Food and Nutrition Security Assessment among Refugee Settlements in Uganda

By

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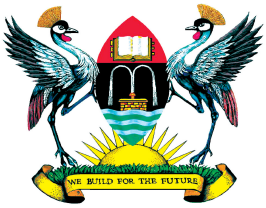

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Table of content

List of tables

List of figures

Executive summary

Key findings on food security

Demography

More than 75% of households in North/West Nile refugee settlements (Adjumani S. Sudan influx, Adjumani old caseload, Rhino camp and Koboko) were female headed while at least one in four households is female headed in South West (Kiryandongo, Kyaka II, Oruchinga, Nakivale, Kyangwali, and Rwamwanja). More than half of the household heads had never been to school of which proportionately more are female. Vulnerability to food insecurity is thus high among households.

Livestock production

Approximately 81% of households did not own any livestock and are thus susceptible to shocks. Among the remaining 19%, poultry and goats are the most common. Key constraints to livestock production are the lack of money among refugees and parasites/diseases that could erode stocks.

Food availability

Nearly 40% of households had no access to land and are unable to cultivate food. Among households practicing agriculture, subsistence is the predominant form, and more than half of such households produced/sold less food this year compared to last year. These households will become increasingly dependent on food aid as food stocks get depleted and could adopt/increase application of coping strategies in case the lean season is prolonged or the next harvest is affected.

Household income

Close to 40% of refugee households did not have a household member earning income, markedly more in North/West Nile settlements. Furthermore, food crop production/sales constitute a major income source yet majority of households produced less food this year and sold none or less in the markets. This suggests high vulnerability to food insecurity due to reduced households' ability to purchase food and lower stocks in the household.

Credit/debt

Nearly 40% of refugee households had incurred debt mostly to buy food and cover health expenses. Indebted households often have poorer Food Consumption Score (FCS) and are likely faced with high interest rates due to dependence on informal lending systems, potentially perpetuating the poverty/debt trap.

Food sources and consumption

The majority of the households across the settlements had acceptable FCS (72%) with only 22% having borderline FCS and 6% with poor FCS. However, female-headed households had poorer FCS compared to male-headed households. Other factors found to influence FCS were:

Access to land: Households that had access to land also had generally better FCS

Debt: Households that had debt also had poorer FCS

Education of household head: Household with heads that had attended and/or completed secondary or higher levels of education also had better FCS

Shocks and coping

Approximately 84% of households had suffered at least one shock in the 30 days preceding the survey (most common being sickness of a household member and high food prices) but with little impact on food consumption. However, application of livelihoods coping strategies is high especially in Oruchinga, Nakivale, Adjumani old caseload and Kyaka II. Across these settlements, households have sustained consumption levels through borrowing money, consumption of seed stock and begging.

Most vulnerable households

Based on the findings from the assessment, the most vulnerable households were female headed with no access to land and without an income earner. Analyses showed that the most vulnerable households were located in Koboko, Rhino camp and Adjumani S. Sudan influx where 31%, 73%, and 75% of households, respectively, meet this criteria. Notable characteristics of these households are:

- Poorer food consumption scores
- Comparatively fewer years of schooling
- Own much less of livestock; over 95% do not own goats and negligible proportions own poultry
- Higher application of stress and crisis coping strategies

These households need urgent support to sustain their food consumption and to become self-reliant.

Recommendations for food security indicators

Given the extremely high percentage of female-headed households in Rhino, Adjumani and Koboko settlements; and given that female-headed households

generally had poor FCS, it is recommended that any interventions related to household food security target these households.

The low education level among household heads increases their vulnerability to Food Insecurity due to reduced ability to earn income and improve food and nutrition security outcomes. Tailored adult literacy programmes are recommended, to help equip such household heads with essential skills such as in nutrition, child care, sanitation and farming that would contribute to improved food security. Such programmes, if initiated, must as a priority be introduced in Adjumani S. Sudan influx, Rhino camp, and Kiryandongo which had higher percentages of household heads never schooled.

Adjumani old caseload, Koboko, and Kyaka II settlements had the highest incidence of chronically ill heads of household (10%, 12% and 13% respectively). In addition, Kiryandongo, Kyangwali, and Rwamwanja had the highest percentage of households that borrowed money to cover health expenses. These findings are indicative of a health issue; further investigation is recommended as a basis for a health intervention to address these issues as they could potentially aggravate food insecurity, impacting on the nutrition status especially of children.

Given that the majority of the households do not own livestock and a few rear poultry and goats under constraining circumstances, sustained and innovative interventions may be necessary to enable refugee households maintain their livestock and/or find alternative livelihoods so as to strengthen their ability to withstand and recover from shocks when they do occur.

Whereas over 60% of refugees reported access to land; given the quality of land and small sizes, most of the agriculture is subsistence. In the North/West Nile settlements, some households are unable to practice agriculture due to swampy land. Where possible, these households should be allocated other land suitable for agriculture to reduce vulnerability and dependence on food aid.

The proportion of households that produced less food this year was especially higher in Adjumani S. Sudan influx (87%), Rhino camp (68%), Kiryandongo (65%) and Adjumani old caseload (62%). Given that these settlements also have a low percentage of households with at least one income earner, urgent food assistance is required to ensure they remain food secure.

Given the extent refugee households identified weather related issues and infertile/marginal land as key constraints to agriculture, it is recommended to pilot climate smart agricultural techniques that could potentially make agriculture more resilient to changing climate and enhance productivity and

incomes. Such techniques could be built within tailored adult literacy programmes for the refugees.

The lowest proportions of households with at least one income earner were in Koboko (22%), Rhino camp (9%) and Adjumani S. Sudan influx (8%). It is thus recommended to implement conditional cash transfers and/or vouchers to beneficiaries in the region, such as through cash for work programmes.

The main sources of credit for households were informal i.e. from traders/shopkeepers, relatives and friends/neighbors among others. It is thus recommended to explore options that would enable access to credit in a structured and secure way for example through savings groups among refugees, since informal lending systems typically charge higher interest on loans that outstrips households of any disposable income.

Key findings on nutrition, morbidity and other key indicators

Nutrition status of children 6-59 months

The prevalence of GAM had significantly reduced in the North/West Nile refugee settlements from critical levels to levels classified as poor (5-10%), and to normal level for the case of Koboko. The great improvement in the North/West Nile refugee settlements was attributed to intensive implementation of supplementary feeding and therapeutic programs by partners and humanitarian agencies. Although GAM prevalence in the Western and South West settlements was largely within normal limits, stunting was at critical levels (above 40%) in all those settlements except Nakivale at serious level (36.2%).

Settlement	GAM % (95%CI)	SAM % (95%CI)	Stunting % (95%CI)	Underweight % (95%CI)
Nakivale (N=783)	3.6 (2.5 - 5.2)	1.4 (0.8 - 2.5)	36.2 (32.9 - 39.6)	11.7 (9.7 - 14.2)
Oruchinga (N=336)	4.3 (2.6 - 7.0)	1.2 (0.5 - 3.1)	40.7 (35.6 - 46.1)	17.3 (13.6 - 21.7)
Kyaka II (N=471)	5.9 (4.1 - 8.6)	2.4 (1.3 - 4.3)	41.6 (37.1 - 46.4)	12.7 (9.9 - 16.2)
Kyangwali (N=503)	3.0 (1.8 - 4.9)	0.8 (0.3 - 2.1)	45.8 (41.5 - 50.2)	11.9 (9.4 - 15.1)
Rwamwanja (N=476)	3.4 (2.1 - 5.4)	0.6 (0.2 - 1.9)	41.4 (37.0 - 45.9)	15.1 (12.2 - 18.6)
Kiryandongo (N=382)	8.5 (6.1 - 11.7)	1.9 (0.9 - 3.8)	12.8 (9.8 - 16.6)	7.3 (5.1 - 10.3)
Rhino Camp (N=271)	5.2 (3.1 - 8.5)	1.5 (0.6 - 3.7)	11.9 (8.6 - 16.3)	4.8 (2.8 - 8.0)
Adjumani Old caseload (N=103)	5.9 (2.8 - 12.4)	1.0 (0.2 - 5.4)	14.4 (8.8 - 22.8)	8.8 (4.7 - 15.9)
Adjumani S.Sudan influx (N=609)	9.0 (7.0 - 11.5)	1.7 (0.9 - 3.0)	9.0 (7.0 - 11.6)	6.7 (5.0 - 9.0)
Koboko (N=309)	1.9 (0.9 - 4.2)	1.3 (0.5 - 3.3)	27.4 (22.7 - 32.6)	6.8 (4.5 - 10.2)
Combined (N=4198)	5.1 (4.5 - 5.8)	1.4 (1.1 - 1.8)	30.0 (28.7 - 31.5)	10.7 (9.8 - 11.6)

Anemia status among children 6-59 months

Anemia prevalence in children 6-59 months in all settlements was at critical levels (above 40%). Nutrition specific interventions such as micronutrient powder and feeding supplementation and nutrition sensitive intervention such as immunization, deworming and others, should be introduced and/or intensified as appropriate.

Infant and young child feeding practices

The quality of complementary feeding was poor in all settlements. There was late introduction of complementary feeding with over 45% of children 6-8 months having been only exclusively breastfed the day before the assessment. Meal frequencies were also inadequate, up to 43.7% of the children received two or less meals the day prior assessment. Minimum dietary diversity scores were below acceptable levels in 74.1% of children 6-23 months. Minimum acceptable diet, the combination of children who had minimum acceptable diet diversity and those who had minimum meal frequency were only 1.2% among children 6-23 months, which was too low and unacceptable. Among children 6-23 months who received two or less meals, 44.9% of the mothers/caregivers sited lack of food to give as the main reason while 25.0% thought breast milk alone was enough for the baby, 9.3% thought that the number of meals were enough for the babies, 3.0% said mothers were too busy and 17.7% sited others reasons such as child did not want or had no appetite or child was sick. There was generally poor knowledge of complementary feeding, which should be addressed through nutrition promotion programs.

Nutrition status of women 15-49 years

There was marked reduction in underweight among South Sudanese mothers 15-49 years from about 56% in the February 2014 to about 24% in the current assessment. Conversely, in the West and Southwest settlements, the challenge to maternal nutrition was the increasing proportion of overweight and obese mothers. The prevalence of overweight and obesity was over 25% in almost all west and southwest settlements. Unfortunately there were no major improvements in the anemia status. Average anemia prevalence among mothers 15-49% was high (33.1%); and settlements such as Rhino Camp (55.6%), Kiryandongo (42.3%), Koboko (39.1%), Adjumani (38.1%) and Kyangwali (37.4%) had even higher than the average anemia prevalence. Therefore there is need to intensify anemia reduction and control strategies and to start educating mothers about the dangers of obesity and healthy life styles in refugee settlements.

Morbidity indicators

Prevalence of ARI was above 50% in most settlements except in Rwamwanja (34.5%), Kiryandongo (44.7%), and Kyangwali (45.6%). Diarrhea prevalence

was also above 30% in most settlements except Kiryandongo (11.0%), Rwamwanja (21.8%) and Kyangwali (23.3%). Likewise, immunization, deworming and vitamin A supplementation coverage were below the target. For instance measles immunization coverage when including mothers' recall was: Rwamwanja (53.9%), Kyaka II (54.3%), Adjumani (71.9%), Kyangwali (77.9%), Kiryandongo (80.8%), Rhino Camp (83.1%), below national target of 85%. Only Nakivale (87.4%) and Oruchinga (88.7%) had achieved national target but all were still less than the 95% UNHCR target and less than the coverage that has been previously reported. Child health cards should be supplied and should be availed to all children in the settlements as efforts are made to achieve targets.

Water and sanitation indicators

Besides Nakivale where about 15% of the households reported using water from open unprotected sources, safe water coverage was near universal in all settlements. The main source of water was boreholes (and piped water in Nakivale). The amount of water at household level fell short of the international standard of 20 liters per person per day by 5 liters.

Additionally latrine coverage was also nearly universal although 40% of them were open pits with no super structure. The highest prevalence of open pits was in Nakivale (60.4%), Rwamwanja (53.2%) and Koboko (48.1%).

Recommendations for nutrition and other key indicators

Continue implementing targeted feeding programs for children below 5 years in order to consolidate gains observed with nutrition status. Screening and enrollment of all children with moderate acute malnutrition into supplementary feeding programs as per national admission and discharging criteria should be continued. The status of GAM prevalence in children should be closely monitored through facility and community level activities.

Given the high rates of anemia in the under five children and women of reproductive age, both therapeutic and preventive interventions should be strengthened by UNHCR, WFP, UNICEF and Partners. Such interventions could include distribution and promotion of multiple micronutrient powder/sprinkles for children, Iron and Folate supplementation for mothers, deworming, malaria control, identification and treatment of parasites, mosquito net distribution, promoting consumption of iron and vitamin C rich foods, and other dietary measures.

Address the observed high prevalence of common childhood illnesses by implementing appropriate health interventions at static facilities and at the

community level. This could include the establishment of more static facilities; distribution of non-food items such as bed nets, and household utilities; WASH and other appropriate clothing for children.

Agencies implementing nutrition program should scale up promotion of preventative programs and essential nutrition actions. Promotion of optimal nutrition for women; promotion of optimal breastfeeding and complementary feeding; prevention of vitamin A deficiency in women and children, promotion of hygiene practices, food habits and immunizations. The health system should ensure that child health cards are available in all health outlets.

WASH agencies should continue with monitoring of WASH facilities especially ensuring that latrines with super structures are available for use by households.

1. INTRODUCTION

1.1 Background

It is routine for UNICEF, UNWFP, and UNCHR to support the government of Uganda to conduct annual Food and Nutrition Security Assessments (FSNA) in all the major refugee settlements in Uganda. The information gathered from the FSNA is used to monitor progress in program implementation and to facilitate planning of activities. The School of Public Health, Makerere University College of Health Sciences (Mak-SPH) has regularly been a partner in carrying out these assessments. FSNA are normally carried out during or around November annually. The current assessment was conducted in a total of nine major settlements namely Nakivale and Oruchinga in Isingiro district; Kyaka II in Kyegegwa district; Rwamwanja in Kamwenge district; Kyangwali in Hoima district; Kiryandongo in Kiryandongo district; Pakelle, Dzaipi, Pachara, Ofua and Itirikwa in Adjumani district; Rhino Camp in Arua district; and Lobule in Koboko district.

1.2 Objectives

1.2.1 General objective

The general objective of the FNSA was to estimate food security and nutrition status of the refugee population in refugee settlements nation wide in order to generate surveillance data to evaluate program performance and to provide a basis for future programing.

1.2.2 Specific objectives

1. To determine the prevalence of acute malnutrition amongst children aged 6-59 months;
2. To determine the prevalence of stunting among children aged 6-59 months;
3. To assess the prevalence of anemia among children aged 6-59 months and non-pregnant women of reproductive age (15-49 years);
4. To assess the coverage of iron-folic acid supplementation in pregnant women.
5. To assess the two week period prevalence of diarrhoea among children 6-59 months;

6. To estimate the coverage of TSFP/ITC/OTP for children aged 6-56 months;
7. To assess the coverage of vitamin A supplementation in the last 6 months in children aged 6-59 months;
8. To determine the coverage of measles vaccination in children 9-23 months;
9. To assess the nutritional status of pregnant women, and lactating women using MUAC;
10. To establish IYCF practices among infants and young children aged 0 to 23 months;
11. To determine the ownership of mosquito nets (all types and Long-lasting insecticidal (LLINs)) in households;
12. To determine the utilization of mosquito nets (all types and LLINs) by the total population, children 0-59 months, and pregnant women;
13. To determine the population's access to, and use of improved water, sanitation and hygiene facilities;
14. To investigate household food security, dietary diversity and consumptions;
15. To identify priority areas in programme implementation and propose informed recommendations for future programming.

2.0 METHODS

2.1 Sample size determination

The ENA for SMART software was used to estimate the sample size for individual-refugee settlement representative samples for nutrition, mortality and other key indicators. Sample size estimates were made to ensure that the key indicators would be statistically representative at the individual settlement level. Sample size was calculated with 0.05, statistical significance (95% confidence interval). Data from previous assessments especially the Nov 2013 Food and Nutrition Security Assessment were used for sample size calculation assumptions, that is, to obtain prevalence on key indicators. The population data of individual settlements were obtained from the OPM, UNCHR and confirmed with the respective Camp Commandants.

A cluster sample size calculator was used since ensuring individual random sampling was impossible due to lack of individual refugee households unique identifiers. Therefore a two-stage cluster sampling technique taking into consideration the design effect (1.5), anticipated non-response (3%) and desired precision (ranging between 1.7-5%) were used to ensure adequate representative sample sizes. The highest sample sizes were obtained by using anthropometric estimates and up to 4604 households were sampled in nine settlements as indicated, **(Table 1)**. Variance between estimated sample sizes and actual samples were due to challenges of not obtaining micro cuvettes for anemia testing on time and thus lost a day of work in those settlements.

Table 1: Estimated sample sizes for the different refugee settlements surveyed

Name of settlement	Total population	Total households	Average household size	Estimated prevalence of malnutrition %	± desired precision %	Design effect	% children under 5 years	6-59 months old children / household	% of non-response households	Number of children to be sampled	Number of household to be sampled	Actual Sampled Households
Adjumani	93,134	18056	5.1	20.1	4.0	1.5	20.4	0.9	3.0	630	707	770
Arua	18,144	4,103	4.4	15.2	5.0	1.5	17.7	1.1	3.0	323	476	274
Koboko	4,556	1,002	5.5	15.2	5.0	1.5	20.2	1.0	3.0	323	333	395
Kiryandongo	29,490	5,173	5.7	24.1	5.0	1.5	23.1	1.1	3.0	459	398	446
Nakivale	28,466	5,203	5.4	2.9	1.7	1.5	18.5	0.9	3.0	611	701	738
Oruchinga	7,240	1467	4.9	2.4	1.7	1.5	18.1	0.8	3.0	339	438	304
Rwamwanja	54,154	10,508	5.2	3.7	1.8	1.5	21.4	1.0	3.0	559	575	542
Kyaka II	23,241	4,661	5.0	4.0	2.2	1.5	21.4	1.0	3.0	498	512	543
Kyangwali	40,310	9,171	4.4	3.2	21.8	1.5	22.7	0.9	3.0	600	582	592
Total												4604

2.2 Sampling procedure

Two-stage cluster sampling was used to select households because of the lack of unique identifiers for refugee households. Therefore at first stage a probability sample of 30 clusters/divisions/blocks were sampled per settlement as appropriate. Updated lists of villages/blocks within settlements were obtained from the OPM and/or camp commandants. Each sampled village/block was stratified into segments and all households in a randomly selected segment were assessed whether they had or did not have children. Food security and mortality were assessed in all households while anthropometric measurements were assessed for all children 0-59 months if they existed in the sampled household.

2.3 Questionnaires and information collected

Six module specific questionnaires were designed to provide information on the relevant indicators for the different target groups, as indicated in the survey objectives and based on the standard SENS questionnaires (see **Appendix 5** for all questionnaires). Questionnaires were prepared in English and administered in the language spoken by the household selected, via translators where necessary. All questionnaires were pre-tested before the survey. Questionnaires covered all SENS modules and included the following areas and measurements:

1) **Children 6-59 months (SENS Modules 1-2):** Anthropometric status, oedema, enrolment in selective feeding programmes and blanket feeding programmes (CSB++), immunization (measles), vitamin A supplementation in last six months, morbidity from diarrhea in past two weeks, hemoglobin assessment.
2) **Children 0-23 months (SENS Module 3):** Questions on infant and young children feeding practices.
3) **Women 15-49 years (SENS Module 2):** Pregnancy status, coverage of iron-folic acid pills and post-natal vitamin A supplementation, MUAC measurements for pregnant and lactating women (PLW), and hemoglobin assessment for non-pregnant women.
4) **Food Security (SENS Module 4):** Access and use of the general food ration (GFR), coping mechanisms when the GFR ran out ahead of time and household food dietary diversity using the food consumption score.
5) **Water, sanitation and hygiene (SENS Module 5):** Access to improved drinking

water source, storage of water, quantity of water used per household, satisfaction with the water supply, type and quality of excreta disposal facilities in use and safe disposal of young children's stools.

6) **Mosquito Net Coverage (SENS Module 6):** Ownership of mosquito nets, utilization of nets of all types and long-lasting insecticidal net (LLIN), and Indoor Residual Spraying (IRS).
7) **Mortality assessment in the past 90 days**

2.4 Variable measurements, definitions and analysis

2.4.1 Indicators of nutritional status and anemia

Age and sex: Exact age of the child was recorded in months using information on child health cards. Where child card did not exist, age (month and year of birth) was determined using a local calendar of events. An age chart was used to read off age in months if date of birth (month and year) was known. Sex was assessed using mothers' reports and/or observation as appropriate.

Weight: Any child falling within the age bracket of 0 to 59 months found in the household sampled and was weighed if falling between 6-59 months. Weight was recorded to the nearest 0.1kg accuracy on the conventional scales. Even children with oedema were weighed because the ENA for SMART software used for data analysis adjusts for oedema.

Height*:* Children above the age of two years were measured standing upright whilst those below 2 years were measured lying down to nearest 0.1cm. Where age, was difficult to determine, those measuring less than 85cm were generally measured lying down and those taller than 85cm measured standing upright. ***Note****: Only data of children measuring between 65cm and 110cm were used for analysis where age was unknown.*

Bilateral pitting oedema*:* Was assessed by applying a medium thumb pressure on the upper side of each foot for three seconds. Oedema was recorded as present if a skin depression remained on both feet after pressure was released.

Results on anthropometric indices were presented based on the WHO standard. However, results with NCHS references were provided in the annex. Acute malnutrition

or wasting was estimated from the weight-for-height (WFH) index values combined with the presence of oedema. WFH indices were expressed in Z-scores.

Global acute malnutrition (GAM) was estimated using Weight-for-Height index and oedema. Children presenting with a weight for height index less than –2 z scores with/without oedema were considered to fall in this category.

Severe Acute Malnutrition (SAM) was estimated using Weight-for-Height index and oedema. Children presenting with a weight for height index less than –3 z-scores and/or presence of bilateral oedema were regarded as severely malnourished.

Likewise, underweight (weight-for-age) and stunting (height-for-age) were analyzed. Interpretation of malnutrition based on stunting, wasting and underweight was as indicated, **(Table 2)**.

Table 2: Cut offs for the severity of malnutrition based on WHO standards

Prevalence %	Critical	Serious	Poor	Acceptable
Low weight-for-height (Wasting)	≥15	10-14	5-9	<5
Low height-for-age (Stunting)	≥40	30-39	20-29	<20
Low weight-for-age (Underweight)	≥30	20-29	10-19	<10

Mid Upper Arm Circumference (MUAC) was assessed for both children and mothers 15-49 years. National guideline cut-offs were applied for interpretation of findings **(Table 3).**

Table 3: Cut off for MUAC based on national standards

MUAC	Interpretation
< 11.5 cm	Severe Malnutrition
≥ 11.5 cm and < 12.5 cm	Moderate Malnutrition
≥ 12.5 cm - < 13.5 cm	Mild Malnutrition (At risk)
≥ 13.5 cm	Good Nutritional Status

Plausibility checks and reports were generated for each of the nutrition surveys conducted in the nine refugee settlements and are provide in settlement specific reports in the annexes.

