SMART SURVEY FINAL REPORT

EAST POKOT SUB COUNTY

BARINGO COUNTY

JANUARY, 2017

ACKNOWLEDGEMENT

This survey has been carried out with the participation of many partners at different levels who are highly acknowledged in particular, WV Germany and UNICEF for funding the survey.

Special thanks to officers from Department of Health, Baringo County Government, National Drought Management Authority (NDMA), UNICEF – Kenya and World Vision Kenya for their implementation role, for the active participation and the supervision roles they played during the survey.

At the community level, special gratitude is due to the households which participated in the survey. The local administrators are also acknowledged for their role in mobilizing the community and acting as guides to the enumerators during the exercise.

The survey teams are also appreciated for the good work of collecting high quality data.

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ACCROYNM AND ABBREVIATIONS

BPHS:	Basic Package of Health Services
CI:	Confidence Interval
CNO:	County Nutrition Officer
CSI:	Coping Strategy Index
DEFF:	Design Effect
ENA:	Emergency Nutrition Assessment
FGD:	Focus Group Discussion
GAM:	Global Acute Malnutrition
HAZ:	Weight-for-Age Z score
HH:	Household
HiNi:	High Impact Nutrition Intervention
KII:	Key Informant Interview
MAM:	Moderate Acute Malnutrition
MoH:	Ministry of Health
MUAC:	Mid Upper Arm Circumference
NDMA:	National Draught Management Authority
NGO:	Non-Governmental Organization
NSO:	Nutrition Support Officer
PPS:	Probability Proportional to Population Size
SAM:	Severe Acute Malnutrition
SCHMT:	Sub-County Health Management Team
SMART:	Standardized Monitoring and Assessment in Relief and Transition
UN:	United Nations
UNICEF:	United Nation Children Fund
WHO:	World Health Organization
WAZ:	Weight-for-Age Z score
WASH:	Water, Sanitation and Hygiene
WFA:	Weight-for-Age
WHZ:	Weight-for-Height Z score

EXECUTIVE SUMMARY

East Pokot is one of the six Sub-Counties (Baringo South (Marigat), Mogotio, Koibatek, Baringo North and Baringo Central) in Baringo County. It borders Turkana East to the North, Marakwet to the West, Laikipia and Samburu Districts to the East, and Marigat to the South.

It has an average area of 4524.8 square kilometres with estimated population of 159,404 people and about 28,693 children under five years (projection from 2009 population census).

The area has two livelihood zones, Pastoral (Kolowa, Tangulbei, Akoret, Mondi, Ngoron, Nginyang divisions) and Agro-Pastoral (Churo division). Over the years, East Pokot experiences poor health and nutrition outcomes which are mainly related to house hold food insecurity as a result of recurrent drought. This survey was done as part of surveillance in order to establish the current nutrition status in East Pokot.

The survey results show that the nutrition situation in Tiaty has deteriorated though not statistically significant and is at emergency levels (GAM 23.3%). This means that an urgent action needs to be done to reverse malnutrition levels in Tiaty. January 2017 drought early warning phase classification showed alarm phase but worsening in the pastoral livelihood zone and alarm to worsening in agro-pastoral livelihood zone of Tiaty. The vegetation cover was below normal and worsening while pastures and browsers were diminishing and livestock were accessing pasture from their dry zone areas. Several aggravating factors like diminishing pastures and tribal conflicts in the sub county were on the rise. The sub county was one of those affected by failure of the short rains that were expected in October – November 2016. The short rains report 2017 (SRA) further explained that Households were currently consuming one to two meals in the Pastoral and Agro Pastoral livelihood zones. This also explains the causes of malnutrition. Coping strategies are at the rise 29.5% compared to last year 27.59% July, this indicated that households practice one or two coping strategies to minimize the effects of food insecurity.74.9% of the respondents have good food consumption scores compared to 87.4% while 10.4% have poor food consumption compared to 2.74% in July 2016. Preparedness activities are recommended to improve community resilience building.

The survey adopted a 2 stage sampling technique. With the list of the villages and their population, probability proportion to size sampling method was used to select the villages which were the clusters; this was the 1st stage sampling. Finally, with the sampled villages, a list of all households with children between 6 and 59 months was drawn up for each village where12-13 households were sampled using Simple Random Sampling, this was the 2nd stage sampling. The total sample size was 340 children aged between 6 and 59 months from 360 households.

Main objective was to determine the prevalence of malnutrition among the children aged 6-59 months old, pregnant and lactating mothers in East Pokot Sub County.

Specific objectives were:

- To estimate the current prevalence of acute malnutrition in children aged 6 – 59 months
- To compare the overall nutritional changes with the previous GAM and SAM

- To determine the morbidity rates amongst children aged 0-59 months over a two week recall period
- To estimate the coverage of Measles, BCG vaccination and deworming for children 9-59 months, 6-59 months and 12-59 months respectively
- To determine the coverage for zinc supplementation and vitamin A supplementation among the children 6-59 months
- To estimate the nutritional status of female caregivers aged 15-49 years using MUAC measurements.
- To assess household food security and livelihoods
- To assess water sanitation and hygiene practices

Table 1: Summary of Survey Findings

Anthropometric indicators		
Indicators	**2016**	**2017**
Global Acute Malnutrition (<-2 Z-score)	(149) 23.0 % (18.6 - 28.0 95% C.I.)	(112)23.3 % (19.2 - 28.1 95% C.I.)
Severe Acute malnutrition (<-3 Z-score)	(23) 3.5 % (2.2 - 5.7 95% C.I.)	(19) 4.0 % (2.4 - 6.5 95% C.I.)
Prevalence of Global Underweight (<-2 Z-score)	(254) 38.8 % (33.9 - 43.9 95% C.I.)	(199) 41.5 % (35.2 - 48.1 95% C.I.)
Prevalence of Global Stunting (<-2 Z-score)	(228) 36.5 % (32.0 - 41.2 95% C.I.)	(171) 36.5 % (31.1 - 42.2 95% C.I.)
Immunization		
Measles Coverage at 9 Months	71.4%	71.4%
Measles Coverage at 18 Months	32.1%	37.8%
BCG by scar	89.9%	97%
OPV 1	91.1%	96.4%
OPV 3	80.8%	81.3%
Zinc Supplementation	11%	36.7%
Vitamin A (6 – 11 months- once)	22.6%	44%
Vitamin A (12 – 59 months) –more than twice	30.7%	41%
Vitamin A (12 – 59 months- once)	13.3%	55.3%
Vitamin A (6-59 months)	42.9%	53.9%
Deworming (12-59 months)	14.9%	21%
Child Morbidity		
Sickness two weeks prior to survey	59%	43.8%
Acute Respiratory Infection	73.0%	52.6%
Fever	53.6%	44.1%
Watery diarrhea	40.8%	22.3%
Bloody diarrhoea	35.5%	0.9%
Seek assistance	42.8%	71%
Maternal nutrition		
Maternal MUAC <21cm	9.7%	6.7%
Maternal MUAC <21cm for PLW	9.4%	6.4%
Iron Folate Supplementation < 90 days	50.2%	49%
Iron Folate Supplementation 90 days and above	8.3%	51%
Household Food Security		
Poor FCS	2.71%	10.4%
Border FCS	9.88%	14.8%

Good FCS	87.4%	74.9%
Household Diet diversity(>4 food groups and above)	63.2%	72.6%
CSI	27.59%	29.5%
Water and Sanitation		
Water sources		
Protected source(safe sources)	5.4%	15%
Unprotected source(unsafe sources)	94.6%	84%
Water treatment	2.9%	
Sanitation Facility		
Open defecation	96%	98%
Shared latrine		
Own latrine	3%	2%
Hand washing at 4 critical times	2%	2%
Hand washing at 3 critical times	8%	
Hand washing at 2critical times		
Hand washing at 1 critical time		73%
No hand washing at all critical times		
After visiting the toilet	11%	14%
Before cooking	58%	33%
Before eating	91%	62%
After taking children to the toilet/latrine	7%	8%
After milking the cow or goat.	15%	
Hand washing with Water only		53%
Hand washing with Soap and water	18%	25%

CHAPTER ONE: INTRODUCTION

1.0 BACKGROUND INFORMATION

East Pokot is one of the 6 sub counties of Baringo County and it borders Turkana East to the North, Marakwet and Baringo North to the West, Laikipia and Samburu county to the East, and Marigat to the South. It has an average area of 4524.8Km and is sub-divided into seven (7) administrative divisions with an official estimated population of around 159,404 people which is a projection from 2009 population census. The area has two livelihood zones, Pastoral (Kolowa, Tangulbei, Akoret, Mondi, Ngoron, Nginyang divisions) and Agro-Pastoral (Churo division).

The sub county has been experiencing poor nutrition outcomes through the years which is mostly attributed to drought in the area. Additionally, other major factors contributing to high malnutrition rates include chronic and acute food insecurity due to poor rainfall, low purchasing power due to eroded capacity as a result of seasons of successive droughts, sub optimal child care and feeding practices and poor hygiene and sanitation practices and retrogressive cultural beliefs.

To try to improve the health and nutrition status in the county, various partners have been working with the Ministry of Health in the implementation and up scaling of High Impact Nutrition Intervention (HiNi) in the County. For instance World Vision has been supporting the Ministry of Health (MoH) in the implementation of the HiNi services in Baringo County. Other partners supporting other nutrition interventions include Maternal and Child Survival Project (MCSP) and Kenya Red Cross during response. World Vision is also supporting Food for asset (FFA) projects in the area.

Figure 1: Map of East Pokot Sub County with Livelihood zones

1.1 Justification

The results of 2016 Smart survey showed a critical GAM levels of 23.3 %(19.2 - 28.1 95% C.I.).There have been several aggravating factors like inter community conflict and drought in the sub county. The survey also assessed the impact of the short rains in October-November 2016.

1.2 Survey Objectives

General Objective

- To determine the prevalence of malnutrition among the children aged 6- 59 months old, pregnant and lactating mothers.

The specific objectives:

- To determine the prevalence of acute malnutrition among children aged 6-59 months.
- Estimate prevalence of maternal malnutrition using MUAC measurements
- To determine the immunization coverage for measles, BCG, Oral Polio Vaccines (OPV 1 and 3) and vitamin A supplementation in children aged 6-59 months
- To determine de-worming coverage for children aged 12 to 59 months
- To estimate the use of zinc in diarrheal treatment in children;
- To determine the morbidity rates amongst children U5 years over a two week recall period.
- To collect information on possible underlying causes of malnutrition such as household food security, water, sanitation, and hygiene practices.

1.3 Timing of the Survey

The survey was undertaken during a dry spell as from 20th to 22nd January 2017. Training and piloting of the survey materials and standardization test was conducted from 22nd January 2017 and thereafter data collection for four from 23rd to 27th January 2017.

CHAPTER TWO: METHODOLOGY

2.0 Survey Area

The target geographical area was East Pokot Sub County which is one of the six Sub counties in Baringo County.

2.1 Survey Design

The survey adopted a 2 stage sampling technique. With the list of the villages and their population, probability proportion to size sampling method was used to select the village which were the cluster, this was the 1st stage sampling. Finally, with the sampled villages, a list of all households with children between 6 and 59 months was drawn upon for each village where12-13 households was sampled using simple random sampling, this was the 2nd stage sampling.

