



INTEGRATED SMART SURVEY WEST POKOT COUNTY

KENYA

June 2019



Report Compiled by West Pokot Multi-Stakeholders 'Committee with Technical Guidance from Action Against Hunger



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ABBREVIATIONS

AAH	Action Against Hunger
ACSM	Advocacy communication and Social Mobilization
ANC	Antenatal care
BCG	Bacille Calmette Guerin
DEFF	Design Effect
DHIS	District Health Information System
DQA	Data Quality Audit
C4D	Communication for Development
CIDP	County integrated development plans
CLTS	Community-Led Total Sanitation
CSI	Coping strategy index
CWC	Child welfare clinic
EBF	Exclusive Breast Feeding
ECDE	Early Childhood Development Education
ENA	Emergency nutrition assessment
FCS	Food consumption score
FGDs	Focus Group Discussions
FSOM	Food security outcome monitoring
FSNS	Food Security and Nutrition Surveillance
GAM	Global acute malnutrition
HAZ	Height-for-Age z-scores
HiNi	High impact nutrition interventions
HH	Household
IFA	Iron folic Acid
IMAM	Integrated Management of Acute Malnutrition
IMCI	Integrated Management of Childhood Illness
KAP	Knowledge, Attitudes and Practices
KEMSA	Kenya Medical Supplies Agency
KNBS	Kenya National Bureau of Statistics
KRCS	Kenya Red Cross Society
MNP	Micronutrient Nutrition Powders

MoALF	Ministry of Agriculture, Livestock and Fisheries
MUAC	Mid Upper Arm Circumference
MoE	Ministry of education
MoH	Ministry of Health
MoTC	Ministry of Trade and Commerce
NCA	Nutrition Causal Analysis
NDMA	National drought management authority
NITWG	Nutrition Information Technical Working Group
NSO	Nutrition Support Officer
ODK	Open Data Kit
OJT	On job training
OPV	Oral Polio Vaccine
PPS	probability proportional to size
RC	Reserved Cluster
SAM	Severe Acute Malnutrition
SMART	Standardized Monitoring Assessment of Relief and Transitions
SPSS	Statistical Package for Social Science
TEM	Technical Error of Measurement
UNICEF	United nation children education fund
WaSH	Water, Sanitation and Hygiene
WFP	World Food Programme
WHO	world health organization
WHZ	Weight-for-Age z-scores
WAZ	Weight-for-Age z-scores
HAZ	Weight –for –Height Z-Scores

EXECUTIVE SUMMARY

1.1 Background

West Pokot County government department of health in collaboration with nutrition sector partners carried out Standardized Monitoring Assessment in Relief and Transitions (SMART) survey, covering all the four sub counties of West Pokot County: (Pokot North, Pokot South, Pokot Central and Pokot West). The main objective of the survey was to estimate the prevalence of acute malnutrition amongst children aged 6-59 months in West Pokot County.

Methodology

West Pokot County conducted Integrated SMART survey in June 2019 during the long rains season to assess its impact on the County nutrition status. The SMART methodology was used in planning, implementation and reporting. The survey employed a two-stage cluster sampling which involved selecting 41 clusters (villages) using probability proportionate to size (PPS) in the first stage and selection of 13 households using simple random sampling in each cluster during the second stage. Data was collected for 6 days by 8 teams (each 4 members) after 4 days of training including a standardization test and pilot testing of the tools in villages outside the selected clusters.

Data was collected using Open Data Kit (ODK). The survey team assessed 612 children in five hundred and twenty-two (522) households out of the 521 randomly sampled households. Emergency Nutrition Assessment (ENA) for SMART software version 21 (July 9th, 2015) was used to analyze anthropometric data. All the other quantitative data were analyzed in Ms. Excel and the SPSS (Version 20) computer package.

Table 1: Summary of Survey Results

Summary of Results	2019	2018
Global Acute Malnutrition (GAM) based on weight for height z-score	11.7% (8.6 – 17.7 95% C.I.)	11.0% (8.9–13.5 95% C.I.)
Severe Acute Malnutrition (SAM) based on weight for height z-score	1.9 % (1.0- 3.7 95% C.I.)	0.9% (0.4 – 2.0 95% C.I.)
Global Acute Malnutrition (GAM) by middle upper arm circumference	3.0 % (1.8 – 5.0 95% C.I.)	4% (2.5 – 6.3 95% C.I.)
Severe Acute Malnutrition (SAM) by middle upper arm circumference	0.2% (0.0 - 1.4 9 5% CI).	0.5% (0.2 – 1.4 95% C.I.)
Stunting based on height for age z-scores	35.1 % (29.4 – 41.3 95% C.I.)	38.2% (33.7 – 43.0 95.5% C.I.)
Children < 5 years were ill 2 weeks prior to the survey.	39.4%	23.0%
Vaccination by card with Oral Polio Vaccine 1 (OPV 1)	48.5%	56.9%
Vaccination by card with Oral Polio Vaccine 3 (OPV 3)	44.0%	53.5%
Measles vaccination at 9 by card	42.4%	49.0%
Measles vaccination at 18 by card	24.1%	22.9%
Bacillus Calmette-Guérin (BCG) vaccination by scar	91.0%	89.3%
Vitamin A 6-11 months supplemented at least once	41.1%.	50.0%
Vitamin A 12-59 months supplemented at least once	36.1%	19.9%
Vitamin A 12-59 months supplemented more than once	21.0%.	20.7%
Children 12-59 months dewormed; once	23.7%	41.1%
Children 12-59 months dewormed; twice	8.5%.	16.7%
Malnourished women (MUAC <21cm)	2.9%	2.6%
Pregnant and lactating women malnourished	3.0%	2.0%
Women with children aged 24 months and below were supplemented with Iron Folic acid	72.3%	70.3%
Household had access to safe water	24.5%	37.6%
Handwashing at all critical times	7.5%	7.2%
Open defecation	45.4%	47.5%
Households treating drinking water	10.0%	9.3%
Minimum Dietary Diversity for women based on 24 hours recall (5 food groups and above)	38.5%	61.6%
Mean household dietary diversity score	46.4%	31.2%
Total weighted coping strategy score	24.3%	20.02%

Conclusion

The findings of the survey indicated that nutrition status of children in West Pokot County slightly deteriorated compared to the results of 2018 SMART survey conducted in the same season. However, the nutrition status of children remained in serious phase (IPC phase 3) with a global acute malnutrition of 11.7 percent. There was an increase in the proportion of children with Severe Acute Malnutrition (SAM) compared to the same period in 2018 with a SAM rate of 1.9 percent compared to 0.9 percent in 2018. The results showed a reduction in stunting compared to similar season in 2018 where the stunting rate reduced to 35.1% from 38.2% reported in June 2018. According to the revised WHO/UNICEF stunting classification, West Pokot County is classified as very high ($\geq 30\%$). No change was seen in children with underweight in 2019 (31.4%) compared to 31.3% in 2018. The high malnutrition levels could be attributed to high food insecurity due to the delayed and poor performance of long rains. The high malnutrition and food insecurity was depicted by an increase in households consuming less than three food groups from 9 percent in 2018 to 14 percent in 2019, low access and coverage of health and nutrition services (21 percent coverage for vitamin A supplementation) and poor WASH practices with only 8% of caregivers washing their hands at all five critical times.

Recommendations

The survey recommendations were derived inputs from various stakeholders' forums at County and Sub-County levels. A summary of recommendations is shown in table 2.

Table 2: Summary of Survey Recommendations

Findings	Recommendations
High levels of acute malnutrition with GAM rate of 11.7% (8.6 – 17.7 95% C.I.)	<ul style="list-style-type: none"> • Conduct mass screening and referral for children <5 years with acute malnutrition • Scale up of early detection and referral of malnourished cases at community using mother MUAC • Conduct active case finding for acutely malnourished children <5years and PLWs • Map, scale up and integrate management of acute malnutrition in all health outreaches • Train newly recruited health workers on IMAM • Up scale the number of IMAM implementing facilities from 86 to 90 • Train newly recruited staff on nutrition commodity management and reporting to avoid stock outs • Scale up and strengthen IMAM surge from 50% (44 facilities) to 80% (60 facilities) • Conduct DQA to improve quality of IMAM data and reporting • Conduct review meetings to strengthen implementation of IMAM services
High stunting level at 35.1 % (29.4 – 41.3 95% C.I.)	<ul style="list-style-type: none"> • Operationalize the common result framework through multi-sectoral platform • Promote production and consumption of diversified foods at household level • Promote appropriate MIYCN practices using developed key messages through different channels of communication • Scale up BFCI from 3 to 7 community units • Conduct MIYCN counseling and education at community level leveraging on the ongoing San-Nut program • Scale up linkages of 12 MTSG to livelihood programs • Develop and promote appropriate complementary feeding recipes using Pro-pan approach • Sensitize the community on available fortified foods in the market
Low coverage for micronutrient supplementation and deworming • IFAS: 72.3%	<ul style="list-style-type: none"> • Sensitize health workers, CHVs and ECDE Teachers on VAS, IFAS and MNPs. • Counsel pregnant women to overcome barriers to utilization of IFAS • Advocate for procurement of IFAS and deworming tablets at county level to avoid stock outs

<ul style="list-style-type: none"> • VAS-12-59m(twice): 21% • Deworming: Once 23.7%, twice 8.5% 	<ul style="list-style-type: none"> • Conduct integrated VAS and deworming in ECDE centers • Sensitise the community through community dialogues and radio to increase uptake of IFAS, VAS, MNPs and dewormers • Conduct review meetings and RDQA for IFAS, VAS, deworming and MNPS <p>Adopt and contextualize and use IFAS, VAS and MNPs messages to educate the community</p>
<p>Poor WASH practices:</p> <ul style="list-style-type: none"> -Hand washing at critical times-7.5% -Open defecation-45.4% -HH Water treatment before drinking -10.9% -Unsafe water sources-75.9% 	<ul style="list-style-type: none"> • Conduct Advocacy Communication and Social Mobilization (ACSM) at community on hygiene and sanitation targeting men, women and children. • Promote adoption of appropriate hand washing practices at five critical times through radio, community gatherings, health facilities and schools • Scale up latrine coverage through community led total sanitation (CLTS) at the community. • Promote water treatment at household through health education at the health facility and community groups. • Intensify promotion of hand washing at community level through demonstrations and campaigns. • Lobby to the County government and development partners to protect water sources in the community and support rain water harvesting technique
<ul style="list-style-type: none"> -Poor Women's Dietary Diversity (38.5% % of women consumed >5 food groups. -Weighted coping strategy score at 24.3%. 	<ul style="list-style-type: none"> • Link caregivers to nutrition sensitive sectors such as agriculture to promote production of diversified foods • Promote gender equality and equity with focus on mainstreaming gender and undertaking gender-targeted actions in health and nutrition. • County government and development partners to prioritize women economic empowerment programs.

1.0 INTRODUCTION

1.1 Background Information

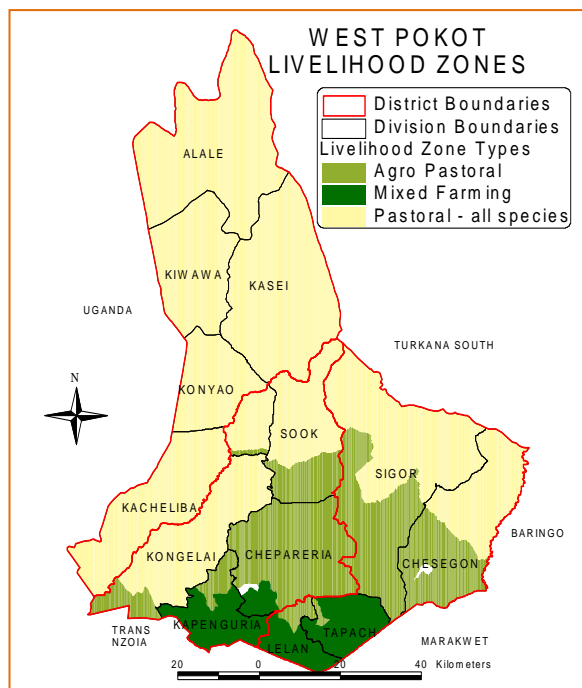


Figure 1: West Pokot County by Livelihood Zone

West Pokot County is one of the counties located in the Northern part of Rift Valley, Kenya. It covers an estimated area of approximately 9,169.4 square kilometers (km²) with a population of 718,837 persons¹. It borders Uganda to the West, Trans-Nzoia to the South West, Elgeyo Marakwet to the South East, Turkana to the North East and Baringo to the South East. The County is characterized by a variety of topographic features. On the Northern and North Eastern parts are the dry plains, with an altitude of less than 900 m above sea level. On the Southeastern part are Cherangani Hills with an altitude of 3,370 m above sea level with this range of altitude

include spectacular escarpments of more than 700 m. The rainfall varies from 400mm to 1500mm per annum with temperature ranges from 10⁰C-30⁰C. The County has four administrative boundaries/sub-counties namely; West Pokot Sub County, South Pokot, North Pokot and Central Pokot sub-counties. The County is characterized by three livelihood zones; pastoral (33%), agro-pastoral (37%), mixed farming (30%)² as shown in figure 1. The County faces a myriad of challenges which include high poverty level (69.4%), rampant insecurity along the Pokot Turkana and Pokot Marakwet boarder, poor infrastructure as well as negative effects of climate change. All these challenges have worsened shocks and hazards of drought that worsens the nutritional status. According to Kenya Demographic and Health Survey, the county has the highest (45.9%) stunting rates in the country. Similarly, acute malnutrition has remained high since 2016.

¹KDHS 2019 projections

⁴West Pokot SRA 2018 Report

⁵KDHS 2014

1.2 Justification of the Survey

SMART survey carried out in West Pokot County in June 2018 showed a serious nutrition status with Global Acute Malnutrition of 11.0% classified as serious (IPC phase 3). The February 2019 Short Rains Assessment conducted in West Pokot County classified the county in the stressed food insecurity phase (IPC Phase 2) and on declining trend. The County's EWS (NDMA Bulletin, April 2019) also indicated the drought situation to be at alarm and worsening. The results formed part of long rain assessment report and IPC nutrition analysis. The County Government and partners have been implementing health and nutrition, WASH and food security and livelihood interventions. The survey therefore provided progress update of health, nutrition and food security situation to inform further response actions and program adjustments.

1.3 Survey Objectives

The survey was conducted in the entire county in all the three livelihood zones. The main objective of the survey was to estimate the prevalence of acute malnutrition amongst children aged 6-59 months in West Pokot County, with the following specific objectives:

1. To determine the prevalence of acute and chronic malnutrition among children aged 6-59 months.
2. To determine morbidity rates among children aged 6-59 months two weeks prior to the survey.
3. To determine the immunization coverage for measles (9-59months), Oral Polio Vaccines (OPV 1 and 3) and coverage of vitamin A supplementation in children aged 6-59 months.
4. To determine the coverage of deworming in children 12-59 months.
5. To estimate coverage of iron/folic acid supplementation during pregnancy in women of reproductive age.
6. To determine the nutritional status of women of reproductive age 15-49 years by MUAC
7. To collect information on possible underlying causes of malnutrition such as household food security, water, sanitation, and hygiene practices.

