purchase food on credit	439	62.7
Consume wild foods (normal wild food)	85	12.1
Consume decomposed fish	86	12.3
Send household members to eat elsewhere	214	30.6
Send child(ren) to School	330	47.1
Begging	110	15.7
Sale of livestock	371	53.0
Sell of charcoal and/or fire wood/small scale business	249	35.6
Part of family migrating with animals to look for grazing	314	44.9
Sale of milk and/or meat, and/or fish	273	39.0
Cash Donation	82	11.7
Food donations	326	46.6

The households were asked to state the type of copying strategy they employed during food crisis in the previous month. The results of the survey revealed that there was

variation in proportion of households using various coping mechanisms with some being used by a majority of households while others were used in just a few households. The most common (62.7%) strategy amongst households was found to be the purchase of food on credit. Other common strategies included reduction in size of meals (55.9%) and reduction in the number of meals per day (50%).

The strategies that were used in almost half of the households include sending of child(ren) to school (47.1%), borrowing food from a friend or relative (46.6%), swapping consumption to less preferred or cheaper foods (46%), food donations (46.6%), restricting consumption of adults to allow more for children (45.9%), part of family migrating with animals to look for grazing (44.9%) and skipping food consumption for an entire day (42.9%). In addition, 39%, 35.6%, 30.6% and 27.1% of the households reported to have either sold milk and/or meat, and/or fish or sold charcoal and/or fire wood/small scale business or sent household members to eat elsewhere or had engaged in casual labour respectively.

The strategies that were least common amongst households include begging (15.7%), cash donation (11.7%), consumption of wild foods [normal wild food] (12.1%), consumption of decomposed fish (12.3%) and hunting and gathering (7%).

3.12 Water, sanitation and hygiene

3.12.1 Access to and utilization of water

3.12.1.1: Source of water for the household

Respondents were asked to state the source of water for the household. The sources given are shown in the table below.

Table 3.36: Source of water for the household

Water Source	n	%
Water tap	176	25.1
Borehole	185	26.4
Dam	77	11.0
River	90	12.9
Unprotected well	86	12.3
Laga	57	8.1
Springs	20	2.9
Protected well	2	0.3
Public pan	2	0.3
Water tanks	5	0.7
Total	700	100.0

The major sources of household water in Garissa County included Borehole (26.4%), Water tap (25.1%), river (12.9%), Unprotected well (12.3%) and Laga (8.1%). Other sources include springs (2.9%) and water tanks (0.7 %), protected wells and public pans (0.3% each). The survey noted that for those who accessed water from water taps, it was not at household level but a tap in common public place for every one.

3.12.1.2: Household utilization of water

Amount of water consumed by the household was assessed by asking the respondents the number of jerricans of water they used per day.

Table 3.37: water consumption

Amount of water/day	1 to 20 litres	179	25.6
	21 to 50 litres	119	17.0
	51 to 100 litres	235	33.6
	101 to 150 litres	75	10.7
	151 to 200 litres	57	8.1
	Above 200 litres	35	5.0
Total		700	100.0
Cost per Jerrican (20 litres)	1 to 10	299	42.7
	11 to 20	104	14.9
	above 20	111	15.9
Cost of water per month	0 to 100	187	26.7
	101 to 200	99	14.1
	201 to 500	105	15.0
	501 to 1000	123	17.6

About 33.6% of the households used between 51 to 100 litres of water per day and 25.6% of households consumed 1 to 20 litres. The rest 17% and 10.7% used 21 to 50 litres and 101 to 150 litres respectively. Only a minority (5.0%) used above 200 litres per day. For those who bought water, cost per 20 litres jerrican was established. From the responses, 42.7% used between Ksh 1 to 10 to buy water, 14.9% used between Ksh 11 to 20 for a 20 litres jerrican while the rest used more than 20 shillings. On a monthly basis, 26.7% used an average of Ksh 100 to buy water, 14.1% used between Ksh 101 to 200. About 15% used between Ksh 201 to 500 while 17.6% used between Ksh 501 to 1000.

3.12.1.3 Time taken to get water

Time taken to fetch water was assessed by asking the respondents the amount of time they spent to get to the source, the time taken at the source and the time taken from the source of water.

Table 3.38 Mean duration of time

Time taken to get water	Mean duration	Standard deviation
Duration to the water source	30.1	23.2
Duration at the water source	26.49	23.9
Duration from the water source	29.6	22.9

The mean time taken to go to the water source was 30.1 minutes while the mean duration at the source of water and from the source are 26.49 and 29.6 respectively. A mean total amount of time taken to get water is 86.19 ± 52.6 SD minutes.

3.12.1.4 Access to adequate clean water

Table 3.39: Access to adequate clean water

Access to water (N=700)	n	%
Yes	340	48.6
No	360	51.4

Total	700	100.0
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Households that were able to access adequate clean water were 48.6% while more than half 51.4% did not have access to clean water.

3.12.2 Sanitation

3.13.1 Access to toilet

Care givers were asked if they had access to toilet facilities. From the responses more than half (54.6%) of the households had no access to a toilet facility, while 45.4% had access to a toilet facility.

Table 3.40: Toilet facility

		n	%
Access to toilet	Yes	318	45.4
	No	382	54.6
	Total	700	100
Type of Toilet	Bucket	5	1.6
	Traditional pit latrine	174	54.7
	Ventilated pit latrine	126	39.6
	Flush toilet	13	4.1
	Total	318	100.0
Facilities used for those with no toilets	Bush	313	81.9
	Open field	47	12.3
	Behind the house	1	0.3
	Toilet at neighbour	21	5.5
	Total	382	100.0

For those who had access to toilet facility the nature of the toilet was established. Majority of the households (54.7%) had traditional pit latrine, 39.6% had ventilated pit latrine, while 4.1% had flush toilet. Only a small percentage (1.6%) was using a bucket. For those households which had no access to toilet facility, 81.9% use the bush, 12.3% use an open field, while 5.5% use a neighbour's toilet to relieve themselves.

