WAJIR COUNTY HEALTH DEPARTMENT

SMART SURVEY REPORT

February 2018

Participating Partners

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Many thanks to Wajir North sub-county community members especially the households selected in the survey. The survey teams: - enumerators and team leaders are highly appreciated for their hard work of data collection.

The local administrators are also acknowledged for their role in mobilizing the community and acting as guides to the enumerators during the exercise.

Executive Summary

Wajir County department of medical services, public health and sanitation in collaboration with UNICEF and Save the Children successfully conducted Integrated Health and Nutrition survey in Wajir North sub-county herein referred as agro-pastoral livelihood zone. The overall objective was to estimate the prevalence of malnutrition among children 6 – 59 months and women of reproductive age following a significant deterioration of nutrition status observed in the SMART survey carried out in July 2017.

The survey applied a two stage cluster sampling using SMART methodology with the clusters being selected using the probability proportional to population size (PPS). A total of 636 and 797 households and children respectively were reached. Overall plausibility check was excellent at 2%.

Summary of Anthropometric results

Table 1: Summary of Anthropometric Results

Indicator	Prevalence
Prevalence of global malnutrition (<-2 z-score and/or oedema) - WHZ	16.0 % (13.0 - 19.5 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema) - WHZ	2.2 % (1.4 - 3.4 95% C.I.)
Prevalence of global malnutrition (< 125 mm and/or oedema) - MUAC	3.3 % (2.1 - 5.1 95% C.I.)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	0.4 % (0.1 - 1.2 95% C.I.)
Prevalence of underweight (<-2 z-score)	18.5 % (14.5 - 23.3 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	3.4 % (2.2 - 5.2 95% C.I.)
Prevalence of stunting (<-2 z-score)	15.3 % (12.0 - 19.4 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	2.4 % (1.4 - 3.9 95% C.I.)

Acronyms

ASAL	-	Arid and Semi-Arid Lands
CI	-	Confidence Interval
ENA	-	Emergency Nutrition Assessment
GAM	-	Global Acute Malnutrition
MOH	-	Ministry of Health
MUAC	-	Mid-Upper Arm Circumference
NDMA	-	National Drought Management Authority
OTP	-	Out-patient Therapeutic Program
SAM	-	Severe Acute Malnutrition
SFP	-	Supplementary Feeding Programme
SMART	-	Standardized Monitoring and Assessment of Relief and Transitions
UNICEF	-	United Nations Children's Fund
URTI	-	Upper Respiratory Tract Infection
WAZ	-	Weight-for-Age Z-score
WHO	-	World Health Organization
WHZ	-	Weight-for-Height/length Z-scores
RUSF	-	Ready to use supplementary feeding.
RUTF	-	Ready to use therapeutic food
DHIS	-	District health information system
PLW	-	Pregnant and lactating women
ANC	-	Antenatal care
WASH	-	Water sanitation and hygiene
CHW	-	Community Health Worker

Chapter One

Background

Wajir North sub-County borders Ethiopia Republic to the North, Mandera County to North East, Tarbaj Sub-County to South East, Eldas Sub-County to the South and Marsabit County to the West. The Sub-County consists of three administrative divisions, namely; Buna, korondile, Bute and Gurar and 21 locations. The Sub-County covers an area of 8554.5 square kilometres and has an estimated population of 135,505 persons according to 2009 population census with an annual growth rate of 3.22% and a population density of 16 per square kilometre. The sub-county has 17 health facilities offering IMAM services with two offering in-patent services

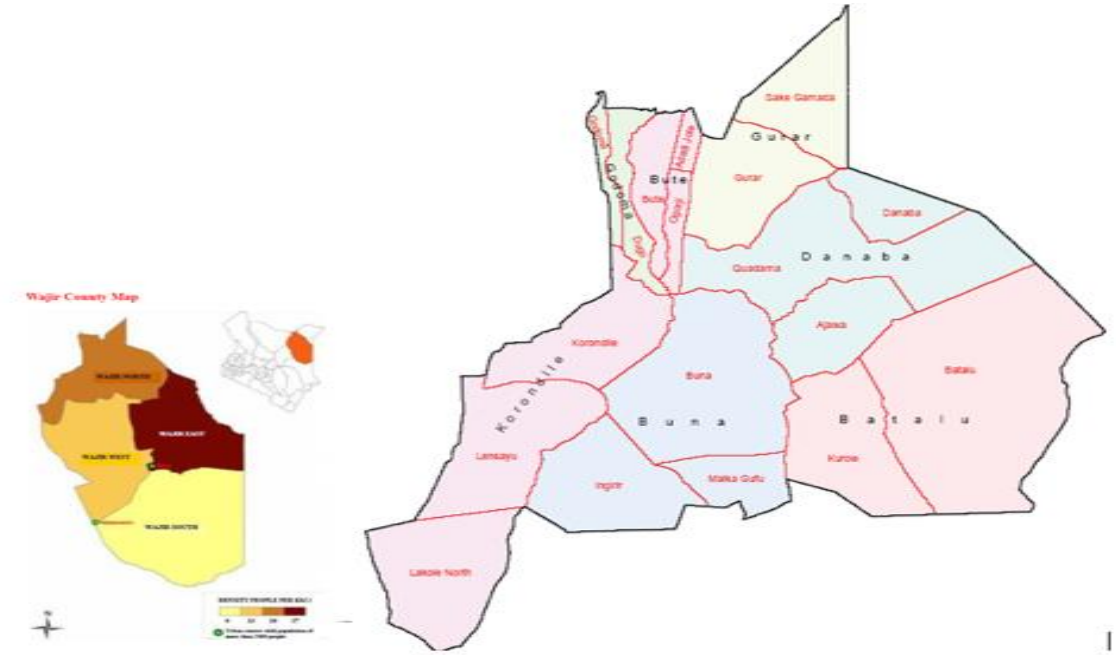


Figure 1: Wajir North sub-County map

Livelihood and Nutrition Status

Livelihood

Wajir North sub-county is an agro-pastoral livelihood zone; majority of the population are pastoralists with small scale farming. Crops cultivated are onions, mangoes, paws, kales ans sorghum. The pastoralist population operate in fragile and precarious environments characterized by long dry spells, interspersed with low erratic rainfall. Persistent and sporadic inter-clan conflicts, often resulting from disputes over limited resources and spill-over of the insecurity in Somalia, has together with poor infrastructure, limiting the mobility in the area. In addition, these communities continue to suffer from structural deficits in the provision of health care, education, water and sanitation infrastructure. Despite many years of humanitarian and relief interventions and improved government assistance, Wajir is still food insecure.

Nutrition

Results of Nutrition SMART survey conducted in July 2017, showed that nutrition situation deteriorated significantly compared to the same period in 2016 in Wajir North (agro-pastoral zone). July 2017 results were: - GAM WHZ, 16.8 % (13.4 - 20.9 95% C.I.) and SAM 2.5% (1.3 - 4.6 95% C.I.) compared to GAM of 9.4 percent in 2016. 2017 LRA classified Wajir county as stressed (IPC phase 2). Nutrition situation was projected to deteriorate as per 2017 LRA report.

Table 2: Wajir North Seasonal Calendar

Short Dry Spell (Jilaal)			**Long Rainy Reason (Gu')**			**Long Dry Spell (Hagai)**				**Short Rainy Season (Deyr)**	
Jan	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sept**	**Oct**	**Nov**	**Dec**
Migration, Conflicts, Watering of Livestock, Pressure on boreholes			Pasture Surveys, mating season, Planting			Livestock diseases, Labour Demand			Calving, Kidding Period	Migration, Conflict	

Overall objective

To estimate the prevalence of malnutrition among children 6 – 59 months and women of reproductive age in Agro-pastoral livelihood zone (Wajir north sub-county).

Specific Objectives

1. To determine the prevalence of acute and chronic malnutrition in children aged 6-59 months
2. To determine the immunization coverage for Measles, Oral Polio Vaccines (OPV 1 and 3) and vitamin A supplementation in children aged 6-59 months;
3. To establish coverage of iron folic acid supplementation during pregnancy among pregnant and lactating women
4. To determine the nutritional status of women of reproductive age (15-49 years)
5. To collect contextual information on possible causes of malnutrition such as household food security, water, sanitation, and hygiene (WASH) practices and Morbidity

CHAPTER TWO

METHODOLOGY

Geographic target area and population group

The survey was conducted in Agro-pastoral livelihood zone (Wajir North sub-county).