1.4 Seasonality of the survey timing

The survey data was collected from 17th to 22nd June, 2019 led by Ministry of Health (MOH), Action Against Hunger and UNICEF in collaboration with National Drought Management Authority (NDMA), Ministry of education and Ministry of Agriculture, irrigation and pastoral economy. The seasonality timing of the assessment was at the end of long rains and

information collected informed the seasonal assessment on food security and nutrition. Table 3 below illustrated the West Pokot County seasonal calendar of events.

Table 3: West Pokot County Seasonal calendar of events

Events	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Weather	Short Dry season			Long Rains		Long Dry Season				Short Rains		
Planting				Long Rains planting			Short Season crop planting			Weeding		
Harvesting	Short Rains Harvesting					Long Rains Harvesting						
Diseases				Diarrhoea/malaria/Upper Respiratory Infections						Diarrhoea/malaria/Upper Respiratory Infections		
Migration	OUT				IN			OUT			IN	
Food prices	Low					High	Low	High		Low		
Labour Demand	Low		High		Low				High		Low	

2.0 METHODOLOGY

2.1. Survey Design

The survey used cross sectional and descriptive survey design. Standardized Monitoring and Assessment on Relief and Transition methodology was adopted in planning and analysis of anthropometric data. Data on socio demographic information, immunization, Vitamin A, morbidity, food security, water, sanitation and hygiene practices were collected concurrently with the anthropometric data.

2.2. Sample size calculation

The Sample size was determined using ENA for SMART software (July 9th 2015). The table below outlines factors considered when determining the sample size calculation.

Table 4: Sample Size Calculation for Anthropometric Survey

Sample size calculator for a Cross-sectional Anthropometric Survey		
Data entered on ENA software	Anthropometric Survey	Rationale
Estimated prevalence of GAM	13.5%	GAM rate of the SMART survey (June 2018) was 11 % (8.9 -13.5, 95% C.I.). April 2019 NDMA monthly bulletin indicate County drought situation at alarm and worsening
±Desired precision	3.5	This is based on the prevalence of malnutrition and the objectives of the survey.
Design effect	1.3	To cater for heterogeneity
Average household size	6	Based on 2018 SMART survey
Proportion of children under five children	19	Based on 2018 SMART survey
Percent of non-respondent	3	This is to cater for any unforeseen circumstances.
Households to be included	521	From ENA software
Children (6-59 months) to be included	518	

2.3. Sampling procedure: Selection of clusters

Two stage cluster sampling was employed in this survey with the first stage involving selection of clusters (villages) and second stage involved selection of households. Total clusters/villages with their respective population were obtained from projected population from the KNBS, 2014. Forty-one clusters were randomly selected from a total of 1503

clusters using probability proportional to population size (PPS).

2.4 Sampling procedure: Selection of households and children

In the second stage of cluster sampling, the survey teams developed a sampling frame in each of the village sampled during the 1st stage sampling. The survey team then randomly selected 13 households from a complete and updated list of households using a simple random table where they administered the household questionnaire. In the event that the household members or children were absent, the survey team would arrange to re-visit the household. The anthropometric measurements of all the eligible children in the sampled households were taken.

2.5. Training

Survey training supported by Action Against Hunger, was conducted for 4 days from 12th to 15th June 2019 where thirty-two participants were trained. The training provided both classroom and practical learning sessions on anthropometric measurements, questions interview skills and standardization test. The training covered the following modules: introduction to nutrition surveys, sampling and sampling procedures, anthropometry, signs and symptoms of malnutrition, questionnaire design, field procedures, data collection and interview skills, standardization, ODK and field test. The training facilitators administered standardization test to all the trainees with 10 children being measured for anthropometrics and the outcome of the standardization used to reinforce teams based on their accuracy and precision in measurements. The enumerators having formed eight teams of three enumerators and one team leader each conducted a pre-test in two villages from with similar characteristics with the study population that were not part of the selected survey clusters. This was necessary for the teams to familiarize with the process of village/site introduction, household sampling, taking anthropometric measurements, capturing household data and finally screening for households for IPC research using Household Hunger Scale and Household Water Security Index questions. Data collection tools were reviewed based on the feedback from the field. The team comprised of eight team leaders from government line ministries, Ministry of Health (MoH), Ministry of education (MOE), Ministry of Agriculture, Irrigation and Pastoral economy and the National Drought Management Authority (NDMA), County health management teams and 24 Survey enumerators recruited from the community.

In addition, nine survey supervisors coordinated the training and the whole survey process. Action Against Hunger, MoH, NITWG and UNICEF technical team facilitated the training.

2.6 Survey team and supervision

The survey comprised of 24 enumerators, 8 team leaders, 7 supervisors and 2 coordinators. The recruitment of the enumerators took place in all the four sub counties of the County. There were eight survey teams, three enumerators and one team leader for each team. The survey also employed 41 village guides sourced from all the randomly selected villages for the survey. The roles of village guides were to assist in the generation of the household list for random selection of the 13 households, introduction of the survey teams in the community, assist in routing and showing the boundary of the respective villages selected. The questionnaire was written in English but translated back to local language (during training, every question was translated to how it would be asked in the local language).

2.7 Data Quality Control Measures

To ensure data collected was valid and reliable for decision making, the following measures were put in place:

- Training of survey team focusing on SMART methodology, survey objectives, interviewing techniques and data collection tools.
- Standardization test conducted to assess team's accuracy and precision in taking anthropometric measurements. Feedback from the test was shared with participants and supervisors.
- Pilot survey test conducted to ensure all the information was collected with uniformity.
- Ensured all anthropometric equipment's were functional and standardized. On daily basis during data collection, each team was required to calibrate the tools.
- Daily support and supervision of teams during data collection. Each survey team was assigned a supervisor during data collection.
- Daily data quality checks were done by running plausibility check using ENA software. Feedback was communicated to the teams before they proceeded to the field

the following day. More attention was given to the teams with notable weaknesses and support given where necessary.

- Adequate logistical planning

2.8. Case Definitions and Inclusion Criteria

A household was defined as members of family eating from the same cooking pot. All the children within the household who were aged 6-59 months were included in the survey.

2.8.1. Anthropometric data

Anthropometric data was collected from all eligible children aged 6-59 months. The child's information collected included:

Age: The child's immunization card, birth certificate or birth notification were the primary sources for this information. In the absence of these documents, a local calendar of events developed from discussions with community members, enumerators and key informants was used. Age calculation chart was used for ease of identifying age in months (see Annex).

Child's Sex: This was recorded as either '**m**' for male or '**f**' for female.

Weight: A seca³ digital weighing scale was used to measure the children's weight. The electronic scales were calibrated on daily basis using a standard weight to confirm measurements and any faulty scales were replaced. In order to enhance accuracy and quality, children were weighed with no clothing inside the house based on the weather, the scale was placed on a hard-flat surface with minimal or no movement of the child and accurate recording of measurements taken to the nearest 0.1kg.

Height: Recumbent length was taken for children less than two years of age while those children above two years of age were measured standing up. A height board was used to measure length/height. The emphasis was placed on the ideal placement of cursor as per instructions on height measurements (SMART/IMAM⁴ guidelines) ensuring minimal or no movement of the child and maintaining height readings at eye level to the nearest 0.1cm.

³Electronic SECA scale manufactured by Secagmbh & co.kg. Hammer Steindamm 9-25.22089 Hamburg. Germany.

⁴ Integrated Management of Acute Malnutrition

MUAC: Mid Upper Arm Circumference was measured on the left arm, at the middle point between the tip of the elbow and the tip shoulder bone while the arm is at right-angle, then followed MUAC measurements of the arm while it is relaxed and hanging by the body's side. MUAC was measured to the nearest 1 mm. In the event of a disability on the left arm or a left-handed child, the right arm was used. Emphasis during the exercise was on the correct identification of mid-point and correct tension upon placement of MUAC tape on arm. Maternal MUAC tapes were used to measure MUAC in women of reproductive age.

Bilateral Oedema: This was assessed by the application of moderate thumb pressure for at least 3 seconds on both feet. If a depression formed on both feet upon pressure application, then presence of pitting upon release of thumb pressure indicated bilateral oedema was confirmed.

Growth Standards: WHO growth standards were used to report principle anthropometry results.

2.8.2 Vaccination, immunization and supplementation information

Measles vaccination: The child's vaccination card was used as a source of verification. In circumstances where this was not available, the caregiver was probed to determine whether the child had been immunized against measles or not (done subcutaneously on the right upper arm). All children with confirmed immunization (by date) on the vaccination card, the status were recorded as "1" (Card) otherwise as "3" (Not immunized). Oral confirmation from the caregiver without proof of card was recorded as "2" (Recall). Children between 9 to 18 months or greater were used to determine coverage of this in the final analysis.

Oral Polio Vaccine (OPV) 1 (1st dose at 6 weeks) **and OPV3** (3rd dose at 14 weeks) was calculated for all children aged 6-59 months.

Vitamin A coverage: This was determined by the number of times the eligible child had received vitamin A in the past year. The response received (number of times) was probed to determine whether provided at the health-facility/outreach sites or elsewhere and the number of times recorded in the card.

Micronutrient powders: The eligible children for this information were children aged 6-23 months. The respondent was asked whether the child was enrolled in the program; recorded

in the questionnaire as “0” for No and “1” for Yes. Those who said no were probed for reasons as to why not enroll. Those enrolled were further probed on adherence.

2.8.3 Other Health and food related Information

De-worming: Determined by whether the child had received drugs for intestinal worms in the past one year. This was recorded as “0” for No, “1” for Yes by card, “2” for Yes by recall and “3” for Do not know.

Morbidity: This was gathered over a two-week recall period by interviewing/probing the mothers/caretakers of the target child and eventually determined based on the respondent’s recall. A clinician did however not verify this information.

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 washed 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): using a 24-hour food consumption recall questionnaire on all women of reproductive Age (15-49 years). Foods consumed in the last 24 hours were enumerated and analyzed. Women consuming more at least five of the ten food groups were categorized to meet the MDD-W.

Household Food Consumption Score (FCS): Data on the frequency of consumption of different food groups by a household during 7 days prior to the survey was collected and analyzed using SPSS.

Coping Strategy Index (CSI): Data on the frequency of the five reduced CSI individual coping behaviors was collected. The five standard coping strategies and their severity weightings used in the calculation of Coping Strategy Index are:

1. Eating less-preferred foods (1.0)
2. Borrowing food/money from friends and relatives (2.0)
3. Limiting portions at meal time (1.0)
4. Limiting adult intake (3.0)
5. Reducing the number of meals per day (1.0)

CSI index per household was calculated by summing the product of each coping strategy weight and the frequency of its use in a week (number of days).

2.8.4. Indicators, Guidelines and Formulas Used in Acute Malnutrition

Weight for height (WFH) index: This was estimated from a combination of the weight for height (WFH) index values (and/or oedema) and by sex based on WHO standards 2006. This index was expressed in WFH indices in Z-scores, according to WHO 2006 reference standards.

Z-Score:

- Severe acute malnutrition is defined by WFH < -3 SD and/or existing bilateral oedema
- Moderate acute malnutrition is defined by WFH < -2 SD and \geq -3 SD and no oedema.
- Global acute malnutrition is defined by WFH < -2 SD and/or existing bilateral oedema.

Mid Upper Arm Circumference (MUAC):

MUAC analysis undertaken to determine the nutrition status of children and women of reproductive age (15-49 years) in the sampled households. MUAC cut offs criteria were applied as shown in table 5.

Table 5: MUAC Thresholds

MUAC Guideline	Interpretation
Children 6-59 months	
MUAC <115mm and/or bilateral Oedema	Severe acute malnutrition
MUAC \geq 115mm and <125mm (<i>no bilateral oedema</i>)	Moderate acute malnutrition
MUAC \geq 125mm and <135mm (<i>no bilateral Oedema</i>)	Risk of malnutrition

MUAC > 135mm (no bilateral Oedema)	Adequate nutritional status
Women of Reproductive Age (15-49 years)	
MUAC 23cm- \geq 21cm	At Risk of malnutrition
MUAC <21cm	Moderate Acute Malnutrition

2.9 Ethical considerations

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

2.10 Referrals

During the survey, all severe and moderately malnourished children as per MUAC, <125mm and Weight-for-Height cut offs <-3SD were referred to the nearby health facility/outreach for management. Pregnant and lactating women with MUAC <21cm were referred as well.

2.11 Data Entry and Analysis

Open data Kit (ODK), which ensures real time data, was used for data collection. Data was uploaded to the main server on daily basis to ensure optimal monitoring of data collected as a quality assurance measure. Anthropometric data was analyzed using ENA for SMART software (July 9th 2015). All other data sets were entered and analyzed using Microsoft Excel (Version 2016) and SPSS (Version 20).

2.12 Survey Limitations

There were inherent difficulties in determining the exact age of some children (even with use of the local calendar of events). This may have led to inaccuracies when analyzing chronic malnutrition. Although verification of age was done by use of health cards, in some cases no exact date of birth was recorded on the card other than the date a child was first seen at the health facility.