3.12.3 Faecal disposal

Caregiver's were asked how they disposed the faecal matter after the child defecated.

Table 3.41: Disposal of children faeces

Disposal of faeces	n	%
Disposed immediately hygienically	251	35.9
Disposed off immediately in the nearby bushes	440	62.8
Not disposed	5	0.7
Given to dogs	4	0.6
Total	700	100.0

Households were asked how they dispose of children's faeces. Majority (62.8%) of the respondents reported to have disposed of the waste in the nearby bushes, 35.9% dispose immediately in a hygienic way, while a small percent 0.7% and 0.6% left the faeces undisposed or gave it to dogs respectively.

3. 12. 4 Hand washing

The care givers were asked at what occasion they washed their hands. Majority (68.7%)

of the households reported to have washed their hands after visiting the toilet, 59.6% wash their hands after cleaning child's bottom. About 41.7% said they normally wash their hands before handling food. 28% said before prayers while 28.4% wash their hands before feeding the child.

Table 3.42 Hand washing

Hand washing	n	%
After defecation/visiting toilet	481	68.7
After cleaning children bottom	417	59.6
Before feeding the child	199	28.4
Before handling food	292	41.7
After handling animals	42	6.0
Before Prayers	196	28.0

3.13 Coverage and Utilization of mosquito nets

Table 3.43 Household utilization of nets

Ownership of nets by households(N=700)	n	%
Household with mosquito nets	393	56.1
Households without mosquito nets	307	43.9
Use of treated nets(N=393)		
Households using treated nets	114	29.0
Households using untreated nets	279	71
Duration since last treatment (N=114)		
Less than one month	29	25.4
Between one and six months ago	37	32.5
More than six months ago	19	16.7
Cannot remember	29	25.4
Type of people sleeping under mosquito net		
Under-fives (N=863)	178	20.6
Mothers (N=332)	115	34.6
Pregnant mothers (N=65)	5	7.7
Every one(all in a household) (N=700)	151	21.6
Nobody in a household (N=700)	58	8.3

The respondents were asked to state whether they utilised the nets. About 56.1% of the households owned mosquito nets while 43.9% did not. However, only 29% of the households which owned nets were found to use treated nets while a majority (71%) used untreated nets. Upon establishing the duration taken since the treatment of the nets, 25.4% reported to have treated their nets within one month, 32.5% between one and six months, while 16.7% reported a duration of more than six months prior to the survey. However, 25.4% of the households using treated nets could not remember the exact period when the nets were treated.

In addition there was variation in household priorities over which categories of people using the mosquito nets with some households preferring under fives while others preferred other categories. At the time of the survey majority (20.6%) of the households had their under fives sleep under nets while 34.6% of women slept under the net respectively. A small percentage (7.7%) of the households reported to have had pregnant mothers sleep under the net a night prior to the survey. Only 21.6% of the households reported to have had all household members sleep under mosquito nets. However, 8.3%

of the households reported to have nobody sleeping under the net the previous night.

4.0 Discussion

- Nutrition program coverage was found to be SFP (75.5%) and OTP (88.5%). According to Sphere standards, these rates were within the acceptable limits. The gaps could be attributed to physical inaccessibility (long distance) to health facilities.
- Vitamin A supplementation was also found to be low (48.3 %). Thus outreach services to raise the Vitamin A, as well as taking services closer to the community is recommended.
- In order to increase HINI, there is need for increase in Zinc and Iron supplementation.

5.0 CONCLUSION

- The malnutrition level of children in Garissa County are at a critical level (GAM=16.2% and SAM=3.2) and this is likely not to improve due to high food insecurity coupled with high morbidity rates.
- The prevalence of morbidity is high, a further aggravating factor to nutrition status.
- Nutrition program coverage was found to be SFP (75.5%) and OTP (88.5%). The gap could be attributed to the fact that only 8 out of the 26 health facilities were providing OTP services. In addition, the physical inaccessibility (long distance to the hospital could have also contributed to this)
- 31 (28.2%) out of the 110 households receiving UNIMIX for SFP were found to share it with others.
- In order to increase HINI, there is need for an increase in Zinc and Iron supplementation.
- The prevalence of morbidity is high and this is an aggravating factor to nutrition status
- Health seeking behaviour is poor with most of the populations visiting the health facilities only when sick
- The food security status is low provided by a low food diversity score
- There is poor access to safe and adequate clean water. Most of the populations consume water from unprotected sources.
- There is a lack of adequate sanitary facilities in Garissa County and this could be a contributing factor to the high levels of diarrhoea and illness in general.

6.0 RECOMMENDATIONS

Short term

- The GAM of 16.2 and SAM of 3.2 calls for an urgent scale up and filling the existing gaps in SFP and OTP programs. This is due to;
 - The reported cases of low food diversity (with only 32.6% of 6-23 and

- 38.3% of 24 -59 consuming > 4 food groups)
 - The coping strategy of reducing the size of the meal by 55.9% and reducing the number of meals by 50.0% is not appropriate among the under fives.
- Need to improve access to health services through;
 - Community sensitization on importance of improved health seeking behaviour
 - Increase the use of CHWs and outreach services to ensure improved immunization and vitamin A coverage. This would also ensure referral of untreated cases found to be 21.2% in the community. Only 41.4% seek medical attention at health facilities (both public and private).
- Intensify the promotion of IYCF practices
- Methods to ensure the households access more water are needed like sinking of more boreholes. The survey noted that 51.4% of the households were not accessing adequate clean water.
- Need for continued promotion of hand washing as large proportion of caregivers did not wash hands in situations like visiting the toilet (31.3%) or handling the child's bottom (40.4%).
- Scale up the distribution of mosquito nets as most of the household members did not use a net. Note: 79.4% of under five children did not sleep under mosquito nets. This could be the reason for the (11.9%) of malaria reported.
- In order to increase HINI, there is need to increase the supplementation of Zinc and Iron. The survey noted that 24.6% of pregnant women had not received iron while others were not sure whether they had received iron supplements. About 76.7% of the children with diarrhoea had not received zinc supplements.