Primary respondents for the survey were mothers and/or care takers of children for both household and child questionnaire. Data was collected on the following variables; anthropometry, morbidity, vaccination and de-worming status, zinc, vitamin A and iron folate supplementation, hygiene and sanitation practices. Other indicators assessed were household food security and livelihood and nutritional status of both children aged 6 – 59 months and women of reproductive age (15 – 49 years).

Survey Design

The survey applied a two stage cluster sampling with the clusters being selected using the probability proportional to population size (PPS) with villages constituting the sampling frame.

Study Population

The target populations for the survey were children aged 6 – 59 months for the anthropometric component and women of reproductive aged 15 – 49 years for the maternal health indicators.

Anthropometric Sample Size

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

Table 3: Sample Size calculation parameters

Data entered in ENA for SMART	Parameters used	Rationale
Estimated prevalence	16.8%	Based on contextual data (DHIS, SRA, NDMA EWS) the situation has not changed, thus using point estimate of July 2017 SMART survey, 16.8 % (13.4 - 20.9 95% C.I.)
±Desired precision	4	Limits of CI doesn't influence decision making/control quality hence reduce bias
Design effect	1.5	Clusters and population heterogeneous have not significantly changed

Average household size	7	KNBS, 2009 census
Proportion of under-five	14%	HSSP/ KNBS/CIDP
Non-response rate	3.0%	Based on previous survey.
Households	**641**	
Children	**548**	

Cluster and Household Selection

All villages were included in the initial sample selection with each village considered a cluster which was sampled with probability proportional to size. At stage two each team used the simple random sampling method in household selection. Within the selected household all children 6-59 months meeting the inclusion criteria were measured.

A household was defined as a group of people who live together and shared a common cooking pot. In polygamous families with several structures within the same compound but with different wives having their own cooking pots, the structures were considered as separate households and assessed separately.

In cases where there was no eligible child, a household was still considered part of the sample. If a respondent was absent during the time of household visit, the teams left a message and re-visited later to collect data for the missing person, with no substitution of household allowed.

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 sub-County that was developed in collaboration with the survey team.

Sex: The gender of the child whether a male or female was recorded

Bilateral Edema*:* 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 thumb, nutritional oedema was indicated after being confirmed the team leader.

Weight: Children were weighed when wearing minimal or light clothing. Weight was taken using Bathroom scale (child mother scale, SECA digital model).

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/ supine position (length, < 87cm) and those over two years while standing upright ((≥87cm height).

Mid Upper Arm Circumference (MUAC): 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, upper respiratory infection (URTI).

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 aged 6-59 months, 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 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, and occasions when the respondents wash their hands was obtained.

Organization of the survey

Coordination/collaboration: Planning meetings led by the department of health were held to plan on recruitment, training, methodology presentation at the national information working group, pilot and data collection. These meetings brought together partners in health and nutrition.

Recruiting the survey team: Recruitment was carried out by the County department of health

Training of the survey teams: Teams were trained for three days prior to data collection, including a standardization test to ensure standardization of measurement and recording practice. Teams were trained on anthropometric measurements, completion of, sampling methodology and mobile data collection. The data collection was pilot tested in a cluster not selected for the survey, to ensure that the interviewers and respondents understand the questions and those interviewers follow correct protocols. The pretest data was uploaded in the server for the supervisors to know how to upload and data presentation.

Data collection: Survey team comprising of three members (measurer, recorder//interviewer and team leader). There were a total of 6 teams

Data uploading, analysis and report writing

Data Uploading: Data was uploaded on daily basis, downloaded on excel format and analysis was done using ENA for SMART and SPSS Statistical software. ONA server was used.

Preliminary results and final report: Preliminary findings were submitted for validation to Nutrition Information Working Group (NIWG) at County and National levels after completion of the survey data collection.

CHAPTER THREE

RESULTS AND DISCUSSION

Household Demographic Characteristics

Residency, Marital Status, Occupation and source of income

All the respondents interviewed were residents of Wajir North sub-county. Majority (90%) were married whereas 4.7% and 3.9% of the respondents were widowed and divorced respectively. Majority (72%) of the respondents were livestock herders with 10.7% carrying out casual work. As shown in table 1 below sale of livestock was the major source of income, with sale of crops as the least source of income at 0.2%.

Table 4: Source of income for Wajir North Sub-County

Source of Income	n	%
Sale of livestock	318	50.0%
Casual labor	80	12.6%
No income	71	11.2%
Petty trading e.g. sale of firewood	55	8.6%
Sale of livestock products	62	9.7%
Permanent job	39	6.1%
Others (sale of miraa, boda boda)	5	0.8%
Sale of personal assets	5	0.8%
Sale of crops	1	0.2%

Education

Majority (89.3%) of the of the household heads had no form of education as pointed on the county integrated development plan 2013 – 2017 which literacy level was reported to be 23.6%. The residents with any form of education were 3.5%, 3.7% and 2.6% for primary, secondary and tertiary levels of education respectively. Among the schools going children only 51% were enrolled in school. The reasons for not attending school are as indicated in table 2 below. Majority of the school going are supporting their parents in taking care of their livestock which is the main occupation in this community.

Table 5: Reasons for not attending school

Main reason for not attending school	N	%
Other reasons (young to attend school, looking after goats, *in dugsi,* child went *baadia*)	200	67.3%
No school Near by	37	12.5%
Household doesn't see value of schooling	29	9.8%

Family labour responsibilities	21	7.1%
Too poor to buy school items	4	1.3%
Migrated/ moved from school area	2	0.7%
Married	2	0.7%
Chronic Sickness	1	0.3%
Insecurity	1	0.3%

Distribution of Children by Age and Sex

The survey attained a sex ratio of 1.0 which is within the estimated range of 0.8 – 1.2 representing unbiased sampling. Children aged between 54 – 59 months were 8.9%, table 6 below

Table 6: Distribution of children by age and sex

	Boys		**Girls**		**Total**		**Ratio**
AGE (mo)	**no.**	%	**no.**	%	**no.**	%	**Boy:girl**
6-17	91	51.7	85	48.3	176	22.1	1.1
18-29	102	50.7	99	49.3	201	25.3	1.0
30-41	89	47.3	99	52.7	188	23.6	0.9
42-53	81	50.9	78	49.1	159	20.0	1.0
54-59	41	57.7	30	42.3	71	8.9	1.4
Total	404	50.8	391	49.2	795	100.0	1.0

Anthropometric results (based on WHO standards 2006)

Global acute malnutrition (GAM) is defined as **<-2SD Z** scores weight-for-height and/or oedema. GAM is a combination of Moderate Acute Malnutrition and Severe Acute Malnutrition. Moderate Acute Malnutrition is defined as **Z** Scores of **<-2SD** - **>-3SD** while Severe Acute Malnutrition is defined as **<-3SD Z** scores weight-for-height and/or oedema.

The Weight for Height index is the most appropriate index to quantify wasting in a population and reflects the current nutrition/health status of the community. The weight for height index measures body mass in relation to height or length and describes the current nutritional status. Children below standard deviations of below the mean indicate wasting and represent failure to receive adequate nutrition in a period immediately preceding the survey.

Prevalence of acute malnutrition (weight-for-height z-score –WHO Standards 2006)

The Global Acute Malnutrition (GAM) rate was 16.0 %(13.0 - 19.5 95% C.I.) as shown in table 4 below. WHO classification indicates a **critical** nutrition situation. More boys were observed to be more malnourished than girls. Severe Acute Malnutrition (SAM) was 2.2% 1.4 - 3.4 95% C.I. with oedema prevalence at 0.1%, there was no significant difference among boys and girls.

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

	All n = 788	**Boys** n = 400	**Girls** n = 388
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(126) 16.0 % (13.0 - 19.5 95% C.I.)	(70) 17.5 % (13.2 - 22.8 95% C.I.)	(56) 14.4 % (10.8 - 19.0 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(109) 13.8 % (11.0 - 17.2 95% C.I.)	(61) 15.3 % (11.3 - 20.2 95% C.I.)	(48) 12.4 % (9.1 - 16.6 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(17) 2.2 % (1.4 - 3.4 95% C.I.)	(9) 2.3 % (1.1 - 4.4 95% C.I.)	(8) 2.1 % (1.1 - 4.0 95% C.I.)

Note: The prevalence of oedema is 0.1 %

Prevalence of acute malnutrition based on MUAC

GAM by MUAC was observed to be 3.3 % (2.1 - 5.1 95% C.I.) with SAM of 0.4 % (0.1 - 1.2 95% C.I.). Boys were more malnourished than girls but not significantly different.