2.2 Study Population

The target population for this survey will be the children aged 6 – 59 months and the mothers of the targeted children

2.3 Sample Size

The anthropometric survey sample size was calculated using the SMART survey calculator. The parameters of interest were captured in the ENA 9th July 2015 software and the respective number of children and households required for the survey computed. The sampling frame for this survey was the updated list of villages (with current projected population) from the survey area

Table 2: Anthropometric Sample Size calculation and rational for the East Pokot County survey

Data entered on ENA software	Anthropometric Survey	Rationale
Estimated prevalence of GAM	28.0%	Upper limit C.I due to deteriorating situation (NDMA monthly bulletins November 2016) SMART survey July 2016 GAM: 23.0 % (18.6 – 28.0 95% C.I.)
±Desired precision	6%	Based on nutrition survey guidelines
Design effect	1.45	Based on the previous 2016 survey to cater for heterogeneity.
Average household size	6	2016 SMART survey
Percent of <5	18%	County HIS estimates
Percent of non-respondent	3%	Due to the frequent movements in most parts of the county hence non-response anticipated
Households to be included	**360**	As calculated using the ENA for SMART software
Children to be included	**340**	As calculated using the ENA for SMART software

2.4 Variables Collected

Age: the age of the child was recorded based on a combination of child health cards, the mothers'/caretakers' knowledge of the birth date and use of a calendar of events for the district developed in collaboration with the survey team.
Sex: it was recorded whether a child was male or female.
Bilateral Oedema*:* normal thumb pressure was applied on the top part of both feet for 3 seconds. If pitting occurred on both feet upon release of the fingers, nutritional oedema was indicated.
Weight: the weights of children were taken with minimal or light clothing on, using Bathroom scale (SECA digital model with a threshold of 150kgs and recorded to the nearest 0.1kg.
Length/Height: children were measured bareheaded and barefooted using wooden UNICEF height boards with a precision of 0.1cm. Children under the age of two years were measured while lying down (length) and those over two years while standing upright (height). If child age could not be accurately determined, proxy heights were used to determine cases where height would be taken in a supine position (<87cm) or in an upright position (≥87cm).
Mid Upper Arm Circumference (MUAC): the MUAC of children were taken at the midpoint of the upper left arm using a MUAC tape and recorded to the nearest 0.1cm.
Retrospective Morbidity of Children: A 2-week morbidity recall was conducted for all children (6-59 months) to assess the prevalence of common diseases (e.g. malaria, diarrhea).
Vaccination Status and Coverage: For all children 6-59 months, information on BCG, Oral polio Vaccine (OPV) 1, OPV 3 and measles vaccination was collected using health cards and recall from caregivers. The vaccination coverage was calculated as the proportion of children immunized based on card and recall.
Vitamin A Supplementation Status: For all children 6-59 months of age, information on Vitamin A supplementation was collected using the child welfare cards and recall from caregivers. Information on whether the child had received supplementation in the last 6 months was collected. Vitamin A capsules were also shown to the mothers to aid in recall.
De-worming Status: Information was solicited from the care takers as to whether their child/children 6-59 months had been de-wormed in the last 6 months.
Household Food Diversity: Dietary diversity is a qualitative measure of food consumption that reflects household access to a wide variety of foods, and is also a proxy of the nutrient intake adequacy of the diet for individuals. Dietary diversity scores were created by summing the number of food groups consumed over a 7- days period to aid in understanding if and how the diets are diversified. Household dietary diversity score (HDDS) is meant to reflect, in a snap shot the economic ability of a household to consume a variety of foods. A score of 1 was allocated to each food group that was consumed by the household per day and a score of 0 for each of the food groups not consumed by the household, and thus the highest possible score per day was 16.
Household Water Consumption and Utilization: The indicators used were main source of drinking and household water, time taken to water source and back, cost of water per 20-litre jerry-can and treatment given to drinking water.
Sanitation: Information on household accessibility to a toilet/latrine, disposal of children's faeces and occasions when the respondents wash their hands was obtained.

2.5 Organization of the Survey

- **Coordination/Collaboration:** Before the survey was conducted meetings were held with the respective county authorities and key stakeholders briefed them about the purpose, objectives and methods for the survey. The survey details were

discussed with the County Steering Group, County Nutrition Technical Forum, County Information Working Group and conducted in collaboration with the County and Sub-Counties Health Offices and UNICEF. The authorities were requested to officially inform the communities (villages) that were involved in the assessment.

- **Recruiting the Survey Team:** Recruitment was done in collaboration with the Ministry of Health office at the sub-county level in order to give ownership and participation in the assessment.
- **Training of the Survey Team:** The teams were given 3-days training prior to field work, including a standardization test to ensure standardization of measurement and recording
- **Quality assurance**
- Daily Plausibility check for data quality
- Giving daily feedback and updates to teams based on quality checks
- Teams supervision/ follow up while in the field
- Use of ODK and recording of Geo points

2.6 Case Definition

The Global Acute Malnutrition (GAM) is the index which is used to measure the level of wasting in any given population. In this survey, GAM was defined as the proportion of children with a z-score of less than -2 z-scores weight-for-height and/or presence of bilateral oedema. Severe Acute Malnutrition (SAM) was defined as the proportion of children with a z-score of less than -3 z-score and/or presence of oedema. Further, using the mid-upper arm circumference (MUAC), GAM was defined as the proportion of children with a MUAC of less than 125 mm and/or presence of oedema while SAM was defined as the proportion of children with a MUAC of less than 115 mm and/or presence of oedema.

Malnutrition by Z-Score: WHO (2006) Standard.

- Severe acute malnutrition is defined by WFH < -3 SD and/or existing bilateral oedema on the lower limbs.
- Moderate acute malnutrition is defined by WFH < -2 SD and >-3 SD and no oedema
- Global acute malnutrition is defined by WFH < -2 SD and/or existing bilateral oedema

Malnutrition by MUAC

- Severe malnutrition is defined by MUAC<115 mm and/or presence of bilateral oedema
- Moderate malnutrition is defined by MUAC < 125 mm and ≥115 mm and no oedema
- Global acute malnutrition is defined by MUAC <125 mm and/or existing bilateral oedema.

2.8. Questionnaire

The survey adopted the data collection tools recommended in the Nutrition Information Working Group but converted to Open Data Kit (ODK) format to enable data collection using android smart phones.

2.9 Data uploading, Analysis and Report Writing

- **Data Uploading:** Data was uploaded on daily basis, downloaded on excel format and analyzed using ENA for SMART and SPSS Statistical software. The World Vision Monitoring and Evaluation Program Officer was responsible for downloading data from the server and analyzing. Baringo nutrition team was responsible for report writing. Results were presented using the new WHO reference levels.

- **Preliminary Results and Final Report:** Preliminary findings were submitted to County Nutrition Technical Forum (CNTF) and County Steering Group (CSG) at the County and (NIWG) at the National levels after completion of the survey fieldwork. The information shared in the preliminary report included the prevalence of global acute malnutrition as well as the prevalence of moderate and severe acute malnutrition, vaccination and other relevant information.

CHAPTER THREE: SURVEY RESULTS AND DISCUSSION

3.1House hold demographics

The survey reached a total of 366 households where children 482 under five years and women 15-49years were reached.

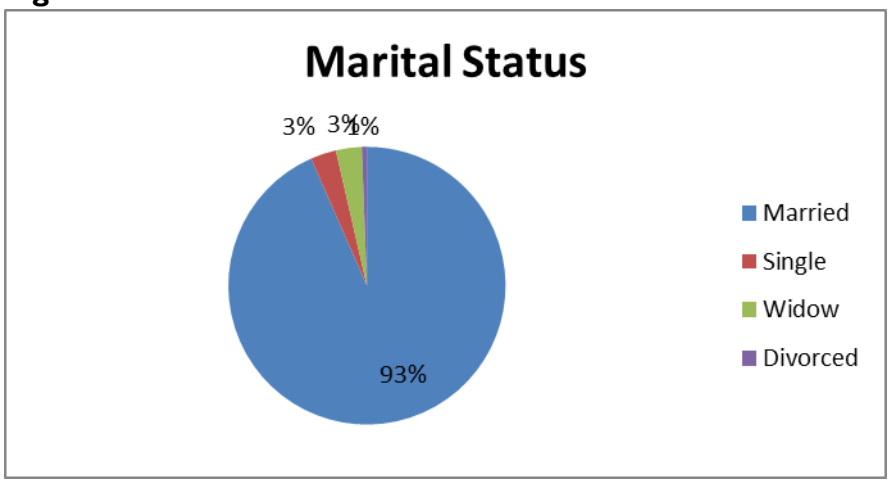
Table 3: House hold demographics

	Target as per Survey Plan	No. Reached
Clusters	30	30
Households	360	366
Total HH Members	2160	1959
Average household size	6	5.4
Children 6 – 59 months	340	480
Women 15 – 49 Years		267

3.1.1 Residency and marital Status of the Respondents:

100% of respondents were residents, 93% of respondents being married, 3% widowed, 3% single and only 1% were divorced. This shows a stable family culture where divorce rates are very low.

Figure 2: Marital status



3.2 Main Occupation of Household Head and Source of household income:

79.1% of respondents were livestock herders followed by petty trade at 11%, this indicates that most of the people in East Pokot spend their time herding.

69.9% of respondents got income from sale of livestock followed 13.5% in petty trade, this indicates that the major source of income is sale of livestock. This shows that the main source of livelihood in East Pokot is livestock keeping. Only 2.2% did farming and firewood collection.

Figure 3: Main Occupation

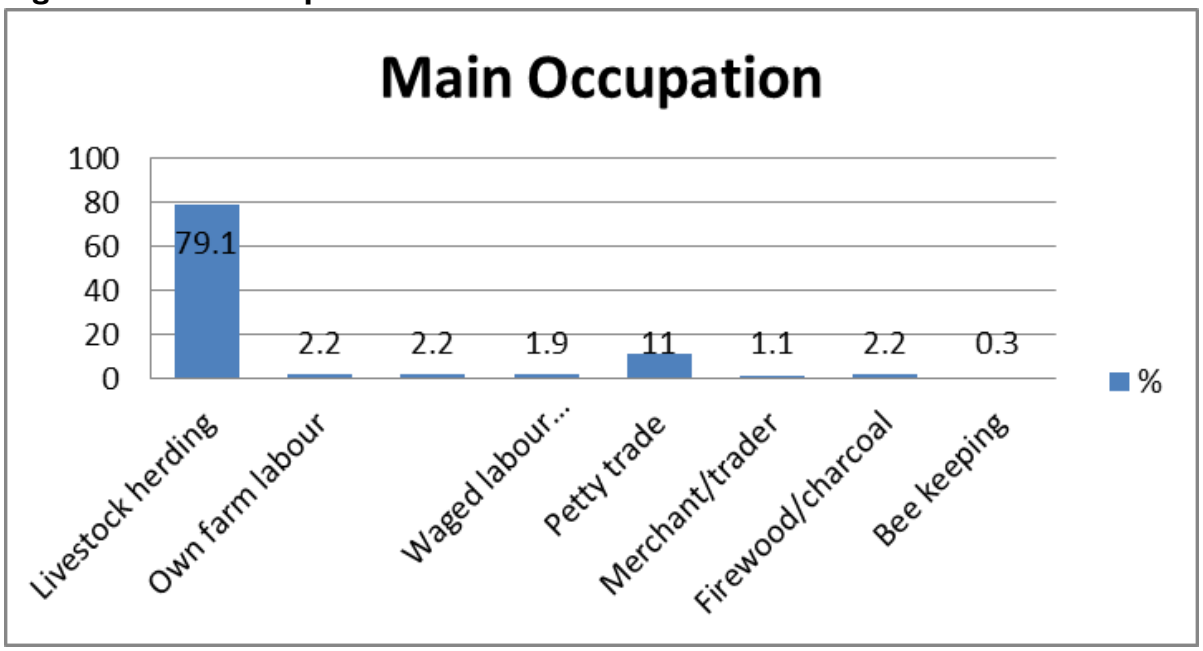
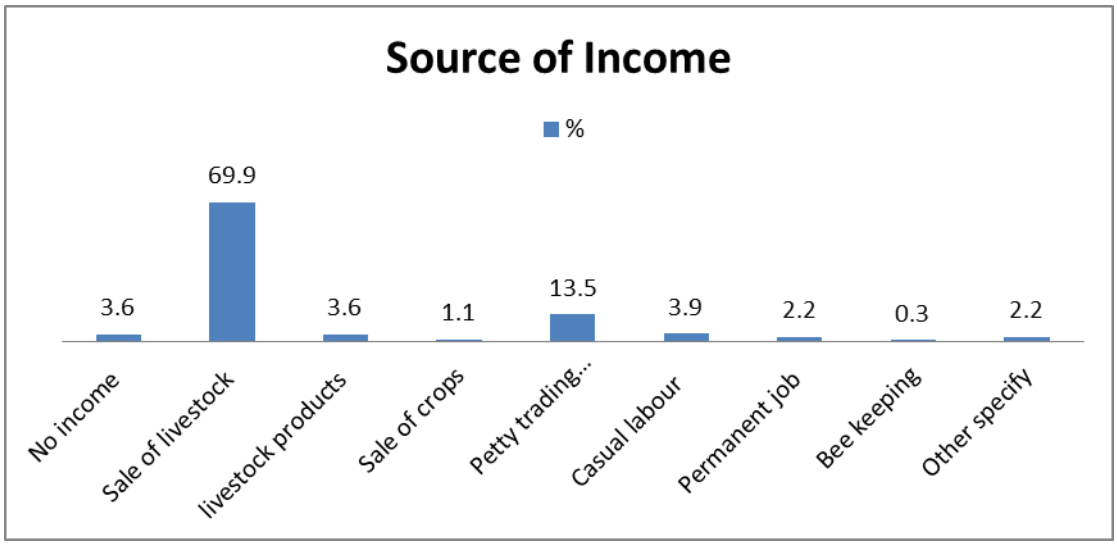


Figure 4: Household Main source of Income:



3.3 Education Level of the respondents

The residents show an increase in the number of respondents with no education from 65.7% in July 2016 to 82% in January 2017. This can be attributed to section of clusters selected may have had a higher education level. There were more clusters around market centers where more people could be learned.