Long term

- Initiate programs to diversify the livelihood of pastoralists
- Initiating income generating activities

Other recommendations

- Need for nutrition survey for each of the four districts as the county is too large and thus generalization can only be done with a lot of caution due to the differences in livelihoods.

REFERENCES

- Cogil B. (2003). *Anthropometric Indicators Measurements Guide*, Revised edition. FANTA
- FAO. (2007). Guidelines for Measuring Household and Individual dietary diversity. Food and Nutrition Technical Assistance (FANTA) Project. Rome, Italy Version 2, June 2007.
- FSAU, (2003). *Nutrition: a guide to data collection, analysis, interpretation and use*
- Kenya Demographic and Health Survey (2008-2009). *Kenya Demographic and Health Survey*. NCPD, CBS, and Ministry of Planning and National Development.

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SMART METHODOLOGY. (2006) .Measuring Mortality, Nutritional Status, and Food Security in Crisis Situations:

Prudhon C. (2002). *Assessment and Treatment of Malnutrition in Emergency Situations, Action Against Hunger.*

WHO-OMS (1995). *Field Guide on Rapid Nutritional Assessment in Emergencies*



Nutrition and Food Security Survey Questionnaire

Name of District	Name of Division	Name of sub location	Cluster Number	Team number	Household Number	Date of Interview (dd/mm/yy)	Name of Interviewer	Name of Team Leader
						___/___/___		

1 HOUSEHOLD DATA

How many people live in this household together and share meals? (Household size)

1.1 Age group	1.2 Person ID and Name <i>(Start with the youngest to the oldest member of the household. Insert the names of the persons and ensure that numbering is continuous. For the head of the household, indicate M for mother, F for father and C for child headed HH)</i>		1.3 Approx.* Age Enter months for children under 5 years and years for over 5's		1.4 Childs age verified by 1=Health card 2=Birth certificate/ notification 3=Baptism card 4=Recall	1.5 Sex 1= Male 2= Female	1.6 Main Occupation of the household head and the respondent or caregiver (enter code from list) <i>(Ask this question to the respondent/ caregiver. The responses can be more than one)</i> 1=Agricultural labour 11=Housewife 2=Livestock herding 12=Domestic help 3=Own farm labour 13=Hunting, gathering 4=Employed(salaried) 14=Firewood/ charcoal selling 5=Waged labour 15= Brewing 6=Petty trade 16=Weaving/basketry 7=Unemployed 17=Fishing 8=Student 18= Very old 9=Merchant/trader 19=Herds boy/girl 10=Mining 20=Others (Specify).....
	ID	NAME	Date of birth	Months			
Under 5 years							
over 5 years	ID	NAME		AGE		SEX	OCCUPATION

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2. IMMUNIZATION COVERAGE: ASK FOR ALL CHILDREN LESS THAN 59 MONTHS

	Name of the child	Sex of the child	AGE IN MONTHS copy from page 1	Has the child received vitamin A supplement in last 6 months? 0=No 1=Yes (Card) 2=Yes (Recall) 3=DNK	Has the child received deworming medicine in last 6 months? 0=No 1=Yes (Card) 2=Yes (Recall) 3=DNK	BCG 0=No 1=Yes (Card) 2=Yes (by scar) 3=DNK	OPV1 0=No 1=Yes (Card) 2=Yes (Recall) 3=DNK	OPV2 0=No 1=Yes (Card) 2=Yes (Recall) 3=DNK	OPV3 0=No 1=Yes (Card) 2=Yes (Recall) 3=DNK	DPT1/ HepB/ Hib1 0=No 1=Yes (Card) 2=Yes (Recall) 3=DNK	DPT2/ HepB/Hib2 0=No 1=Yes (Card) 2=Yes (Recall) 3=DNK	DPT3/ HepB/Hib1 0=No 1=Yes (Card) 2=Yes (Recall) 3=DNK	Measles 0=No 1=Yes (Card) 2=Yes (Recall) 3=DNK	PCV10 0=No 1=Yes (Card) 2=Yes (Recall) 3=DNK
1														
2														
3														

