Standardised Expanded Nutrition Survey (SENS)

FINAL REPORT

for

Nyarugusu and Nduta Refugee Camps

in Kigoma Region, Tanzania

Jointly coordinated by UNHCR and WFP

In collaboration with

Survey dates: 5th – 25th September 2023

Final report date: November 2023

Table of Contents

Acronyms and Abbreviations 4

Executive summary 5

Overview 5

Methodology 5

Findings 5

Anthropometric results 5

Infant and young child feeding (IYCF) practices 6

Physiological status and program coverage for women of reproductive age 6

Food Security Situation 6

Prevention of Malaria 7

Water, Sanitation and Hygiene (WASH) 7

Conclusions 7

Recommendations 7

Summary of key findings 9

1. Introduction 14

1.1. Geographic description of survey area 15

1.2. Description of the population 15

1.3. Food security situation 15

1.4. Health situation 16

1.5. Nutrition situation 18

2. Survey Objectives 21

2.1. Primary objectives: 21

2.2. Secondary objectives: 21

2.3. Optional objectives (selected/measured): 21

3. Methodology 22

3.1. Sample size 22

3.2. Clusters and HH selection 24

3.3. Sampling procedure by survey teams 25

3.4. Questionnaire and measurement methods 26

3.5. Case definitions, inclusion criteria and calculations 29

3.6. Classification of public health problems and targets 34

3.7. Survey team 35

3.8. Data collection 36

3.9. Data analysis 37

4. Results 38

4.1. Demographic indicators 38

4.2. Children 6 – 50 months *43*
4.3. Children 0–23 months *63*
4.4. Women 15 – 49 years *67*
4.5. Food Security *72*
4.6. Mosquito Net Coverage *86*
4.7. WASH *90*
4.8. Limitations *92*

5. Discussion 93
5.1. Nutritional status of children and women *93*
5.2. Programme coverage *93*
5.3. Anaemia in young children and women *94*
5.4. IYCF indicators *95*
5.5. Food Security *95*
5.6. Mosquito net coverage *96*
5.7. WASH *96*

6. Conclusions 97

7. Recommendations and priorities 98
7.1. Short Term Recommendations: *98*
7.2. Medium Term Recommendations: *98*
7.3. Long Term Recommendations: *99*

8. References 100

9. Acknowledgements 100

10. Appendices 103
Appendix 1: Data quality check *103*
Appendix 2: Assignment of clusters *105*
Appendix 3: Maps of survey area *108*
Appendix 4: UNHCR – SENS Questionnaire *110*
Appendix 5: Local event calendar used to estimate age – Sept 2023 ..... *141*

Acronyms and Abbreviations

ANC	Antenatal Care
ART	Antiretroviral Therapy
AWD	Acute Watery Diarrhoea
BSFP	Blanket Supplementary Feeding Program
CHW	Community Health Workers
CHWs	Community Health Workers
CI	Confidence Interval
CMR	Crude Mortality Rate
CNW	Community Nutrition Worker
CSB	Corn-Soya Blend
CSB+	Corn-Soya Blend Plus
CSB++	Corn-Soya Blend Plus Plus
DEFF	Design effect
DRC	Democratic Republic of Congo
ENA	Emergency Nutrition Assessment
EPI	Expanded Programme on Immunization
Epi Info	Name of CDC software for epidemiological investigations
FANTA	Food and Nutrition Technical Assistance
GAM	Global Acute Malnutrition
GFD	General Food Distribution
GFR	General Food Ration
HAZ	Height-for-Age z-score
Hb	Haemoglobin
IP	Implementing partner
IPD	In-patient Department
IYCF	Infant and Young Child Feeding
KCAL	Kilocalorie
LLIN	Long-Lasting Insecticidal net
LPPPD	Litres per Person per Day
LRTI	Lower Respiratory Tract Infection
MAM	Moderate Acute Malnutrition
MNP	Micronutrient Powder
MTI	Medical Teams International
MoH	Ministry of Health
MoHA	Ministry of Home Affairs
MSF	Médecins Sans Frontières
MUAC	Middle Upper Arm circumference
ODK	Open Data Kit
OP	Operational partner
OTP	Out-patient Therapeutic Programme
PHC	Primary health care
PLW	Pregnant and Lactating Woman
PoC	Person of concern
ProGres	UNHCR registration database for refugees
PSN	Persons with Special Needs
SAM	Severe Acute Malnutrition
SBCC	Social and behaviour change communication
SD	Standard Deviation
SENS	Standardized Expanded Nutrition survey
SMART	Standardized Monitoring & Assessment of Relief & Transitions
TFP	Therapeutic Feeding Programme
TRCS	Tanzania Red Cross Society
TSFP	Targeted Supplementary Feeding Programme
U5	Children under 5 years Congolese
U5MR	Under-5 Mortality Rate
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Funds
URTI	Upper Respiratory Tract Infection
VAS	Vitamin A Supplementation
WASH	Water Sanitation and Hygiene
WAZ	Weight-for-Age z-score
WFP	World Food Programme
WHO	World Health Organization
WHZ	Weight-for-Height z-score

Executive summary

Overview

The government of Tanzania with the support from UNHCR and other humanitarian actors continued to provide refuge to people fled their countries, mainly from Burundi and Democratic Republic of Congo. As of 31st July 2023, the UNHCR database had a total of 213,427 refugee and asylum seekers hosted in Nyarugusu and Nduta camps in Kasulu and Kibondo districts, respectively. It's heartening to see the collective effort in aiding and ensuring basic necessities for those seeking refuge.

The biannually, Standardised Expanded Nutrition Survey (SENS), seeks to determine the magnitude of malnutrition to inform programmatic decisions aimed at improving the overall nutrition and health situation of refugee's population in Tanzania. The exercise is usually coordinated by UNHCR in collaboration with WFP and UNICEF along with refugee operational and implementing partners mainly health and nutrition agencies.

This was the third-round v3 SENS in refugees' operation in Tanzania, intending to assess nutritional status of children aged 6-59 months, investigate coverage of blanket feeding program among women and children, coverage of targeted feeding programs, IYCF practices and access to primary health services. Additionally, the surveys focused food security situation, water, sanitation, and hygiene, as well as coverage of mosquito net, among others.

The collaboration among various organizations and the government showcases a unified approach to tackling the complex issues surrounding displacement. The focus on nutrition, health, and overall well-being, especially among vulnerable groups like children, reflects a commitment to holistic care.

Methodology

A twostage-cluster sampling technique was used, involving selection of 29 clusters for Burundians and Congolese in Nyarugusu camp and 26 clusters in Nduta camp in the first stage, and random selection of 420 household (HH) for each camp in the second stage. ENA for SMART software was used to calculate sample size, selection of clusters and HH to be surveyed. A five-day training was conducted for the survey team comprised of national staffs from the government, UN agencies and partners for health and nutrition services in refugee camps. A camp level training for anthropometry measurers, standardization tests and pretesting of data collection tools was conducted prior to data collection. The survey questionnaires saved in the preinstalled ODK app on twelve Samsung tablets were used by six teams comprised of national staff and refugee incentive workers to collect the data. Standardization of anthropometric equipment was conducted every morning of data collection day before the team leaves to the field. Data collection lasted five days in each camp, and supervisors, with the support from survey managers and consultants, synchronized data to the UNHCR Kobo Toolbox every day. ENA for SMART software was used to analyse anthropometric information and Epi Info 7.2 was used the remaining modules. Hopefully, the survey results provide valuable insights for informed decision-making and improved support for the refugee's population.

Findings

Anthropometric results

The weighted prevalence of acute malnutrition involving the three individual camps was 2.4% compared to 1.8% in 2021. A statistically significant increase of prevalence of acute malnutrition was noticed among Congolese refugees where GAM increased from 0.4% (0.1 - 1.5) to 4.1% (2.2 - 7.5), ($p < 0.05$). The prevalence of GAM among Burundians in Nyarugusu was 1.7% (0.8 - 3.5) compared to 3.0% (1.7 - 5.3) and 0.9% (0.3 - 2.4) compared to 1.8% (1.0 - 3.4) in Nduta in 2021. The change of GAM in the later camps was not statistically significant, ($p > 0.05$). The prevalence of SAM was 1.0% (0.4 - 2.9), all from children with nutritional oedema in Nyarugusu camp. There was no SAM case among Burundian communities in Nyarugusu and Nduta camps. The combined prevalence of global acute malnutrition based on both WHZ and MUAC, was 3.4% (1.5 - 5.3), 4.7%

(2.2 - 7.2) and 1.5% (0.5 - 2.6) in Nyarugusu Burundians, Nyarugusu Congolese and Nduta camps respectively. Prevalence of combined severe acute malnutrition was 0.4% (0.0 - 1.0) in Nyarugusu Burundians, 1.0% (0.0 - 2.1) in Nyarugusu Congolese and none in Nduta camp.

The weighted prevalence of stunting was 43.4% compared to 39.1% in 2021. A statistically significant increase 39.9% (35.6 - 44.4) in 2021 to 52.1% (46.3-57.8) was noted in Nduta camp between 2021 and 2023, ($p<0.05$). Stunting prevalence of 43.6% (36.9 - 50.5) and 35.9% (29.5-42.8) was revealed in Nyarugusu Burundian and Nyarugusu Congolese camps respectively. Prevalence of stunting however, remained above the critical level according to UNICEF and WHO classification of public health significance.

Infant and young child feeding (IYCF) practices

Proportion of mothers who timely initiated breastfeeding was at same level among Nyarugusu Congolese and Burundian (77%vs78%), with a lightly higher proportion in Nduta camp (84%). Proportion of under six months infants who were exclusively breastfed was above 70% across the three camps with much improvement in Nduta where the proportion increased from 70% in 2021 to 82% in 2023 and more than 83% of infants of the same age were predominantly fed with breastmilk. Proportion of children who were still breastfeeding at the age of 12 to 15 months was at least 90% in Nyarugusu while children who continued breastfeeding at two years was as low as 39% in Nyarugusu Congolese camp. About 70% of children aged between 6 and 8 months in Nyarugusu received semisolid and solid food, with the difference ranging from 14 to 19 percent when compared to Nduta and Nyarugusu Burundian camps respectively. Proportion of children aged between 6 to 23 months who consumed iron fortified food on the previous day was 53% which is far below 74% and 81% in Nyarugusu Burundian camps and Nduta camp. The proportion of infants fed with bottles remained within the recommended WHO and UNIEF threshold of 5%.

