MARSABIT COUNTY
JULY 2023

Felicity Munene (Concern)

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The survey teams composed of the enumerators and team leaders are highly appreciated for the hard work of collecting the high quality data to the best of their abilities.

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ACRONYMS

ANC:	Antenatal Care
ASAL	Arid and Semi-Arid Lands
BCG:	Bacillus Calmette – Guerin
BSFP	Blanket Supplementary Feeding Program
CHMT	County Health Management Team
C.I.:	Confidence Interval
CLTS	Community Led Total Sanitation
CSI	Coping Strategy Index
ENA:	Emergency Nutrition Assessment
FAO	Food and Agriculture Organization
FCS	Food consumption Score
FCS_N	Food consumption Score Nutrition
FHK	Food for Hungry-Kenya
GAM:	Global Acute Malnutrition
HDDS	Household Dietary Diversity Score
HiNi:	High Impact Nutrition Intervention
IDPs	Internally Displaced People
IFAs	Iron Folic Acid Supplementation
IMAM	Integrated Management of Acute Malnutrition
IP	Implementing Partners
IPC	Integrated Phase classification
MAM:	Moderate Acute Malnutrition
MDD_W	Minimum Dietary Diversity women
MNPs	Micronutrient Powder
MoH:	Ministry of Health
MoA:	Ministry of Agriculture
MUAC:	Mid-Upper Arm Circumference
NITWG	Nutrition Information Technical Working Group
SAM:	Severe Acute Malnutrition
SBCC	Social and Behavior Change Communication
SCHMT	Sub County Health Management Team
SFP	Supplementary Feeding Program
SMART:	Standardized Measurement of Relief and Transition
SPSS:	Statistical Package for Social Sciences
SRA	Short Rains Assessment
ODK	Open Data Kit
OTP	Outpatient Therapeutic Program
ORS	Oral Rehydration Salts
OPV	Oral Polio vaccine
UNICEF:	United Nations Children Fund
WASH	Water and Sanitation Hygiene
WDD_S	Women Dietary Diversity Score
WFA:	Weight for Age
WFH:	Weight for Height
WHO:	World Health Organization
WRA	Women of Reproductive Age
WVK	World Vision Kenya

EXECUTIVE SUMMARY

The survey findings indicated that Marsabit County has a GAM prevalence rate of 12.9 %(10.7 - 15.6 95% C.I.), while the prevalence for severe malnutrition was 2.1% (1.5 - 3.1 95% C.I.). This is generally classified as serious by the WHO classification of malnutrition. The findings also showed the prevalence of underweight at 25.50 %(22.4 - 28.9 95% C.I.) Where 4.6 %(3.5 - 5.9 95% C.I.) Were severely underweight. In terms of stunting prevalence, the survey findings indicated that 28.3 %(24.8 - 32.0 95% C.I.) Of children in Marsabit County were stunted as where 6.4 %(5.1 - 8.1)95% C.I.) Of the children were severely stunted.

Further analysis of the nutrition data showed that North Horr sub-county had the highest GAM rate prevalence of 22.5% (17.9-28.0) that was very critical, followed by Laisamis with 18.0% (14.4-22.4) that was in critical situation. Moyale and Saku sub-counties have a GAM rate prevalence of 6.8% (4.4-10.3) indicating an alert situation and 10.0% (6.1-16.1) respectively that indicate serious situation.

The survey findings indicated that 19.6% of children aged 6-59 months in Marsabit County was reported to have been ill two weeks prior to survey. The most prevalent illness during this period was acute respiratory illnesses/ cough at 73.8%, fever with chills (32.7%) and watery diarrhea (12.3%). In addition, 78.2% of children in Marsabit County sought Health assistance when their children were ill. In terms of the specific areas sought for the treatment, majority sought assistance from public (61.0%) clinics and private clinics (23.3%). In term of supplementation, the survey findings indicate that the overall proportion of children (6-59 Months) supplemented with Vitamin A for at least once in the period of one year preceding the survey was 88.0% that is above the national target of 80%. In terms of zinc supplementation, 66.7% had received the supplementation that is below the HiNi target of 80%. From the survey results, 98.8% of children were reported to have received BCG and confirmed by Scar while Measles vaccination coverage at 9 months verified by card was at 83.9%. The results of the survey showed that among the caregivers interviewed 30.2% reported practicing proper hand washing at the 4 critical times. For the household dietary diversity, analysis showed that 24.1% of the households consumed more than 5 food groups while the minimum maternal dietary diversity showed that 88.0% of the women aged 15-49 years consumed less than 5 food groups. On IYCF, 17.4% of the children reached the minimum Dietary Diversity, 53.9% reached the minimum meal frequency and 13.5% reached the minimum Acceptable diet.

The survey was conducted through the partnership of the Ministry of Health, National Drought Management Authority (NDMA), Ministry of Agriculture, Department of Health Marsabit County, World Vision – Kenya, USAID Nawiri, World Food Programme, BOMA, MSF, SND, KWS, Welt Hunger, Midair, Child Fund, NRT, Kenya Red Cross, and Concern Worldwide-Kenya was funded by UNICEF. The survey was conducted between 1st of July and the 12th of July 2023.

METHODOLOGY

The target geographical area was Marsabit County that targeted the 4 sub-counties of Moyale, Marsabit Central, North Horr and Laisamis. The survey adopted a 2 stage sampling technique. With the list of the villages, then the selection of the households to be included in the survey was selected using the simple random sampling that was the 1st stage sampling. Finally, with

the sampled villages, a list of all households was drawn upon which 15 households was sampled using simple random sampling according to different sample sizes of different Sub Counties.

OBJECTIVES OF THE SURVEY

Main Objective

- To determine the nutrition status of children aged 6- 59 months old and Women of reproductive age 15-49 Years.

Specific Objectives

- 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 6-59 months over a two-week recall period.
- To relate nutrition status and the immunization coverage of Measles, BCG, and Oral polio vaccines (OPV1 and 3) for children aged 6-59 months.
- To determine the coverage for deworming (12-59 months), zinc supplementation, ORS+Zinc Pack for diarrhea, and vitamin A supplementation among children 6-59 months.
- To estimate the nutritional status of women of reproductive age 15-49 years using MUAC measurements, Women's dietary Diversity, and IFAS Coverage.
- To collect information on household food security, water, sanitation, and hygiene (WASH) practices, Morbidity, and treatment seeking.
- To assess the Minimum meal frequency, Minimum Acceptable Diet, and Minimum Dietary Diversity for children aged 6-23 months
- To estimate the crude mortality rate (CMR) and under-five mortality rate (U5MR)

The following table presents the summary of the indicators

TABLE 1: SUMMARY FINDINGS

	Indicator	Laisamis	Moyale	North Horr	Saku	Total
Nutrition Indicators	Prevalence of global malnutrition	18.0% (14.4-22.4)	6.8% (4.4-10.3)	22.5% (17.9-28.0)	10.0% (6.1-16.1)	12.9%(10.7 - 15.6)
	Prevalence of severe malnutrition	3.0% (1.7-5.1)	0.7% (0.2-2.0)	4.7% (2.8-7.7)	2.0% (1.0-4.0)	2.1% (1.5 - 3.1)
	Prevalence of global malnutrition by MUAC	4.1% (2.6-6.6)	3.0% (1.5-6.1)	5.6% (3.3-9.5)	6.8% (3.9-11.5)	4.8% (3.6-6.5)
	Prevalence of severe malnutrition by MUAC	0.8% (0.3-2.0)	0.6% (0.1- 2.8	1.0% (0.4-2.5)	0.7% (0.1-2.9)	0.8% (0.4-1.4)
	Global underweight	39.7% (34.6-45.0)	12.9% (9.0-18.2)	37.1% (31.4-43.2)	23.9% (16.4-33.4)	25.50%(22.4 - 28.9)
	Severe Underweight	7.4% (5.2-10.3)	1.1% (0.4-3.1)	8.1% (5.5-11.8)	6.9% (3.7-12.5)	4.6%(3.5 - 5.9)

	Global Stunting	38.9% (33.3-44.8)	21.3% (16.0-27.9)	28.3% (23.2-33.9)	30.4% (24.0-37.7)	28.3%(24.8 - 32.0)
	Severe Stunting	9.8% (7.1-13.3)	4.0% (2.3-6.8)	6.5% (4.5- 9.2)	8.3% (5.0-13.3)	6.4%(5.1 - 8.1)
Respondent gender	Female	94.8%	86.9%	89.1%	84.6%	89.0%
	Male	5.2%	13.1%	10.9%	15.4%	11.0%
HH MAIN OCCUPATION	Crop farming/Own farm labour	0.0%	9.3%	2.2%	10.2%	5.2%
	Employed (salaried)	4.4%	7.3%	2.2%	8.7%	5.5%
	Firewood/charcoal	1.8%	3.6%	.9%	7.9%	3.5%
	Fishing	1.8%	.2%	1.1%	.2%	.8%
	Livestock herding	75.9%	6.0%	76.0%	23.5%	47.5%
	Merchant/trader	.2%	3.8%	.6%	2.5%	1.6%
	Others (Specify)	1.6%	10.3%	6.8%	13.1%	7.8%
	Petty trade	3.4%	22.2%	3.9%	7.4%	8.6%
	Waged labour (Casual)	11.0%	37.3%	6.2%	26.6%	19.3%
CURRENT SOURCE OF INCOME	Casual labor	10.0%	41.7%	7.3%	27.8%	20.6%
	Emergency Cash Transfer	.6%	0.2%	0.6%	0.2%	0.4%
	No income	15.3%	9.1%	55.5%	19.9%	25.9%
	Others (Specify)	5.3%	5.4%	2.1%	2.6%	3.8%
	Permanent job	4.0%	8.9%	1.7%	7.9%	5.5%
	Petty trading e.g. sale of firewood	3.2%	17.7%	2.4%	10.7%	8.0%
	Regular cash transfer program (HSNP or Inua Jamii)	0.0%	0.2%	2.1%	0.2%	0.6%
	Remittance	.2%	4.6%	1.9%	2.1%	2.1%
	Sale of crops	0.0%	4.0%	0.5%	8.9%	3.3%
	Sale of livestock	60.7%	4.8%	13.7%	15.1%	24.5%
	Sale of livestock products	.3%	2.8%	11.1%	4.3%	4.7%
	Sale of personal assets	.2%	0.8%	1.3%	0.5%	0.7%
MARITAL STATUS	Divorced	.3%	1.2%	0.0%	1.8%	.8%
	Married	79.8%	85.7%	76.1%	80.5%	80.3%
	separated	3.9%	1.0%	1.6%	2.6%	2.3%
	Single	1.3%	1.4%	3.2%	.5%	1.6%
	Widowed	14.7%	10.7%	19.1%	14.6%	15.0%
HH RESIDENCY STATUS	IDP	0.0%	.4%	0.0%	.2%	.1%

	Refugee	0.0%	.2%	.3%	0.0%	.1%
	Resident - Nomadic/Pastoralist	17.6%	4.0%	18.6%	2.6%	11.1%
	Resident - Permanent residential	82.4%	95.4%	81.0%	97.2%	88.6%
HH in CTP	No	77.1%	87.1%	79.6%	71.9%	78.6%
	Yes	22.9%	12.9%	20.4%	28.1%	21.4%
Hunger Safety Net Programme	No	35.9%	23.1%	50.4%	28.7%	35.5%
	Yes	64.1%	76.9%	49.6%	71.3%	64.5%
Older persons programme	No	83.8%	81.5%	81.4%	87.7%	84.2%
	Yes	16.2%	18.5%	18.6%	12.3%	15.8%
OVC programme	No	95.8%	96.9%	94.6%	97.1%	96.1%
	Yes	4.2%	3.1%	5.4%	2.9%	3.9%
People with severe disabilities	No	99.3%	96.9%	100.0%	100.0%	99.4%
	Yes	.7%	3.1%	0.0%	0.0%	.6%
WFP Linda Lishe Bora/M-Pesa	No	97.9%	96.9%	90.7%	98.2%	96.1%
	Yes	2.1%	3.1%	9.3%	1.8%	3.9%
Other	No	85.2%	93.8%	80.6%	86.5%	85.6%
	Yes	14.8%	6.2%	19.4%	13.5%	14.4%
Own Mosquito_Nets	None	55.6%	59.7%	59.9%	74.9%	62.6%
	1 Only	31.0%	10.5%	30.8%	16.4%	22.8%
	More than 2	13.4%	29.8%	9.3%	8.7%	14.6%
Are there children who have come to live with you recently?	No	94.8%	89.1%	89.4%	87.7%	90.3%
	Yes	5.2%	10.9%	10.6%	12.3%	9.7%
Why did the child/children come to live with you?	His/Her caregiver died	18.8%	16.4%	20.9%	21.3%	19.7%
	His/Her Father and Mother left home	28.1%	30.9%	10.4%	13.3%	18.8%
	Other	40.6%	47.3%	56.7%	54.7%	51.5%
	The child did not have access to food	12.5%	5.5%	11.9%	10.7%	10.0%
Nutrition Coverage	Yes	18.8%	5.0%	21.4%	10.2%	13.9%
	No	81.2%	95.0%	78.6%	89.8%	86.1%
	OTP	7.9%	4.3%	11.4%	8.5%	8.9%
	SFP	88.1%	78.3%	79.5%	89.4%	84.6%
	BSFP	4.0%	17.4%	6.8%	2.1%	5.8%
Morbidity (6-59 Months)	Yes	27.4%	20.1%	18.2%	11.3%	19.6%
	No	72.6%	79.9%	81.8%	88.7%	80.4%
Illnesses	Prevalence of Fever	23.8%	46.2%	34.7%	30.8%	32.7%
	Prevalence of ARI	88.4%	53.8%	70.7%	73.1%	73.8%
	Prevalence of Watery Diarrhoea	8.8%	18.3%	9.3%	15.4%	12.3%

	Prevalence of Bloody Diarrhoea	1.4%	0.0%	0.0%	0.0%	0.5%
	Prevalence of Others	2.0%	1.1%	4.0%	3.8%	2.5%
Health Seeking Behavior	Yes	77.6%	88.2%	64.0%	82.7%	78.2%
	No	22.3%	11.7%	35.5%	17.0%	21.6%
Place of assistance	Community Health worker	2.6%	17.1%	45.8%	0.0%	13.6%
	Private Clinic/Pharmacy	20.2%	41.5%	2.1%	20.9%	23.3%
	Shop/kiosk	1.8%	2.4%	0.0%	9.3%	2.8%
	Public clinic	72.8%	43.9%	50.0%	74.4%	61.0%
	Mobile Clinic	0.9%	3.7%	14.6%	2.3%	4.2%
	Local Herbs	3.5%	0.0%	0.0%	2.3%	1.7%
	NGO/FBO	0.0%	1.2%	0.0%	4.7%	1.0%
Zinc Supplementation	Zinc Supplementation	46.2%	76.5%	42.9%	100.0%	66.7%
Vitamin A Supplementation	Vitamin A Supplementation (12-59 Months) - Once	88.4%	93.1%	84.3%	88.8%	88.7%
	Vitamin A Supplementation (12-59 Months) - Once-Verified by Card	74.1%	63.5%	81.8%	68.7%	71.9%
	Vitamin A Supplementation (6-11 Months)- Once	74.4%	90.2%	82.1%	78.7%	81.7%
	Vitamin A Supplementation (6-11 Months)- Once- Verified by Card	65.1%	62.7%	79.5%	72.3%	69.4%
	Vitamin A Supplementation (6-59 Months) - once- Verified By card	73.4%	63.4%	81.6%	69.1%	71.7%
	Vitamin A Supplementation (6-59 Months) - once	87.3%	92.8%	84.1%	87.7%	88.0%
	Deworming (12-59 Months)	82.1%	85.3%	81.6%	81.7%	82.6%

Measles Coverage	Measles at 9 Months (Yes by Card)	85.8%	81.6%	75.8%	91.2%	83.9%
	Measles at 9 Months (Yes by Recall)	7.4%	16.6%	11.5%	7.6%	10.6%
	Measles at 18 Months (Yes by Card)	78.6%	82.1%	71.7%	90.1%	80.6%
	Measles at 18 Months (Yes by Recall)	7.5%	16.0%	12.1%	8.2%	10.7%
	BCG by Scar	98.3%	98.9%	98.3%	99.6%	98.8%
OPV Coverage	OPV 1 (Yes by Card)	91.0%	81.9%	77.1%	93.3%	86.3%
	OPV 1 (Yes by Recall)	7.8%	16.8%	11.7%	6.7%	10.6%
	OPV 3 (Yes by Card)	89.0%	82.1%	76.6%	90.7%	85.0%
	OPV 3 (Yes by Recall)	8.2%	16.4%	11.4%	8.5%	11.0%
Age Verification (0-59 Months)	Health Card/MNCH Booklet	91.2%	70.2%	77.6%	93.9%	83.7%
	Birth Certificate	1.3%	17.1%	1.5%	2.8%	5.6%
	Recall	7.5%	12.7%	20.9%	3.3%	10.7%
MAIN SOURCE OF DRINKING WATER	borehole / protected spring /protected shallow wells	47.2%	34.9%	33.5%	45.0%	40.3%
	Earth pan/dam	5.0%	25.2%	7.6%	10.5%	11.4%
	Earth pan/dam with infiltration well	0.0%	5.8%	2.2%	1.3%	2.2%
	Harvested water (Jabiya)	0.0%	6.0%	4.7%	14.9%	6.4%
	Other	0.6%	0.2%	0.0%	0.0%	0.2%
	Piped water system	27.5%	2.6%	18.0%	5.1%	13.9%
	River/spring	3.2%	0.2%	6.2%	0.0%	2.5%
	Unprotected shallow well	16.5%	4.0%	27.2%	1.6%	12.9%
	Water trucking / Boozer	0.0%	1.8%	0.3%	6.2%	2.1%
	Water vendor	0.0%	19.4%	0.3%	15.3%	8.2%
TREKKING DISTANCE	Less than 500m (Less than 15 minutes)	47.5%	48.6%	39.8%	49.6%	46.2%

	More than 2 km (1 – 2 hrs)	18.9%	14.7%	18.5%	18.2%	17.7%
	More than 500m to less than 2km (15 to 1 hour)	33.4%	34.7%	41.4%	30.2%	35.0%
	Other	.2%	2.0%	.3%	2.0%	1.1%
QUEUE FOR WATER	No	62.5%	62.7%	60.5%	40.6%	56.4%
	Yes	37.5%	37.3%	39.5%	59.4%	43.6%
QUEUE DURATION	30-60 minutes	43.1%	35.6%	62.4%	32.3%	42.6%
	Less than 30 minutes	40.1%	58.5%	28.4%	46.7%	42.9%
	More than 1 hour	16.8%	5.9%	9.2%	21.0%	14.4%
WATER TREATMENT	No	85.3%	73.0%	66.4%	52.2%	69.1%
	Yes	14.7%	27.0%	33.6%	47.8%	30.9%
Boiling	No	58.2%	72.1%	73.7%	60.1%	66.1%
	Yes	41.8%	27.9%	26.3%	39.9%	33.9%
Chemicals	No	24.2%	7.4%	16.9%	19.9%	17.2%
	Yes	75.8%	92.6%	83.1%	80.1%	82.8%
traditional herbs	No	98.9%	93.4%	92.5%	96.9%	95.2%
	Yes	1.1%	6.6%	7.5%	3.1%	4.8%
Pot filters	No	90.1%	98.5%	99.5%	99.7%	98.2%
	Yes	9.9%	1.5%	0.5%	0.3%	1.8%
Other	No	100.0%	100.0%	99.5%	97.3%	98.8%
	Yes	0.0%	0.0%	0.5%	2.7%	1.2%
WHO GOES TO FETCH WATER	Boys	0.8%	5.0%	0.6%	0.5%	1.6%
	Girls	6.9%	0.6%	2.2%	0.3%	2.6%
	Men	0.5%	19.2%	1.6%	1.5%	5.0%
	Other	0.2%	2.6%	0.0%	0.3%	0.7%
	Women	91.6%	72.6%	95.6%	97.4%	90.1%
WATER STORAGE	Closed container / Jerrican /brika	90.3%	77.2%	88.2%	83.4%	85.2%
	Open container / Jerrican /brika	9.7%	22.8%	11.8%	16.6%	14.8%
DO YOU PAY FOR WATER?	No	48.6%	30.6%	70.8%	40.4%	48.6%
	Yes	51.4%	69.4%	29.2%	59.6%	51.4%
HOW DO YOU PAY?	Per 20 litre jerrican	10.1%	94.6%	40.0%	91.5%	63.2%
	Per month	89.9%	5.4%	60.0%	8.5%	36.8%
Hand washing facility	Fixed facility observed (Sink / Tap) In dwelling	1.1%	0.6%	0.2%	0.3%	0.5%