2.1 Has the index child received vitamin A for the last one year _____ 1=Yes (Card) 2=Yes (by scar) 3= Recall 4=DNK

2.2 Is the child currently enrolled in a feeding program _____ 1=Yes (OTP) 2=Yes (SFP) 3= NO 4=DNK

2.3 Has the child been attending growth monitoring _____ 1=Yes 2= NO 3=DNK

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3. MORBIDITY: ASK FOR ALL CHILDREN LESS THAN 59 MONTHS

	Name of the child	Sex 1=M 2=F	In the last 2 weeks including today, has [name] been sick? Yes--Ask the mother to describe illness No--continue to section 4	Watery Diarrhea An episode of 3 or more loose /watery stools in 24 hours	Bloody diarrhoea An episode of 3 or more watery stools with blood in 24 hours	Cough with difficult breathing Any episode with difficult breathing, rapid breathing or severe or persistent cough	Fever High temperature/ Hot body-anything that is used to describe a high temperature	Fever with chills High body temperature with feelings of hot and cold spells	Other Specify Anything that does not fit other categories	When the child was sick, where did you first seek assistance? (enter code) 1=Traditional healer 2=Community health worker 3=Private clinic/ pharmacy 4=Shop/kiosk 5=Public health facility 6=Mobile clinic 7=Relative or friend 8=No assistance sought 9= Herbs/home remedy 10=Prayer 11= Others (specify) _____
1			Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> Watery diarrhoea	<input type="checkbox"/> Bloody diarrhoea	<input type="checkbox"/> Cough with difficult breathing	<input type="checkbox"/> Fever	<input type="checkbox"/> Fever with chills	<input type="checkbox"/> Other (specify) _____	
2			Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> Watery diarrhoea	<input type="checkbox"/> Bloody diarrhoea	<input type="checkbox"/> Cough with difficult breathing	<input type="checkbox"/> Fever	<input type="checkbox"/> Fever with chills	<input type="checkbox"/> Other (specify) _____	
3			Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> Watery diarrhoea	<input type="checkbox"/> Bloody diarrhoea	<input type="checkbox"/> Cough with difficult breathing	<input type="checkbox"/> Fever	<input type="checkbox"/> Fever with chills	<input type="checkbox"/> Other (specify) _____	
4			Yes <input type="checkbox"/> No <input type="checkbox"/>	<input type="checkbox"/> Watery diarrhoea	<input type="checkbox"/> Bloody diarrhoea	<input type="checkbox"/> Cough with difficult breathing	<input type="checkbox"/> Fever	<input type="checkbox"/> Fever with chills	<input type="checkbox"/> Other (specify) _____	

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4. INFANT AND YOUNG CHILD FEEDING PRACTICES

(IYCF) FOR CHILDREN 0-23 MONTHS OF AGE

Make every effort to speak with the mother. If she is not available, speak with the primary caregiver responsible for feeding of the child.
For every question use the child's name.

CH. No	Name of child	Background Information				Infant Feeding information					
		4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8	4.9	4.10
		Child's date of Birth: dd/mm/yy	Source of birth date 1 = CARD 2 = RECALL 3 =Calendar 3 = DNK	Age of child in months	Sex of child 1 = M 2 = F	Did you ever breastfeed [name]? 1= Yes 2= No 3=DNK If No, go to 4.6 If yes, go to 4.7	If No, why? See code below for the answers 1=Mother sick 2= Mother deceased 3=Separation	If yes, How long after birth did you put [name] on the breast? 1= Yes, 2= No, 3= DNK	During the first 3 days after delivery, did you give [Name] the fluid/liquid that came from your breasts? 1= Yes, 2= No, 3= DNK	In the first 3 days after delivery, was [Name] given anything to drink other than breast milk? 1= Yes, 2= No, 3= DNK	Are you still breastfeeding [Name]? 1= Yes 2= No

4.11 Apart from breast milk, what else did you give to the child apart from breast milk _____ when did you start _____

Now, I will ask you about what [Name] drank YESTERDAY during the day and the night. Did [Name] receive any of the following fluids?

CH. No	Name of child	4.11	4.12	4.13	4.14	4.15	4.16	4.17	4.18
		Breast milk Only one answer coded as below: 1. Yes 2. No 3. DNK	Infant formula (Mamex, Nan) 1. Yes 2. No 3. DNK	Other milks: animal milk, - reconstituted powdered milk, (Halwa, Milki, Nido, Safari land, Hayat, Coast) - Sour milk. 1=Yes 2= No 3=DNK	Sweetened flavoured juices (Quencher, Juice for you, Zeitun, Altuza, Mushakil, vimto, afia, juice cola, Savannah.) Soda 1=Yes 2= No 3=DNK	ORS 1. Yes 2. No 3. DNK	Tea/Coffee 1. Yes 2. No 3. DNK	Plain water 1. Yes 2. No 3. DNK	Porridge 1. Yes 2. No 3. DNK

Now, I will ask you about what solid/ semi solid foods [Name] ate YESTERDAY during the day and the night. (Ask the mother /caregiver to mention all foods given to the child and record as mentioned in the appropriate category). *Note: Please wait for the mothers response after asking the questions other than reading out the various foods*

ChNo	Child Name	4.19	4.20	4.21	4.22	4.23	4.24	4.25	4.26	4.27	4.28
		Eggs 1. Yes 2. No 3. DNK	Porridge made from CSB/ Unimix/ millet/ sorghum/ maize flour Use the correct code. Only one answer. 1. Yes 2. No 3. DNK	Flesh Meats (Chicken, beef, Goat,Kidney,Liver, Mutton, Camel, Donkey, Fish, blood, wild meat) 1. Yes 2. No 3. DNK	Legumes and Nuts (Beans, Groundnuts, Cowpeas, Lentils, Green Grams, Edapal, Eedung) 1. Yes 2. No 3. DNK	Dairy Products (Milk, cheese, Ghee, fermented milk) 1. Yes 2. No 3. DNK	Grains, Roots &Tubers (Pasta, rice, bread, potatoes, biscuits, mandazi, chapatti, anjera, ugali, cassava, sorghum, millet) 1. Yes 2. No 3. DNK	Vitamin A Rich fruits & Vegetables (pawpaw, melon, Sukuma wiki, carrots, cowpea leaves, spinach, Avocado,) 1. Yes 2. No 3. DNK	Other Fruits and Vegetables (onions, tomatoes, cabbage, Oranges, bananas Okra, wild fruits) 1. Yes 2. No 3. DNK	Oil (Salad oil), fats, Zeitzun, simsim, (camel fat, goat's fat) 1= Yes 2= No 3= DNK	Yesterday (During the day and at night), how many times did you feed [Name] solid and semi-solid foods? No. of times child was given food to make it full.