Physiological status and program coverage for women of reproductive age

The proportion of non-pregnant and non-lactating women was below 50% in the three camps. Women who were pregnant ranged between 12% in Nyarugusu Burundian to approximately 19% in Nduta camp, among which 55%, 61% and 86% were attending ANC programme in Nyarugusu Congolese, Nyarugusu Burundians and Nduta camps respectively. At least 87% of women attending ANC were receiving IFAS and 97% receiving BSFP rations in the three camps. Prevalence of low MUAC (below 220mm) in non-lactating and non-pregnant based on the “Nutrition Assessment, Counselling and Support (NACS)” developed in 2016 by the Ministry of Health, Community Development, Gender, Elderly and Children as JOB AIDS for Health Facility-Based Service Provider was 0.9% in Nyarugusu Burundian, 4.7% in Nyarugusu Congolese and 3.3% in Nduta. The prevalence of low MUAC (below 230mm) for pregnant and lactating women to infants below six months was 1.9% in Nyarugusu Burundians, 1.6% in Nyarugusu Congolese and 3.4% in Nduta. The prevalence in PLW has significantly improved compared to 2021 where the prevalence was 3.3% in Nyarugusu Burundians, 3.9% in Nyarugusu Congolese and 14% in Nduta.

Food Security Situation

An in-kind food assistance remained major source covering at least 99% of HH across the camps. However, the reduced ration distributed at 60% of the normal ration lasted for an average of 18 to 19 days ranging from a minimum of 1 day and a maximum of 30 days in some HH. To cover the gaps, refugees employed some negative coping strategies such as opting for less preferred or less expensive foods, borrowing, relying on help from friends or relatives, reducing the number of meals eaten in a day, limiting portion sizes at mealtimes and/or reducing consumption by adults so children could eat. The average reduced coping strategy index ranged from 27.4 in Nyarugusu Congolese to 33.6 in Nyarugusu Burundians. However, FCS used to assess dietary diversity, food frequency and relative different nutritional food groups revealed 77% of HH scoring the acceptable level. The proportion of HH consuming vitamin A at least daily ranged between 21% in Nyarugusu Burundians and 37% in Nduta. The proportion of HH consuming protein rich foods at least daily ranged between 79% to 90% in Nyarugusu Burundians and Congolese respectively, while the proportion of HH consuming haem iron rich foods at least daily was 2.6% for Nyarugusu Burundians, 3.9% for Nduta and 14% for Nyarugusu Congolese.

Prevention of Malaria

The proportion of HH owning at least one LLIN was 36% in Nduta, 49% in Nyarugusu Burundians and 67% among Nyarugusu Congolese which, when expressed to average number of persons sharing one LLIN becomes 10.8 in Nduta, 7.2 in Nyarugusu Burundians and 4.8 in Nyarugusu Congolese as opposed to the UNHCR target of 2 persons per LLIN. It should be noted that mass distribution of mosquito net has not been implemented for years now but, the targeted distribution has been conducted to pregnant women and lactating mothers with children aged below one year. The proportion of children aged below five years who slept under LLIN a day before the survey was 31% in Nduta, 45% in Nyarugusu Burundians and 64% in Nyarugusu Congolese, while proportion of pregnant women slept under LLIN was above 50% across the three camps. Despite inadequate ownership of LLIN, the IRS intervention conducted in 2022 was still valid and coverage was 99% in Nyarugusu Burundians, 91% in Nduta and 72% in Nyarugusu Congolese which, the difference from other camps may be attributed by the recent influx of Burundian arrivals.

Water, Sanitation and Hygiene (WASH)

At least 99% all surveyed HH were collecting potable water from treated sources, however, proportion of HH with at least 10 litres per person water storage capacity as lower as 57% in Nduta camp. While the mean water consumption per capita was at least 24.7 litres, collection of potable water from treated sources using protected containers was as lower as 17 litres per capita in Nduta camp. The proportion of HH with access to soap was 47% in Nduta camp and at least 79% in Nyarugusu Burundian and Congolese camps. The use of latrines ranged between 99 to 100% across the three camps.

Conclusions

The persistent issues with stunting and anaemia among children, along with low coverage of nutrition programs and other health interventions, paint a concerning picture. The misuse of distributed nutrition commodities and the high prevalence of malaria add additional layers of complexity.

There's a need for a comprehensive approach to address not only the immediate health concerns but also the underlying factors contributing to the challenges, such as the unstable food pipeline and nutrition supplies, limited livelihood opportunities and lack of access to market. Finding ways to improve nutritional screening, and cases detection, increase coverage of essential health interventions, and strengthen high impact nutrition intervention as well as addressing negative coping strategies could make a significant impact.

Collaboration with relevant authorities, NGOs, and the community might be crucial in developing and implementing effective strategies. It's not just about treating the symptoms but also addressing the root causes to create sustainable improvements in the health and well-being of the refugees in the camps.

Recommendations

Short Term Recommendations:

1. **Fortified Food Promotion:** Promote consumption of fortified food products and proper use of supplementary foods among vulnerable groups, focusing on addressing anaemia and other micronutrient deficiencies disorders.
2. **EBF Awareness:** Increase awareness of Exclusive Breastfeeding (EBF) among lactating pregnant mothers, emphasizing seeking advice from healthcare providers in case of discomfort while breastfeeding during pregnancy.
3. **Strengthen Linkages:** Strengthen linkages between Targeted Supplementary Feeding Program (TSFP) and Blanket Supplementary Feeding Program (BSFP) while continuing existing nutrition programs.
4. **Increase CHWs:** Increase the number of Community Health Workers (CHWs) to the recommended ratio of 1:500 for active case finding and better uptake of nutrition program services.

5. **WASH Promotion:** Strengthen WASH promotion through effective dissemination of key messages on latrine usage, handwashing, and ensure an adequate number of hygiene promoters.
6. **Community Health Structure Review:** Review the community health structure, focusing on active case finding, education for new arrivals, identification of pregnant women, disease surveillance, and mortality surveillance.
7. **IYCF Awareness:** Strengthen awareness and protection of IYCF through baby tents, mother-to-mother support groups, and hiring professionals for lactation counselling.
8. **Distribution Network Review:** Review the distribution network to ensure equity and adequate water supply, emphasizing the importance of water storage.
9. **Multisectoral Collaboration:** Enhance multisectoral collaboration among partners delivering humanitarian services for optimal IYCF practices and control of specialized nutritious food items.
10. **Monthly Soap Distribution:** Ensure consistent monthly distribution of soap, prioritizing vulnerable populations, and promote awareness on its proper usage.
11. **Dignity Kits for Pregnant Women:** Provide dignity kits to pregnant women at their first visit during the first trimester to promote early enrolment in Antenatal Care (ANC) and increase coverage of Iron and Folic Acid (IFA) pills supplementation.

Medium Term Recommendations:

1. **KAP Survey on IYCF:** Conduct a Knowledge, Attitudes, and Practices (KAP) survey on Infant and Young Child Feeding (IYCF) to identify factors hindering optimal feeding.
2. **Refresher Training on MIYCAN/IYCF:** Conduct refresher training on Maternal, Infant, and Young Child Nutrition (MIYCAN/IYCF) for national staff, incentive workers, and community leaders.
3. **LLIN Distribution:** Ensure regular distribution of Long-Lasting Insecticidal Nets (LLIN) to pregnant women and children below five years.
4. **Immunization Strengthening:** Strengthen routine measles vaccination, vitamin A supplementation, and deworming through defaulter tracing and house-to-house checking of immunization status.
5. **Food Security Assessment:** Conduct an expanded food security assessment to understand household-level causes of food insecurity and design appropriate interventions.
6. **Anaemia Reduction Strategy:** Finalize an anaemia reduction strategy targeting children under two and pregnant women, considering micronutrient supplementation to include non-pregnant women of child-bearing age.
7. **Water Usage Assessment:** Conduct an in-depth assessment of knowledge and practice regarding water usage, adequacy, and quality of water containers.
8. **Soap Access:** Investigate low access to soap and develop interventions to increase prevalence.

Long Term Recommendations:

1. **Breastfeeding Corners:** Consider establishing breastfeeding corners at health facilities to enhance optimal IYCF practices.
2. **Livelihood Opportunities:** Advocate for livelihood opportunities for refugees through developmental initiatives to improve their economic status.
3. **Increased Food Rations:** Advocate for more resources to increase food rations at the household level.
4. **Nutrition Causal Analysis:** Investigate causes of persistent undernutrition, especially stunting and anaemia, through a Nutrition Causal Analysis.
5. **Nutrition Sensitive Interventions:** Promote nutrition-sensitive interventions, including backyard kitchen gardens emphasizing Vitamin A and iron-rich foods.