Anemia was assessed among children 6-59 months and interpretation of findings was based on national and WHO classification. Anemia findings were presented without adjustment for altitude. Therefore hemoglobin less that 7 g/dl was classified as severe anemia, 7-9.9 g/dl as moderate anemia, 10-10.9 g/dl as mild anemia and 11.0 g/dl or higher as normal. In case of any anemia, interpretation of severity was based on WHO and national guidelines **(Table 4).**

Table 4: Cut offs for anemia prevalence based on WHO recommendations[1]

Prevalence %	Severe	Moderate	Mild	Normal
Anemia	≥40	20-39	5-19	4.9 or lower

2.4.2 Selective indicators coverage amongst refugee households

UNHCR, UNICEF and WFP Strategic Plan for Nutrition and Food Security guidelines and SPHERE standards includes indicators on Supplementary Feeding Programs (SFP) and Outpatient Therapeutic Care (OTP) **(Table 5),** Water and Sanitation (WASH) **(Table 6),** immunisation and supplementation coverage **(Table 7),** and mosquito net coverage **(Table 8)**

Table 5: Performance indicators for SFP and OTP based in international standards

	Recovery	Case fatality	Defaulter rate	Coverage		
				Rural areas	Urban areas	Settlements
SFP	>75%	<3%	<15%	>50%	>70%	>90%
SC/OTP	>75%	<10%	<15%	>50%	>70%	>90%

* Also meet SPHERE standards for performance

Table 6: Recommended targets for measles vaccination and vitamin A supplementation in last 6 months

Indicator	Target Coverage
Measles vaccination coverage (9-59 months)	UNHCR, SPHERE 95% National 85%
Vitamin A supplementation in last 6 months coverage	National 85%

[1] WHO 2011. Haemoglibin concentrations for the diagnosis of anaemia and assessment of severity. WHO/NMH/NHD/MNM/11.1

Table 7: UNHCR, UNICEF and WFP and SPHERE standards on WASH Programme

Standard	Indicator
Average quantity of water available per person/day	WHO > or = 20 liters Sphere 15 liters

Table 8: UNHCR Mosquito Net Programme Standards

UNHCR Standard	Indicator
Proportion of households owning at least one Long-Lasting Insecticide treated bed net (LLIN)	>80%
Average number of persons per LLIN	2 persons per LLIN

2.5 Data collection

Trained research assistants collected data simultaneously in all the nine refugee settlements in the first two weeks of November 2014. Data were collected using semi-structured questionnaires (Annex 2), administered face-to-face to mothers and/or household heads in camp settings. Data were captured on android mobile telephones using open access software (ODK) downloaded from Google play (www.opendatakit.org). The tool was in English but translators speaking the respective local languages of the refugee were used to translate the questions. Translators were first trained and orientated on meaning of each question.

Data were analyzed using ENA for SMART (November 2, 2014 version) and SPSS version 22. To determine nutrition indicators of weight-for-height (WHZ), height-for-age (HAZ) and weight-for-age (WAZ), the WHO 2006 standards (with WHO exclusion) were used.

2.6 Quality assurance

We decided to do electronic data capture to ensure that good and accurate data was collected by research assistants. In addition, the following quality assurance measures were put in place to ensure quality:

- Research assistants were trained for 5 days on how to use android phones to capture data and risks associated with trying to edit research tools when in the field;
- Data was remitted to Kampala to the Investigators on a daily basis. This enabled effective correction and verification of data collected;

- The PI and the statistician collated and merged data to ensure that variables from different teams are compatible and can thus be merged into one dataset;
- A record of daily activities showing the locations of data collection were undertaken and kept by research assistants; and
- Daily debriefing of the research team was ensured at the end of every day's activities.

2.7 Data management

Electronic data received from the field by email on daily basis was collated and exported to SPSS while the nutrition data was exported to ENA software for generation of z-scores. Eventual analysis was done in SPSS version 22. Data was backed-up daily including saving it on distant servers through the email system.

2.8 Survey limitations

Data collection was done using cellphones with no hard copy/source documents. In order to overcome errors and risks associated with electronic data, each field team had to electronically submit by email all the collected data on a daily basis to the Investigators in Kampala. The Investigators would in turn go through the data to ensure consistency and accuracy of the collected information. Appropriate feedback was provided where necessary, and corrective measures undertaken.

To minimize risk of errors related to Hemocue analyzers, cleaning with manufacturer's cleaners and validation using standard liquid tests (Hb 301 control low, normal and high) was done before being analyzers were taken to the field. Likewise, weighing scales were validated daily in the field using standard weights.

Age estimation for children without child health cards and for adults/mothers was a challenge with potential implications on accuracy of anthropometric outcomes. Emphasis during training was the use of a calendar of events to minimize errors due to age estimation.

3. FINDINGS

3.1 Socio-demographic characteristics

3.1.1 Sex of household heads

More than 70% of households in North/West Nile[2] refugee settlements (Rhino camp, Adjumani old caseload, Adjumani S. Sudan influx and Koboko) are female headed. In the South West refugee settlements, approximately one out of every four refugee households is female headed, going up to half of households in Kiryandongo, but lowest in Rwamwanja at 18% (**Figure 1**).

This incidence of female-headed households (FHHs) is rather high with potential implications on Food Security and nutrition status of households. For instance, analyses showed that female-headed households across settlements generally had poorer food consumption scores (see section 3.2.7). This suggests that a high number of refugee households are either food insecure or vulnerable to food insecurity and may require scaled up interventions to assist these households.

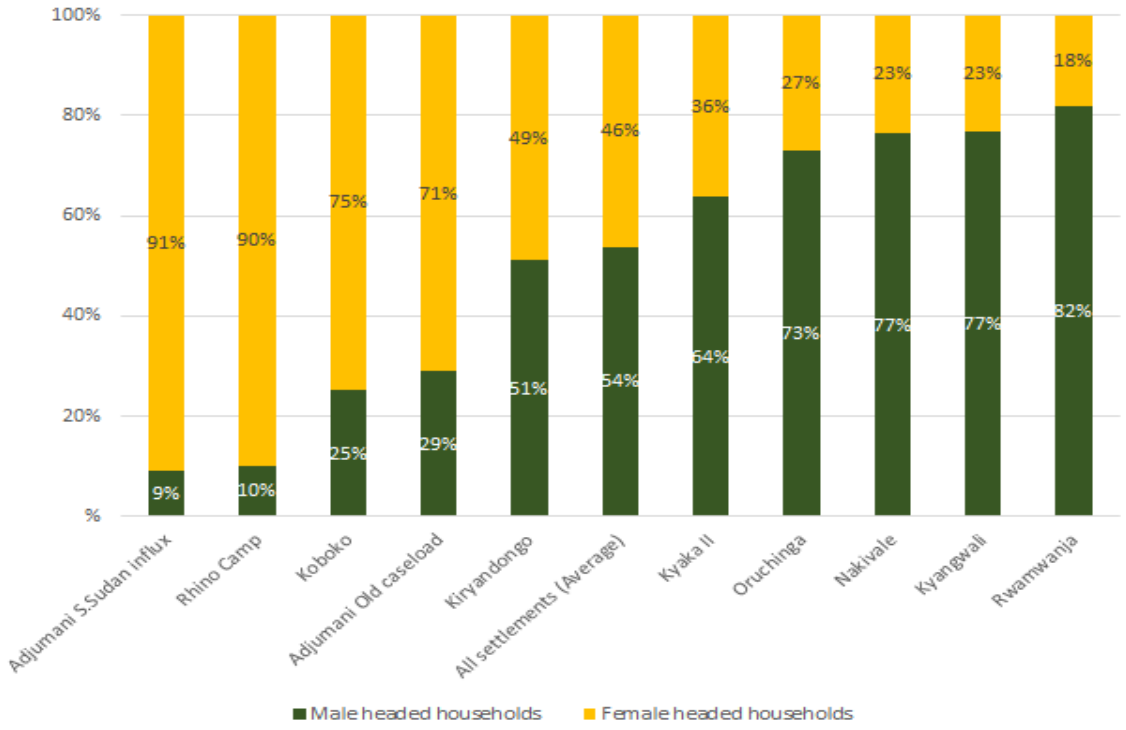

Figure 1: Percentage of female-headed households

[2] 'North/West Nile' refugee settlements is used in the report to collectively refer to Adjumani S. Sudan influx, Adjumani old caseload, Rhino camp and Koboko settlements; while 'South West' refugee settlements collectively refers to Kiryandongo, Kyaka II, Oruchinga, Nakivale, Kyangwali, and Rwamwanja settlements.

3.1.2 Education status of household heads

Overall, half of the heads of household had never been to school in all settlements (zero years of schooling). The highest percentage is observed in Adjumani S. Sudan influx at 74%. At least 36% of heads of household across the settlements had attended and/or completed primary level education (7 or less years of schooling) with the highest percentage observed in Adjumani Old caseload and Oruchinga at 46%. There were fewer heads of household that had attended and/or completed secondary and tertiary levels of education (more than 7 years of schooling). Furthermore, findings showed that across all settlements, there were more female heads of household that had never been to school compared to their male counterparts (**Figure 2**).

The low education level among household heads increases their vulnerability to Food Insecurity due to reduced ability to earn income and improve food and nutrition security outcomes. Moreover, the level of education was found to be positively correlated with food consumption scores (see section on food security). Tailored adult literacy programmes might help equip such household heads with essential skills such as in nutrition, childcare, sanitation and farming that would contribute to improved food security. Such programmes, if initiated, must as a priority be introduced in Adjumani S. Sudan influx, Rhino, and Kiryandongo, which had the higher percentages on household heads never schooled.

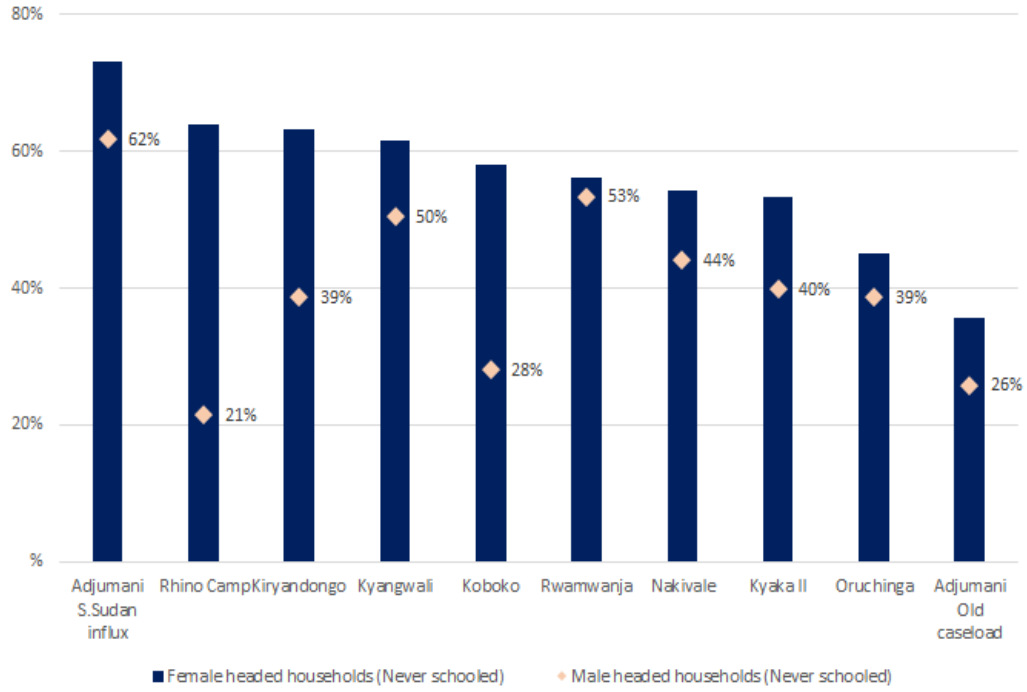

Figure 2: Percentage of heads of household that have never been to school

3.1.3 Physical status of household heads

Over 90% of household heads across the settlements were reported as able bodied, while the chronically ill were about 7% and those disabled were about 3%. The incidence of chronically ill heads of household was highest in Adjumani old caseload, Koboko, and Kyaka II at 10%, 12% and 13% respectively. There was no marked difference in the incidence of disabled heads of household across the settlements.

3.1.4 Household size and respondent age

The average household size was about 5 persons although the median population was four persons in the majority of the settlements **(Table 9)**.

Table 9: Household population according to settlement

Settlement	Mean	Std. Deviation	Median
Nakivale (N=737)	5.3	2.3	5
Oruchinga (N=303)	5.1	2.0	5
Kyaka II (N=542)	4.2	2.2	4
Kyangwali (N=590)	5.2	2.4	5
Rwamwanja (N=542)	4.7	2.3	4
Kiryandongo (N=446)	5.1	2.6	5
Rhino Camp (N=274)	4.9	2.4	4
Adjumani Old caseload (N=106)	4.4	2.0	4
Adjumani S.Sudan influx (N=622)	4.6	2.2	4
Koboko (N=395)	4.4	2.2	4
Total (N=4557)	4.8	2.3	4

The majority of the respondents in all settlements were females **(Figure 3).**

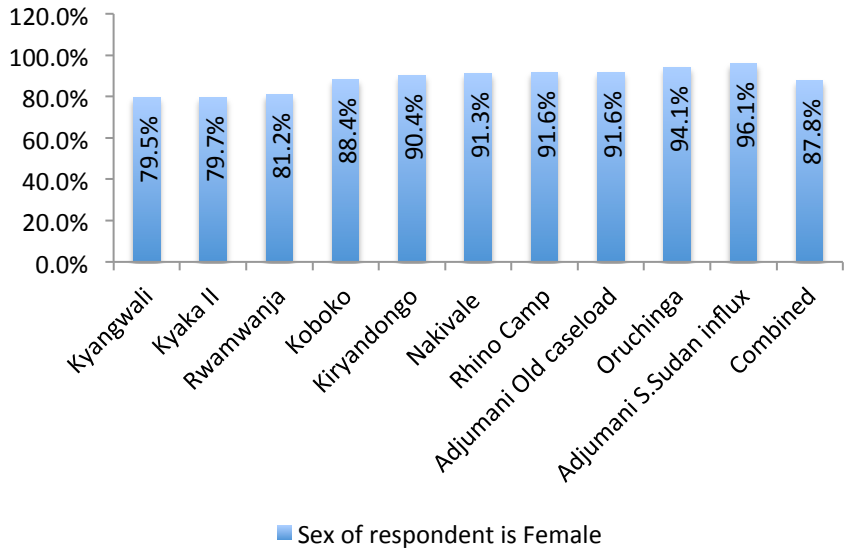

Figure 3: Sex of the respondents according to refugee settlement

The mean (SD) age for mothers was 33.4 (12.4) years with a median of 30 years **(Table 10)** while the median number of live birth for mothers was 4.0 children.

Table 10: Respondents' age

Settlement	Mean	Std. Deviation	Median
Nakivale (N=734)	31.3	9.9	30.0
Oruchinga (N=301)	31.6	9.9	30.0
Kyaka II (N=531)	33.4	14.2	30.0
Kyangwali (N=589)	34.6	13.5	31.0
Rwamwanja (N=534)	30.9	10.8	28.0
Kiryandongo (N=437)	35.9	14.3	32.0
Rhino Camp (N=273)	30.6	11.7	28.0
Adjumani Old caseload (N=105)	33.0	11.6	30.0
Adjumani S.Sudan influx (N=651)	34.5	12.9	32.0
Koboko (N=394)	37.5	12.3	35.0
Combined (N=4549)	33.4	12.4	30.0

3.1.5 Reproductive health of mothers

Of the respondents who were females in reproductive years (15-49), about 10.4% were pregnant while 45.0% were breastfeeding **(Table 11).**

Table 11: Reproductive health status of mothers 15-49 years by location of refugee

Settlement	Pregnant	Breastfeeding	Pregnant and breastfeeding	Not pregnant & not breastfeeding
Nakivale (N=673)	10.7%	54.8%	1.3%	33.1%
Oruchinga (N=285)	10.5%	59.6%	0.7%	29.1%
Kyaka II (N=433)	12.0%	42.5%	0.9%	44.6%
Kyangwali (N=470)	12.6%	49.6%	0.4%	37.4%
Rwamwanja (N=440)	16.4%	52.0%	1.1%	30.5%
Kiryandongo (N=403)	9.9%	33.0%	0.5%	56.6%
Rhino Camp (N=251)	3.6%	43.8%	0.0%	52.6%
Adjumani Old caseload (N=98)	7.1%	50.0%	0.0%	42.9%
Adjumani S.Sudan influx (N=636)	4.7%	38.1%	0.0%	57.2%
Koboko (N=349)	7.4%	28.1%	0.6%	63.9%
Combined (4038)	9.8%	45.0%	0.6%	44.5%

The lowest proportion of mothers who were neither pregnant nor breastfeeding was in Oruchinga, Rwamwanja and Nakivale. There is need to emphasize reproductive health services in those settlements. There were no mothers who were breastfeeding while pregnant as is often observed in Uganda. That could imply presence of some cultural beliefs and practices among refugees that might hinder pregnant mothers from breastfeeding, which is harmful as it might lead to malnutrition infants and young children.

Of the pregnant mothers 64.1% were attending Ante-natal Care Services (ANC) while 60.7% were having iron and folate (IFA) supplements **(Figure 4).** Reproductive health services in Kyaka II should be addressed to improve coverage.

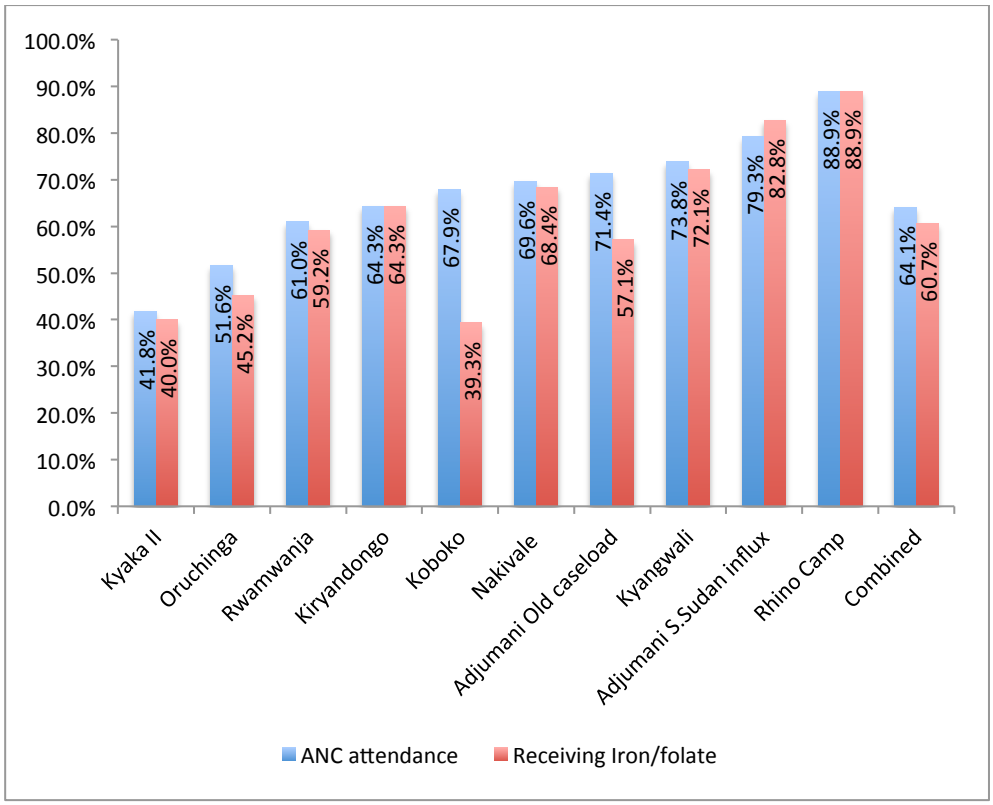

Figure 4: **ANC attendance and IFA supplementation in pregnant women (N=417)**

3.1.6 Distribution of age and sex of sampled children 6-59 months

Surveys in all settlements met acceptable minimum standards based on the plausibility checks (Annex 3). The overall sex ratio of the sampled children was one, confirming acceptable standard of sampling procedures used in the survey **(Table 12).**

Table 12: Distribution of age and sex of sampled children 6-59 months

	Boys		Girls		Total		Ratio
Age (mo)	no.	%	no.	%	no.	%	Boy:girl
6-17	557	48.9	582	51.1	1139	27.1	1.0
18-29	552	51.0	530	49.0	1082	25.8	1.0
30-41	513	52.0	473	48.0	986	23.5	1.1
42-53	375	50.8	363	49.2	738	17.6	1.0
54-59	125	49.0	130	51.0	255	6.1	1.0
Total	2122	50.5	2078	49.5	4200	100.0	1.0

3.2 Household food security

3.2.1 Livestock production

There is limited livestock ownership[3] across the refugee settlements; approximately 81% of the households did not own any livestock, 17% had negligible holding (<0.5TLU) and 2% had low livestock holding (<1 TLU). There were no households with >1 TLU. The highest level of livestock ownership was observed in Adjumani old caseload where 65% had <0.5TLU and 7% had <1 TLU. The most commonly owned livestock across the settlements were goats and poultry, highest in Adjumani old caseload and lowest in Adjumani S. Sudan influx (**Figure 5**).

Among households that owned livestock, majority (64%) cited a diversity of constraints, key among them being:

- Lack of money - to buy more livestock, feeds and veterinary services,
- Livestock parasites/diseases - mentioned by 19% of households across settlements,
- Shortage of pasture/feed – especially in Koboko and Rhino camp (21% and 14% respectively),
- Lack of veterinary services – especially in Adjumani old case load (18%) and,
- Insecurity – especially in Adjumani S. Sudan influx.

[3] Livestock ownership was measured through a calculation of Total Livestock units (TLU) at household level. The TLU is a weighted sum of different livestock (cattle, sheep, goats etc.) available in a household. Households are then classified into groups depending on the sum.