Table 4: Education levels of the respondents

Level of Education	July 2016	January 2017
	%	%
None	65.7	82
pre primary	20.7	6
Primary	7.8	8
Secondary	4.3	3
Tertiary	1.4	1

3.4 Nutritional Status of Under-Five Children

3.4.1 Age distribution and anthropometric data quality check

Among 482 children under five years reached, 49% were boys and 51% girls. The overall sex ratio of boys to girls' was 1.0 and was within the recommended range of 0.8-1.2 showing unbiased selection of the sample. The ratio for Skewness and Kurtosis of WHZ also showed unbiased distribution of the sampled children.

Table 5: Distribution of sex and age of sample

	Boys		Girls		Total		Ratio
AGE (mo)	no.	%	no.	%	no.	%	Boy: girl
6-17	46	39.0	72	61.0	118	24.5	0.6
18-29	65	53.7	56	46.3	121	25.1	1.2
30-41	47	52.8	42	47.2	89	18.5	1.1
42-53	53	52.0	49	48.0	102	21.2	1.1
54-59	25	48.1	27	51.9	52	10.8	0.9
Total	236	49.0	246	51.0	482	100.0	1.0

3.4.2 Age verification

Age verification was done using health cards, birth certificate, birth notification or baptism card. For those where were unable to have the documents, a calendar of event was used to help the mother recall the birth date.

3.4.3 Prevalence of Acute Malnutrition.

The Global Acute Malnutrition (GAM) is the index which is used to measure the level of wasting in any given population. In this survey, GAM was defined as the proportion of children with a z-score of less than -2 z-scores weight-for-height and/or presence of bilateral oedema. Severe Acute Malnutrition (SAM) was defined as the proportion of children with a z-score of less than -3 z-score and/or presence of oedema. Further, using the mid-upper arm circumference (MUAC), GAM was defined as the proportion of children with a MUAC of less than 125 mm and/or presence of oedema while SAM was defined as the proportion of children with a MUAC of less than 115 mm and/or presence of oedema.

Malnutrition by Z-Score: WHO (2006) Standard.

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- Moderate acute malnutrition is defined by WFH < -2 SD and >-3 SD and no oedema

- Global acute malnutrition is defined by WFH < -2 SD and/or existing bilateral oedema

Malnutrition by MUAC

- Severe malnutrition is defined by MUAC<115 mm and/or presence of bilateral oedema
- Moderate malnutrition is defined by MUAC < 125 mm and ≥115 mm and no oedema
- Global acute malnutrition is defined by MUAC <125 mm and/or existing bilateral oedema.

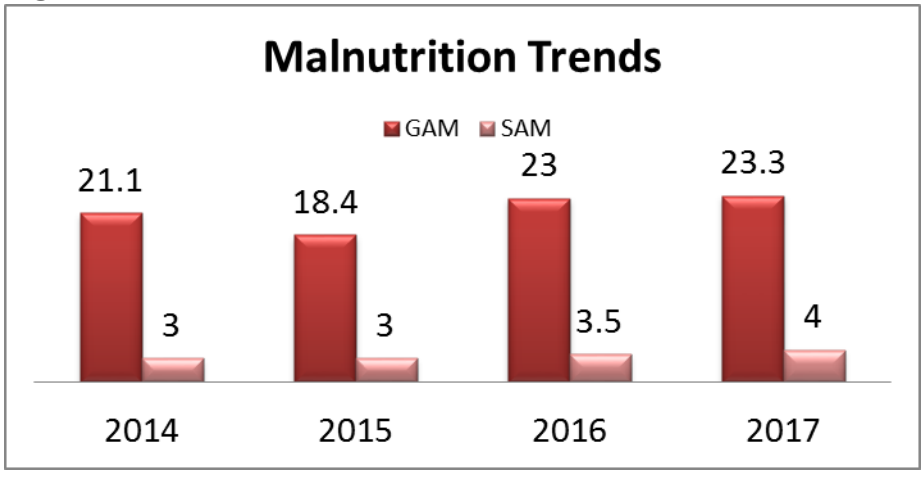
The malnutrition levels have slightly increased from last year at 23% to 23.3% this year. This is attributed mainly by lack of food and water due to failed short rains in October and November 2017. Other contributing factors may be residents not treating water despite getting it from unprotected sources and poor hygiene practices like only 2% of the population are reported to wash hands at the four critical times hence leading to diarrhea in children. Poor maternal nutrition can also be a contributing factor to malnutrition in the area since only 22.1% consume at least 5 food groups.

Table 6: Overall prevalence of GAM compared to previous year's survey findings.

	January 2017 n = 480	**July 2016** n = 649
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(112) 23.3 % (19.2 - 28.1 95% C.I.)	(149) 23.0 % (18.6 - 28.0 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(93) 19.4 % (15.4 - 24.1 95% C.I.)	(126) 19.4 % (16.0 - 23.4 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(19) 4.0 % (2.4 - 6.5 95% C.I.)	(23) 3.5 % (2.2 - 5.7 95% C.I.)

Compared to 2016 SMART survey the malnutrition levels are not significantly different from the current levels. However the levels have risen a bit form 23.0% to 23.3%. Considering previous years there has not been much change in terms of malnutrition levels in East Pokot over the years.

Figure 5: Shows the trend of Malnutrition from 2014 to 2017



3.4.4 Prevalence of Acute malnutrition by sex

The table below shows that boys are more malnourished than girls. This can be attributed to the boys above three years going out to herd - cattle with their elder siblings while leaving the girls at home with the parents. Due to lack of food in the area and considering that boys naturally have high activity level than girls then they are not able to get extra food to cater for their energy utilization per day.

Table 7: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

	All n = 480	**Boys** n = 235	**Girls** n = 245
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(112) 23.3 % (19.2 - 28.1 95% C.I.)	(62) 26.4 % (20.1 - 33.8 95% C.I.)	(50) 20.4 % (15.6 - 26.2 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(93) 19.4 % (15.4 - 24.1 95% C.I.)	(53) 22.6 % (16.9 - 29.4 95% C.I.)	(40) 16.3 % (11.6 - 22.5 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(19) 4.0 % (2.4 - 6.5 95% C.I.)	(9) 3.8 % (2.2 - 6.6 95% C.I.)	(10) 4.1 % (2.2 - 7.5 95% C.I.)

3.4.5 Prevalence of acute malnutrition by age

All age groups were affected by both severe and moderate acute malnutrition. However, age groups 54-59, 30-41 and 43-53 months seem to be more affected by severe malnutrition. This can be attributed to chores allocated to children over 3 years since drought is affecting the area. They are sent to herd cattle with their elder siblings looking for water and pasture. Sometimes they are left to take care of their younger siblings while their parents go out to look for food and water for the family.

Table 8: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

		Severe wasting (<-3 z-score)		**Moderate wasting (>= -3 and <-2 z-score)**		**Normal (> = -2 z score)**		**Oedema**	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	116	3	2.6	15	12.9	98	84.5	0	0.0
18-29	121	3	2.5	21	17.4	97	80.2	0	0.0
30-41	89	5	5.6	17	19.1	67	75.3	0	0.0
42-53	102	5	4.9	29	28.4	68	66.7	0	0.0
54-59	52	3	5.8	11	21.2	38	73.1	0	0.0
Total	480	19	4.0	93	19.4	368	76.7	0	0.0

3.4.6 Distribution of acute malnutrition and oedema based on weight-for-height z-scores

There was no oedema cases observed. However, twenty (20) children were severely wasted (marasmic) representing 4.1% of the children reported to be malnourished. Those severely malnourished were referred to the nearest health facilities for management and treatment.

Table 9: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 20 (4.1 %)	Not severely malnourished No. 462 (95.9 %)

3.6.7 Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex.

MUAC is the best indicator for mortality and is used in the community (for screening) to identify individual children at risk and in need of referral and as an admission criterion for feeding programmes. MUAC directly measures thinness (or fatness) like WFH but it tends to indicate lower GAM levels hence it is used in many nutrition intervention programmes in Kenya (Including in the SFP and OTP programmes in East Pokot Sub County) since it is still a criteria for admission in the national IMAM guidelines. Table 9 below shows the prevalence of global malnutrition based on MUAC at 3.9% compared 2016 SMART Survey which showed 9.0%.The prevalence of moderate acute malnutrition based on MUAC 3.7%was compared to 2016 which was at 8.35% while severe acute malnutrition prevalence was0.2% slightly lower from 2016 survey which was 0.6%

This indicates that East Pokot has decreased number of children at risk of malnutrition as compared to 2016 SMART Survey. From the GAM prevalence by MUAC, girls seemed to be more malnourished than boys; this trend is contrary to the GAM prevalence where boys were more malnourished.

Table 10: Prevalence of acute malnutrition based on MUAC (and/or oedema) and by sex

	All n = 482	**Boys** n = 236	**Girls** n = 246
Prevalence of global malnutrition (< 125 mm and/or oedema)	(19) 3.9 % (2.4 - 6.4 95% C.I.)	(5) 2.1 % (0.9 - 4.9 95% C.I.)	(14) 5.7 % (3.2 - 10.0 95% C.I.)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	(18) 3.7 % (2.3 - 6.1 95% C.I.)	(4) 1.7 % (0.6 - 4.4 95% C.I.)	(14) 5.7 % (3.2 - 10.0 95% C.I.)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	(1) 0.2 % (0.0 - 1.6 95% C.I.)	(1) 0.4 % (0.1 - 3.2 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)

3.4.8 Prevalence of acute malnutrition by age, based on MUAC /oedema

Severe wasting by MUAC was found to be more prevalent among children of age group 6-17 months. There was 1 case of severe wasting by MUAC which 0.2% from 18-26 age groups while the prevalence of moderate malnutrition was more among children aged 6-17 followed by30-41months. There were no cases of oedema.

Table 11: Prevalence of acute malnutrition by age, based on MUAC and/or oedema

		Severe wasting (< 115 mm)		Moderate wasting (>= 115 mm and < 125 mm)		Normal (> = 125 mm)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	118	0	0.0	7	5.9	111	94.1	0	0.0
18-29	121	1	0.8	4	3.3	116	95.9	0	0.0
30-41	89	0	0.0	4	4.5	85	95.5	0	0.0
42-53	102	0	0.0	3	2.9	99	97.1	0	0.0
54-59	52	0	0.0	0	0.0	52	100.0	0	0.0
Total	482	1	0.2	18	3.7	463	96.1	0	0.0

3.4.9 Prevalence of underweight based on weight-for-age z-scores by sex

Underweight is measured by weight for age and reflects acute and chronic malnutrition (Guidelines for Conducting Nutrition and mortality Surveys, 2012).

Table 11 below show the global underweight rates for East Pokot Sub County is at 50.0% compared to 2016 level which was at 38.8%. This is considerably higher compared to the national rate of 11%, (2014 KDHS) and it shows an increase from last year's survey though not in the same season. Boys are more underweight than girls and this trend is also true with the GAM levels. The overall prevalence of underweight as compared from 2016 survey has increased hence increasing the number of children at risk of severe malnutrition.