Summary of key findings

Surveyed Area	Nyarugusu Burundian Camp	Nyarugusu Congolese Camp	Nduta Camp	Classification of public health significance or target
Data collection period	**05 - 09/09/2023**	**11 – 15/09/2023**	**21 – 25/09/2023**	
CHILDREN 6-59 months % (95% CI)				
Acute Malnutrition (WHO 2006 Growth Standards)				
Global Acute Malnutrition	1.7% (0.8 - 3.5)	4.1% (2.2 - 7.5)	0.9% (0.3 - 2.4)	Very high/critical if ≥ 15% (WHO-UNICEF) UNHCR Target of < 10%
Moderate Acute Malnutrition	1.7% (0.8 - 3.5)	3.1% (1.6 - 5.9)	0.9% (0.3 - 2.4)	
Severe Acute Malnutrition	0.0%	1.0% (0.4- 2.9)	0.0%	UNHCR Target of < 2%
Oedema	0.0%	1.0%	0.0%	
Mid Upper Arm Circumference (MUAC)				
MUAC <125 mm and/or oedema	1.9% (0.8 - 4.4)	2.6% (1.6 - 4.3)	1.1% (0.5-2.5)	
MUAC 115-124 mm	1.7% (0.7 - 4.0)	1.4% (0.7- 2.8)	1.1% (0.5-2.5)	
MUAC <115 mm and/or oedema	0.2% (0.0 - 1.6)	1.2% (0.5 - 3.0)	0.0%	
Acute Malnutrition (WHO 2006 Growth Standards WHZ and/or MUAC and/or Oedema)				
Combined Global Acute Malnutrition (cGAM)	3.4% (1.5 - 5.3)	4.7% (2.2 - 7.2)	1.5% (0.5 - 2.6)	
Combined Moderate Acute Malnutrition (cMAM)	3.0% (1.2 -4.8)	3.7% (1.6 - 5.7)	1.0% (0.0 - 2.1)	
Combined Severe Acute Malnutrition (cSAM)	0.4% (0.0 - 1.0)	1.5% (0.5 - 2.6)	0%	
Stunting (WHO 2006 Growth Standards)				
Total Stunting	43.6% (36.9 - 50.5)	35.9% (29.5-42.8)	52.1% (46.3-57.8)	Very high/critical if ≥ 30% (WHO-UNICEF)
Severe Stunting	13.5% (9.9-18.1)	11.7% (8.5-15.9)	18.1% (15.6-21.0)	
Programme coverage				
Measles vaccination with card or recall (9-59 months)	98.0% (96.6 - 99.3)	97.8% (96.3 - 99.4)	98.8% (97.6 – 100)	Target of ≥ 95%

Surveyed Area	Nyarugusu Burundian Camp	Nyarugusu Congolese Camp	Nduta Camp	Classification of public health significance or target
Data collection period	**05 - 09/09/2023**	**11 – 15/09/2023**	**21 – 25/09/2023**	
Measles vaccination with card (9-59 months)	92.0% (86.2 - 97.7)	88.8% (82.0 - 95.6)	83.1% (76.5 - 89.6)	
Vitamin A supplementation within the past 6 months with card or recall	86.3% (78.5 - 94.2)	82.1% (72.9 - 91.3)	88.1% (78.4 - 97.8)	Target of ≥ 90%
Vitamin A supplementation within the past 6 months with card	77.7% (67.2 - 88.2)	60.6% (47.8 - 73.5)	40.7% (27.7 - 53.7)	
Deworming coverage children 12-59 months	42.6% (27.7 - 57.5)	9.4% (0.1 - 18.8)	14.2% (8.7 - 19.6)	
Nutrition programme enrolment coverage				
Blanket supplementary feeding program in 6 – 23 months (Super Cereal)	98.8% (97.0 – 100)	95.8% (92.5 - 99.1)	100%	
Blanket supplementary feeding program in 24 – 59 months (MNP)	99.0% (97.9 – 100)	97.7% (95.8 - 99.7)	99.7% (98.9 – 100)	
Targeted supplementary feeding program (TSFP)	35.7% (6.6 - 64.8)	16.7% (1.1 - 32.2)	57.1% (7.7 – 100.0)	
Outpatients care therapeutic feeding program/Stabilization centre (OTP/SC)	0.0%	20.0% (0.0 - 89.0)	0.0%	
Average number of days BSFP ration for 6 – 23 months lasts out of 30 days (mean, 95%CI range)	18.0 days (17.1 - 19.0) [4 – 30]	17.7 days (16.5 - 18.8) [4 – 30]	19.5 days (18.5 - 20.6) [10 – 30]	
Average number of days BSFP ration for 24 – 59 months lasts out of 28 days (mean, 95%CI range)	21.3 days (19.7 - 22.9) [0 – 30]	21 days (19.0 - 22.1) [0 – 30]	23.9 days (22.8 - 25.0) [0 – 28]	
Diarrhoea				
Diarrhoea in the last 2 weeks	11.8% (7.4 - 16.3)	11.0% (6.4 - 15.6)	9.1% (5.7 - 12.5)	
Anaemia (6 – 59 months)				
Total anaemia (Hb < 11 g/dl)	41.1% (34.0 - 48.2)	44.2% (38.4 - 50.1)	38.2% (30.2 - 46.1)	High if ≥ 40% Target of < 20%
Mild (Hb 10-10.9)	21.2% (16.9 - 25.5)	28.6% (24.8 - 32.4)	21.4% (16.4 - 26.4)	
Moderate (Hb 7-9.9)	19.5% (13.6 - 25.4)	14.8% (10.1 - 19.5)	16.5% (10.4 - 22.5)	
Severe (Hb < 7)	0.4% (0 - 1.0)	0.8% (0.0 - 1.6)	0.3% (0.0 - 1.0)	
CHILDREN 0-23 months % (95% CI)				
IYCF indicators				
Timely initiation of breastfeeding	77.5% (70.2 - 84.9)	77.2% (69.1 - 85.2)	83.5% (76.6 - 90.4)	UNHCR Target of ≥ 85%

Surveyed Area	Nyarugusu Burundian Camp	Nyarugusu Congolese Camp	Nduta Camp	Classification of public health significance or target
Data collection period	**05 - 09/09/2023**	**11 – 15/09/2023**	**21 – 25/09/2023**	
Exclusive breastfeeding under 6 months	76.2% (64.9 - 87.5)	71.0% (59.5 - 82.5)	81.6% (71.1 - 92.2)	UNHCR Target of ≥ 75%
Consumption of iron-rich or iron-fortified foods	81.1% (72.9 - 89.3)	53.1% (41.1 - 65.1)	73.7% (66.9 - 80.5)	UNHCR Target of ≥ 60%
Bottle feeding	1.0% (0 - 2.3)	0.4% (0.0 - 1.2)	0.5% (0.0 - 1.4)	UNHCR Target of < 5%
WOMEN 15-49 years % (95% CI)				
Anaemia (non-pregnant)				
Total Anaemia (Hb <12 g/dl)	22.7% (14.2 - 31.3)	24.0% (16.3 - 31.6)	14.5% (6.3 - 22.7)	High if ≥ 40% (WHO) UNHCR Target of < 20%
Mild (Hb 11-11.9)	12.3% (6.6% - 17.9)	14.1% (8.0 - 20.1)	10.5% (3.8 - 17.3)	
Moderate (Hb 8-10.9)	9.2% (4.5 - 13.8)	9.9% (4.3 - 15.5)	4.0% (0.3 - 7.6)	
Severe (Hb <8)	0.5% (0 - 1.6)	0%	0%	
Program coverage				
ANC coverage	60.7% (40.2 - 81.3)	54.6% (36.3 - 72.8)	85.7% (76.2 - 95.3)	
Iron and Folic Acid supplementation coverage	60.7% (40.2 - 81.3)	51.5% (30.7 - 72.3)	74.3% (58.5 - 90.1)	
BSFP coverage for Pregnant women	76.5% (55.8 - 97.1)	72.2% (46.1 - 98.4)	68.6% (51.6 - 85.6)	
BSFP coverage for Lactating women	100%	96.7% (89.6 – 100)	100%	
DEMOGRAPHY % (95% CI)				
HH size and Composition				
Average HH size: Mean, (95%CI), [range]	5.5 (5.0 - 6.0) [1 – 14]	5.3 (5.0 - 5.6) [1 – 14]	4.7 (4.4 - 5.1) [1 – 11]	
Percent of children U2	10.2%	12.5%	13.0%	
Percent of children U5	25.3%	28.8%	30.2%	
Percent of pregnant women	2.4%	3.3%	3.5%	
HH Head Profile				
Female headed HHs	67.4% (57.3 - 77.5)	72.9% (65.4 - 80.5)	66.6% (56.5 - 76.7)	
Male headed HHs	29.2% (19.0 - 39.4)	24.1% (17.1 - 31.0)	30.4% (20.4 - 40.3)	
Children headed HHs	0%	0%	0%	
Elderly headed HHs	3.5% (1.8 - 5.1)	3.0% (1.0 - 5.0)	3.1% (1.3 - 4.8)	

Surveyed Area	Nyarugusu Burundian Camp	Nyarugusu Congolese Camp	Nduta Camp	Classification of public health significance or target
Data collection period	**05 - 09/09/2023**	**11 – 15/09/2023**	**21 – 25/09/2023**	
Age dependency ratio				
Average age dependency ratio: Mean, (95%CI), [range]	1.6 (1.4 - 1.7) [0 – 7]	1.6 (1.5 - 1.8) [0 – 7]	1.6 (1.5 - 1.7) [0 – 8]	
FOOD SECURITY % (95% CI)				
Proportion of HHs receiving a food assistance (in-kind)	99.0% (97.5 – 100)	100%	100%	
In-kind food distribution				
Average number of days general food ration lasts out of 28 days: Mean, (95%CI), [range]	19.2 days (18.2 - 20.1) [7 - 28]	17.2 days (16.4 – 18.0) [7 – 30]	18.0 days (17.1 - 19.0) [1 – 30]	
Negative HH coping strategies				
Proportion of HHs reporting using one or more negative coping strategies over the past 4 weeks	80.3% (70.8 - 89.9)	58.3% (46.1 - 70.5)	67.2% (52.9 - 81.6)	
Rely on less preferred and/or less expensive foods	89.1% (82.0 - 96.2)	89.5% (84.1 - 94.8)	92.8% (87.5 - 98.0)	
Borrow food, or rely on help from a friend or relative	76.2% (67.5 - 84.8)	59.8% (48.7 - 70.9)	68.9% (60.6 - 77.2)	
Reduce the number of meals eaten in a day	88.1% (81.9 - 94.3)	76.9% (67.0 - 86.8)	81.7% (73.4 - 89.9)	
Limit portion sizes at mealtime	90.7% (85.3 - 96.0)	78.9% (68.9 - 88.9)	86.7% (79.9 - 93.5)	
Reduce consumption by adults so children could eat.	81.3% (74.6 - 88.1)	65.8% (54.7 - 77.0)	75.6% (66.9 - 84.3)	
Average rCSI: Mean, (95%CI), [range]	33.6 (28.5 - 38.7) [0 - 56]	27.4 (21.4 - 33.5) [0 - 56]	32.3 (27.2 - 37.5) [0 - 56]	
Average FCS: Mean (95%CI), [range]	41.1 (39.6 - 42.5) [20.5 - 74.0]	48.2 (45.8 - 50.5) [12.0 - 89.5]	42.1 (39.9 - 44.3) [19.5 - 89]	WFP target: FCS>35
FCS profiles:				
Acceptable	77.2% (69.3 - 85.1)	92.0% (87.6 - 96.2)	82.8% (74.0 - 91.6)	
Borderline	21.2% (13.5 - 29.0)	5.5% (1.5 - 9.6)	15.6% (6.9 - 24.2)	
Poor	1.6% (0 - 3.3)	2.5% (0.4 - 4.6)	1.7% (0.0 - 3.6)	
MOSQUITO NET COVERAGE % (95% CI)				
Mosquito net ownership				
Proportion of HHs owning at least one LLIN	48.7% (40.5 - 57.0)	67.0% (58.5 - 75.5)	36.3% (25.2 - 47.5)	UNHCR Target of > 80%