	Fixed facility observed (Sink / Tap) In yard /plot	0.6%	1.0%	0.8%	0.8%	0.8%
	MOBILE OBJECT OBSERVED (BUCKET / JUG / KETTLE)	19.5%	42.5%	34.9%	33.0%	32.0%
	NO HANDWASHING PLACE IN DWELLING /YARD / PLOT	18.9%	8.5%	11.4%	15.4%	13.8%
	NO PERMISSION TO SEE	0.2%	0.2%	4.4%	0.0%	1.3%
	NOT OBSERVED	59.6%	47.2%	48.3%	50.4%	51.6%
Is soap or detergent or ash/mud/sand present at the place for handwashing?	Yes	67.4%	66.7%	79.3%	76.0%	72.9%
	No	32.6%	33.3%	20.7%	24.0%	27.1%
ARE YOU AWARE OF HAND WASHING PRACTICES?	Do not know	6.8%	1.8%	3.0%	2.3%	3.6%
	No	36.0%	16.5%	42.8%	27.8%	31.5%
	Yes	57.2%	81.7%	54.2%	70.0%	64.9%
WHAT USED FOR HANDWASHING	Only water	24.9%	32.3%	19.8%	13.4%	22.5%
	Other	0.3%	0.0%	0.0%	0.0%	0.1%
	Soap and water	62.1%	66.7%	74.1%	81.2%	71.3%
	Soap when I can afford it	12.7%	1.0%	5.8%	5.4%	6.0%
	traditional herb	0.0%	0.0%	0.3%	0.0%	0.1%
After toilet	No	28.2%	2.7%	19.5%	12.7%	15.1%
	Yes	71.8%	97.3%	80.5%	87.3%	84.9%
Before cooking	No	16.9%	17.7%	27.4%	22.5%	21.0%
	Yes	83.1%	82.3%	72.6%	77.5%	79.0%
Before eating	No	21.2%	10.7%	2.9%	7.7%	10.6%
	Yes	78.8%	89.3%	97.1%	92.3%	89.4%
After taking children to the toilet	No	80.5%	54.6%	71.7%	56.6%	65.0%
	Yes	19.5%	45.4%	28.3%	43.4%	35.0%
Other	No	99.4%	99.0%	100.0%	100.0%	99.6%
	Yes	0.6%	1.0%	0.0%	0.0%	0.4%
Handwashing_4 critical times	Yes	13.2%	34.8%	18.8%	33.3%	100.0%
	No	27.3%	23.4%	23.9%	25.4%	100.0%
	Total	23.1%	26.8%	22.3%	27.8%	100.0%

HH RELIEVING POINT	Bucket	0.0%	0.0%	0.6%	0.0%	0.2%
	Composting toilet	0.0%	1.0%	0.2%	1.3%	0.6%
	Flush / pour flush	0.0%	0.2%	0.0%	0.2%	0.1%
	Hanging toilet / hanging latrine	0.3%	0.4%	0.3%	0.8%	0.5%
	No facility / bush / field	81.3%	11.9%	64.5%	37.8%	50.8%
	Other	1.6%	2.2%	0.5%	0.7%	1.2%
	Pit latrine	16.8%	84.3%	34.0%	59.3%	46.7%
WaterConsumption_per person per day.	Water consumption > 15Liters PPPD	23.3%	59.3%	27.3%	36.5%	35.4%
	Water consumption <15Liters PPPD	76.7%	40.7%	72.7%	63.5%	64.6%
Infant Young Child Feeding	MINIMUM DIETARY DIVERSITY 6–23 MONTHS (MDD)	18.4%	23.7%	10.2%	15.6%	17.4%
	MINIMUM MEAL FREQUENCY 6–23 MONTHS (MMF)	44.2%	67.5%	42.5%	57.0%	53.9%
	MINIMUM ACCEPTABLE DIET 6–23 MONTHS (MAD)	12.9%	20.1%	8.7%	11.2%	13.5%
	EGG AND/OR FLESH FOOD CONSUMPTION 6–23 MONTHS (EFF)	25.2%	29.0%	19.7%	20.1%	23.6%
	UNHEALTHY FOOD CONSUMPTION 6–23 MONTHS (UFC)	21.1%	38.5%	8.7%	29.6%	25.7%
	ZERO VEGETABLE OR FRUIT CONSUMPTION 6–23 MONTHS (ZVF)	17.0%	34.9%	7.9%	24.0%	22.0%
	CONTINUED BREASTFEEDING 12–23 MONTHS (CBF)	79.6%	76.1%	98.8%	86.5%	84.5%
	INTRODUCTION OF SOLID, SEMI-	100.0%	100.0%	100.0%	95.5%	98.8%

	SOLID OR SOFT FOODS 6–8 MONTHS (ISSSF)					
PHYSIOLOGICAL STATUS	Pregnant	10.7%	10.3%	8.5%	5.1%	8.7%
	Lactating	36.7%	45.8%	53.3%	46.7%	45.4%
	Pregnant & Lactating	0.4%	1.1%	1.1%	0.7%	0.8%
	Not Pregnant & Not Lactating	52.2%	42.8%	37.1%	47.6%	45.2%
MUAC for WRA	MUAC >21 cm	84.3%	97.8%	84.7%	94.0%	89.6%
	MUAC < 21 cm	15.7%	2.2%	15.3%	6.0%	10.4%
FULL TERM PREGNANCY / CHILD LESS THAN 2YRS	Yes	52.0%	54.4%	37.3%	47.3%	47.5%
	No	48.0%	45.6%	62.7%	52.7%	52.5%
ANC ATTENDANCY	Yes	98.5%	99.0%	92.4%	99.0%	97.5%
	No	1.5%	1.0%	7.6%	1.0%	2.5%
1ST ANC (MONTH)	Month 1 to Month 3	39.9%	27.8%	18.4%	34.0%	31.4%
	Month 4 to Month 6	57.0%	63.4%	61.4%	59.1%	59.9%
	Month 7 to Month 9	3.1%	8.2%	19.0%	6.9%	8.4%
	Don't know	0.0%	0.5%	1.3%	0.0%	0.4%
TOOK IRON, IRON SYRUP OR IRON-FOLATE TABLETS	Yes	96.9%	92.3%	90.6%	98.5%	95.0%
	No	2.7%	6.6%	7.0%	1.5%	4.2%
	Don't know	0.0%	1.0%	1.2%	0.0%	0.5%
	N/A	0.4%	0.0%	1.2%	0.0%	0.4%
IFAS Days taken	Above 180 Days	9.4%	1.1%	5.2%	2.5%	4.9%
	90 to 180 Days	52.4%	21.5%	49.0%	58.4%	46.2%
	Less than 90 Days	38.2%	77.3%	45.8%	39.1%	48.9%
Minimum Dietary Diversity Women	Less than 5 Food Groups	92.1%	75.6%	94.8%	86.6%	88.0%
	5 and More Food Groups	7.9%	24.4%	5.2%	13.4%	12.0%
FCS for WFP	Acceptable	60.9%	56.2%	45.7%	50.9%	53.2%
	Borderline	21.3%	26.6%	22.1%	25.8%	23.8%
	Poor	17.8%	17.3%	32.2%	23.3%	23.0%
Reduced CSI IPC	None	8.1%	31.5%	9.0%	8.9%	13.5%
	Stressed	77.7%	44.6%	37.9%	47.8%	52.3%
	Crisis+	14.2%	23.8%	53.1%	43.3%	34.2%

Household Hunger Score Categories	`No or little hunger in the household`	35.1%	62.3%	42.3%	47.9%	46.1%
	`Moderate hunger in the household`	63.8%	35.9%	45.5%	44.3%	47.9%
	`Severe hunger in the household`	1.1%	1.8%	12.2%	7.7%	5.9%
Household hunger scale IPC for confirmation	Minimal	28.9%	55.6%	30.6%	40.9%	38.1%
	Stressed	6.1%	6.7%	11.7%	7.1%	8.0%
	Crisis	63.8%	35.9%	45.5%	44.3%	47.9%
	Emergency	0.5%	0.4%	9.3%	2.1%	3.3%
	Catastrophe	0.6%	1.4%	2.8%	5.6%	2.7%
HDDS_WFP	<3Food Groups	63.0%	37.1%	49.3%	31.9%	45.8%
	3-5 Food Groups	25.8%	30.0%	29.9%	34.8%	30.1%
	>5Food Groups	11.1%	32.9%	20.9%	33.3%	24.1%
Mortality	CMR (deaths per 10 000/day	0.28 (0.10-0.74)	0.35 (0.07-1.67)	0.22 (0.10-0.50)	0.22 (0.10-0.48)	0.25 (0.16-0.41)
	U5MR (deaths in children <5/10 000/day	0.17 (0.02-1.28)	0.21 (0.03-1.56)	0.00 (0.00-0.00)	0.00 (0.00-0.00)	0.09 (0.02-0.39)

CONCLUSIONS AND RECOMMENDATIONS

According to the current Integrated Phase Classification (IPC) for acute malnutrition among children U5, Marsabit is ranked at the critical phase (IPC Phase 3- GAM <12.9% percent).The Nutrition status of Children has improved compared to the July 2022. The Main occupation of Households still remains to be Livestock herding among the Marsabit Communities. The main source of income in most households is sale of livestock. Further, Low access and Utilization of a variety of health and nutrition services i.e. immunization, Micronutrient supplementation, health and nutrition care practices remain a major a concern, although we acknowledge high vitamin A supplementation, coverage which is attributed to sustained routine outreaches and quarterly feedback on individual facility coverage. WASH indicators (Access and sustainability to safe drinking water, Hand Washing and Sanitation) remain suboptimal. The Household food security situation (Dietary diversity, FCS, Micronutrient intake and CSI) has largely remained unchanged compared to July 2022. It can be concluded therefore that the key drivers of poor nutrition status include; Chronic food insecurity, High prevalence of childhood illness, Inadequate dietary diversity, Poor access to safe water, Poor hygiene practices (High rates of open defecation), Inadequate incomes and assets for the household

CHAPTER ONE: INTRODUCTION

1.0 CONTEXT ANALYSIS

Marsabit County is located in the former Eastern province of Kenya and covers an area of 70,961.3 Km2 and is ranked as the largest county in the country. The county border Ethiopia to the North, Lake Turkana to the West, Samburu County to the South West, Isiolo County to the South East and Wajir County to the North East. Marsabit County borders Isiolo County to the South West. Marsabit County consists of four sub-counties namely Laisamis, North Horr, Marsabit Central, and Moyale. The county has an estimated population of 347,970 from an estimated 66,168 households. Additionally, it is the least populated county in the country in terms people per km2 with a density of 4 people per km2. The county remains amongst the counties with the highest poverty index in the in Kenya and ranked position 44 out of 47 counties with a poverty rate of 83.2%. The county is characterized by recurrent droughts and is a hot and dry climate with low and erratic rainfall patterns. The dry season is characterized by a short dry season (January to March) and a long dry and cool season from (July to October).3

The county is divided into four ecological zones, namely:

- Agro-ecological zone III: This zone has rainfall and is suitable for horticultural and food crop production such as maize, beans, fruits and vegetables. It comprises only 1% of the total land area in the county.
- Agro-ecological zone IV covers 2% of the total land area and is suitable for settled livestock rearing and some mixed farming with dryland crops.
- Agro-ecological zone V covers 28% of the total land area and includes landmasses falling between 700m-1000m above sea level. The vegetation here includes acacia tortillas woodland on stony soils and acacia bushland on deeper soils. The land is suitable for small animals such as goats.
- Agro-ecological zone VI covers 69% of the total land area and lies 700m above sea level. High rates of evaporation and salt deposits cause stunted grass growth. It is only suitable for camels.

The county has three main livelihood zones: pastoral, agro-pastoral, and formal employment/business/trade representing 81%, 16% and 3% respectively, Pastoralists dominate almost all parts of the four sub counties, with agro-pastoralists mostly notable in Saku and some parts of Moyale sub counties. The other livelihoods are mainly notable in urban areas of the county and sub county capitals. Agricultural and livestock productivity is worsened by limited, unreliable, and poorly distributed rainfall patterns. In recent years, the rains have become erratic and unpredictable making it difficult to plan for farming.

To improve Marsabit's health and nutritional situation, the county plans to use health care services to address the nutritional needs of women and children. It will also use early childhood development education centers (ECDEs) to identify and tackle child malnutrition so that everyone can enjoy a safe, nutritious diet year-round. The county has the huge responsibility of ensuring local communities have access to good quality health care so they can live a healthy life. The county will establish various programs and projects geared toward improving health care services. All these programs are geared toward improving the resilience

of people in the county. The main drivers of acute malnutrition include inappropriate infant feeding and childcare practices, suboptimal coverage of health and nutrition services and a high level of morbidity in children less than 5 years old. Other drivers of acute malnutrition include poor hygiene and sanitation practices. Poor hygiene and sanitation lead to an increase in waterborne diseases such as diarrhea and cholera outbreaks. Pre-existing vulnerabilities such as low literacy levels, limited livelihood assets and poverty continue to expose households and communities to persistently high levels of malnutrition. The Ministry of Health, together with partners such as Concern Worldwide, has been implementing High Impact Nutrition Interventions (HiNi) services in the county to improve the nutritional status of children and women.

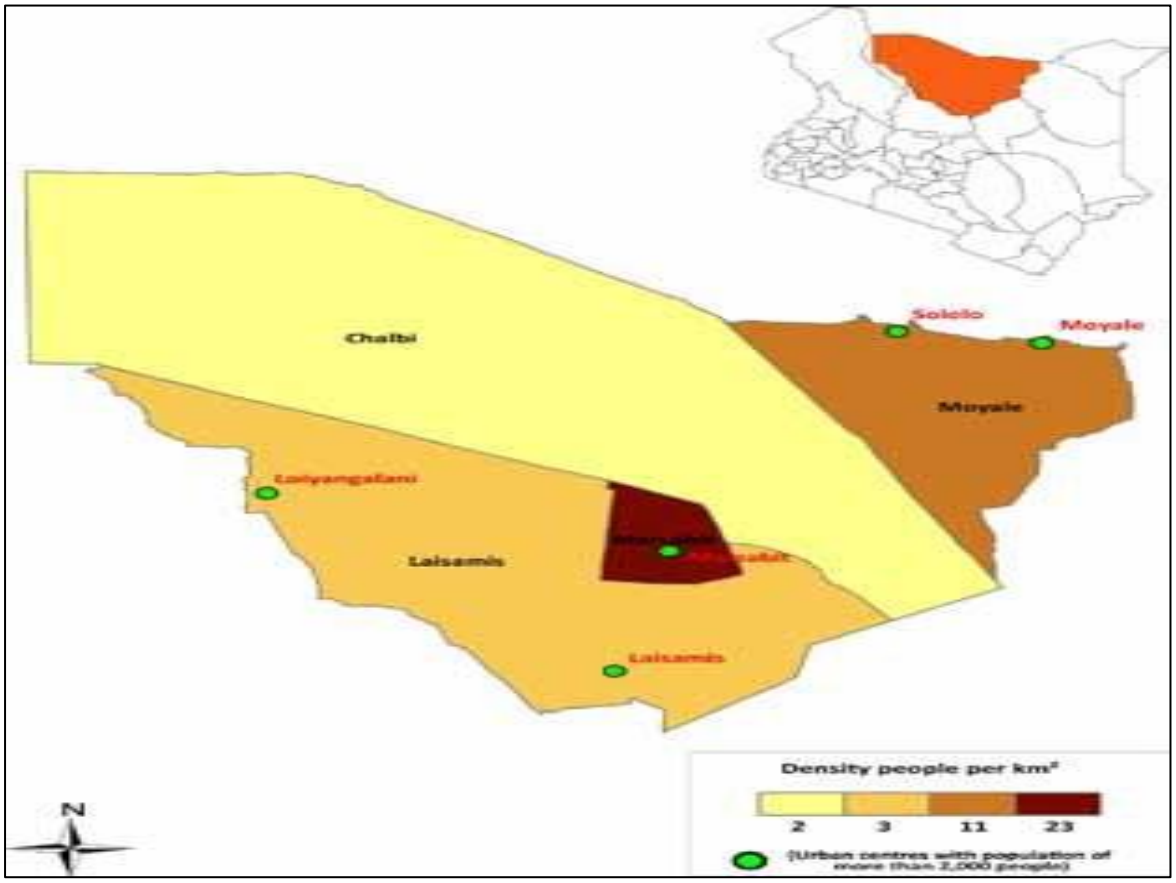

FIGURE 1: MAP OF MARSABIT COUNTY

1.1 RATIONALE OF SURVEY

According to the January 2023 Integrated Phase Classification (IPC) for acute malnutrition among children U5, Laisamis was classified as extremely critical (IPC Phase - GAM ≥30% percent), North Horr and Moyale at critical phase (IPC Phase 4- GAM 15-30% percent) while Saku was at serious Phase (IPC Phase 3- GAM 10-14.9 % percent). The last SMART survey conducted in January 2023 showed the overall critical nutrition situation in Marsabit County but ranged from serious levels in Saku (8.4%), critical levels in North Horr (29.6%), and Moyale (15.2%) and Extremely Critical level Laisamis (32.8%). The county is classified as "Crisis" (IPC Phase 3, food security) as per the January 2023 SRA assessment report with projected Integrated Phase Classification at "Emergency" (IPC 4) from March 2023. In May 2023, the majority of households in the pastoral and agro-pastoral livelihood zones employed

consumption-coping strategies indicative of Crisis (IPC Phase 3) and Stressed (IPC 2) respectively to address food consumption shortages at the household level. (May 2023 NDMA bulletin). The county's EWS classification in May 2023, indicated that the County is at the "recovery" phase with an improving trend. On rainfall, Moyale surpassed 125 percent of its Long Term Mean rainfall by 170.4 percent. However, most parts of Saku, North Horr, and Laisamis sub-counties recorded depressed to no rainfall In most parts of the County due to the above-normal cumulative seasonal rainfall amounts where North Horr, Laisamis and Moyale sub-counties will drift towards good conditions while Saku will improve to very good forage conditions. Household milk consumption is at 0.75 liter which is low and malnutrition by MUAC is 18.4 which is higher than the Normal range. (May 2023 NDMA bulletin) IMAM admission trends analysis indicates a sharp increase in OTP and SFP admissions between January and March 2023, attributed to the worsening food security situation and the scale-up of case finding and treatment through the integrated outreaches.

Further analysis shows that MAM admissions increased by 34.4% while SAM admissions decreased by 11.4% from January to May 2023 compared to the same period in 2022. On the performance indicators, a high Non-recovery rate was reported in the months of February and March 2023 in both SFP and OTP which affected the recovery rates. Sub-optimal complementary feeding practices for children 6-23 months; minimum dietary diversity (MDD) 17.6%, minimum meal frequency 14.8% (MMF), and minimum acceptable diet (MAD) 4.5% (MIYCN KABP survey 2018). This survey will provide a progress update on the health, nutrition, and food security situation in the county to inform response actions and program adjustments. The results will feed into the long rains assessment report for July/August 2023. The County has experienced other shocks, including drought and insecurity, during the COVID-19 pandemic. The survey will inform on the impacts of interventions that are going on, especially since the drought began, social protection, and Emergency activities.

1.2 OBJECTIVES OF SURVEY

Main Objective

- To determine the nutrition status of children aged 6- 59 months old and Women of reproductive age 15-49 Years.

Specific Objectives

- 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 6-59 months over a two-week recall period.
- To relate nutrition status and the immunization coverage of Measles, BCG, and Oral polio vaccines (OPV1 and 3) for children aged 6-59 months.
- To determine the coverage for deworming (12-59 months), zinc supplementation, ORS+Zinc Pack for diarrhea, and vitamin A supplementation among children 6-59 months.
- To estimate the nutritional status of women of reproductive age 15-49 years using MUAC measurements

- To collect information on household food security, water, sanitation, and hygiene (WASH) practices, Morbidity and treatment seeking.
- To assess the Minimum meal frequency, Minimum Acceptable Diet, and Minimum Dietary Diversity for children aged 6-23 months
- To estimate the crude mortality rate (CMR) and under-five mortality rate (U5MR)

1.3 TIMING OF THE SURVEY

The survey was undertaken from 1st July 2023. Training and piloting of the survey materials and standardization test were conducted from 1st July to 4th July 2023 and thereafter data collection from 5th July, 2023. Data was collected using the Open Data Kit (ODK) hence reducing time which could be used for data entry. This survey was conducted in the middle of the long dry period as shown in the below seasonal calendar:

TABLE 2 : SEASONAL CALENDAR

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Short Dry Season			**Long Rain**			**Long dry spell**			**Short Rains**		

CHAPTER TWO: SURVEY METHODOLOGY

2.0 SURVEY AREA

The target geographical area was Marsabit County which targeted the 4 sub-counties of Moyale, Saku, North Horr and Laisamis.

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 villages which were the cluster and this was the 1st stage sampling. Finally, with the sampled villages, a list of all households was drawn upon for each village where 15 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 11th Jan 2020 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.