Table 8: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex

	All n = 795	**Boys** n = 404	**Girls** n = 391
Prevalence of global malnutrition (< 125 mm and/or oedema)	(26) 3.3 % (2.1 - 5.1 95% C.I.)	(14) 3.5 % (2.0 - 5.9 95% C.I.)	(12) 3.1 % (1.8 - 5.2 95% C.I.)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	(23) 2.9 % (1.8 - 4.5 95% C.I.)	(11) 2.7 % (1.5 - 5.0 95% C.I.)	(12) 3.1 % (1.8 - 5.2 95% C.I.)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	(3) 0.4 % (0.1 - 1.2 95% C.I.)	(3) 0.7 % (0.2 - 2.3 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)

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

Underweight is measured by weight for age and reflects combination of acute and chronic malnutrition. The global underweight rate observed 18.5 % (14.5 - 23.3 95% C.I.), boys were more underweight compared to girls, (table 6).

Table 9: Prevalence of underweight based on weight-for-age z-scores by sex

	All n = 793	**Boys** n **=** 403	**Girls** n **=** 390
Prevalence of underweight (<-2 z-score)	(147) 18.5 % (14.5 - 23.3 95% C.I.)	(84) 20.8 % (16.0 - 26.7 95% C.I.)	(63) 16.2 % (11.7 - 21.9 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(120) 15.1 % (11.9 - 19.0 95% C.I.)	(68) 16.9 % (12.8 - 22.0 95% C.I.)	(52) 13.3 % (9.6 - 18.2 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(27) 3.4 % (2.2 - 5.2 95% C.I.)	(16) 4.0 % (2.3 - 6.7 95% C.I.)	(11) 2.8 % (1.5 - 5.4 95% C.I.)

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 nutrition over a long period of time and is also affected by recurrent and chronic illness. It indicates that a child is failing to thrive. Stunting has adverse effects on the optimal growth and development of children. The stunting was reported at 15.3 % (12.0 - 19.4 95% C.I.), table 7 below. Boys seem to be more stunted than girls. Stunting levels observed during the survey were lower than County figure of 26.4 percent reported in the Kenya demographic health survey of 2014.

Table 10: Prevalence of stunting based on height-for-age z-scores and by sex

	All n = 763	**Boys** n **=** 391	**Girls** n **=** 372
Prevalence of stunting (<-2 z-score)	(117) 15.3 % (12.0 - 19.4 95% C.I.)	(66) 16.9 % (13.0 - 21.7 95% C.I.)	(51) 13.7 % (9.4 - 19.5 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(99) 13.0 % (10.0 - 16.6 95% C.I.)	(56) 14.3 % (10.7 - 18.8 95% C.I.)	(43) 11.6 % (7.7 - 17.0 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(18) 2.4 % (1.4 - 3.9 95% C.I.)	(10) 2.6 % (1.3 - 5.1 95% C.I.)	(8) 2.2 % (1.0 - 4.4 95% C.I.)

Maternal nutrition status

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. Maternal malnutrition is usually associated with high risk of low birth weights and it is recommended that before, during and after birth, the maternal nutrition status should be adequate. MUAC is used to determine the level of undernutrition among pregnant and lactating women using a cut-off point of < 21cms**.**

The survey reached a total of 516 women of reproductive age (WRA) of which 49.4% and 20.3% were lactating and pregnant respectively. Among the WRA, 3.7% had a MUAC of < 21.0 cm. Among the pregnant and lactating women (PLW), 4.7% had a MUAC of less than 21.0 CM. Nutrition status among the PLW is a big challenge in Wajir County, with approximately over 5,000 at any given time in the targeted supplementary feeding program.

Iron folate supplementation (IFAS) was 59.7% among women with children aged 24 months and below. Majority of the women, 91.6% were observed to have taken IFAs for less than 90 days with barely 1.6% taking for more than 180 days. The national IFAS guideline recommends supplementation throughout the pregnancy. Poor supplementation above days could be attributed to poor seeking behaviour among WRA for ANC services, according to KDHS of 2014 only 36.8% having attended 4 or more antenatal. Majority of the pregnant mothers attended first ANC during the third trimester thus not taking for the recommended period.

Table 11: No. of days IFAS was consumed by pregnant mothers

IFAS Consumption (In Days)	**No of women**	**Proportion (%)**
< 90 Days	175	91.6%
90≥180 Days	13	6.8%
> 180 Days	3	1.6%

Access and utilization of health and nutrition services

Child Morbidity

Child morbidity was assessed based on a two weeks' recall period prior to the survey date. The illness prevalence was at 9.8%. Leading causes of morbidity were cough, fever with chills like malaria, watery diarrhoea, and other ailments.

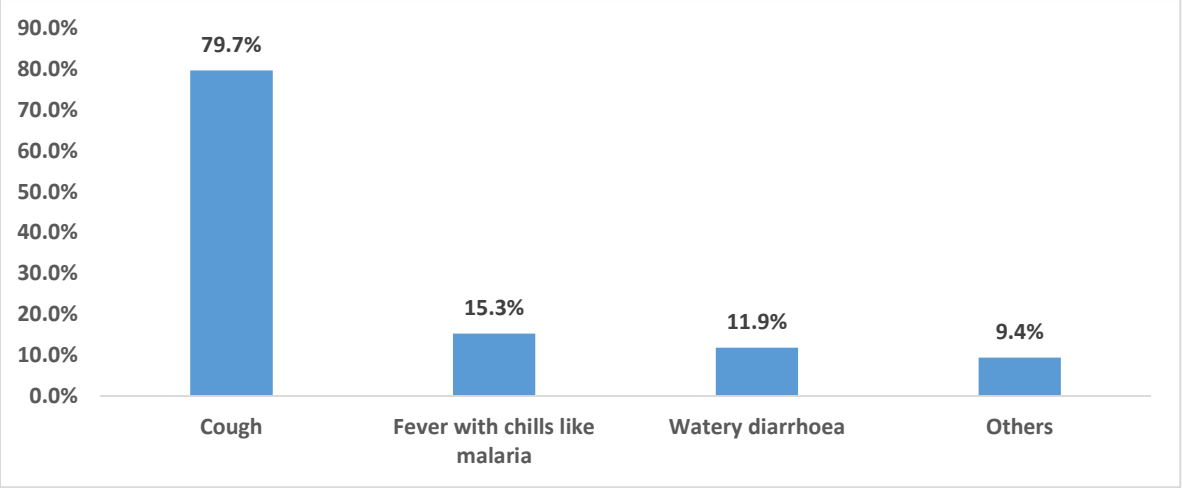


Figure 2: Child Morbidity

Most of the respondents (85.4%) sought medical care from public clinics, with the rest attending private clinics or getting drugs over the counter. Of the caregivers who reported their children had diarrhoea (11.9%), 62.5% were supplemented with zinc. According to the management of diarrhoea all children are to be given zinc tablets as it reduces severity among other benefits. Mosquito net ownership was observed to be 73%. Usage by under-5 year of age was at 83%.

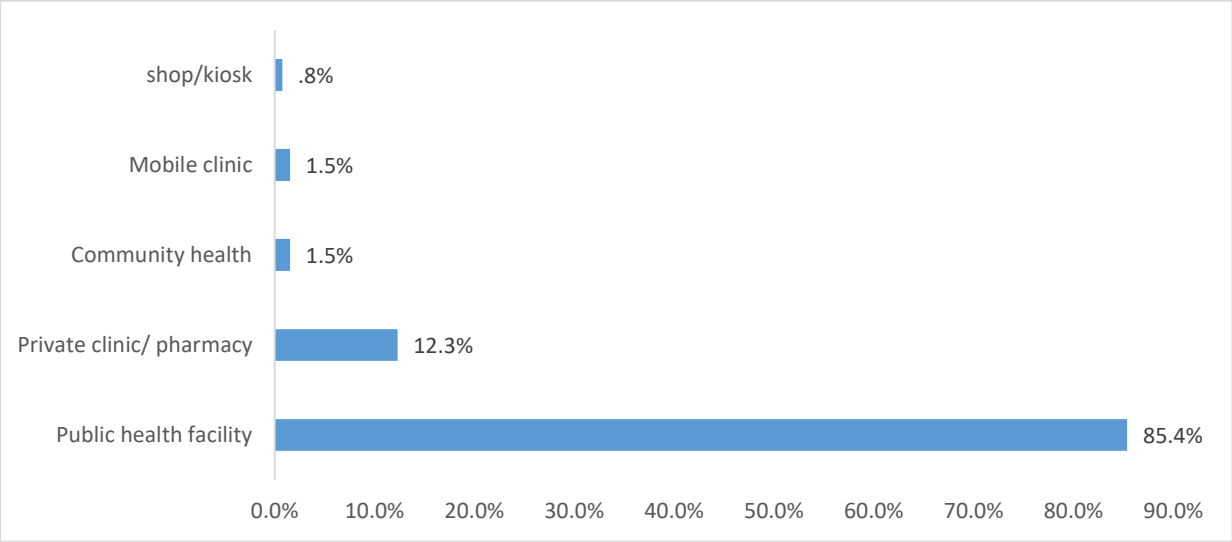


Figure 3: Health Seeking Behaviour

Immunization Coverage

Immunization is an important and a powerful, cost-effective preventive health measure to improve on child survival. Most 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 is given at 18 months.