Surveyed Area	Nyarugusu Burundian Camp	Nyarugusu Congolese Camp	Nduta Camp	Classification of public health significance or target
Data collection period	**05 - 09/09/2023**	**11 – 15/09/2023**	**21 – 25/09/2023**	
Average number of persons per LLIN (mean)	7.2	4.8	10.8	2 persons per LLIN
Mosquito net utilisation				
Proportion of HH members (all ages) who slept under an LLIN	35.3%	50.6%	25.1%	
Proportion of children 0-59 months who slept under an LLIN	45.2%	63.6%	31.4%	
Proportion of pregnant women who slept under an LLIN	53.5%	88.2%	58.8%	
IRS coverage	99.0% (97.5 - 100.0)	84.7% (72.1 - 97.3)	96.1% (90.9 – 100.0)	
WASH % (95% CI)				
Water quality				
Proportion of HHs collecting drinking water from protected/treated sources	99.0% (97.5 – 100)	99.0% (98.0 – 100)	100%	
Water quantity				
Proportion of HHs that use domestic water collected from protected/treated sources (with protected containers only): ≥ 20 lpppd	46.6% (35.9 - 57.4)	44.4% (33.4 - 55.5)	36.5% (23.8 - 49.3)	
Proportion of HHs that use domestic water collected from protected/treated sources (with protected containers only): 15 - <20 lpppd	6.7% (3.0 - 10.5)	11.6% (7.3 - 16.0)	7.3% (4.0 - 10.7)	
Proportion of HHs that use domestic water collected from protected/treated sources (with protected containers only): <15 lpppd	46.6% 36.0 - 57.3)	43.9% (31.4 - 56.4)	56.2% (43.6 - 68.8)	
Toilet/Latrine use				
Proportion of HHs reporting defecating in a toilet	100%	99.5% (98.5 – 100)	99.4% (98.3 – 100)	
Access to soap				
Proportion of HHs with access to soap	79.3% (69.8 - 88.8)	80.8% (67.9 - 93.8)	46.6% (31.2 - 62.0)	

1. Introduction

The Standardised Expanded Nutrition Survey (SENS) is scheduled biannually for Tanzania and seeks to determine the magnitude of malnutrition to inform programmatic decisions aimed at improving the overall nutrition and health situation of refugee population. The exercise is usually coordinated by UNHCR in collaboration with WFP and UNICEF along with Government of Tanzania through MoH, MoHA and TFNC, and refugee OPs and IPs, mainly health and nutrition agencies. In 2023, TRCS, MTI, WVT, IRC and CWS joined UNHCR, WFP and UNICEF to accomplish the exercise which took place between August and September.

As of June 2023, the United Republic of Tanzania (URT) was hosting a total of 255,459 population, including 203,995 refugees and 39,135 asylum seekers, among which, 84% live in camps, 8.4% in villages, 7.5% in settlements and 0.1% in urban. The refugees living in the camps are hosted in Nyarugusu (subdivided into Burundians and Congolese) and Nduta camps in Kasulu and Kibondo districts. Refugees from DRC arrived in 1995 while those from Burundi came in 2015, both fleeing the war caused by political instability in their countries. In March 2023, a wave of asylum seekers from DRC crossed the border into Tanzania, accounting for approximately 11,000 new arrivals. As of 31st July 2023, the UNHCR database had 213,427 refugees and asylum seekers hosted in the camps (UNHCR, July 2023).

This was the third round of SENS version 3, conducted from the 5th to 25th September 2023 in Nyarugusu Burundian, Nyarugusu Congolese and Nduta camps. The surveys intended to assess the nutritional status of children aged 6-59 months, investigate the coverage of blanket feeding programs among women and children, coverage of targeted feeding programs, assess anaemia among children aged 6 – 50 months and non-pregnant women of reproductive age (15 – 49yrs) IYCF practices and access to primary health services. Additionally, the surveys focused on food security situation, water, sanitation and hygiene, as well as coverage of mosquito nets, among others. The surveys were jointly organized and coordinated by UNHCR and WFP along with the Government of Tanzania involving the Ministry of Home Affairs, the Ministry of Health, the Tanzania Food and Nutrition Centre, Tanzania Red Cross Society, UNICEF, Medical Teams International, International Rescue Committee, Church World Services and World Vision Tanzania.

The last SENS was conducted from 6 September to 10 October 2021. The weighted prevalence of global acute malnutrition (GAM) based on weight for height expressed in Z-scores and/or oedema for the two camps was 1.6% and SAM of 0.0 %. The GAM prevalence for camp specific was 3.0% for Nyarugusu Burundian, 0.4% for Nyarugusu Congolese and 1.8% for Nduta with 0% SAM in all the camps.

The overall prevalence of stunting in the two camps was 38.3%, which was categorized as very high according to the classification of public health significance. The prevalence of stunting by the camp was 42.7% in Nyarugusu Burundian, 36.3% in Nyarugusu Congolese and 39.9% in Nduta. When segregated by sex, boys seemed to be more stunted than girls across all the camps.

The weighted prevalence of anaemia in children aged 6 – 59 months was 31.1%, specifically, 28.8% in Nyarugusu Burundian, 36.6% in Nyarugusu Congolese and 32.6% in Nduta camp. Analysis revealed a much higher prevalence of anaemia in children aged 6-23 months compared to 24-59 months. The situation was worse (above 40%) in children aged 6-23 months in Nyarugusu camp for both Congolese and Burundians.

Due to funding limitations, food assistance has been reduced in the past three years, leading to increased use of negative coping strategies among some families, like sharing the supplementary food provided to special groups. Limited livelihood opportunities are also thought to affect food diversity, thus, compromising the nutritional status of the refugees. Ration reduction by half may have contributed to the worsening of the nutritional status of under-fives children. For instance, as of June 2023, the total number of admissions for severe acute malnutrition was 207 children, higher than 92 children admitted in the same month in 2022. Despite the fact that the population is decreasing following the ongoing voluntary repatriation, the trend of SAM admissions has been noted to increase. Nutrition security has been a concern in Nyarugusu camp, which is receiving new asylum seekers. A measles outbreak that was reported among 326 children between April and June 2023 may have

contributed to worsening nutrition security among children in Nyarugusu camp. Hence, conducting SENS in 2023 was necessary for monitoring of nutritional status among Congolese and Burundians across all refugee sites.

1.1. Geographic description of survey area

Kasulu and Kibondo are administrative districts of the Kigoma region which lies along the international border between Tanzania and Burundi on the North-western and the DRC on its Western part. Kasulu and Kibondo districts are located about 90km and 240km from Kigoma town respectively. The altitude where refugees are located ranges from 1,224m to 1,311m above sea level.

The Nyarugusu camp is located about 66km from Kasulu town and distance from Kibondo town to Nduta is about 14km. The ethical characteristics between Burundians and the ethnic group of host population (*Waha)*, resembles the same, while for Congolese is slightly different.

Refugee camps in Kigoma Region

1.2. Description of the population

The Nyarugusu Congolese camp is about 29 years old, established following the first influx in 1994 after political turmoil in DRC and is hosting Congolese fled from Eastern part of DRC who were living along Lake Tanganyika of which majority are from Bembe tribe. Nduta reopened in 2015 when Burundians fled their country, and Nyarugusu Burundian camp was established closer to Nyarugusu Congolese camp when Nduta reached its capacity. Nduta and Nyarugusu Burundian camps are accommodating Hutus ethnic group from Burundi, among which, the majority were former refugees, hosted in Mtabila, Muyovosi, Nduta, Mtendeli, Karago and Lukole before the closure of the last camp in June 2009. This recycling has exposed most Burundian refugees to the best experience of being a refugee and how to cope with it, especially in Tanzania.

The refugee population living in the camps as of 31st July 2023 was 213,427 (including 44,550 under-fives).

Table 1: Total population and U5 refugees and asylum seekers in Nyarugusu and Nduta camp (Source: UNHCR, 2023)

Camp/Site	Population	No. HHs	Av. HHs	Children U5s	% of children U5s
Nyarugusu (DRC)	88,168	20,758	4.3	17,038	19.3%
Nyarugusu (BRD)	49,889	10,274	4.9	10,322	20.69%
Nduta	75,370	17,760	4.2	17,190	22.8%
Total	**213,427**	**48,792**	**4.5**	**44,550**	**20.94%**

(Source: UNHCR ProGres)

1.3. Food security situation

Food security among refugees in the three camps depends on assistance from donor through WFP. In Tanzania, refugee receives an in-kind food assistance, distributed through general ration on 28 days distribution cycle. A full ration a refugee food basket contains of cereals at 380g, pulses at 120g, super cereal with sugar at 50g vegetable oil at 20g and salt at 5g per person per day intended to provide 2,166kcal per person per day as recommended by Sphere standards. However, in the last cycle of food distribution prior to the survey exercise, food rations were distributed at 50% of the full ration. The distributed food items were maize flour at 230g, pulses at 50g, vegetable oil at 8g, and salt at 5g, which provides 1,301 kcal/p/day. A total of 206,862 received food assistance in Nyarugusu and Nduta camps.