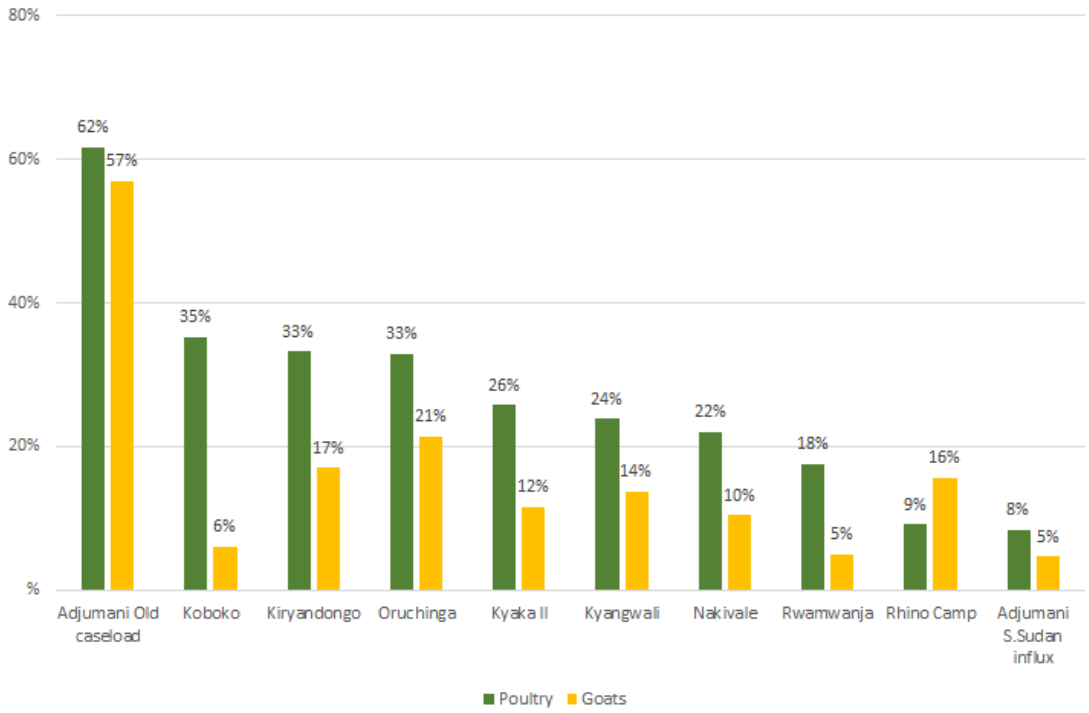

Figure 5: Percentage of households that owned goats and poultry

Household livestock ownership is thought to be a positive factor contributing to resilience strengthening and improved nutrition outcomes through improved access to animal protein/micronutrients. Low livestock ownership in refugee settlements is expected, but further exacerbates the vulnerability of these households to food insecurity. Sustained and innovative interventions may be necessary to enable refugee households maintain their livestock and/or find alternative livelihoods so as to strengthen their ability to withstand and recover from shocks when they do occur.

3.2.2 Access to agricultural land

About 62% of refugee households had access to agricultural land. The highest percentage of households with agricultural land was observed in Kiryandongo and Kyangwali settlements (89% and 88% respectively), while only 10% and 17% reported access to agricultural land in Adjumani S. Sudan influx and Rhino camp respectively. As shown in **Figure 6**, households with access to land mostly had access to either flat land for small gardens (63%) or upland (35%).

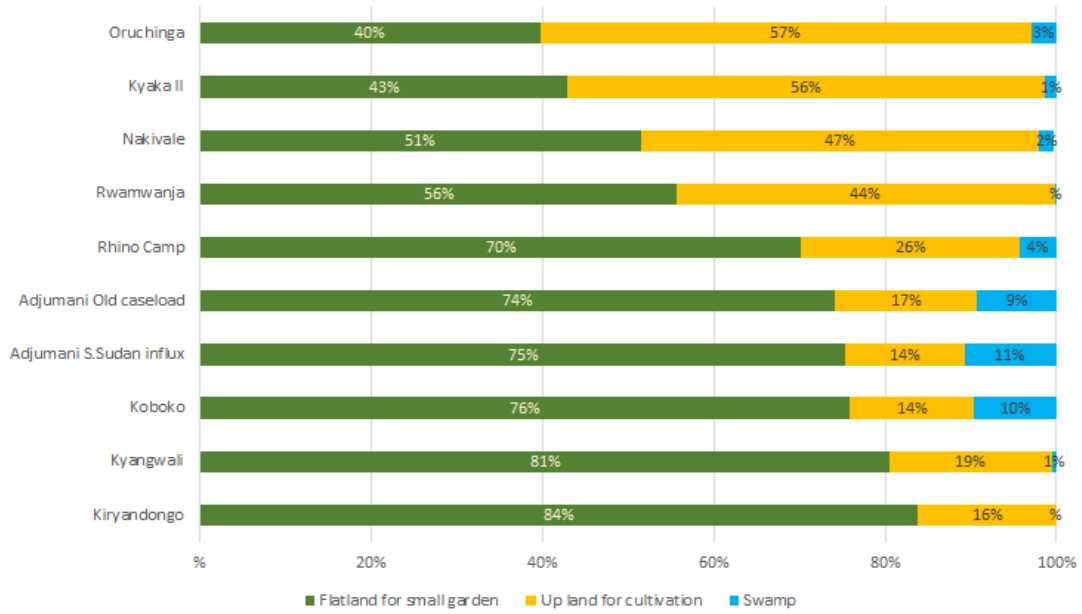

Figure 6: Type of land accessed by households

The average land sizes households had access to were 0.6 acres for flat land and 0.7 acres for upland (**Table 13**). Land sizes were bigger in Kyangwali, Kiryandongo, and Adjumani old caseload (average 0.9 acres) and smaller in Rwamwanja and Koboko (average 0.18 and 0.22 acres respectively).

Table 13: Average land size in acres per household

Settlement	Average land size (acres) per household	
	Flat land for small gardens	Upland for cultivation
Kiryandongo	.94	1.16
Adjumani Old caseload	.91	1.58
Kyangwali	.90	.94
Average (All settlements)	**.60**	**.72**
Adjumani S. Sudan influx	.47	.38
Rhino Camp	.47	.95
Nakivale	.45	.82
Kyaka II	.45	.86
Oruchinga	.42	.53
Koboko	.22	.38
Rwamwanja	.18	.32

Thus despite over 60% of refugees reporting access to land; given the quality of land and small sizes, most of the agriculture is subsistence. In the North/West Nile settlements, some households are unable to practice agriculture due to swampy land. Where possible, these households should be allocated other land suitable for agriculture to reduce vulnerability and dependence on food aid.

3.2.3 Food crop production

The most commonly cultivated crops across the settlements were maize and beans (**Table 14**). Maize was mostly grown in Kyangwali (80% of households) while Rhino camp and Koboko had the least percentage (30% and 13% respectively). To a limited extent, cassava was cultivated in the South West refugee settlements (20-30% of households), while a few households in Adjumani old caseload (29%), Adjumani S. Sudan influx (12%), and Koboko (26%) mentioned Sorghum as a cultivated crop.

Table 14: Most commonly grown crops in the settlements

Settlement	Most commonly cultivated crops
Nakivale Oruchinga Kyaka II Kyangwali Rwamwanja Kiryandongo	Maize: 75 – 95% of households Beans: 67 – 90% of households Cassava: 10 - 35% of households
Rhino camp*	Maize (30%), Sorghum (9%)
Adjumani old caseload*	Maize (63%), Sorghum (29%)
Adjumani S. Sudan influx*	Maize (49%), Beans (15%)
Koboko*	Sorghum (25%)

*Between 32 – 66% of households in these settlements mentioned crops enumerated as "other" in the survey as the most commonly cultivated; these were mainly groundnuts and sim sim.

When asked to compare amount of food produced this year to that produced in the same season last year, more than half of respondents (54%) across the settlements reported that they had produced less, 14% had produced about the same, and 32% had produced more (**Figure 7**). The proportion of households that produced less was especially higher

in Adjumani S. Sudan influx (87%), Rhino camp (68%), Kiryandongo (65%) and Adjumani old caseload (62%) but less so in Oruchinga (31%).

Consequently, a relatively high proportion of the households (41%) did not sell any food this year; an average of 31% of the households sold less food compared to the previous year while 19% sold about the same, and only 10 percent sold more (**Figure 7**). Thus for most households, agriculture was purely a subsistence activity rather than a livelihood/income generating activity.

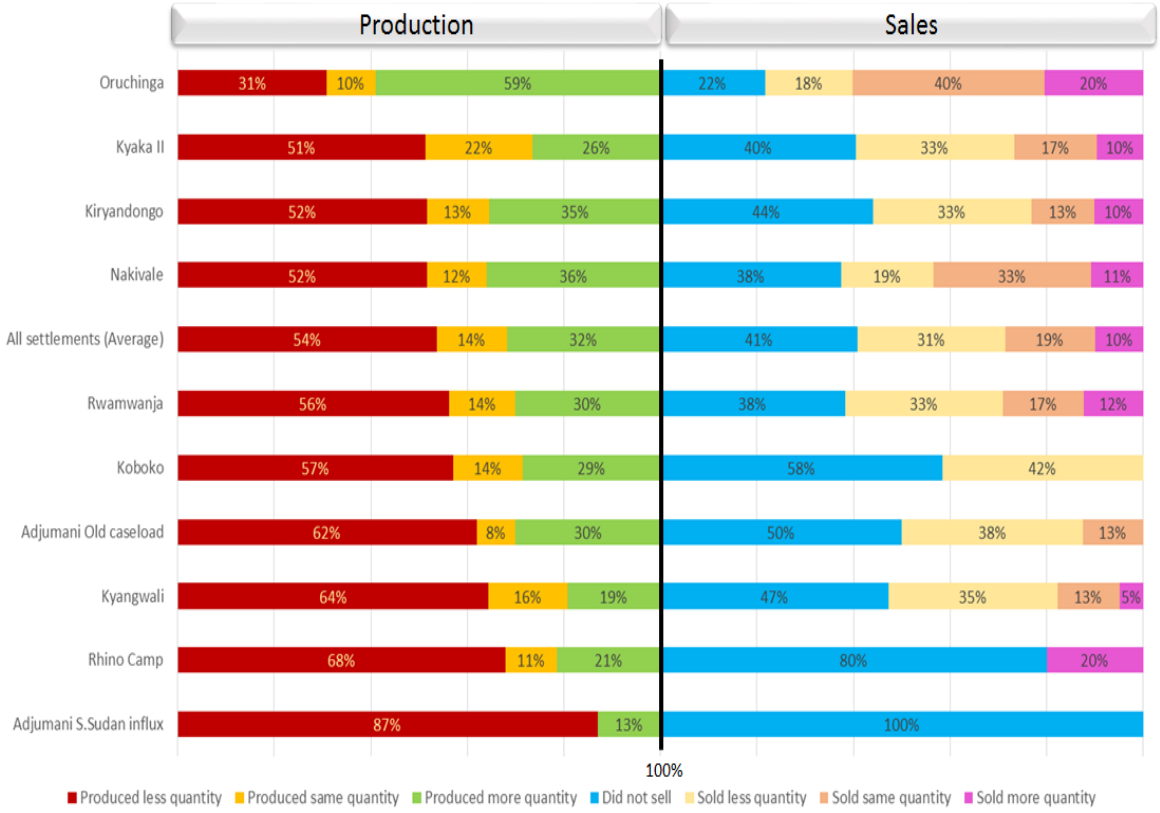

Figure 7: Comparison between amounts of food produced/sold this year and production/sales in the same season last year

3.2.4 Constraints to agriculture

The main constraints to agriculture were found to be drought/low rainfall, infertile/marginal land and Sickness or physical inability as detailed in **Table 15** below. Given the extent refugee households identified weather related issues and infertile/marginal land as key constraints to agriculture, it is recommended to pilot climate smart agricultural techniques that could potentially make agriculture more

resilient to changing climate and enhance productivity and incomes. Such techniques could be built within tailored adult literacy programmes for the refugees.

Table 15: Main constraints to agriculture

Settlement	Main constraints* to agriculture (% households)
Nakivale	**Drought/low rainfall (58%)**
Oruchinga	**Drought/low rainfall (65%)**
Kyaka II	**Drought/low rainfall (48%)**, Infertile/marginal land (21%)
Kyangwali	Sickness/physical inability (20%), Infertile/marginal land (18%)
Rwamwanja	**Drought/low rainfall (21%)**, Infertile/marginal land (15%)
Kiryandongo	Infertile/marginal land (18%), Sickness/physical inability (17%)
Rhino camp	**Drought/low rainfall (55%)**
Adjumani old caseload	**Drought/low rainfall (25%)**
Adjumani S. Sudan influx	**Drought/low rainfall (23%)**
Koboko	Inadequate seeds and tools (22%), infertile/ marginal land (16%)

*Between 20 – 48% of households across settlements mentioned constraints enumerated as "other" in the survey; these were mainly pests/diseases and rodents.

3.2.5 Main income sources

Over 60% of households reported having at least one income earner in the household. As shown in **Figure 8**, the highest percentage was in Rwamwanja settlement (96%), while the lowest was in Rhino camp (9%) and Adjumani S. Sudan influx (8%).

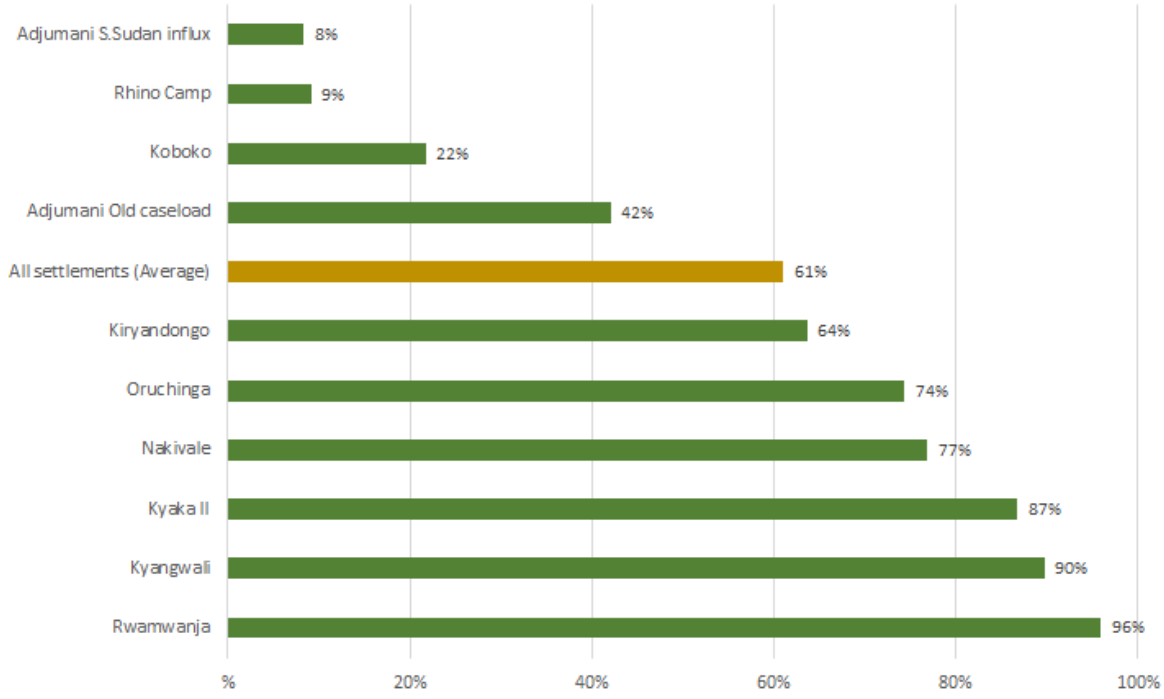

Figure 8: Percentage of households with at least one income earner[4]

The low percentage of households with at least one income earner in North/West Nile settlements is a big issue as it indicates inability of the households to access food through market purchases. Moreover, most of the households in these settlements indicated that they had access to flat land for small gardens while others had swamp land (refer to **Figure 6**) and thus agriculture for these households is largely subsistence. Furthermore, majority of the households in these settlements reported having produced less food this year compared to last year and mostly did not sell any food or sold less quantities compared to last year (refer to **Figure 7**). These households are therefore highly vulnerable and require urgent assistance to meet their Food/Nutrition needs. Conditional cash transfers and/or vouchers could be an option particularly in Adjumani, Rhino and Koboko to help improve access to food.

Food crop production/sales and agricultural wage labour are the most important income sources for households in the settlements (**Table 16**). Food crop production was particularly important for households in Rwamwanja (44%), Kyaka II (40%) and

[4] There seems to be a marked difference in the percentage of households with at least one income earner in Kiryandongo and Rhino camp between the current assessment and that conducted by WFP (See WFP Analysis on Food & Cash Interventions in Select Refugee Settlements, November 2014). It is therefore recommended that WFP conducts a follow up assessment to clarify this issue.

Kyangwali (36%), while agricultural wage labour was more important in Oruchinga (40%) and Nakivale (35%).

Table 16: Main income sources

Settlement	Most important	2nd most important
Nakivale	Agricultural wage labour	Food crop production/sales
Oruchinga*	Agricultural wage labour	Food crop production/sales
Kyaka II	Food crop production/sales	Agricultural wage labour
Kyangwali	Food crop production/sales	Agricultural wage labour
Rwamwanja	Food crop production/sales	Agricultural wage labour
Kiryandongo*	Food crop production/sales	Agricultural wage labour
Rhino camp**	Sale of food assistance	Sale of food assistance
Adjumani old caseload*	Food crop production/sales	Agricultural wage labour
Adjumani S. Sudan influx**	Sale of food assistance	Remittances (23%)
Koboko**	Agricultural wage labour	Food crop production/sales

(*) About 21-34% and (**) 68-80% of households were dependent on food aid

Further to the findings above, it is clear that households in Adjumani S. Sudan influx, Rhino camp, and Koboko are mainly dependent on food aid and are thus highly vulnerable compared to other settlements where food crop production/sales and agricultural wage labour are key income sources. These settlements should be prioritized in any future food security interventions seeking to foster self-reliance.

3.2.6 Credit/Debt among households

Approximately 37% of households reported that they were indebted. The highest percentage of households with debt was found in Oruchinga (61%) and Nakivale (52%), while the lowest was in Kiryandongo and Rhino camp (11% and 12% respectively). As shown in **Table 17**, the average amount of debt incurred per household was rather high at UgX. 73,000.

Table 17: Incidence and Level of debt in refugee settlements

Settlement	% Households that had debt to repay	Average amount of debt* per household (UgX)	% Households with debt less than 30,000
Oruchinga	61%	42,300	71%
Nakivale	52%	76,600	59%
Rwamwanja	45%	41,600	62%
Koboko	44%	80,300	44%
Kyangwali	43%	107,400	51%
Kyaka II	42%	79,100	60%
Adjumani Old caseload	40%	43,800	60%
All settlements (Average)	37%	73,000	58%
Adjumani S.Sudan influx	18%	69,400	55%
Rhino Camp	12%	32,500	75%
Kiryandongo	11%	140,500	45%

*Rounded off to the nearest hundred

The main reasons for new debt cited by households (**Table 18**) were to buy food (42%), cover health expenses (33%) and, to a limited extent, pay school/educational costs especially in Kiryandongo (20%). The majority of households that undertook debt for health reasons were located in Kyangwali, Kiryandongo and Rwamwanja.

Typically, households that borrowed to buy food did so with small amounts of money (average UgX 38,500) but with majority (72%) borrowing amounts less than UgX 30,000. On the other hand, households that borrowed to cover health expenses did so with higher amounts; 45% borrowed amounts higher than UgX 30,000 (average UgX 56,000).

Note for example that whereas Oruchinga had the highest percentage of households having taken loans, the level of debt for the majority of these households was lower; about 71% of households that took loans in Oruchinga did so for amounts <UgX 30,000.

Table 18: Reasons for debt among refugee households

Settlement	Reason for new debt (% households)	
	Main reason	**Other reason**
Kiryandongo	Cover health expenses (43%)	Pay school/education costs (20%)
Kyangwali	Cover health expenses (56%)	Buy food (15%)
Koboko	Buy food (48%)	Cover health expenses (31%)
Kyaka II	Buy food (46%)	Cover health expenses (28%)
Nakivale	Buy food (52%)	Cover health expenses (18%)
Adjumani S. Sudan influx	Buy food (55%)	Cover health expenses (27%)
Adjumani Old caseload	Buy food (33%)	Cover health expenses (33%)
Oruchinga	Buy food (62%)	Cover health expenses (12%)
Rwamwanja	Cover health expenses (54%)	Buy food (31%)
Rhino Camp	Buy food (50%)	Cover health expenses (34%)

The fact that a high percentage of households borrowed money primarily to meet health expenses, particularly in Kyangwali and Rwamwanja settlements is suggestive of a health issue. Further investigation is recommended as a basis for a health intervention to address these issues as they could potentially aggravate food insecurity, impacting on the nutrition status especially of children.

Further analyses showed that households that had debt also generally had poor food consumption scores (see section 6), probably due to the fact that majority of households borrowed primarily to buy food or meet health care needs, suggesting stress. This is a key finding and is a central argument to introduce and/or expand cash transfers because having high debt is a risk to the current food security status of households.

The main sources of credit for households were informal i.e. from traders/shopkeepers (34%), relatives (23%) and others (33%) - including friends/neighbors and health care providers. Borrowing from banks/credit institutions/microcredit projects was negligible across settlements. This finding is not surprising as there are no formal financial systems in the settlements and, in any case, refugees would in most cases not be able to meet the requirements of formal lending systems. However, informal lending systems on which the households rely typically charge higher interest on loans which, in essence, outstrips households of any disposable income, thus perpetuating the poverty trap. It is thus

recommended to explore options that would enable access to credit in a structured and secure way for example through savings groups among refugees.

3.2.7 Food sources and consumption

Majority of households across settlements had acceptable FCS (72%) with only 22% having borderline FCS and 6% with Poor FCS (**Figure 9**). The highest percentage of households with acceptable FCS was observed in Rwamwanja (84%) where only 14% had borderline FCS and 2% with poor FCS. On the other hand, the poorest food consumption was noted in Adjumani Old caseload with only 33% of households having acceptable FCS while 47% had borderline FCS and 21% poor FCS. Thus over 67% of households in Adjumani Old caseload have borderline or poor food consumption.