Child immunization was corroborated either by recall or confirmed with mother-child booklet. OPV 1, OPV 3, Measles at 9 months and Measles at 18 months' vaccines coverage were observed to be 94.6%, 90.5%, 83.2%, and 24.9% respectively as shown in figure 2 below. BCG was reported to be 95.6% based on presence of scar.

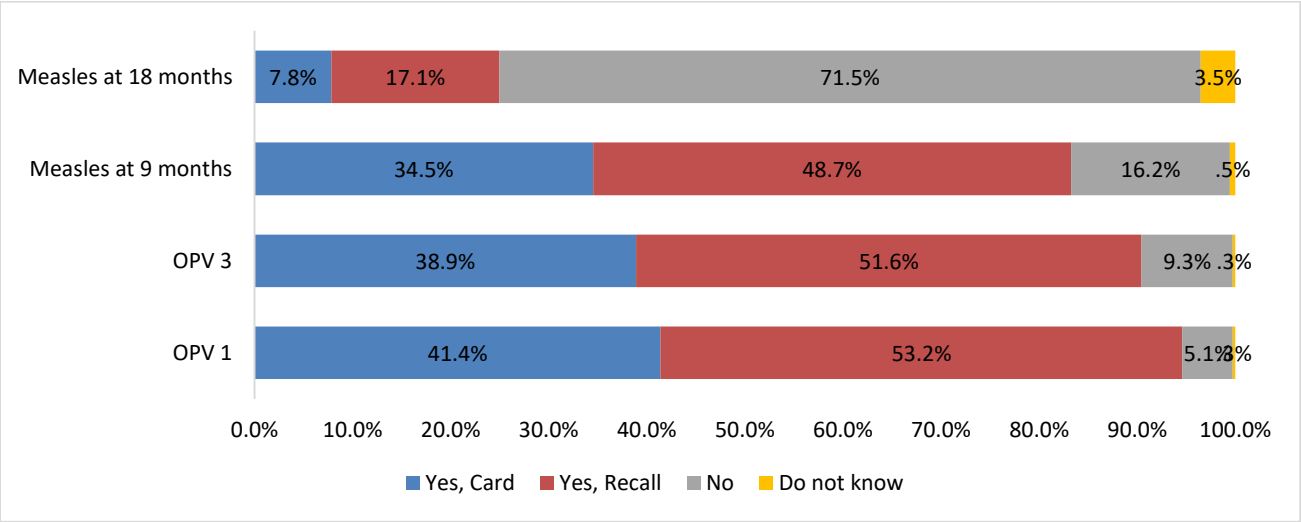
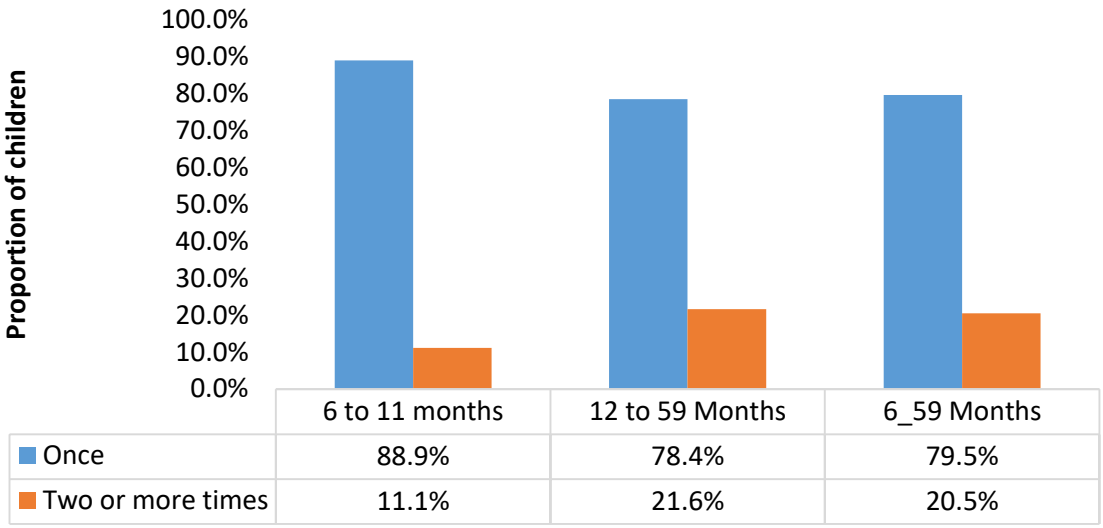


Figure 4: Immunization coverage OPV and measles

Vitamin A Supplementation and Deworming Coverage

Vitamin A supplementation among children below the age of five years offers protection against common childhood infections and substantially reduces mortality hence improving the child's survival. Vitamin supplementation coverage was determined both for over the last six months and one-year period.

The survey findings showed Vitamin A supplementation of 6-11 months was at 88.9% and children aged 12-59 months who received Vitamin A twice was 21.6% both indices were below the national average of 80% coverage, figure 3. Deworming for children above one year was observed to be 11.9%.



	6 to 11 months	12 to 59 Months	6_59 Months
Once	88.9%	78.4%	79.5%
Two or more times	11.1%	21.6%	20.5%

Figure 5: Vitamin A supplementation rates for children aged 6 – 11 months and 12 – 59 months

Water Sanitation & Hygiene Practices

Main Water Sources

The survey indicated that the major water source included Earth pans/dams/ *silanga* at approximately 77%. Other sources were unprotected shallow well, borehole and protected shallow well at 11.8%, 7.0% and 3.0% respectively as shown in figure 4 below. It was observed that only 10% of the households consume safe water, with majority of the households having access to adequate water as per the SPHERE standards.

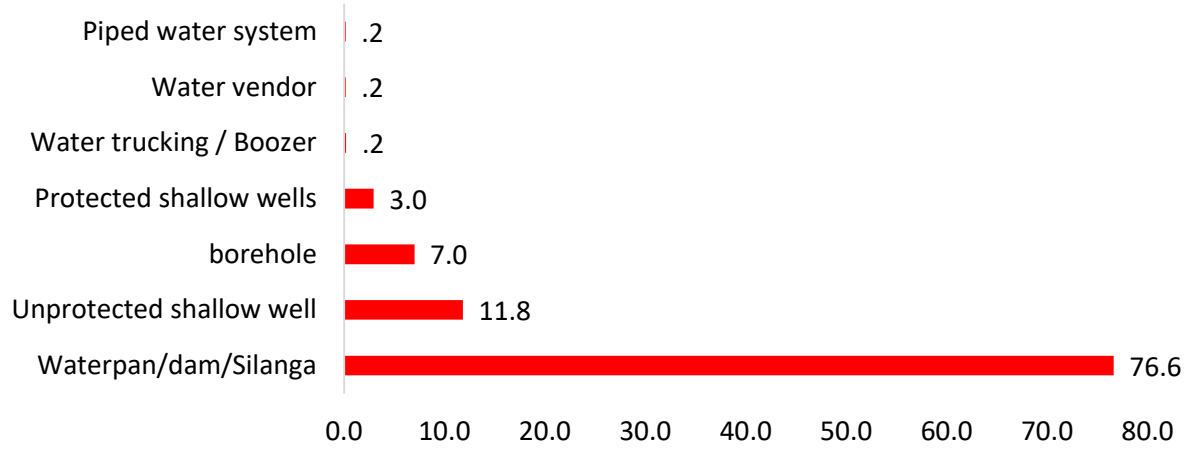


Figure 6: Main sources of drinking water

Distance to the water sources and Queuing time

The survey revealed that, 39% of respondent's trek for more than 2 kilometres or 1 – 2 hours while 36 % trek for more than 500 metres and 22% for less than 500 metres or less than 15 minutes. Few (6.5%) respondents however reported that they queue for water for less than 30 minutes. This survey was carried out in the month of February which is a dry season following October – December rains which were supressed. More households are trekking long distance compared to July 2017.