3.0 SURVEY RESULTS

3.1 General characteristics of the study populations and households

The average household size as derived from 3231 household members from the 521 randomly selected households was approximate 6 persons per household. In regards to the age cohort surveyed; 0-59 months 612 (Male 303, Female 309) where children aged 6-59 months were 520 (Male 270, Female 262), the 5-18 years were 1317 (Male 646, Female 671), while 1286 were above 18 years of age (Male 619, Female 667). The majority of the subjects surveyed were married at 85.4% of adults being married, 6.9% widowed, 4.6% single and 2.3% separated. Notably 99.8% of the households were Residents, 0.2% refugees and there were no IDPs reported in the Survey. The main occupation of the household heads was crop farming (29.8%) followed by livestock herding (25.5%), waged labor (17.2%), salaried/wages (11.3%) and the rest (petty trade, fire wood and charcoal burning and others) accounting for 16.0% (figure 2). The proportion of adults in the county who had no formal education was 39.5%, with 29% of them having attained compulsory primary education, 16.7% secondary education and about 10.6% tertiary education. The assessment showed that majority (80%) of the children aged between 5-17 years were enrolled in school with lack of school nearby 33.4%, family labor responsibilities (involvement in family labor like herding and fetching water/firewood (15.4%) and not seeing the value of school(15.1%) being some of the main reasons cited for the rest of the children (19.9%) not attending school (figure 3).The assessment findings indicated that mosquito ownership remained the same in 2019 and 2018 (63.2%), the proportion of the population sleeping under mosquito net the previous day had reduced from 77.0% in 2018 to 64.3% in 2019

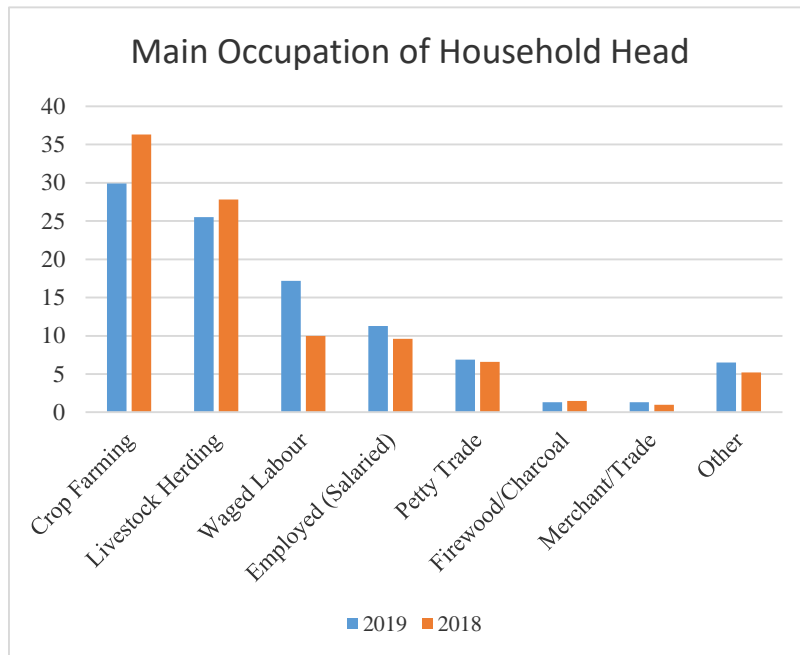


Figure 2: Main Occupation of Household Heads in West Pokot County

Education level

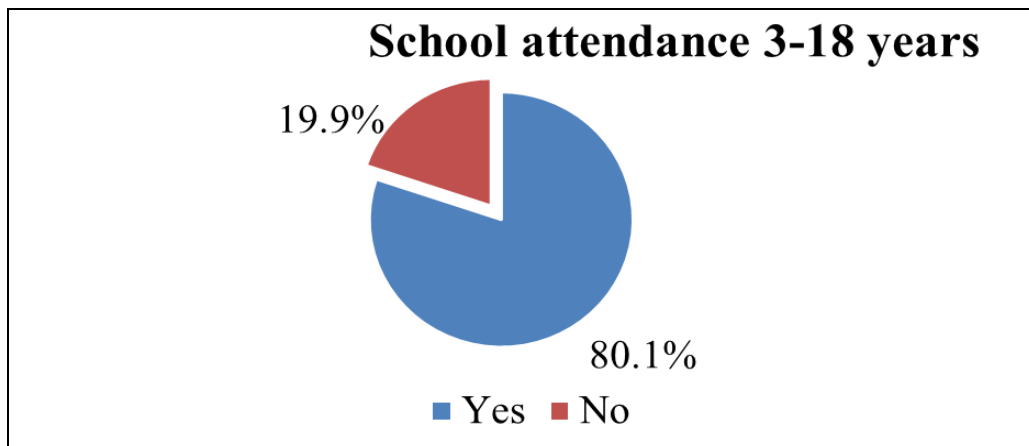


Figure 3: Education Status among the children aged 3-18years

Table 6: Distribution of Age and Sex of Sample

Reasons for not being in school	Percent
Chronic illness	1.30%
Family labour responsibilities	15.40%
Household doesn't see value of schooling	15.10%
Insecurity	0.30%
No school nearby	33.40%
Married	1.30%
No food in school	0.30%
Teacher absenteeism	1.00%
Too poor to buy school items	5.20%
Other	26.20%
Working outside home	0.30%

3.2. Anthropometric results (bases on WHO standards 2006)

3.2.1 Distribution by Age and Sex

The anthropometric measurements covered 530 children aged between 6 to 59 months indicating a 19% of total population. Both boys and girls were equally represented with p-value of (0.729). The Age ratio among children aged 6-29 months and 30-59 months was 0.420 with overall p-value of (p=0.035) indicating equal representation of both age cohorts. Statistical evaluation of sex and age ration using chi-squared statistics had a p-value of (>0.03) indicating significant difference. Table 7 shows distribution by age and sex of the sampled children. The overall data quality score of the anthropometric survey results was 2% (interpreted as excellent score).

Table 7: Distribution of Age and Sex of Sample

AGE (mo)	Boys		Girls		Total		Ratio
	no.	%	no.	%	no.	%	Boy: girl
6-17	54	46.6	62	53.4	116	21.8	0.9
18-29	69	51.9	64	48.1	133	25.0	1.1
30-41	63	50.8	61	49.2	124	23.3	1.0
42-53	45	40.9	65	59.1	110	20.7	0.7
54-59	31	63.3	18	36.7	49	9.2	1.7
Total	262	49.2	270	50.8	532	100.0	1.0

3.2.2 Nutritional status of children 6-59 months

a) Prevalence of acute malnutrition based on weight-for height Z-scores

The survey results showed a GAM prevalence based on weight for height z-scores of 11.7 % (8.6 - 15.7 95% C.I.) classified as high based on the revised WHO classification of acute malnutrition. The severe acute malnutrition (SAM) was 1.9 % (1.0 - 3.7 95% C.I.). There was no significant difference (p=0.69) noted in GAM point prevalence of 2019 compared to June 2018 SMART survey findings. There was also no significant difference (p=0.8) in global acute malnutrition for girls in 2019 compared to the results of 2018 SMART survey. The survey revealed boys being more malnourished than girls with global acute malnutrition (GAM) of 11.5% and 10.5% for girls and boys respectively, though the difference was statistically insignificant (p = 0.1). This can be attributed to early introduction of complementary food to boys with believe that boys need more energy than girls. The high malnutrition levels could be attributed to high food insecurity due to the delayed and poor performance of long rains, poor child feeding practices and low coverage of nutrition and health services.

Table 8: Prevalence of Acute Malnutrition Based on Weight -for -Height Z-Scores and /or Oedema and by Sex

	All n = 521	Boys n = 258	Girls n = 263
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(61) 11.7 % (8.6 - 15.7 95% C.I.)	(35) 13.6 % (8.9 - 20.1 95% C.I.)	(26) 9.9 % (6.4 - 15.0 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(51) 9.8 % (7.2 - 13.3 95% C.I.)	(27) 10.5 % (6.7 - 16.0 95% C.I.)	(24) 9.1 % (5.9 - 13.9 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(10) 1.9 % (1.0 - 3.6 95% C.I.)	(8) 3.1 % (1.5 - 6.4 95% C.I.)	(2) 0.8 % (0.2 - 3.1 95% C.I.)

The Gaussian curve as illustrated in figure 4 shows the survey curve (colored in red) deviating to the left of the WHO reference curve (green color) meaning that majority of children assessed were categorized within poor nutritional status.

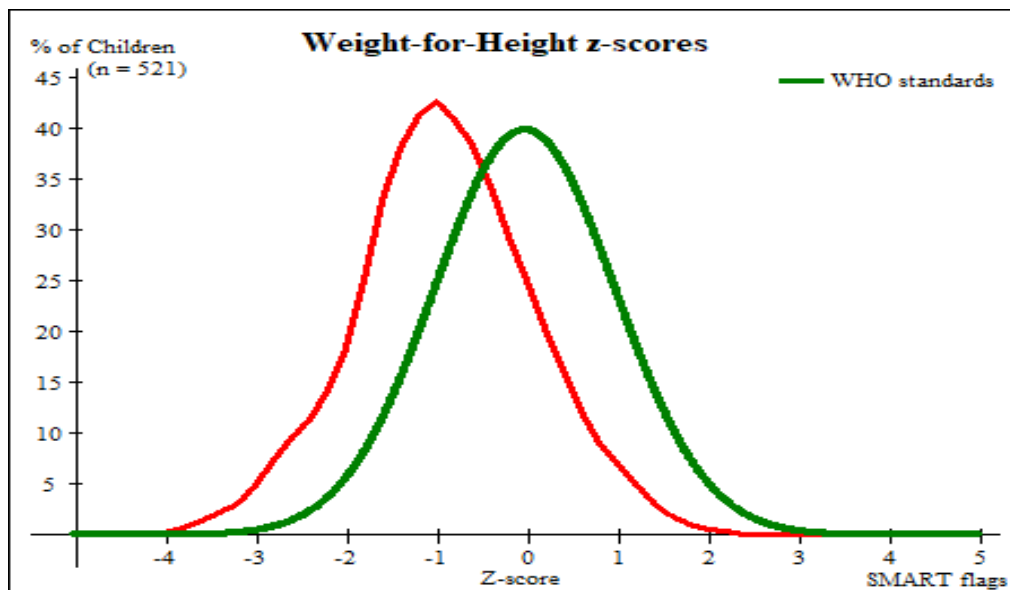


Figure 4: Gaussian Curve

b) Prevalence of Acute Malnutrition by Mid upper arm circumference (MUAC)

MUAC is a simple and low-cost method that can easily be applied with minimum training. It is less susceptible to measurement error than WHZ. However, MUAC admission criteria to community-based therapeutic programmes may result in missed opportunities to treat severe condition⁵. The GAM and SAM prevalence by MUAC were 3.0% (1.8 -5.0 95% C.I.) and 0.2 % (0.0 - 1.4 95% C.I.) respectively, a reduction with no significant difference (p=0.8), compared to GAM and SAM prevalence of 4.0 % (2.5 – 6.3 95% C.I.) and 0.5 % (0.2 - 1.4 95% C.I.) respectively in June 2018. Though statistically insignificant, girls were more malnourished than boys as illustrated in table 9 with a p value of 0.5919.

Table 9: Prevalence of Acute Malnutrition Based on MUAC

	All n = 532	Boys n = 262	Girls n = 270
Prevalence of global malnutrition (< 125 mm and/or Oedema)	(16) 3.0 % (1.8 - 5.0 95% C.I.)	(4) 1.5 % (0.6 - 4.0 95% C.I.)	(12) 4.4 % (2.4 - 7.9 95% C.I.)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no Oedema)	(15) 2.8 % (1.6 - 4.9 95% C.I.)	(3) 1.1 % (0.4 - 3.6 95% C.I.)	(12) 4.4 % (2.4 - 7.9 95% C.I.)
Prevalence of severe malnutrition (< 115 mm and/or Oedema)	(1) 0.2 % (0.0 - 1.4 95% C.I.)	(1) 0.4 % (0.0 - 2.9 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)

⁵ Comparison of Mid-Upper Arm Circumference and Weight-for-Height to Diagnose Severe Acute Malnutrition: A Study in Southern Ethiopia, 11th March 2017

c) Prevalence of underweight based on weight for age z-scores

Underweight is a composite of acute and chronic malnutrition that occurs when a child fails to attain the appropriate weight relative to age. The survey established underweight rates of 31.3% (25.5 - 37.8 95% C.I.) as shown in table 10. There was no significant difference (P value = 0.9) in current prevalence of underweight compared to the results of June 2018 SMART survey. There was no significant difference (p=0.9) in underweight between boys and girls.

Table 10: Prevalence of Underweight Based on Weight-for-Age Z-Scores (WAZ) by Sex

	All n = 527	Boys n = 259	Girls n = 268
Prevalence of underweight (<-2 z-score)	(165) 31.4 % (25.5 - 37.8 95% C.I.)	(82) 31.7 % (24.1 - 40.4 95% C.I.)	(83) 31.0 % (23.9 - 39.0 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(131) 24.9 % (20.3 - 30.1 95% C.I.)	(63) 24.3 % (18.1 - 31.9 95% C.I.)	(68) 25.4 % (19.2 - 32.7 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(34) 6.5 % (4.3 - 9.6 95% C.I.)	(19) 7.3 % (4.3 - 12.3 95% C.I.)	(15) 5.6 % (3.4 - 9.2 95% C.I.)

(d) Prevalence of stunting based on height-for-age z-scores

Stunting refers to a state of being too short for one’s age. Stunting is associated with diminished mental abilities and limited physical work capacity, resulting in continued economic hardships for families and County at large. The causes of stunting are multiple and cuts across different sectors. Studies reveal that there is need to embrace multi-sectoral approaches which recognize the role of other sectors such as agriculture, water, sanitation, social protection and education in addressing malnutrition in order to address stunting. Further, there’s need to support efforts such as Scaling Up Nutrition which has a multi-sectoral approach to addressing stunting.

The SMART Survey 2019 revealed slight decline in stunting prevalence from 38.2% in 2018 to 35.0% (35.0 % (29.3 - 41.2 95% C.I.) as illustrated in table 11, with no significant difference (p=0.5). The stunting prevalence as reflected to revised WHO classification on chronic malnutrition indicates the current prevalence is very high (≥ 30). Analysis by gender

revealed that boys were more stunted than girls, although with no significant difference ($p=0.7$). This can be attributed cultural perceptions that girls are more fragile to disease and malnutrition than boys and hence given more attention and better care practices (feeding, hygiene and healthcare)⁶. Also there is a perception that boys are not satisfied with mother's milk alone within the first 6 months of life hence early introduction of other foods.

Table 11: Prevalence of Stunting Based on Height -for-Age Z-Scores (HAZ) and by Sex

	All n = 514	Boys n = 254	Girls n = 260
Prevalence of stunting (<-2 z-score)	(180) 35.0 % (29.3 - 41.2 95% C.I.)	(92) 36.2 % (28.9 - 44.2 95% C.I.)	(88) 33.8 % (27.7 - 40.6 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(128) 24.9 % (20.7 - 29.6 95% C.I.)	(67) 26.4 % (20.8 - 32.9 95% C.I.)	(61) 23.5 % (18.9 - 28.8 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(52) 10.1 % (6.9 - 14.7 95% C.I.)	(25) 9.8 % (5.9 - 15.9 95% C.I.)	(27) 10.4 % (6.7 - 15.8 95% C.I.)

Analysis by age group showed that children aged 18-29 months and 30-41 months were most stunted among other age group assessed as reflected in table 12. These could be attributed to early cessation of breastfeeding and poor dietary diversity.

Table 12: Prevalence of Stunting by Age

Age (mo)	Total no.	Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (>= -2 z score)	
		No.	%	No.	%	No.	%
6-17	113	6	5.3	29	25.7	78	69.0
18-29	127	18	14.2	33	26.0	76	59.8
30-41	121	16	13.2	27	22.3	78	64.5
42-53	105	6	5.7	25	23.8	74	70.5
54-59	48	6	12.5	14	29.2	28	58.3
Total	514	52	10.1	128	24.9	334	65.0

⁶ Nutrition Causal Analysis, West Pokot County, June 2015

3.2.3 Overview of trends in under nutrition over time in West Pokot County

The general trend of under nutrition in West Pokot County from May 2011 to June 2019 is illustrated in figure 5. The County faces food and nutrition insecurity attributed to poor performance of rains over time, endemic human and livestock diseases, sub optimal food and livestock production, high food prices in markets coupled with overreliance on market for household food, limited sources of income, and insecurity in some areas. Food consumption score in majority of household have deteriorated (NDMA March 2019) due to the delayed rains. The nutrition situation has further been exacerbated by poor child care practices, unhygienic practices and low access to basic services (health and safe water)

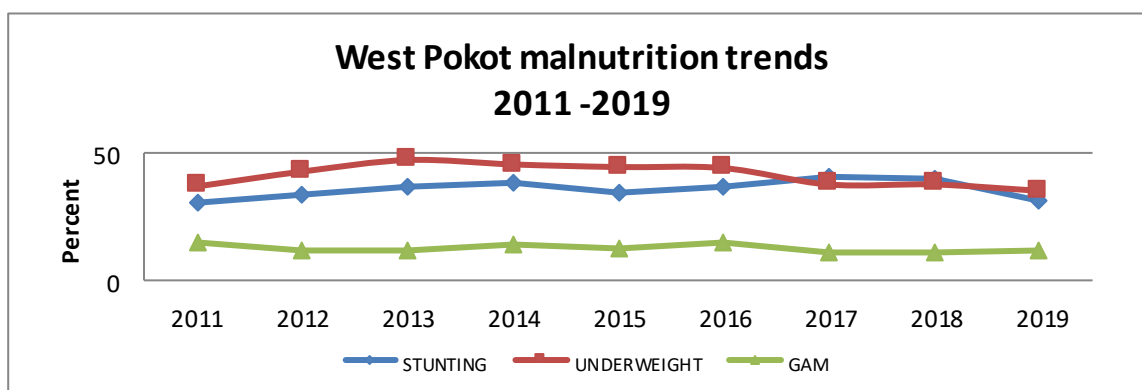


Figure 5: Malnutrition trend among under-fives over time

Proxy (Indirect) Coverage of IMAM program

All the malnourished children 6-59 months (MUAC<125MM or WFH Z score<-2 SDS) were assessed whether they were enrolled into any nutrition program during the survey. Five out of ten (50.0%) of SAM cases were already enrolled in OTP program while 10 out of 51 (19.6%) of MAM cases were enrolled in SFP program. This indicates acceptable coverage for OTP and low coverage for SFP programs per the expected 50% SPHERE standards coverage for rural setting.