2.4 SAMPLE SIZE CALCULATION

TABLE 3: ANTHROPOMETRIC SAMPLE SIZE CALCULATION

Variable	North Horr	Laisamis	Rationale
Estimated Prevalence (%)	24.0	27.9	Use of Lower CI due to projected slight improvement of nutrition situation from January 2023 and also due to the intense response activities like Outreaches , BSFP, Food Distribution, and Cash Transfers at the household level

Precision (%)	5.0	5.0	Precision guided by Global SMART for the given prevalence
Design Effect	1.5	1.5	Guided by January 2023 SMART Survey. Both North Horr and Laisamis had a design effect of above 2 hence used 1.5
Estimated No of children	458	505	
Average Household size	6.7	5.6	As per 2019 KNBS
Proportion of children < 5 yrs (%)	11.9	16.5	As per 2019 KNBS
Non Response rate (%)	2.0	2.0	As per January 2023 SMART survey.
Estimated No. of Households	651	619	
No of Households per day	15	15	Based on Jan 2023 SMART Survey Experience
No of clusters	44	42	Computed from the Number of HHs per Day
No of Teams	7	7	
No of days	7	6	Based on the Number of Teams to be Recruited
Variable	Moyale	Saku	Rationale
Estimated Prevalence (%)	11.3	5.8	Use of Lower CI due to projected slight improvement of nutrition situation from January 2023 and also due to the intense response activities like Outreaches, Food Distribution, and Cash Transfers at the household level
Precision (%)	4	3	Precision guided by Global SMART for the given prevalence
Design Effect	1.86	1.56	Guided by January 2023 SMART Survey.
Estimated No of children	487	396	
Average Household size	6.1	4.9	As per 2019 KNBS
Proportion of children < 5 yrs (%)	17.8	14.9	As per 2019 KNBS
Non Response rate (%)	2%	2%	As per January 2023 SMART survey.
Estimated No. of Households	509	615	
No of Households per day	15	15	Based on Jan 2023 SMART Survey Experience
No of clusters	34	41	Computed from the Number of HHs per Day
No of Teams	6	7	
No of days	6	6	Based on the Number of Teams to be Recruited

Sample Size Calculation for Mortality

TABLE 4: MORTALITY SAMPLE SIZE CALCULATION

Parameter	NH	Laisamis	Moyale	Saku	Rationale

Estimated death rate per 10,000/ day	0.07	0.12	0.01	0.22	Lower C.I from the e2022 mortality survey because of insignificant Changes in key determinants of mortality across all sub-counties
Desired precision	0.3	0.3	0.3	0.3	SMART –with death rate less than 1.0 deaths/ 10,000/day a precision of 0.3 is appropriate
Design effects	1.27	1.21	1.00	1.5	From 2022 Mortality survey
Recall period in days	104	104	104	104	1st April 2023 to Midpoint data collection on 13/07/2023
Average HH size	6.7	5.6	6.1	4.9	KNBS census 2019
Non-response %	2	2	2	2	Based on previous surveys
Total No. HH to be surveyed	**60**	**118**	**7**	**293**	Based on ENA output
No. of HH per day/cluster	**2**	**3**	**1**	**8**	**Calculated as per no. of clusters**
Population to be included	397	649	45	1407	Based on ENA output

Finally, the anthropometry sample was used as the overall household sample in all the Survey zones since Mortality sample Size was small.

2.5 ORGANIZATION OF THE SURVEY

Coordination/Collaboration: Before the survey was conducted, meetings were held with the respective authorities and key stakeholders briefed them about the purpose, objectives and methods for the survey. The survey details were discussed with the County Health office, key partners on the ground (NGO and UN). The authorities were requested to officially inform the communities (villages) that were involved in the assessment.

Training of the Survey Team: the data collection teams were given 4-days training prior to field work, including a standardization test to ensure standardization of measurement and recording practice. All data collectors were trained on taking anthropometric measurements, completion of questionnaires and sampling methodology. The data collection forms and questionnaires were pilot tested in clusters not selected to be part of the larger survey, to ensure that the interviewers and respondents understand the questions and that interviewers follow correct protocols. The teams were also trained on the digital data collection methods as tablets were used during the survey.

Team work in the field: Twenty seven teams each with four members who have experience in data collection were organized/ selected from the survey area with each team consisting of 1 team leader, interviewer and 2 measurers. In addition, supervisors from, Concern Worldwide, NDMA, MoA, MoH, and other partners closely supervised the team throughout the survey. In moving from one randomly selected household to another, a village leader, or a community volunteer, depending on the village, guided the teams and who was available.

2.6 VARIABLES Measured

Age: The exact age of the child was recorded in months. Calendar of events, health or baptismal cards and birth certificates were used to determine age.

Weight: Children were measured using a digital weighing scale

Height: Recumbent length was taken for children less than 87 cm or less than 2 years of age while height measured for those greater or equal to 87 cm or more than 2 years of age.

MUAC: Mid Upper Arm Circumference (MUAC) was measured on the left arm, at the middle point between the elbow and the shoulder, while the arm was relaxed and hanging by the body's side. MUAC was measured to the nearest cm. MUAC measurements were taken for children 6-59 months of age and for women in the reproductive age (15-45 years of age).

Bilateral Oedema: Assessed by the application of normal thumb pressure for at least 3 seconds to both feet/arms at the same time. The presence of a pit or depression on both feet/arms was recorded as Oedema present and no pit or depression as Oedema absent.

Morbidity: Information on two-week morbidity prevalence was collected by asking the mothers or caregivers if the index child had been ill in the two weeks preceding the survey and including the day of the survey. Illness was determined based on respondent's recall and was not verified by a clinician.

Immunization status: For all children 6-59 months, information on BCG, OPV1, OPV3 and measles vaccinations status was collected using health cards/mother-child booklets and recall from caregivers. When estimating measles coverage, only children 9 months of age or older were taken into consideration as they are the ones who were eligible for the vaccination.

Vitamin A supplementation status: For all children 6-59 months of age, information on Vitamin A supplementation in the 6 months prior to the survey date was collected using child health/Mother-Child booklets and immunization campaign cards and recall from caregivers.

Iron-Folic Acid supplementation: For all female caregivers, information was collected on IFA supplementation and number of days (period) they took IFA supplements in the pregnancy of the last birth that was within 24 months of this survey.

De-worming status: Information was solicited from the caregivers as to whether children 12-59 months of age had received de-worming tablets or not in the previous one year. This information was verified by health Card where available.

Food security status of the households: Food consumption score, Minimum dietary diversity score women source of predominant foods and coping strategies data was collected.

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: Data on household access and ownership to a toilet/latrine, occasions when the respondents wash their hands were also obtained.

Mosquito nets ownership and utilization: Data on the household ownership of mosquito nets and their utilization was collected

Minimum dietary diversity score women (MDD-W): A 24 hour food consumption recall was administered to all women of reproductive Age (15-49 years).All foods consumed in the last 24 hours were enumerated for analysis. All food items were combined to form 10

defined food groups and all women consuming more at least five of the ten food groups were considered to meet the MDD-W.

Household food consumption score (FCS). Data on the frequency of consumption of different food groups consumed by a household during 7 days before the survey was collected.

2.7 DATA ANALYSIS

Data Analysis: the data downloading and analysis was done using ENA for SMART, Excel and SPSS Statistical software version 22. The Concern Worldwide Manager Survey and Surveillance was responsible for the Data downloading, analysis and report writing. Results are presented using the new WHO reference levels.

Preliminary Results and Final Report: Manager Survey and Surveillance Officer of Concern Worldwide to the CHMTs, stakeholders and the Nutrition Information Working Group (NIWG) submitted the preliminary findings within two weeks of completion of the survey fieldwork at County and National level. 2.8 Technical Support

Referrals

During the survey, all severe and moderately malnourished children as per MUAC and Weight-for-Height cut offs referred to the nearby health service delivery points offering IMAM services. Pregnant and lactating women with MUAC.

Ethical consideration

Sufficient information was provided to the local authorities about the survey including the purpose and objectives of the survey, the nature of the data collection procedures, the target group, and survey procedures. Verbal consent was obtained from all adult participants and parents/caregivers of all eligible children in the survey. The decision of caregiver to participate or withdrawal was respected. Privacy and confidentiality of survey respondent and data was protected.

CHAPTER THREE: SURVEY RESULTS AND DISCUSSION

3.1 DEMOGRAPHIC RESULTS

3.1.1 GENDER OF THE RESPONDENT

The respondents in Marsabit were predominantly female, accounting for 89% of the total, while the remaining 11% were male. It is worth noting that the majority of male respondents hailed from Saku and Moyale sub-counties.

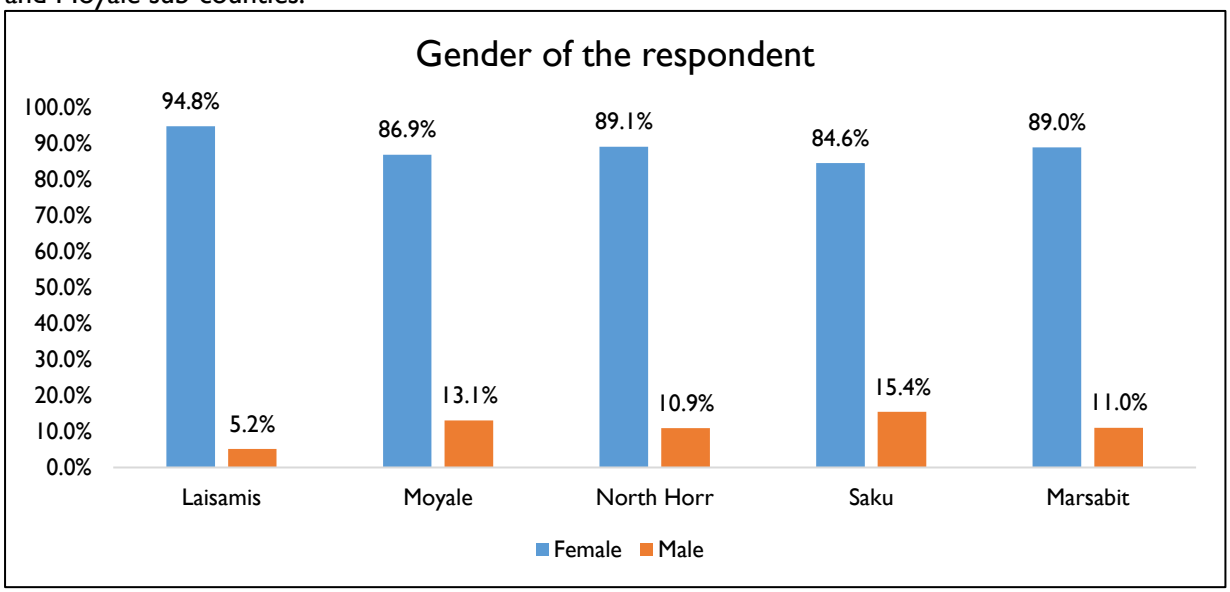

FIGURE 2: GENDER OF THE RESPONDENT

3.1.1 CAREGIVERS' MARITAL STATUS

The majority 88.6% of the Marsabit residents are permanent residents while 11.1% are nomadic/pastoralists mainly reported in North Horr and Laisamis sub-counties. Majority of the respondents were married at 80.3% and 15.0% are widowed as shown in the figure below:

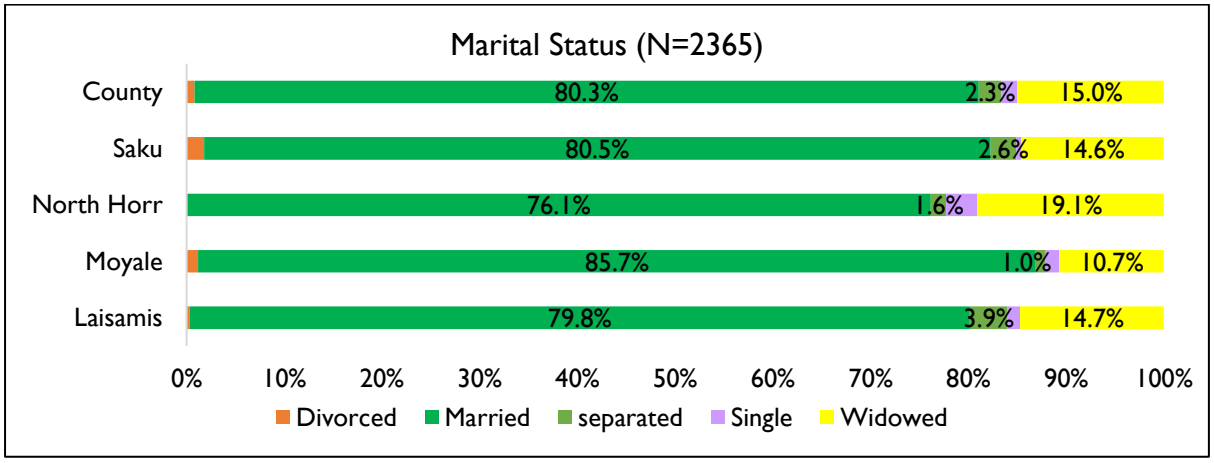

FIGURE 3: MARITAL STATUS OF THE RESPONDENT

3.1.3 SCHOOL ENROLMENT

As shown in the figure below, nearly 71.1% of the respondents (3-18 year olds) in Marsabit County were enrolled in school. Further analysis showed the highest enrollment to be in Saku (88.7%) and Moyale (86.5%) while lower in Laisamis (52.3%) and North Horr (61.2%) respectively. In Marsabit County, according to the County Steering Group, most children enroll to school after the attaining the age of 7 years hence low enrollment rate. This is as shown below.

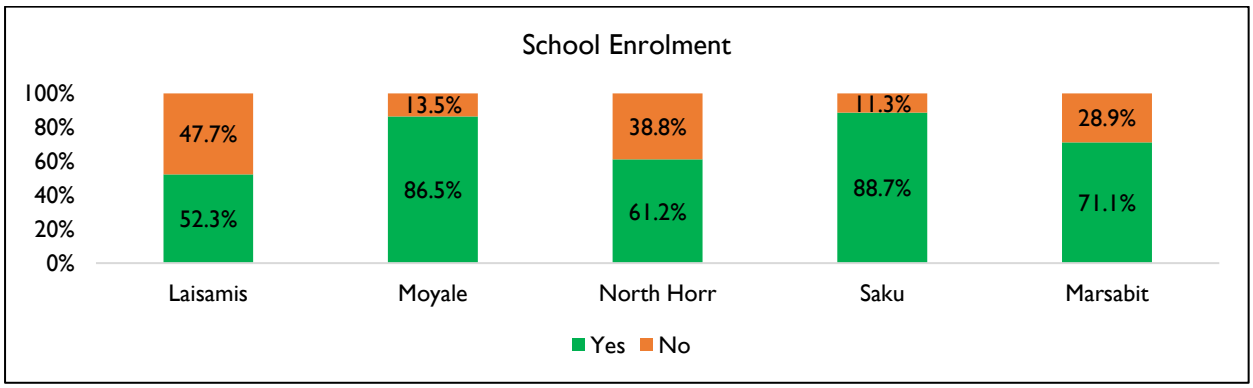

FIGURE 4: SCHOOL ENROLMENT

When the data was further analysed, it was found that for the respondents that were not enrolled in schools, majority (46.2%) were reported that they were not enrolled due to family responsibilities followed by being too young to join school at 31.6%. For North Horr and Laisamis, family labour responsibilities 51.1% and 55.9% were the main reason for poor school enrolment compared to Saku and Moyale where 58.0% and 76.1% were not enrolled due to other reasons (under-age and drop-outs). This is as summarized in the table below:

TABLE 5: REASONS FOR NOT BEING IN SCHOOL

	LAISAMIS	MOYALE	NORTH HORR	SAKU	MARSABIT
Chronic Sickness	0.3%	2.2%	0.6%	1.1%	0.6%
Weather (rain, floods, storms)	0.1%	0.0%	0.2%	0.0%	0.1%
Family labour responsibilities	55.9%	3.0%	51.1%	23.9%	46.2%
Working outside home	0.0%	0.7%	0.6%	0.0%	0.3%
Teacher absenteeism	0.3%	0.0%	0.2%	1.7%	0.4%
lack of fees or money to meet other costs	0.7%	6.7%	8.5%	2.3%	3.9%
The household doesn't see the value of schooling	3.5%	0.7%	2.0%	0.6%	2.4%
No food in the schools	0.3%	0.7%	0.2%	0.6%	0.3%
Migrated/ moved from the school area	0.9%	0.0%	0.6%	0.0%	0.6%
Insecurity/violence	0.0%	2.2%	0.0%	0.6%	0.3%
No school Nearby	3.5%	0.0%	1.6%	5.7%	2.8%
Married	0.5%	1.5%	0.6%	0.0%	0.6%
Pregnant / Taking care of her own child	0.0%	1.5%	0.4%	0.6%	0.3%
Others (specify)	12.1%	4.5%	8.7%	5.1%	9.6%
Too young to be in school	22.0%	76.1%	24.9%	58.0%	31.6%

3.1.4 HOUSEHOLDS' MAIN SOURCE OF INCOME AND LIVELIHOOD

The main occupation of the household head in Marsabit County, majority were livestock herders (47.5%) followed by casual labor (19.3%).
In Marsabit, 25.9% of the resident have no source of income, 24.5% source of income is Sale of livestock and 20.6% are casual laborers. This is as summarized in the table below:

TABLE 6: MAIN OCCUPATION AND MAIN SOURCE OF INCOME OF THE HOUSEHOLD HEAD

	North Horr	Moyale	Laisamis	Saku	COUNTY
Main Occupation Of the Household Head					
Crop farming/Own farm labour	2.2%	9.3%	0.0%	10.2%	5.2%
Employed (salaried)	2.2%	7.3%	4.4%	8.7%	5.5%
Firewood/charcoal	0.9%	3.6%	1.8%	7.9%	3.5%
Fishing	1.1%	0.2%	1.8%	0.2%	0.8%
Livestock herding	76.0%	6.0%	75.9%	23.5%	47.5%
Merchant/trader	0.6%	3.8%	0.2%	2.5%	1.6%
Others (Specify)	6.8%	10.3%	1.6%	13.1%	7.8%
Petty trade	3.9%	22.2%	3.4%	7.4%	8.6%
Waged labour (Casual)	6.2%	37.3%	11.0%	26.6%	19.3%
Current Main Source of Income of the Household Head					
Casual labor	7.3%	41.7%	10.0%	27.8%	20.6%
Emergency Cash Transfer	0.6%	0.2%	0.6%	0.2%	0.4%
No income	55.5%	9.1%	15.3%	19.9%	25.9%
Others (Specify)	2.1%	5.4%	5.3%	2.6%	3.8%
Permanent job	1.7%	8.9%	4.0%	7.9%	5.5%
Petty trading e.g. sale of firewood	2.4%	17.7%	3.2%	10.7%	8.0%
Regular cash transfer program	2.1%	0.2%	0.0%	0.2%	0.6%
Remittance	1.9%	4.6%	.2%	2.1%	2.1%
Sale of crops	.5%	4.0%	0.0%	8.9%	3.3%
Sale of livestock	13.7%	4.8%	60.7%	15.1%	24.5%
Sale of livestock products	11.1%	2.8%	0.3%	4.3%	4.7%
Sale of personal assets	1.3%	0.8%	0.2%	0.5%	0.7%

3.2 NUTRITION STATUS OF CHILDREN

3.2.1 PREVALENCE OF ACUTE MALNUTRITION (WEIGHT-FOR-HEIGHT Z-SCORE)

The survey managed to reach a total of 455, 463, 408 and 533 children aged between 6 to 59 months in Saku, Moyale, North Horr and Laisamis Sub Counties respectively whose anthropometric measurements were taken.

In this survey, the global acute malnutrition (GAM) is defined as the proportion of children with a z-score of less than -2 z-scores weight-for-height and/or presence of oedema. Additionally, severe acute malnutrition (SAM) is defined as the proportion of children with less than -3 z-scores weight-for-height and/or presence of oedema. Further, based on MUAC, GAM was defined as the proportion of children with a MUAC of less 125 mm and/or presence

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

Malnutrition by MUAC

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

The survey findings indicated a GAM prevalence rate of 12.9 %(10.7 - 15.6 95% C.I.), while the prevalence for severe malnutrition was 2.1% (1.5 - 3.1 95% C.I.). This is generally classified as a serious by the WHO classification of malnutrition. This was lower compared to July 2022 results which showed a GAM rate of 19.6 %(16.7-22.9). Further analysis showed that North Horr sub-county had the highest GAM rate of 22.5%, followed by Laisamis sub-county at 18.0% and this are above the emergency GAM thresholds (15.0%) indicating a critical situation. Saku and Moyale Sub Counties recorded serious and alert nutrition status with GAM rates of 10.0% (6.1-16.1) and 6.8% (4.4-10.3) respectively. The findings showed a significant change from the previous survey results done in July 2022 in Moyale, North Horr and Laisamis Sub Counties. Saku Sub County, the situation remained the same. There were no cases of edema that were reported.

TABLE 7: PREVALENCE OF ACUTE MALNUTRITION BY WHZ SCORE

	North Horr July 2022	North Horr July 2023	Laisamis July 2022	Laisamis July 2023	Moyale July 2022	Moyale July 2023	Saku July 2022	Saku July 2023	County July 2022	County July 2023
Global Acute Malnutrition (GAM)	29.7% (25.4-34.5)	22.5% (17.9-28.0)	30.3% (24.6-36.6)	18.0% (14.4-22.4)	9.4 % (6.4 - 13.5	6.8% (4.4-10.3)	10.6% (7.8-14.4)	10.0% (6.1-16.1)	19.6% (16.7 - 22.9)	12.9%(10.7 - 15.6)
Severe Acute Malnutrition (SAM)	4.4% (2.8-6.7)	4.7% (2.8-7.7)	5.5% (3.2- 9.0)	3.0% (1.7- 5.1)	2.2 % (1.2 - 3.9	0.7% (0.2- 2.0)	1.2% (0.5-2.7)	2.0% (1.0-4.0)	3.5% (2.6 - 4.7)	2.1% (1.5 - 3.1)

Further analysis was done on children who were malnourished and in the program. The survey findings indicated that in North Horr that out of the 80 children in the program where 10 in the OTP and 70 in the SFP program only 92 were malnourished hence the actual program coverage being 86.9%.In Laisamis, 97 children were in program where with 8 in OTP and 89 in SFP program, only 96 were malnourished hence the actual program coverage was above 100%. In Moyale, 19 children were in program where 1 in OTP and 18 in SFP but 31 were malnourished hence the actual program coverage being 61.3%. In Saku, 46 children were in

program with 4 in OTP and 42 in the SFP program and 46 were malnourished hence the actual program coverage being 100%

3.2.2 PREVALENCE OF ACUTE MALNUTRITION BY MUAC

The nutrition situation was also assessed using the MUAC and in comparison with the GAM rates by the WFH scores. The overall prevalence of Acute Malnutrition by MUAC for Marsabit County was 4.8% with the worst affected sub-county being Saku which recorded the highest prevalence of 6.8% while North Horr, Laisamis and Moyale had 5.6%, 4.1% and 3.0% respectively.