Table 12: Distance trekked by households

Distance travelled	Previous year 2017 (%)	Current Year 2018 (%)
Less than 500m	20.3%	22%
More than 500M	59%	36%
More than 2kms	20.7%	39%

Water Treatment

Majority, over 92% of the households do not treat the water before drinking. This exposes households to water borne diseases bearing in mind that the major source of water is unprotected sources. Of the 7% who treat their water before drinking 85.1% use water treatment chemicals (PUR and Water-Guard) whereas 19.1%, 4.3% and 2% use boiling, traditional herbs and pot filters respectively.

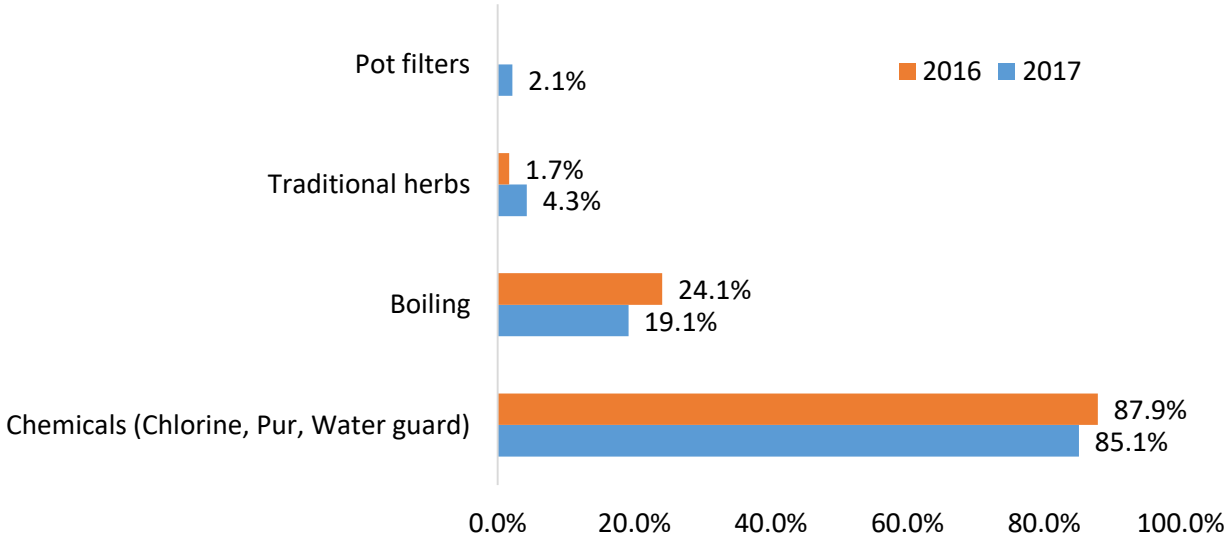


Figure 7: Methods used by households for water treatment

Hand Washing

Majority (84.9%) of the respondents said they washed their hands. The moments hands were washed are after visiting the toilet, before cooking, before eating and after taking children to the toilet at 86.8%, 76.5%, 92.3% and 53.9% respectively. However, only 46.4%% of the sample population washed their hands at the four critical times; highlighting a major knowledge gap in this vital practice. A low proportion of the population (22.6%) practiced handwashing with soap, traditional herbs or ash. Majority (54.7%) however, washed their hands with water only.

Table 13: Hand Washing Practices

HYGIENE	n	%
HH Aware of hygiene practices	545	85.7 %
After toilet	472	86.8 %
Before cooking	416	76.5 %
Before eating	502	92.3 %
After taking children to the toilet	293	53.9 %
Hand washing in all 4 critical times	253	46.4 %
Hand washing by soap and water	145	22.6 %

Latrine Ownership and Utilization

From the survey, latrine coverage was approximately 45%; with 42% of respondents owning a pit latrine. However, 55% of the sampled population practice open defecation as shown in the figure below. This predisposes the population to disease outbreaks and the contamination of water sources.

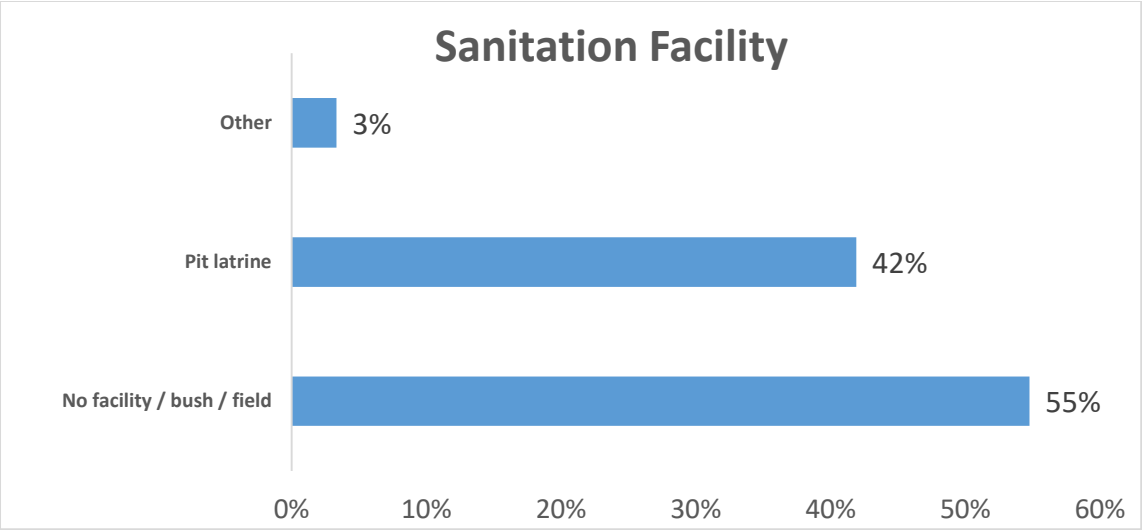


Figure 8: Sanitation facility

Household Dietary Diversity and Food Consumption Score

In assessing the nutritional quality and quantity of the food consumed by the survey population, one-week retrospective household dietary diversity questionnaire was administered that would help to determine the households' economic capacity to consume various foods in the county.

Only 65.1% had good consumption score compared to 99.5% in July 2017.

Table 14: Food Consumption Scores

Main Threshold	Nomenclature	Proportion of Households a	
		Previous year - 2017	Current year - 2018
0-21	Poor food consumption…mainly cereal and sugar	0.2%	2.9%
21.5-35	Borderline food consumption Cereal, legumes, milk, oil, sugar	0.3%	32%
>35.5	Good food consumption Cereal, legumes, milk, condiment, flesh meat, vegetable, oil, sugar	99.5%	65.1%

Household dietary diversity was observed to be very poor with majority (72.7%) consuming < 3 food groups, 21.6% and 5.8% consumed between 3 – 5 food groups and > 5 food groups respectively, table below.

Table 15: Household dietary diversity

Indicator	2018
Households Consuming <3Food Groups	72.7 %
Households Consuming 3-5 Food Groups	21.6 %
Households Consuming >5Food Groups	5.8 %

Protein and staples were the most frequently consumed with iron rich and vegetables being the least consumed by households, as shown in figure 6 below.

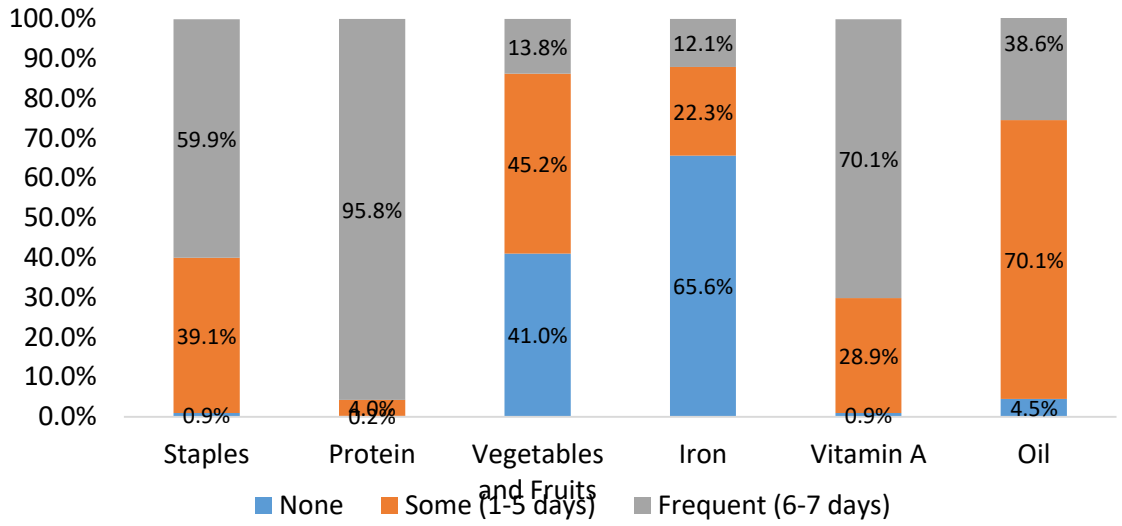


Figure 9: Household consumption of micronutrient rich foods

The average consumption of iron rich food and fruits and vegetables was 1.5 and 2.5 days respectively compared to 6.9 days of protein. Among the women, WDD was equally poor with majority (83.9%) consuming less than 5 food groups; this is much higher than what was reported in July SMART survey at 60.6%.