Table 12: Prevalence of underweight based on weight-for-age z-scores by sex

	All n = 480	**Boys** n = 236	**Girls** n = 244
Prevalence of underweight (<-2 z-score)	(240) 50.0 % (44.0 - 56.0 95% C.I.)	(121) 51.3 % (43.5 - 59.0 95% C.I.)	(119) 48.8 % (40.2 - 57.4 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(196) 40.8 % (35.3 - 46.6 95% C.I.)	(98) 41.5 % (34.3 - 49.1 95% C.I.)	(98) 40.2 % (31.5 - 49.5 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(44) 9.2 % (6.4 - 13.0 95% C.I.)	(23) 9.7 % (6.0 - 15.5 95% C.I.)	(21) 8.6 % (4.8 - 14.8 95% C.I.)

3.4.10 Prevalence of underweight by age, based on weight-for-age z-scores

The prevalence of severe underweight is higher in children of age groups 18-29 and 30-41 months respectively. Children of age group 6-17 months are the least affected by severe underweight contrary to last year's survey where this group was most severely malnourished. The prevalence of moderate malnutrition is high in children 42-53 months then 30-41 months.

Table 13: Prevalence of underweight by age, based on weight-for-age z-scores

		Severe underweight (<-3 z-score)		Moderate underweight (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	117	7	6.0	41	35.0	69	59.0	0	0.0
18-29	120	13	10.8	47	39.2	60	50.0	0	0.0
30-41	89	12	13.5	39	43.8	38	42.7	0	0.0
42-53	102	8	7.8	49	48.0	45	44.1	0	0.0
54-59	52	4	7.7	20	38.5	28	53.8	0	0.0
Total	480	44	9.2	196	40.8	240	50.0	0	0.0

3.4.11 Prevalence of stunting based on height-for-age z-scores and by sex

Stunting is measured by the index of height for age and reflects failure to receive adequate micro and macro nutrients over a long period of time and is also affected by recurrent and chronic illness. Stunting levels have not changed from last years' levels of 36.5%.This level is higher than the national levels of 26% and the Baringo county levels of 29%(KDHS 2014). This according to WHO classification indicates serious levels of malnutrition. The boys (39.9%) are also more stunted than girls (33.1%) which was also the trend in last year's survey.

Table 14: Prevalence of stunting based on height-for-age z-scores and by sex

	All n = 469	**Boys** n = 233	**Girls** n = 236
Prevalence of stunting (<-2 z-score)	(171) 36.5 % (31.1 - 42.2 95% C.I.)	(93) 39.9 % (33.7 - 46.5 95% C.I.)	(78) 33.1 % (26.3 - 40.5 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(125) 26.7 % (22.8 - 30.9 95% C.I.)	(70) 30.0 % (25.0 - 35.6 95% C.I.)	(55) 23.3 % (18.4 - 29.0 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(46) 9.8 % (7.4 - 13.0 95% C.I.)	(23) 9.9 % (6.3 - 15.2 95% C.I.)	(23) 9.7 % (6.5 - 14.4 95% C.I.)

3.4.12 Prevalence of stunting by age based on height-for-age z-scores

Table 14 below shows that the prevalence of severe stunting is higher in children aged 30-41 and 18-29 months respectively. Children of age 6-17 months seem to be least affected by stunting. The prevalence of moderate stunting seems to be evenly distributed among all age groups.

Table 15: 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 no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	115	8	7.0	31	27.0	76	66.1
18-29	117	16	13.7	32	27.4	69	59.0
30-41	86	13	15.1	21	24.4	52	60.5
42-53	101	8	7.9	30	29.7	63	62.4
54-59	50	1	2.0	11	22.0	38	76.0
Total	469	46	9.8	125	26.7	298	63.5

3.4.13 Prevalence of overweight based on weight for height by sex (no oedema)

The overall prevalence of overweight is 0.0%.

Table 16: Prevalence of overweight based on weight for height and by sex (no oedema)

	All n = 480	Boys n = 235	Girls n = 245
Prevalence of overweight (WHZ > 2)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)
Prevalence of severe overweight (WHZ > 3)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)

3.4.14 Prevalence of overweight by age, based on weight for height (no oedema)

There was no prevalence of overweight in any of the age groups.

Table 17: Prevalence of overweight by age, based on weight for height (no oedema)

		Overweight (WHZ > 2)		Severe Overweight (WHZ > 3)	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**
6-17	116	0	0.0	0	0.0
18-29	121	0	0.0	0	0.0
30-41	89	0	0.0	0	0.0
42-53	102	0	0.0	0	0.0
54-59	52	0	0.0	0	0.0
Total	480	0	0.0	0	0.0

Table 18: Mean z-scores, Design Effects and excluded subjects

	n	Mean z-scores ± SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	480	-1.28±0.97	1.26	0	2
Weight-for-Age	480	-1.72±1.01	1.99	0	2
Height-for-Age	469	-1.55±1.15	1.49	0	13

3.5 MATERNAL NUTRITION STATUS

Pregnancy imposes a big nutrient-need load on mothers, which in the absence of adequate extra nutrients leads to utilization of body nutrient reserves leading to malnutrition. Gestational malnutrition leads to low birth weights and may ultimately culminate in poor child growth and development, thus there is an urgent need to address high rates of malnutrition among pregnant women. Household food insecurity is a key indicator/determinant for poor adult nutritional status. A high number of malnourished PLWs increase the risk of growth retardation of the fetus and consequently an increase in low birth weight and malnutrition burden spreads to both U5 children and caretakers from the same household faced with food insecurity and related vulnerabilities, a common scenario during nutrition emergency levels

MUAC was used to determine the level of malnutrition among pregnant and lactating women using a cutoff point of < 21cms. The mothers sampled were 267, Among the women interviewed their physiological status were as follows: those who were pregnant were 22.5%, pregnant and lactating were 3.5%, lactating were 61% and those who were not pregnant and not lactating were 13.5% and out of these, those found to be having malnutrition were 6.4% and 6.7% respectively. The following graph depicts the maternal nutrition situation of the pregnant and lactating women in East Pokot.
The maternal malnutrition was defined as women whose MUAC measurements were < 21.0cm while women whose MUAC measurements were between 21.0 <23.0cm were classified as at risk of malnutrition; above which were normal

Figure 6: Physiological status of the mother

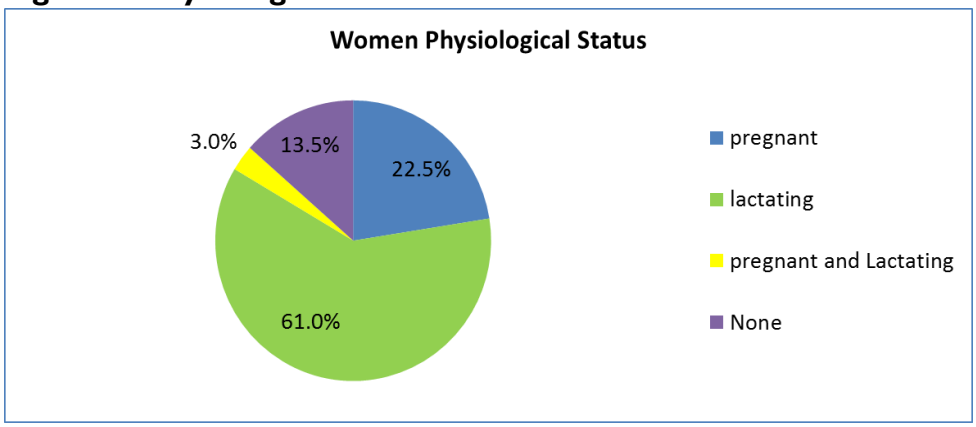


Table 19: Prevalence of Acute maternal Malnutrition

Indicator	N	%
MUAC <21.0 cm for all women	18	6.7%
MUAC <21.0 cm for PLW	17	6.4%

3.5.1 Iron-Folate Supplementation

Iron supplementation is recommended in resource limited settings as strategy to prevent and correct iron deficiency and anemia among pregnant women WHO recommends daily consumption of 60mg elemental iron and 0.4mg folic acid throughout the pregnancy.[1]These recommendations have since been adopted by Kenya government in its 2013 policy guidelines on supplementation of iron folic acid supplementation (IFAS) during pregnancy.The care takers sampled were 231.Among the Caregivers with children aged 24 months and below sampled and supplemented with Iron Folic acid in their last pregnancy were 60.2%. Mean number of days IFAS was consumed by women was **50 days.**
Caregivers who consumed IFAS in less than 90 days were 49%, between 90 and 180 days were 51% and those who consumed IFAS more than 180 days were 0% showing that high no of caregivers consume less IFAS than recommended entire pregnancy period.

Table 20: Iron Folate intake by pregnant mothers

Categories of IFA Consumption (In Days)	No of women (N=231)	Proportion (%)

[1] WHO. Guideline: Daily iron and folic acid supplementation in pregnant women. Geneva, World Health Organization, 2012.

< 90 Days	113	49%
90≥180 Days	118	51%
> 180 Days	0	0%

3.6 ACCESS AND UTILIZATION OF HEALTH AND NUTRITION SERVICES

3.6.1 Immunization Coverage

Kenya aims to achieve 90% under one immunization coverage by the end of second medium term plan (2013- 2017). The Kenya guideline on immunization define a fully immunized child is one who has received all the prescribed antigens ***and at least one Vitamin A dose*** under the national immunization schedule before the first birthday. Immunization is an important and a powerful, cost-effective preventive health measure taken by the government of Kenya to improve on child survival. All of the recommended vaccinations should be given before children reach their first birthday.

The survey used three antigens as a proxy for immunization coverage. These were; BCG, Oral Polio vaccination (1 and 3) and measles vaccine (1 and 2). The second measles vaccine given at 18 months was recently introduced by the Ministry of Health in the country.

Immunization to the children was confirmed either by card (mother-child booklet) or by recall. BCG was confirmed by observing the scar at the child's arm. BCG, OPV 1 and OPV 3 immunization coverage was at 97% up from 89.9% last year, 92.4% up from 91.1% last year and 81.3 up from 80.8% last year respectively which was above the national target of 80%.However Measles at 9 months and 18 months was at 71.4% same as last year and 37.8% up from 32.1% last year respectively; these were all below the national target. Overall immunization coverage has slightly increased from 2016 survey and also most mothers did not have the mother child booklet for verification. This may be an indicator that either mothers do not seek immunization services from health facilities or they are not given the maternal child booklets from health facilities or even they don't value the booklet hence they lose it.