TABLE 8: PREVALENCE OF ACUTE MALNUTRITION BY MUAC

	North Horr July 2022	North Horr July 2023	Laisamis July 2022	Laisamis July 2023	Moyale July 2022	Moyale July 2023	Saku July 2022	Saku July 2023	County July 2022	County July 2023
Global malnutrition < 125mm	4.0 % (2.4 - 6.6	5.6% (3.3- 9.5)	7.3 % (4.6 - 11.2	4.1% (2.6- 6.6)	5.0 % (3.2 - 7.8)	3.0% (1.5- 6.1)	4.3 % (2.7 - 6.9	6.8% (3.9- 11.5)	5.0% (3.9 - 6.3)	4.8% (3.6- 6.5)
Severe malnutrition <115mm	0.4 % (0.1 - 1.5	1.0% (0.4- 2.5)	1.0 % (0.4 - 2.5	0.8% (0.3- 2.0)	1.2 % (0.5 - 2.8	0.6% (0.1- 2.8	0.7 % (0.3 - 1.8	0.7% (0.1- 2.9)	0.8 % (0.4 - 1.4	0.8% (0.4- 1.4)

3.2.3 PREVALENCE OF UNDERWEIGHT

The prevalence of underweight is determined by low weight-for-age which arises from insufficient weight gain relative to age is a function of short stature, thinness or both. The measure of underweight gives a mixed reflection of both the current and past nutrition experience by a population and is very useful in growth monitoring. Children who are WFA Z score fell below -2 standard deviations of the WHO reference population are classified as underweight. Children who are WFA Z score fell below -3 standard deviation of the WHO reference population are classified as severe underweight.

TABLE 9: PREVALENCE OF UNDERWEIGHT

	North Horr July 2022	North Horr July 2023	Laisamis July 2022	Laisamis July 2023	Moyale July 2022	Moyale July 2023	Saku July 2022	Saku July 2023	County July 2022	County July 2023
Global underweight (<-2 z-score)	39.7 % (35.0 - 44.6)	37.1% (31.4- 43.2)	47.1 % (40.6 - 53.7)	39.7% (34.6- 45.0)	16.4 % (12.1 - 21.8)	12.9% (9.0- 18.2)	19.6 % (15.0 - 25.2	23.9% (16.4- 33.4)	30.5% (26.9 - 34.3)	25.50%(22.4 - 28.9)
Severe underweight (<-3 z-score)	11.6 % (9.1 - 14.5)	8.1% (5.5- 11.8)	11.5 % (7.5 - 17.3	7.4% (5.2-10.3)	1.9 % (0.9 - 3.9)	1.1% (0.4- 3.1)	4.7 % (3.1 - 7.1	6.9% (3.7- 12.5)	7.1% (5.5 - 9.1)	4.6%(3.5 - 5.9)

Underweight prevalence for Marsabit County was 25.5%(22.4-28.9) with Laisamis at 39.7% which was the highest while North Horr, Saku and Moyale reported 37.1%, 23.9% and 12.9% respectively. This prevalence of underweight was classified as high using the WHO classification of underweight[1].

The high prevalence of underweight in Laisamis and North Horr Sub counties is consistent with wasting prevalence. Some of the factors that lead to high levels of wasting and underweight include poor dietary intake, high morbidity and poor child care practices coupled with poor hygiene and sanitation practices. Other underlying factors include poor access to health service delivery points due to poor community referral system and also the vastness of the county.

3.2.4 PREVALENCE OF STUNTING

Height-for-age is another anthropometric indices commonly used as an indicator for malnutrition. Stunting (height-for-age) is an indicator of chronic (long-term) malnutrition arising from persistently poor food security situation, micronutrient deficiencies, recurrent illnesses, and other factors which interrupt normal growth. Stunting in childhood leads to reduced adult size and reduced work capacity. This, in turn, has an impact on economic productivity at the national level. Unlike wasting, stunting is not affected by seasonality but rather related to the long-term effect of socio-economic development and long-standing food insecurity situations.

TABLE 10: PREVALENCE OF STUNTING

	North Horr July 2022	North Horr July 2023	Laisamis July 2022	Laisamis July 2023	Moyale July 2022	Moyale July 2023	Saku July 2022	Saku July 2023	County July 2022	County July 2023
Global Stunting (<-2 z-score)	26.8 % (22.7 - 31.4	**28.3% (23.2-33.9)**	31.2 % (25.7 - 37.3	**38.9% (33.3-44.8)**	19.1 % (15.1 - 23.9)	**21.3% (16.0-27.9)**	19.0 % (15.2 - 23.6	**30.4% (24.0-37.7)**	23.8% (21.2 - 26.6)	**28.3%(24.8 - 32.0)**
Severe Stunting (<-3 z-score)	6.2 % (4.6 - 8.4)	**6.5% (4.5-9.2)**	9.5 % (6.5 - 13.8	**9.8% (7.1-13.3)**	3.9 % (2.0 - 7.2)	**4.0% (2.3-6.8)**	4.3 % (2.8 - 6.6)	**8.3% (5.0-13.3)**	5.8% (4.5 - 7.4)	**6.4%(5.1 - 8.1)**

In terms of stunting prevalence, the survey findings indicated that 28.3% (24.8 – 32.0 95% C.I.) of children in Marsabit County were stunted as where 6.4% (5.1 – 8.1 95% C.I.) of the children were severely stunted. The results of the survey show that the prevalence of stunting in Marsabit is categorized as high based on the WHO classification[2]. The high stunting levels in the County represent a loss of both mental and physical potential for the affected children.

[1] WHO Classification of Underweight: Low - <10%, Medium – 10 – 19.9%, High – 20 – 29.9%, Alarming/Critical - >30%

[2] WHO Classification: Low - <20%, Medium - 20 – 29.9% , High – 30 – 39.9%, Alarming/Critical - >40.0%

The high stunting levels could be attributed to the poor dietary intake both in terms of quantity and quality as evidenced by the household dietary diversity score which showed that the survey population relied heavily on 5 major food groups (cereals, legumes, milk, fats & oils and sugars) which are predominantly high in energy but lack in the essential micronutrients required for proper growth and development mainly found in vegetables, fruits and protein-rich foods of animal sources e.g. meat, eggs, fish etc.

3.3 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 .

3.3.1 WOMEN PHYSIOLOGICAL STATUS

The figure below indicates that majority of the surveyed women of Reproductive age (15-49 years) in the county were lactating (45.4%) and 45.2% were not pregnant or lactating.

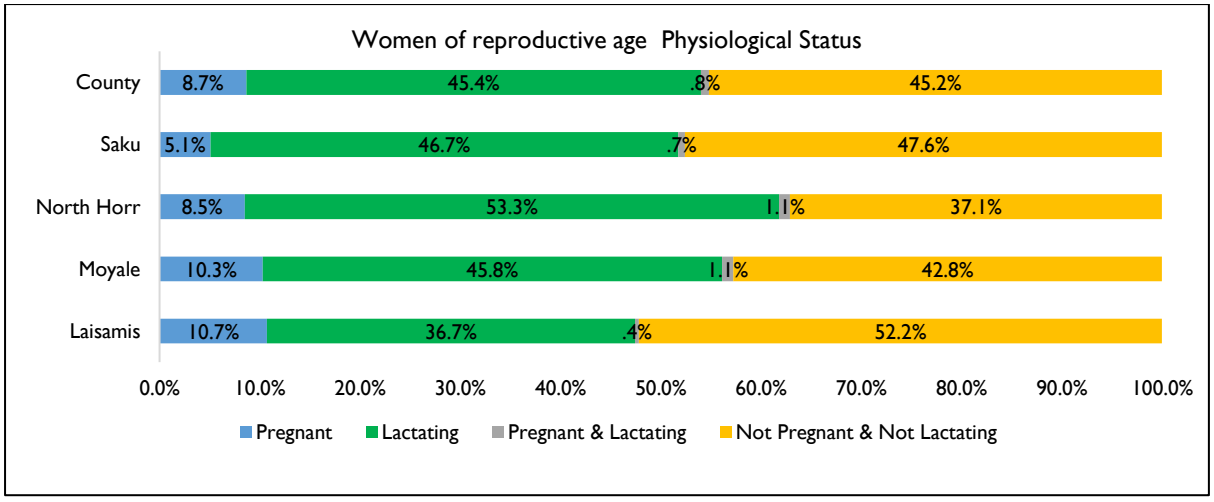

FIGURE 5: PHYSIOLOGICAL STATUS OF THE WOMEN

3.3.2 ACUTE 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. The following table below shows the maternal nutrition situation of the women of the reproductive age and pregnant and lactating women in the four sub-counties and for the Marsabit County.

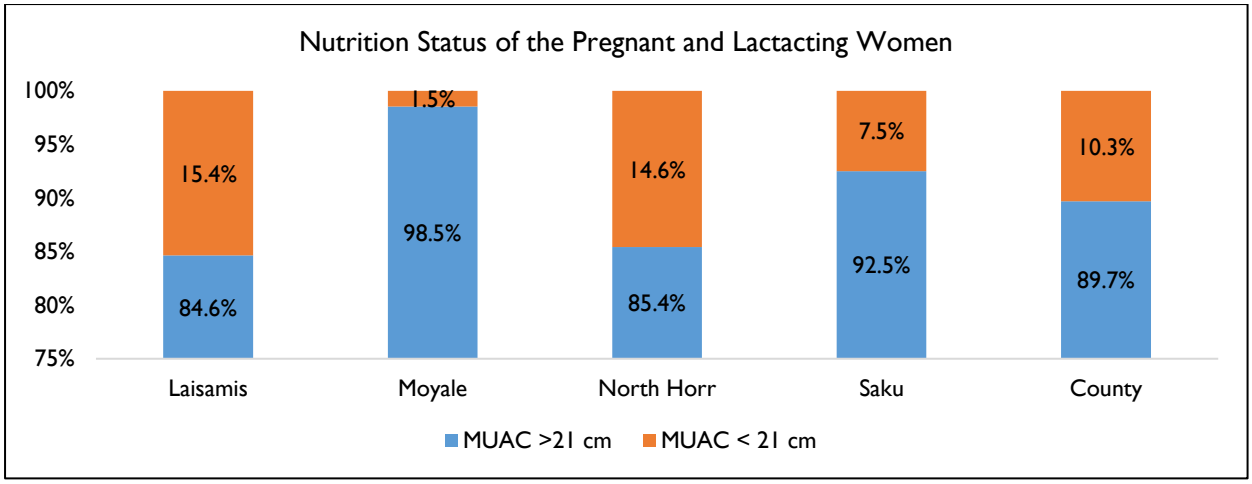

FIGURE 6: PREVALENCE OF MATERNAL ACUTE MALNUTRITION

The maternal malnutrition was defined as women whose MUAC measurements were < 21.0cm

The proportion of malnourished pregnant and lactating women in Marsabit was 10.3% with Laisamis recording the highest proportion of pregnant and lactating women who were malnourished at 15.4% which was followed by North Horr at 14.6%. Saku and Moyale were at 7.5% and 1.5% respectively.

The Proportion of Malnourished women of reproductive age in Marsabit County was 10.4% with Laisamis recording the highest at 15.7%,followed by North Horr at 15.3%, Moyale and Saku were at 2.2% and 6.0% respectively.

3.3.3 ANTENATAL CARE

Antenatal care (ANC) is health care given to a pregnant woman from conception to the onset of labor. The care aims to achieve a good outcome for the mother and baby and prevent any complications that may occur in pregnancy, labor, delivery and the post-partum period. Focused or targeted ANC refers to a minimum number of four comprehensive personalized antenatal visits, each of which has specific service to the mother including client assessment, education and care to ensure prevention or early detection and prompt management of complications. According to the Kenya national guidelines for quality obstetrics and perinatal care, the four visits should be scheduled as follows;

1. First visit less than 16 weeks
2. Second Visit 16-28 weeks
3. Third Visit 28-32 weeks
4. Fourth Visit 32-40 weeks

The results of the survey showed that the proportion of mothers who had ever attended antenatal care during the pregnancy of their last born child was 97.5%.

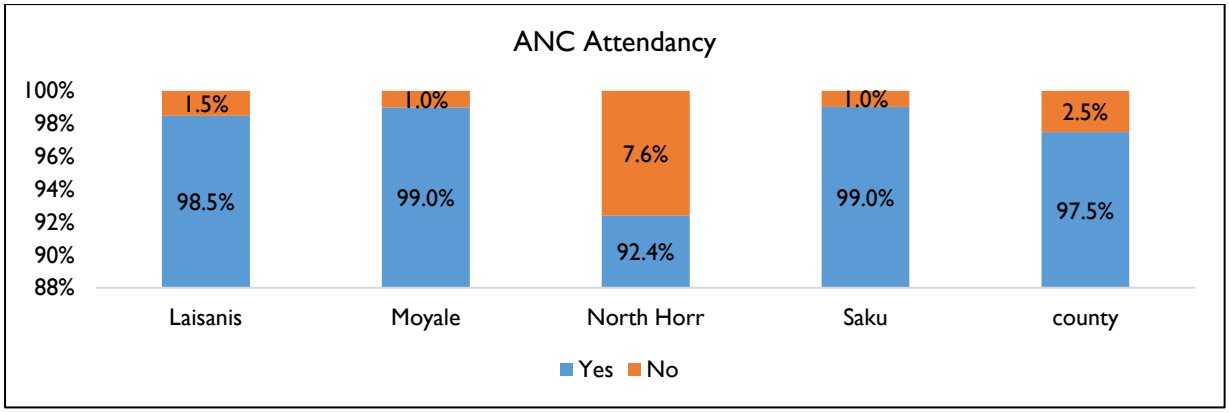

FIGURE 7: ANC ATTENDANCY

Further the survey looked at how many months were the mothers were pregnant when they attended the first antenatal visit. Most mothers attended during month 4 to month 6 the first visit.

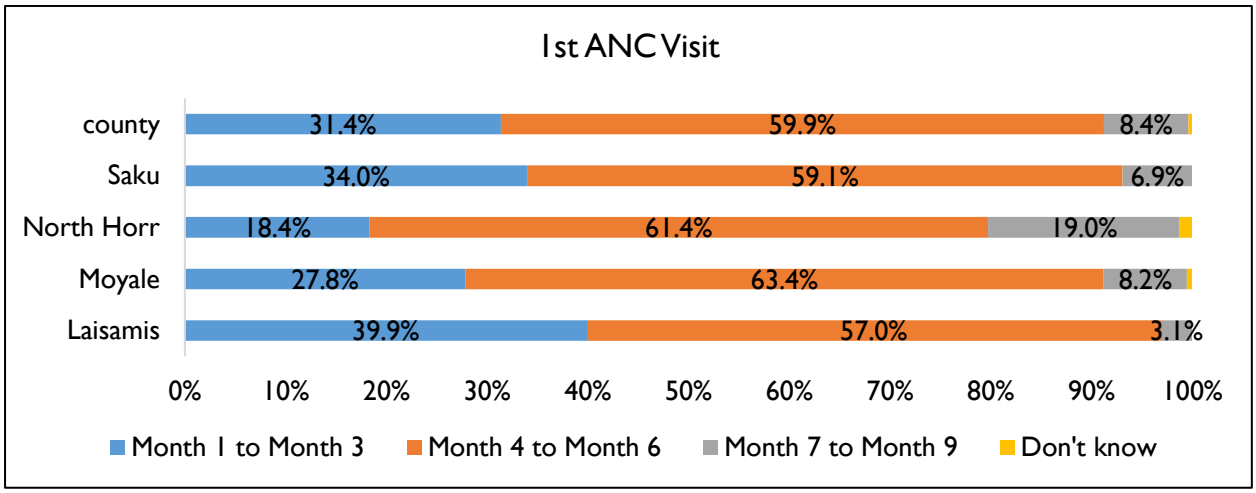

FIGURE 8: 1ST ANC VISIT

3.3.4 IRON SUPPLEMENTATION

During pregnancy, women have increased need for additional iron to ensure they have sufficient iron stores to prevent iron deficiency. 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?[3]These recommendations have since been adopted by Kenya government in its 2013 policy guidelines on supplementation of iron folic acid supplementation (IFAS) during pregnancy. During the survey, iron folic supplementation was assessed by asking mothers of children below 2 years if they consumed iron folate in their most recent pregnancy. Results show that Marsabit county is yet to achieve the target for IFAS, Possibly due to operational shortfalls in the delivery of the product or health seeking behavior where mother seek ANC services late in their last trimester.

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

From the survey results, 95.0% (n=792) of caretakers with children aged 24 months and below were supplemented with Iron Folic acid in their last pregnancy. Further analysis showed that the % of caretakers with children aged 24 months and below who were supplemented with Iron Folic acid in their last pregnancy per sub-county was as follows: Laisamis 96.9% (254), North Horr 90.6% (155), Moyale 92.3% (181) and Saku 98.5% (202).
This is as summarized in the table below:

TABLE 11: IFAS SUPPLEMENTATION

	n	Laisamis	n	Moyale	n	North Horr	n	Saku	n	County
Below 90 Days	24	9.4%	2	1.1%	8	5.2%	5	2.5%	39	4.9%
90 to >= 180	133	52.4%	39	21.5%	76	49.0%	118	58.4%	366	46.2%
Above 180 Days	97	38.2%	140	77.3%	71	45.8%	79	39.1%	387	48.9%

3.4 CHILD HEALTH AND IMMUNIZATION.

3.4.1 MORBIDITY

The morbidity of the children in the survey area was determined within a two weeks recall period. The prevalence for Morbidity in Marsabit County of children aged 6-59 months ill two weeks prior to survey was 19.6% (367) with Laisamis reporting the highest of 27.4% followed by Moyale at 20.1%. The most prevalent illness during this period was acute respiratory illnesses/ cough at 73.8%, fever with chills (32.7%) and watery diarrhea (12.3%) as shown in the graph below:

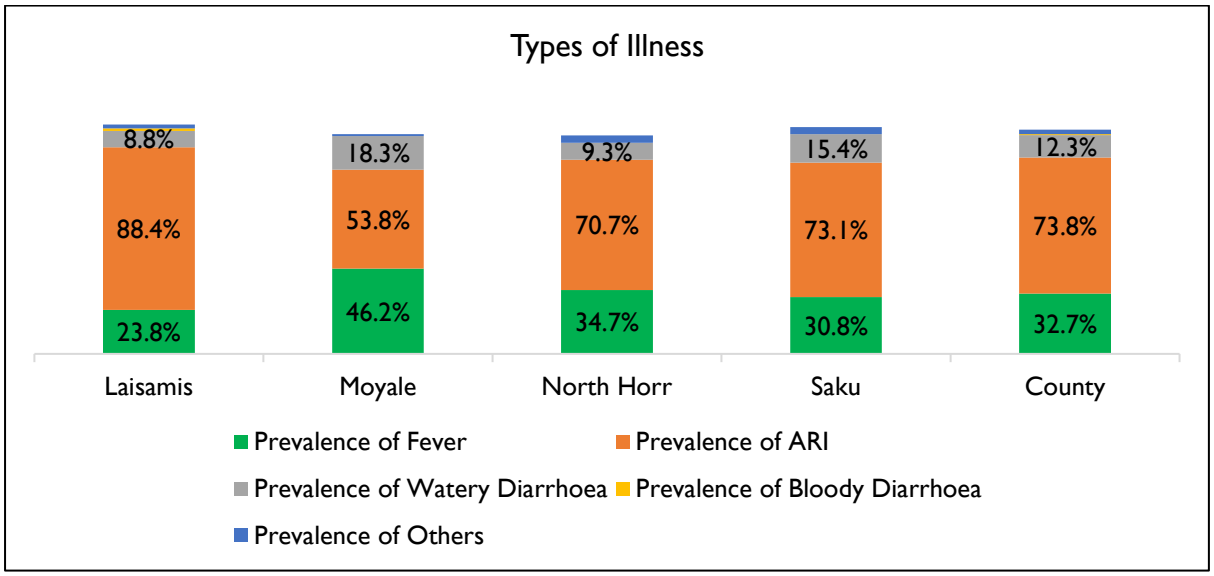

FIGURE 9: TYPE OF ILLNESSES

The high prevalence for acute respiratory infections could be as a result of the cold season which accompanies the long rains and hence most of the children < 5 years are prone to these diseases. In Moyale the high prevalence for the diarrhea cases could be as a result of poor hygiene and sanitation practices since most people in Moyale drink unsafe water since the main source of drinking water is surface water. In North Horr the high prevalence of acute

respiratory infections cases could be associated with high rate of malnutrition and Poverty since during the survey most household had no source of income.
Further analysis on the children who had diarrhea, the survey results showed that the prevalence of watery diarrhea was 12.3% (n=45) In terms of zinc supplementation, 66.7% had received the supplementation which is below the HiNi target of 80%. This is as highlighted in the table below:

TABLE 12: ZINC /ORS SUPPLEMENTATION

	Laisamis			Moyale			North Horr			Saku			County		
	n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
Zinc Supplementation	6	13	**46.2%**	13	17	**76.5%**	3	7	**42.9%**	8	8	**100.0%**	30	45	**66.7%**

In terms of the health seeking behavior of the caregivers who had sick children within a period of two weeks before the survey, 78.2% (287) of children in Marsabit County sought Health assistance when their children were ill? Majority of caregivers in Saku and Moyale had sought medical assistance with 82.7% and 88.2% respectively of the caregivers reporting to have sought medical help. North Horr recorded the poorest health seeking behavior with only 64.0% of the caregivers reporting to have sought medical assistance which could be attributed to long distance to the nearest health facility and especially this time of the drought where most people have moved looking for pasture for their livestock.
In terms of the specific areas sought for the treatment, majority sought assistance from public clinics (61.0%) and private clinics (23.3%).). This is as shown in the table below.