5. FOOD AID (GENERAL FOOD DISTRIBUTION)

5.1. Have you received **FOOD AID** (general food distribution) in the last **three (3)** months? (Please circle) 1 = Yes 2 = No (If no go to section 6)

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5.2 If, YES, how many times in the last 3 months? 1= Once 2= Two times 3= Three times

Please indicate the food commodities received in the last distribution, duration each food item lasted and how it was utilized. Tick the appropriate spaces.

Of the food aid received please indicate how it was used					
5.3 FOOD AID COMMODITY	5.4 Resold in the market	5.5 Bartered for other item	5.6 Shared with kin	5.7 Consumed by household members	5.8 How many days did each food commodity last? Write number of days

1= Maize 2=Beans 3=Sugar 4=Oil 5=Unimix/CSB 5=Beans 6=Rice 7= pulses 8= Any other _____

6: Food Consumption patterns and dietary diversity

I would like to ask you about the type of foods and drinks the child(ren) 6-59 months and other house members ate or drank yesterday from the time you woke up in the morning to the time you slept. Underline the food item and record the appropriate code for each food group. Code: 0=No, 1=Yes						
	FOOD GROUPS	EXAMPLES	6-23	24-59	>5 yrs	Source (code below)
1	CEREALS	Pancakes, pasta, posho, biscuits, githeri, rice, sorghum, chapatti, uji, mandazi, bread, CSB, ugali, UNIMIX				
2	LEGUMES, NUTS, SEEDS	Groundnuts, simsim, ndengu, greengrams, split peas, lentils, beans, cowpea seeds,				
3	OILS AND FATS	GFD oil, ghee, butter, blue band, cooking fats (e.g. Kasuku, Kimbo, Chipsy, Cowboy, etc.), other types of cooking oils				
4	CITRUS FRUITS	Oranges, guavas, pineapple, lemon, lime				
5	VITAMIN A RICH FRUITS	Papaya, mango				
6	RED/ORANGE VIT. A RICH VEGETABLES	Pumpkin, carrots, yellow-fleshed sweet potatoes				

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7	DARK GREEN LEAFY VEGETABLES	Sukumawiki, spinach, cow pea leaves, cabbages, kunde, cassava leaves, indigenous green vegetables				
8	OTHER VEGETABLES & FRUITS	Tomato, onion, cabbage, okra, eggplant, green pepper, pili pili, passion fruit, watermelon, banana, Tamarind				
9	TUBERS AND ROOTS	Potatoes (English), yams, cassava, chips, green bananas				
10	SUGARY FOODS & DRINKS	Sugar and other artificial juices, soda, chocolate, sweets, jam, honey, glucose				
11	COFFEE/TEA	Tea (black, herbal), coffee				
12	MILK /MILK PRODUCTS	Fresh milk, UHT milk, yoghurt, mala, milk tea				
13	EGGS	Eggs				
14	FISH	Tinned (tuna) fish, omena, Nile perch, tilapia, catfish, dried fish				
15	MEAT	Kidney, liver, heart, intestines, beef, camel, goat, sheep, chicken, quails, lamb, ducks, donkey, doves				
16	Seasonings	Salt, Roiko, Curry Powder,				
1=Market 2=Own production, 3=Both: market and own production, 4=Gifts from relatives, neighbour, others, 5=Food-for-Assets, 6=Free relief food, 7=Market and relief food 8=Wild food, 9= Nutrition program 10. Food for work 11. Other (specify _____) -						

		No. of Meals
6.1	How many meals did 6-23 months old eat yesterday	
6.2	How many meals did 24-59 months child eat yesterday	
6.3	How many meals did other household members (>5 years) eat yesterday	
6.4	Including food eaten in the morning, how many meals does your family <u>usually</u> eat per day?	

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List of Food items purchased in the last one week and the amount in KES (tick and indicate as appropriate)

1 = milk _____	4= salt _____ and spices _____	7= vegetables _____	10= Sugar _____	13= wheat _____
2= Meat _____	5= Fruits _____	8= Eggs _____	11= Maize _____	14= Rice _____
3 =poultry _____	6= fish _____	9= Tea/coffee _____	12= Beans _____	15= oil _____

Please probe and accurately indicate the number of meals consumed per day and the previous day. Information on household members who ate the previous day, those who did not eat as well as reasons for not eating should be probed and recorded appropriately

<p>6.5. Including food eaten in the morning, how many meals does your family normally eat per day?</p> <p><i>(Please indicate the number of meals consumed e.g. 1, 2, 3, 4, 5, 6)</i></p>	<p>6.6. Including food eaten in the morning, how many meals did your family eat <u>YESTERDAY</u>?</p> <p><i>(Please indicate the number of meals consumed e.g. 0, 1, 2, 3, 4, 5, 6)</i></p>	<p>6.7. Did all the members of your family eat yesterday?<i>(Please record all responses)</i></p> <p>1. Yes <i>(If Yes, Go to question 7)</i></p> <p>2. No <i>(If No, Go to 6.8)</i></p>	<p>6.8. If some household members did not eat, Who did not eat yesterday?<i>(Please record all the responses)</i></p> <p>1=Child under 5 4= Mother 2= 5-12 years old 5= Father 3=13-19 years old 6= Above 19 yrs</p>	<p>6.9. Why did the person/s not eat? <i>(Please record all the responses)</i></p> <p>1= Food not enough 2= Sickness 3= Away from home 4= Other (specify)</p>

7. ANTHROPOMETRY AND SELECTIVE FEEDING PROGRAMMES FOR ALL CHILDREN 6-59 MONTHS

Name of children 6-59 months	Sex 1=M 2=F	Birth date dd/mm/yyyy	Age in months	Weight (to the nearest 0.1kg)	Height/Length (to the nearest 0.1cm)	Oedema Yes=Y No=N	MUAC cm	Is the child currently in any feeding programme? 0=No 1=SFP 2=OTP 3=SC 4= Not sure/Do not know	Was child admitted in BSFP? 0=No 1=Yes 88= Not sure/Do not know