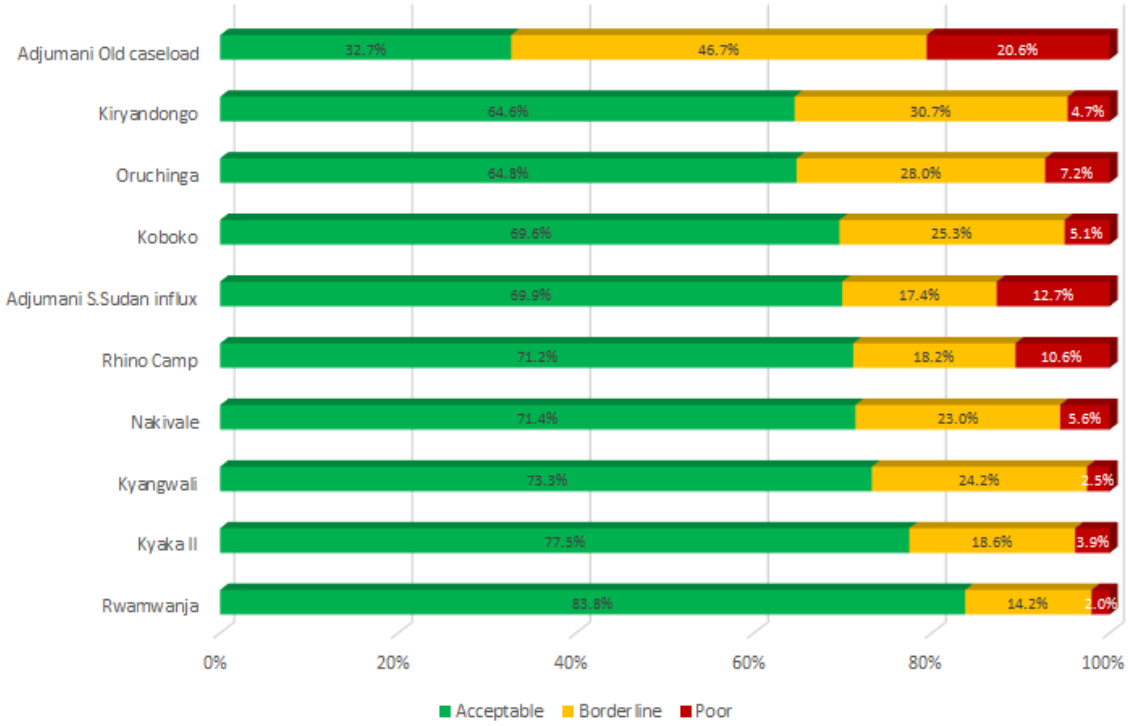

Figure 9: Food consumption scores

Overall, female-headed households had poorer FCS compared to male-headed households; 75% of male-headed households across settlements had acceptable FCS (FHH = 68%), 22% had borderline FCS (FHH = 23%) and 4% had poor FCS (FHH = 9%). This poor FCS among female-headed households is probably linked to the fact that up to 61% had no income earner in the household while 32% had only one income earner, translating into difficulties in access to food due to low income.

Furthermore, findings suggested better FCS among households where the heads had attended and/or completed secondary or higher levels of education (>= 8 years of formal education). This relationship was particularly pronounced in Adjumani S. Sudan Influx, Oruchinga, Kyangwali and Kiryandongo settlements but less so in others.

Access to land was important for food consumption for refugee settlements in South West than for those in the North/West Nile; among households in Nakivale, Oruchinga, Kyaka II, Kyangwali and Rwamwanja settlements, households that had access to land also had better FCS while no such correlation was seen in Kiryandongo, Rhino camp, Adjumani Old case load, Adjumani S. Sudan influx and Koboko settlements. This is probably because households in the latter five settlements were highly dependent on food assistance.

Across the settlements, the three major sources of food consumed in the 7 days preceding the survey were own production, food aid and market purchases (cash/credit). These sources were cited by at least 72% of households across settlements and across food groups except for vegetables where gathering was an important source for some 29% of households, going up to 50% in Kiryandongo and 69% in Kyangwali.

As summarized in **Table 19**, gender of the household head is a key factor influencing Food Consumption Scores across settlements. Others were access to land and the presence of an income earner in the household. These factors are fundamental, influencing the vulnerability of households to food insecurity in the various settlements.

Table 19: Summary of key factors influencing food consumption scores by settlement

Refugee settlement	Key FCS influencing factors	
Adjumani Old caseload	*Gender of household head*	*Debt*
Adjumani S. Sudan influx		*Debt, Education (household head)*
Kiryandongo		*Education (household head)*
Koboko		---
Kyaka II		*Access to land, Debt*
Kyangwali		*Access to land, Debt, Education (household head)*
Nakivale		*Access to land, Debt*
Oruchinga		*Access to land, Debt, Education (household head)*
Rhino camp		*Debt*
Rwamwanja		*Access to land*

3.3 Coping strategies

3.3.1 Shocks affecting households and food consumption coping strategies

When asked about the main difficulties or shocks in the past 30 days, 84% of households had suffered at least one shock while 16% had not. As illustrated in **Table 20**, majority of households (average 62%) cited sickness of a household member, while about 8-18% of households across all settlements mentioned high food prices.

Table 20: Main shocks faced by households in the 30 days preceding the survey

	Main shocks faced by households		
Settlement	***1st shock***	***2nd Shock***	***3rd shock***
Adjumani Old caseload	*Sickness of a household member*	*High food prices*	*Death of a household member*
Adjumani S. Sudan influx			*Loss of employment/reduced salary*
Kiryandongo			---
Koboko			*Debt to reimburse*
Kyaka II			*Loss of employment/reduced salary*
Kyangwali			*Debt to reimburse*
Nakivale			*Adverse weather*
Oruchinga			---
Rhino camp			*Loss of employment/reduced salary*
Rwamwanja			*Debt to reimburse*

Nonetheless, findings suggest that these shocks had little or no impact on food consumption. In general, application of food consumption coping strategies[5] such as reliance on less preferred, less expensive food; borrowing food or relying on help from friends/relatives; reduction in the number of meals eaten per day; reduction in portion size of meals; and reduction in the quantities of food consumed by adults/mothers for young children was low across the settlements. Actual values of the reduced coping strategy index (RCSI) by settlement are shown in **Figure 10**. The reliance on food assistance and borrowing money largely negates the need for households to adopt food consumption coping strategies.

[5] Reduced Coping Strategy Index (RCSI) measures the behaviours adopted by households when they have difficulties covering their food needs. It is calculated using standard food consumption-based strategies (reliance on less preferred, less expensive food; borrowing food or relying on help from friends/relatives; reduction in the number of meals eaten per day; reduction in portion size of meals; and reduction in the quantities of food consumed by adults/mothers for young children) and severity weighting.

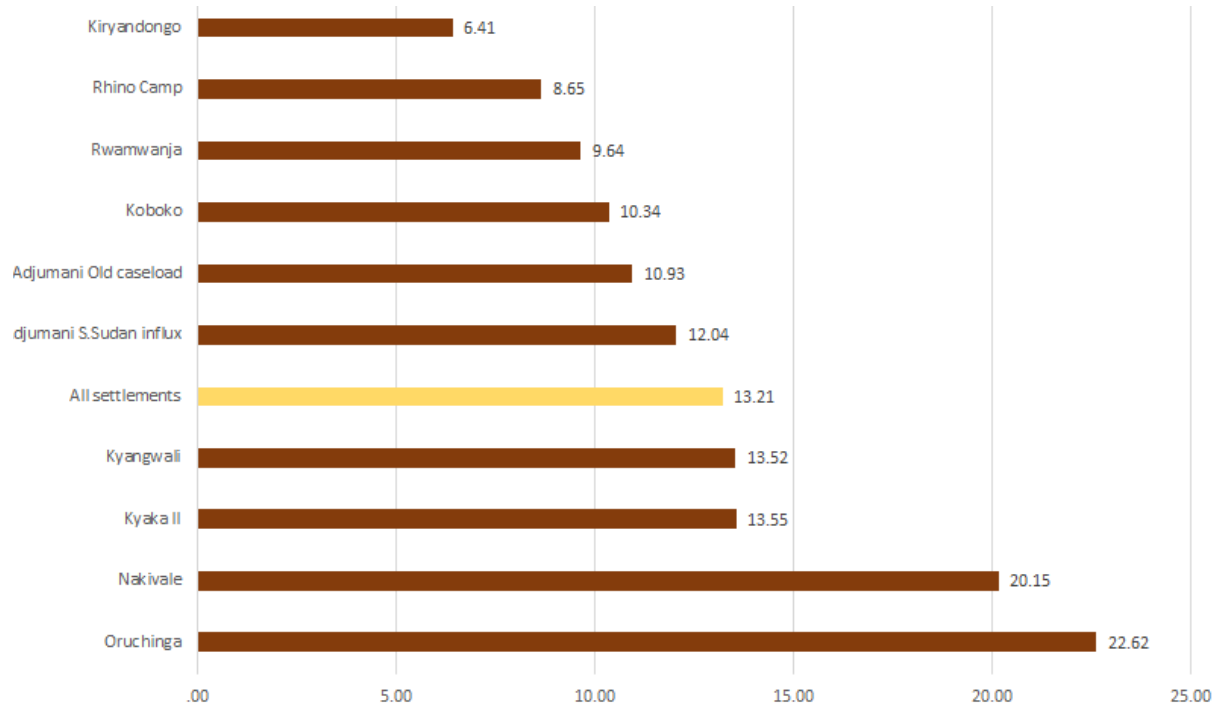

Figure 10: Food consumption coping strategies - the reduced coping strategy index (RCSI)

Given that Oruchinga and Nakivale settlements also had a high percentage of households that borrowed money to buy food, it is indicative of stress among households and necessitates close monitoring to prevent deterioration of the food security situation.

3.3.2 Livelihoods-based coping strategies

However, application of livelihood coping strategies[6] such as spending savings, selling productive assets, begging etc. was varied across settlements. Overall, at least 48% of households had not adopted any livelihood coping strategies (**Figure 11**). Consistent with the above findings on the RCSI, the highest percentage of households not adopting any livelihood coping strategies was found in Kiryandongo (73%) and Rhino camp (71%).

[6] Livelihoods-based coping strategies reflect longer term coping capacity of households. The various strategies applied by households can be categorized as stress, crisis or emergency coping strategies depending on the severity weights.

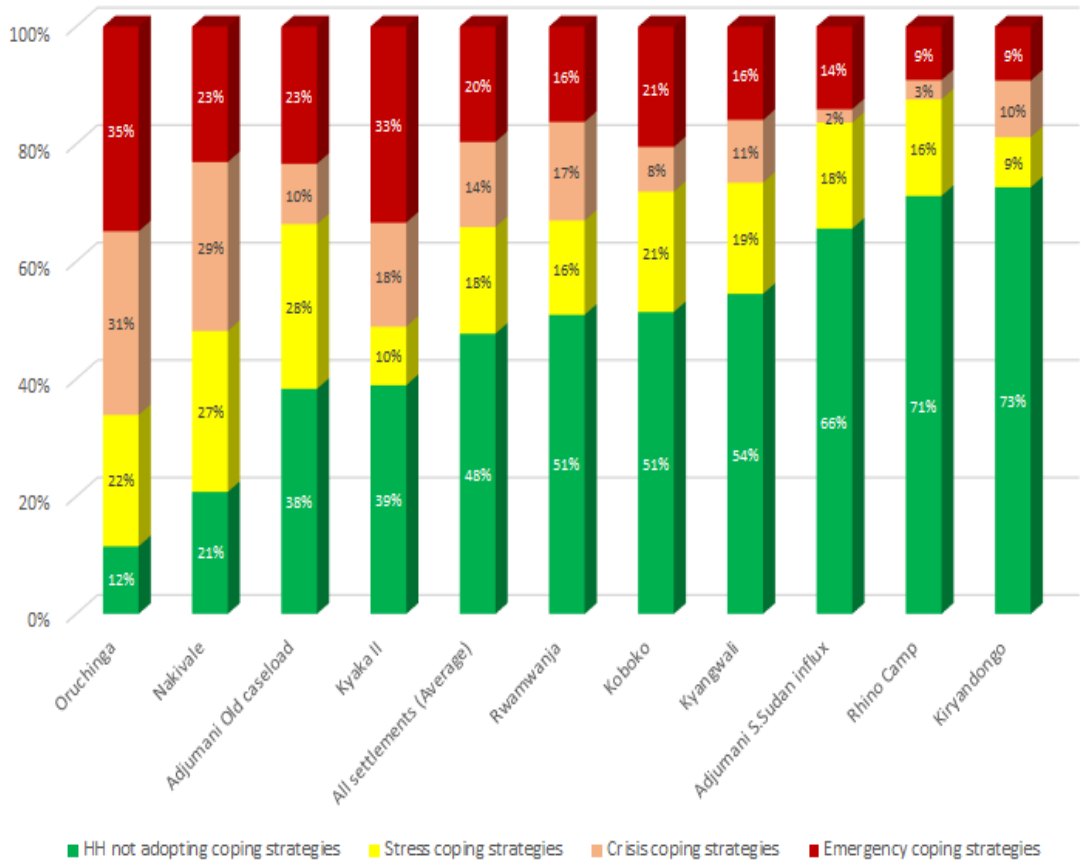

Figure 11: Livelihoods coping strategies in the refugee settlements

Application of stress, crisis and emergency coping strategies across settlements is summarized in **Table 21** below:

The most applied stress coping strategies[7] were the borrowing of money and spending of savings.

Application of crisis coping strategies[8] was less prevalent in the settlements, the most common being the consumption of seed stock and, to a limited extent, selling of productive assets.

Emergency coping strategies[9] were more widely applied compared to stress and crisis coping strategies, of which begging was the dominant strategy.

[7] Stress coping strategies indicate reduced ability to deal with future shocks due to a current reduction in resources or increase in debts. They include borrowing money, spending savings, selling household goods or animals.

[8] Crisis coping strategies, such as selling productive assets, reduction of essential non-food expenditure, and consumption of seed stock directly reduce future productivity, including human capital formation

[9] Emergency coping strategies, such as selling one's house or land, engaging in illegal income activities, and begging also affect future productivity, but are more difficult to reverse or more dramatic in nature.

Table 21: Application of livelihoods-based coping strategies

	Most commonly applied livelihoods-based coping strategies (% households)		
	Stress coping	**Crisis coping**	**Emergency coping**
Kiryandongo	Borrowed money (13%)	Sold productive assets (7%)	Begged (9%)
Kyangwali	Borrowed money (33%)	Consumed seed stock (9%)	Begged (16%)
Koboko	Borrowed money (34%)	Sold productive assets (6%)	Begged (21%)
Kyaka II	Borrowed money (29%)	Consumed seed stock (26%)	Begged (30%)
Nakivale	Borrowed money (44%)	Consumed seed stock (29%)	Begged (20%)
Adjumani S. Sudan influx	Borrowed money (16%)	Reduced essential nonfood expenditure (2%)	Begged (14%)
Adjumani Old caseload	Borrowed money (31%)	Consumed seed stock (8%)	Begged (23%)
Oruchinga	Borrowed money (50%)	Consumed seed stock (39%)	Begged (31%)
Rwamwanja	Borrowed money (25%)	Consumed seed stock (15%)	Begged (14%)
Rhino Camp	Spent savings (11%)	Consumed seed stock (3%)	Begged (9%)

3.4 Summary note on vulnerability of households

Summative analyses were conducted to show where the most vulnerable are located. For analysis purposes, most vulnerable households have been defined as those meeting the following criteria based on findings in the previous sections:

- Female headed
- Have no access to land
- Have no income earner present in the household

Analyses showed that the most vulnerable households are located in Koboko, Rhino camp and Adjumani S. Sudan influx as shown in **Figure 12** below. Notable characteristics of these households were:

- Poorer food consumption scores
- Comparatively fewer years of schooling
- Own much less of livestock; over 95% do not own goats and negligible proportions own poultry
- Higher application of stress and emergency coping strategies (recall that the most common stress and emergency coping strategies were borrowing money and begging respectively).

These households need urgent support to sustain their food consumption and to become self-reliant.

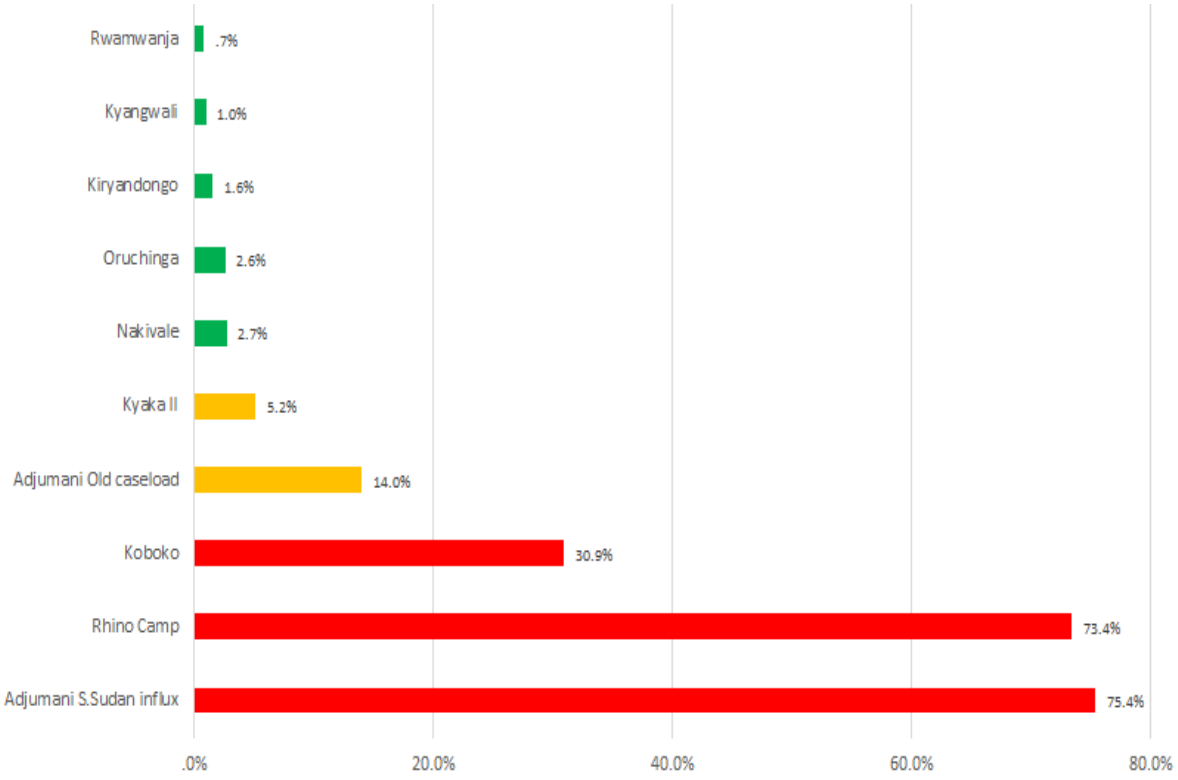

Figure 12: Female headed households without 1) access to land and 2) income earner

3.5 Comparing FSNA 2014 findings to FSNA 2013 for Kyangwali settlement

Limited comparisons were made on the findings of the FSNA 2014 and 2013 for Kyangwali settlement[10] as shown in **Table 22** below:

Livestock production: Data suggests that livestock ownership remains low among refugee households, but with improvement in the percentage of households that own goats and poultry. Households that rear livestock however still face the same constraints mostly related to livestock parasites/diseases and the lack of money to afford livestock and related veterinary services.

Income & livelihoods: Fewer households reported depending on food aid in FSNA 2014 (6%) compared to 37% in FSNA 2013. The principal livelihood sources in the settlement however remain food crop production/sales and agricultural wage labour. Findings suggest an increased number of households taking on more sustainable livelihoods.

Food consumption: Data suggests food consumption scores have worsened since the last assessment, with more households having moved to poor and borderline FCS.

[10] FSNA 2013 only covered Kyangwali refugee settlement

This might be due to a multiplicity of factors including the fact that majority (64%) of households in Kyangwali reported having produced less food this year compared to last year (refer to **Figure 8**). The main sources of food consumed however remain food assistance (particularly for cereals, legumes and oil), own production and market purchases.

Table 22: Comparison between FSNA 2014 and FSNA 2013 findings[11]

Measure		FSNA 2014	FSNA 2013
Percent of households that owned livestock	Goats	14%	7%
	Poultry	24%	11%
Constraints to livestock production		Livestock parasites/diseases, lack of money	
Main income sources	Food crop production/sales	36%	25%
	Agricultural wage labour	26%	17%
Percent of households with Acceptable, Borderline and Poor Food Consumption Scores	Acceptable	73%	82%
	Borderline	24%	17%
	Poor	3%	2%
Main food sources		Food assistance, Own production, Market purchases	

3.6 Nutrition status of children

3.6.1 Prevalence of Global Acute Malnutrition (GAM), Severe Acute Malnutrition (SAM), stunting and underweight

Indicators of malnutrition significantly improved compared to the previous assessments (2013 and Feb 2014) in all refugee settlements with Global Acute Malnutrition (GAM) falling in acceptable levels in most settlements except in Adjumani, Kiryandongo and Kyaka II **(Table 23)** (Detailed findings with ENA software plausibility checks of individual settlements are provided in Addendum to this report). However, even in

[11] Due to differences in survey & questionnaire design, a comprehensive comparison is not possible, thus only a few parameters are compared here

Adjumani and Kiryandongo, there are significant improvement since prevalence was above 20% in the February 2014 assessment.

Table 23: Prevalence of GAM, SAM*, stunting and underweight based on z-scores, according to settlement

Settlement	GAM % (95%CI)	SAM % (95%CI)	Stunting % (95%CI)	Underweight % (95%CI)
Nakivale (N=783)	3.6 (2.5 - 5.2)	1.4 (0.8 - 2.5)	36.2 (32.9 - 39.6)	11.7 (9.7 - 14.2)
Oruchinga (N=336)	4.3 (2.6 - 7.0)	1.2 (0.5 - 3.1)	40.7 (35.6 - 46.1)	17.3 (13.6 - 21.7)
Kyaka II (N=471)	5.9 (4.1 - 8.6)	2.4 (1.3 - 4.3)	41.6 (37.1 - 46.4)	12.7 (9.9 - 16.2)
Kyangwali (N=503)	3.0 (1.8 - 4.9)	0.8 (0.3 - 2.1)	45.8 (41.5 - 50.2)	11.9 (9.4 - 15.1)
Rwamwanja (N=476)	3.4 (2.1 - 5.4)	0.6 (0.2 - 1.9)	41.4 (37.0 - 45.9)	15.1 (12.2 - 18.6)
Kiryandongo (N=382)	8.5 (6.1 - 11.7)	1.9 (0.9 - 3.8)	12.8 (9.8 - 16.6)	7.3 (5.1 - 10.3)
Rhino Camp (N=271)	5.2 (3.1 - 8.5)	1.5 (0.6 - 3.7)	11.9 (8.6 - 16.3)	4.8 (2.8 - 8.0)
Adjumani Old caseload (N=103)	5.9 (2.8 - 12.4)	1.0 (0.2 - 5.4)	14.4 (8.8 - 22.8)	8.8 (4.7 - 15.9)
Adjumani S.Sudan influx (N=609)	9.0 (7.0 - 11.5)	1.7 (0.9 - 3.0)	9.0 (7.0 - 11.6)	6.7 (5.0 - 9.0)
Koboko (N=309)	1.9 (0.9 - 4.2)	1.3 (0.5 - 3.3)	27.4 (22.7 - 32.6)	6.8 (4.5 - 10.2)
Combined (N=4198)	5.1 (4.5 - 5.8)	1.4 (1.1 - 1.8)	30.0 (28.7 - 31.5)	10.7 (9.8 - 11.6)

*The prevalence of oedema was nine cases (0.2 %)

The decrease in GAM rates in the North/West Nile settlements were large and unusual, that is, from 20% to the current rates, and possible explanation could be derived from program activities in the region during 2014. After the last survey in February 2014, targeted supplementary and therapeutic feeding program for treatment of SAM and MAM were instituted in the North/West Nile settlements.