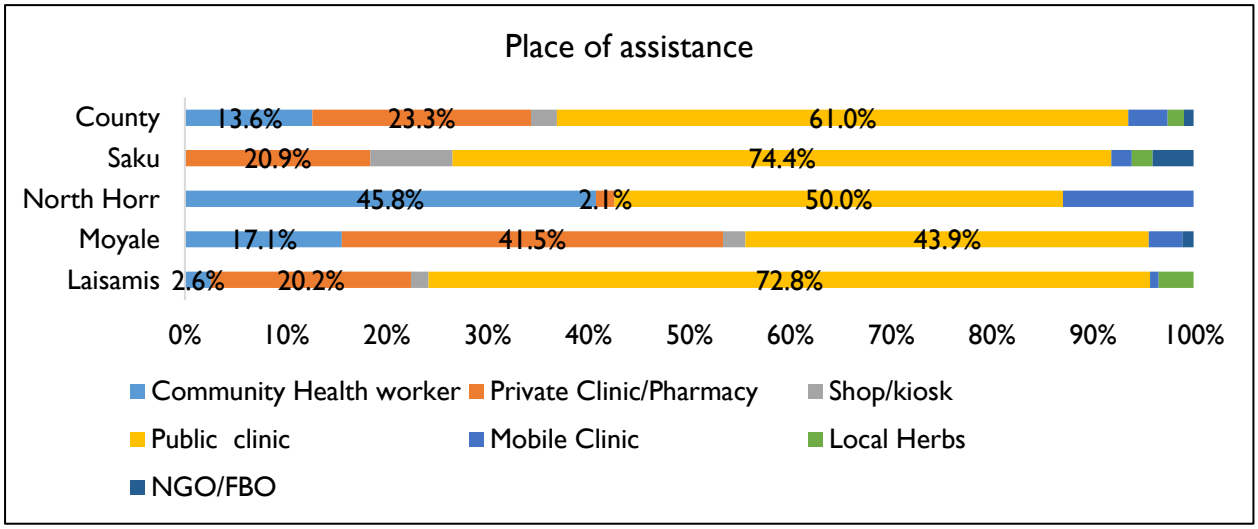

FIGURE 10: PLACE OF ASSISTANCE

3.4.2 IMMUNIZATIONS 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 defines a fully immunized child as one who has received all the prescribed antigens and at least one Vitamin A dose under the national immunization schedule before the first birthday. This survey assessed the coverage of 4 vaccines namely, BCG, OPV1, OPV3, and measles at 9 and 18 months. The information on vaccination coverage was obtained from health cards and from mother's verbal reports. All mothers were asked to show the interviewer health cards used for the child's immunization.

The 1st measles immunizations coverage at 9 months by card was higher in Saku (91.2%) which was followed by Laisamis (85.8%) and lowest in North Horr at 75.8%. For the 2nd measles immunizations coverage at 18 months by card was low in two of the sub-counties where the survey was conducted which were North Horr at 71.7% and Laisamis at 78.6% .For BCG vaccination which was ascertained by scar, the coverage performed quite well in the four sub-counties with all of them attaining the 80% national coverage targets.

For the OPV1 by card Saku recorded highest at 93.3% followed by Laisamis at 91.0%. North Horr recorded the least at 77.1%. For OPV3 by card Saku recorded highest at 90.7% followed by Laisamis at 89.0%. North Horr recorded the least. This is as shown in the table below:

TABLE 13: MEASLES, OPV1 AND OPV3 COVERAGE

Indicator	Moyale	North Horr	Laisamis	Saku	COUNTY
Measles at 9 Months (Yes by Card)	81.6%	75.8%	85.8%	91.2%	83.9%
Measles at 9 Months (Yes by Recall)	16.6%	11.5%	7.4%	7.6%	10.6%
Measles at 18 Months (Yes by Card)	82.1%	71.7%	78.6%	90.1%	80.6%
Measles at 18 Months (Yes by Recall)	16.0%	12.1%	7.5%	8.2%	10.7%
BCG with Scar	98.9%	98.3%	98.3%	99.6%	98.8%
OPV 1 (Yes by Card)	81.9%	77.1%	91.0%	93.3%	86.3%
OPV 1 (Yes by Recall)	16.8%	11.7%	7.8%	6.7%	10.6%
OPV 3 (Yes by Card)	82.1%	76.6%	89.0%	90.7%	85.0%
OPV 3 (Yes by Recall)	16.4%	11.4%	8.2%	8.5%	11.0%

3.4.3 VITAMIN A SUPPLEMENTATION AND DEWORMING COVERAGE (12-59 MONTHS)

Improving the vitamin A status of deficient children through supplementation enhances their resistance to disease and can reduce mortality from all causes by approximately 23 per cent[4]. Therefore, vitamin A supplementation is critical, not only for eliminating vitamin A deficiency as a public-health problem, but also as a central element for child survival.

Poor data management on vitamin A logistics, inadequate social mobilization to improve vitamin uptake and placement of vitamin A at lower level of priority among other interventions have been cited as major challenges in achieving the supplementation targets (MOH Vitamin A supplementation Operational Guidelines for Health Workers 2012).

[4] Vitamin A Supplementation: A Decade of Progress, UNICEF 2007

To assess vitamin A supplementation, parents and caregivers were probed on whether children had been supplemented, for how many times and the place of supplementation (whether it was done in a health facility, outreach site or during mass campaigns) in the past one year. Reference was made to the child health card and in case the card was not available recall method was applied.

The results of the survey showed the Vitamin A coverage for children aged 6-11 months, 81.7% had received Vitamin A once while for children aged 12-59 months, and 88.7% had received Vitamin A once. Overall, for children aged 6-59 months, 88.0% had received vitamin A once. This is as shown in the graph below:

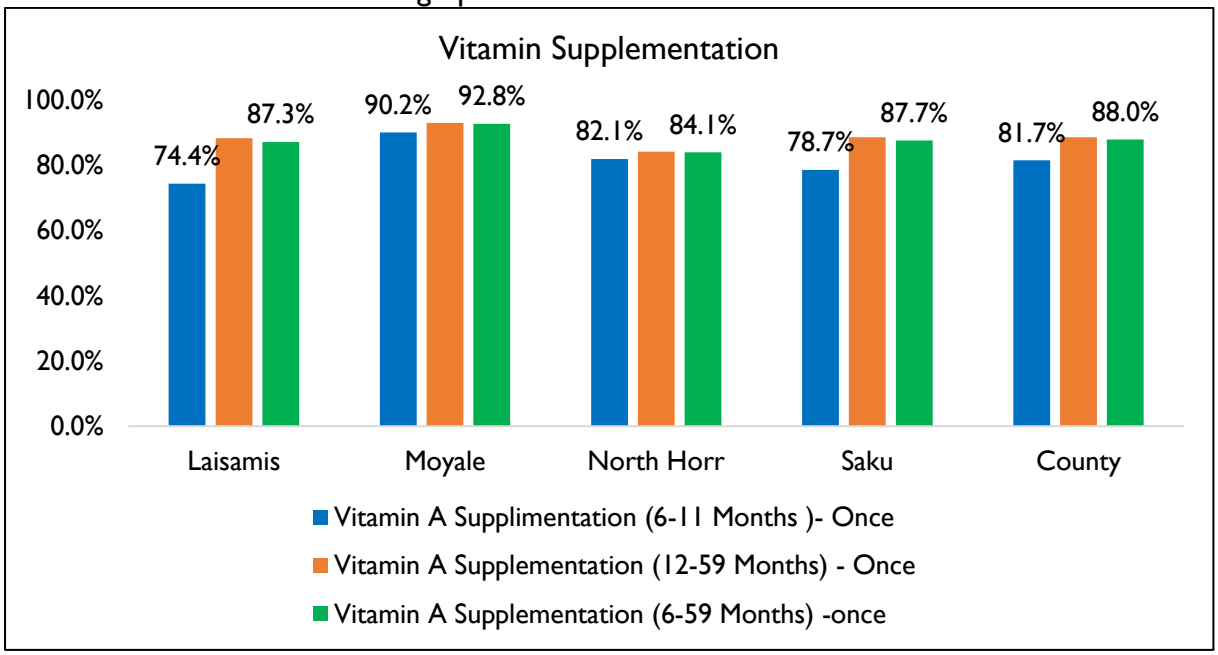

FIGURE 11: VITAMIN SUPPLEMENTATION

The proportion of children (12-59 Months) dewormed was 82.1%, 85.3%, 81.6%, 81.7% & 82.6% for Laisamis, Moyale, North Horr, Saku, and the County respectively

3.5 WATER, SANITATION AND HYGIENE

International human rights consider access to water and sanitation as a human right.[5] This means that all individuals are entitled to have access to an essential amount of safe drinking water and to basic sanitation facilities. The human right to water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use. Water and sanitation are deeply interrelated. Sanitation is essential for the conservation and sustainable use of water resources, while access to water is required for sanitation and hygiene practices. Furthermore, the realization of other human rights, such as the right to the highest attainable standard of health, the right to food, right to education and the right to adequate housing, depends very substantially upon the implementation of the right to water and sanitation. Increasingly current evidence on poor WASH indicators is being linked to under nutrition and more so on High Stunting levels. Diarrhea, the leading killer of young children is closely linked to poor/inadequate WASH (Pruss-Ustun et al, 2014), which often causes undernutrition, which in turn reduces a child's resistance to subsequent

[5] The UN committee on economic, Cultural and Social rights states in its General Comment of November 2002

infections, thus creating a vicious circle. An estimated 25% of stunting is attributable to five or more episodes of diarrhea before 24 months of age (Checkley et al, 2008).

3.5.1 MAIN SOURCE OF WATER

According to the survey, 40.3% of the households in Marsabit County have borehole/protected spring/protected shallow wells, piped water system (13.9%) and Earth pan/dam (11.4%) as the main source of water. Across all the Sub Counties, borehole/protected spring/protected shallow wells were the major source of drinking water. This is as shown in the table below:

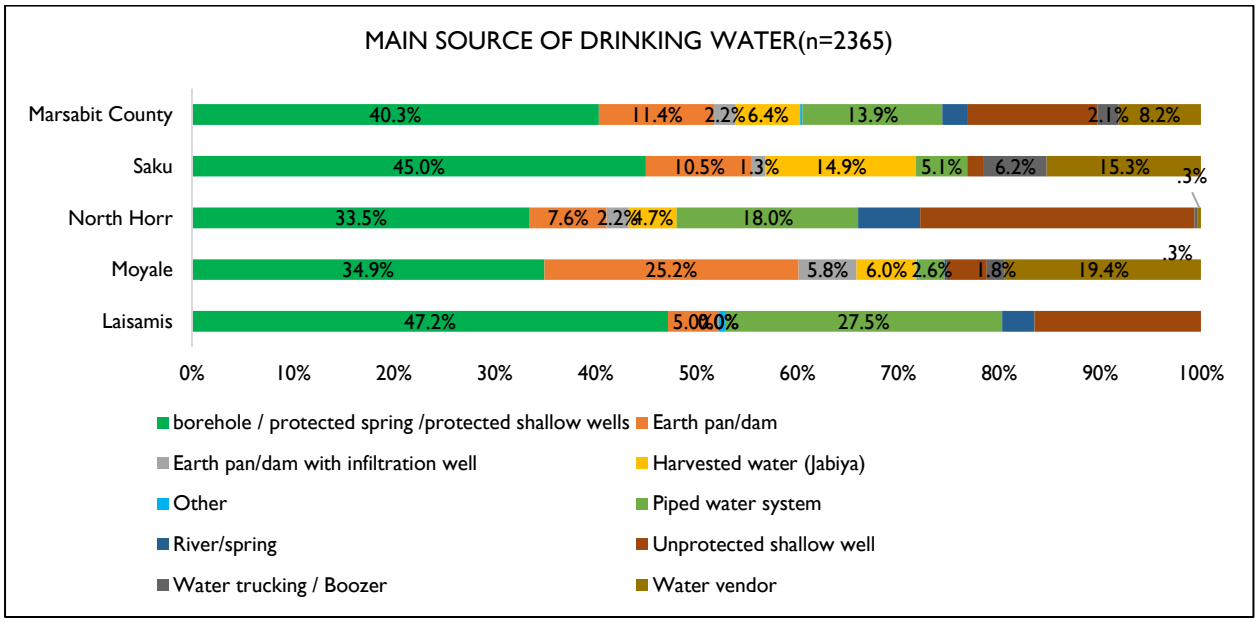

FIGURE 12: MAIN SOURCE OF DRINKING WATER

3.5.2 DISTANCE TO WATER SOURCE AND QUEUING TIME

According to SPHERE handbook for minimum standards for WASH, 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 not more than 15 minutes and it should not take more than three minutes to fill a 20-litre container.

The survey results showed that 46.2% of the households in Marsabit County had a trekking distance of less than 500m or less than 15 minutes to get water, 35.0% trekked for 500m to 2km or 15 minutes to 1 hour to get water while 17.7% trekked for more than 2km. This is as shown in the graphs below:

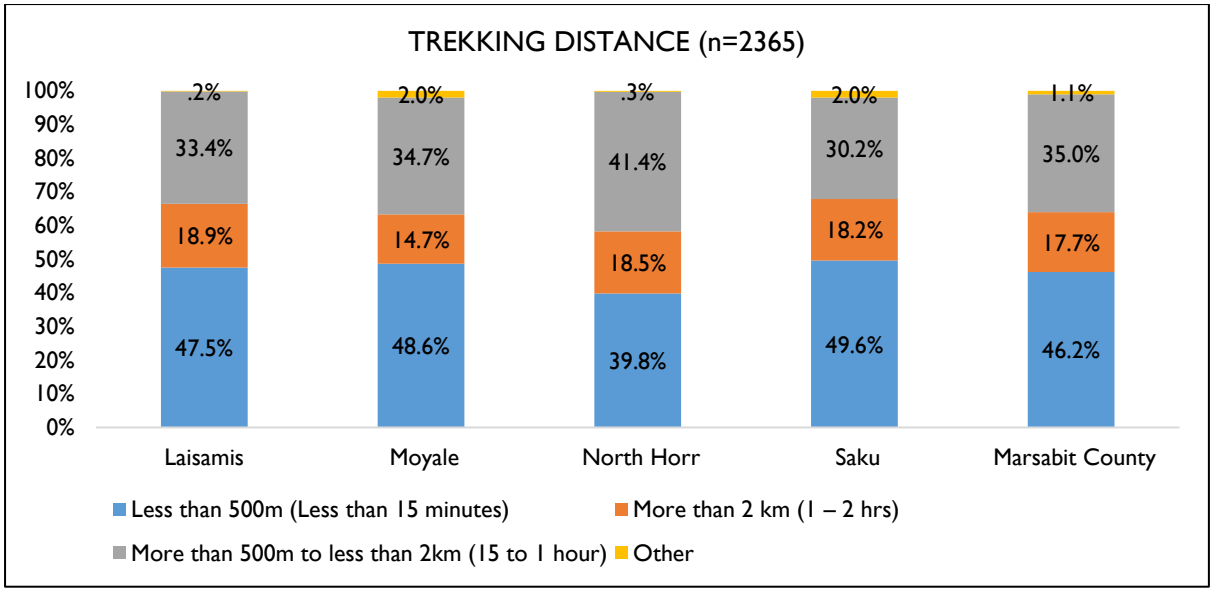

FIGURE 13: TREKKING DISTANCE TO WATER POINT

In terms of queuing at water points, the 42.9% indicated that the queued for less than 30 minutes, 42.6% queued for between 30 minutes to 1 hour and 14.4% queued for more than 1 hour. The queuing time at water point per the sub-counties is as shown in the graph below:

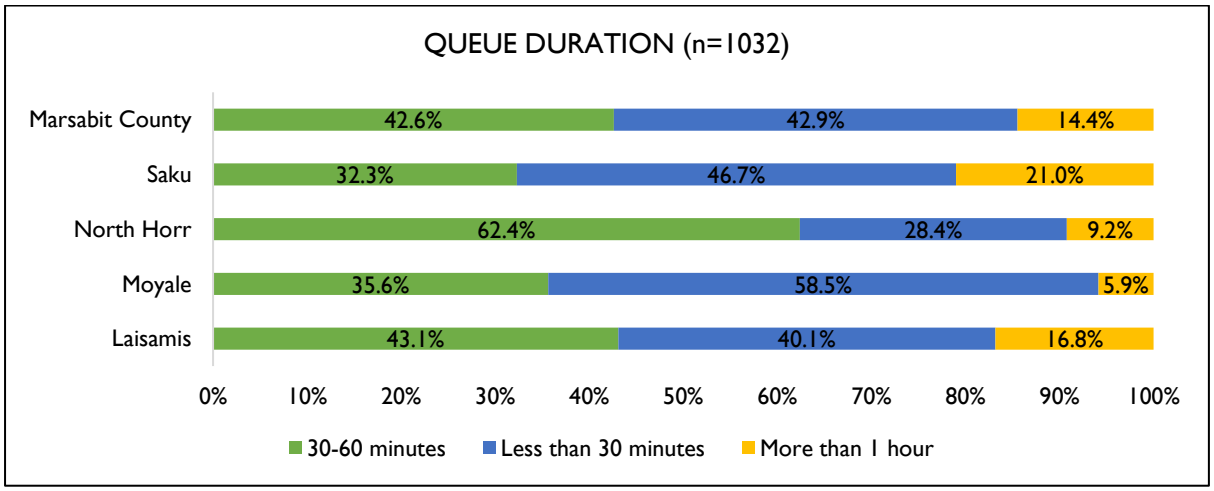

FIGURE 14: QUEUING FOR WATER IN WATER POINTS

3.5.3 WATER TREATMENT AND STORAGE

The results of the survey showed that 30.9% of the households in Marsabit County reported to treat water with 82.8% of the households reported treating water with chemicals before drinking while 33.9% boiled water before drinking. In Laisamis, 14.7%, North Horr 33.6%, Moyale 27.0% and Saku 47.8% reported treating water. Further analysis showed that a higher proportion of households in Moyale and North Horr use chemicals for water treatments at 92.6% and 83.1%% respectively. This is as summarized in the graph below:

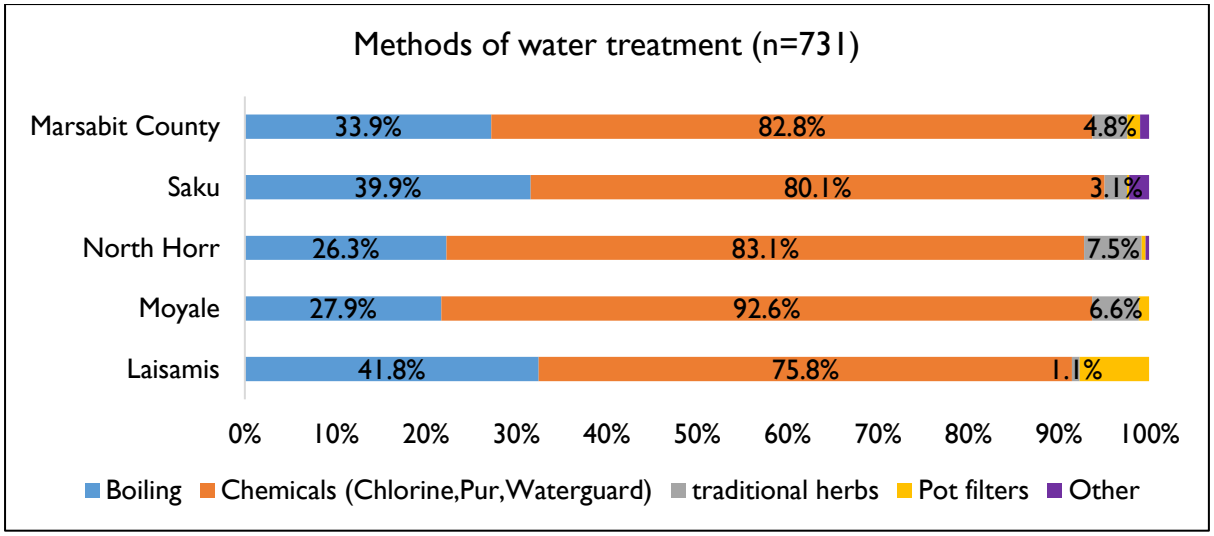

FIGURE 15: WATER TREATMENT METHODS

In terms of water storage, the majority, 85.2% of the respondents reported to store water on closed containers/ Jerri cans. This is as summarized in the graph below:

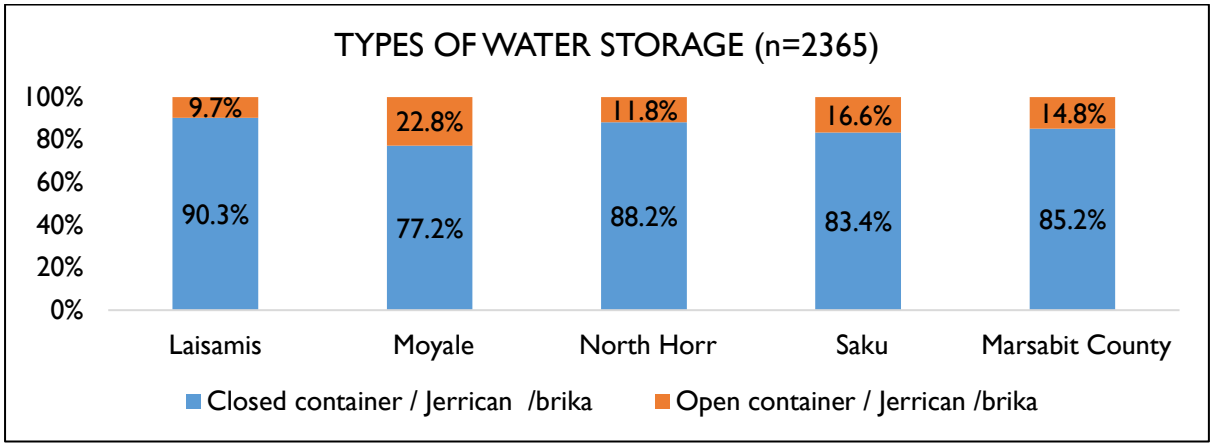

FIGURE 16: WATER STORAGE

3.5.4 WATER UTILIZATION AND PAYMENT

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. Out of the sampled households only 35.4 % of the households used at least 15 liters of water per person per day which is the minimum per capita recommendation for drinking cooking and personal hygiene (SPHERE Hand book 2004). The table below shows the water utilization in Liters per person per day in all the survey zones in Marsabit County.