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1										
2										

8. ADULTS NUTRITIONAL STATUS

QUESTIONS TO BE ANSWERED IF CARE GIVER IS A FEMALE:		
<ul style="list-style-type: none"> • Measure MUAC of caregiver only if a child from her household was measured in <u>SECTION 7</u> • Caregiver must be female between 15 and 49 years of age • If there are multiple caregivers, interview only the one who is a <u>primary caregiver</u> 		
8.1. How old are you? _____ years	8.2. What is the woman's current physiological status? (Ask carefully and Circle) 1= Currently pregnant 4= Pregnant and breastfeeding 2= Breastfeeding (<6months infant) 5= Not pregnant/not breastfeeding 3= Breastfeeding (6-24months)	8.3. MUAC (mm), left arm (To the nearest 0.1 mm), do not round up _____mm

8.4 If pregnant, did you take any of the following _____ 1=iron pills 2=sprinkles with iron 3=iron syrup

8.5 Ask breast feeding mothers only "have you received any vitamin A supplements) _____ 1= Yes 2= No 3= Don't know

9. SANITATION

9.1. Does your household have access to a toilet/ latrine facility? 1=Yes 2=No IF NO, GO TO QUESTION 9.3	9.2. If yes, what type of toilet facility do you have? 1=Bucket 2=Traditional pit latrines 3=Ventilated improved pit latrine 4=Flush toilet 5=Other Specify _____	9.3. If No, where do you go/use? (probe further) 1= Bush 2=Open field 3.=Near the river 4.=Behind the house 5.=Other (specify)_____	9.4. How is children's faeces disposed (Probe and OBSERVE) 1= Disposed of immediately and hygienically 2= Disposed of immediately in the nearby bushes 3= Not disposed (scattered in the compound) 4= Use of dogs 5=Other (specify) 6= Not applicable (for houses with no children)	9.5. On what occasion (s) do you wash your hands? Record ALL that applies See codes for 6.5 below
9.5 1= After using the toilet; 2= After attending to a child who has defecated, 3= Before feeding a child (including before breastfeeding a child), 4=Before eating or preparing a meal; 5=After handling animals, 6=others specify				

10. Malaria Control /Utilization of ITNs

10.1 Does this household have a mosquito net? 1 = Yes 2 = No (go to section 11)	10.2 If YES , have you ever treated your net (soaked or dipped it in dawa or chemical to repel mosquito or insects)? 1 = Yes 2 = No	10.3 If YES , When did you last treat it? Enter code 1 = Less than one month ago 2 = Between one and six months ago 3 = More than six months ago 4 = Cannot remember	10.4 Who slept under the mosquito net last night? (Probe - enter all responses mentioned) <table border="0"> <tr> <td>1 = Children less than 5 years</td> <td>3 = Pregnant woman</td> <td>5 = Father</td> <td>7 = Everyone</td> </tr> <tr> <td>2 = Children over 5 years</td> <td>4 = Mother</td> <td>6 = Nobody uses</td> <td></td> </tr> </table>			1 = Children less than 5 years	3 = Pregnant woman	5 = Father	7 = Everyone	2 = Children over 5 years	4 = Mother	6 = Nobody uses	
1 = Children less than 5 years	3 = Pregnant woman	5 = Father	7 = Everyone										
2 = Children over 5 years	4 = Mother	6 = Nobody uses											

11. HOUSEHOLD WATER CONSUMPTION

<p>11.1. What is your main current water source for household use?</p> <p><i>(Probe for the <u>Main</u> source)</i></p> <p>1=River 2=Lake 3=Water tap 4=Borehole 5=Unprotected well 6=Protected well</p> <p>7=Public pan 8=Water tanks 9=Dam 10=<i>Laga</i> 11=Springs 12=Other _____</p>	<p>11.2 How long does it take to go to the main source of water and come back (in minutes)</p> <p>To river _____</p> <p>At the river _____</p> <p>From river _____</p>	<p>11.3 On average, how many LITRES (20 litre jerricans) of water does the household use per day?</p>	<p>11.4. How much do you pay for a 20lt jerrican (enter zero if water is free). Enter in Kenya shillings</p> <p>1. Per 20lt jerrican _____</p> <p>2. Per month _____</p> <p>3. Free _____</p>	<p>11.5. What is your main source of drinking water?</p> <p><i>(Probe for the <u>Main</u> source of drinking water)</i></p> <p>1=River 2=Lake 3=Water tap 4=Borehole 5=Unprotected well</p> <p>6=Protected well 7=Public pan 8=Tanker 9=Dam 10=<i>Laga</i> 11=Other _____</p>	<p>11.6. Do you do anything to the water before drinking it?</p> <p>1=Boiling 2=Use traditional herbs 3=Use chemicals 4=Filters/Sieves 5=Decant 6=Nothing</p>
	Total				

12. Wealth Ranking

12.1	<p>What is the major material of the roof?</p> <p>IF POSSIBLE, DON'T ASK, ANSWER BASED ON YOUR OBSERVATION</p> <p>1= Concrete 2= Tiles 3= Straw (grass, papyrus, banana fibres) 4= Wood 5= Plastic shelter 6= Galvanized iron 7= Mud 8= Other, specify _____</p>	12.4	<p>How many sleeping rooms/structures do you have?</p> <p>Structures __ __ Rooms __ __ </p>
12.2	<p>What is the major material of the Walls?</p> <p>IF POSSIBLE, DON'T ASK, ANSWER BASED ON YOUR OBSERVATION</p>	12.5	<p>How many people usually sleep in this dwelling/compound?</p>