Figure 7: Immunization coverage

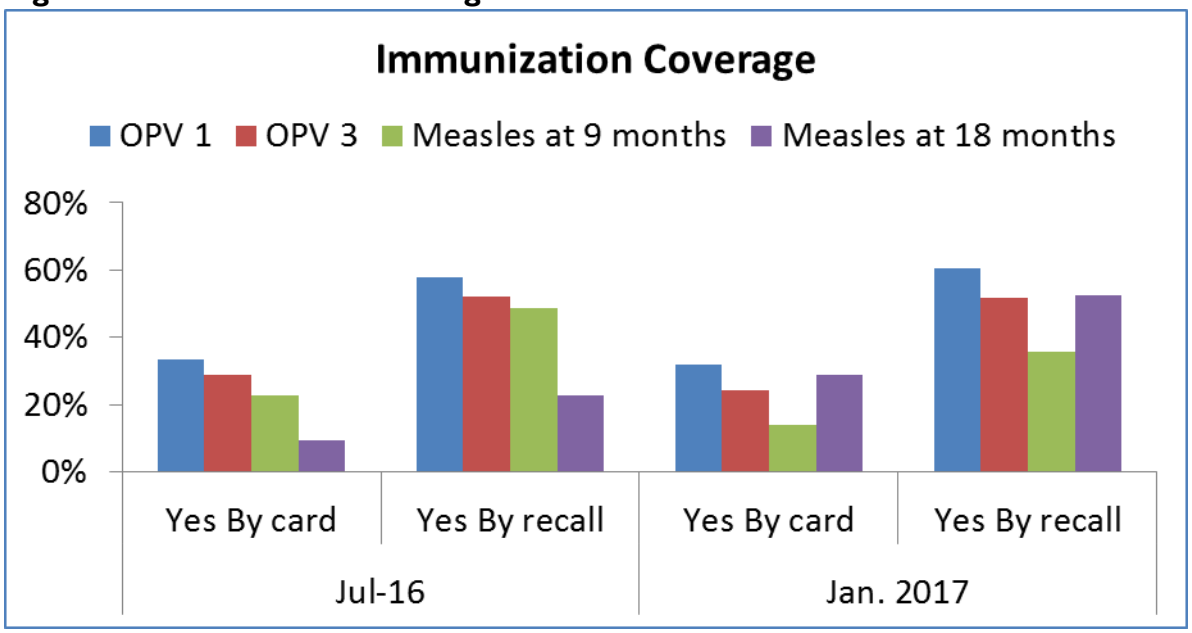
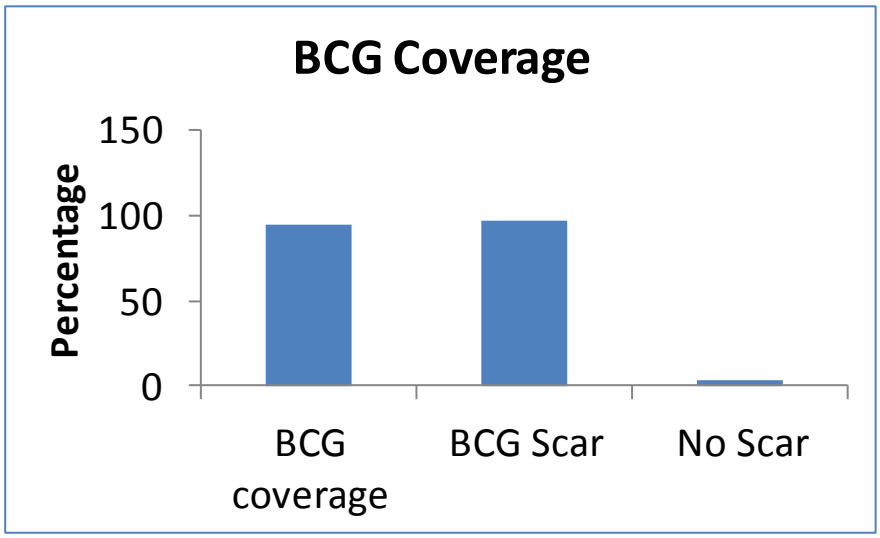


Figure 8: BCG Coverage



3.6.2 Vitamin A coverage, zinc supplementation and deworming.

Vitamin A supplementation among children below the age of five years offers protection against common childhood infections by improving child immunity and substantially reduces mortality hence improving the child's survival. Evidence shows that, giving vitamin A supplements to children reduces the rate of mortality and morbidity. Vitamin A reduces mortality risk by 24% (WHO 2011). Guaranteeing high supplementation coverage is critical, not only to eliminating vitamin A deficiency as a public-health problem, but also as a central element of the child survival agenda. Delivery of high-dose supplements remains the principal strategy for controlling vitamin A deficiency. Food-based approaches, such as food fortification and consumption of foods rich in vitamin A, are becoming increasingly feasible but have not yet ensured coverage levels similar to supplementation in most affected areas (UNICEF 2007). Vitamin A supplementation coverage was for children below one year supplemented at six months and one year determined period. The survey findings showed low coverage of Vitamin A. Children aged 6-11 months who had received Vitamin A was 44% and improvement from 22.6% last year and children 12-59 months who had received Vitamin A twice or more was at 55.3% an improvement from 30.7% last year's. This is far much below the national target recommendation of 80% but still a great improvement of the coverage. Only 38.8% of the respondents received Vitamin A from health facilities while others received from health campaigns, ECD and health outreaches.

Zinc supplementation during diarrheal episodes is highly recommended to reduce severity of the disease and reduce child mortality related to diarrheal diseases. Zinc coverage was found to be 42.9% of the 42 children that had reported to have diarrhoea in the last two weeks prior to survey date.

Deworming is also an important practice that gets rid of worms that compete for nutrients in the human body and may cause iron deficiency anemia. The survey showed that deworming coverage has improved from 14.9% last year to 30% in January 2017. This is attributed to the strategies put in place after last year's survey to improve health indicators in the community. Though slightly improved from last year's coverage it's still very low from the national target of 80% and efforts need to be emphasized by the county health team.

Figure 9: Vitamin A supplementation coverage

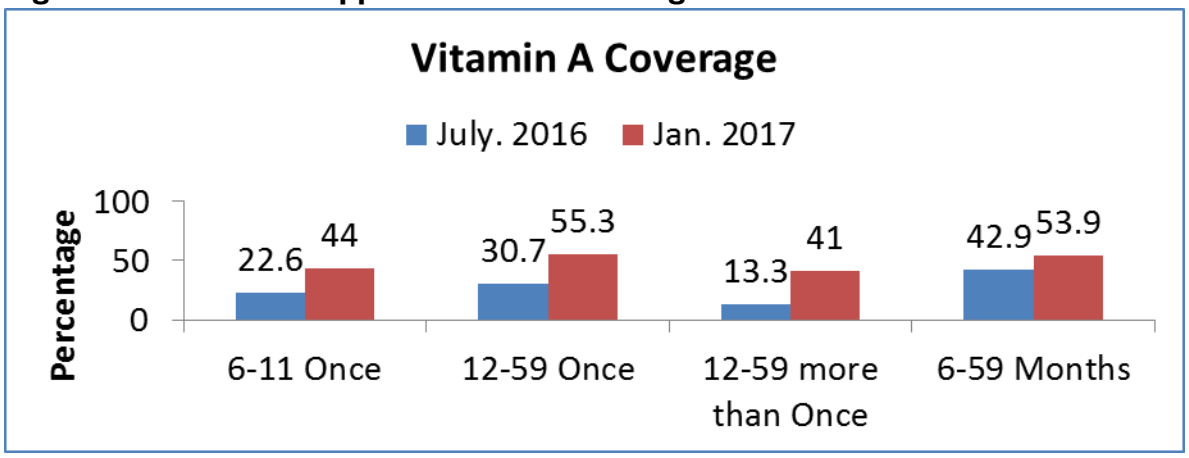
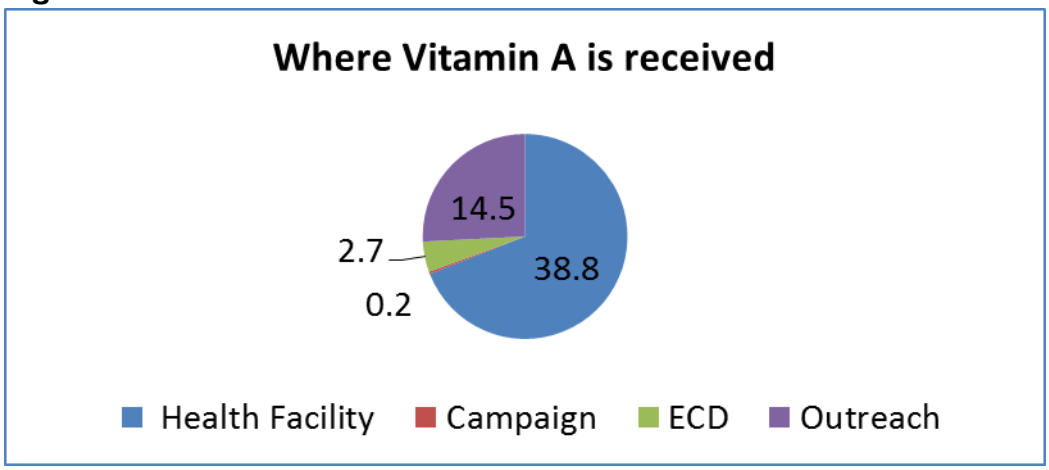


Figure 10: Where Vitamin A is received



Health facility still remains a critical place to promote vitamin A supplementation

3.6.3 Child Morbidity and Health Seeking Behavior

The morbidity of children in the survey area was determined within a two weeks recall period. Compared to last year's survey there was an improvement in child illnesses as it had reduced from 59% to 43.8% of the children reported to be ill within the last two weeks before the survey. Most cases reported to have suffered from Acute Respiratory Infection (ARI) 52.6% compared to 73.0%%, fever 44.1%, a decrease from 53.6%, Bloody diarrhoea at 0.9%, a drop from 35.5% last year and Watery diarrhoea at 22.3%, a decrease from 40.8% last year. Among the other diseases reported include eye and skin infections. The table below shows the morbidity results.

Table 21: Child Morbidity rates

Disease	Prevalence (%)		
	July 2016	January 2017	
	%	N	%
Total Illness	59	211	43.8
Fever with chills	53.6	93	44.1
ARI	73.0	111	52.6
Watery diarrhoea	40.8	47	22.3
Bloody Diarrhoea	35.5	2	0.9

Others (pneumonia, Skin infection, Eyes and ear infections)	8.2	19	9

Diarrhoea rates have dropped from last year and this could be attributed to reduction of rains since in July there were much rains and the water with the feaces from open defecation was being deposited in the water points that the community use this could have partly attributed to this high rates. Since hygiene practices in the area are also compromised, treatment of water is minimal and latrine coverage is at 2%.This made diarrhea case go up in July 2016. In the month of January 2017 most of the population got their water from infiltrated wells, water tracking and boreholes that was not as contaminated as water from rivers and earth pans. Community hygiene practices where still very poor and latrine coverage is at 2% and only 2% of the respondents washed hands at the 4 critical times. The high prevalence for acute respiratory infections could be attributed to dust particles in the air because of lack of rainfalls hence most of the children under five years are prone to these diseases though it has reduced from last year.

3.6.4 Health seeking behaviors

Only 70% of care givers seek for help when the child is ill. Most of them (72%) reported to seek medical attention from public and private clinics. This show that most care givers are aware of the formal treatment regime apart from herbal medicine (4.7%).

Figure 11: Health seeking behaviors

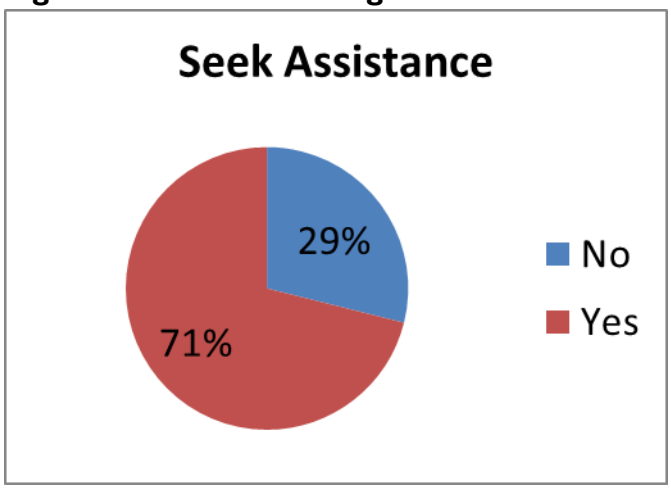
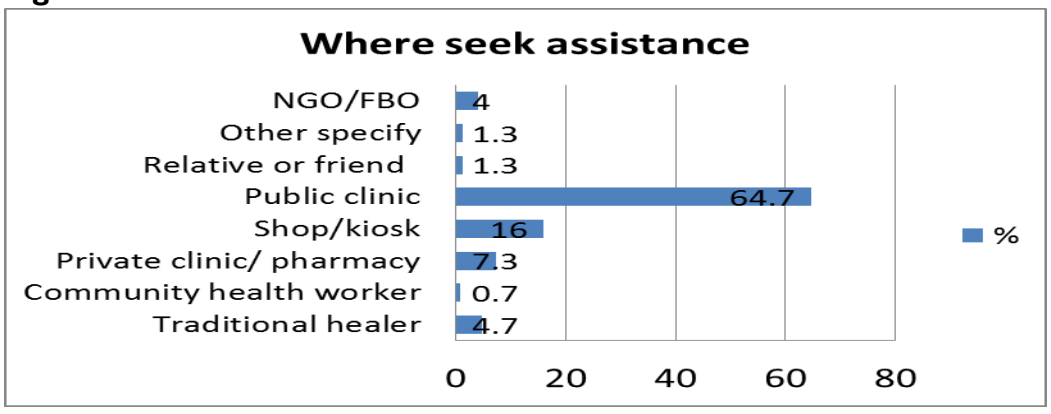