TABLE 14: WATER UTILIZATION

Sub County	>15 liters/pp/per day
Saku	36.5%
Laisamis	23.3%
Moyale	59.3%
North Horr	27.3%
COUNTY	35.4%

In the county 51.4 % of the surveyed households buy water for domestic use and 74.4% pay for water on monthly basis and 36.8% pay water per month. Moyale was the highest proportion of Household who pay water per 20 liters Jerri can.

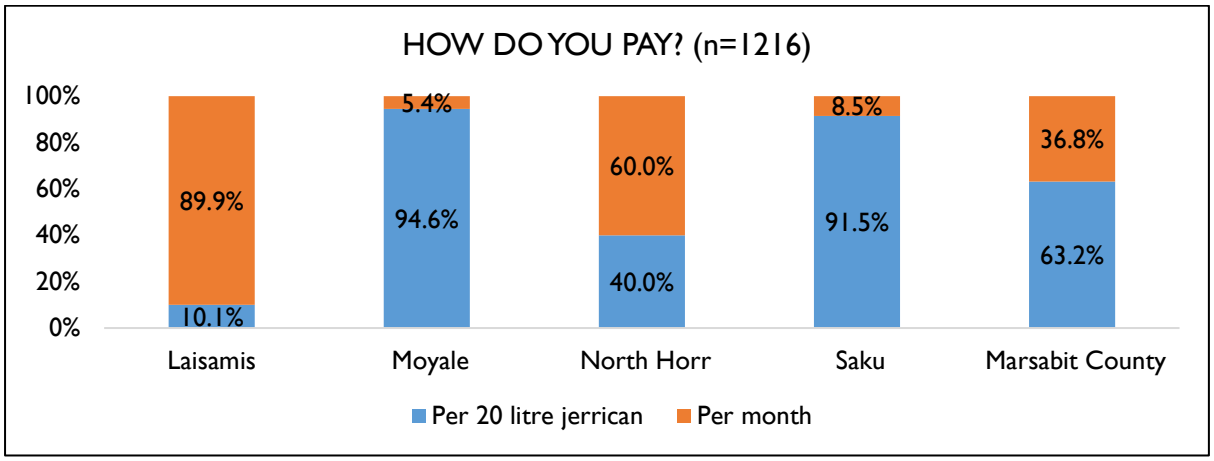

FIGURE 17: WATER PAYMENT

3.5.5 HANDWASHING

Handwashing is important for good health. Effective washing can be practiced with alternatives to soap and using a variety of different hygienic facilities. Washing hands with soap reduces the risk of diarrheal diseases by 42–47%[6]. There are also indications that handwashing is an important preventive measure in the incidence of acute respiratory infections. Overall, interventions to promote handwashing might save a million lives a year. Each person should be able to wash hands with water and soap after toilet use, before food preparation, before eating and after cleaning babies.

The surveys showed different handwashing facilities available at the household level. Over half of the households visited no observation was possible but at least 32.0% had a mobile object (Bucket/jug/Kettle). But it's worth noting the 13.8% did not have a handwashing facility.

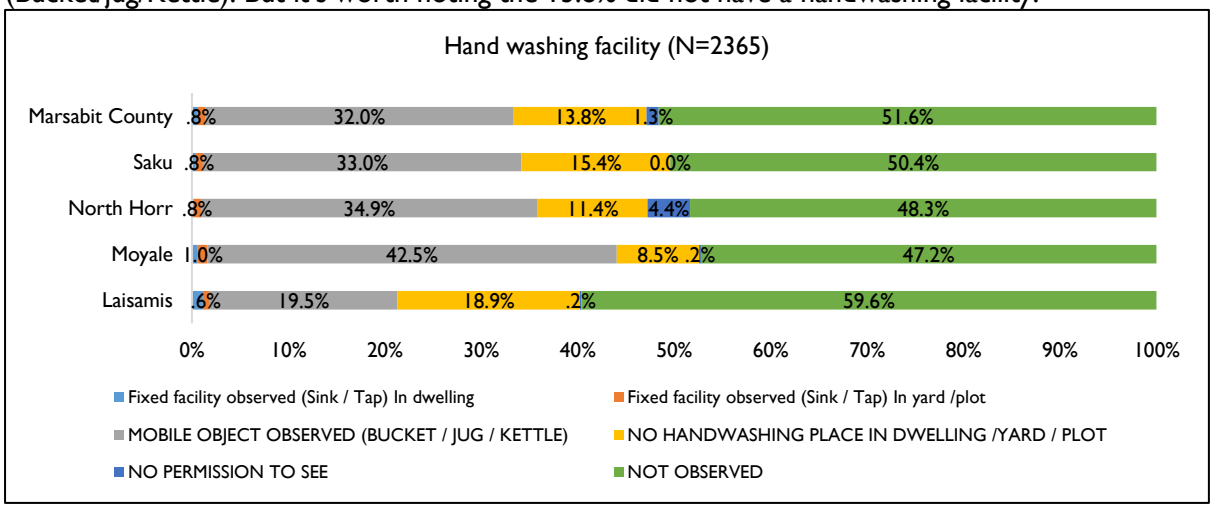

FIGURE 18: HANDWASHING FACILITY

[6] Curtis, V., and Cairncross, S. "Effect of washing hands with soap on diarrhoea risk in the community: a systematic review.", The Lancet infectious diseases, Vol 3 nr. 5, 1 May 2003

The results of the survey showed that among the households interviewed 64.9% were aware of handwashing practices. Moyale reported the highest at 81.7%, followed by Saku at 70.0%.

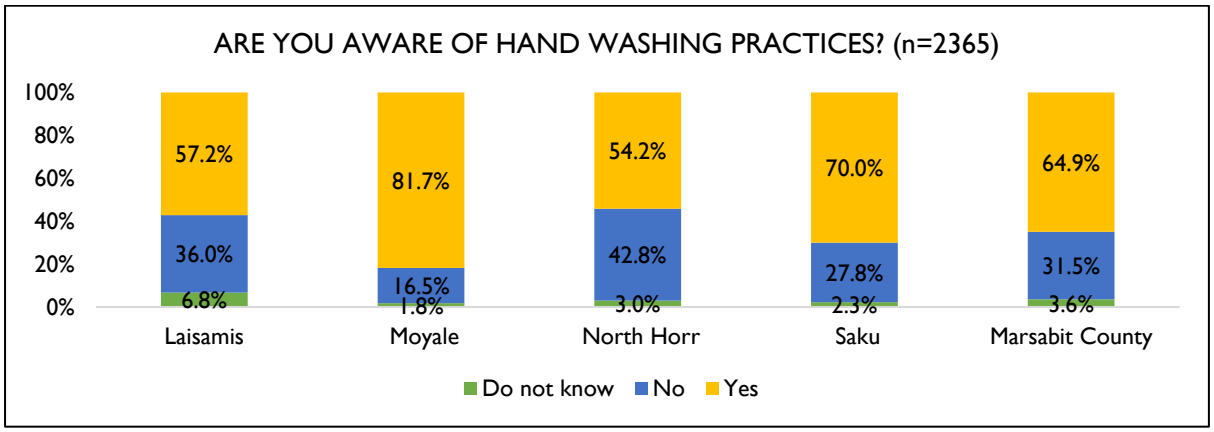

FIGURE 19: AWARE OF HANDWASHING PRACTICES

Further analysis showed that 84.9% of the households generally washed hands after visiting the toilets, 79.0% before cooking, and 89.4% before eating and 35.0% washed their hands after taking the children to the toilet.

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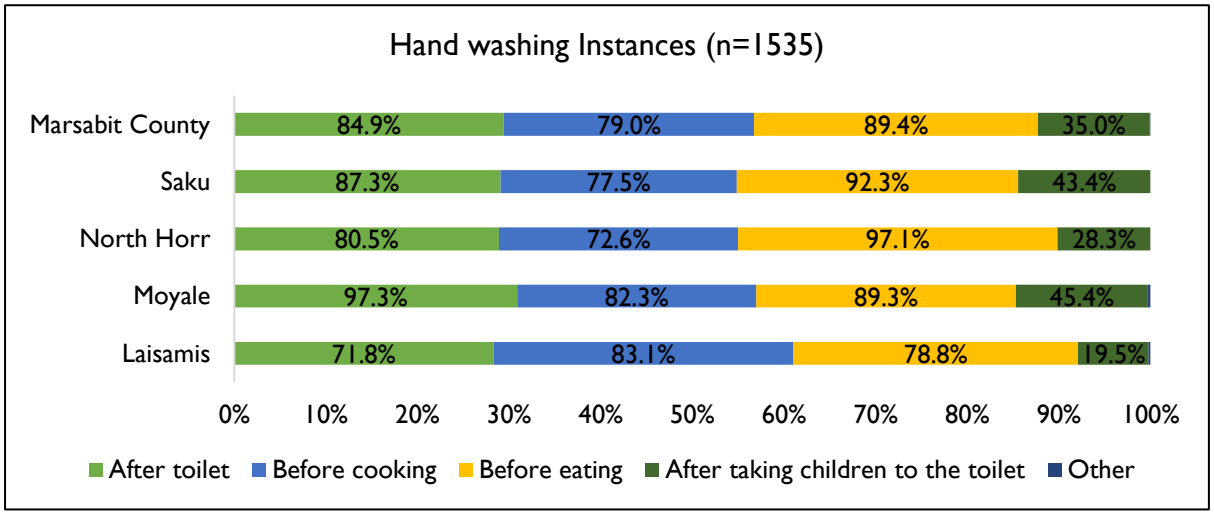

FIGURE 20: HANDWASHING INSTANCES

In terms of what was used to wash hands, 71.3% used Soap and Water, 22.5% used water only, and 6.0% used soap when they can afford it.

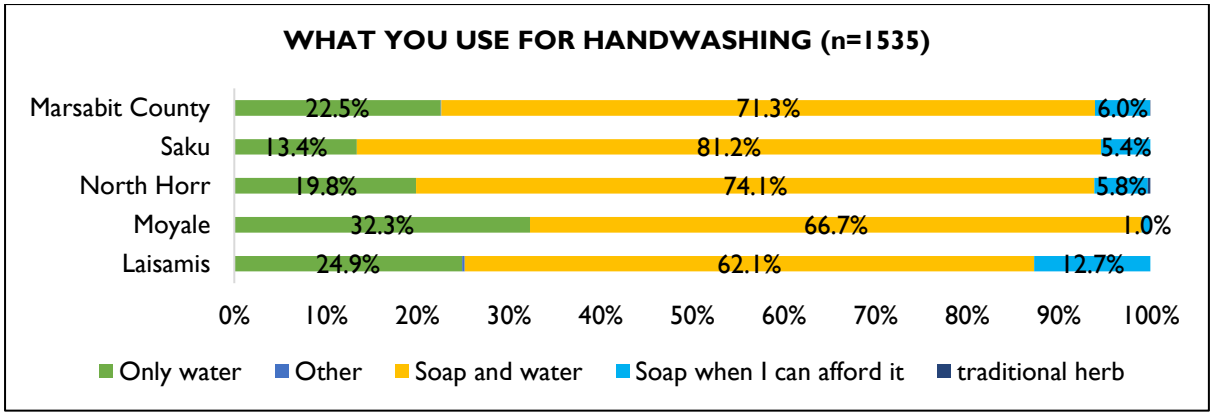

FIGURE 21: WHAT WAS USED TO WASH HANDS?

The four critical hand washing moments include; after visiting the toilet/latrine, before cooking, before eating and after taking children to the toilet/latrine. Of these, only 30.2% reported practicing proper hand washing at the 4 critical times. This is as summarized in the table below:

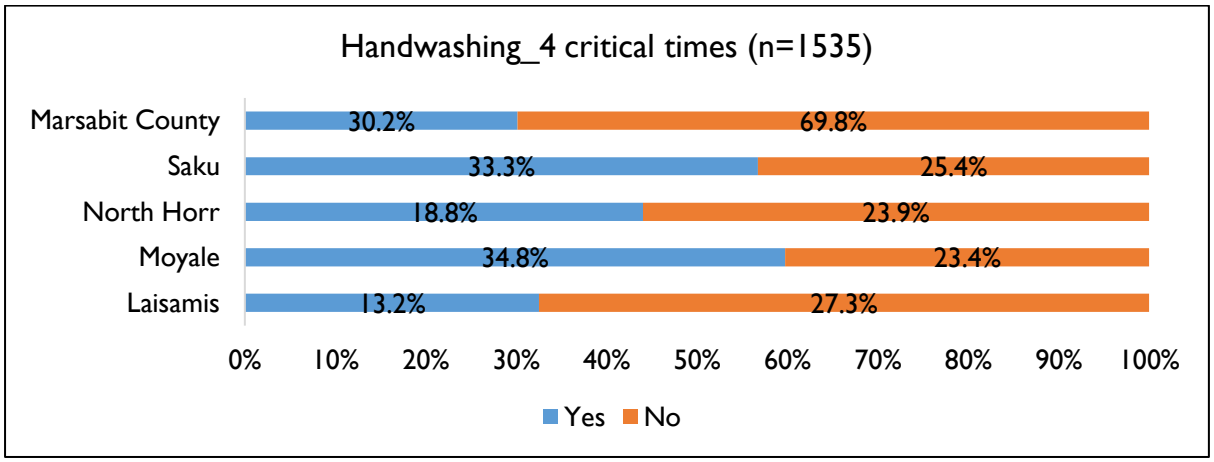

FIGURE 22: HANDWASHING AT 4 CRITICAL TIMES

3.5.6 LATRINE UTILIZATION

Access to safe human waste disposal methods is crucial for the health and wellbeing of people. Lack of access to safe human waste disposal facilities, leads to higher costs to the community through pollution of rivers, ground water and higher incidence of air and water borne diseases. Other costs include reduced incomes as a result of disease and lower educational outcomes. In terms of sanitation, majority of the households reported that they have no access to toilets where 50.8% reported to use bush (no facility) while 46.7% reported to have access to pit latrine. This is as summarized in the table below:

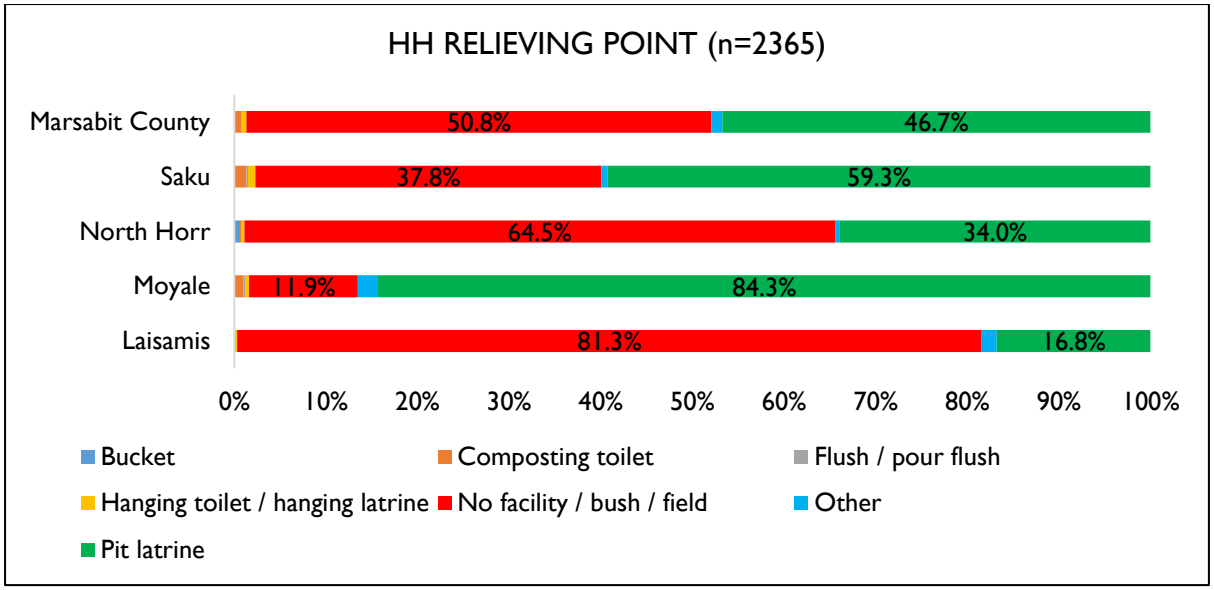

FIGURE 23: : LATRINE UTILIZATION

3.6 INFANT YOUNG CHILD FEEDING

Undernutrition is estimated to be associated with 2.7 million child deaths annually or 45% of all child deaths. Infant and young child feeding is a key area to improve child survival and promote healthy growth and development. The first 2 years of a child's life are particularly important, as optimal nutrition during this period lowers morbidity and mortality, reduces the risk of chronic disease, and fosters better development overall. Around the age of 6 months, an infant's need for energy and nutrients starts to exceed what is provided by breast milk, and complementary foods are necessary to meet those needs. An infant of this age is also developmentally ready for other foods. If complementary foods are not introduced around the age of 6 months, or if they are given inappropriately, an infant's growth may falter. Guiding principles for appropriate complementary feeding are:

- Continue frequent, on-demand breastfeeding until 2 years of age or beyond.
- Start at 6 months with small amounts of food and increase gradually as the child gets older.
- Gradually increase food consistency and variety.
- Increase the number of times that the child is fed: 2–3 meals per day for infants 6–8 months of age and 3–4 meals per day for infants 9–23 months of age, with 1–2 additional snacks as required.
- Use fortified complementary foods or vitamin-mineral supplements as needed.

In the County the major foods consumed by the children aged 6-23 Months are breastmilk at 87.0%, starchy foods which include, grains, roots, tubers and plantains at 55.0% and thirdly, the dairy products at 54.1%. The least consumed foods are eggs at 12.0%, others fruits and vegetables at 13.0% and flesh foods at 15.0%

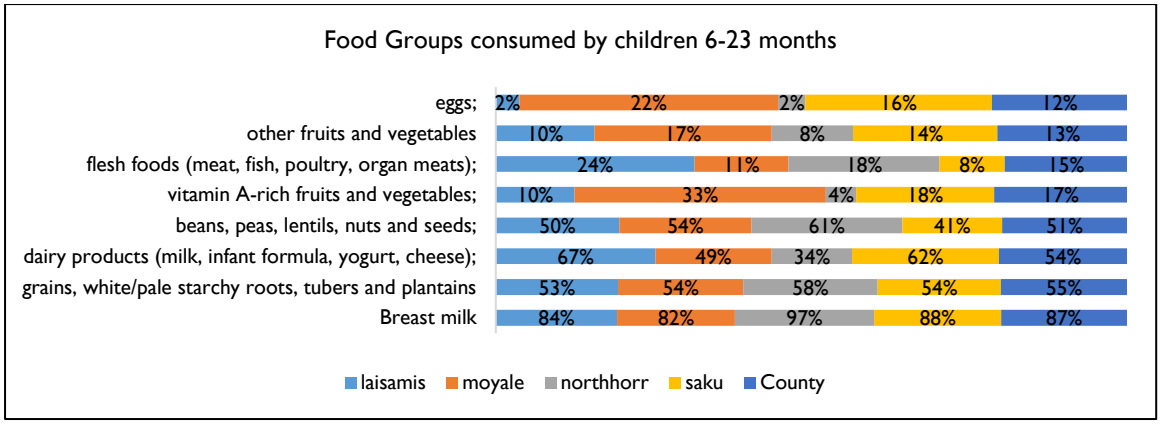

FIGURE 24: FOODS GROUPS CONSUMED BY CHILDREN 6-23 MONTHS

WHO Global Strategy for Infant and Young Child Feeding recommends that children continue breastfeeding for two years or beyond. Children who are still breastfed after one year of age can meet a substantial portion of their energy needs with the breast milk in their diet. Continued breastfeeding is consistently associated with higher performance in intelligence tests among children and adolescents, with children breastfed longer than 12 months benefiting the most. Longer periods of breastfeeding may reduce a child's risk of becoming overweight or obese. Continued breastfeeding is also important for mothers, reducing the risk of breast cancer and potentially reducing their risk of ovarian cancer and type 2 diabetes. On continued Breastfeeding up to two years is very key for every infant. North Horr reported the highest at 98.8% followed by Saku at 86.5%. Moyale reported the lowest at 76.1%.