Among households who consumed acceptable food consumption score, almost (99.7% and 81.8%) all consumed protein and Vitamin A food respectively with only 19.5% consuming iron rich foods.

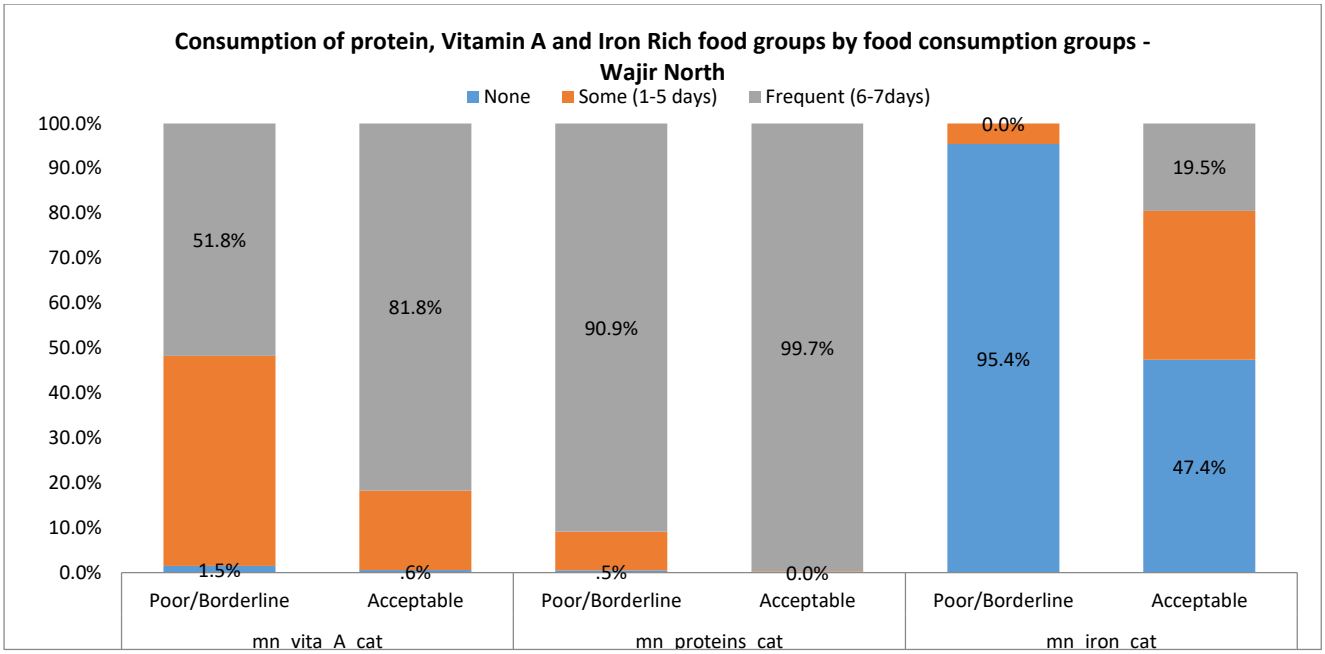


Figure 10: Food consumption score and dietary diversity

21% of the households reported applying a copying strategy. Copying strategies employed are as shown in the table below.

Coping strategy	Proportion of HHs (N=136)	Frequency score (0-7)	Severity score (1-3)	Weighted score
Rely on less preferred & less expensive food	23-(**16.9%**)	2.2	1	2.2
Borrow food	35 (**25.7%**)	1.1	2	2.2
Limit portion sizes	26 (**19.1%**)	2.0	1	2
Restrict consumption of food by adults for young children to eat	31(**22.8%**)	1.9	3	5.7
Reduced number of meals	21(**15.4%**)	1.3	1	1.3
Total weighted Coping Strategy Score				**13.4**

Figure 11: Coping Strategy

Social safety net

There are different social safety net programmes that have been rolled by either the government or partners to cushion HHs against shocks. Majority (82%) of the households are enrolled in the hunger safety net. Linda lishe bora (LLB) was targeting HHs with malnourished child and/or PLW and accounted for 11% (labelled as other in the pie chart) of the HHs, as show in figure 6 below.

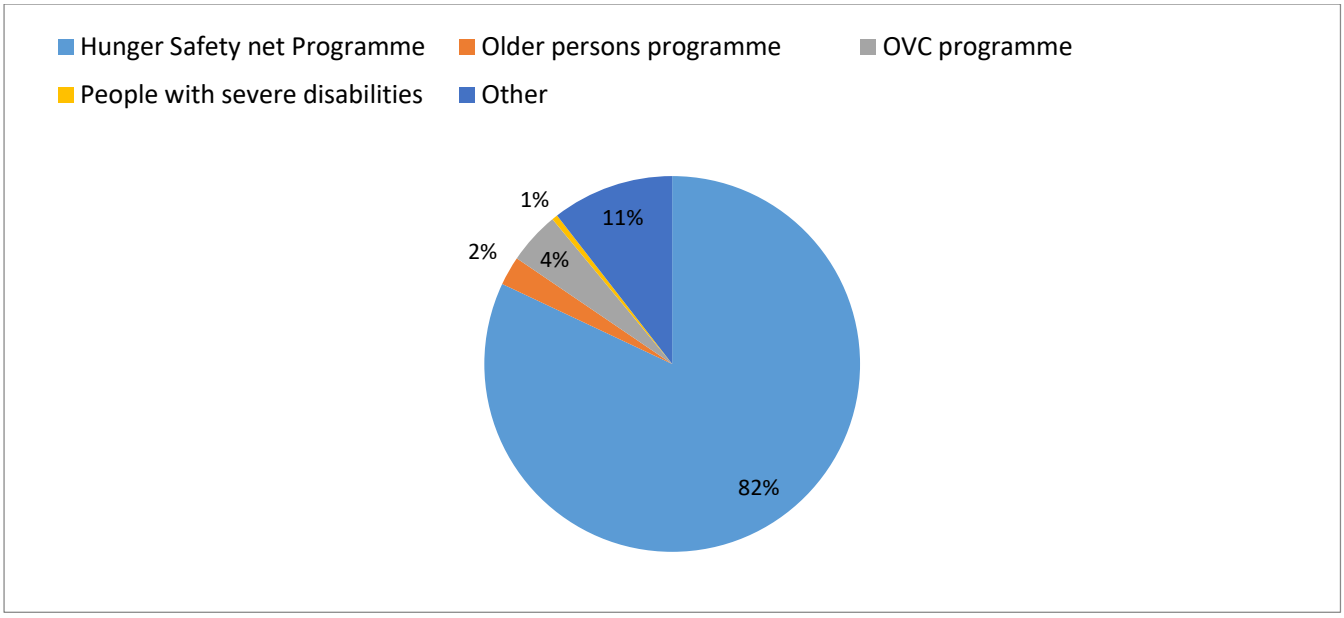


Figure 12: Social safety net programs households are enrolled in

Conclusion

Nutrition rates(GAM) in Wajir North remains at critical levels with no improvement observed from last year assessment. Poor hygiene and sanitation coupled with food insecurity are the major drivers of malnutrition in Wajir North. Hygiene and sanitation remains a major challenge as most households drink unsafe water, practise open defecation and don't wash their hands during the five critical times with soap and water. Dietary diversity is very poor with majority not consuming more than 3 food groups and micronutrient rich foods

Recommendations

Based on the findings and observation from the survey, the following are the recommendations agreed upon by the sector.