3.3. Child Morbidity

Malnutrition can make a person more susceptible to infection, and infection also contributes to malnutrition, which causes a vicious cycle of malnutrition and infections. A sick person's nutrition is further aggravated by diarrhea, mal-absorption, loss of appetite, diversion of

nutrients for the immune response, and urinary nitrogen loss, all of which lead to nutrient losses and further damage to defense mechanisms. These, in turn, cause reduced dietary intake.

Morbidity was assessed among children aged 6-59 months by cross-checking the mother and child health booklet if the child was sick in the last 2 weeks. Where the booklet was missing, inquiry was made to the caregivers to recall whether the child was ill or not in last 14 days. Those who confirmed illness in the past two weeks were further probed on the type illness that affected their children and whether or not they sought any assistance when their child/children were ill and where. Those who indicated that their child/children suffered from watery diarrhea were probed on the kind of treatment that was given to them.

Morbidity among children significantly increased where 39.4% (152) of children less than 5 years were ill two weeks prior to the survey compared to 23% reported in the 2018 SMART survey. This can be attributed to use of untreated water, dusty weather and inadequate food. The survey revealed acute respiratory infection/ cough as the most common ailment among children 6-59 months at 63.1% followed by fever with chills like malaria at 42.9%, watery diarrhea at 22.6% and bloody diarrhea at 2.4%. Notably 85% of children with watery diarrhea were supplemented with zinc for management of diarrhea.

Morbidity pattern

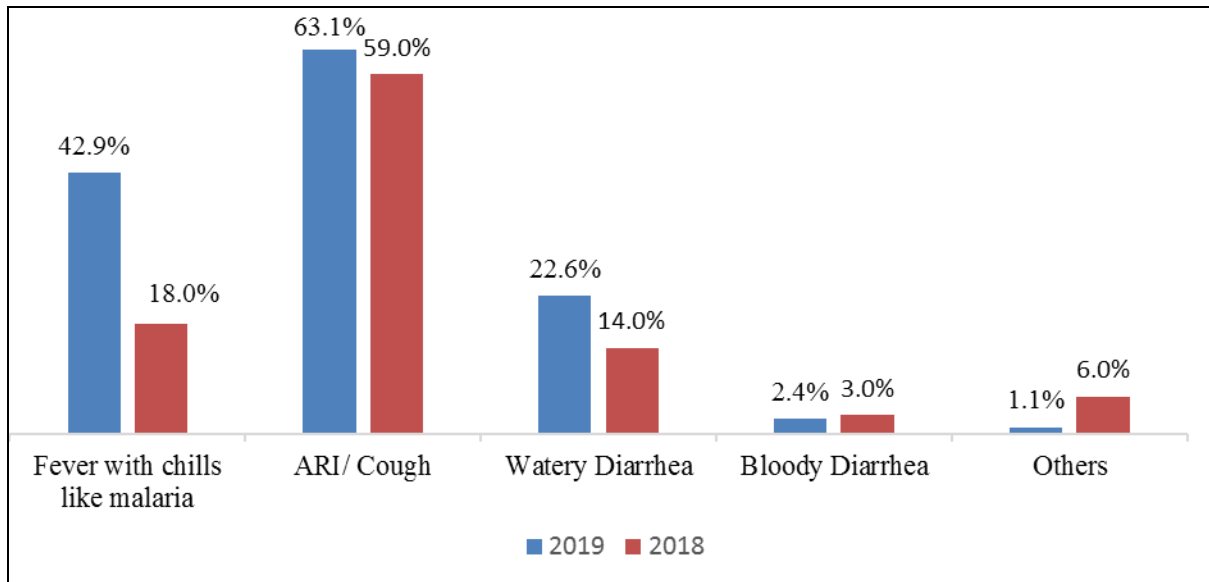


Figure 6: under-five morbidity pattern

The survey indicated that 95% of caregivers sought appropriate health assistance when their children were ill: Public health facilities at 65.9%, private health facilities/ Pharmacies at 28.0%. This is an improvement from 88.1 % in 2018 to 95% in 2019. The proportion of caregivers seeking health services from private pharmacies also increased from 20.6% in 2018 to 28.0% in 2019. Others sought treatment from community health volunteers, shops/kiosks, local herbs, relatives or friends and traditional healers representing all at 0.8 each. Poor health seeking behavior could be attributed to long distances to health facilities, high transport costs and industrial action that lead to closure of public health facilities.

Health Seeking Behavior

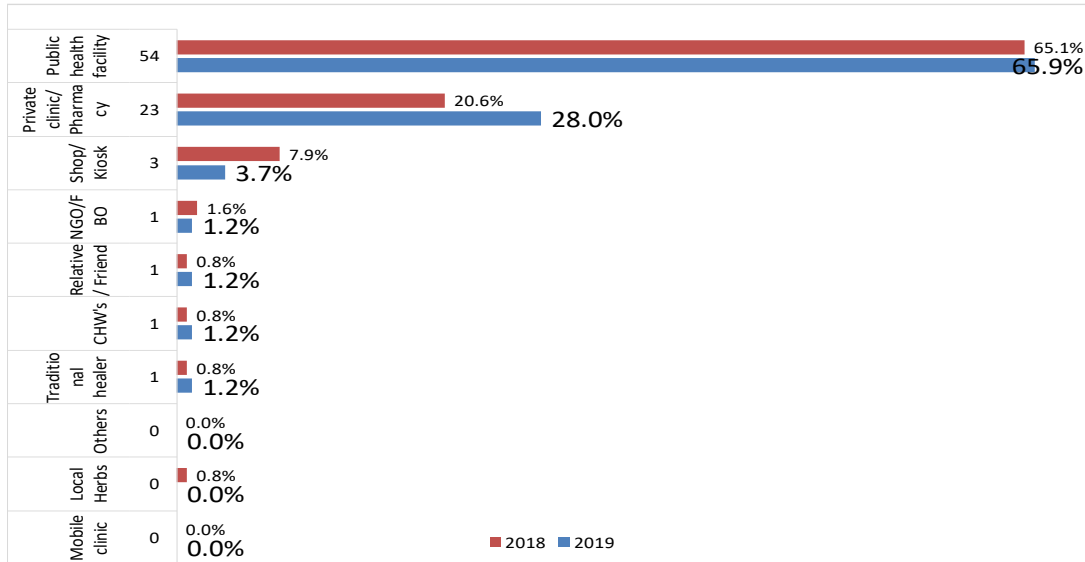


Figure 7: Health Seeking Behaviors

3.4. Child Immunization, supplementation and deworming

3.4.1. Immunization

The ministry of health through the Division of Vaccines and Immunization supports scale up of immunization services under the Kenya Expanded Programme on Immunization (KEPI) in order to reduce morbidity and mortality related to vaccine preventable diseases⁷. The immunization coverage in county (Figure 8) remained low with measles vaccination at 18 months was being extremely low 24%; which could be attributed to lack of awareness of the caregivers on second dose of measles vaccination.

⁷Kenya comprehensive multiyear plan for 2011-2015

Immunization coverage

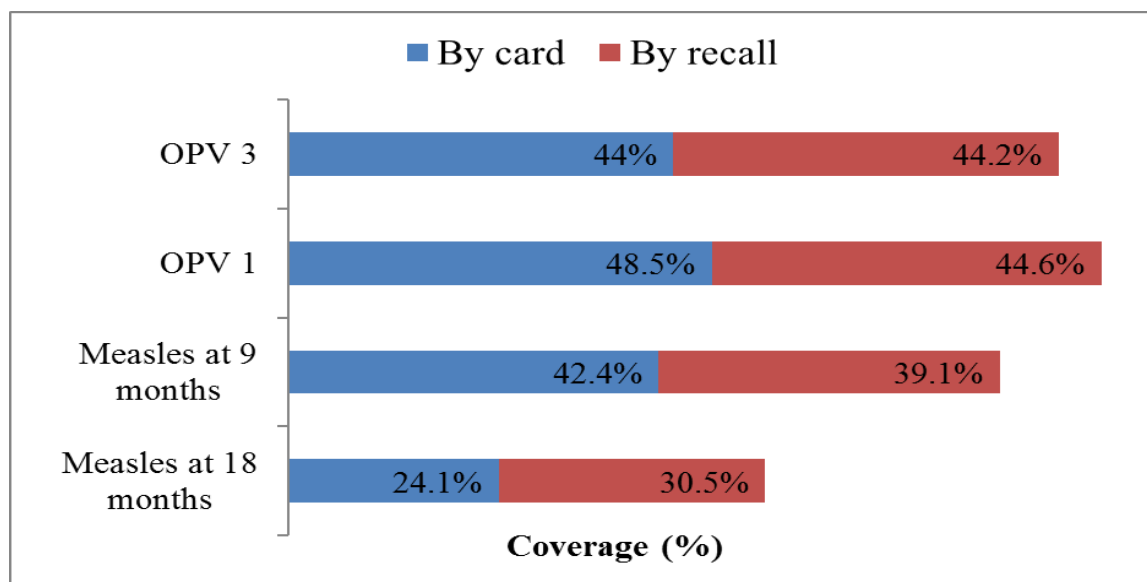


Figure 8: Immunization coverage

Table 13: Child Immunization Package

Vaccination	2017	2018	2019
OPV 1 by card	59.6%	56.9%	48.5%
OPV 1 by recall	33.1%	33.8%	44.6%
OPV 3 by card	51.9%	53.5%	44%
OPV 3 by recall	31.1%	30.4%	44.2%
Measles at 9 months by card	47.6%	49.0%	42.4%
Measles at 9 months by recall	27.8%	49.0%	39.1%
Measles at 18 months by card	22.9%	12.0%	24.1%
Measles at 18 months by recall	11.1%	12.1%	30.5%
BCG by presence of left hand scar	87.0%	89.3%	91.0%

There was slight decrease in immunization coverage for OPV 1, OPV3 and measles at 9 months. This could be attributed to industrial action, stock out of vaccines and low access to immunization services. However, BCG coverage remained above the national average of 80% at 91.0%, with slight improvement for measles at 18 months.

3.4.2 Vitamin A Supplementation

Kenya's ministry of health recommends that all children 6-59 months be supplemented with vitamin A after every six months. This can be done at the health facility, at the medical

outreach site, community level or at the ECDE centers. Provision of vitamin A supplements every six months is an inexpensive, quick, and effective way to improve vitamin A status and reduce child morbidity and mortality in the long term.

Vitamin A coverage was assessed for the past one year (June 2018 to June 2019) and the results are as shown in figure 9. Coverage assessment was done through recall since only 44.5% of interviewees had vitamin A supplementation indicated on their mother child booklet.

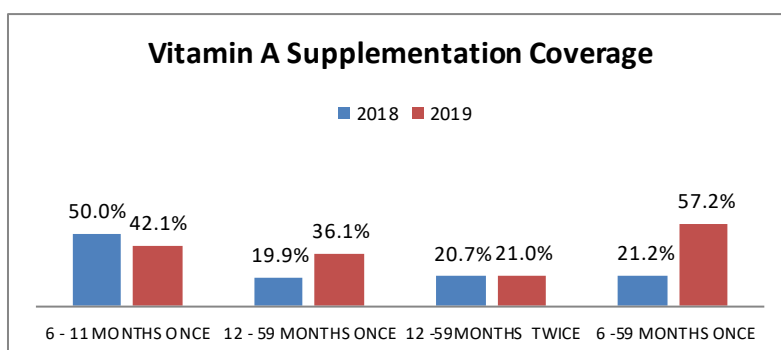


Figure 9: Vitamin A Supplementation Coverage for Children 6-59 Months

Vitamin A supplementation for children aged 6-11 months and 12-59 months was below 80% national target however there was a noticeable improvement from 21.2% reported in 2018 to 57.2% in 2019. Major factors attributed to improved coverage include acceleration of vitamin A supplementation during integrated outreaches and Malezi bora weeks, increased awareness among caregivers at the health facility and community, availability of the vitamin A supplements and improved linkage between community supplementation data (ECDE, outreach) to facility data.

3.4.3. Deworming

Deworming of children routinely helps to combat soil-transmitted helminthes that worsen child nutritional status through intestinal bleeding, loss of appetite, and mal-absorption of micronutrients. Periodic treatment (deworming) of children supported with improvement of water and sanitation, and health education can reduce the transmission of Schistosoma and soil-transmitted helminth infections⁸. The proportion of children aged 12-59 months in West

⁸ Hotez, P. J et al, Helminthic infections: soil-transmitted helminth infections and schistosomiasis, 2006. Oxford University Press and World Bank.

Pokot dewormed once was 23.7% a reduction from 41.1% reported in 2018. In addition, coverage for those who were dewormed twice in the past one year remained low at 8.5%. The low deworming coverage could be attributed to stock out of dewormers in health facilities.

3.5. Maternal Health and Nutrition

Women Physiological status

During the survey women were asked about their current physiological status on whether pregnant, lactating, pregnant and still lactating or none. The survey unveiled that; pregnant, lactating, and pregnant and lactating were 10%, 39.1% and 1.1% respectively.