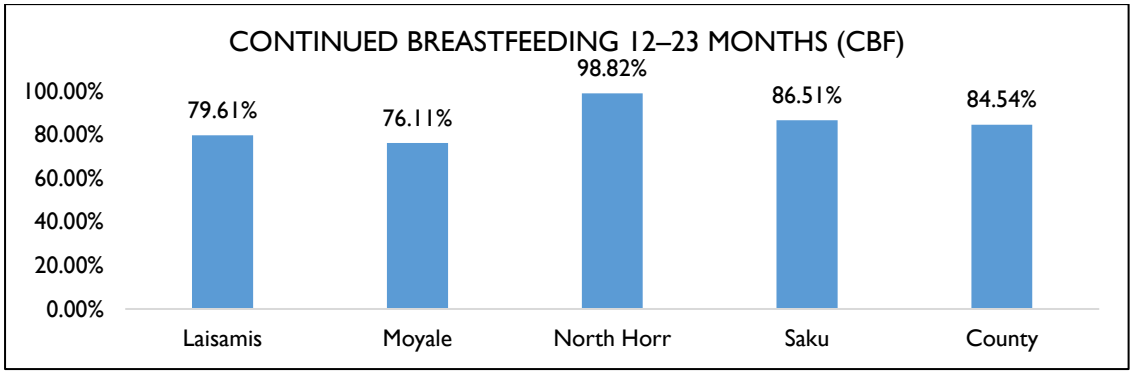

FIGURE 25: CONTINUED BREASTFEEDING 12-23 MONTHS

Introduce complementary foods at six months of age (180 days) while continuing to breastfeed". After the first six months of life, infants' nutrient demands start to exceed what breast milk alone can provide and this leaves them vulnerable to malnutrition unless solids are introduced. Introduction to solid and semi solid foods to children aged 6-8 Months is recommended since if they are given inappropriately, an infant's growth may falter. All the Sub Counties introduced the solid and semi solid foods at the required time.

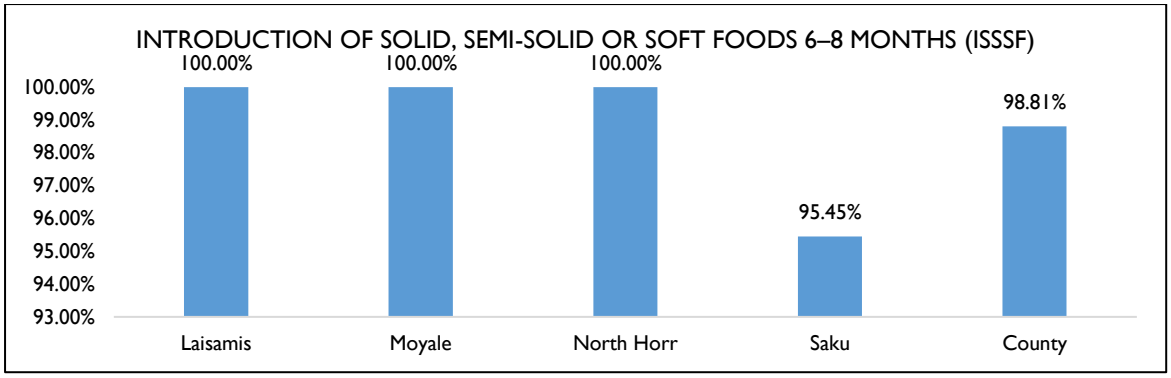

FIGURE 26: INTRODUCTION OF SOLID, SEMI SOLID OR SOFT FOODS 6-8 MONTHS

Food group diversity is associated with improved linear growth in young children. A diet lacking in diversity can increase the risk of micronutrient deficiencies, which may have a damaging effect on children's physical and cognitive development. On Feeding frequency, feeding meals/snacks less frequently than recommended can compromise total energy and micronutrient intake, which in turn may cause growth faltering, stunting and micronutrient deficiencies. In terms of minimum Dietary Diversity, Minimum Meal frequency and Minimum Acceptable diets across the County they were very low. At the County level only 17.4% reached the minimum dietary diversity, and only 13.5% reached the minimum acceptable diet with North Horr reporting the lowest among the Sub Counties

TABLE 15: COMPLEMENTARY FEEDING

	Laisamis	Moyale	North Horr	Saku	County
MINIMUM DIETARY DIVERSITY 6–23 MONTHS (MDD)	18.40%	23.70%	10.20%	15.60%	17.40%
MINIMUM MEAL FREQUENCY 6–23 MONTHS (MMF)	44.20%	67.50%	42.50%	57.00%	53.90%
MINIMUM ACCEPTABLE DIET 6–23 MONTHS (MAD)	12.90%	20.10%	8.70%	11.20%	13.50%

WHO guiding principles for feeding breastfed and non-breastfed children state that "meat, poultry, fish or eggs should be eaten daily, or as often as possible". There is evidence that children who consume eggs and flesh foods have higher intakes of various nutrients important for optimal linear growth. Consuming eggs is associated with increased intakes of energy, protein, essential fatty acids, vitamin B12, vitamin D, phosphorus and selenium, and with higher recumbent length. Introduction of meat as an early complementary food for breastfed infants was associated with improved protein and zinc intake. There is also evidence of low prevalence of egg and flesh food intake across many countries.

On Unhealthy foods they include:

- Candies, chocolate and other sugar confections, including those made with real fruit or vegetables like candied fruit or fruit roll-ups.
- Frozen treats like ice cream, gelato, sherbet, sorbet, popsicles or similar confections.
- Cakes, pastries, sweet biscuits and other baked or fried confections which have at least a partial base of a refined grain, including those made with real fruit or vegetables or nuts, like apple cake or cherry pie.
- Chips, crisps, cheese puffs, French fries, fried dough, instant noodles and similar items which contain mainly fat and carbohydrate and have at least a partial base of a refined grain or tuber. These foods are also often high in sodium.

WHO indicates that low vegetable and fruit consumption is associated with increased risk of non-communicable diseases (NCDs). Low consumption of fruits and vegetables was linked to 3.9 million deaths in 2017, placing this among the top10 risk factors for global mortality.
At the County Level, the consumption of eggs and flesh foods is very low among children aged 6-23 months at 23%, Unhealthy foods consumption is at 26% and Zero consumption of fruits and Vegetables is at 22.0%.
Among the three indicators, North Horr reported the lowest followed by Laisamis Sub County. Moyale Sub County reported the highest consumption of the eggs/flesh foods, consumption of unhealthy foods and Zero on vegetables and Fruits.

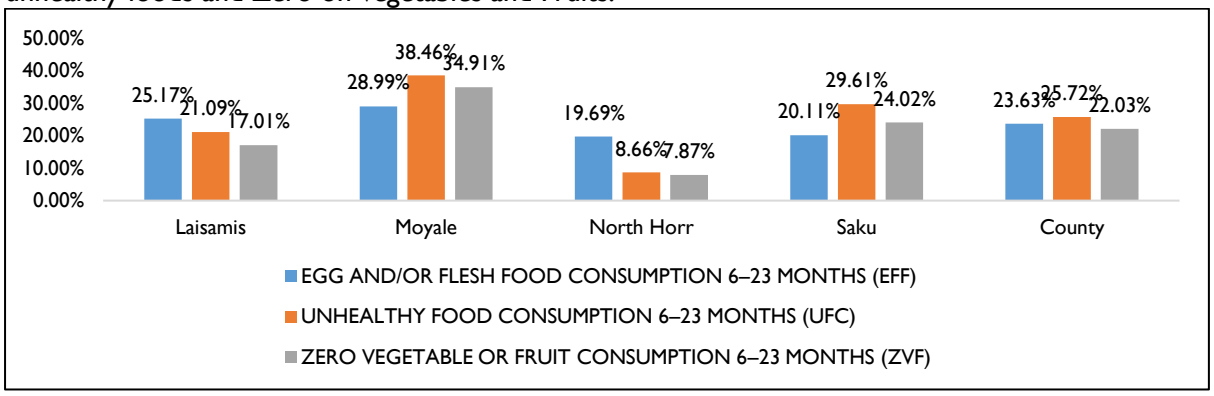

FIGURE 27: MICRONUTRIENT IYCF INDICATORS

3.7 FOOD SECURITY

3.7.1 WOMEN DIETARY DIVERSITY (24-HOUR RECALL)

Women of reproductive age (WRA) are often nutritionally vulnerable because of the physiological demands of pregnancy and lactation. Requirements for most nutrients are higher for pregnant and lactating women than for adult men (National Research Council, 2006; World Health Organization [WHO]/Food and Agriculture Organization of the United Nations [FAO], 2004). Outside of pregnancy and lactation, other than for iron, requirements for WRA may be similar to or lower than those of adult men, but because women may be smaller and eat less (fewer calories), they require a more nutrient-dense diet (Torheim and Arimond, 2013). Insufficient nutrient intakes before and during pregnancy and lactation can affect both women and their infants. Yet in many resource-poor environments, diet quality for WRA is very poor, and there are gaps between intakes and requirements for a range of micronutrients (Arimond et al., 2010; Lee et al. 2013).
MDD-W is a dichotomous indicator of whether or not women 15–49 years of age have consumed at least five out of ten defined food groups the previous day or night. The ten defined food groups include ;1) Grains, white roots and tubers and plantains; 2) pulses (beans ,peas and lentils); 3) Nuts and seeds,4) Dairy; 5) Meat ,poultry and fish; 6) Eggs; 7) Dark green Leafy vegetables; 8) Other vitamin A rich fruits and vegetables; 9) Other vegetables; 10) Other fruits.

The survey results showed that majority of the women aged 15-49 years consumed starchy foods (90.0%), Legumes and pulses (73.3%), Dairy (35.4%), and flesh foods (17.3%). Other fruits, eggs and nuts were the least consumed with 6.3%, 8.4% and 3.7% respectively of the caregivers interviewed reporting to have consumed in the past 24 hours. This is as summarized in the table below:

TABLE 16: WOMEN DIETARY DIVERSITY (24 HOUR RECALL)

	Laisamis	Moyale	North Horr	Saku	County
ALL STARCHY STAPLE FOOD	85.7%	84.4%	93.4%	96.1%	90.0%
PULSES/LEGUMEs	64.1%	78.3%	76.6%	76.4%	73.3%
NUTS AND SEED	2.2%	12.5%	1.3%	0.7%	3.7%
DAIRY(MILK)	56.7%	28.3%	33.0%	18.9%	35.4%
FLESH FOODS	20.0%	22.5%	13.3%	14.1%	17.3%
EGGS	4.0%	19.7%	2.0%	10.9%	8.4%
VITAMIN A-RICH DARK GREEN LEAFY VEGETABLES	11.9%	36.1%	5.7%	40.4%	22.3%
OTHER VITAMIN A-RICH VEGETABLES AND FRUITS	3.2%	22.8%	2.2%	8.5%	8.3%
OTHER VEGETABLES	5.8%	29.4%	9.6%	25.9%	16.6%
OTHER FRUITS	5.6%	13.6%	2.4%	5.1%	6.3%

3.7.2 MINIMUM WOMEN DIETARY DIVERSITY SCORE.

MDD-W[7] is a dichotomous indicator of whether or not women 15-49 years of age have consumed at least five out of ten defined food groups the previous day or night. The proportion of women 15–49 years of age who reach this minimum in a population can be used as a proxy indicator for higher micronutrient adequacy, one important dimension of diet quality. The indicator constitutes an important step towards filling the need for indicators for use in national and subnational assessments. It is a population-level indicator based on a recall period of a single day and night, so although data are collected from individual women, the indicator cannot be used to describe diet quality for an individual woman. This is because of normal day-to-day variability in individual intakes.

With regard to WDD_S the survey showed that 88.0% of the women aged 15-49 years consumed less than 5 food groups while 12.0% of the women consumed 5 and more food groups.

[7] Additional background on the indicator is available at: http://www.fantaproject.org/monitoring-and-evaluation/minimum-dietary-diversity-women-indicator-mddw.

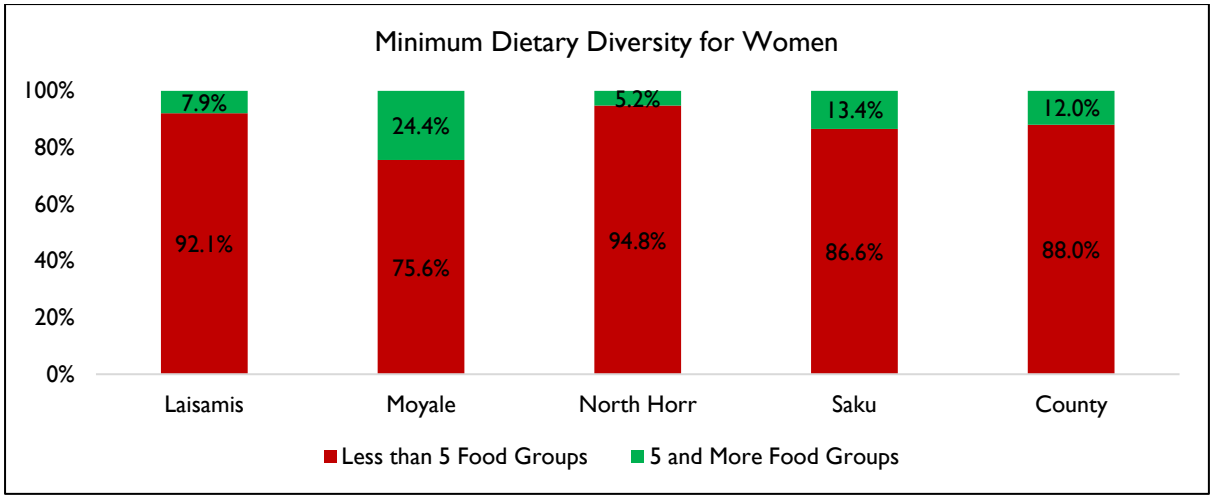

FIGURE 28: WOMEN DIETARY DIVERSITY SCORE

3.7.3 HOUSEHOLD DIETARY DIVERSITY (7 DAYS RECALL)

In assessing the nutritional quality and quantity of the food consumed by the survey population, a 1 week retrospective household dietary diversity questionnaire was administered that would also help to determine the households' economic capacity to consume various foods in the sub-counties.

Three main food groups were consumed and were consistent with the 4 sub-counties where the survey was conducted. This were cereals, legumes and pulses, and fats and oils which were consumed by at least >70% of the population that was surveyed within the last 7 days. Vegetables, milk and milk products, sweets and condiments was consumed by at least >35% of the surveyed population. The other foods that were consumed by the least number of people (<20% of the surveyed population) included: tubers, fruits, eggs, Iron rich foods and fish. This is as summarized in the table below:

TABLE 17: HOUSEHOLD DIETARY DIVERSITY (7 DAYS RECALL)

	Laisamis	Moyale	North Horr	Saku	County
CEREALS AND CEREAL PRODUCTS	96.80%	98.40%	94.60%	98.20%	96.90%
VITAMIN A RICH VEGETABLES AND TUBERS:	12.00%	34.30%	3.20%	27.40%	18.40%
WHITE TUBERS AND ROOTS:	7.90%	47.40%	13.90%	31.00%	23.90%
DARK GREEN LEAFY VEGETABLES:	23.60%	63.10%	13.40%	51.70%	36.50%
OTHER VEGETABLES	28.10%	52.60%	24.50%	69.30%	43.00%
VITAMIN A RICH FRUITS	2.60%	22.00%	2.70%	10.80%	8.90%
OTHER FRUITS	9.20%	30.40%	4.40%	12.50%	13.30%
ORGAN MEAT (IRON-RICH):	15.50%	15.70%	7.60%	6.40%	11.10%
FRESH MEATS AND OFFALS:	33.30%	38.90%	21.50%	24.10%	29.00%
EGGS	7.80%	31.70%	2.40%	15.40%	13.40%
FISH: FRESH OR DRIES FISH OR SHELLFISH	1.80%	5.40%	7.10%	0.50%	3.60%
PULSES/LEGUMES, NUTS	77.90%	88.70%	75.20%	73.20%	78.30%
MILK AND MILK PRODUCTS	70.40%	34.50%	46.60%	19.40%	43.30%
OILS/FATS	77.20%	91.30%	75.20%	85.10%	81.70%
SWEETS:	41.50%	52.40%	40.80%	37.60%	42.60%
CONDIMENTS, SPICES, AND BEVERAGES:	21.60%	77.20%	33.30%	46.50%	43.00%

3.7.4 MINIMUM HOUSEHOLD DIETARY DIVERSITY SCORE

Household dietary diversity Score (HDDS) is a qualitative measure of food consumption that reflects household access to a variety of foods. Further analysis showed that 30.1% of the households consumed 3-5 food groups, 45.8 consumed less than 3 food groups while the majority of the households, 24.1% consumed more than 5 food groups Across the Sub County, majority consumed less than 3 food groups with Laisamis reporting the highest at 63.0%. This is as summarized in the graph below:

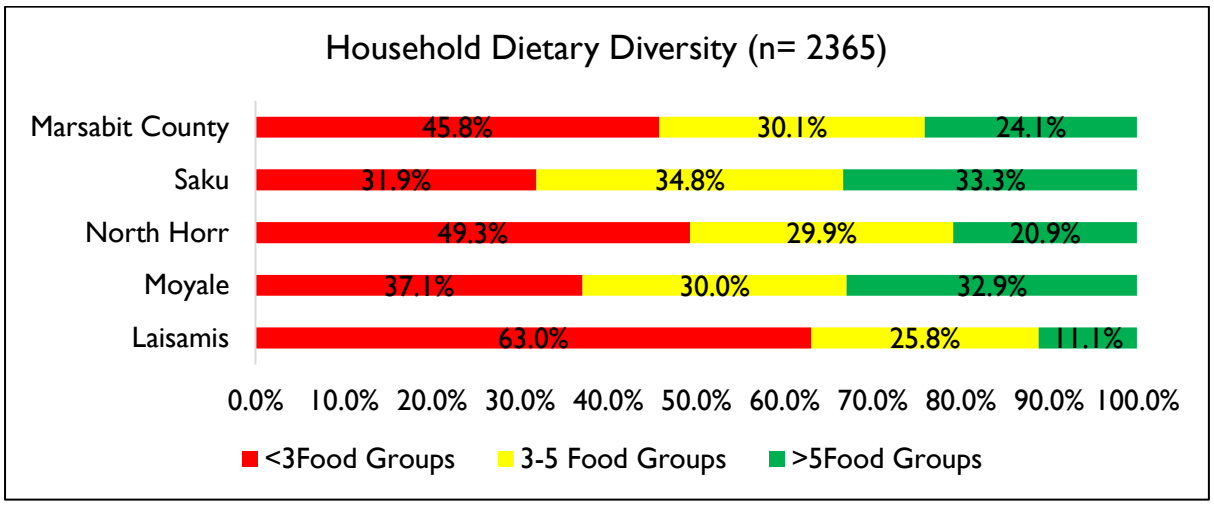

FIGURE 29: MINIMUM HOUSEHOLD DIETARY DIVERSITY SCORE

On the Household dietary diversity score integrated Phase classification, 45.8% are in phase 4 to 5, 30.1% are in phase 3, 10.4% are in Phase 2 and 13.7% are in Phase 1. It's only in Saku where the population in phase 3 at 34.8% is higher than in Phase 4 and 5 at 31.9%.

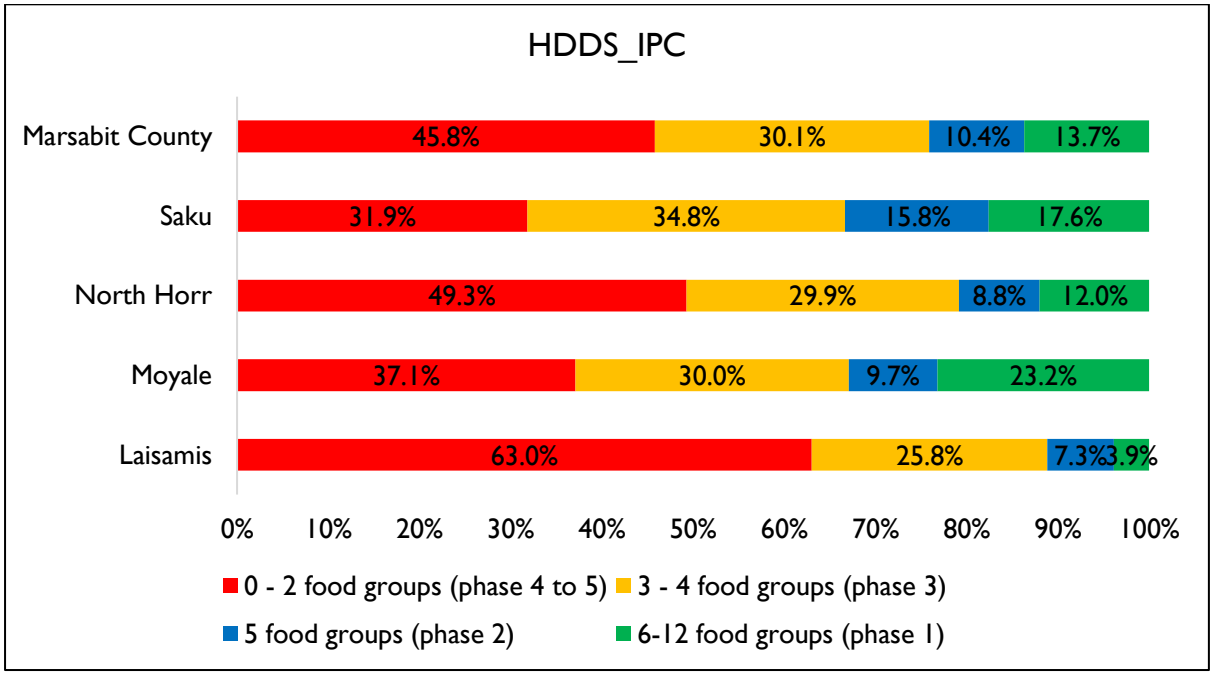

FIGURE 30: HOUSEHOLD DIETARY DIVERSITY SCORE_IPC

3.7.5 HOUSEHOLD FOOD CONSUMPTION SCORE

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. The survey results showed that majority of the households in Marsabit County (53.2%) had a good food consumption score while 23.8% were at the border food consumption score. This is as shown in the graph below:

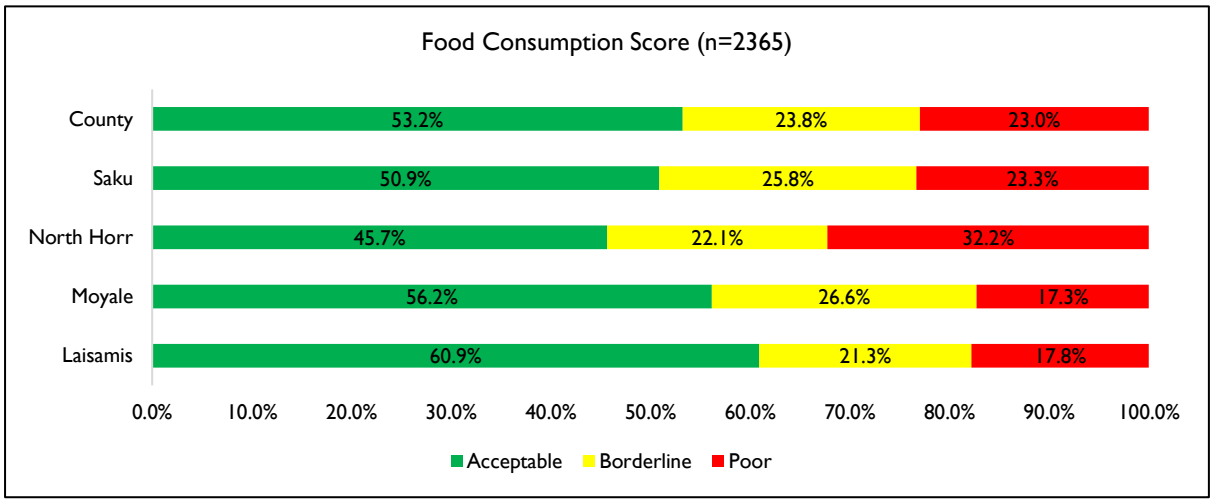

FIGURE 31: HOUSEHOLD FOOD CONSUMPTION SCORE

3.7.6 CONSUMPTION OF MICRONUTRIENT FOODS

Micronutrients are those nutrients we require in relatively small quantities. They are vitamins and minerals, and our good health requires them in milligram and microgram amounts. There are 13 vitamins, and you can get most of them by eating a variety of foods from each food group.