Table 16: Recommendations

FINDINGS	RECOMMENDATION	ACTOR (BY WHO?)	IMPLEMENTATION TIME LINE
High GAM prevalence (Critical)	Periodic mass screening and continuous active case finding through CHVs Outreach services in hard to reach areas	Department of Health / Partners	March – June 2018
Low Vitamin A and Deworming Coverage	➢ Periodic DQA ➢ Vitamin A supplementation and deworming through ECDs and *Dugsi*	Department of health and partners	March – June 2018
Poor uptake of IFAS (31 days) against recommended 180 days	➢ Sensitization of opinion leaders (religious) and men on the importance and schedule of IFAS ➢ Sensitization of health workers on IFAS	Department of health	March – June 2018
Poor practice of drinking treated water	Prepositioning of water treatment chemicals at health facilities and water point (water kiosks, dams, pans)	Department of health	March – June 2018
Poor dietary diversity	Continuous sensitization/ education of mother and caregivers on dietary diversity through community, radio	Department of health	March – June 2018

	and health education at facility		
Poor sanitation	Strengthen CLTS	Department of health	March – June 2018

ANNEXES

Annex I: Plausibility report

Table 17: Plausibility check for anthropometric data

Indicator	Acceptable values/range	Score/ interpretation
Flagged data (% of out of range subjects)	<7.5	**0** (0.9 %)
Overall sex ratio (significant CHI square)	>0.001	**0** (p=0.645)
Age ratio (6-29vs 30-59) Significant CHI square	>0.001	**0** (p=0.404)
Dig. prevalence score-weight	<20	**0** (3)
Dig. prevalence score-height	<20	**2** (8)
Dig. prevalence score-MUAC	<20	**0** (4)
Standard Dev. Height WHZ	>0.80	**0** (1.00)
Skewness WHZ	<±0.6	**0** (0.06)
Kurtosis WHZ	<±0.6	**0** (0.11)
Poisson WHZ -2	>0.001	**0** (p=0.080)
OVERALL	**<24**	**2 % (Excellent)**

Annex II: List of sampled clusters

Table 18: Wajir North sub-county villages showing clusters selected

Geographical unit	Population size	Cluster
Malkagufu	2304	1
Fullo	1152	
Buna	9140	2,3,4
Garseake	1016	
Beramu	1872	5
Ingirir	3111	6
Korondille	8582	7,8
Nyatta	2160	9
Sirey	1700	
Kobole	1437	10
Harade	1289	
Milseded	1251	
Lensayu	6912	11,12

Golbo	300	13
Hote	1101	
Bute	22005	RC,RC,14,15,16,17
Adadijole	4037	18,19
Godoma NEP	6887	20,21
Konchore	1100	
jarte	512	
Ogorji	3789	RC
Watiti A	2095	22
Watiti B	3200	23
Karaduse	700	
Dugo	7412	24,25
Ajawa	8249	26,27,28
Bosicha	917	
Qaranri	623	
Garakilo	2616	29
Qudama	8903	30,RC,31
basakoro	735	
Danaba	15891	32,33,34,35
bolowle	423	36
Gulani	560	
Qarsabula	3819	RC
Gurar	8100	37,38
Eresteno	3512	39
Qarsasare	715	40
Qarsa Bulla	1115	
Beladulamin	600	

Annex III: Calendar of Events

LOCAL ENENTS CALENDER FOR WAJIR NORTH							
MONTH	**Seasons**	***2013***	***2014***	***2015***	***2016***	***2017***	***2018***
JANUARY (JITOKO, BISHAKOWAD)	ORAHED, BIRA (HOT AND DRY SEASON)		49	37	25	13	1
			Mowlid	Mowlid	Mowlid	Orahed	
FEBRUARY (JILAMA,BISHALABAD)		60	48	36	24	12	0

MARCH (JISADI,BISHASADAHAD)		59	47	35	23	11	
APRIL (JIAFURI,BISHAAFARAD)	GU'U, GANI (LONG RAINS)	58	46	34	22	10	
		President Inauguration					
MAY (JISHANI,BISHASHANAD)		57	45	33	21	9	
						Ramadan	
JUNE (JIJAHA, BISHALIHAD)	HAGAY ADHOLES (COLD SEASON)	56	44	32	20	8	
			Ramadan	Ramadan	Ramadan	Idul-fitr	
JULY (JITORBA,BISHATODOBAD)		55	43	31	19	7	
		Ramadhan	Idul-fitr	Idul-fitr	Idul-fitr/Campagn		
AUGUST (JISADED, BISHASADEDAD)		54	42	30	18	6	
		Idul-fitr	Idul-fitr			General Elections /Doorashadi guud	
SEPTEMBER (JISAGAL, BISHASAGALAD)	JILAL,BON (DRY SEASON)	53	41	29	17	5	
				Iddul-Adhaa	Iddul-Adhaa	Iddul-Adhaa	
OCTOBER (JIKUDAN, BISHATOBANAD	DERR AGAY (SHORT RAINS)	52	40	28	16	4	
		Idul-Adha(Arafah)	bisha Zakka	bisha Zakka	Zakat	Nullification of election/ Mailnki kura eleski	
		51	39	27	15	3	

NOVEMBER (JIKUDANI,BISHAKOWITOBANAD)		Bisha Zakkah					
DECEMBER (JIKUDLAMA, BISHASALABAITOBANAD)		50	38	26	14	2	
						Lakoley attacks	

Annex IV: Nutrition 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 Ward	1.7 Location	1.8 Sub-Location	1.9 Village	1.10 Cluster No	1.11 HH No	1.12 Team No.
1.13 Household geographical coordinates	**Latitude**	_____	**Longitude**	_____				

		2. Household Demographics									
2.1	**2.2a**	**2.2b**	**2.3**		**2.4**	**2.5**	**2.6**	**2.7a**	**2.7b**	**2.8**	**2.10**
Age Group	**Please give me the names of the persons who usually live in your household.**	**Please indicate the household head (write HH on the member's column)**	**Age (Record age in MONTHS for children <5yrs and YEARS for those ≥ 5 years')**		**Childs age verified by** 1=Health card 2=Birth certificate / notification 3=Baptism card 4=Recall 5. other _____ specify	**Sex** 1= Male 2= Female	**If between 3 and 18 years old, Is the child attending 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/lack of teachers 6= Fees or costs 7=Household doesn't see value of schooling 8 =No food in the schools 9 = Migrated/ moved from	**2.7a, what is the child doing when not in school?** **1**=Working on family farm 2=Herding Livestock 3=Working for payment away from home 4=Left home for elsewhere 5=Child living on the street 6: Other 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) Go to question to 2.9 ↓	**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) go to*
			Years	Months							

								school area (including displacements) 10=Insecurity/ violence 11-No school Near by 12=Married 13. Pregnant/ taking care of her own child 13=others (specify)…… ……..			*question 2.11*
< 5 YRS	1										
	2										
	3										
	4										
>5 TO <18 YRS	5										
	6										
	7										
	8										
	9										
	10										
	11										
	12										
ADULT (18 years and above)	13										
	14)										
	15										
	16										

2.9	**How many mosquito nets does this household have? _____ (Indicate no.) go to question 2.10 before proceeding to question 2.11**	
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	**2.12.** What is the **main** current source of income **of the household?** 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

	6=Merchant/trader 7=Firewood/charcoal 8=Fishing **9=** Income earned by children **10=Others (Specify)** |____|	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 4. = separated 5. = Divorced. |____|	**2.14. What is the residency status of the household**? 1. IDP 2.Refugee 3. Resident |____|
2.15	Are there children who have come to live with you recently? 1. YES 2. NO	2.15b If yes, why did the child/children come to live with you? 1= Did not have access to food 2=Father and Mother left home 3=Child was living on the street, 4=Care giver died 5= Other specify _____

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.	**4.**	**5. 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*** ***3.2 and 3.3 CHILD MORBIDITY*** *(**Please** fill in **ALL REQUIRED** details below. Maintain the same child number as part 2)*

A **Child No.**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**3.2 a**	**3.2 b**	**3.3 a**	**3.3 b**	**3.3 c**
	what is the relationship of the respondent with the child/children? 1=Mother 2=Father 3=Sibling 4=Grandmother 5=Other (specify)	SEX Female …...F Male ……..M	Exact Birth Date	Age in months	Weight (KG) XX.X	Height (CM) XX.X	Oedema Y= Yes N= No	MUAC (cm) XX.X	Is the child in any nutrition program 1. Yes 2. No If no skip to questions 3.2	If yes to question J. which nutrition program? 1.OTP 2.SFP 3.BSFP Other Specify _____	Has your child (NAME) been ill in the past two weeks? 1.Yes 2. No <u>If No, skip to 3.4</u>	If YES, which illness (multiple responses possible) 1 = Fever with chills like malaria 2 = ARI /Cough 3 = Watery diarrhoea 4 = Bloody diarrhoea 5 = Other (specify) *See case definitions above*	**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	If the child **<u>had watery diarrhoea</u>** in the last TWO (2) WEEKS, did the child get: 1. ORS 2. Zinc supplementation? *Show sample and probe further for this component* *check the remaining drugs (confirm from mother child booklet)*