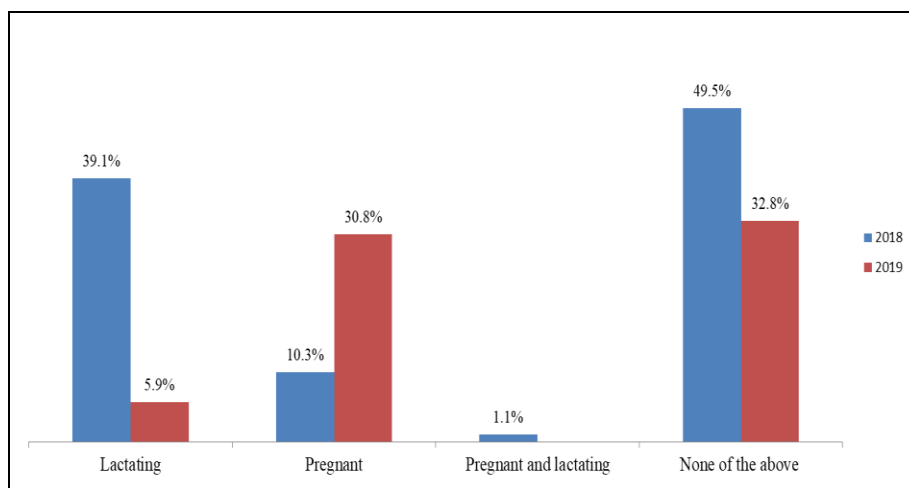


Figure 10: Women Physiological status

3.5.1 Iron Folate Supplementation During Pregnancy

Anemic women are more likely to deliver low birth weight infants and low folic acid levels are associated with an increased risk of low birth weight and birth defects. Iron folic acid supplementation is recommended as part of antenatal care to reduce risk of low birth weight, maternal anaemia and iron deficiency, ultimately improving maternal and perinatal health. WHO recommends routine intake of Iron tablets and folate supplements (IFAS), for all pregnant women together with appropriate dietary advice. A total of 180 women (63.9%) confirmed through retrospective inquiry having consumed iron folate in their last pregnancy. There was no significant difference in the proportion of women who consumed IFAS for over 90 days (63.9%) in 2019 compared to 62.4% reported in 2018 (Table 14). The mean number of days IFAS was consumed by women reduced from 60 days in 2018 to 56.5 days in 2019

mainly attributed to commodity stock out and with some reported cases of ignorance on the importance of consuming IFAS.

Table 14: Frequency of Consumption of Iron Folate Supplements

Categories of IFA Consumption (In Days)	No. of women	2019 Percent	2018 Percent
< 90 Days	69	63.9%	62.4
90≥180 Days	39	36.1%	37.6
> 180 Days	0	0	0

3.5.2 Maternal nutrition status based on Mid Upper Arm Circumference (MUAC)

Maternal mid upper arm circumference is a proxy indicator of maternal nutritional status. Nutritional status of 455 women aged 15-49 years was assessed using MUAC. A tenth (11.4%%) of the women were pregnant. Malnutrition among women was very low with 2.9% of all women and 3% of pregnant and lactating women being malnourished (MUAC <21 cm). There was an increase in risk for malnutrition among pregnant and lactating women in 2019 compared to 2018. The increase could be attributed to household food insecurity following poor performance of the long rains.

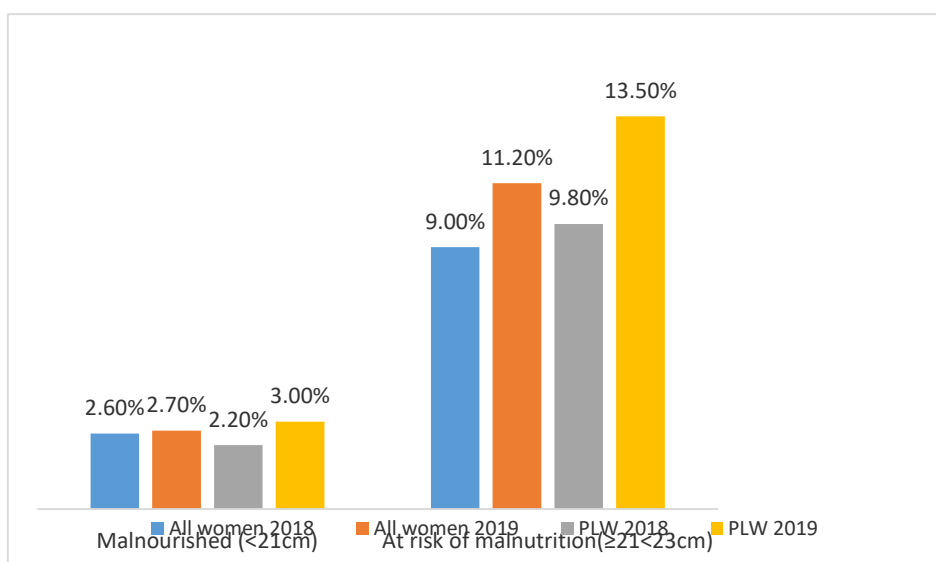


Figure 11: Maternal nutrition status based on Mid Upper Arm Circumference (MUAC)

3.6. Water, Sanitation and Hygiene (WASH)

3.6.1. Water Sources

According to June 2019 NDMA bulletin, the county experienced prolonged delay of onset of the long rains. Substantial rains were later received in both lowlands and highlands, with fairly good temporal and spatial distribution. The rainfall distribution and intensity was good across the livelihoods, especially in the highlands.

Majority of the households use unsafe water sources with only 24.1% of household getting their drinking water from safe sources in 2019 compared to 46.7% recorded in 2018 (Figure 12). The proportion of household consuming <15 litres per day was 4.6% while those consuming >15 liters per day 97.0%. Mean water consumption per person/day was 44.

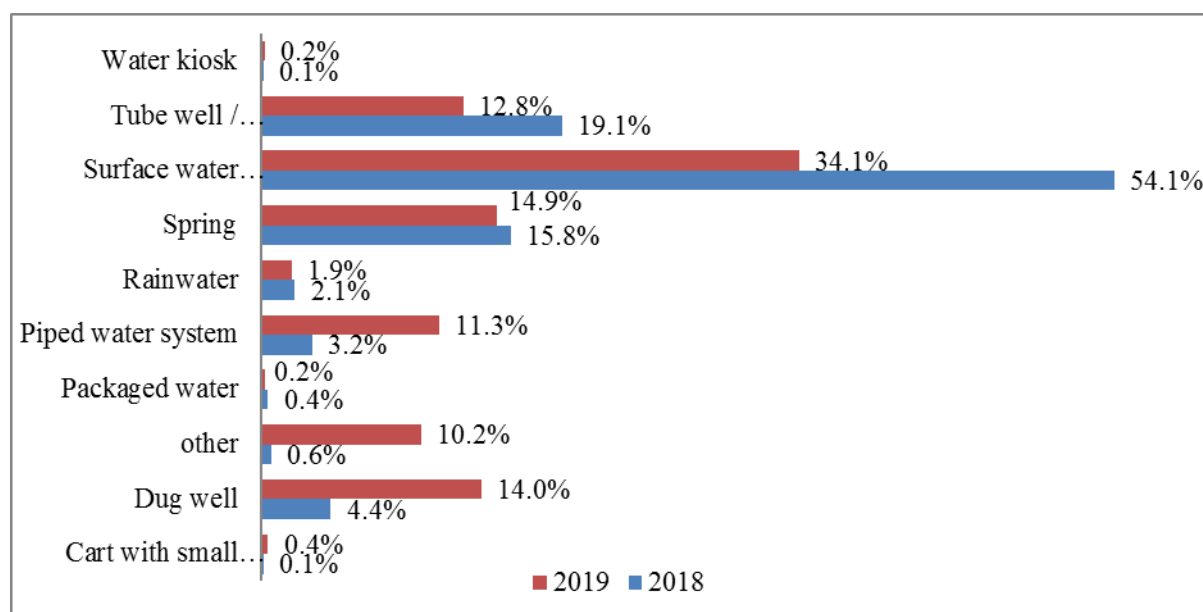


Figure 12: Main source of drinking water

The return distance to open water source (more than one hour) from the household reduced from 36.8% reported in 2018 to 7.1% in 2019. However, queuing time (more than one hour) slightly increased from 36.7% to 40.8%.

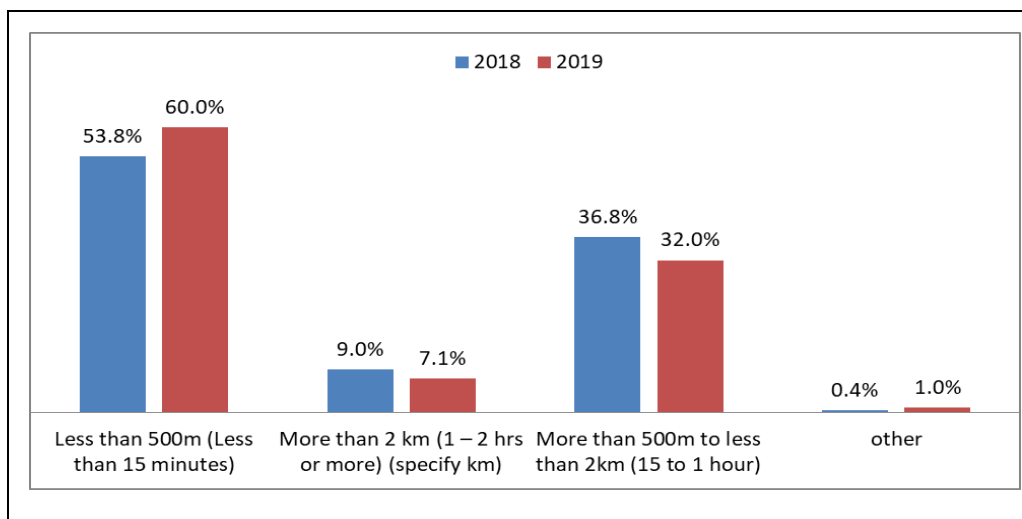


Figure 13: Water Queuing Time

The decreased distance and queuing time is attributed increased drilling of boreholes, desilting and water tracking as the county’s contribution to supporting interventions towards increasing access to water sources. Additionally, during the survey period, there was adequate recharge of water sources as a result of adequate rains received in May and June 2019. Households buying water paid an average of Ksh 20 per 20 litre jerrican/day while those paying per month paying an average of Ksh. 352.9 per month. The average water consumption per capita was 8.8L/person/day which is below the SPHERE standard of 15L/person/day recommended.

3.6.2. Water storage and treatment

Household water treatment and safe storage (HWTS) interventions is associated with improved quality of drinking water and reduction in water borne diseases such diarrheal diseases. This makes an immediate difference to the lives of those who rely on water from polluted rivers, lakes and, in some cases, unsafe wells or piped water supplies. Only 10.0 % of households treated their water before drinking. Boiling and use of chemicals were the main water treatment methods used at 59.6% and 36.8% respectively while use of pot filters usage was by only 1.8% of the respondent.

3.6.3. Hygiene practices

Hand washing, especially with soap and water, is one of the most effective and inexpensive methods of reducing diarrhea and pneumonia which are the major causes of child death and under nutrition. Hand washing in critical times such as before eating or preparing food could reduce diarrhea by up to 40%⁹. Table 15 shows the proportion of caregivers assessed who washed their hands in various critical times. Only 7.5% washed their hand in all the four critical times, a slight increase from 7.2% in 2018. There was an increase (47.5%) in caregivers who used soap and water to wash their hands in 2019 compared to 36.1% in 2018.

There was no difference between the proportion of respondents who washed hands at 4 critical times recorded in 2019 and 2018. The poor hand washing practices can be attributed to inadequate supply of water and low awareness on importance of hand washing at all critical times.

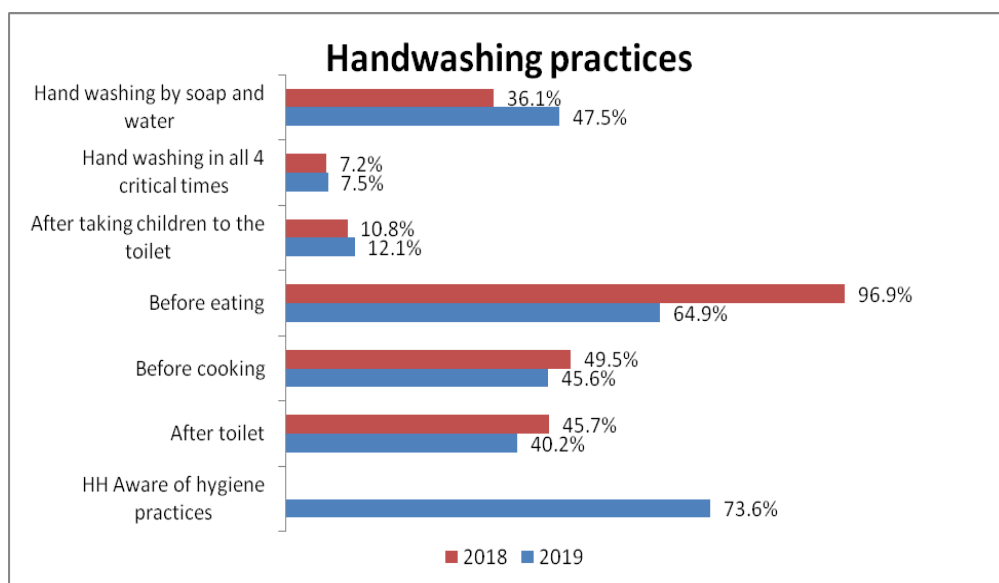


Figure 14: Hand washing Practices

3.6.4. Sanitation Practices

Appropriate sanitation practices are crucial in reducing food and waterborne diseases. Poor sanitation such as open defecation has been linked to increase in chronic malnutrition in

⁹ UNICEF “Fast Facts And Figures About Hand washing”

children¹⁰. The survey showed high proportion of households (45.4%), practiced open defecation, 48.7% used latrines while 0.8% used flash toilets. Open defecation reduced slightly from 47.5% to 45.4%. The poor sanitation practices could be attributed to migration and cultural beliefs making open defecation socially acceptable in some parts of the county especially the pastoral community (North Pokot Sub County). In addition, in some parts of Central Pokot, pit latrines collapsed due to loose and unstable soils.

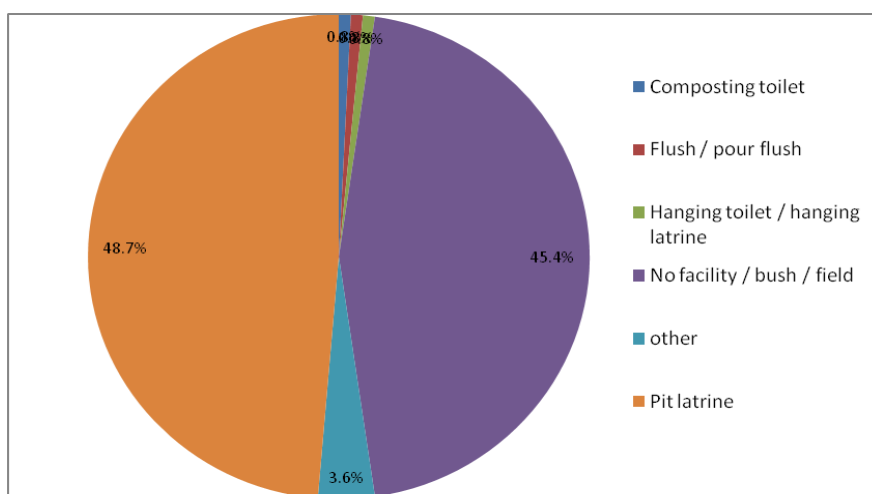


Figure 15: Sanitation practices

3.7 Food Security and Livelihoods

3.7.1 Food Security Information

Food security exists when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. A person is considered nutrition secure when she or he has a nutritionally adequate diet and the food consumed is biologically utilized such that adequate performance is maintained in growth, resisting or recovering from disease, pregnancy, lactation and physical work.¹¹The indicators used to measure food security in the survey included FCS, CSI, IDDS for WRA and HDDS.