According to the performance data, over 2554 children with severe acute malnutrition with medical complications, and severe acute malnutrition without medical complications were treated in the Adjumani, Arua and Kiryandongo settlements by the end of November 2014. In addition 501 children with moderate acute malnutrition were enrolled and treated for acute malnutrition. Considering the February 2014 assessment estimates, coverage of SFC and TFC could have reached over 80% of the malnourished children, which is commendable.

It was also further acknowledged that nutrition treatment performance indicators for SAM children enrolled in the outpatient therapeutic programme (OTC) were reported to have been above the sphere standards as indicated below:

The performance indicators for severe acute malnutrition without oedema (marasmus) children were as follows:

- *recovery rate 85.1%,*
- *death rate 0.8%,*
- *default rate 7.3%,*
- *referral rate 4.2%*
- *non-cured 2.6%, and*
- *the mean length of stay (days) was 26 days*

The performance indicators for severe acute malnutrition with oedema (kwashiorkor) children were:

- *recovery rate 91.4%,*
- *death rate 1.0%,*
- *default rate 5.3%,*
- *referral rate 1.9%*
- *non-cured 0.5%, and*
- *the mean length of stay (days) was 18.4*

The average coverage of the vitamin A supplementations, measles vaccinations and deworming programs during the period of January to September 2014 among eligible refugee children (new arrivals) based on national protocols was also above 90% for all settlement in the North/West Nile, although this program information on immunization, deworming and vitamin A supplementation could not be collaborated with current survey findings. Nonetheless, we believe that the gains in nutrition status are justifiable.

3.6.2 Prevalence of acute malnutrition based on MUAC

Based on Mid Upper Arm Circumference (MUAC), less than 1.0% of the children had severe malnutrition (<11.5 cm), 2.6% had moderate and 96.7% normal **(Table 24)**.

Table 24: Malnutrition based on MUAC measurement among children 6-59 months, according to settlement

District	Severe (<11.5)	Moderate (11.5-12.4 cm)	Normal (12.5 and above)
Nakivale (N=778)	1.4%	3.1%	95.5%
Oruchinga (N=330)	1.8%	3.3%	94.8%
Kyaka II (N=420)	0.5%	3.6%	96.0%
Kyangwali (N=500)	0.2%	3.0%	96.8%
Rwamwanja (N=470)	0.9%	4.5%	94.7%

District	Severe (<11.5)	Moderate (11.5-12.4 cm)	Normal (12.5 and above)
Kiryandongo (N=379)	1.1%	1.1%	97.9%
Rhino Camp (N=267)	0.7%	0.0%	99.3%
Adjumani Old caseload (N=101)	0.0%	3.0%	97.0%
Adjumani S.Sudan influx (N=596)	0.2%	1.7%	98.2%
Koboko (N=308)	0.0%	1.3%	98.7%
Combined (N=4149)	0.7%	2.6%	96.7%

It is important to note that even among settlements in the North/West Nile i.e. dominated by South Sudanese, MUAC measurements were considerably better contradicting findings from other studies that have found that Nilotic population have lower MUAC measurements.

3.6.3 Anemia status of children 6-59 months

Classification of anemia was based on WHO cuts-offs. That is, hemoglobin less that 7 g/dl classified as severe anemia, 7-9.9 g/dl as moderate anemia, 10-10.9 g/dl as mild anemia and 11.0 g/dl or higher as normal. Although there was modest improvement from about 60% or higher of anemia prevalence observed in February 2014 to about 50% in the current survey **(Table 25),** the overall prevalence of anemia in the majority of the settlement was still classified as "High or Severe". Anemia in children was therefore a severe public health problem in the majority of settlements. There is need to intensify all nutrition, health and WASH interventions including iron and folate supplementation, bed net and deworming in all settlement. Micronutrient powder supplementation should be introduced immediately since there is already conclusive evidence on their effect on anemia reduction.

Table 25: Anemia status of children 6-59 months, according to refugee settlement

Settlement	Severe anemia	Moderate anemia	Mild anemia	Total anemic	Not anemic
Rhino Camp (N=108)	1.9%	38.9%	26.9%	67.6%	32.4%
Koboko (N=307)	2.3%	33.9%	28.3%	64.5%	35.5%
Adjumani S.Sudan influx (N=303)	4.3%	31.0%	24.4%	59.7%	40.3%
Kyangwali (N=236)	0.8%	31.4%	20.3%	52.5%	47.5%
Rwamwanja (N=246)	3.3%	26.4%	19.5%	49.2%	50.8%
Kyaka II (N=333)	3.3%	27.3%	17.7%	48.3%	51.7%
Oruchinga (N=260)	2.7%	17.3%	23.1%	43.1%	56.9%
Kiryandongo (N=280)	0.4%	21.8%	18.9%	41.1%	58.9%
Nakivale (N=569)	1.6%	17.9%	17.0%	36.5%	63.4%
Combined (N=2642)	2.3%	25.7%	21.0%	49.0%	51.1%

3.7 Nutrition status of mothers

3.7.1 Underweight status using Body Mass Index (BMI)

There has been marked reduction in underweight among South Sudanese mothers 15-49 years from about 56% in the February 2014 to about 24% in the current assessment. Mothers in Rhino camp, Adjumani and Kiryandongo were more wasted compared to mothers in others settlements **(Table 26)**. In the West and South West settlements, the challenge to maternal nutrition was the increasing proportion of overweight and obese mothers. There is need to start educating mothers about the dangers of obesity and healthy life styles in refugee settlements.

Table 26: BMI status of mothers 15-49 years

Settlement	Severely underweight (<16.5)	Moderately underweight (16.5-18.5)	Normal (18.5-25)	Overweight (25-30)	Obese (>30)
Rhino Camp (N=215)	12.1%	28.8%	52.6%	4.2%	2.3%
Adjumani S.Sudan influx (N=487)	5.3%	25.1%	62.4%	5.5%	1.6%
Kiryandongo (N=291)	3.8%	15.5%	68.7%	9.6%	2.4%
Adjumani Old caseload (N=86)	0.0%	16.3%	69.8%	11.6%	2.3%
Koboko (N=268)	1.1%	8.2%	79.9%	8.2%	2.6%
Nakivale (N=653)	0.9%	4.0%	66.5%	23.4%	5.2%
Oruchinga (N=261)	0.4%	9.2%	72.4%	16.1%	1.9%
Kyaka II (N=349)	0.6%	4.3%	67.9%	22.1%	5.2%
Kyangwali (N=405)	0.2%	3.0%	68.6%	22.0%	6.2%
Rwamwanja (N=344)	0.0%	1.7%	66.6%	22.1%	9.6%
Combined (N=3359)	2.3%	10.4%	67.2%	15.9%	4.3%

3.7.2 Anemia status of mothers

There were no major improvements in the anemia status compared to previous surveys. Anemia prevalence among mothers 15-49 years was high with up to 33.1% of mothers, overall having anemia. Even higher proportions were observed in the North/West Nile settlement especially Rhino camp and Kiryandongo settlements **(Table 27)**

Table 27: Anemia prevalence among women 15-49 years according to settlement

Settlement	Severe anemia	Moderate anemia	Mild anemia	Total anemic	Not anemic
Rhino Camp (N=87)	1.1%	27.6%	29.9%	58.6%	41.4%
Kiryandongo (N=213)	0.5%	18.8%	23.0%	42.3%	57.7%
Koboko (N=294)	0.7%	14.6%	23.8%	39.1%	60.9%
Adjumani S.Sudan influx (N=257)	1.2%	21.0%	16.0%	38.2%	61.9%
Kyangwali (N=179)	0.6%	19.0%	17.9%	37.5%	62.6%
Kyaka II (N=296)	0.0%	12.8%	17.6%	30.4%	69.6%
Nakivale (N=486)	0.6%	10.5%	15.8%	26.9%	73.0%
Rwamwanja (N=203)	0.0%	10.8%	14.3%	25.1%	74.9%
Oruchinga (N=201)	0.0%	10.9%	9.5%	20.4%	79.6%
Combined (N=2216)	0.5%	14.8%	17.8%	33.1%	66.9%

3.8 Infant and young child feeding practices

3.8.1 Breastfeeding practices

Exclusive breastfeeding rate – using 24-hour recall – among children 0-5 months was above 90% in most settlements except Kyaka II, Rwamwanja, Nakivale and Adjumani S. Sudan influx **(Figure 13)**.

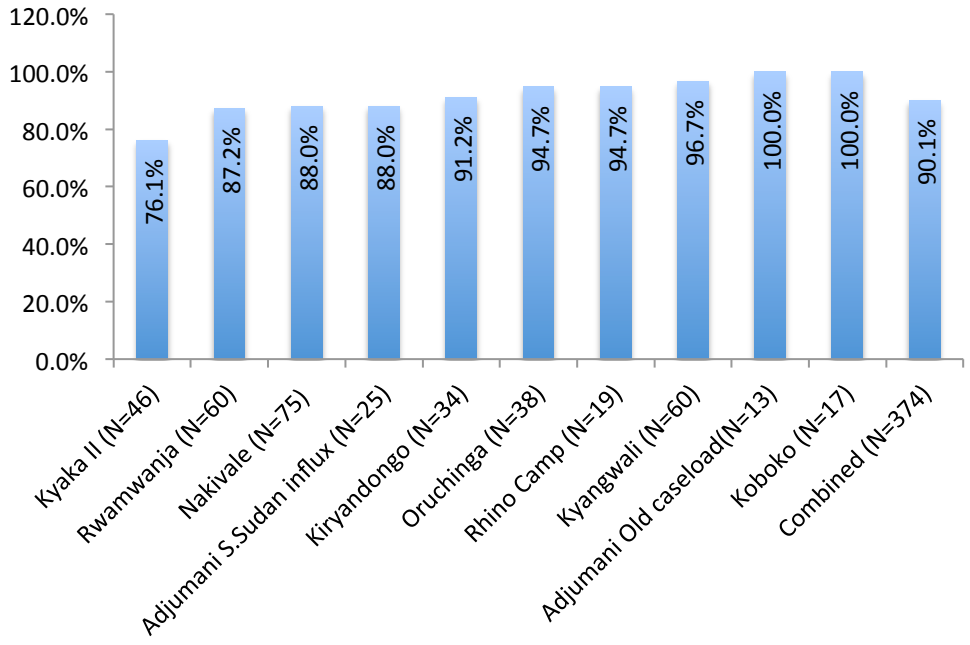

Figure 13: Exclusive breastfeeding rates among children 0-5 months, according to settlement

These findings are better than the national averages for most East African Countries, which range between 40-60% and better than the highest figure of 68% reported in the

2013 report of refugee settlements. Despite the high prevalence, it should be noted that the 24-hour recall grossly over estimates rates of exclusive breastfeeding.[12] There is therefore need for continued promotion of exclusive breastfeeding especially in Kyaka II.

3.8.2 Introduction of complementary feeding

Introduction of complementary feeding was not timely at all as was previously observed. Large proportions, for example up to 71.1% of children 6-8 months in Adjumani, were exclusively breastfed the previous day of the assessment **(Figure 14)** when they should have received transitional complementary foods, in good consistency and nutrient rich, since mothers milk alone is no longer enough by this age. A few infants were also no longer breastfeeding and solely depended on other foods. There should be health education on breastfeeding and complementary feeding, which should be done delicately to ensure that the two important practices are well articulated to mothers. The importance of emphasizing the fact that too much of either of the practices is not necessarily better and thus the need for a balance at the right time

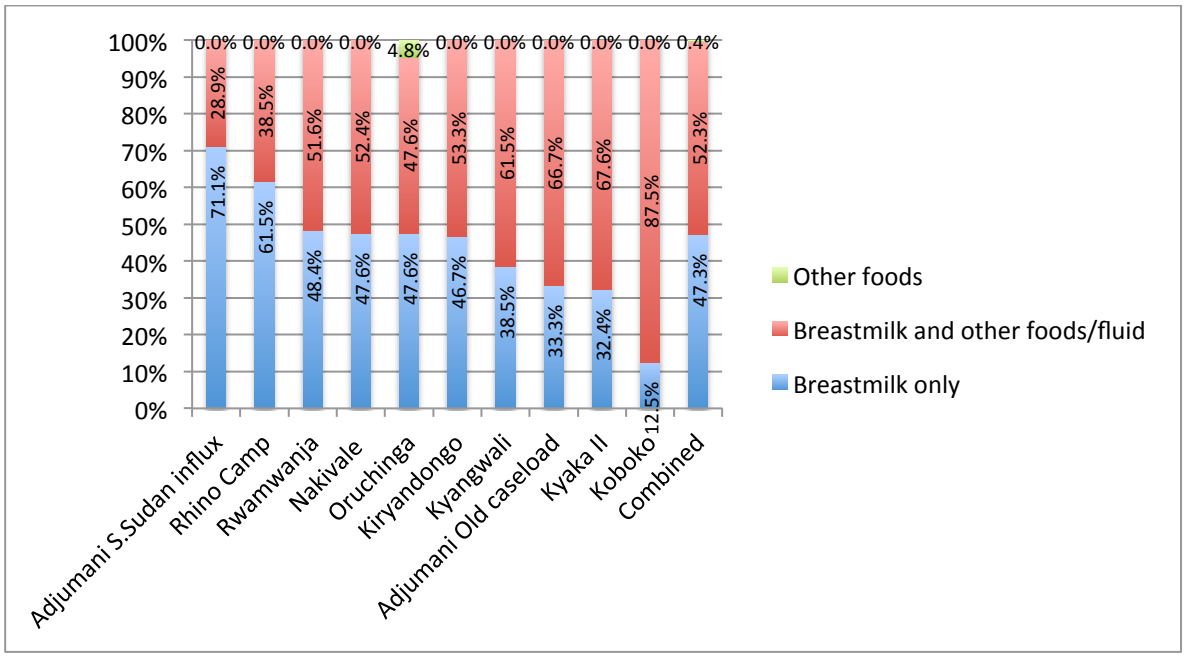

Figure 14: Proportions of children 6-8 months who did not receive complementary food 24 hours before the assessment, according to settlement

[12] Engebretsen IM, Wamani H, Karamagi C, et al Low adherence to exclusive breastfeeding in Eastern Uganda: A community-based cross-sectional study comparing dietary recall since birth with 24-hour recall. *BMC Pediatr.* 2007;**1**;7:10

3.8.3 Minimum meal frequency (complementary food)

Among children 6-23 months there were many who had receive zero meals or had only been exclusively breastfed in the 24-hour preceding the assessment **(Figure 15)**. On average up to 44.6% of the children received less than three meals (minimum meal frequency). Meal frequency and quality should therefore be improved in all refugee settlements.

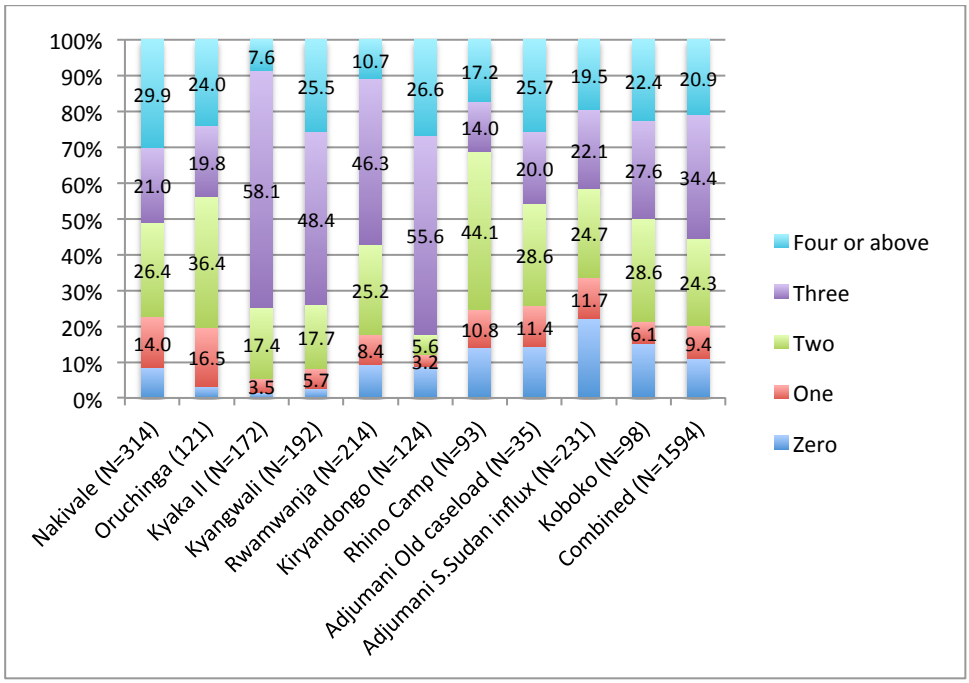

Figure 15: Meal frequency among children 9-23 according to settlement

Among children 6-23 months who received two or less meals, 44.9% of the mothers/caregivers sited lack of food to give as the main reason while 25.0% though breast milk alone was enough for the baby, 9.3% thought that the number of meals were enough for the babies, 3.0% said mothers were too busy and 17.7% sited other reasons such as child did not want or had no appetite or child was sick.

3.8.4 Minimum dietary diversity

Individual dietary diversity scores (IDDS), which is a measure of the diversity of food groups contained in the diet consumed by children 6-23 months was low (not acceptable). IDDS were assessed based on seven food groups namely: cereals, pulses and oils, meats, eggs, milk, vitamin A rich fruits and vegetables, and other fruits and

vegetables.[13] Minimum dietary diversity has been defined as the proportion of children who received foods from at least four food groups the previous day[14]. In the current assessment 74.1% of the children were having low or unacceptable IDD **(Figure 16)**. Nutrient diversity of food consumed by children at household level is key for sustainability of good nutrition status of children. It is therefore important to address food security issues discussed before (above), while continuing to promote adequate complementary feeding practices.

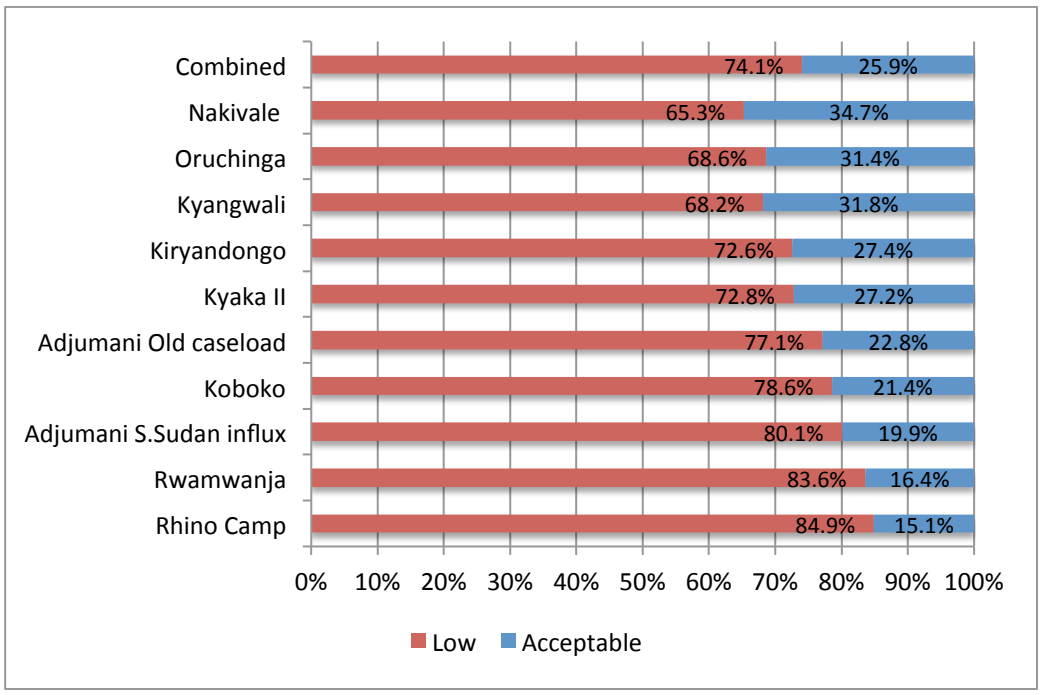

Figure 16: Minimum acceptable dietary diversity for children 6-23 months according to settlement

3.8.5 Minimum acceptable diet

Minimum acceptable diet, the combination of children who had minimum acceptable diet diversity and those who had minimum meal frequency were only 1.2% among children 6-23 months **(Figure 17)**. This was too low and unacceptable and calls for the need for continued blanket supplementary feeding program and nutrition education for mothers. There is strong justification to improve feeding because all children (100%) who had minimum acceptable diet had no GAM and were not underweight, while 89.5% were not stunted.