														5.Public clinic 6. Mobile clinic 7. Relative or friend 8. Local herbs 9.NGO/FBO	
01															
02															
03															
04															

3.4 Maintain the same child number as part 2 and 3.1 above

	A1	**A2**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**
Child No.	How many times has child received Vitamin A in the past year?	Has the child received vitamin A supplement in the past 6 months?	How many times did the child receive vitamin A capsules from the facility or out reach?	If Vitamin A received how many times in the past one year did the child receive verified by	**FOR CHILDREN 12-59 MONTHS** How many times has child received	Has the child received BCG vaccination? Check for BCG scar. **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**	Has child received the second measles vaccination (18 to 59 months) *(On the upper right shoulder)?* **1=Yes, Card** **2=Yes, Recall** **3 = No**

	(show sample)			**Card?**	drugs for worms in the past year? *(show Sample)*				**4 = Do not know**	**4 = Do not know**
01										
02										
03										
04										

3.5 MNP Programme Coverage. ***Maintain the same child number as part 2 and 3.1 above. Ask all the relevant questions (3.5.1 to 3.6.4) before moving on to fill responses for the next child. THIS SECTION SHOULD ONLY BE ADMINISTERED IF MNP PROGRAM IS BEING IMPLEMENTED OR HAS BEEN IMPLEMENTED***

	3.5 Enrolment in an MNP program		3.6 Consumption of MNPs			
	3.5.1. Is the child enrolled in the MNP program?(show the example of the MNP sachet) ***(record the code in the respective child's number)*** Yes =1 No=0 **If no go to 3.5.2,** **If yes go to section 3.6.1**	3.5.2 If the child, 6-23months, is not enrolled for MNP, give reason. (***Multiple answers possible. Record the code/codes in the respective child's number. 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 Ch ild receiving therapeutic or supplementary foods ……5 Other reason, specify ……6 ***Skip to 3.7***	3.6.1 Has the child consumed MNPs in the last 7 days?(shows the MNP sachet) ***(record the code in the respective child's number)*** YES = 1 N0= 0 ***If no skip to 3.6.3***	3.6.2 If yes, how frequent do you give MNP to your child? ***(record the code in the respective child's number)*** Every day ……1 Every other day ……2 Every third day ……3 2 days per week at any day ….4 Any day when I remember….5	3.6.3 If no, since when did you stop feeding MNPs to your child? ***(record the code in the respective child's number)*** 1 week to 2 weeks ago ….1 2 weeks 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. Record the code/codes in the respective child's number. 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 in IMAM program …8 Other (Specify)_____ ..9

Child 1						
Child 2						
Child 3						
Child 4						

MATERNAL NUTRITION FOR WOMEN 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 women in the HH aged 15-49 years from the household demographics – section 2)**	What is the mother's / caretaker's physiological status **1. Pregnant** **2. Lactating** **3. not pregnant and not lactating** **4. Pregnant and lactating**	Mother/ caretaker's MUAC reading: ____.__**cm**	During the pregnancy of the (name of the youngest biological child below 24 months) did you take the following supplements? indicate **1. Yes** **2. No** **3. Don't know** **4. N/A**			If Yes, for how many days did you take? (***probe and approximate the number of days***)			
			Iron tablets syrup	Folic acid	Combined iron and folic acid supplements	Iron tablets syrup	Folic acid	Combined iron and folic acid supplements	

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>?**

piped water
- piped into dwelling 11
- piped to yard / plot 12
- piped to neighbour 13
- public tap / standpipe 14

tube well / borehole 21

dug well
- protected well 31
- unprotected well 32

spring
- protected spring 41
- unprotected spring 42

rainwater 51
tanker-truck 61
cart with small tank 71
water kiosk 72
surface water (river, dam, lake, pond, stream, canal, irrigation channel) 81

packaged water
- bottled water 91
- sachet water 92

1.

4.2 a 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)
|____|

4.2b – Who MAINLY goes to fetch water at your current main water source?

1=Women,
2=Men,
3=Girls,
4=Boys

4.2.2a **How long do you queue for water?**

1. Less than 30 minutes
2. 30-60 minutes
3. More than 1 hour
4. Don't que for water

1.

.3 Do you do anything to your water before drinking? (*MULTIPLE RESPONSES POSSIBLE) (Use 1 if YES and 2 if NO).* |____|

1. Nothing
2. Boiling…… ……
   |____|
3. Chemicals (*Chlorine,Pur,Waterguard*)……
   |____|
4. Traditional herb……...
   |____|
5. Pot filters……..
   |____|

5.

4.3a	|____|	**6.**

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** |____|

4.7.1a	We would like to learn about where members of this household wash their hands. Can you please show me where members of your household <u>most often</u> wash their hands? *Record result and observation.* **OBSERVED** FIXED FACILITY OBSERVED (SINK / TAP) IN DWELLING.....1 IN YARD /PLOT.....2 MOBILE OBJECT OBSERVED (BUCKET / JUG / KETTLE)..... 3 NOT OBSERVED NO HANDWASHING PLACE IN DWELLING / YARD / PLOT..... 4 NO PERMISSION TO SEE 5	4.7.1b Is soap or detergent or ash/mud/sand present at the place for handwashing? YES, PRESENT .....1 NO, NOT PRESENT..... ……**2**

4.7.1	**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……	|____| |____| |____| |____| |____|

4.7.2	**If the caregiver washes her hands, then probe further; what did you 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 What kind of toilet facility do members of your household usually use?** **If 'Flush' or 'Pour flush', probe:** **Where does it flush to?** |____| **If not possible to determine, ask permission to observe the facility.** **flush / pour flush** **flush to piped sewer system 11** **flush to septic tank 12** **flush to pit latrine 13** **flush to open drain 14** **flush to DK where 18** **pit latrine** **ventilated improved pit latrine 21** **pit latrine with slab 22** **pit latrine without slab / open pit 23** **composting toilet 31** **bucket 41** **hanging toilet / hanging latrine 51** **no facility / bush / field 95** 1. **OTHER (specify) 96**

5.0: Food frequency and Household Dietary Diversity

Type of food*	**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)**	**WOMEN DIETARY DIVERSITY** **ONLY FOR WOMEN AGE 15 TO 49 YEARS. REFER TO THE HOUSEHOLD DEMOGRAPHICS SECTION Q2.3 AND Q2.5** **Please describe the foods that you 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***			
		D1	***D2***	**D 3**	**D 4**	**D5**	**D 6**	**D7**	**TOTAL**		Woman ID……	Woman ID……..	Woman ID …….	Woman ID……..
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, nuts *(e.g. beans, lentils, green grams, cowpeas)*?														
*5.13*Milk and milk products *(e.g. goat/camel/ fermented milk, milk powder)?*														
5.14Oils/fats *(e.g. cooking fat or oil, butter, ghee, margarine)?*														

5.15 Sweets: Sugar, honey, sweetened soda or sugary foods such as chocolates, sweets or candies														
5.16 Condiments, spices and beverages:														

6. COPING STRATEGIES INDEX		
		Frequency sc **Number of days out of past seven (0 -7).**
	In the past 7 DAYS, have there been times when you did not have enough food or money to buy food? 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*)	
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**	

	4.1 FOOD FORTIFICATION (FF)/- *Please ask the respondent and indicate the appropriate number in the space provided*
1.1	**Have you heard about food fortification?** 1. Yes 2. No 3. Don't know
1.1.1	**If yes, where did you hear or learn about it? (MULTIPLE RESPONSE ARE POSSIBLE-** (Use 1 if "Yes" and 2 if "No") 6. Radio…… 7. Road show……... |____| 8. In a training session attended……. 9. On a TV show…… |____| 10. Others……. |____|

		|____| |____|
1.2	**Respondent's knowledge on the food fortification logo (Show the food fortification logo to the respondent and record the response). Do you know about this sign?** 1. Yes 2. No 3. Don't know	|____|
1.3	**What is the MAIN source of Maize flour for the household <u>NOW</u>?** 2. Bought from the shops, supermarket e.t.c 3. Maize is taken for milling at a nearby Posho Mill 4. Bought from a nearby Posho Mill 5. Other *(Please specify)* |_____|	**1.1b Do you know if the maize flour you consume is fortified or not?** 1. Yes 2. No 3. Don't know
1.4	**What brands of the following foods does your household consume?** 1. Maize flour 2. Wheat flour 3. Margarine 4. Oils 5. Fats 6. Sugar	|_____| |_____| |_____| |_____| |_____| |_____|