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	1= Concrete 2= 3= Straw (grass, papyrus, banana fibres) 4= Wood 5= Plastic shelter 6= Galvanized iron 7= Mud 8= Other, specify _____		People __ __
12.3	What is the major material of the floor? IF POSSIBLE, DON'T ASK, ANSWER BASED ON YOUR OBSERVATION 1= Concrete 2= Mud 3= Straw 4= Wood 5= Plastic sheeting 6= Tiles 7= Other, specify _____	12.6	How many wives does the household head have? Wives __ __

12.7	Does your household own any of following items?	Asset	Tick Box	Asset	Tick Box	Asset	Tick Box
		Hoe		Fishing net		Chairs/sofa	
		Axe		Drip Bucket		Ox/donkey cart	
		Sickle/Machete		Paraffin Stove		Roofing (any kind)	
		Plough/Ox Plough		Pressure Lamp		Water Tank	
		Radio (only)		Cell phone		Grinding Mill	
		Tape/CD player		Beds		Oil press	
		Bicycle		Food Granary			
12.8	How many acres of land do your Household Cultivate? Estimate based on 4 gorogoro = 10kg that is usually used to cultivate 1 acre of land					__ __ __ . __	acres
12.91	Indicate if they have the following animals: Codes: 1=<5, 2=5-10, 3= 10-20, 4=20-50, 5=50-100, 6=100- 200 7=>200					How many? Please use codes	
	Cattle						
	Camels						
	Goats						
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	Sheep				
	Chicken				
	Donkeys				
12.92	Has the size of your livestock herd changed since last rain? (1=increased, 2=reduced, 3=remained the same, 4=Wiped out)			12.11	Livelihood
12.93	If increased/decreased what are the reasons (1=animals gave birth, 2=bought, 3=given, 4=death because of drought, 5=death because diseases, 6=sold, 7=raid, 8=Other (specify)				What is the main source of livelihood for the household? 1=Pastoralism, 2=Agro-pastoralism, 3=Fishing, 4=petty-trading, 5=Agriculture, 6=Formal employment, 7=Informal employment 8=natural resource dependents
12.10	Source of income				
	What were your sources of income the last three months (please indicate the three most important in order of priority) 1=sell of live stock, 2=sale of livestock product, 3= sale of fish 4=sale of ration food, 5=sale of own crop, 6=wage labour, 7=Remittance 8=charcoal/firewood, 9=basket weaving, 10=petty trade, 11=Salary 12=CFW 13= No source of income 14= Others (specify)				

13. COPING STRATEGIES

	In the previous month, has the household done any of the following? Tick as appropriate	1=Yes 2=No 88 = Do not know
13.1	Reduction in the number of meals per day	
13.2	Skip food consumption for an entire day	
13.3	Reduction in size of meals	
13.4	Restrict consumption of adults to allow more for children	

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13.5	Swapped consumption to less preferred or cheaper foods	
13.6	Hunting and gathering	
13.7	Engaging in casual labour	
13.8	Borrow food from a friend or relative	
13.9	Purchase food on credit	
13.10	Consume wild foods (normal wild food)	
13.11	Consume decomposed fish	
13.12	Send household members to eat elsewhere	
13.13	Send child(ren) to School	
13.14	Begging	
13.15	Sale of livestock	
13.16	Sell of charcoal and/or fire wood/small scale business	
13.17	Part of family migrating with animals to look for grazing	
13.18	Sale of milk and/or meat, and/or fish	
13.19	Donation	
13.20	Others (Specify)	

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14. HIGH IMPACT NUTRITION INTERVENTIONS (HINI) INDICATORS

14.1 Indicator: Hand washing

	<p>At what times do you usually wash your hands?</p> <p>(Multiple answers possible)</p>	<p>1=After defecation/visiting toilet</p> <p>2=Before handling food</p> <p>3=After eating</p> <p>4=Before feeding the child</p>	<p>5=After cleaning children's bottom</p> <p>6=None of the above</p> <p>7=Others specify</p>	
	<p>What do you use to clean (wash) your hands?</p> <p>(Multiple responses)</p>	<p>1=Water only</p> <p>2=Water and soap</p>	<p>3=Water and ash</p> <p>4=Other (specify) _____</p>	

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	Is the compound clean	1=Yes	2=No	
--	-----------------------	-------	------	--

14.2 Indicator: Therapeutic zinc supplementation for diarrhoea management

If diarrhoea is yes, in the morbidity question.

Was he/she given any of the following to drink at any time since he/she started having the diarrhoea? _____

1=A fluid made from a special packet called Oralite or ORS?

2=A home-made sugar-salt solution?

3=Another home-made liquid such as porridge, soup, yoghurt, coconut water, fresh fruit juice, tea, milk, or rice water?

4=Zinc

5=others (specify) _____

14.3 Indicator: Deworming

Has the child taken any drug for intestinal worms in the last six months? _____

1=Yes

2= No

3= don't know

14.4 Indicator : Iron supplementation (Question addressed to the mothers)

In your last pregnancy, did you take iron pills, sprinkles with iron, or iron syrup? _____

1=Yes

2= No

3= don't know

NB: PLEASE FILL IN THE MORTALITY QUESTIONNAIRE ATTACHED FOR THIS HOUSEHOLD

Annex 2: QUESTIONNAIRE FOR MORTALITY RATE

District: _____ Division _____ Sub-location----- Cluster number: _____ Team number: _____
 Date of Interview _____ Name of Interviewer _____ Name of Team Leader _____

Name of Coordinator _____

HH No.	Total no in household	Total under 5 in House-hold	Total Join House-hold since 24 th February	Total Under 5 join Household since 24 th February	Total Leave Household since 24 th February	Total under 5 leave Household since 24 th February	No. of births since 24 th February 2010	Total deaths since 24 th February	Total No. under 5 deaths since 24 th February
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Annex 3: Focus group discussion