WFP also supports new arrivals with wet feeding at the same ration provided to the old caseload in Nyarugusu camp. Under maternal and child nutrition, WFP provides 150/p/d of super cereal to PLW, 100g/p/d of super cereal plus to children aged 6 – 23 months, 0.5g/p/day of micronutrient powder to children aged 24 – 59 months. Children with MAM and ART clients receive 200g/p/ of super cereal plus, and 200g/p/d, 100g/p/d, 200g/p/d,

20g/p/d and 5g/p/d for maize flour, pulses, super cereal plus, vegetable oil and salt to hospitalized patients in the IPD.
The number of beneficiaries received rations under specials feeding programs were 8,955 PLW, 9,526 children aged 6 – 23 months, 24,907 children aged 24 – 59 months and 726 children aged 6 – 59 months with MAM.

Food commodities are usually shipped from Dar Es Salaam through Dodoma, Shinyanga, Isaka and delivered in Kibondo and finally in Nyarugusu EDP/FDP managed by WFP. Roads are passable throughout the year with minor challenges. There are neither common markets between refugees and host community nor petty businesses in the camps.

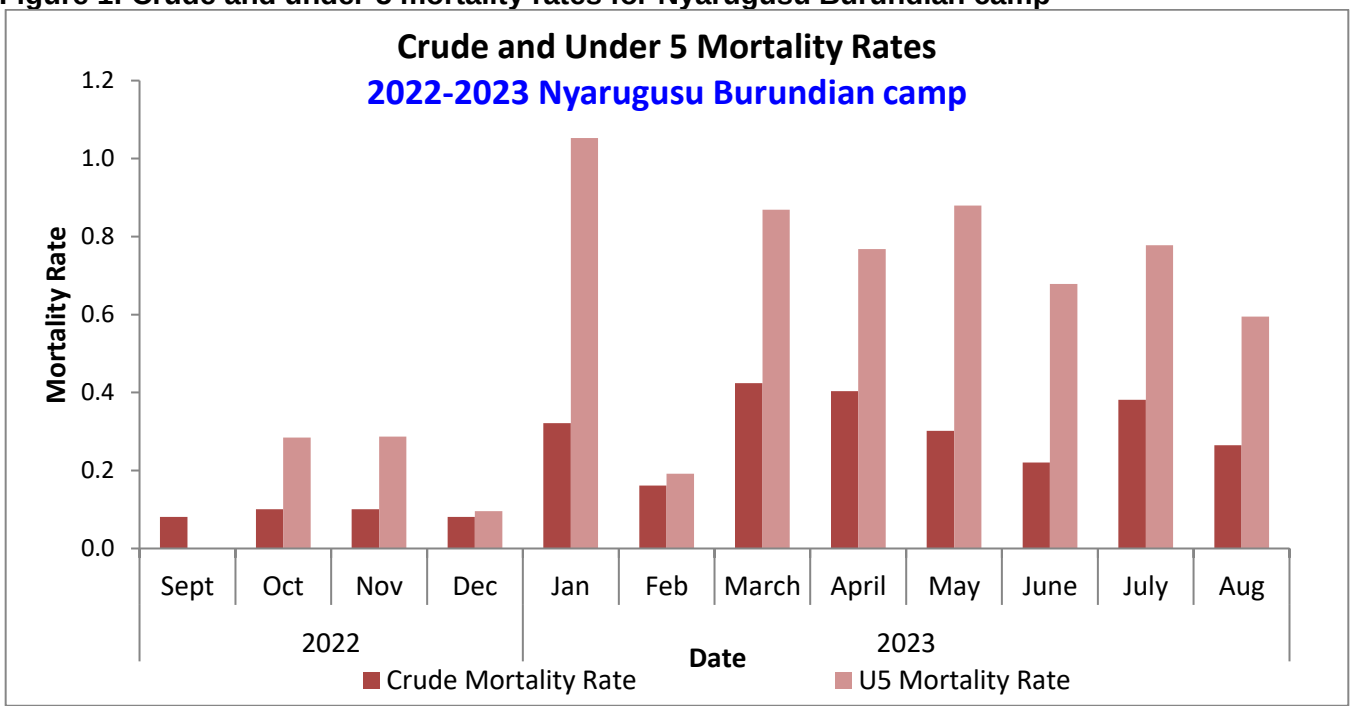
1.4. Health situation

The person of concern receives primary healthcare in respective camps comprising hospitals and health posts. There are OPDs, IPDs, surgery, reproductive and child health including HIV/AIDS, nutrition services, mental health and non-communicable disease services in hospitals. At health posts, OPD, RCH and HIV/AIDS services are provided. Elective and emergency cases that cannot be managed in the camps are referred to government run health facilities and semi-private and public owned secondary and tertiary hospitals in Kasulu, Kibondo, Kigoma, Mwanza and Dar Es Salaam.

In the past one-year, the crude mortality rate ranged between 0.08 and 0.42 in Nyarugusu Burundians, 0.11 to 0.49 for Nyarugusu Congolese and 0.05 to 0.20/1000pop/month in Nduta camp. The under-five mortality rate ranged between 0.00 to 1.05, 0.11 to 1.4 and 0.06 to 0.55 for Nyarugusu Burundians, Nyarugusu Congolese and Nduta camps, respectively, with malaria being a primary cause of death. The leading morbidities were Malaria (28%), URTI (37%), LRTI (14%), UTI (37%), watery Diarrhoea (14%) and others 28.3%[1]. The fact that malaria is identified as the primary cause of death among under-fives is concerning and very common in the Kigoma Region.

The variation in mortality rates over the past year suggests a dynamic situation that requires ongoing monitoring and adaptation of healthcare strategies. Addressing malaria, given its prominence, might involve more intensified efforts in preventive measures in addition to mosquito net distribution and anti-malarial treatments. Additionally, improving overall healthcare access and the capacity to manage malaria cases could contribute to reducing these mortality rates.