Figure 12: Where seek assistance



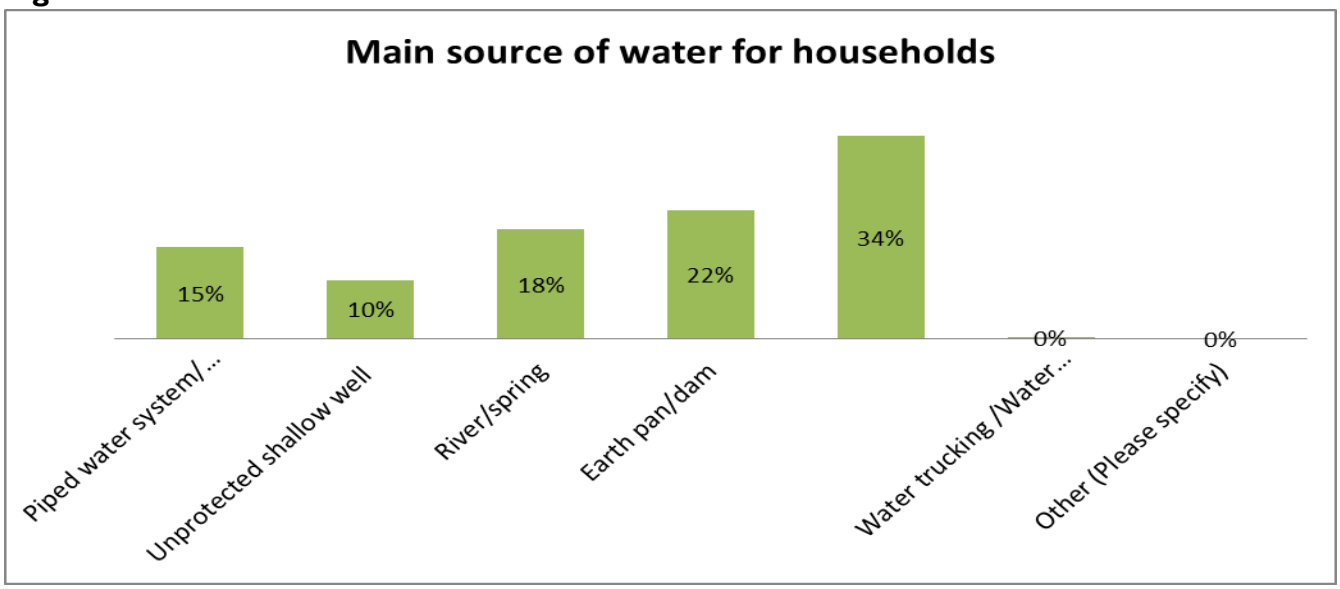
3.7 Household Water Access, Hygiene and Sanitation

Everyone has the right to water. This right is recognized in international legal instruments and provides for sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses. An adequate amount of safe water is necessary to prevent deaths due to dehydration, to reduce the risk of water-related disease and to provide for consumption, cooking, and personal and domestic hygienic requirements. According to SPHERE handbook for minimum standards for WASH, the average water use for drinking, cooking and personal hygiene in any household should be at least 15 liters per person per day. The maximum distance from any household to the nearest water point should be 500 meters. It also gives the maximum queuing time at a water source which should be no more than 15 minutes and it should not take more than three minutes to fill a 20-litre container. Water sources and systems should be maintained such that appropriate quantities of water are available consistently or on a regular basis.

3.7.1 Main source of drinking water for the residents

A small proportion (15%) of East Pokot residents obtained their drinking water from safe water source specifically piped water system, borehole and protected well. Majority (84%) of the residents get their drinking water from unsafe sources. These are unprotected shallow wells, rivers/springs, earth pan/dams and Earth pan/dam with infiltration well. Considering the distance travelled to get unsafe water the residents are also in need of closer sources of water nearer to their homes.

Figure 13: Main water sources



3.7.2 Methods of Treating and Storing Drinking Water

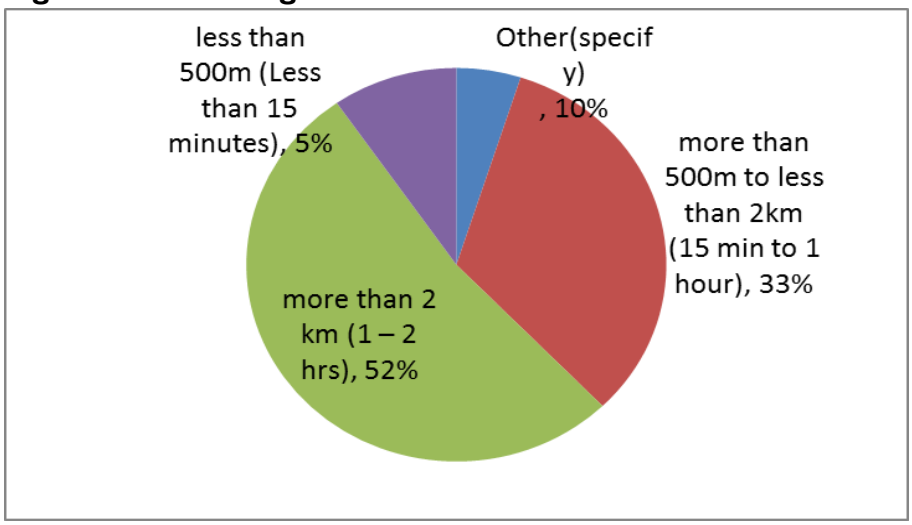
Despite majority of the household getting their drinking water from unsafe water sources, 94% of the households did not treat their drinking water. Only 6% treated their water with 73% of them reporting having boiled the water, 18% using herbs while 5% used chemicals. 64% of household used closed containers for water storage.

3.7.3 Distance To/ from Water Source

Majority of the households (95%) walked for more than 500m one way to their main water source, with 10% of them reporting having walked 5 to 20 km to the water points. This is

far above the SPHERE Standard recommendation of 500m. Most of the households (69%) do not queue for water, while 64% of those queuing having queued for 30 minutes and above. Most of the household (91%) did not pay for water.

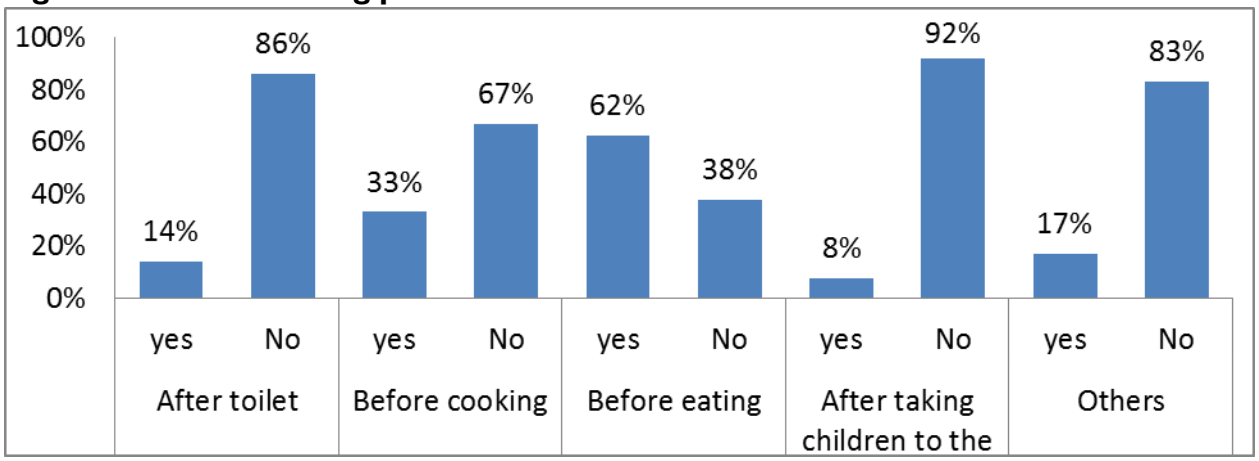
Figure 14: Trekking distance to water sources



3.7.4 Hygiene and Sanitation

Good hygiene practices especially hand washing at four critical times has been proven to reduce the incidences of common illnesses especially diarrheal diseases. 73% of the care givers reported having washed their hands at least in one of the four critical hand washing times. Mostly care givers washed hand before eating (62%) and before cooking (33%). A high proportion (53%) washed hands with only water followed by soap and water (25%).Those who owned toilets or latrines were only 2% and 98% of the respondents practiced open defecation. This explains the reasons as to why there is a high rate of diarrhea in East Pokot.

Figure 15: Hand washing practices



3.8 Household Dietary Diversity and Food Consumption Score

3.8.1 Household Dietary Diversity and food consumption at households

In assessing the nutritional quality and quantity of the food consumed by the respondents, a week retrospective household dietary diversity questionnaire was administered. Only one main food groups (cereals) was consistently consumed within 7 days by more than 90% of the sampled households. Sweets were also highly consumed at over 70%.Vegetables,

condiments, milk, oils and fats were consumed by at least 60% of the respondents. Milk consumption has reduced from last year's survey and there was an increase in vegetable intake at households. High consumption of cereals could be attributed to access of cereals in markets and reduction in milk consumption may be attributed to lack of rains leading to poor pastures for animals hence reduction in milk production. Increase in vegetable intake can be attributed to increased access of vegetables in market places from other areas. 72.6% of the respondents consumed more than 4 food groups per day and only 27.4% consumed less than 4 food groups. These show that many households are able to access and consume a minimum acceptable diet.

Figure 16: Household Dietary Diversity

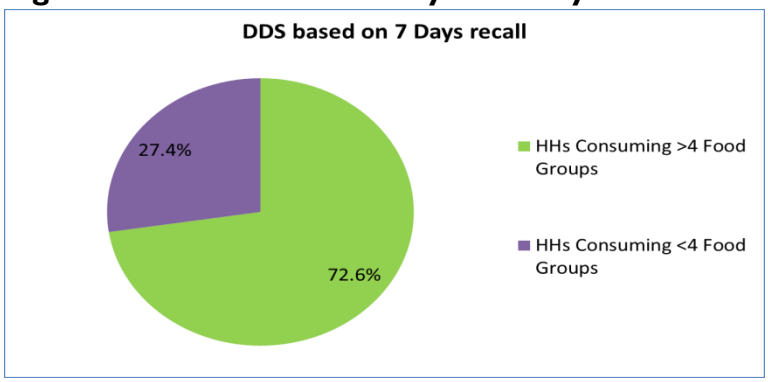
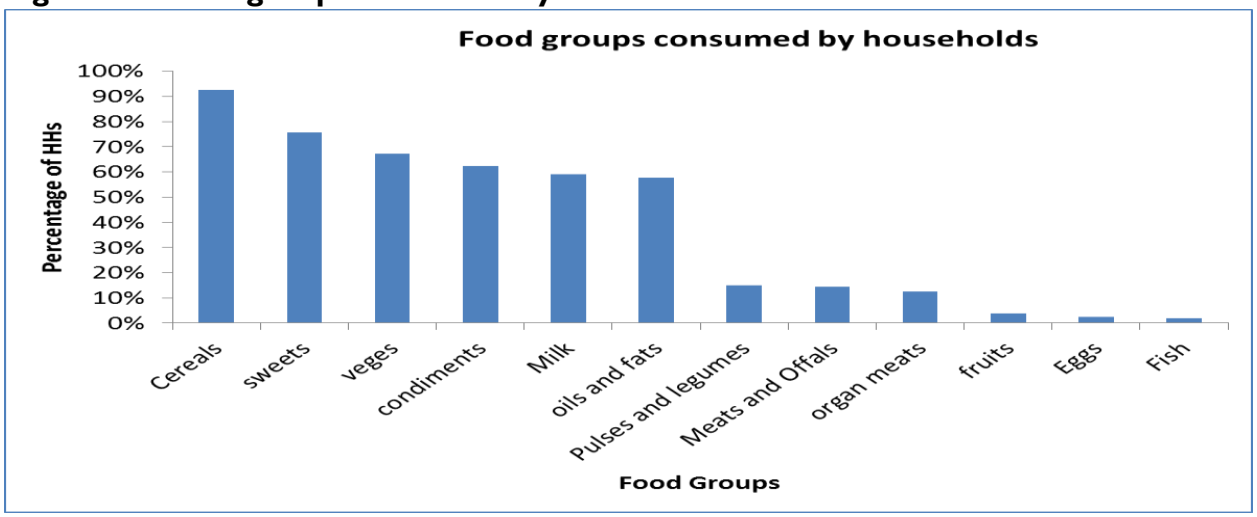