¹⁰ Spears D, Ghosh A, Cumming O (2013) Correction: Open Defecation and Childhood Stunting in India: An Ecological Analysis of New Data from 112 Districts. PLoS ONE 8(9)

¹¹http://www.fao.org/fileadmin/user_upload/food-security-capacity-building/docs/Nutrition/NairobiWorkshop/5.WFP_IndicatorsFSandNutIntegration.pdf Food security indicators

The main contributing factor to deteriorating food security in the county was poor household food security. This was attributed to low milk availability, increased food prices and reduced market prices for livestock owing to reduced purchasing power for households (NDMA Bulletin June 2019).

3.7.2 Household Dietary Diversity

Household dietary diversity is used as a proxy measure of the socio-economic level of a household. Household dietary diversity was assessed by 7 days recall period. A total of 16 food groups later aggregated to 12 were assessed. Nearly half (46.4%) of the respondents have food consumption score within the acceptable range, 40.0% and 13.6% at borderline and poor categories respectively. The FCS for those households within acceptable and borderline categories reduced from 31.2% and 60.0% respectively while households categorized as having poor FCS increasing from 8.7% in 2018 to 13.6% in 2019. Low HDDs could be attributed to below long term average availability of milk and increased food prices across the Pastoral and Agro Pastoral livelihood zones (NDMA Bulletin June 2019). Incidents of insecurity in some areas within the county such as Kamelei and Arpollo remain the major constraint to pasture access and consequently negative impacts on access to livelihoods in the community.

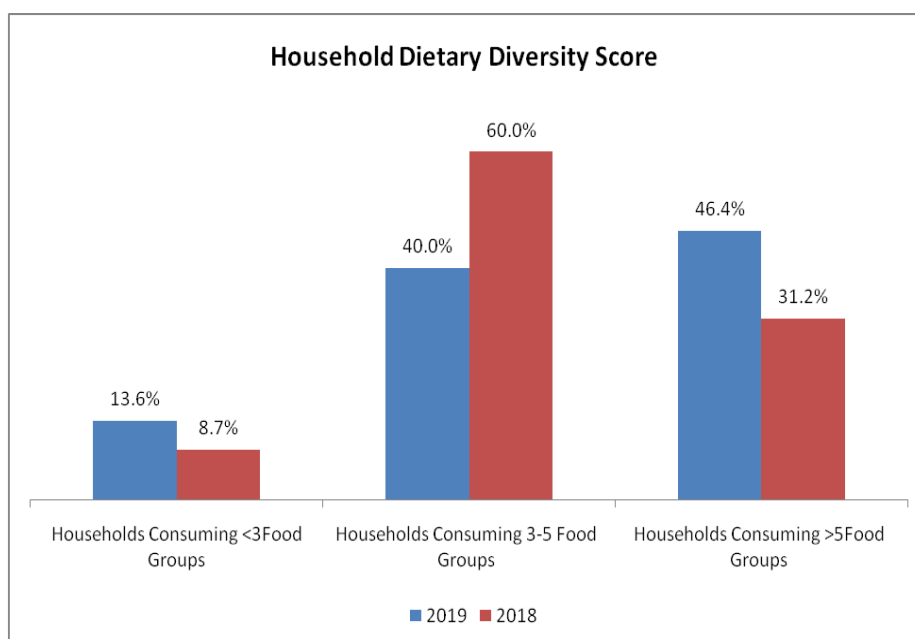


Figure 16: Household Dietary Diversity Score

As the rains continue, the livestock productivity is anticipated to increase. The forage

condition is expected to continue improving resulting into enhanced livestock body condition hence better livestock production and prices thus improved access to food and better income. Milk availability is expected to increase with the ongoing regeneration of pastoral resources supporting livestock production. Cereal prices are expected to decrease while that of goat projected to increase. As such, the terms of trade are likely to continue stabilizing over this period.

Micronutrient Consumption from Household Dietary Diversity

Majority of the households frequently (6-7 days) consumed foods rich in micronutrient. However, the results showed that Vitamin A foods were poorly consumed with only 8.7% of the population consuming Vitamin A rich foods for 6 or more days. Poor consumption of Vitamin A rich foods is highly associated to low availability and access of Vitamin A rich foods coupled with high market prices as a result of delayed March –May rains (long rains). Information on Micronutrient consumption from HH dietary diversity is shown in *Figure 17*.

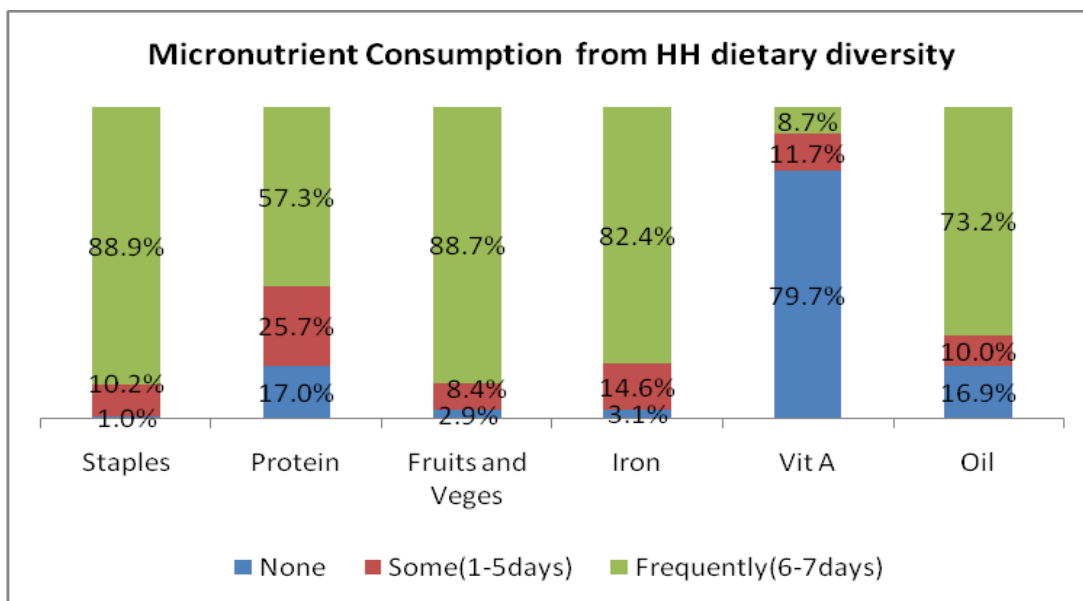


Figure 17: Micronutrient Consumption from HH dietary Diversity

Average Days Food Groups are Consumed showing Consumption of Micronutrients

Foods with micronutrients consumed frequently include staples, fruits and vegetables and iron at average days of 6.6, 6.5 and 6.2 respectively. This is in agreement with the household dietary diversity on 24-hour recall that indicated 97.3% and 92.1% of households consumed

cereals and vegetables. On the other hand, oils, proteins and Vitamin A rich foods were consumed with average consumption days of 5.4, 4.7 and 4.1 respectively (figure 18). This is attributed to low availability and low purchasing power to acquire the food item.

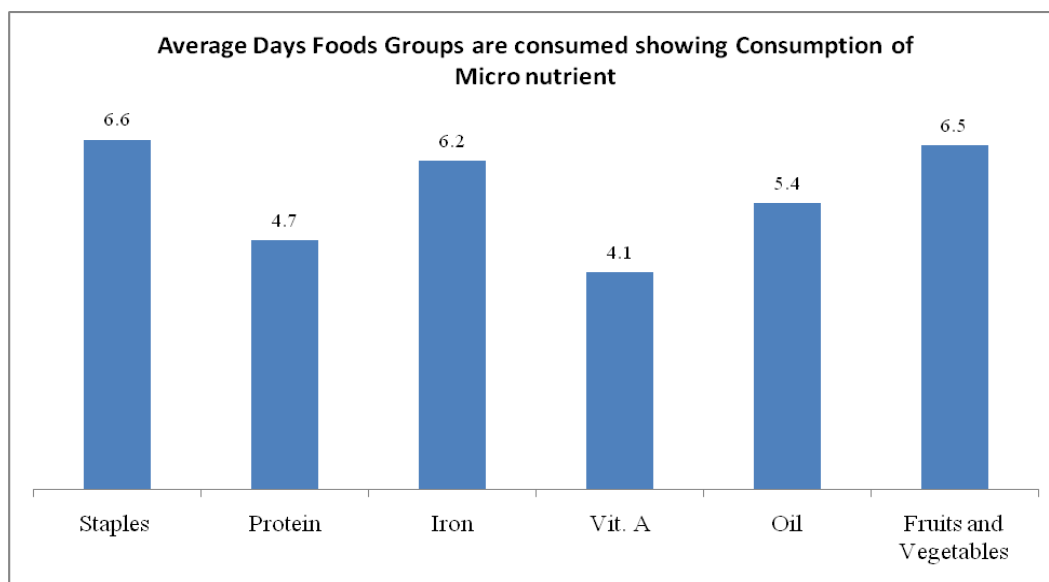


Figure 18: Average Days Food groups consumed showing Consumption of Micronutrients

3.7.3 Food Consumption Score (FCS)c

Food consumption score (FCS) is a proxy indicator of household food security that combines measurements of dietary diversity, the frequency with which different foods are consumed and the relative nutritional importance of various food groups. According to the NDMA bulletin for June, the mean FCS increased to 40 in June 2019 compared to May 2019. There was significant variation between the two (agro pastoral and pastoral) livelihood zones, with 97% of households in the agro-pastoral zone being categorized as having acceptable FCS compared to 63% households under the same category in the pastoral livelihood zone. The proportion of households in the poor category of 6.3% a slight increase compared to 2.8% classification of 2018, while the borderline was at 24.7%, a slight decrease compared to 37.7% in 2018. This is an indication that some households from the borderline have moved to the poor food consumption classification.

Table 15: Food Consumption Score

Main Threshold	Nomenclature	Proportion of Households (%)	
		2019	2018

0-21	Poor food consumption manly cereal and sugar	6.3	2.8
21.5-35	Borderline food consumption Cereal, legumes, milk, oil, sugar	24.7	37.7
>35.5	Good food consumption Cereal, legumes, milk, condiment, flesh meat, vegetable, oil, sugar	69.0	63.5

The deteriorating food consumption score can be attributed to the unstable food prices and poor terms of trade experienced in the county during the period under review, despite some households having improved as shown by an increase in the proportion of households with good food consumption from 63.5% to 69.0%. There was also low household milk consumption attributed to low regenerating pastures for livestock among other factors.

Food Consumption Score Frequency

Majority of the households frequently (6-7 days) consumed proteins, Vitamin A rich and Hem rich foods at 81.9%, 73.6% and 85.3% respectively. 6.7%, 2.5% and 0% of the households did not Vitamin A rich food, Hem rich foods and protein rich foods. Poor consumption of vitamin A rich food attributed to poor knowledge on vitamin A rich food, low food availability and poor purchasing power at household level (*figure 19*).

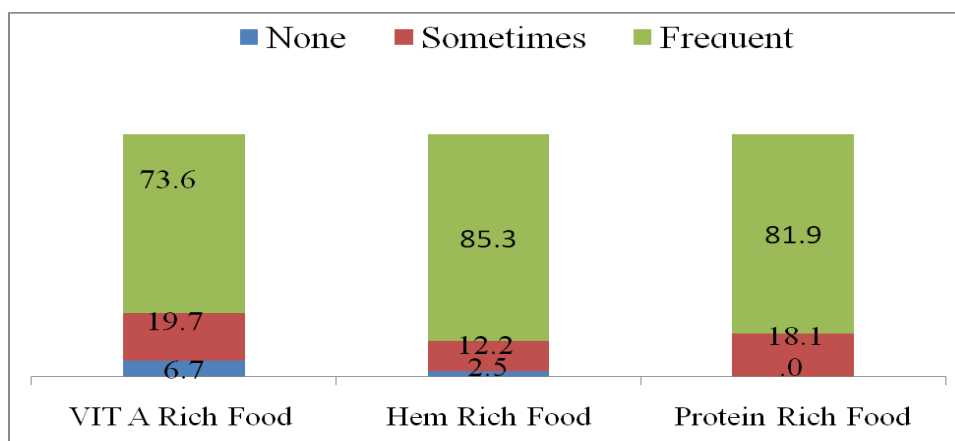


Figure 19: Food consumption score Frequency

Food Consumption Score Nutrition

80.6%, 1.6% and 50.4% of the households in borderline food consumption score did not consume vitamin A rich food, iron rich foods and protein rich foods. This is an indication of poor consumption of vitamin A rich foods and protein rich foods, interventions geared towards increasing food diversifications, particularly intake of vitamin A rich food and proteins needs to be scaled up. Household within the acceptable food consumption score frequently consumed vitamin A rich food, iron rich foods and protein rich foods at 73.6%, 85.3% and 81.9% respectively (figure 20).

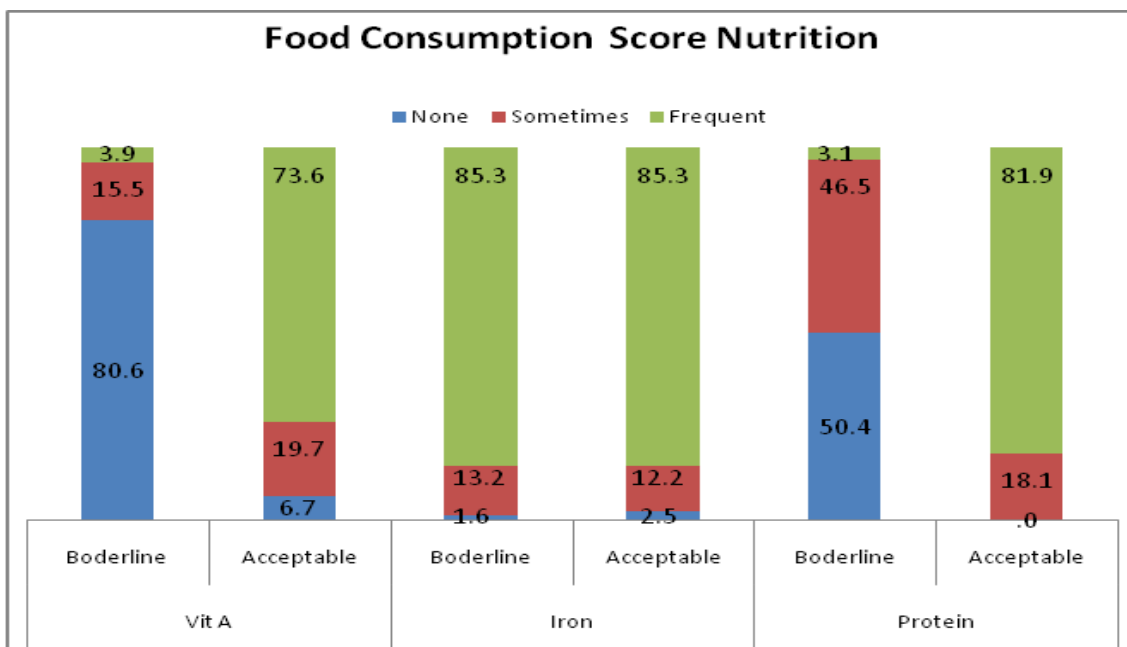


Figure 20: Food consumption score nutrition

3.7.4 Food fortification

Food fortification is the practice of deliberately increasing the content of essential micronutrients – (vitamins and minerals) – in a food so as to improve the nutritional quality of the food supply and to provide a public health benefit with minimal risk to health. The survey results show that only 9.6% of households reported to have heard about Food fortification and 4.2 % were able to identify the Food fortification Logo. Sources of information on food fortification included local radio at 30%, television at 28% and health education at 22%. The low awareness could be attributed to low diversified support for public health and nutrition education and advocacy.