Name of District	Name of Division	Name of Cluster/Village	Cluster No.	Date dd/mm/yy	Moderator

Instructions

The group should comprise of 8-10 people residing in the sampled livelihood zone. Representations should be sought from pastoralists, farmers, agro-pastoralists, women group members, community leaders and other community members (rich, medium and poor, and men and women). Write all responses in your note book

Type of Focus group: _____ **No. of Participants** _____

Time Start _____ **Time Finish** _____

1.0 Wealth Ranking

- 1.1 Define at least 3 wealth groups of households in the community
- 1.2 Come up with local terms for their differentiated groups, and describe the characteristics of each of these groups. Of particular reference, note the average number of the different animal species for each group
- 1.3 Come up with proportions of the differentiated wealth groups in the community using proportional piling.
- 1.4 Who are the most vulnerable groups with respect to food and nutrition security? Why?

2.0 Infant and Young Child Nutrition

- 2.1 What are the different complementary foods introduced to infants?
- 2.2 Why do mothers introduce complementary foods to infants?
- 2.3 On average how many times do caretakers feed the under-fives per day?
- 2.4 What are the reasons for the families to feed under-five children few times a day?
- 2.5 List the various health seeking practices for the sick children
- 2.6 Why do the caretakers prefer those health seeking practices?
- 2.7 Proportion of children sleeping under the mosquito net. Why are some children not sleeping under mosquito nets

4.0 Food Aid Utilization

4.1 When families receive food ration and supplementary food what do they do with it (**Use proportional piling to derive the amounts in kilograms for each purpose**)

4.2 For each purpose probe why?

5.0 Community participation

5.1 What do you think the government and NGOs can do to help the community recover from the current food insecurity problems?

5.2 What do you think the local community can do to recover from the current food insecurity problems?

6.0 Water and Sanitation

6.1 What is the most common practice of disposing off faeces?

6.2 Is this the same way children's faeces is disposed off?

6.3 How is the child cleaned after defecating?

6.4 Do caretakers clean their hands after cleaning their children (use proportional piling)?
How and/or with what?

7.0 Coping Strategy index

Ask the group to give the meaning and severity of each of the coping strategy

Coping strategy		Severity level				
		FG1	FG2	FG3	Average	Consensus Ranking
		Indicate the severity by from any of the four categories, where 1 = least severe 2 = moderate 3 = severe 4 = most severe				
7.1	Have you ever worried that your household did not have enough food					
7.2	Reduction in the number of meals per day					
7.3	Skip food consumption for an entire day					
7.4	Reduction in size of meals					

7.5	Limited the variety of food					
7.6	Restrict consumption of adults to allow more for children					
7.7	Feed working members at expense of non-working					
7.8	Swapped consumption to less preferred or cheaper foods					
7.9	Borrow food from a friend or relative					
7.10	Purchase food on credit					
7.11	Consume wild foods (normal wild food)					
7.12	Consume immature crop					
7.13	Consume toxic/taboo foods (Acacia, bitter fruit etc)					
7.14	Food consumption of seed stock					
7.15	Send household members to eat elsewhere					
7.16	Withdraw child(ren) from school					
7.17	Begging or engaging in degrading jobs					
7.18	Individual migration out of the area					
7.19	Household migration out of the area					
7.20	Sale of farm implements					
7.21	Sale of milking livestock					
7.22	Sale of household goods					
7.23	Disintegration of families					
7.24	Abandonment of children or elderly					
7.25	Part of family migrate with livestock looking for grazing					

Annex 4: Assignment of Clusters

	Geographical unit	Population size	Cluster
IJARA	EKAMBERE	5457	
	GARABE	4027	
	HULUGHO	5100	
	KORAHINDI	2735	1
	DOLOLO	886	
	BODHAI	1159	
	JALISH	2536	
	SANGAILU	2328	
	WAKOBHAREY	11995	2
	MATA ARBA	2498	
	HANDARO	5980	3

	GEDILUM	1149	
	MASALANI	22050	4,5
	MOHAMED DAHIR	8868	6
	GABABA	10449	
	KORISA	1158	7
	HARA	5566	
	QURAMADHA	1906	
	KOTILE	1546	
	BULA WARDE	792	
	ABARATIRO	1263	8
	HADI	6369	
	SANGOLE	2075	
	BULA WACHE	803	
	IJARA	3248	
	BULAGOLOL	1362	
	WARSAME	1938	
	RUQA	1404	RC
	GERILE	1447	
LAGDERA	MODOGASHE	13458	9
	GARSE	8321	
	ILAAAN	8818	10
	MAALIM	6430	RC
	DIHLEY	4347	
	BANANE	9630	11
	ELDERE	7098	12
	TOKOJO	3503	
	AFWEYN	599	
	GARUFA	7687	13
	CHERON	3334	
FAFI	BARAKI	694	
	GOREALE	1228	
	MANSABUBU	1641	
	GARASWEINO	878	
	NANIGHI	3884	14
	KAMUTHE	3445	
	GALMAGALA	3566	
	GUBIS	3893	
	BULAGOL	2063	15
	AMUMA	2309	
GARISSA	WELMERER	65628	16,17,18,19,20
	FAFI	3908	
	YUMBIS	1200	RC
	BURA	2797	
	TOWNSHIP	65593	21,22,RC,23,24,25
	IFTIN	24600	26,27
	WABERI	20617	28
	BOUR-ALGI	2908	29
	KORA-KORA	3235	
	SAKA	6915	
SHIMBIR	2385	30	
RAYA	3117		
JARAJARA	7356	31	
BALAMBALA	14085	32	
DUJIS	9214		
LABAHILOW	8390	33	
DANYERE	7010	34	
SIKLEY	9420	35	