Minerals can be electrolytes (minerals that are charged ions in your body fluids) which help you maintain fluid balance. Minerals are also part of some enzymes, work with your immune system, and play an invaluable role in the structural growth of your body. By ensuring food and nutrition security and by reducing the widespread problem of micronutrient malnutrition we may hope to achieve the targets set for the Millennium Development Goals.

In addition, further analysis on the average day's food groups are consumed highlighting the consumption of micronutrients showed that proteins were consumed at an average of 4.93 days, staples (4.92 days) and oils and fats (2.01 days). Vitamin A were the least consumed. This is as highlighted in the graph below:

TABLE 18: CONSUMPTION OF MICRONUTRIENT FOODS

Survey zone	PROTEIN	IRON	VIT A	OILS	FRUIT/VEG	STAPLE
Laisamis	5.66	1.88	.36	1.65	1.77	4.38
Moyale	5.20	3.44	1.81	2.82	4.35	5.30

North Horr	4.67	1.34	.16	1.92	1.28	4.71
Saku	4.21	2.72	1.06	1.81	4.59	5.36
Total	4.93	2.29	.80	2.01	2.92	4.92

3.8 LIVELIHOOD

3.8.1 REDUCE COPING STRATEGY INDEX

The Reduce Coping Strategy Index (CSI), a tool developed by the World Food Programme, is commonly used as a proxy indicator for access to food.[8] It is a weighted score that allows one to measure the frequency and severity of coping strategies. Data is collected on the number of days in the last seven days a household used a specific coping strategy due to a shortage of food and/or income. 34.2% of the population are in Crisis, 52.3% are in Stressed phase and 13.5% are in none.

TABLE 19: REDUCED COPING STRATEGIES IPC

		Laisamis	Moyale	North Horr	Saku	Marsabit County
Reduced CSI IPC	None	8.1%	31.5%	9.0%	8.9%	13.5%
	Stressed	77.7%	44.6%	37.9%	47.8%	52.3%
	Crisis+	14.2%	23.8%	53.1%	43.3%	34.2%
	Total	100.0%	100.0%	100.0%	100.0%	100.0%

3.8.2 HOUSEHOLD HUNGER SCALE

The Household Hunger score is an individual indicator, it is a household food deprivation scale based on the ideas that the experience of household food deprivation causes predictable reactions that can be captured by a survey and summarized in a scale. In Marsabit County, 5.9% of the household had severe HHS and 47.9% had moderate HHS. North Horr Sub County reported the highest number of

[8] Access to food' is just one of the three pillars of food security. Other pillars include, 'food availability' and 'food utilization'.

Household at Severe at 12.2% followed closely by Saku at 7.7%. Laisamis Sub County, also reported the least number of households in little at 35.1%.

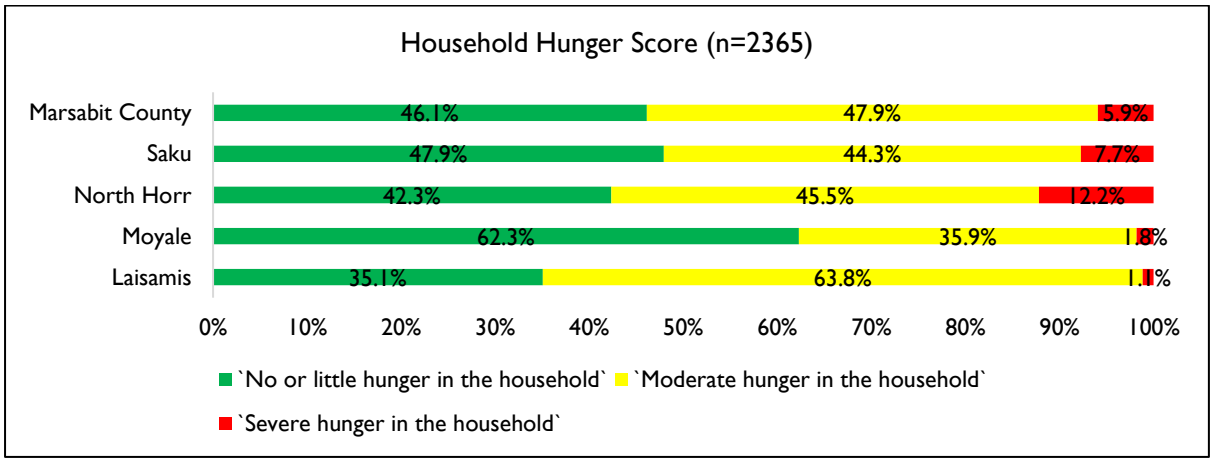

FIGURE 32: HOUSEHOLD HUNGER SCALE

On the Household hunger score integrated Phase classification, 38.1% are in Minimal phase, 8.0% are in stressed phase, 47.9% are in Crisis Phase, 3.3% are in Emergency Phase and 2.7% are in catastrophe Phase. Saku reported the highest population in catastrophe phase.

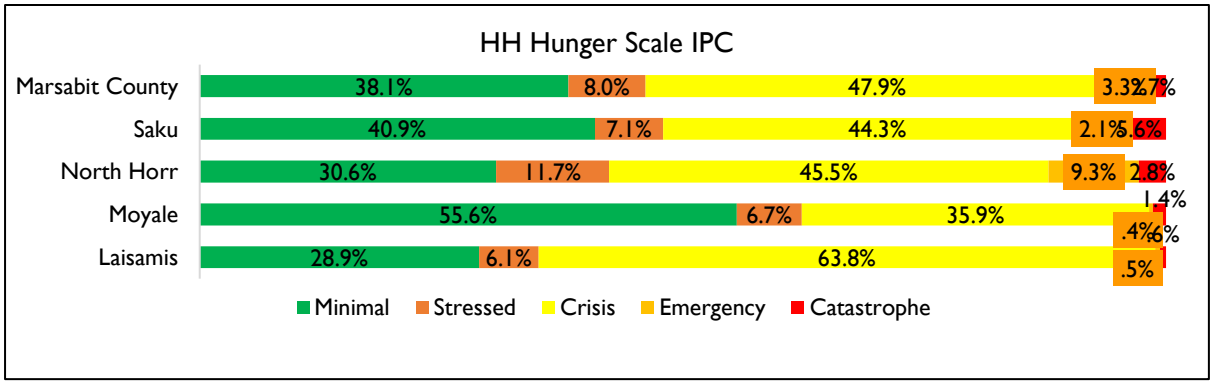

FIGURE 33: HOUSEHOLD HUNGER SCALE IPC

3.9 MORTALITY

Mortality refers to death. One of the mortality rates measured was Crude Mortality rate which is measuring how many people die each year and why they died is one of the most important means – along with gauging how diseases and injuries are affecting people – for assessing the effectiveness of a country's health system. Cause-of-death statistics help health authorities determine their focus for public health actions. Another is U5 Mortality rate which refers to the probability a newborn would die before reaching exactly 5 years of age, expressed per 1,000 live births.

TABLE 20: MORTALITY FINDINGS

	Laisamis	Moyale	North Horr	Saku	County
CMR (deaths per 10 000/day	0.28 (0.10-0.74)	0.35 (0.07-1.67)	0.22 (0.10-0.50)	0.22 (0.10-0.48)	0.25 (0.16-0.41)
U5MR (deaths in children <5/10 000/day	0.17 (0.02-1.28)	0.21 (0.03-1.56)	0.00 (0.00-0.00)	0.00 (0.00-0.00)	0.09 (0.02-0.39)
Total number of HHs	619	503	633	609	2364
Total number of HHs with children under five	423	332	366	394	1517
Average household size	5.1	4.8	4.8	5.7	5.1
Mid Interval Population Size	3137	2437.5	3060	3454	12094

Number of Clusters	42	34	44	41	161
Percentage of children under five	18.5	21.7	14.6	14.9	17.2
Birth Rate	0.53	1.31	0.76	0.77	0.85
In-migration Rate (Joined)	0.84	0.17	0.44	0.15	0.44
Out-migration Rate (Left)	3.19	0.83	2.06	0.46	1.82
Total deaths during the recall period	9	8	7	7	32
Total deaths during the recall period <5 years old	1	1	0	0	2
Total births during the recall period	17	30	24	25	96
Recall Period (days)	104	104	104	104	104
Cause of death					
1] Unknown	0	12.5	0	14.3	6.3
2] Injury/Traumatic	0	0	28.6	14.3	9.4
3] Illness	77.8	87.5	71.4	42.9	71.9
4] Other (e.g. old age)	22.2	0		28.6	12.5
Location of death					
1] In current location	77.8	87.5	100	100	90.6
2] During migration	0	12.5	0	0	3.1
3] In place of last residence	22.2	0	0	0	6.3
4] Other	0	0	0	0	0

CHAPTER FOUR

4.0. CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSION

According to the current Integrated Phase Classification (IPC) for acute malnutrition among children U5, Marsabit is ranked at the critical phase (IPC Phase 3- GAM <12.9% percent).The Nutrition status of Children has improved compared to the July 2022. The Main occupation of Households still remains to be Livestock herding among the Marsabit Communities. The main source of income in most households is sale of livestock. Further, Low access and Utilization of a variety of health and nutrition

services i.e. immunization, Micronutrient supplementation, health and nutrition care practices remain a major a concern, although we acknowledge high vitamin A supplementation, coverage which is attributed to sustained routine outreaches and quarterly feedback on individual facility coverage. WASH indicators (Access and sustainability to safe drinking water, Hand Washing and Sanitation) remain suboptimal. The Household food security situation (Dietary diversity, FCS, Micronutrient intake and CSI) has largely remained unchanged compared to July 2022. It can be concluded therefore that the key drivers of poor nutrition status include; Chronic food insecurity, High prevalence of childhood illness, Inadequate dietary diversity, Poor access to safe water, Poor hygiene practices (High rates of open defecation), Inadequate incomes and assets for the households.

4.2 RECOMMENDATION

TABLE 21: RECOMMENDATIONS

Results	Recommendation	By Whom	Timeline
High GAM rates in Laisamis and North Horr of 18.0% and 22.5% respectively.	• Continuous Mapping of Malnutrition Pockets in the area • Continuous Screening of all the Under five Children using Z score • Remapping of Outreaches to match the hotspot areas in the County. • There is need to promote the consumption of the least consumed food groups such as eggs, fish, fruits, and vegetables. Low consumption of eggs and fish has been attached to cultural practices and hence it's important to design a BCC approach to address the issues	CHMT and IM	Immediately
Over 80% of the Household In North Horr and Laisamis have no Income during the Survey Period	• The County Government needs to explore investing in value addition technology that can promote sale of livestock and fisheries products since sale of livestock and livestock products is the major income for the community.	County	Immediately
High Food Consumption Score of Food	• Knowledge Attitude and Practice together with a 24 Hour Recall is recommended to determine if the quantity of food being consumed is meeting the required nutrients for the body.	CHMT and IM	Continuous
Few health facilities have implementing IMAM surge Approach	• Full role out of IMAM surge Approach and Continuous updating of the dashboards to show how is the situation without waiting for a population Survey to in all the health facilities	MoH and IPS	Ongoing

Poor food access: since the major source of income for majority of the households is livestock sales and at the time of the survey, majority of the animals had moved far in search of pasture and water which limited the food accessibility.	• There is need to always whenever there is a change in food basket to do a sensitization to the community on the preparation of the food items.	MoH	Immediately
Poor mobilization in hygiene and sanitation related issues	• Raising awareness around WASH through community based forums and schools • Provision of NFIs to the household and water tracking to the Health facilities and Community so as to access water.	MoH and IPS	Underway

APPENDICIES

APPENDIX 1: PLAUSIBILITY RESULTS

Indicator	Acceptable values/range	North Horr	Laisamis	Moyale	Saku
Flagged data (% of out of range subjects)	<7.5	0 (0.7 %)	0 (0.0 %)	0 (0.9%)	0 (1.3 %)
Overall sex ratio (significant CHI square)	>0.001	0(p=0.276)	4(p=0.022)	0(p=0.676)	4(p=0.013)
Age ratio (6-29vs 30-59) Significant CHI square	>0.001	0(p=0.731)	0(p=0.938)	0(p=0.293)	4(p=0.011)
Dig. prevalence score-weight	<20	0 (5)	0 (5)	0 (5)	0 (5)
Dig. prevalence score-height	<20	2 (8)	0 (5)	0 (5)	2 (9)
Dig. prevalence score-MUAC	<20	0 (4)	0 (4)	0 (6)	2 (8)
Standard Dev. Height WHZ	>0.80	0 (0.93)	0 (0.92)	0 (1.02)	0 (1.00)
Skewness WHZ	<±0.6	0 (-0.03)	0 (-0.03)	0 (0.03)	0 (-0.06)
Kurtosis WHZ	<±0.6	1 (0.25)	1 (0.30)	1 (-0.28)	0 (-0.07)
Poisson WHZ -2	>0.001	3 (p=0.006)	1(p=0.017)	1(p=0.022)	5(p=0.000)
OVERALL	<24	6% (Excellent)	6% (Excellent)	2% (Excellent)	17% (Acceptable)

APPENDIX 2: CLUSTERS VISITED

Sub County	Village Name	Sub County	Village Name	Sub County	Village Name	Sub County	Village Name
saku	Town B	moyale	Badole Binne	northhorr	Centre	laisamis	Dupsahai Lkiminigi
saku	Ilkuume	moyale	Diribo Haro	northhorr	Kubi athi	laisamis	Galoro
saku	Loisusu	moyale	Hussein Abdi	northhorr	Taka ballo	laisamis	Galtheilan
saku	Rokor	moyale	Waqo Huqa	northhorr	Elyibo	laisamis	segenge/Athi
saku	Nongorio	moyale	Tesso	northhorr	Bales saru	laisamis	Rongumo Morub
saku	Nambaa	moyale	Gurach Borbor	northhorr	Balesa town	laisamis	Ketepes
saku	Chief Center	moyale	Bagaja Guyo	northhorr	Bule Warobesa	laisamis	Kurungu
saku	Nairobi	moyale	Olla Ture	northhorr	Yaa sharbana/tumtic ha	laisamis	AIC centre
saku	Manyatta Chini	moyale	Guyotimo	northhorr	Elhadi centre	laisamis	Trinity village
saku	Silango I	moyale	Qorobo	northhorr	lomadang	laisamis	Galdeyllan Torder
saku	Ilpus	moyale	Ogomdi	northhorr	telesgaye	laisamis	naabo C
saku	Ilkume	moyale	Arbsoka	northhorr	kerech	laisamis	dubsahay noolaso
saku	Leskul	moyale	Gira Galgalo	northhorr	namuguse	laisamis	R. eysimgobanay/ Super
saku	Milimani	moyale	Mare Harme	northhorr	El-bokoch	laisamis	saale segelan
saku	Lturuyia	moyale	Hassan Ali	northhorr	Thuorim	laisamis	goob orre - Barnai
saku	Leyai	moyale	Mohamed Ali Edin	northhorr	diba okotu	laisamis	Uraween -Silamo
saku	Dima	moyale	Adan Abdullah jarso	northhorr	gamura	laisamis	Nahgan Machan

saku	Shukri Huqa	moyale	Denge Okotu	northhorr	ilman gura	laisamis	Lmekinya
saku	Marsa Riwe	moyale	Rob Halake	northhorr	yaa gara	laisamis	sukuroi
saku	Guyo Halakhe	moyale	Abdub Tuke	northhorr	bori	laisamis	Ongeli Mago
saku	Hussein BORE	moyale	Halima Galma	northhorr	Baqaqa	laisamis	Lmongoi
saku	Tangi	moyale	Ali Godana	northhorr	m. konchora	laisamis	lukumai
saku	Galm Jattani	moyale	Doyo Halake	northhorr	duke	laisamis	1A Lmooti
saku	Lochumba	moyale	Ali Yarow Eymol-Biashara	northhorr	chirra	laisamis	1A Lukumai
saku	Dokata Ali	moyale	Salim Abdi Sheikh-Old town	northhorr	kutur	laisamis	Manyatta juu
saku	Daaba	moyale	Fahad Ali Salim	northhorr	centre	laisamis	Manyatta comboni
saku	Haro Bota	moyale	Hassan Ibrahim-Old town	northhorr	balal	laisamis	M.Lawai
saku	Athi Huqa	moyale	Issack Adan Guracha	northhorr	Isacko malla	laisamis	Naigero
saku	Dirib Center 2	moyale	Ali Abdi Eda	northhorr	Qabdo	laisamis	Sidaimurt/KAG/Nkutoto/Lerai
saku	Gombo	moyale	Salad Bontore	northhorr	Fila	laisamis	Lpusi 2
saku	Karra	moyale	Gurumesa 5	northhorr	Sessi raha	laisamis	losidan
saku	Boru Duba	moyale	Ali Guyo	northhorr	Abdub tullu	laisamis	Ndikir
saku	Kubkub Tiro 1	moyale	Kulo Molu	northhorr	Wormo	laisamis	lorora
saku	Bagajo Adhi	moyale	Edin Halake	northhorr	kancharo B	laisamis	Ntumo
saku	Boru Haro Center	moyale	Diba Wako Dima	northhorr	Lag sathen	laisamis	loruko
saku	MalkaLakole 1	moyale	Jara Sora	northhorr	Ebeso 2	laisamis	manyatta juu west
saku	Dub Ali	moyale	Jillo's	northhorr	Khob Dertu	laisamis	Odhola
saku	Diid Adhi	moyale	Dalacha Boru	northhorr	Barambate	laisamis	Lgos
saku	Ilman Sora			northhorr	Elboru Magado	laisamis	soweto
saku	Barako Jaldesa			northhorr	ruchi kushi	laisamis	Serima
saku	Dadach Huqa			northhorr	bathole	laisamis	Kilima Mbogo
saku	Manyatta Jillo			northhorr	manyatta Dambala koba	laisamis	kiwanja
saku	Ilman Dida			northhorr	mathare	laisamis	Palo
saku	Wario Duba			northhorr	tigo	laisamis	Nakakolea
saku	Gar-Qarsa			northhorr	dirona	laisamis	Lgoon
				northhorr	segel	laisamis	Ntumo
				northhorr	shuur	laisamis	Nkororoi centre

APPENDIX 3: 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's)**		**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 t o 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 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)……	**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 question 2.11*
			Years	Months							
< 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 6=Merchant/trader 7=Firewood/charcoal 8=Fishing **9=** Income earned by children **10=Others (Specify)** |____|	**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 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 5.Public clinic 6. Mobile clinic 7. Relative or friend 8. Local herbs 9.NGO/FBO	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)*
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? (show sample)	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 **Card?**	**FOR CHILDREN 12-59 MONTHS** How many times has child received drugs for worms in the past year? *(show Sample)*	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** **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										

3.5 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 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. 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

4.2.2 a **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** |____|

4.7.1 a	We would like to learn about where members of this household wash their hands. Can you please show me where members of your household most often 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** l. **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)**	**<u>WOMEN DIETARY DIVERSITY</u>** **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)?*														
5.10 Eggs?														
5.11 Fish: Fresh or dries fish or shellfish														
5.12 Pulses/legumes, nuts *(e.g. beans, lentils, green grams, cowpeas)*?														
5.13 Milk and milk products *(e.g. goat/camel/ fermented milk, milk powder)?*														
5.14 Oils/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 score: Number of days out of the 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	|_____ ___| |_____ ___| |_____ ___| |_____ ___| |_____ ___|