Figure 1: Crude and under-5 mortality rates for Nyarugusu Burundian camp



[1] UNHCR health statistics report, 2022-2023

Figure 2: crude and under-5 mortality rates for Nyarugusu Congolese Camp

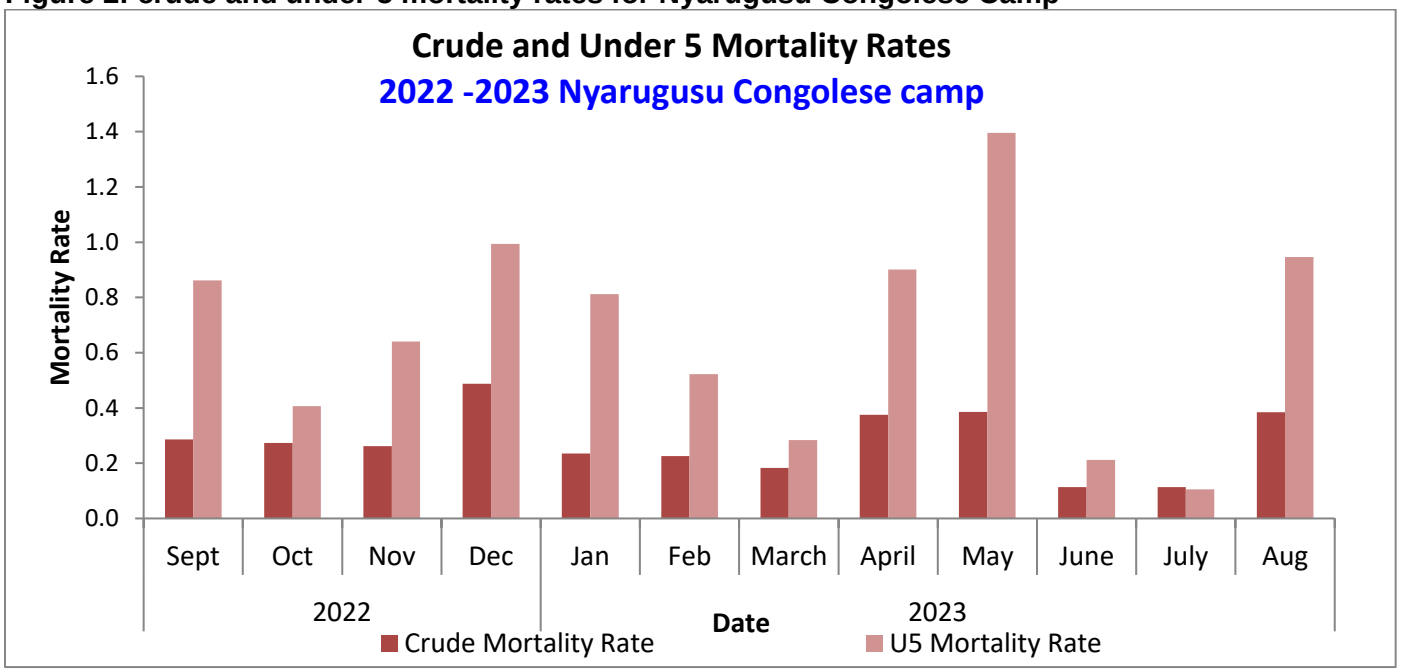


Figure 3: crude and under-5 mortality rates for Nduta Camp

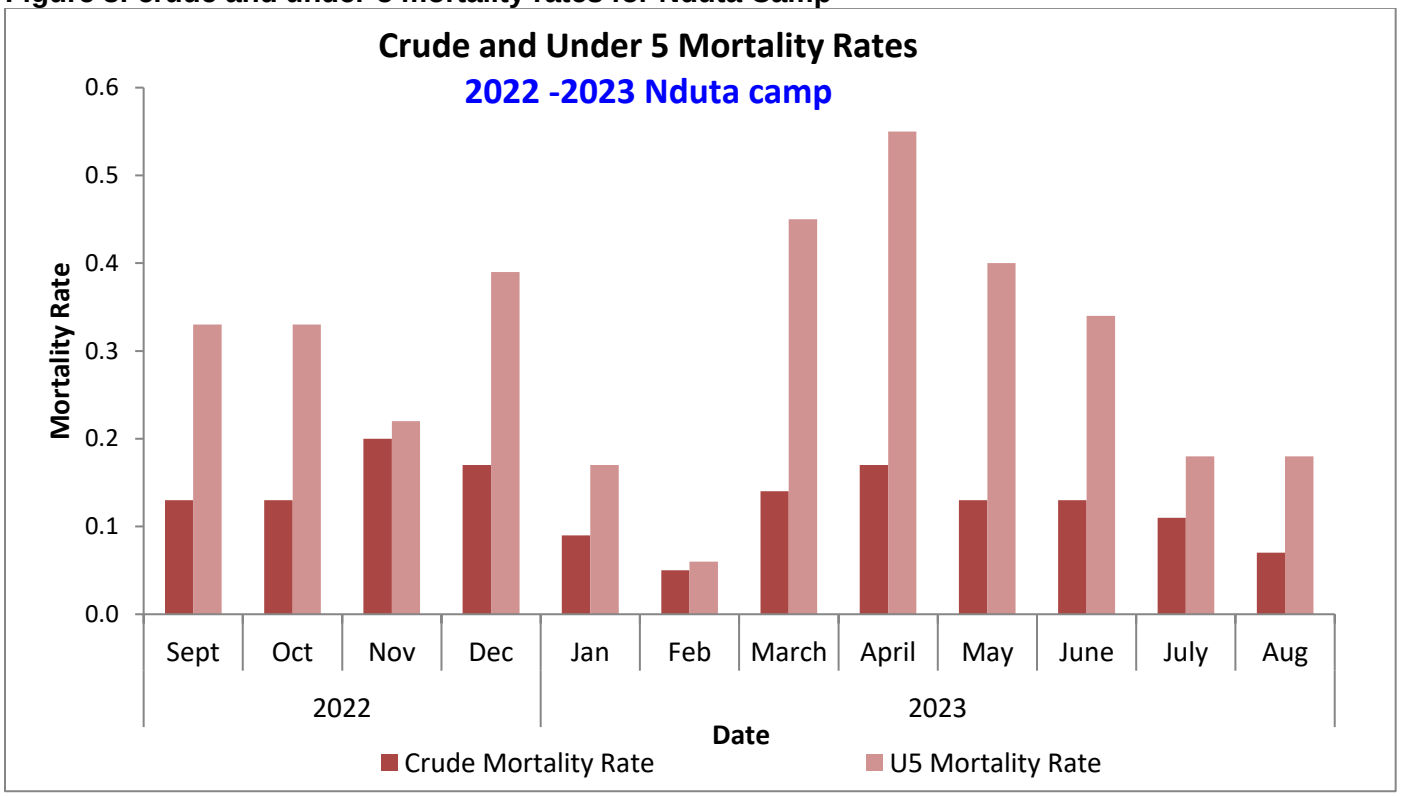
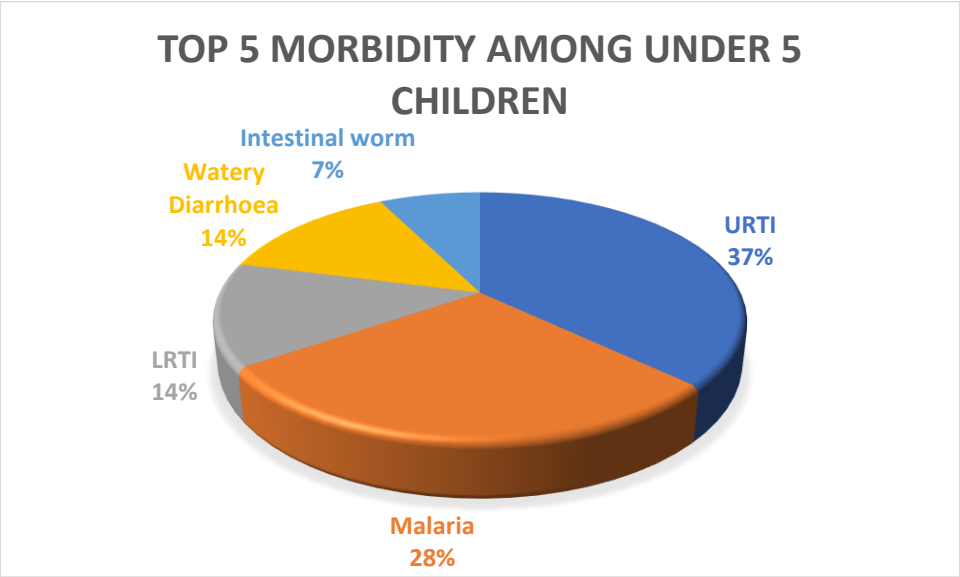


Figure 4: Top five causes of morbidity in children under-fives



1.5. Nutrition situation

UNHCR along with WFP, UNICEF and partners continued to provide nutrition services to PLW, children aged 6 – 59 months, children with MAM and SAM, IPD patients and ART clients. These programs are widely used in many dimensions aiming to improve the nutrition wellbeing of refugee population. The program supports timely detection and treatment of acute malnutrition, vitamin A supplementation and deworming of children, Infant and young child feeding and strengthen nutrition information systems. The programs also are used to inform a additional information that can necessary included in the routine and annual/biannual assessments including SENS.

The last SENS was conducted from 6th September to 10th October 2021. The weighted prevalence of global acute malnutrition (GAM) based on weight for height expressed in Z-scores and/or oedema for the two camps was 1.6% and SAM of 0.0 %. The GAM prevalence for camp specific was 3.0% for Nyarugusu Burundian, 0.4% for Nyarugusu Congolese and 1.8% for Nduta, with 0% SAM in all the camps.

The overall prevalence of stunting in the two camps was 38.3%, which was categorized as very high according to classification of public health significance. The prevalence of stunting by the camp was 42.7% in Nyarugusu Burundian, 36.3% in Nyarugusu Congolese and 39.9% in Nduta. Disaggregation by sex indicated higher stunting among boys compared to girls across the three camps.

The weighted prevalence of anaemia in children aged 6 – 59 months was 31.1%, specifically, 28.8% in Nyarugusu Burundian, 36.6% in Nyarugusu Congolese and 32.6% in Nduta camp. Analysis revealed a much higher prevalence of anaemia in children aged 6-23 months compared to those aged 24-59 months. The situation was worse (above 40%) in children aged 6-23 months Nyarugusu camp for both Congolese and Burundians. In August 2023, a MUAC screening campaign was conducted in Nyarugusu Burundian camp and 119 cases of moderate acute malnutrition indicated in Figure 5 below (an increase of almost three times when compared to July 2023 cases), were detected and admitted in the targeted supplementary feeding program.

The challenges in maintaining food assistance due to funding limitations are indeed troubling. It's disheartening to hear about the negative coping strategies adopted by some families, like sharing supplementary food, because of reduced assistance. The link between limited livelihood opportunities and compromised nutritional status underscores the interconnectedness of various factors influencing the well-being of refugees.

The increase in severe acute malnutrition admissions, especially among under-five children, is concerning and suggests a need for urgent intervention. The reduction in rations, combined with the influx of new asylum seekers and the impact of a measles outbreak between April and June 2023, creates a complex scenario that demands careful and targeted responses.

The decision to conduct the SENS in 2023 for monitoring nutritional status is a crucial step. It not only provides a snapshot of the current situation but also serves as a foundation for informed decision-making in addressing the specific challenges faced by the Congolese and Burundian refugees.

In such challenging circumstances, the resilience of the communities and the efforts of humanitarian organizations become paramount.

Figure 5: Number of admissions for MAM and SAM in 6-59 months for Nyarugusu Burundian camp

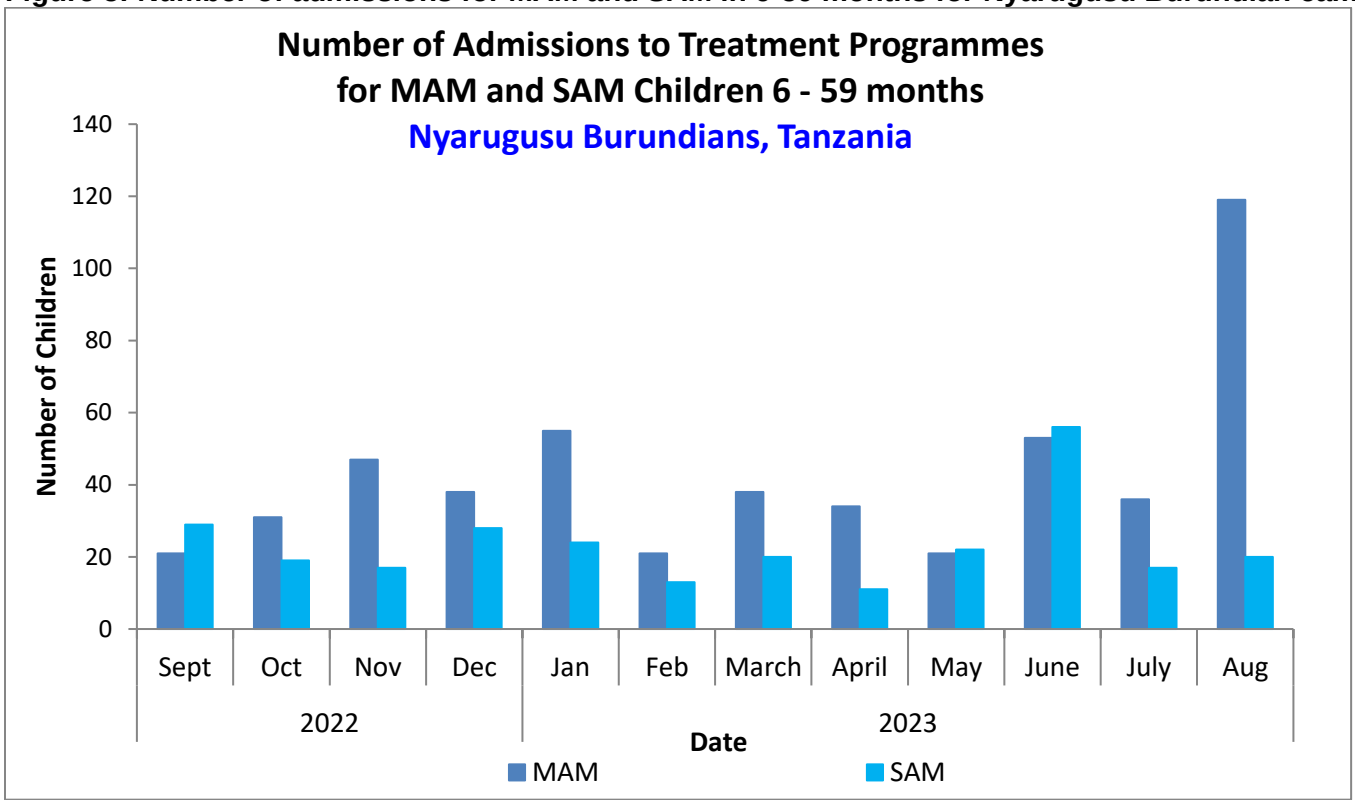


Figure 6: Number of admissions for MAM and SAM in 6-59 months for Nyarugusu Congolese camp