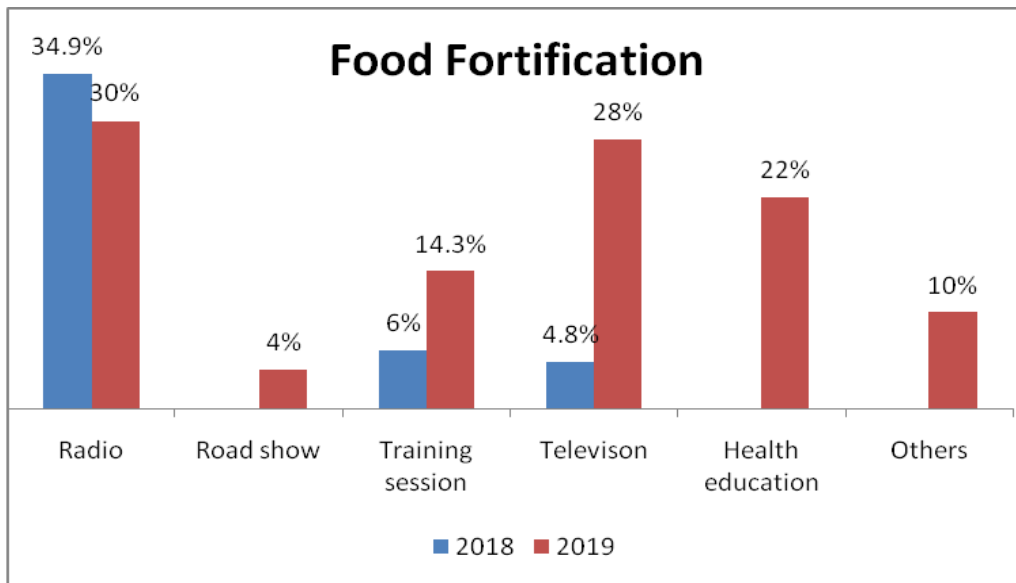


Figure 21: Sources of information on Food Fortification

3.7.5 Women Dietary Diversity

Women dietary diversity is a proxy to individual dietary diversity. The survey results indicated a mean Women Dietary Diversity of 3.5 which is lower than 5. The result further showed that 38.5% percent of women consumed food from more than five food groups. A reduction of almost half could be attributed to prolonged delay in rains, out migrations and other factors. The foods mostly consumed by women are shown in *figure 22*.

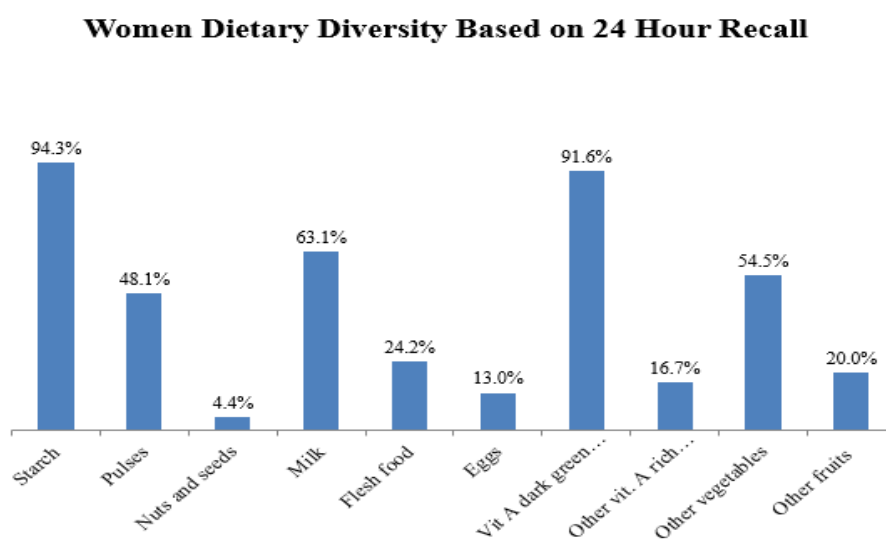


Figure 22: Women Dietary Diversity (Food Consumed by Women)

Minimum Women's Dietary Diversity Score Based on 24 Hours Recall

Women dietary diversity score for 2019 and 2018 recorded a significant change comparatively, with consumption of < 5 food groups at 61.5% and 38.4% for 2019 and 2018 respectively. Similarly, consumption of > 5 food groups was 38.5% and 61.6% for 2019 and 2018. The poor dietary diversity for women is attributed to household food insecurity, increased food prices and poor availability and access to foods. This information is shown in *figure 23*.

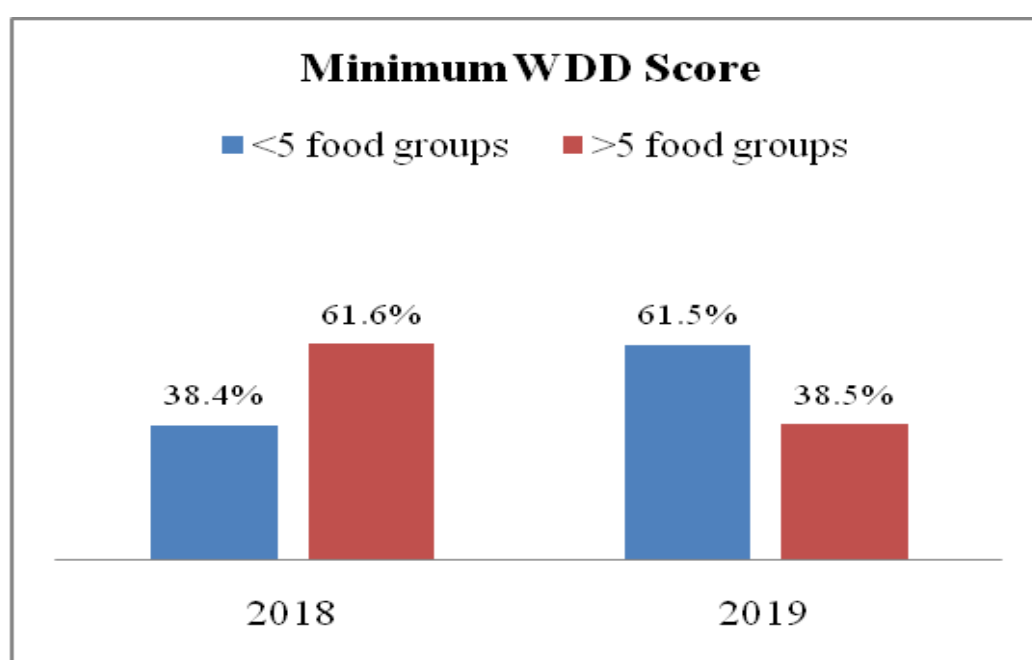


Figure 23: Minimum women Dietary diversity score Based on 24 hour recall

3.7.6 Coping Strategy Index

The coping strategy index assesses how a household copes in times of food shortage or lack of food. Households were assessed based on five strategies, which were then weighted based on their severity. An estimated 53.4% of the households reported not to have had enough money to buy foods or enough food in 2019 compared to 42.7% in 2018. The most utilized form of coping strategy by households were; rely on less preferred & less expensive food, limit portion sizes and reduce number of meals, however 23.8 percent of households employed the most severe strategy of restricting consumption of food by adults for young children to eat.

Table 16: Coping strategy index

Coping strategy	Proportion of HHs (n=)	Frequency score (0-7)	Severity score (1-3)	Weighted score=Freq*weight	
				2018	2019
Rely on less preferred & less expensive food	204	3	1	2.3	3
Borrow food	173	2.4	2	3.8	4.8
Limit portion sizes	188	3.1	1	3.1	3.1
Restrict consumption of food by adults for young children to eat	154	3.1	3	6.6	9.3
Reduced number of meals	200	4.3	1	4.2	4.1
Total weighted Coping Strategy Score				20.02	24.3

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

The 2019 SMART survey findings indicated a slight deterioration in nutrition status of children under five in the county. Global Acute Malnutrition (GAM) rates slightly increased to 11.7% compared to 11.0% reported in 2018 though statistically insignificant ($P=0.69$). The slight increase in malnutrition rates is attributed to delayed onset of long rains experienced in the county that resulted to an increase in households with poor food consumption score (2.8% in 2018 to 6.3% in 2019) and increased morbidity among children under five (23% in 2018 to 39.4% in 2019). Underweight in children under five remained the same at 31.3% and 31.4% for 2019 and 2018 respectively.

Stunting (chronic malnutrition) an indicator that measures growth in stature recorded a decrease in 2019 compared to 2018 at 35.1% and 38.2% respectively, although the change was not significant ($P=0.25$). The decrease is attributed to health education messages passed through the local radio stations, community peer group support, health facilities and scale up of BFCI in the community. According to the revised WHO/UNICEF stunting classification, West Pokot County is classified as very high (≥ 30).

A causal analysis for malnutrition in West Pokot County is summarized in the *figure 24*.

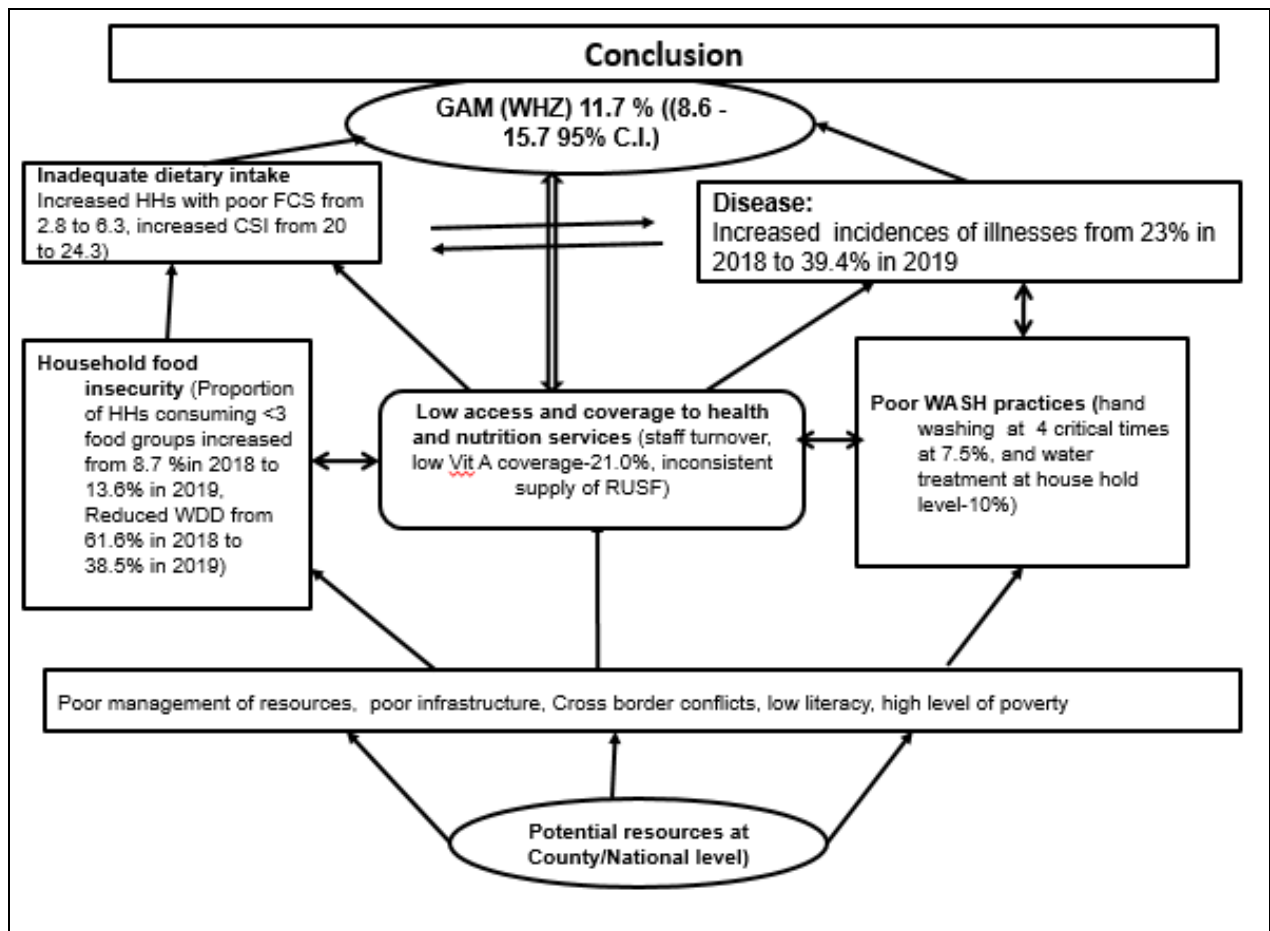


Figure 24: Causal Analysis Framework

4.2 Recommendations

The 2019 SMART survey recommendations were derived from consultative meetings held with different actors in the CSG and CNFT where both nutrition sensitive and nutrition

specific sectors attended. The recommendations also aligned to the common results framework developed by sectors to address malnutrition.