[13] WHO Indicators for assessing infant and young child feeding practices part 2: measurements.
[14] Low $\leq$ 3; acceptable $\geq$ 4

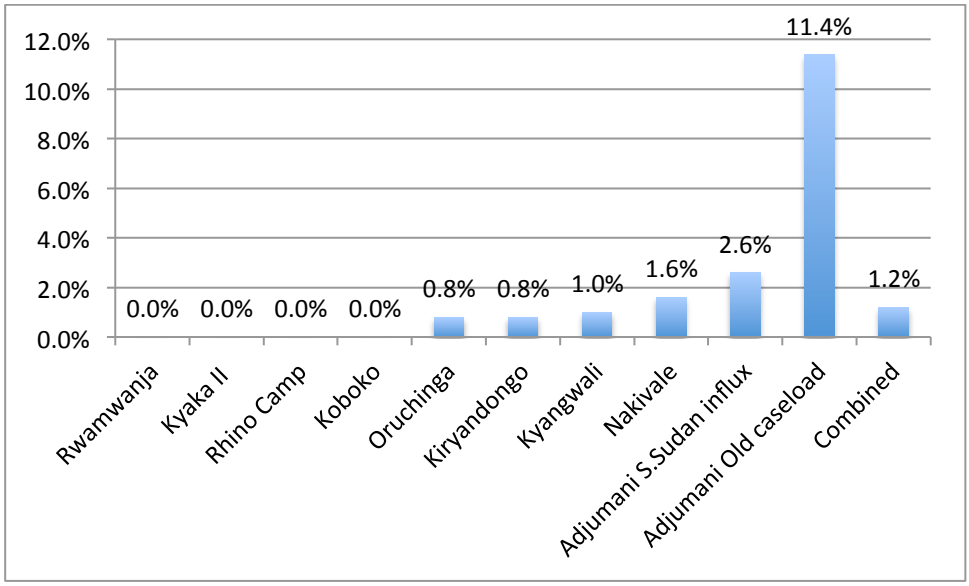

Figure 17: Proportion of children 6-23 months who had minimum acceptable diet, according to settlement:

3.8.6 Summary of standard IYFC indicators

Additional IYCF indicators showed that consumption of iron rich foods was low, however use of bottles to feed infants and young children was almost non-existent in all settlement **(Table 28).**

Table 28: Summary findings on IYCF indicators

Indicator	Age range	Nakivale %	Oruchinga %	Kyaka II %	Kyangwali %	Rwamwanja %	Kiryandongo %	Rhino Camp %	Adjumani %	Koboko %
Timely initiation of breastfeeding	0-23 months	82.5	89.7	98.1	81.4	98.4	89.1	75.2	75.6	65.7
Exclusive breast feeding under 6 months	0-5 months	88.0	94.7	76.1	96.7	87.2	91.2	94.7	88.0	100
Continued breast feeding at 1 year	12-15 months	82.0	77.2	83.6	70.6	81.8	75	89.8	67.9	82
Continued breast feeding at 2 years	20-23 months	78.4	56.5	72.7	61.6	64	61.2	86.3	54.2	78.4
Introduction of solid, semi-solid or soft foods	6-8 months	52.4	47.6	67.6	61.5	51.6	53.3	38.5	28.9	87.5
Consumption of iron-rich or iron-fortified foods	6-23 months	38.5	53.7	42.2	45.8	42.1	37.9	30.1	25.5	42.9
Bottle feeding	0-23 months	0.0	0.0	0.0	0.4	0.0	0.0	0.9	2.4	0.0

3.9 Care-seeking practices, morbidity and mortality

3.9.1 Immunization, vitamin A and deworming coverage, children 12-23 months

Although the majority of the children 12-23 months were reported to have been immunized, supplemented with vitamin A and dewormed in the past 6 six months, most of the settlements failed to meet national targets of 85% and UNCHR target of 95%. If the mothers' history was to be considered, the coverage for measles was about 75%. On average about 25% of children did not own cards. Rwamwanja and Kyaka II settlements were the worst performers **(Table 29).**

Table 29: Measles immunization coverage among children 12-23 months

Settlement	Yes with card	Yes without card	No with card	No without card
Koboko (N=100)	28.0%	60.0%	4.0%	8.0%
Rhino Camp (N=95)	28.4%	54.7%	7.4%	9.5%
Rwamwanja (N=217)	32.7%	21.2%	20.3%	25.8%
Adjumani S.Sudan influx (N=239)	36.8%	35.1%	15.9%	12.1%
Kiryandongo (N=125)	43.2%	37.6%	10.4%	8.8%
Kyaka II (N=175)	44.0%	10.3%	35.4%	10.3%
Kyangwali (N=194)	52.6%	25.3%	10.8%	11.3%
Nakivale (N=326)	69.6%	17.8%	9.2%	3.4%
Oruchinga (N=124)	80.6%	8.1%	8.1%	3.2%
Adjumani Old caseload (N=37)	81.1%	10.8%	5.4%	2.7%
Combined (N=1632)	49.3%	26.2%	14.2%	10.4%

Apparently DPT 3 coverage was better than measles coverage **(Table 30)**, which might imply lack of adequate health education to mothers to take older children for the measles vaccine, and also a case of missed opportunities on the part of health care providers.

Table 30: DPT 3 coverage among children 12-23 months

Settlement	Yes with card	Yes without card	No with card	No without card
Koboko (N=100)	32.0%	64.0%	0.0%	4.0%
Rhino Camp (N=95)	32.6%	61.1%	3.2%	3.2%
Rwamwanja (N=217)	46.5%	30.0%	4.6%	18.9%
Kiryandongo (N=125)	48.8%	42.4%	3.2%	5.6%
Adjumani S.Sudan influx (N=239)	54.8%	35.1%	3.3%	6.7%
Kyangwali (N=194)	58.2%	30.4%	4.6%	6.7%
Kyaka II (N=175)	65.7%	15.4%	11.4%	7.4%
Nakivale (N=326)	77.0%	19.3%	2.1%	1.5%
Oruchinga (N=124)	85.5%	12.9%	1.6%	0.0%
Adjumani Old caseload (N=37)	86.5%	10.8%	0.0%	2.7%
Combined (N=1632)	59.6%	30.2%	3.9%	6.3%

Both deworming and vitamin A coverage were lower than either measles or DPT 3 coverage **(Tables 31 and 32)**. Koboko, Rhino Camp, Rwamwanja and Kyaka II settlements consistently performed badly calling for a deliberate effort to improved primary health care services in the settlements in order to sustain gains in GAM prevalence. Reasons as to why settlements like Rwamwanja has declined should be established and worked upon.

Table 31: **De-worming coverage among children 12-23 months**

Settlement	Yes with card	Yes without card	No with card	No without card
Rhino Camp (N=95)	22.1%	57.9%	9.5%	10.5%
Rwamwanja (N=217)	23.5%	21.2%	30.4%	24.9%
Koboko (N=100)	25.0%	63.0%	5.0%	7.0%
Adjumani S.Sudan influx (N=239)	32.2%	38.9%	16.7%	12.1%
Nakivale (N=326)	38.3%	23.6%	30.4%	7.7%
Kiryandongo (N=125)	41.6%	39.2%	12.0%	7.2%
Kyangwali (N=194)	46.4%	29.9%	16.5%	7.2%
Kyaka II (N=175)	49.7%	10.3%	30.9%	9.1%
Oruchinga (N=124)	53.2%	16.1%	23.4%	7.3%
Adjumani Old caseload (N=37)	56.8%	29.7%	5.4%	8.1%
Combined (N=1632)	37.7%	30.0%	21.5%	10.8%

Table 32: **Vitamin A coverage among children 12-23 months**

Settlement	Yes with card	Yes without card	No with card	No without card
Koboko (N=100)	24.0%	68.0%	5.0%	3.0%
Rhino Camp (N=95)	25.3%	55.8%	9.5%	9.5%
Rwamwanja (N=217)	26.3%	21.2%	27.2%	25.3%
Adjumani S.Sudan influx (N=239)	34.7%	38.9%	15.5%	10.9%
Kiryandongo (N=125)	46.4%	40.8%	6.4%	6.4%
Nakivale (N=326)	53.4%	24.2%	16.0%	6.4%
Kyangwali (N=194)	56.2%	30.9%	6.2%	6.7%
Kyaka II (N=175)	57.1%	10.3%	24.0%	8.6%
Oruchinga (N=124)	67.7%	18.5%	7.3%	6.5%
Adjumani Old caseload (N=37)	70.3%	21.6%	5.4%	2.7%
Combined (N=1632)	45.3%	30.6%	14.4%	9.7%

Child health cards should be supplied to all the settlements in adequate amounts.

3.9.2 Morbidity

The two-week prevalence of common childhood illness was high but similar to what is commonly observed in studies done elsewhere in Uganda **(Figure 18)**. The burden of common childhood illness was less in Kiryandongo, Rwamwanja and Kyangwali settlements. The high prevalence of diarrhea in settlements should be addressed since there is a correlation with settlements that do not have latrines (refer to figure 22, below). However, overall diarrhea prevalence was lower than reported in previous studies. Over 50% of the children were reported to have suffered from ARI.

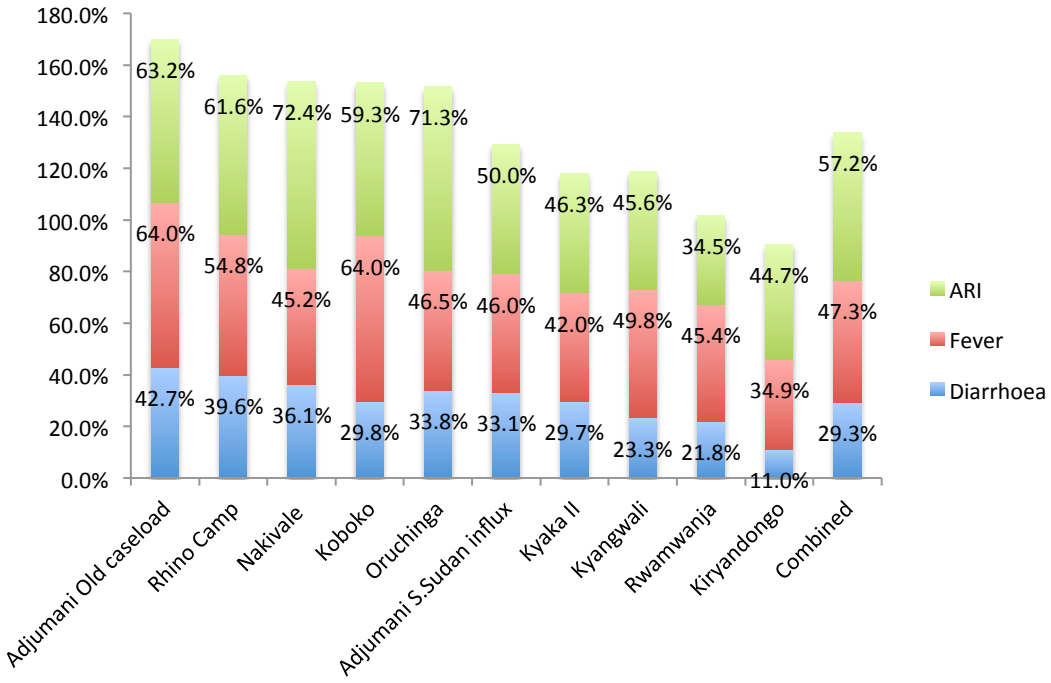

Figure 18: Prevalence of common childhood illness two-week prior survey according to settlement

Unfortunately of the children with diarrhea, only about half, received ORS when all settlements were combined **(Figure 19)**. Use of ORS corresponded with prevalence of diarrhea, i.e. settlements with high prevalence tended to use ORS more. These gaps in service delivery should be addressed across board but more so in Rwamwanja, Kyangwali, Kiryandongo and Kyaka II.

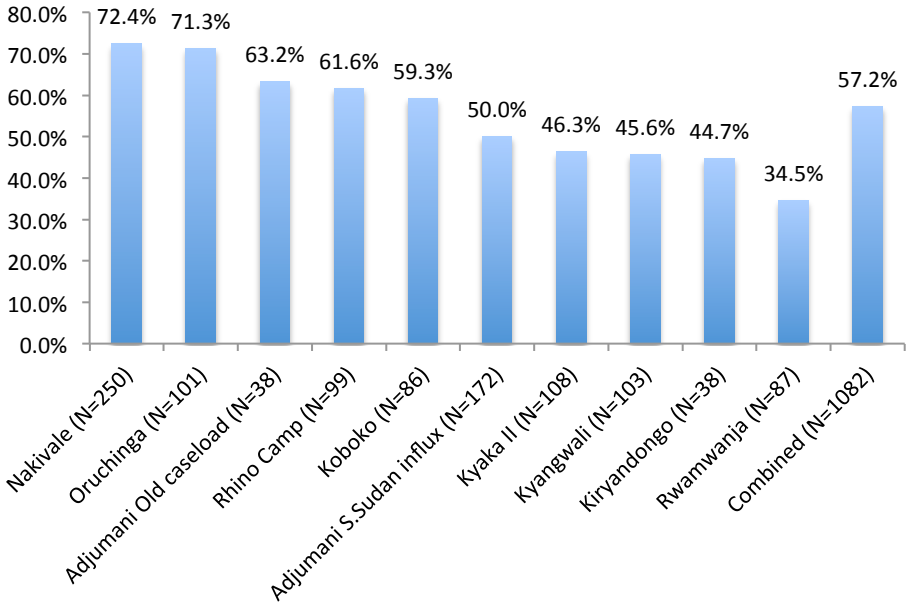

Figure 19: Proportion of children with diarrhea that were treated with ORS

3.9.3 Mosquito net use and treatment coverage

Ownership of mosquito nets was low and less than 50% in most West and Southwest settlements except Kyaka II where it was 68.5% **(Figure 20)**. The target of over 80% ownership of mosquito net was not met in almost all settlements. Apparently ownership of nets did not have inverse correlation with fever prevalence (refer to figure 17, above).

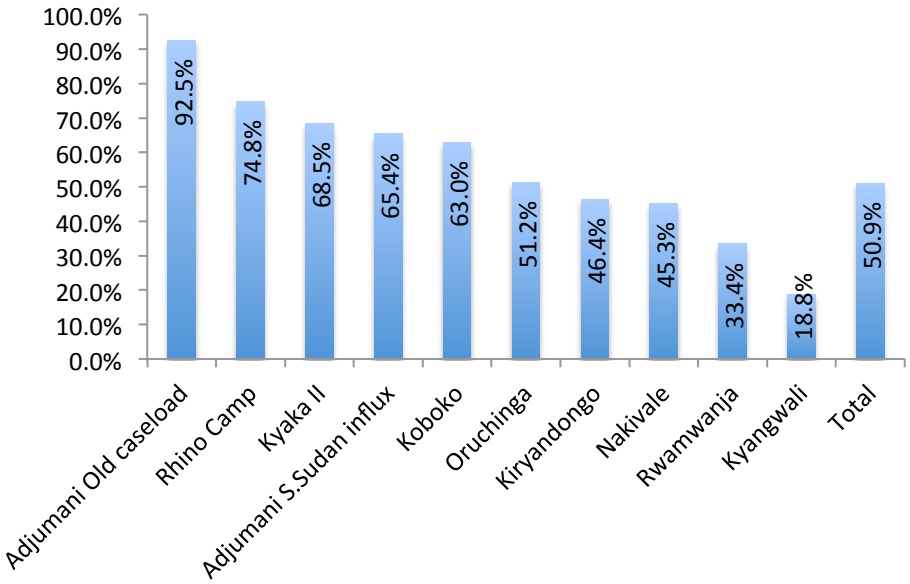

Figure 20: Proportion of household owning at least one mosquito net according to settlement

Of the households that owned nets, the median number of nets owned was two for North/West Nile settlements and the median was one for West and Southwest settlements **(Table 33)**.

Table 33: **Household number of average mosquito nets that can be used to sleep**

Settlement	Mean	Std. Deviation	Median
Rhino Camp (N=205)	2.4	1.2	2
Adjumani Old caseload (N=98)	2.2	1.0	2
Kiryandongo (N=207)	2.1	1.1	2
Adjumani S.Sudan influx (N=407)	2.0	1.0	2
Nakivale (N=334)	1.7	0.9	1
Kyaka II (N=371)	1.7	1.0	1
Koboko (N=249)	1.7	0.8	2
Oruchinga (N=155)	1.5	0.7	1
Kyangwali (N=111)	1.5	0.7	1
Rwamwanja (N=181)	1.4	0.7	1
Total (N=2318)	1.8	1.0	2

Mosquito net treatment was minimal at 3% in Adjumani, Nakivale and Oruchinga, and 1% or less in the rest of the settlements.

Among children 0-59, about half (57.4%) slept under a mosquito net **(Figure 21).** A better mosquito net coverage was observed among pregnant women. The number of pregnant women in all settlements was about 472 and 94.4% reported to have slept under a mosquito net. Despite mixed findings on these indicators, net distribution programs should be intensified to increase coverage, and number of nets in households.

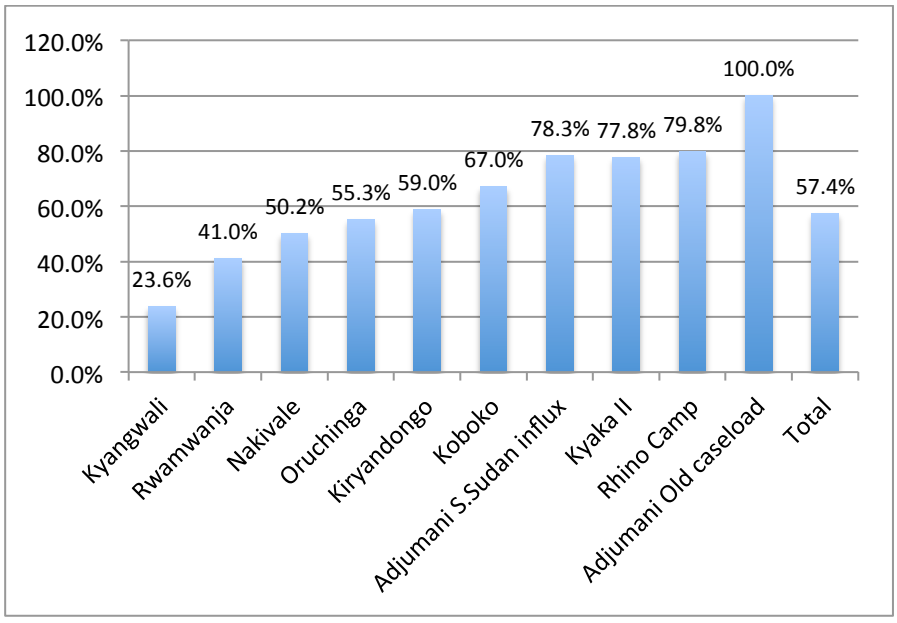

Figure 21: **Proportion of children 0-59 who slept under net the night before the survey, according to settlement**

3.10 Water and sanitation

3.10.1 Safe water sources and coverage

The majority of the households in most settlements reported to receive water from boreholes **(Table 34).** Piped water coverage was highest and over 50% in Nakivale settlement. Provision of safe water should be sustained at such high levels by regular maintenance of boreholes.

Table 34: Water sources according to refugee settlement

Settlement	Piped water	Protected well or spring	Borehole	Open well or spring	Surface water (pond, stream, river)	Rain water	UNHCR Tanker/ truck
Nakivale (N=738)	55.7%	0.3%	25.2%	2.6%	14.6%	0.0%	1.6%
Oruchinga (304)	1.0%	9.2%	87.8%	0.3%	1.3%	0.3%	0.0%
Kyaka II (N=543)	3.3%	0.4%	93.6%	0.2%	0.6%	0.0%	2.0%
Kyangwali (N=590)	7.6%	0.0%	83.6%	0.2%	3.1%	0.3%	5.3%
Rwamwanja (N=542)	6.1%	0.0%	92.1%	1.3%	0.6%	0.0%	0.0%
Kiryandongo (N=446)	0.2%	0.2%	99.3%	0.0%	0.2%	0.0%	0.0%
Rhino Camp (N=274)	0.0%	0.0%	98.2%	0.0%	0.0%	0.0%	1.8%
Adjumani Old caseload (N=107)	0.0%	0.0%	99.1%	0.0%	0.0%	0.0%	0.9%
Adjumani S.Sudan influx (N=662)	0.0%	0.2%	89.1%	0.0%	0.0%	0.2%	10.6%
Koboko (N=395)	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Combined (N=4601)	11.1%	0.7%	81.6%	0.6%	3.0%	0.1%	2.8%

3.10.2 Household daily water usage

The mean (SD) water used by household was about 60 liters **(Table 35)**.

Table 35: Amount of water used by households, according to refugee settlement

Settlement	Mean	Std. Deviation	Median
Nakivale (N=681)	48.5	36.8	40
Oruchinga (N=261)	48.8	25.9	40
Kyaka II (N=506)	54.6	27.0	50
Kyangwali (563)	62.2	33.2	60
Rwamwanja (N=530)	50.5	22.9	40
Kiryandongo (N=428)	72.8	37.8	60
Rhino Camp (263)	78.1	45.9	60
Adjumani Old caseload (N=103)	86.2	46.4	80
Adjumani S.Sudan influx (N=645)	66.8	41.7	60
Koboko (N=364)	76.8	40.3	80
Total (N=4344)	61.4	37.1	60

Since the median household population was 4 persons and the recommended standard is 20 liters of water per person per day, the amount of available water was therefore still below the recommended standard especially in settlement in the west and south west.

3.10.3 Latrine coverage

The number of households without latrines in settlements has reduced from about 37% in the previous assessment to about 10% **(Figure 22).** Lack of latrines was highest in settlements in the North/West Nile especially Adjumani and Rhino Camp. Since diarrhea prevalence is high in these settlements, WASH teams need to urgently address the situation to ensure 100% coverage.

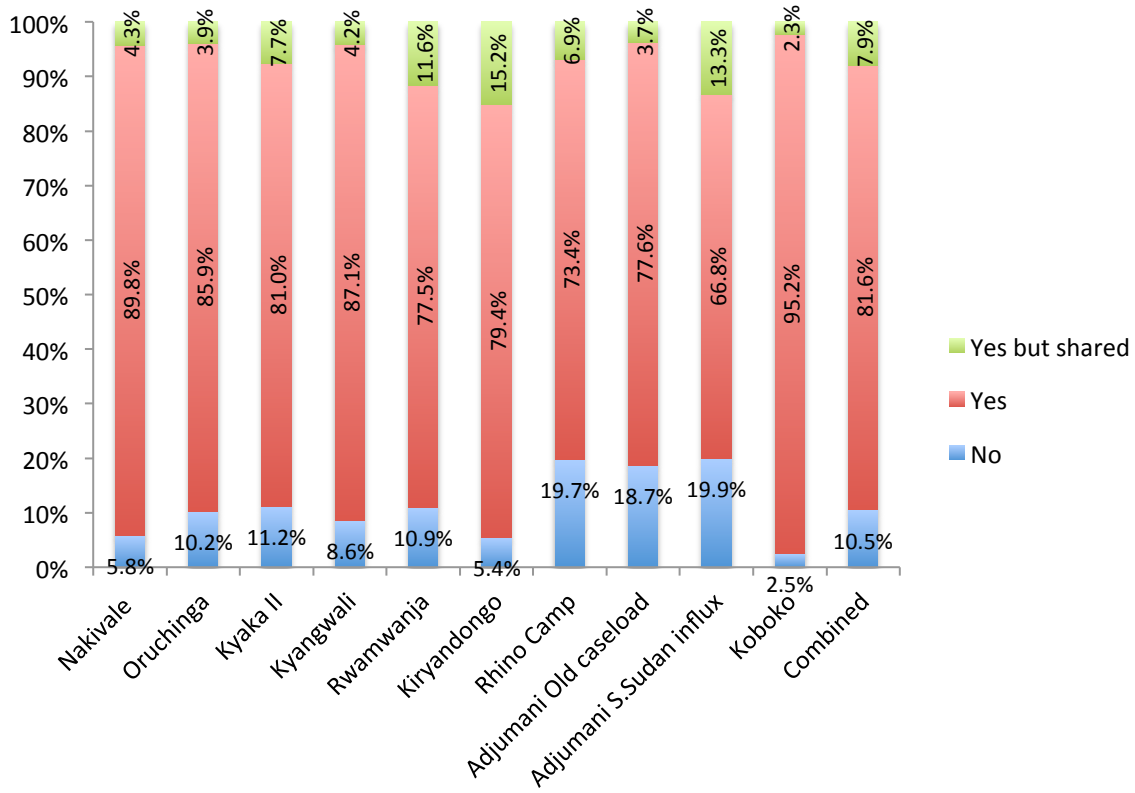

Figure 22: Household latrine ownership

The majority of the toilet facilities were open pit with slab and open pits without any super structure **(Table 36)**.