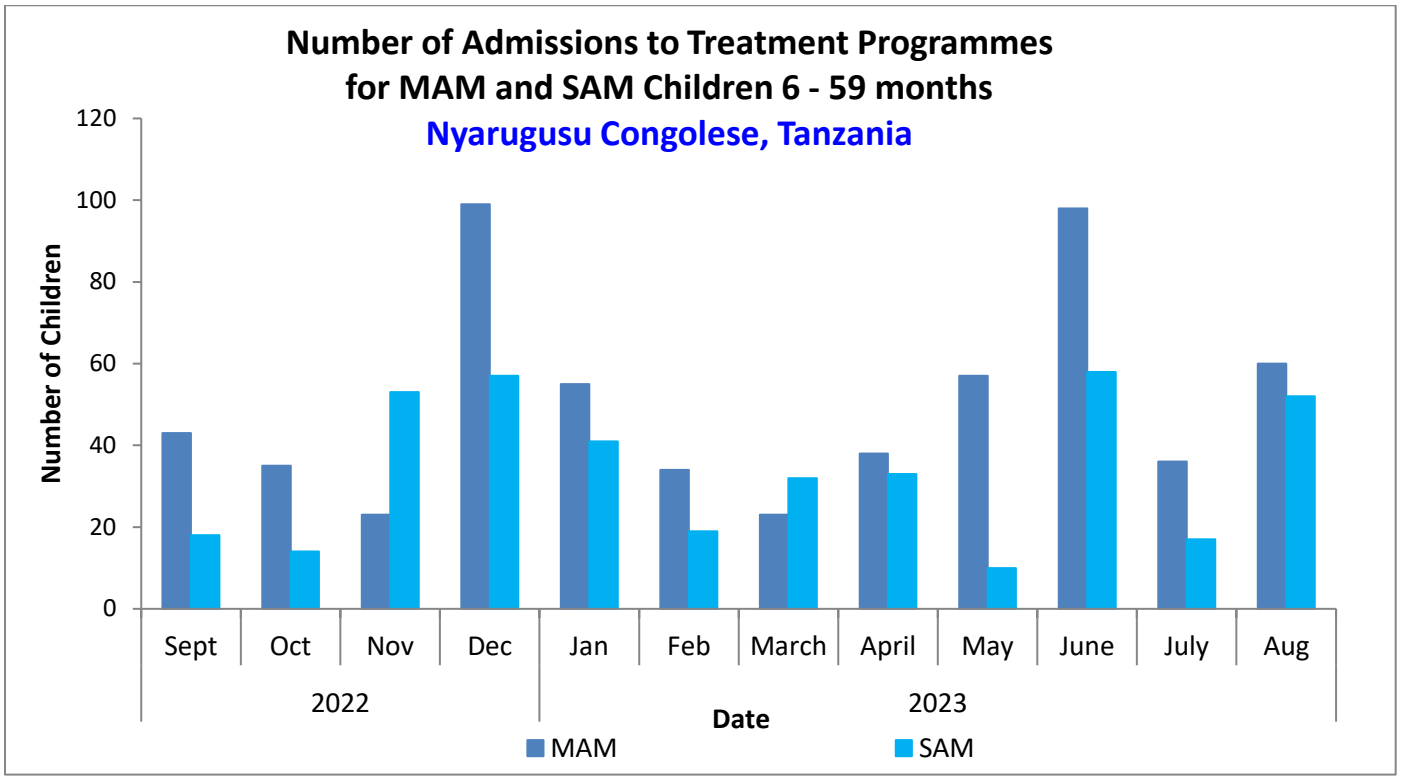
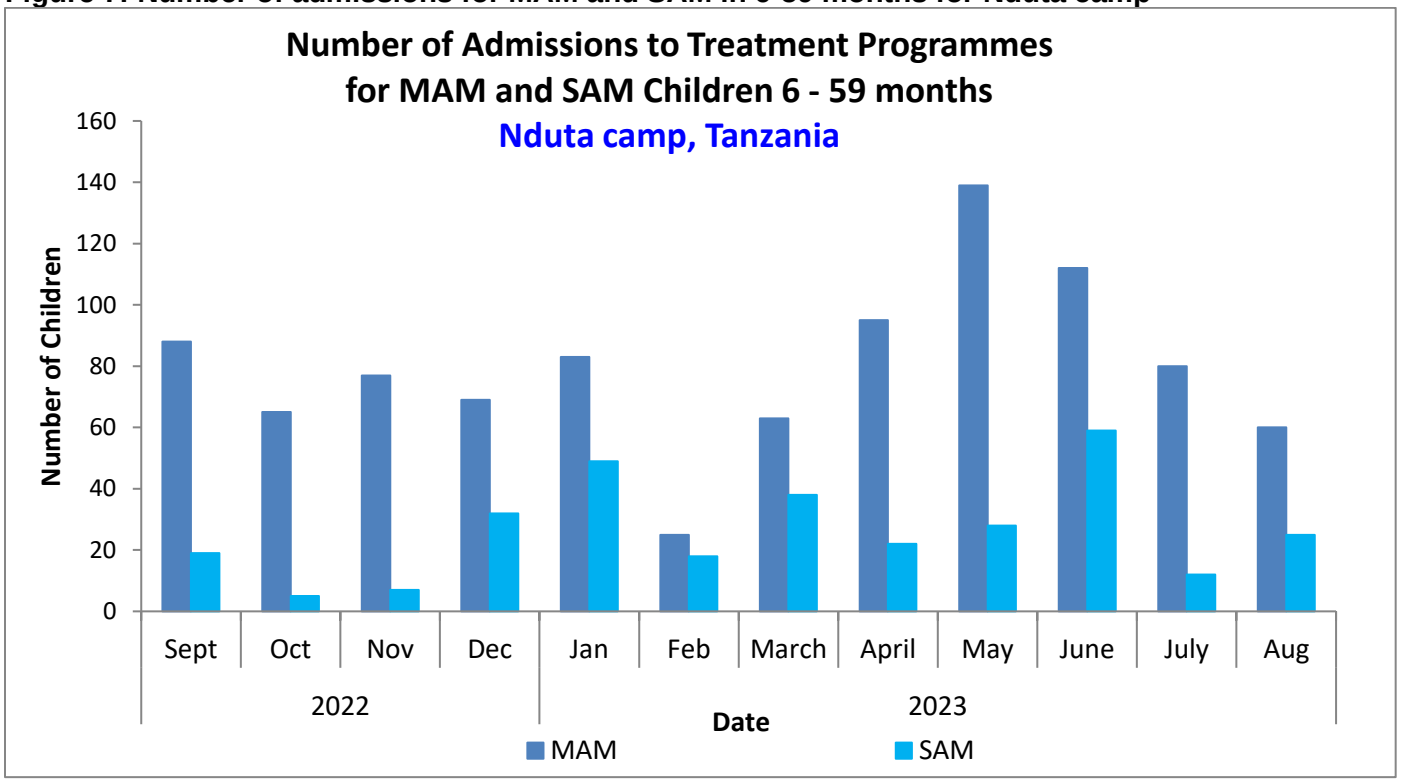


Figure 7: Number of admissions for MAM and SAM in 6-59 months for Nduta camp



2. Survey Objectives

The main objective of the nutrition survey was to assess the general health and nutrition status of Burundians and Congolese refugees in Nyarugusu and Nduta camps and formulate workable recommendations for appropriate nutritional and public health interventions.

2.1. Primary objectives:

1. To determine the demographic profile of the population.
2. To determine the age dependency ratio.
3. To measure the prevalence of acute malnutrition in children aged 6-59 months.
4. To measure the prevalence of stunting in children aged 6-59 months.
5. To determine the coverage of measles vaccination among children aged 9-59 months.
6. To determine the coverage of vitamin A supplementation in the last six months among children aged 6-59 months.
7. To determine the two-week period prevalence of diarrhoea among children 6-59 months.
8. To measure the prevalence of anaemia in children 6-59 months and in women of reproductive age (non-pregnant) between 15-49 years);
9. To investigate IYCF practices among children aged 0-23 months.
10. To determine the coverage of HHs receiving in-kind food assistance and the duration of the general in-kind food distribution for recipients' HHs.
11. To determine the extent to which negative coping strategies are used by HHs.
12. To assess HH food consumption (quantity and quality).
13. To determine the ownership of mosquito nets (all types and LLINs) in HHs.
14. To determine the utilization of mosquito nets (all types and LLINs) by the total population, children 0-59 months and pregnant women.
15. To determine the population's access to, and use of, water, sanitation, and hygiene facilities.
16. To determine the population's access to soap.
17. To establish recommendations on actions to address the situation in the refugee population in the three camps.

2.2. Secondary objectives:

1. To determine the coverage of deworming with mebendazole in the last six months among children aged 12-59 months.
2. To determine the enrolment into the supplementary (SFP) and therapeutic (OTP/SC) nutrition programmes for children aged 6-59 months.
3. To determine the coverage of the blanket supplementary feeding programme (BSFP) for children aged 6-23 months.
4. To determine the coverage of the MNP supplementation for children aged 24-59 months.
5. To determine the coverage of the blanket supplementary feeding programme (BSFP) in pregnant and lactating women.
6. To determine enrolment into the Antenatal Care clinic and coverage of iron-folic acid supplementation in pregnant women.
7. To determine the coverage of vitamin A postnatal supplementation among women with children less than 6 months.
8. To determine the population's access to and use of cooking fuel.