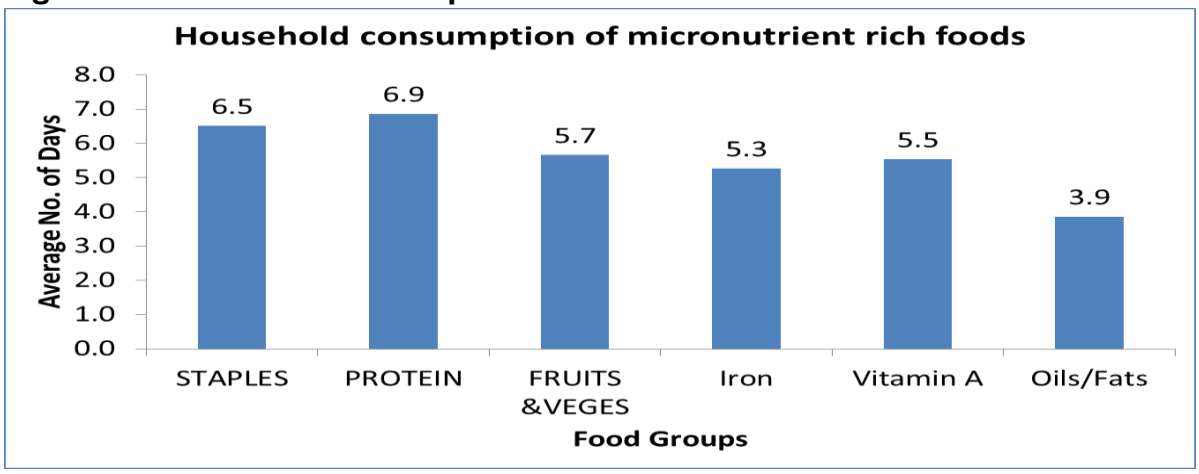
Figure 17: Food groups consumed by households



3.8.2 Household consumption of micronutrients

Most households consumed more proteins, staples and fruits and vegetables. As shown in figure 18 below

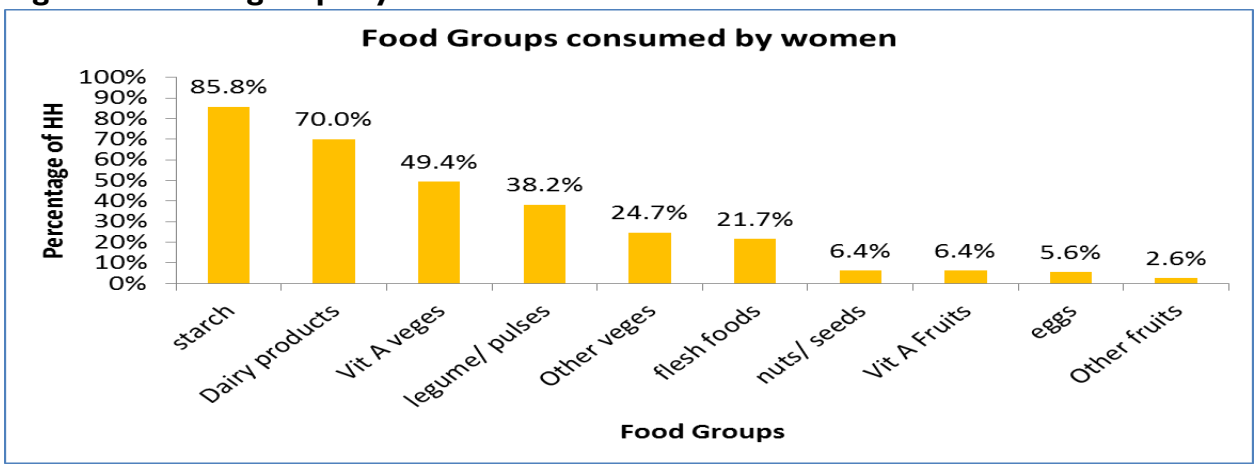
Figure 18: Household consumption of micronutrient rich food



3.8.3 Dietary Diversity for women of reproductive age

The first 1000 days of a child's life from conception to 2 years of age is very vital for their growth hence a mother should be well nourished to enable good nutrition status of her newborn. Among the pregnant and lactating women interviewed, only 21.3% of women consumed at least 5 food groups. This meant that the women were not able to access adequate food to enable them go through their pregnancy period in a healthy state. This will also explain the reason for high stunting levels in East Pokot as per this survey.

Figure 19: Food groups by women



3.8.5 Food Consumption Score and Coping Strategy Index.

The food consumption score is an acceptable proxy indicator to measure caloric intake and diet quality at household level, giving an indication of food security status of the household. It's a composite score based on dietary diversity, food frequency and relative nutritional importance of different food groups. 74.9% of the sampled households had acceptable FCS compared to 87.4% last year, 14.8% were at borderline up from 9.88% last year and 10.4% had poor score up from 2.71%% last year. This indicates that the good food consumption score has reduces compared to last year. This can be attributed to poor access to food since the rains had failed so there was no enough milk. This is shown in table 21.

Table 22: Food Consumption Score and Coping Strategy Index.

Nomenclature	Proportion of Households
	January 2017
Poor food consumption mainly cereal and sugar	10.4%
Borderline food consumption Cereal, legumes, milk, oil, sugar	14.8%
Good food consumption Cereal, legumes, milk, condiment, flesh meat, vegetable, oil, sugar	74.9%

The Coping strategy index (CSI) is considered an outcome of household food insecurity. The collection is per the number of days a household had to rely on the various coping strategies in the past seven days. The average CSI for East Pokot was 29.5% higher from last year's index of 27.59% meaning the sampled population engaging more in different survival tactics due to inadequate food availability at household level. This means there is increasing higher food insecurity in East Pokot compared to last year July.

Table 23: Coping strategy Index

Coping strategy	Proportion of HHs (N= 307)	Frequency score (0-7)	Severity score (1-3)	Weighted score=Freq*weight
				Jan 2017
Rely on less preferred & less expensive food	241 (78.5%)	3.80	1	3.80
Borrow food	215 (70.0%)	2.50	2	5.00
Limit portion sizes	266 (86.6%)	4.00	1	4.00
Restrict consumption of food by adults for young children to eat	289 (94.1%)	4.10	3	12.30
Reduced number of meals	276 (89.9%)	4.40	1	4.40
Total weighted Coping Strategy Score				**29.5**

The coping strategy in East Pokot has been cyclic which means lack of food at household level is always a challenge in East Pokot.

CHAPTER 4: RECOMMENDATIONS AND CONCLUSION

4.1 Recommendations from last year's survey and progress of implementation.

RECOMMENDATIONS	ACTORS	STATUS
Carryout mass screening in East Pokot Sub County. Reactivate stabilization centres. ➢ Scale up IMAM to all East Pokot Health facilities. Implement surge model in every health facilities. ➢ Scale up Outreaches Integrate Vit A supplementation and Deworming to ECDs. Train CHVs on nutrition technical module. Implement the existing SBCC Strategy. Implement the complementary feeding action plan. Reactivate the SCNTF Conduct health education on WASH in schools.	MOH, WVK KRCS UNICEF NDMA	➢ Mass Screening has been done in 11 sites in September 2016 and 8 sites in January 2017. More mass screening is needed in the new hot spots ➢ Equipment bought and staffs have been oriented and supplies have been prepositioned to the facilities. More discussions needed to actualise this ➢ All facilities are offering IMAM services. IMAM surge has been started in 4 health facilities. it will be scaled up sequentially ➢ Scaled up Outreaches in September 2016 but lack of funds couldn't allow to continue. ➢ ECD teachers trained and children dewormed and supplemented. More emphasis needed in this ➢ 250 CHVs trained on nutrition and not specifically nutrition technical module. ➢ C4D training to be

		done on 20th Feb 2017 after which strategy will be reviewed. ➢ Implementing complementary feeding plan on going.

4.2 Recommendation and implementation timeline

FINDINGS	RECOMMENDATION	ACTOR (BY WHO?)	IMPLEMENTATION TIME LINE
GAM -23.3% SAM- 4% PLWs -6.4%	➢ Outreaches still needed (map and implement integrated outreach to hard to reach areas ➢ Train CHVs on nutrition technical module ➢ Strengthen LMIS reporting and requesting Ensure request of therapeutic supplies. ➢ Integrate nutrition to community strategy to ensure malnutrition active case finding at community level and referral. ➢ Reactivate Stabilization centres. Engage SCHMT and targeted health facilities to reactivate stabilization centre ➢ Scale up IMAM to all facilities ➢ Strengthen and scale up IMAM surge approach to more health	WVK MOH UNICEF KRCS NDMA	March 2017 May 2017 Monthly October 2017 April 2017

	facilities ➢ Train all health workers on revised IMAM guideline		
Low Deworming coverage. Poor hygiene Practices.	➢ Complete and implement SBCC Strategy. ➢ Conduct health education on WASH in schools. ➢ Sensitize community on WASH practices(CLTS triggering) ➢ Train more ECD teachers on nutrition ➢ Intensify deworming in ECD centres. Link ECD to health facilities	WVK MOH UNICEF KRCS NDMA BBCMA	April 2017 October 2017 May 2017
Low numbers of children having mother and child boolets	➢ Procure and issue mother and child booklet to all pregnant mother ➢ Sensitise mother on mother and child boolet	MOH	Immediately
Low vitamin A coverage	➢ Use ECD to supplement children ➢ Sensitise health workers on documentation and reporting of vitamin A ➢ Use community strategy to sensitise the community on Vitamin A supplementation	MOH WVK UNICEF	May and November during Malezi bora

Poor dietary diversity	➢ Link with other nutrition sensitive department to promote good nutrition ➢ Use coordination mechanism to promote increased inclusion of nutrition in other sectors plans	NDMA MOH WVK UNICEF BBCMA	Immediately

5.0 ANNEXES

5.1 Integrated SMART survey questionnaire

1.IDENTIFICATION **1.1 Data Collector_____ 1.2 Team Leader_____ 1.3 Survey date (dd/mm/yy)----------**								
1.4 County	1.5 Sub County	1.6 Division	1.7 Location	1.8 Sub-Location	1.9 Village	1.10 Cluster No	1.11 HH No	1.12 Team No.