Table 36: **Type of toilet facilities used by refugees according to settlement**

Settlement	Flush toilet	Pit latrine with slab/VIP	Open pit (no super structure)	Bucket latrine
Nakivale	0.4%	39.1%	60.4%	0.0%
Oruchinga	0.0%	63.7%	35.2%	1.1%
Kyaka II	0.4%	60.2%	39.4%	0.0%
Kyangwali	0.0%	65.9%	34.1%	0.0%
Rwamwanja	0.0%	46.8%	53.2%	0.0%
Kiryandongo	0.2%	56.2%	43.6%	0.0%
Rhino Camp	0.0%	56.8%	43.2%	0.0%
Adjumani Old caseload	0.0%	79.3%	20.7%	0.0%
Adjumani S.Sudan influx	0.4%	71.3%	28.3%	0.0%
Koboko	0.0%	51.9%	48.1%	0.0%
Combined	0.2%	56.5%	43.2%	0.1%

In summary the average key indicators on sanitation in refugee settlements were as indicated **(Table 37)** depicting the need for continued WASH activities in all refugee settlements. Some details of the breakdown of indicators per settlement are in summary table (Annex 1).

Table 37: **Summary of findings on key indicators on excreta disposal**

	Number/total	% (95% CI)
Proportion of households that use:		
An improved excreta disposal facility (improved toilet facility, 1 household)	1629	43.0 (41.1 – 44.9)
A shared family toilet (improved toilet facility, 2 households)	244	11.5 (8.6 – 14.4)
A communal toilet (improved toilet facility, 3 households or more)	231	10.9 (8.0 – 13.8)
An unimproved toilet (unimproved toilet facility or public toilet)	1782	43.3 (41.1 – 45.6)
Proportion of households with children under three years old that dispose of faeces safely	2764	97.9 (96.1 – 99.7)

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

The majority of the households across the settlements had acceptable FCS (72%) with only 22% having borderline FCS and 6% with poor FCS. However, female-headed households had poorer FCS compared to male-headed households. Households that had access to land also had generally better FCS while households that had debt had poorer FCS and household with heads that had attended and/or completed secondary or higher levels of education had better FCS

Approximately 84% of households had suffered at least one shock in the 30 days preceding the survey (most common being sickness of a household member and high food prices) but with little impact on food consumption. However, application of livelihoods coping strategies was high especially in Oruchinga, Nakivale, Adjumani old caseload and Kyaka II. Across these settlements, households have sustained consumption levels through borrowing money, consumption of seed stock and begging.

Based on the findings from the assessment, the most vulnerable households were female headed with no access to land and without an income earner. Analyses showed that the most vulnerable households were located in Koboko, Rhino camp and Adjumani S. Sudan influx where 31%, 73%, and 75% of households, respectively, met the vulnerability criteria. Notable characteristics of these households were: poorer food consumption scores; comparatively fewer years of schooling; owning much less of livestock - over 95% did not own goats and negligible proportions owned poultry; and higher application of stress and crisis coping strategies.

There were significant reductions in prevalence of GAM in all refugee settlements compared to previous assessments. Prevalence was within normal limits (less than 5%) in most settlements except Adjumani, which dropped from 20.1% to 9.0% (poor level), Kiryandongo from 24.1% to 8.5% (poor level) and Kyaka II was 5.6% (poor level). The great improvement in the North/West Nile refugee settlements was attributed to intensive implementation in 2014 of supplementary and therapeutic feeding programs by partners and humanitarian agencies. Although GAM prevalence in the Western and

South West settlements was largely within normal limits, stunting was at critical levels (above 40%) in all settlements except Nakivale (36.2%) where it was at serious level.

Anemia prevalence in children 6-59 months in all settlements was at severe levels (above 40%) considered as a severe public health problem. The quality of complementary feeding was also poor in all settlements. There was late introduction of complementary feeding with over 45% of children 6-8 months having been exclusively breastfed the day before the assessment when they should have received complementary food. Minimum acceptable diet was only met by 1.2% of the children 6-23 months.

There was marked reduction in underweight among South Sudanese mothers 15-49 years from about 56% in the February 2014 to about 24% in the current assessment. Conversely, in the West and Southwest settlements, the challenge to maternal nutrition was the increasing proportion of overweight and obese mothers. The prevalence of overweight and obesity was over 25% in almost all West and southwest settlements. Unfortunately there were no major improvements in the anemia status. Anemia prevalence among mothers 15-49% was high (33.1%).

Prevalence of ARI was above 50% in most settlements except in Rwamwanja (34.5%), Kiryandongo (44.7%), and Kyangwali (45.6%). Diarrhea prevalence was also above 30% in most settlements except Kiryandongo (11.0%), Rwamwanja (21.8%) and Kyangwali (23.3%). Likewise, immunization, deworming and vitamin A supplementation coverage were below the target. If the mothers' history was to be considered, the coverage for measles was about 75% in all settlements, which is less than the 95% UNHCR target and less than the coverage that has been previously reported.

Besides Nakivale where about 15% of the households reported using water from open unprotected sources, safe water coverage was near universal in all settlements. The main source of water was boreholes (and piped water in Nakivale). The amount of water at household level fell short of the international standard of 20 liters per person per day by 5 liters. Whereas latrine coverage was also nearly universal, 40% of the latrines were open pits with no super structures. The highest prevalence of open pits was in Nakivale (60.4%), Rwamwanja (53.2%) and Koboko (48.1%).

4.2 Recommendations

Given the extremely high percentage of female-headed households in Rhino, Adjumani and Koboko settlements, and given that female-headed households generally had poor FCS, it is recommended that any interventions related to household food security target these households.

The low education level among household heads increases their vulnerability to Food Insecurity due to reduced ability to earn income and improve food and nutrition security outcomes. Tailored adult literacy programmes are recommended, to help equip such household heads with essential skills such as in nutrition, child care, sanitation and farming that would contribute to improved food security. Such programmes, if initiated, must be, as a priority introduced in Adjumani S. Sudan influx, Rhino camp, and Kiryandongo that had higher percentages of household heads never schooled.

Adjumani old caseload, Koboko, and Kyaka II settlements had the highest incidence of chronically ill heads of household (10%, 12% and 13% respectively). In addition, Kiryandongo, Kyangwali, and Rwamwanja had the highest percentage of households that borrowed money to cover health expenses. These findings are indicative of a health issue; further investigation is recommended as a basis for a health intervention to address these issues as they could potentially aggravate food insecurity, impacting on the nutrition status especially of children.

Given that the majority of the households do not own livestock and a few rear poultry and goats under constraining circumstances, sustained and innovative interventions may be necessary to enable refugee households maintain their livestock and/or find alternative livelihoods so as to strengthen their ability to withstand and recover from shocks when they do occur.

Whereas over 60% of refugees reported access to land, the quality of land as poor and sizes were small, thus most of the agriculture was subsistence. In the North/West Nile settlements, some households were unable to practice agriculture due to swampy land. Where possible, these households should be allocated other land suitable for agriculture to reduce vulnerability and dependence on food aid.

The proportion of households that produced less food this year was especially higher in Adjumani S. Sudan influx (87%), Rhino camp (68%), Kiryandongo (65%) and Adjumani old caseload (62%). Given that these settlements also have a low percentage of households with at least one income earner, urgent food assistance is required to ensure they remain food secure.

Given the extent refugee households identified weather related issues and infertile/marginal land as key constraints to agriculture, it is recommended to pilot climate smart agricultural techniques[15] that could potentially make agriculture more resilient to changing climate and enhance productivity and incomes. Such techniques could be built within tailored adult literacy programmes for the refugees.

The lowest proportions of households with at least one income earner were in Koboko (22%), Rhino camp (9%) and Adjumani S. Sudan influx (8%). It is thus recommended to implement conditional cash transfers and/or vouchers to beneficiaries in the region, such as through cash for work programmes.

The main sources of credit for households were informal i.e. from traders/shopkeepers, relatives and friends/neighbors among others. It is thus recommended to explore options that would enable access to credit in a structured and secure way for example through savings groups among refugees, since informal lending systems typically charge higher interest on loans that outstrips households of any disposable income.

Continue implementing targeted and blanket supplementary feeding programs for children below 5 years in order to consolidate gains observed with nutrition status. Screening and enrollment of all children with moderate acute malnutrition into supplementary feeding programs as per national admission and discharging criteria should be continued. The status of GAM prevalence in children should be closely monitored through facility and community level activities.

[15] According to the Food and Agriculture Organization, Climate Smart Agriculture is agriculture that sustainably increases productivity, resilience (adaptation), reduces/removes GHGs (mitigation), and enhances achievement of national food security and development goals.

Given the high rates of anemia in the under five children and women of reproductive age, both therapeutic and preventive interventions should be strengthened by UNHCR, WFP, UNICEF and Partners. Such interventions could include distribution and promotion of multiple micronutrient powder/sprinkles for children, Iron and Folate supplementation for mothers, deworming, malaria control, identification and treatment of parasites, mosquito net distribution, promoting consumption of iron and vitamin C rich foods, and other dietary measures.

Address the observed high prevalence of common childhood illnesses by implementing appropriate health interventions at static facilities and at the community level. This could include the establishment of more static facilities; distribution of non-food items such as bed nets, and household utilities; WASH and other appropriate clothing for children.

Agencies implementing nutrition program should scale up promotion of preventative programs and essential nutrition actions. Promotion of optimal nutrition for women; promotion of optimal breastfeeding and complementary feeding (Infant and Young Child Feeding Practices); prevention of vitamin A deficiency in women and children, promotion of hygiene practices, food habits and immunizations. The health system should ensure that child health cards are available in all health outlets.

WASH agencies should continue with monitoring of WASH facilities especially ensuring that latrines with super structures are available for use by households.

4.0 ANNEXES

Annex 1: Summary table of findings

Settlement				
NUTRITION BY Z-SCORES	**GAM % (95%CI)**	**SAM % (95%CI)**	**Stunting % (95%CI)**	**Underweight % (95%CI)**
Nakivale	3.6 (2.5 - 5.2)	1.4 (0.8 - 2.5)	36.2 (32.9 - 39.6)	11.7 (9.7 - 14.2)
Oruchinga	4.3 (2.6 - 7.0)	1.2 (0.5 - 3.1)	40.7 (35.6 - 46.1)	17.3 (13.6 - 21.7)
Kyaka II	5.9 (4.1 - 8.6)	2.4 (1.3 - 4.3)	41.6 (37.1 - 46.4)	12.7 (9.9 - 16.2)
Kyangwali	3.0 (1.8 - 4.9)	0.8 (0.3 - 2.1)	45.8 (41.5 - 50.2)	11.9 (9.4 - 15.1)
Rwamwanja	3.4 (2.1 - 5.4)	0.6 (0.2 - 1.9)	41.4 (37.0 - 45.9)	15.1 (12.2 - 18.6)
Kiryandongo)	8.5 (6.1 - 11.7)	1.9 (0.9 - 3.8)	12.8 (9.8 - 16.6)	7.3 (5.1 - 10.3)
Rhino Camp	5.2 (3.1 - 8.5)	1.5 (0.6 - 3.7)	11.9 (8.6 - 16.3)	4.8 (2.8 - 8.0)
Adjumani Old caseload	5.9 (2.8 - 12.4)	1.0 (0.2 - 5.4)	14.4 (8.8 - 22.8)	8.8 (4.7 - 15.9)
Adjumani S.Sudan influx	9.0 (7.0 - 11.5)	1.7 (0.9 - 3.0)	9.0 (7.0 - 11.6)	6.7 (5.0 - 9.0)
Koboko	1.9 (0.9 - 4.2)	1.3 (0.5 - 3.3)	27.4 (22.7 - 32.6)	6.8 (4.5 - 10.2)
Combined	5.1 (4.5 - 5.8)	1.4 (1.1 - 1.8)	30.0 (28.7 - 31.5)	10.7 (9.8 - 11.6)
NUTRITION BY MUAC	**MUAC <125mm and/or oedema %**	**MUAC 11.5-12.4 cm %**	**MUAC <11.5 cm and/or oedema %**	
Nakivale	3.5	3.1	1.4	
Oruchinga	5.1	3.3	1.8	
Kyaka II	4.1	3.6	0.5	
Kyangwali	3.2	3.0	0.2	
Rwamwanja	5.4	4.5	0.9	
Kiryandongo	2.2	1.1	1.1	
Rhino Camp	0.7	0.0	0.7	
Adjumani Old caseload	3.0	3.0	0.0	
Adjumani S.Sudan influx	1.9	1.7	0.2	
Koboko	1.3	1.3	0.0	
Combined	3.3	2.6	0.7	
PROGRAMME COVERAGE	**Measles vaccination recorded from card or recall %**	**DPT3 vaccination recorded from card or recall %**	**Vitamin A supplementation in last 6 months with card or recall %**	**Deworming in last 6 months with card or recall %**
Koboko	88.0	96.0	92.0	80.0
Rhino Camp	83.1	93.7	81.1	44.7
Rwamwanja	53.9	76.5	47.5	88.0
Adjumani S.Sudan influx	71.9	91.2	75.6	71.1
Kiryandongo	80.8	89.9	87.2	61.9
Kyaka II	54.3	88.6	77.6	80.8
Kyangwali	77.9	81.1	87.1	76.3
Nakivale	87.4	96.3	67.4	60.0
Oruchinga	88.7	98.4	86.2	69.3
Adjumani Old caseload	91.9	97.3	91.9	86.5
Combined	75.5	89.8	75.9	67.7
MORBIDITY	**Diarrhea in last 2 weeks %**	**Total Anaemia (Hb <11 g/dl) %**	**Mild (Hb 10-10.9) %**	**Moderate (Hb 7-9.9) and severe anemia (Hb<7) %**
Rhino Camp	39.6	67.6	26.9	40.8
Nakivale	36.1	36.5	17.0	19.5
Koboko	29.8	64.5	28.3	36.2
Oruchinga	33.8	43.1	23.1	20.0

Settlement				
Adjumani	33.1	59.7	24.4	35.3
Kyaka II	29.7	48.3	17.7	30.6
Kyangwali	23.3	52.5	20.3	32.2
Rwamwanja	21.8	41.1	19.5	27.9
Kiryandongo	11.0	41.1	18.9	22.2
Combined	29.3	49.0	21.0	28.0

IYCF INDICATORS	Timely initiation of breastfeeding (Within 1 hour) %	Exclusive Breastfeeding under 6 months %	Consumption of iron-rich or iron-fortified foods %	Bottle feeding %
Nakivale	82.5	88.0	38.5	0.0
Oruchinga	89.7	94.7	53.7	0.0
Kyaka II	98.1	76.1	42.2	0.0
Kyangwali	81.4	96.7	45.8	0.0
Rwamwanja	98.4	87.2	42.1	0.0
Kiryandongo	89.1	91.2	37.9	0.0
Rhino Camp	75.2	94.7	30.1	0.0
Adjumani Old caseload	76.0	100.0	48.6	0.0
Adjumani S.Sudan influx	76.1	88.0	25.5	4.2
Koboko	65.7	100.0	42.9	0.0
Total	84.9	90.1	39.5	0.4

ANEMIA (NON-PREGNANT)	Total Anemia (Hb <12 g/dl) %	Mild (Hb 11-11.9 g/dl) %	Moderate (Hb 8-10.9 g/dl) %	Severe (Hb<8.0 g/dl) %
Rhino Camp	58.6	29.9	27.6	1.1
Kiryandongo	42.3	23.0	18.8	0.5
Koboko	39.1	23.8	14.6	0.7
Adjumani S.Sudan influx	38.2	16.0	21.0	1.2
Kyangwali	37.5	17.9	19.0	0.6
Kyaka II	30.4	17.6	12.8	0.0
Nakivale	26.9	15.8	10.5	0.6
Rwamwanja	25.1	14.3	10.8	0.0
Oruchinga	20.4	9.5	10.9	0.0
Combined	33.1	17.8	14.8	0.5

FOOD SECURITY	Proportion of households with a ration card %	Average number of days general food ration lasts out of 15 days (mean,)	Proportion of households reporting using *NONE* of the coping strategies over the past month %	Households experiencing severe food insecurity based on FCS %
Nakivale	86.1	15.9	15.2	2.7
Oruchinga	90.2	17.2	11.2	1.0
Kyaka II	93.1	19.3	26.6	1.5
Kyangwali	90.4	20.0	16.4	0.2
Rwamwanja	96.0	18.4	20.3	1.3
Kiryandongo	77.7	22.7	29.8	1.6
Rhino Camp	95.2	21.3	5.8	3.6
Adjumani Old caseload	71.0	22.1	5.6	15.9
Adjumani S.Sudan influx	98.7	24.6	11.2	9.1
Koboko	100.0	16.8	3.3	0.3
Combined	91.3	19.7	16.1	2.9

CONSUMPTION OF VITAMIN A AND HAEM IRON	Proportion of households *not consuming any* vegetables, fruits,	Proportion of households consuming organ meat/flesh meat,	Proportion of households consuming either a plant or animal	

Settlement	meat, eggs, fish/ seafood, & milk/ milk products (7 days recall) %	or fish/seafood (food sources of haem iron) (7 days recall) %	source of vitamin A (7 days recall) %	
Nakivale	13.0	21.5	87	
Oruchinga	7.9	40.8	92.1	
Kyaka II	32.7	25.6	67.3	
Kyangwali	6.4	31	93.6	
Rwamwanja	25.6	16.2	74.4	
Kiryandongo	16.4	19.7	83.6	
Rhino Camp	29.2	10.6	70.8	
Adjumani Old caseload	12.1	27.1	87.9	
Adjumani S.Sudan influx	41.4	10.6	58.6	
Koboko	7.1	18	92.9	
Total	20.5	21.3	79.5	

WASH	Proportion of households using improved drinking water source %	Proportion of households that say they are satisfied with drinking water supply %	Proportion of households that use an improved excreta disposal facility (improved toilet facility, not shared) %	Proportion of households that use a communal toilet (improved toilet facility, 3 HHs or more) %
Nakivale	82.8	47.8	34.8	2.3
Oruchinga	98.3	64.0	54.8	3.8
Kyaka II	99.3	88.1	45.0	5.2
Kyangwali	96.8	81.9	38.0	18.9
Rwamwanja	98.2	86.9	43.3	1.2
Kiryandongo	99.7	52.2	32.2	1.6
Rhino Camp	100	88.9	43.2	2.0
Adjumani Old caseload	100	100	69.0	2.4
Adjumani S.Sudan influx	100	61.8	55.0	3.6
Koboko	100	93.5	47.0	0.3
Combined	96.3	73.0	43.0	6.2

MOSQUITO NET COVERAGE	Proportion of households owning at least one LLIN %	Average number of persons per LLIN %	Proportion of children 0-59 months who slept under an LLIN %	Proportion of pregnant women who slept under an LLIN %
Rhino Camp	74.8	2.0	79.8	100
Adjumani Old caseload	92.5	2.2	100	100
Kiryandongo	46.4	2.4	59.0	100
Adjumani S.Sudan influx	65.4	2.3	78.3	100
Nakivale	45.3	3.1	50.2	95.7
Kyaka II	68.5	2.5	77.8	97.8
Koboko	63.0	2.6	67.0	75.0
Oruchinga	51.2	3.4	55.3	100
Kyangwali	18.8	3.5	23.6	71.4
Rwamwanja	33.4	3.4	41.0	100
Total	50.9	2.7	57.4	94.4

Annex 2: Questionnaire

World Food Programme

UNHCR The UN Refugee Agency

Household ID: |__|__|__|__|__|
(Check and complete during data entry)

Food Security and Nutrition Assessment in Refugee Settlements 2014

0.1 Date |__|__|/|__|__|/2014

0.2 Interviewer Name: _____ Signature: _____

0.3 Supervisor Name:_____ Signature:_____

0.4 Settlement; 1-Nakivale 2–Oruchinga 3–Kyaka II 4–Kyangwali 5–Rwamanja 6–Kiryandongo 7–Rhino Camp 8-Adjumani/Pakelle - Old caseload (Pre influx) 9 - Adjumani/Pakelle (South Sudan Influx)

0.5 District: ……

0.6 Sub-county…… 0.7 Parish…… 0.8 Village……

0.9 Cluster ID |__|__| **0.10 HH No:** |__|__|

0.11 a. Is this household on the Extremely Vulnerable Households' (EVH) Programme? *(Circle one)* 1= Yes 0=No *(If No, skip to 0.10)*

0.11 b. If Yes, do you have a card for the EVH Programme 1= Yes 0=No

SECTION 1 – HOUSEHOLD AND MOTHER/CAREGIVER INFORMATION

A1. What is the sex of the household head? Male = 1 Female = 2

A2. What is the age of the household head? |__|__| Years

A3. Is the head of household disabled, chronically ill or able bodied?
1 = Disabled 2 = Chronically ill 3 = Able bodied

A4. Household head number of completed years of formal education |__|__|

A5. Respondents sex 1 = Male 2 = Female

A6. Respondents Age |__|__| years ***(If respondent is the household head put as A2)***

A7. Respondent's marital status

1= Married 2 = single 3 = widowed 4 = separated/divorced

A8. Respondents number of completed years of formal education |__|__|
(If respondent is the household head put as A4)

A9. How many live children have you given birth to? |__|__| ***(If respondent is man skip to A13)***

A10. Are you currently pregnant or breastfeeding?

1= Pregnant 2 = Breastfeeding 3= Pregnant and breastfeeding 4= None of the above

A11. If pregnant are you currently enrolled in the ANC programme?

1= Yes 0= No 8= Don't know

A12. Are you currently receiving iron-folate pills? ***(Show pill)***

1= Yes 0= No 8= Don't know

A13. Does your household have toilet facilities?

1= Yes 2= Yes but shared with other households 0= No **(*If NO go to A16)***

A14. What kind of toilet facilities do you use or, rather, have within the household and use?

1= Flush toilet 2= Pit Latrine with slab/VIP3= Open pit (no super structure) 4= bucket latrine

A15. How many households share this toilet?

1= Not shared 2= Two HH 3= 3 HH or more 4 = Public Toilet

A16. If not having toilet - "why?"

1 = Don't' like having one 2 = There is no need for it 3 = No construction material 4 = Other (Specify) _____

A17. Do you have children under three years?

1= Yes 0= No If No skip to A19

A18. The last time child under three years passed stool what was done to dispose of stools?

1= child used latrine 2 = Put/rinsed into latrine or toilet 3= Buried

4= Thrown into garbage 5= Left open 8= Other 9=Don't know

A19. Where do you usually get the water which people drink?

1=Piped water 2= Protected Well or Spring 3= Bore hole 4= Open Spring or well

5= Surface water (pond, stream, river, lake, dam, swamp) 6= Rain water 7= UNHCR Tanker/Tanker truck/water vendor

A20. Before drinking this water do you do anything to make it safer to drink?