Table 17: Proposed Recommendations

Survey Findings	Short Term Recommendations	Medium to Long Term Recommendations	Cost	Timeline	Responsible
High levels of acute malnutrition with GAM of 11.7%	<p>Conduct mass screening and referral for acute malnutrition</p> <p>Scale up and integrate management of acute malnutrition in all health outreaches</p>	<ul style="list-style-type: none"> • Train newly recruited health workers on IMAM • Increase the number of IMAM implementing facilities from 86 to 90 • Conduct active case finding for acutely malnourished children <5years and PLWs • Train newly recruited staff on nutrition commodity management and reporting to avoid stock outs • Scale up and strengthen IMAM surge • Scale up of early detection and referral of malnutrition at community using mother MUAC • Conduct DQA to improve quality of IMAM data and reporting • Conduct review meetings to strengthen implementation of IMAM services 	8,000,000	Aug 2019-May 2020	MoH, UNICEF, ACF, KRCS, NDMA
Poor WASH practices; Hand washing at critical times-7.5% Open defecation-45.4% HH Water treatment before drinking - 10.9% Unsafe water sources-75.9%	<p>Conduct WASH sensitization meetings with different stakeholders at all levels</p> <p>Promote water treatment at household level</p>	<ul style="list-style-type: none"> • Promote adoption of appropriate hand washing practices at four critical times through radio, community gatherings, health facilities and schools • Upscale CLTs • Repair of broken boreholes • Sensitize community on use of safe water sources • Sensitize community on water harvesting technique 	10,000,000	July 2019-May 2020	MoH, ACF, KRCS, NDMA, UNICEF
High stunting level at 35.1%	Promote food fortification at household level with Micronutrient supplementation	<ul style="list-style-type: none"> • Operationalize the common result framework through multi-sectoral platform • Promote appropriate MIYCN practices using developed key messages through different channels of communication 	12,000,000	July 2019-May 2020	MoH, UNICEF, ACF, KRCS, NDMA

		<ul style="list-style-type: none"> • Promote production and consumption of diversified foods at household level • Scale up BFCI from 3 to 7 community units • Conduct MIYCN counseling and education at community level leveraging on the ongoing SanNut program • Scale up linkages of 12 MTSG to livelihood programs • Develop and promote appropriate complementary feeding recipes using Propan approach • Educate the community on available fortified foods in the market 			
<p>Low coverage for micronutrient supplementation and deworming (IFAS- >72.3% VAS-12-59m(twice)-21%, Deworming-once 23.7%, twice 8.5%)</p>	<p>Conduct sensitization meetings to health workers, CHVs and ECDE teachers on VAS, IFAS, MNPs</p> <p>Counsel pregnant women to overcome barriers to utilization of IFAS</p>	<ul style="list-style-type: none"> • Advocate for procurement of IFAS and dewormers at county level to avoid stock outs • Conduct health education to overcome barriers to utilization of IFAS • Request commodities for Vitamin A supplementation to avoid stock outs in the health facilities • Conduct integrated VAS and deworming in ECDE centers • Conduct review meetings and RDQA for IFAS, VAS, deworming and MNPs • Follow up health facilities to ensure that vitamin A supplementation data is routinely reported. • Adopt and contextualize IFAS, VAS and MNPs messages 	6,000,000	July 2019-May 2020	MoH, ACF, KRCS, NDMA, UNICEF
	<p>Hold health talks through health education, community gatherings and radio to increase uptake of IFAS, VAS, MNPs and dewormers</p>				

ANNEXES

Annex 1: Sampled Clusters

Sub County	Ward	Sub-location	Geographical Unit	Population Size	Cluster
West Pokot	Kapenguria Ward	Komol	Embosis	388	1
West Pokot	Mnagei	Keringet	Chepangang	1806	2
West Pokot	Riwo Ward	Kanyarkwat	Attacha	404	3
West Pokot	Endugh	Ptoyo	Motuput	380	4
West Pokot	Siyoi	Kaibos	Kiptenden	620	5
West Pokot	Kapenguria Ward	Chewoyet	Mutelo	229	6
West Pokot	Kapenguria Ward	Mwotot	Kakurut	1171	Rc
West Pokot	Mnagei	Makutano	Sunflower(A4)	327	7
West Pokot	Mnagei	Psigirio	Bondeni	718	8
West Pokot	Mnagei	Kishaunet	Kiwanja Ndege	698	9
West Pokot	Siyoi	Chepkoti	Chepkoti	1185	10
West Pokot	Sook	Cheptram	Cheptram	1083	11
West Pokot	Sook	Tamugh	Cheptoch	573	12
West Pokot	Siyoi	Kaisakat	Sinenden	1352	13
West Pokot	Kapenguria Ward	Mwotot	Saint Mary's(I)	596	14
West Pokot	Kapenguria Ward	Kaprom	Kalan	418	Rc
West Pokot	Mnagei	Makutano	Lutheran(I)	454	15
West Pokot	Siyoi	Kapsurum	Tulwet	721	Rc
West Pokot	Riwo Ward	Kitalekapel	Sees"A"	515	16
West Pokot	Riwo Ward	Serewo	Lokitonyala	244	17
West Pokot	Sook	Merur	Korenger	486	18
West Pokot	Suam	Kacheliba	Sangakai	298	19
South Pokot	Chepareria Ward	Chepareria	Kasongwor(B)	605	20
South Pokot	Chepareria Ward	Sla	Emposos	303	21
South Pokot	Lelan Ward	Mokoyon	Korosion	451	22
South Pokot	Lelan Ward	Kabichbich	Melewa	297	23
South Pokot	Batei	Ortum Centre	Chesirken	638	24
South Pokot	Tapach	Kale	Parayon	861	25
South Pokot	Lelan Ward	Kapsangar	Kapsangar	418	Rc
South Pokot	Tapach	Tangasia	Kaghot	585	Rc
South Pokot	Batei	Chepokoriong	Kokwomerewo	516	26
South Pokot	Tapach	Nyarpat	Kapkolel	945	27
Central Pokot	Masol	Tikit	Cherelo	288	28
Central Pokot	Seker	Sostin	Kapcherorok	464	29
Central Pokot	Lomut	Ptirap	Chesrony	334	30
Central Pokot	Lomut	Toghomo	Chesorkoi	387	31
Central Pokot	Masol	Amoler	Kalas	866	32
Central Pokot	Seker	Nasolot	Silip	705	33
North Pokot	Alale	Amakuriat	Napodo	603	34

North Pokot	Kasei	Kamketo	Kapyomot	1166	35
North Pokot	Kiwawa	Kases	Melle	1053	36
North Pokot	Alale	Sasak	Adapale	1254	37
North Pokot	Kodich	Cherangan	Namuton	247	38
North Pokot	Kodich	Lokichar	Kororon	524	39
North Pokot	Suam	Ngengechwo	Lotellemoi	330	40
North Pokot	Alale	Kodii	Kapkorcho	362	41

Annex 2: Plausibility Report

Criteria	Flags*	Unit	Excel	Good	Accept	Problematic	Score
Flagged data	Incl	%	0-2.5 0	>2.5-5.0 5	>5.0-7.5 10	>7.5 20	0 (1.9 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	0 (p=0.729)
Age ratio	Incl	P	>0.1 (0)	>0.05 (2)	>0.001 (4)	<=0.001 (10)	0 (p=0.691)
Dig pref score - weight	Incl	#	0-7 (0)	8-12 (2)	13-20 (4)	>20 (10)	0 (6)
Dig pref score – height	Incl	#	0-7 (0)	8-12 (2)	13-20 (4)	>20 (10)	2 (8)
Dig pref score - MUAC	Incl	#	0-7 (0)	8-12 (2)	13-20 (4)	>20 (10)	0 (3)
Standard Dev WHZ	Excl	SD	<1.1 and >0.9 (0)	<1.15 and >0.85	<1.20 and >0.80	>=1.20 or <=0.80	0 (0.97)
Skewness WHZ	Excl	SD	<±0.2 (0)	<±0.4 (5)	<±0.6 (10)	>=±0.6 (20)	0 (0.01)
Kurtosis WHZ	Excl	#	<±0.2 (0)	<±0.4 (1)	<±0.6 (3)	>=±0.6 (5)	0 (0.07)
Poisson dist. WHZ-2	Excl	P	>0.05 (0)	>0.01 (1)	>0.001 (3)	<=0.001 (5)	0 (p=0.088)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	2%
The overall score of this survey is 2 %, excellent.							

Annex 3: Standardization Report

Outcome			
Weight	Subjects	Precision	Accuracy
Supervisor	10	TEM acceptable	Bias good
Enumerator 1	10	TEM poor	Bias good
Enumerator 2	10	TEM poor	Bias good
Enumerator 3	10	TEM poor	Bias good
Enumerator 4	10	TEM poor	Bias good
Enumerator 5	10	TEM reject	Bias good
Enumerator 6	10	TEM reject	Bias good
Enumerator 7	10	TEM poor	Bias good
Enumerator 8	10	TEM poor	Bias good
Enumerator 9	10	TEM poor	Bias good
Enumerator 10	10	TEM poor	Bias good
Enumerator 11	10	TEM poor	Bias good
Enumerator 12	10	TEM poor	Bias good
Enumerator 13	10	TEM reject	Bias good
Enumerator 14	10	TEM reject	Bias good
Enumerator 15	10	TEM reject	Bias good
Enumerator 16	10	TEM poor	Bias good
Enumerator 17	10	TEM poor	Bias good
Enumerator 18	10	TEM poor	Bias good
Enumerator 19	10	TEM reject	Bias reject
Enumerator 20	10	TEM reject	Bias good
Height			
Supervisor	10	TEM good	
Enumerator 1	10	TEM reject	Bias good
Enumerator 2	10	TEM acceptable	Bias good
Enumerator 3	10	TEM reject	Bias good
Enumerator 4	10	TEM acceptable	Bias good
Enumerator 5	10	TEM poor	Bias good
Enumerator 6	10	TEM reject	Bias good
Enumerator 7	10	TEM poor	Bias good
Enumerator 8	10	TEM good	Bias good
Enumerator 9	10	TEM reject	Bias good
Enumerator 10	10	TEM good	Bias good
Enumerator 11	10	TEM good	Bias good
Enumerator 12	10	TEM good	Bias good
Enumerator 13	10	TEM reject	Bias good
Enumerator 14	10	TEM reject	Bias good
Enumerator 15	10	TEM good	Bias good
Enumerator 16	10	TEM acceptable	Bias good
Enumerator 17	10	TEM poor	Bias good
Enumerator 18	10	TEM reject	Bias good

Enumerator 19	10	TEM good	Bias good
MUAC			
Supervisor	10	TEM acceptable	Bias poor
Enumerator 1	10	TEM good	Bias acceptable
Enumerator 2	10	TEM good	Bias good
Enumerator 3	10	TEM good	Bias poor
Enumerator 4	10	TEM reject	Bias good
Enumerator 5	10	TEM reject	Bias acceptable
Enumerator 6	10	TEM reject	Bias good
Enumerator 7	10	TEM acceptable	Bias poor
Enumerator 8	10	TEM good	Bias reject
Enumerator 9	10	TEM good	Bias good
Enumerator 10	10	TEM good	Bias good
Enumerator 11	10	TEM good	Bias acceptable
Enumerator 12	10	TEM acceptable	Bias acceptable
Enumerator 13	10	TEM good	Bias poor
Enumerator 14	10	TEM reject	Bias reject
Enumerator 15	10	TEM good	Bias good
Enumerator 16	10	TEM good	Bias good
Enumerator 17	10	TEM good	Bias acceptable
Enumerator 18	10	TEM acceptable	Bias good
Enumerator 19	10	TEM good	Bias good
Enumerator 20	10	TEM good	Bias good

Annex 4: Smart Survey Agenda

WEST POKOT COUNTY SMART SURVEY: ENUMERATORS' TRAINING SCHEDULE

Section Code	Section Title	Time
Day 1 (12TH JUNE 2019)		
Introduction – arrival & registration, climate setting – Cher Jacob County overview –CNC Opening Remarks – County Representative (Director)		
	PRE-TEST	65 min
1A	Enumerator Training Overview – Salome	45 min
1B	Survey Teams –	45 min
3A	Malnutrition – Leah Chelobei	105 min
3B	Weight	55 min
3C	Height/ Length – Elizabeth	55 min
3D	MUAC	30 min
3E	Edema	35 min
3F	Interpretation of Measurements – (Anthropometric tools, referral forms, Z-Score chart) Practical sessions	
	Review of the Day – CNC Cluster Sampling	
Day 2 (13TH JUNE 2019)		
	Day 1 Recap	
2A	Questionnaire Design-Both Household and Anthropometric	225 min
2B	Event Calendar	60 min
4	Arrival to Village	45 min
	Segmentation and Random Number Table	60 min
	Simple Random sampling	60 min
	Systematic random Sampling	120 min
	Special Cases	30 min
	Anthropometric Questionnaire/ HH selection	90 min
	Anthropometric Measurements	
Day 3 (14TH JUNE 2019)		
5A	Standardisation Test (morning)	180 min
5B	Day 2 Recap	30 min
5C	Quality Checks (including Standardisation Test organisation)	35 min
5D	Standardisation Test (Anthropometric measurements)	75 min
	Movement plan	
Day 4 (15TH JUNE 2019)		
	Objectives of the IPC Research Household Hunger Scale Questionnaire Household Water Security Index Questionnaire	
Day 5 (16TH JUNE 2019)		
	Field Test –Half Day Field test Feedback: Entire team and Individual teams Practice identified areas of improvement: Last minute team preparations for first day of data collection	Full day

Annex 5: West Pokot County Activity Schedule 2019 June SMART Survey Schedule

SMART Survey Schedule

Main Activity	By	When
Development and presentation of SMART survey methodology	ACF/MOH/MOALF/ NDMA/UNICEF	14th to 30th May 2019
Community mobilization	ACF/MOH/MOALF/ NDMA/UNICEF	20th May to 20th June 2019
Resource mobilization	ACF/MOH/MOALF/ NDMA/UNICEF	20th May 30th May 2019
Recruitment of survey teams	ACF/MOH/MOALF/ NDMA/UNICEF	22nd May 2019 to 7th June 2019
Training of survey team	ACF/MOH/MOALF/ NDMA/UNICEF	10th to 14th June, 2019
Data collection/ Data entry	ACF/MOH/MOALF/ NDMA/UNICEF	15th to 20th June 2019
Report writing	ACF/MOH/MOALF/ NDMA/UNICEF	21st to 25th June 2019
Preliminary and presentation at CNTF County Level	ACF/MOH/MOALF/ NDMA/UNICEF	26th June 2019
Presentation of Results at NITWG	ACF/MOH/MOALF/ NDMA/UNICEF	27th June 2019

Annex 7: SMART Survey Team composition

	SMART SURVEY 2019	Cellphone Number
Team One	Leader: Nangiro Amos	713670162
1	Caren Kawertui	0713 926327
2	Eugine Mukera	07025 32494
3	Jane Molo	723072403
Team two	Leader: Jacob Cherr	717643887
1	Joash Yego	708413681
2	Hilda Sikuku.	0726 565414
3	Kimeli Emmanuel.	729600746
Team three	Leader: Thomas Chikichik	720873761
1	Philip Kidir	710288803
2	Chepundon Agness.	719766628
3	Faith Temko	716150451
Team Four	Leader:Albert Ruto	724307513
1	Mercy Mulongo	0711 627 769
2	Ivor Pkemoi	729504236

	3	Ruth Chenangat.	0972 838991
Team five		Leader: Wasike Thomas	710253127
	1	Joel Lotingamoi	0728 557 849
	2	Carolyne Cherotich	0701 949950
	3	Anthony Toroitich.	0703 679504
Team 6		Leader: Kasiwai Geofrey.	724338633
	1	Lorema Salome	0704 237 977
	2	Henry Chelele	0713 644613
	3	Lydia chenangat	0717 912 094
team seven		Leader: Esther Akonete.	724307513
	1	Juliet Chepengat	0701 887 858
	2	Dominic Ywalanyang	0708 785043
	3	Kennedy Toywareng	0719 199003
Team 8		Leader: Benedict Pkatey.	0722 66 7055
	1	Mercy Cheptoo	0721 667066
	2	Victor Kimutai	0743 858453
	3	Dominic Limangole.	0722 897958