2. Household Demographics									
2.1	**2.2**	**2.3**		**2.4**	**2.5**	**2.6**	**2.7**	**2.8**	**2.9**
Age Group	**Please give me the names of the persons who usually live in your household.**	**Age (months for children <5yrs and years for over 5's)**		**Childs age verified by** 1=Health card 2=Birth certificate/ notification 3=Baptism card 4=Recall	**Sex** 1= Male 2= Female	**If 3 yrs and under 18 Is child enrolled in school ?** 1 = Yes 2 = No (If yes go to 2.8; If no go to 2.7)	**Main Reason for not attending School (Enter one code from list)** 1=chronic Sickness 2=Weather (rain, floods, storms) 3=Family labour responsibilities 4=Working outside home 5=Teacher absenteeism 6=Too poor to buy school items e.t.c 7=Household doesn't see value of schooling 8 =No food in the schools 9 = Migrated/ moved from school area 10=Insecurity 11-No school Near by 12=Married 13=others (specify)……..	**What is the highest level of education attained?(level completed) From 5 yrs and above** 1 = pre primary 2= Primary 3=Secondary 4=Tertiary 5= None 6=others(specify)	**If the household owns mosquito net/s, who slept under the mosquito net last night? (***Probe-enter all responses mentioned(Use 1 if "Yes" 2 if "No and 3 if not applicable)*
		YRS	MTH						
< 5 YRS	1								
	2								
>5 TO 18 YRS	5								
	6								
	7								
ADULT	13**(HH)**								
	14)								
	15								
	16								

2.10	**How many mosquito nets does this household have? _____ (Indicate no.)**
2.11	**Main Occupation of the Household Head – HH. (enter code from list)** 1=Livestock herding 2=Own farm labour 3=Employed (salaried) 4=Waged labour (Casual) 5=Petty trade 6=Merchant/trader 7=Firewood/charcoal 8=Fishing **9=Others (Specify)|____|**
2.12.	What is your **main** current source of income 1. =No income 2. = Sale of livestock 3. = Sale of livestock products 4. = Sale of crops 5. = Petty trading e.g. sale of firewood 6. =Casual labor 7. =Permanent job 8. = Sale of personal assets 9. = Remittance 10. Other-Specify|____|
2.13	Marital status of the respondent 1. = Married 2. = Single 3. = Widowed
2.14.	**What is the residency status of the household?** 1. IDP 2.Refugee 3. Resident |____|

	4. = separated 5. = Divorced. |_____|	

Fever with Malaria: High temperature with shivering	**Cough/ARI:** Any episode with severe, persistent cough or difficulty breathing	**Watery diarrhoea:** Any episode of three or more watery stools per day	**Bloody diarrhoea:** Any episode of three or more stools with blood per day

3. CHILD HEALTH AND NUTRITION (ONLY FOR CHILDREN 6-59 MONTHS OF AGE; IF N/A SKIP TO SECTION 3.6)

Instructions: *The caregiver of the child should be the main respondent for this section*

3.1 CHILD ANTHROPOMETRY

*(**Please** fill in **ALL REQUIRED** details below. Kindly maintain the same child number as part 2)*

A Child No	B	C	D	E	F	G	H	I	J	K	L	3.2	3.3
	what is the relationship of the respondent with the child/children 1=Mother 2=Father 3=Sibling 4=Grandmother 5=Other (specify)	SEX F/m	Exact Birth Date	Age in months	Weight (KG) XX.X	Height (CM) XX.X	Oedema Y= Yes N= No	MUAC (cm) XX.X	Has your child (NAME) been ill in the past two weeks? <u>If No, please skip part K and proceed to 3.4)</u> 1.Yes 2. No	If YES, what type of illness (multiple responses possible) 1 = Fever with chills like malaria 2 = ARI /Cough 3 = Watery diarrhoea 4 = Bloody diarrhoea 5 = Other (specify)	If the child **<u>had watery diarrhoea</u>** in the last TWO (2) WEEKS, did the child get THERAPEUTIC zinc supplementation? *Show sample and probe further for this component check the remaining drugs(confirm from mother child booklet)* 1 = Yes 2 = No 3 = Do not know	**When the child was sick did you seek assistance?** 1.Yes 2. No	**If the response is yes to question # 3.2 where did you seek assistance? (More than one response possible-** 1. Traditional healer 2.Community health worker 3. Private clinic/ pharmacy 4. Shop/kiosk 5.Public clinic 6. Mobile clinic 7. Relative or friend 8. Local herbs 9.NGO/FBO

										See case definitions below			
01													
02													
03													

3.4 Kindly maintain the same child number as part 2 and 3.1 above

	A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Child No.	How many times has child received Vitamin A in the past year? (show sample)	How many times did you receive vitamin A capsules from the facility or out reach	If Vitamin A received how many times verified by **Card?**	How many times has child received drugs for worms in the past year? **(12-59 Months)** *(show Sample)*	Has the child received BCG vaccination? **1 = scar 2=No scar**	Has child received OPV1 vaccination **1=Yes, Card 2=Yes, Recall 3 = No 4 = Do not know**	Has child received OPV3 vaccination? **1=Yes, Card 2=Yes, Recall 3 = No 4 = Do not know**	Has child received measles vaccination at 9 months *(On the upper right shoulder)?* **1=Yes, Card 2=Yes, Recall 3 = No 4 = Do not know**	Has child received the second measles vaccination (18 to 59 months) *(On the upper right shoulder)?* **1=Yes, Card 2=Yes, Recall 3 = No 4 = Do not know**
01									
02									
03									
04									

3.5MNP Programme Coverage ***Kindly maintain the same child number as part 2and 3.1 above***

3.5.1	Is the child enrolled in the MNP program?(show the example of the MNP sachet)***(circle the given answers)***	Yes =1 No=0 **If the answer is no go to 3.5.2, If the answer is yes go to section 3.6**
Child 1		
Child 2		
Child 3		
Child 4		
3.5.2	If the child, 6-23months, is not enrolled for MNP, kindly give reason. (Multiple answers possible. circle the given answers. DO NOT READ the answers)	Do not know about MNPs……1 Discouraged from what I heard from others……..2 The child has not fallen ill, so have not gone to the health facility……..3 Health facility or outreach is far……4 Child receiving therapeutic or supplementary foods--5 Other reason, specify……6

3. 6 Consumption of MNP

3.6.1	Has the child consumed MNPs in the last 7 days?(shows the MNP sachet)***(Circle the given answer)***	YES = 1N0= 0 ***If no continue to 3.6.3,*** ***If yes go to 3.6.2***
3.6.2	If yes, how frequent do you give MNP to your child? ***(Circle the given answer)***	Every day……1 Every other day……..……..2 Every third day……..……..……..3 2 days per week at any day……..……...4 At any day when I remember……..…….5
3.6.3	If no, since when did you stop feeding MNPs to your child? ***(Circle the given answer)***	1 week to 2 weeks ago .....1 2 week to 1 month ago.....2 More than 1 month.....3

3.6.4	What are the reasons to stop feeding your child with MNPs? (***Multiple answers possible. circle the given answers. DO NOT READ the answers)***	Finished all of the sachets.....1 Child did not like it.....2 Husband did not agree to give to the child.....3 Sachet got damaged .....4 Child had diarrhea after being given vitamin and mineral powder.....5 Child fell sick.....6 Forgot.....7 Child enrolled into the IMAM program.....8 Other (Specify)_____ 9

MATERNAL NUTRITION FOR MOTHERS OF REPRODUCTIVE AGE (15-49 YEARS)*(Please insert appropriate number in the box)*				
3.7	**3.8**	**3.9**	**3.10**	**3.11**
Woman ID. **(all ladies in the HH aged 15-49 years from the demographics page)**	What is the mother's / caretaker's physiological status **1. Pregnant** **2. Lactating** **3. None of the above**	Mother/ caretaker's MUAC reading: **____.__cm**	During the pregnancy of the (name of child below 24 months) did you take iron pills, sprinkles with iron, iron syrup or iron-folate tablets? (name that appears in HH register) **1. Yes** **2. No** **3. Don't know** 4. **N/A**	If Yes, for how many days? (approximate the number of days)

4.0 WATER, SANITATION AND HYGIENE (WASH)/- *Please ask the respondent and indicate the appropriate number in the space provided*

4.1 **What is the MAIN source of drinking water for the household <u>NOW</u>?**

1. Piped water system/ borehole/ protected spring/protected shallow wells
2. Unprotected shallow well
3. River/spring
4. Earth pan/dam
5. Earth pan/dam with infiltration well |____|
6. Water trucking /Water vendor
7. Other *(Please specify)*

4.2 What is the trekking distance to the current main water source?

1=less than 500m (Less than 15 minutes)
2=more than 500m to less than 2km (15 to 1 hour)
3=more than 2 km (1 – 2 hrs)
4=Other(specify)
|____|

4.2.2a **Do you queue for water?**

1. Yes
2. No **(If No skip to question 4.3)** |____|

4.2.2b. If yes how long?

1. Less than 30 minutes |____|
2. 30-60 minutes
3. More than 1 hour

4.3a **Is anything done to your water before drinking *(Use 1 if YES and 2 if NO)*. if No skip to 4.4**

|____|

4.3b If yes what do you do? (*MULTIPLE RESPONSES POSSIBLE) (Use 1 if YES and 2 if NO)*.

1. Boiling…… …… |____|
2. Chemicals (*Chlorine, Pur,Waterguard*)…|____|
3. Traditional herbs……|____|
4. Pot filters……|____|
5. Other specify_____)……|____|

4.4 **Where do you store water for drinking?**

1. Open container / Jerrican
2. Closed container / Jerrican |____|

4.5 How much water did your household use YESTERDAY (excluding for animals)?
(Ask the question in the number of 20 liter Jerrican and convert to liters & write down the total quantity used in liters) **|____|**

4.6 **Do you pay for water?**

1. Yes
2. No **(If No skip to Question 4.7.1)** |____|

4.6.1 If yes, how much per 20 liters jerrican _____ KSh/20ltrs

4.6.2 If paid per month how much |____|

4.7.1 **If the caregiver is aware hand washing practices?**

1. Yes
2. No
3. Don't know

4.7.2 **If yes, Yesterday (within last 24 hours) at what instances did you wash your hands? (MULTIPLE RESPONSE-** (Use 1 if "Yes" and 2 if "No")

1. After toilet…… |____|
2. Before cooking……... |____|
3. Before eating……. |____|
4. After taking children to the toilet…… |____|
5. Others……. |____|

4.7.3	**Probe further; what did the caregiver use to wash your hands?** 1. Only water 2. Soap and water 3. Soap when I can afford it 4. traditional herb 5. Any other specify |____|	**4.8 Where do members of your household Mainly relieve themselves?** 1. In the bushes, open defecation 2. Neighbor or shared traditional pit/improved latrine 3. Own traditional pit/improved latrine |____| 4. Others Specify

5.0: Food frequency and Household Dietary Diversity

Type of food*	**Please describe the foods that you (Mother) ate or drank yesterday during day and night at home or outside the home (start with the first food or drink of the morning)** ***0-No 1-Yes***	**Did members of your household consume any food from these food groups in the last** *7 days?(food must have been cooked/served at the household)* ***0-No 1-Yes***	**If** *yes*, **mark days the food was consumed in the last 7 days?** ***0-No 1-Yes***								What was the **main** source of the dominant food item consumed in the HHD? **1.Own production 2.Purchase 3.Gifts from friends/families 4.Food aid 5.Traded or Bartered 6.Borrowed 7.Gathering/wild fruits 8.Other (specify)**
			D1	***D2***	**D 3**	**D 4**	**D5**	**D 6**	**D7**	**TOTAL**	
5.1. Cereals and cereal products *(e.g. sorghum, maize, spaghetti, pasta, anjera, bread*)?											
5.2. Vitamin A rich vegetables and tubers: Pumpkins, carrots, orange sweet potatoes											
5.3. White tubers and roots: White potatoes, white yams, cassava, or foods made from roots											
5.4 Dark green leafy vegetables: Dark green leafy vegetables, including wild ones + locally available vitamin A rich leaves such as cassava leaves etc.											
5.5 Other vegetables *(e.g., tomatoes, egg plant, onions)?*											
5.6. Vitamin A rich fruits: + other locally available vitamin A rich fruits											
5.7 Other fruits											

5.8 Organ meat (iron rich): Liver, kidney, heart or other organ meats or blood based foods											
5.9. Flesh meats and offals: Meat, poultry, offal *(e.g. goat/camel meat, beef; chicken/poultry)?*											
5.10Eggs?											
5.11Fish: Fresh or dries fish or shellfish											
5.12Pulses/legumes, *(e.g. beans, lentils, green grams, cowpeas)*?											
5.13 Seeds and nuts (e.g. simsim, pump kin seeds, sunflower seeds, peanuts)											
*5.14*Milk and milk products *(e.g. goat/camel/ fermented milk, milk powder)?*											
5.15Oils/fats *(e.g. cooking fat or oil, butter, ghee, margarine)?*											
5.16Sweets: Sugar, honey, sweetened soda or sugary foods such as chocolates, sweets or candies											
5.17Condiments, spices and beverages:											

6. COPING STRATEGIES INDEX		
In the past 7 DAYS, have there been times when you did not have enough food or money to buy food? ***0-No*** ***1-Yes***If No; END THE INTERVIEW AND THANK THE RESPONDENT		
	If YES, how often has your household had to: *(INDICATE THE SCORE IN THE SPACE PROVIDED***)**	**Frequency score: Number of days out of the past seven (0 - 7).**
1	Rely on less preferred and less expensive foods?	
2	Borrow food, or rely on help from a friend or relative?	
3	Limit portion size at mealtimes?	
4	Restrict consumption by adults in order for small children to eat?	
5	Reduce number of meals eaten in a day?	
	TOTAL HOUSEHOLD SCORE: **END THE INTERVIEW AND THANK THE RESPONDENT**	