1= Yes 2= No (If No go to A22)

A21. What do you commonly do to make your water safer to drink?

1= Boil 2= Add bleach or chlorine 3= Straining through a cloth 4= Use water filter (ceramic/sand/composite, etc)

5= Let it stand and settle 6= Other (Specify) _____

A22. If not treating water before consumption - "why?

1 = Don't know 2 = Don't have money 3 = Don't know where to buy purifier 4 = Other Specify _____

A23. Are you satisfied with the water supply?

1=Yes 0=No 3=Partially 8= Don't know

A24. What is the main reason you are not satisfied with the water supply?

1= Not enough 2= Long waiting queue 3= Long distance 4= Irregular supply 5= Bad taste

6= Water too warm 7= Bad quality 8= Have to pay 9= Other

No	OBSERVATION / QUESTION	ANSWER			
A25.	CALCULATE THE TOTAL AMOUNT OF WATER USED BY THE HOUSEHOLD PER DAY THIS RELATES TO ALL SOURCES OF WATER (DRINKING WATER AND NON-DRINKING WATER SOURCES)	Please show me the containers you used yesterday for collecting water ASSIGN A NUMBER TO EACH CONTAINER	Capacity in litres	Number of journeys made with each container	Total litres **SUPERVISOR TO COMPLETE HAND CALCULATION**
		1 E.g. jerry can	20 L		
		2 E.g. jerry can	10 L		
		3 E.g. jerry can	5 L		
		4 E.g. bucket	20 L		
		5 E.g. bucket	10 L		
		6			
		7			
		Total litres used by household			
A26.	Please show me where you store your drinking water.	Are the drinking water containers covered or narrow necked? All are..... 1 Some are..... 2 None are 3			|__|

SECTION 2 – LIVESTOCK PRODUCTION					
				1=Yes 0=No	Number of livestock
B1.	Does your household own	1.	Cattle	|__|	|__|__|__|

	any of the following livestock? If *'No'* skip to section 4. If '*Yes'*, how many of the following livestock does your household currently own?	2.	Sheep	|__|	|__|__|__|
		3	Goat	|__|	|__|__|__|
		4.	Pig	|__|	|__|__|__|
		5.	Poultry	|__|	|__|__|__|
		6.	Donkey	|__|	|__|__|__|
		8.	Other: Specify		|__|__|__|
B2.	What are the main constraints for livestock and livestock production for your household? *Circle all that apply*	**Main constraints**			
		1=Poor breed		6=Lack of veterinary services	
		2=Parasites/diseases		7=Insecurity	
		3=Inadequate labour		8=Theft	
		4=Shortage of pasture/feed		9=Lack of market for livestock	
		5=Shortage of water		10=Other *(specify)*:	

SECTION 3 – FOOD AVAILABILITY			
C1.	Do you have access to agricultural land (arable land for cultivation)?		1=Yes 0= No *(Go to section 4)*
C2.	What type and how big is the land do you have access to?	1= Flatland for small garden	acres
		2= Up land for cultivation	acres
		3= Swamp	acres
		4= Other (specify):	acres
C3.	What type of crops did you cultivate last season and how much land each occupy?	Maize	acres
		Bean	acres
		Cassava	acres
		Millet	acres
		Sorghum	acres
		Potato	acres
		Banana	acres
		Rice	acres
		Other (specify)	
C4.	Compare the amount of food produced this year (last season) to the same season last year **(Circle one response)**	1.Much less than the amount of food produced last year	
		2.Somewhat less than the amount of produced sold last year	
		3.About the same as the amount of food produced last year	
		4.Somewhat greater than the amount of food produced sold last year	
		5.Much greater than the amount of food produced last year	
C5.	Compare the amount of food sold from the harvest this year with that sold from the harvest at the same time last year **(Circle one response)**	1.Much less than the amount of food produced last year	
		2.Somewhat less than the amount of produced sold last year	
		3.About the same as the amount of food produced last year	
		4.Somewhat greater than the amount of food produced sold last year	
		5.Much greater than the amount of food produced last year	
C6	What is the **BIGGEST** constraint to agriculture in the past six months? **(Circle one response)**	1=Insecurity 2=I have been prohibited by the clan/my husband 3=The land is infertile/farming is unproductive 4=I have been prohibited by the government 5=Sickness or physical inability 6=I did not have adequate seeds and tools 7=I do not have sufficient family/household labour 8= Land conflicts 9= Drought/Low rainfall 10= Lack of household storage facility 11=Other (Specify)	

SECTION 4 – MAIN INCOME SOURCE			
D1. - How many members of the household earn an income?			|___|
Please complete the table, one activity at a time *(use income source codes, up to 3 activities)*		During the past 30 days, what were your household's most important livelihood sources? *(use income source codes, up to 3 activities)*	Using proportional piling or 'divide the pie' methods, please estimate the relative contribution to total income of each source **(%)**
D2.	**Most important**	|__|__|	|__|__|__|
D3.	**Second** *(leave blank if none)*	|__|__|	|__|__|
D4.	**Third** *(leave blank if none)*	|__|__|	|__|__|
Income source codes:		*7 = Small business/self-employed*	*14 = Borrowing*
1 = Food crop production/sales		*8 = Petty trade (firewood sales, etc.)*	*15 = Food assistance*
2 = Cash crop production/sale (e.g. coffee)		*9 = Pension, allowances*	*16 = Skilled Trade*
3 = Sale of animals or animal products		*10 = Salary/wages*	*17 = Sale of food assistance*
4 = Livestock production (Animal Husbandry)		*11 = Fishing*	*19=Government allowance*
5 = Agricultural wage labor		*12 = Handicrafts*	*20=Remittances*
6 = Non-agricultural wage labor		*13 = Gifts/begging*	*18 = Other*

SECTION 5 – CREDIT/DEBT			
E1.	Do you have any debt or credit to repay at the moment?	1= YES 0= N	|__| ***If 'No', go to section 6***
E2.	If yes, approximate the amount of current debt in Uganda shillings		**……UGX**
E3.	What was the **MAIN** reason for new debts or credit? (**CHOOSE ONLY ONE)** **1**= To buy food **2**= To cover health expenses **3**= To pay school, education costs **4**= To buy agricultural inputs (seed, tools...) **5**= To buy animal feed, fodder, veterinary **6**= To buy or rent land **7**= To buy or rent animals **8**= To buy or rent or renovate a flat/ house **9**= To pay for social events / ceremonies **10**= To invest for other business **11**= Other reason(specify)_____		**Main reason** |___|
E4.	Who is the **MAIN** source of credit for all debts and loans? (**CHOOSE ONLY ONE)** 1= Relatives 2= Traders/shop-keeper 3= Bank/ Credit institution/Micro-credit project 4= Money lender 5= Other (specify)		**Main source** |___|

SECTION 6– FOOD SOURCES AND CONSUMPTION

Read: I would now like to ask you a few questions about food consumption in your household (**Ask all the three questions for each row)**

	Food Item	***a.*** *Number of days food item was eaten during last 7 days (0-7 Days)*	***b.*** *Main Source (use codes at bottom of table)*	***c.*** *Was food item eaten in last 24 hours? 1= Yes 0= No*
F1.	**Cereals and grain:** Rice, bread / cake and / or donuts, sorghum, millet, maize, chapatti.	|__|	|__|	
F2.	**Roots and tubers:** potato, yam, cassava, sweet potato, and / or other tubers	|__|	|__|	
F3.	**Pulses:** beans, cowpeas, lentils, soy, pigeon pea	|__|	|__|	
F4.	**Nuts:** ground nuts, peanuts, sim sim, coconuts or other nuts	|__|	|__|	
F5.	**Orange vegetables (vegetables rich in Vitamin A):** carrot, red pepper, pumpkin, orange sweet potatoes,	|__|	|__|	
F6.	**Green leafy vegetables:**, spinach, broccoli, amaranth and / or other dark green leaves, cassava leaves, bean leaves, pea leaves.	|__|	|__|	

F7.	**Other vegetables:** onion, tomatoes, cucumber, radishes, green beans, peas, lettuce, cabbage, etc.	|__|	|__|	
F8.	**Orange fruits (Fruits rich in Vitamin A):** mango, papaya, apricot, peach	|__|	|__|	
F9.	**Other Fruits (Fruits rich in Vitamin A) :** banana, apple, lemon, tangerine	|__|	|__|	
F10.	**Meat:** goat, beef, chicken, pork *(report only meat consumed in large quantities and not as a condiment)*	|__|	|__|	
F11.	**Liver, kidney, heart and / or other organ meats and blood**	|__|	|__|	
F12.	**Fish / Shellfish:** fish, including canned tuna, and/or other seafood *(report only fish consumed in large quantities and not as a condiment)*	|__|	|__|	
F13.	**Eggs**	|__|	|__|	
F14.	**Milk and other dairy products**: fresh milk / sour, yogurt, cheese, other dairy products *(Exclude margarine / butter or small amounts of milk for tea / coffee)*	|__|	|__|	
F15.	**Oil / fat / butter:** vegetable oil, palm oil, shea butter, margarine, other fats / oil	|__|	|__|	
F16.	**Sugar, or sweet:** sugar, honey, jam, cakes, candy, cookies, pastries, cakes and other sweet (sugary drinks)	|__|	|__|	
F17.	**Condiments / Spices:** tea, coffee / cocoa, salt, garlic, spices, yeast / baking powder, lanwin, tomato / sauce, meat or fish as a condiment, condiments including small amount of milk / tea coffee.	|__|	|__|	
Food source codes *0 = Not eaten food group* *1 = Own production (crops, animal)* *2 = Fishing / Hunting* *3 = Gathering* *4 = Borrowed*		*5 = Market (purchase with cash)* *6 = Market (purchase on credit)* *7 = Beg for food* *8 = Exchange labor or items for food*	*9 = Gift (food) from family relatives or friends* *10 = Food aid from civil society, NGOs, government, WFP etc*	

SECTION 7– SHOCKS AND COPING

WHAT HAVE BEEN YOUR MAIN DIFFICULTIES OR SHOCKS **IN THE PAST 30 DAYS** *DO NOT LIST, LEAVE THE HOUSEHOLD ANSWER SPONTANEOUSLY* ***ONCE DONE, ASK THE HOUSEHOLD TO RANK THE 3 MOST IMPORTANT ONES***	**1ST DIFFICULTY**		2nd Difficulty	
1 = Loss employment/reduced salary/wages 2 = Crop Loss due to Rodents 3 = Death household member/funerals 4 = High food prices 5 = High fuel/transportation prices 6= Debt to reimburse 7 = Floods, heavy rains, drought, land slides 8= Other shock (Specify) 99= No difficulty mentioned	G1.	|__|	G2.	|__|

Reduced Coping Strategies Index During the last 7 days, how many times (in days) did your household have to employ one of the following strategies to cope with a lack of food or money to buy it? **READ OUT STRATEGIES**		**Frequency (number of days from 0 to 7)**
G3.	Relied on less preferred, less expensive food	| _ |
G4.	Borrowed food or relied on help from friends or relatives	| _ |
G5.	Reduced the number of meals eaten per day	| _ |
G6.	Reduced portion size of meals	| _ |
G7.	Reduction in the quantities consumed by adults/mothers for young children	| _ |

Livelihood Coping Strategies Index During the last 30 days, did anyone in your household have to engage in any of	**1 = Yes**

the following activities because there was not enough food or money to buy food			**0= No** **8=Dont' Know**
G8.	STRESS	Sold more animals (non-productive) than usual	| __ |
G9.		Sold household goods (radio, furniture, refrigerator, television, jewelry etc..)	| __ |
G10.		Spent savings	| __ |
G11.		Borrowed money	| __ |
G12.	EMERGENCIES	Sold productive assets or means of transport (sewing machine, wheelbarrow, bicycle, car, goats, cows, etc.)	| __ |
G13.		Reduced essential non-food expenditures such as education, health, etc.	| __ |
G14.		Consume seed stock held for next season	| __ |
G15.	CRISIS	Sold house or land	| __ |
G16.		Illegal income activities (theft, smuggling, prostitution)	| __ |
G17.		Begged	| __ |

SECTION 8: ANTHROPOMETRIC DATA FORM AND QUESTIONNAIRE FOR CHILDREN 0-59 MONTHS

(*All children in age-range in the household should be assessed)*

H1.	**H2.**	**H3.**	**H4.**	**H5.**	**H6.**	**H7.**	**H8.**	**H9.**								
Child (only first name) ***(From youngest to oldest)***	Sex 1=M 2=F	Date of birth (if available) dd/mm/yyyy	Age of child in months	Weight (kg) ±0.1 kg	Height/ Length [1](cm) ±0.1cm	Oedema 1=Y 0=N	MUAC ±0.1cm ***(skip if child under 6 months)***	Hemocue g/dl	Has the child received the following 1= Yes (with child health card); 2= Yes (without card); 3= No with card; 4= No without card; 5 = Don't know				Did this child have the following illnesses in the last 2 weeks (1= Y 0= No, 8 =Don't know)			
									H10. Measles	**H11.** DPT3	**H12.** De-worming (past 6 months)	**H13.** Vitamin A (In past 6 months)	**H14.** Diarrhoea	**H15.** If Yes, did the child receive ORS?	**H16.** Fever	**H17.** ARI

Case definition:

- Diarrhoea= any episode of more than three loose stools per day; bloody diarrhoea: any episode of more than three stools per day in which there is presence of blood in stools

- ARI= any episode associated with fever and cough and at least one of the following signs: running nose, wheezing, difficult breathing, sputum, chest pain

- Malaria verified by fever= elevated body temperature (confirm if test was done), fever, chills, headache, muscular aching and vomiting.

[1] Height measurement standing when child is ≥24 months (height proxy ≥87 cm) and lying down when child is < 24 months (< 87 cm)

SECTION 9: INFANT AND YOUNG CHILD FEEDING QUESTIONNAIRE FOR CHILDREN 0-23 MONTHS

(*All children in age-range in the household should be assessed)*

Child Name	**I1.**	**I2.**	**I3.**	**I4.**	**I5.**	**I6.**	**I7.**	**I8.**
(From youngest to oldest)	Child ever breastfed? 1= yes 0= No 8 = Don't know	How long after birth did you first put child to breast? 1= Within first hour 2= Between 1 and 23 hours 3= More than 24 hours 8= Don't know	What did the child feed on in the last 24 hours? 1 = Breast milk only 2 = Breast milk and other foods or fluids 3 = Bottled Or milk in cup (cow or formular) 4 = Other foods only 8 = Don't know	Which of the following food groups were consumed by the child in the last 24 hours? **(Yes=1 and No=0)** **C=**Cereals(Maize/posho, sorghum, wheat,rice, millet, residue) **O=**Oils and fats (butter, ghee, simsim, sunflower etc) **M**=Meat,offal and blood , fish, **E** = eggs **ML** = Milk and milk products eg yoghurt, cheese etc. **V** = Vegetables *(Pumpkin, tomato, onion, boo, akeo,ekadolia,ekoorete, etsaboliet, ejaapo, eshwiga, dodo, bamya, mboga etc)* **P** = Pulses, Beans/Lentils/Nuts eg*(beans, peas,groundnut)* **FR**=Fruits *(mango, pawpaw, banana, ekimune, citrus, passion, etc.)* **S =** Sugar/Honey	How many meals did child eat during the last 24 hours? 0 = zero 1 = one 2 = two 3 = three 4 = Four or above ***If 3 or more skip to B7***	If child had 2 or less meals what were the reason? 1 = No food to give to child 2 = Child had enough breast milk 3 = Mother too busy to feed the child 4 = Meal frequency is adequate for the child Other (specify) _____	Is this child currently enrolled in any feeding programs? 1= OTC (Plumpy Nut, red sachet, RUTAFA); 2= ITC; 3 = SFC** (Plumpy, white sachet) 4=None	Did child sleep under bed net last night? 1= Yes 0= No
				C = O = M = E = ML = V = P = FR = S = Total score= (Total score = 0 if no food)				
				C = O = M = E = ML = V = P = FR = S = Total score= (Total score = 0 if no food)				
				C = O = M = E = ML = V = P = FR = S = Total score= (Total score = 0 if no food)				
				C = O = M = E = ML = V = P = FR = S = Total score= (Total score = 0 if no food)				
				C = O = M = E = ML = V = P = FR = S = Total score= (Total score = 0 if no food)				
				C = O = M = E = ML = V = P = FR = S = Total score= (Total score = 0 if no food)				

** Refers to SFC where a take home ration is provided (not just supplementary plumpy)

SECTION 10: MOSQUITO NET COVERAGE

No	QUESTION	ANSWER CODES			
SECTION TN1					
TN1	How many people live in this household and slept here last night? INSERT NUMBER				|__|__|
TN2	How many children 0-59 months live in this household and slept here last night? INSERT NUMBER				|__|__|
TN3	How many pregnant women live in this household and slept here last night? INSERT NUMBER				|__|__|
TN4	Did you have your house sprayed with insecticide in an indoor residual spray campaign in the past two months?	Yes……1 No……0			|__|
TN5	Do you have mosquito nets in this household that can be used while sleeping?	Yes……..1 No……..0			|__| **IF ANSWER IS 0 STOP NOW**
TN6	How many of these mosquito nets that can be used while sleeping does your household have? INSERT NUMBER	IF MORE THAN 4 NETS, ENTER THE NUMBER AND USE ADDITIONAL NET QUESTIONNAIRE SHEETS ENTERING THE NUMBER OF THE NETS SEQUENTIALLY AT THE TOP.			|__| Nets
TN7	ASK RESPONDENT TO SHOW YOU THE NET(S) IN THE HOUSEHOLD. IF NETS ARE NOT OBSERVED → CORRECT TN6 ANSWER	NET #|__|	NET #|__|	NET #|__|	NET #|__|
TN8	OBSERVE NET AND RECORD THE BRANDNAME OF NET ON THE TAG. IF NO TAG EXISTS OR IS UNREADABLE RECORD 'DK' FOR DON'T KNOW.				
TN9	**For surveyor/supervisor only (not to be done during interview)**: WHAT TYPE OF NET IS THIS? BASED ON THE TAG INDICATE IF THIS IS A LLIN OR OTHER TYPE OF NET OR DK.	1=LLIN 2=Other/DK |__|	1=LLIN 2=Other/DK |__|	1=LLIN 2=Other/DK |__|	1=LLIN 2=Other/DK |__|
TN10	**For surveyor/supervisor only (not to be done during interview)**: RECORD THE TOTAL NUMBER OF LLINs IN HOUSEHOLD BY COUNTING THE NUMBER OF '1' IN TN9.				|__| LLINs

SECTION TN2							
Line no	**Household members**	**Sex**	**Age**	**Pregnancy status**	**Slept under net**	**Which net**	**Type of net**
#	**COL1**	**COL2**	**COL3**	**COL4**	**COL5**	**COL6**	**COL7**
	Please give me the names of the household members who live here and who slept here last night	Sex m/f	Age years	FOR WOMEN 15-49 YEARS, ASK: Is (NAME) currently pregnant? (CIRCLE NOT APPLICABLE OR N/A'99' IF FEMALE <15->49 YEARS OR MALE) Yes No/DK N/A	Did (NAME) sleep under a net last night? Yes No/DK	ASK THE RESPONDENT TO PHYSICALLY IDENTIFY WHICH OF THE OBSERVED NETS THEY SLEPT UNDER. WRITE THE NUMBER CORRESPONDING TO THE NET THEY USED.	**For surveyor/ supervisor only:** BASED ON THE OBSERVED NET BRANDNAME RECORDED (TN8), INDICATE IF IT IS AN LLIN OR OTHER / DON'T KNOW (DK). LLIN OTHER/DK
01		m f	<5 ≥5	1 0 99	1 0	|___|	1 2
02		m f	<5 ≥5	1 0 99	1 0	|___|	1 2
03		m f	<5 ≥5	1 0 99	1 0	|___|	1 2
04		m f	<5 ≥5	1 0 99	1 0	|___|	1 2
05		m f	<5 ≥5	1 0 99	1 0	|___|	1 2
06		m f	<5 ≥5	1 0 99	1 0	|___|	1 2
07		m f	<5 ≥5	1 0 99	1 0	|___|	1 2
08		m f	<5 ≥5	1 0 99	1 0	|___|	1 2
09		m f	<5 ≥5	1 0 99	1 0	|___|	1 2
10		m f	<5 ≥5	1 0 99	1 0	|___|	1 2
11		m f	<5 ≥5	1 0 99	1 0	|___|	1 2
12		m f	<5 ≥5	1 0 99	1 0	|___|	1 2
13		m f	<5 ≥5	1 0 99	1 0	|___|	1 2
14		m f	<5 ≥5	1 0 99	1 0	|___|	1 2
15		m f	<5 ≥5	1 0 99	1 0	|___|	1 2

Mosquito net summary (for surveyor / supervisor only, not to be done during interview)			
	Total household members	**Total <5**	**Total Pregnant**

Slept under a net of any type	Count the number of '1' in COL5	**TN11** |___|___|	For children < 5 (COL3 is '<5'), count the number of '1' in COL5	**TN13** |___|___|	For pregnant women (COL4 is '1'), count the number of '1' in COL5	**TN 15** |__|__|
Slept under an LLIN	Count the number of '1' in COL7	**TN12** |___|___|	For children <5 (COL3 is '<5'), count the number of '1' in COL7	**TN14** |___|___|	For pregnant women (COL4 is '1'), count the number of '1' in COL7	**TN 16** |__|__|

SECTION 11: MORTALITY ASSESSMENT IN THE PAST 60 DAYS

K1. Current HH members – total		
K2. Current HH members - < 5		
K3. Current HH members who arrived during recall (exclude births)		
K4. Current HH members who arrived during recall - <5		
K5. Past HH members who left during recall (exclude deaths)		
K6. Past HH members who left during recall - < 5		
K7. Births during recall		
K8. Total deaths		
K9. Deaths < 5		
K10. Assumed cause of death for under five 1		
K11. Assumed caused of death for under five 2		
K12. Assumed cause of death for adult		

1= Diarrhea, 2= Bloody diarrhea, 3= Measles, 4= Malaria (fever of 2-3days standing), 5= Lower respiratory tract infection, 6= Gun shot, 7= Accident, 8= Other (specify), 9= Unknown

SECTION 12: ANTHROPOMETRY AND ANAEMIA STATUS OF MOTHER/FEMALE CARETAKER

L1. MUAC (15-49 yrs even if mother/caregiver is pregnant) |__|__|__|.|__|cm

L2. WEIGHT (15-49 yrs ONLY if mother/caregiver is NOT pregnant) |__|__|__|.|__|kg

L3. HEIGHT (15-49 yrs ONLY if mother/caregiver is NOT pregnant) |__|__|__|.|__|cm

L4. Hemocue test |__|__|.|__| g/dl