2.3. Optional objectives (selected/measured):

1. To determine the use of oral rehydration salt (ORS) and/or zinc during diarrhoea episodes in children ages 6-59 months.
2. To determine the prevalence of MUAC malnutrition in women of reproductive age 15-49 years.

3. Methodology

The surveys were conducted using the Standardized Expanded Nutrition Survey (SENS) guidelines and tools. SENS is a standardized tool for conducting nutrition surveys in refugee populations developed by UNHCR in collaboration with expert organizations and individuals in the fields of nutrition, public health, food security, water, sanitation and hygiene, and malaria prevention. SENS is based on the internationally recognized SMART Methodology[2] (Standardized Monitoring and Assessment of Relief and Transitions) for survey design and anthropometric assessments and adapted to the specific requirements of refugee settings. The SENS modules include standardized questionnaires, analysis guidance, reporting format and standard analysis procedures.

3.1. Sample size

Three independent samples were drawn separately for Nyarugusu Burundian, Nyarugusu Congolese and Nduta camps using cluster sampling. The primary sample size was computed for children based on anthropometry information obtained from 2021 SENS, and the number of HHs to be surveyed was estimated thereafter. The assumptions for the sample size calculation are given below (Tables 3, 4 and 5).

Table 2: Assumptions for the sample size calculation – Nyarugusu Burundian camp

Parameters for Anthropometry	Value	Assumptions based on context
The population of children U5	10,322	Number of children under five years of age and living in Nyarugusu Burundians camp was obtained from the UNHCR database for refugees, as of 31st July 2023.
Estimated Prevalence of GAM (%)	5.3%	The prevalence of Global Acute Malnutrition (GAM) in Nyarugusu Burundians camp from the SENS survey conducted in September 2021 is used for the calculation of sample size. To be on the safe side, the upper limit of the confidence interval was chosen (3.0% [1.7% - 5.3%; 95% CI])
± Desired Precision	3.0%	The general purpose of this survey is to assess the current nutrition situation in children under the age of five and women of reproductive age and assist in monitoring the effectiveness and coverage of interventions. From a practical point of view, this means the level of precision needed for sample size calculations is high in order to allow valid comparisons between 2021 and 2023. Since the GAM prevalence was low, a precision of ±3.0% was chosen.
Design Effect	1.5	As nutrition outcomes are known to generally create relatively low design effects, the choice was made to use a 1.5 design effect to inflate the sample size and compensate for the possible heterogeneity between clusters.
Children to be included	**350**	
Average HH Size	4.9	The average HH size was calculated based on camp population and number of HHs obtained from UNHCR Kasulu as of 31st July 2023
% of Children Under Five years old	20.7%	The percentage of under-5 was derived from the population statistics as of 31st July 2023shared by UNHCR in Kasulu
% Non-Response HHs	3%	It is expected to have a 3% non-response rate which refers to the number of basic sampling units that are not able to be reached due to the following reasons: refusal, accessibility, absentees, etc.
HHs to be included	**395**	

Table 3: Assumptions for the sample size calculation – Nyarugusu Congolese Camp

[2] SMART. Standardized Monitoring and Assessment of Relief and Transitions. Available at: https://smartmethodology.org/

Parameters for Anthropometry	Value	Assumptions based on context
Population of children U5	17,038	Numbers of children under five years of age and living in Nyarugusu Congolese camp was obtained from the UNHCR database for refugees, as of 31st July 2023.
Estimated Prevalence of GAM (%)	3.0%	The prevalence of Global Acute Malnutrition (GAM) for Nyarugusu Congolese camp from the SENS survey conducted between September and October 2021 was adjusted during calculation of sample size, given the aforementioned new influx. It is assumed that the new arrivals could elevate the level of undernutrition, hence, the upper limit of confidence interval was doubled. (0.4% [0.1% - 1.5%; 95% CI])
± Desired Precision	2.5%	The general purpose of this survey is to assess current nutrition situation in children under the age of five and women of reproductive age and assist in monitoring the effectiveness and coverage of interventions. From a practical point of view, this means the level of precision needed for sample size calculations is high in order to allow valid comparisons between 2021 and 2023. Since the expected GAM prevalence was very low, a precision of ±2.5% was chosen.
Design Effect	1.5	As nutrition outcomes are known to generally create relatively low design effects, the choice was made to use a 1.5 design effect to inflate the sample size and compensate for the possible heterogeneity between clusters.
Children to be included	**292**	
Average HH Size	4.3	The average HH size was calculated based on camp population and number of HHs obtained from UNHCR Kasulu as of 31st July 2023
% of Children Under Five years old	19.3%	The percentage of under-5 was derived from the population statistics as of 31st July 2023 shared by UNHCR.
% Non-Response HHs	3%	It is expected to have a 3% non-response rate which refers to the number of basic sampling units that are not able to be reached due to the following reasons: refusal, accessibility, absentees, etc.
HHs to be included	**403**	

Table 4: Assumptions for the sample size calculation – Nduta Camp

Parameters for Anthropometry	Value	Assumptions based on context
Population of children U5	17,190	Numbers of children under five years of age and living in Nduta camp was obtained from the UNHCR database for refugees, as of 31st July 2023
Estimated Prevalence of GAM (%)	3.4%	The prevalence of Global Acute Malnutrition (GAM) in Nduta camp from the SENS survey conducted in September 2021 is used for the calculation of the sample size. To be on the safe side, the upper limit of the confidence interval was chosen (1.8% [1.0% - 3.4%; 95% CI])
± Desired Precision	2.5%	The general purpose of this survey is to assess the current nutrition situation in children under the age of five and women of reproductive age and assist in monitoring the effectiveness and coverage of interventions. From a practical point of view, this means the level of precision needed for sample size calculations is high in order to allow valid comparisons between 2021 and 2023. Since the GAM prevalence was very low, a precision of ±2.5% was chosen.
Design Effect	1.5	As nutrition outcomes are known to generally create relatively low design effects, the choice was made to use a 1.5 design effect to inflate the sample size and compensate for possible heterogeneity between clusters.

Parameters for Anthropometry	Value	Assumptions based on context
Children to be included	**330**	
Average HH Size	4.5	The average HH size was calculated based on camp population and number of HHs obtained from UNHCR Kasulu as of 31st July 2023
% of Children Under Five years old	22.8%	The percentage of under-5 was derived from the population statistics as of 31st July 2023shared by UNHCR in Kasulu
% Non-Response HHs	3%	It is expected to have a 3% non-response rate which refers to the number of basic sampling units that are not able to be reached due to the following reasons: refusal, accessibility, absentees, etc.
HHs to be included	**368**	

3.2. Clusters and HH selection

In each camp, a cross-sectional survey was conducted using a two-stage cluster sampling.

First stage: Cluster selection

The camps are divided into zones and further into villages, blocks and clusters, which are administratively the smallest units. The villages were used as primary sampling units and assigned to clusters for the survey. In this stage, survey clusters were drawn from individual camp populations obtained from the UNHCR registration database (ProGres) as of July 31st, 2023. Cluster selection was conducted using ENA for SMART 2011, Jan 11th, 2020, software.

Second stage: HH selection

The second stage of sampling involved selecting HHs within each selected cluster by using a simple random selection procedure. The Registration Group was used as a proxy for the HH definition. A Registration Group was defined as one or more together registered individuals. For example, a Registration Group could be a family, or it could be an HH registered together for assistance purposes. An individual must always belong to a Registration Group. An individual can only belong to one Registration Group at any time. Houses/tents were physically labelled with unique numbers per village/cluster in each camp. To ensure results represent people living in the camps at the time of the survey, an empty shelter[3], as verified through neighbours was not labelled. Using the total list of HHs generated from the physical count and labelling of tents/houses per village/cluster in the camps, the HHs to be surveyed were picked automatically using the ENA software and each team was assigned the list of HHs for the work.

The number of HHs to be completed per day (per cluster) was determined based on time to be spent by a team in the field, considering, travelling time, break and locating the next HHs. In this survey the number of HHs to be covered by a team per cluster was calculated at 14 across the three camps. This was derived given that, teams start working at 8 am and stop at 4 pm (8 working hours). Considering the walking time to locate the next HH and/or break for meals, 7hrs (420min) was the estimated time for data collection. If the time spent to complete one HH is 30 minutes the number of HHs to be covered in one day by one team will be 420 minutes divided by 30 minutes equals 14, which means the team will be able to reach 14 HHs per day in each camp.

The number of clusters was determined based on the total number of HHs divided by the number of HHs per cluster in each camp thus, the number of calculated clusters is 29 for Nyarugusu Congolese, and Burundians and 26 for Nduta camp.

Table 5: Number of clusters and duration of data collection for the 2023 SENS survey (Anthropometry and Health Module)

Parameters for Anthropometry	**Nyarugusu Congolese Camp**	**Nyarugusu Burundians Camp**	**Nduta Camp**

[3] An empty shelter was considered as an abandoned shelter and excluded from the survey if no one was living in that shelter during the last month.

HHs to be included	403	395	368
HHs/ cluster	14	14	14
Number of clusters	29	29	26
Number of days required for data collection. (6 teams)	5 days (6 teams x 14 HH x 5 days = 420 HH)	5 days (6 teams x 14 HH x 5 days = 420 HH)	5 days (6 teams x 14 HH x 5 days = 420 HH)

Table 6: Final sample sizes for all modules

Modules	Nyarugusu Congolese Camp	Nyarugusu Burundians Camp	Nduta Camp
Anthropometry and Health	420 HH	420 HH	420 HH
Anaemia – Children	420 HH	420 HH	420 HH
Anaemia – Women	420/2 = 210 HH	420/2 = 210 HH	420/2 = 210 HH
IYCF	420 HH	420 HH	420 HH
Demography	420 HH	420 HH	420 HH
Food Security	420/2 = 210 HH	420/2 = 210 HH	420/2 = 210 HH
WASH	420/2 = 210 HH	420/2 = 210 HH	420/2 = 210 HH

3.3. Sampling procedure by survey teams

Special cases

Absent HH

If the HH members were not present, the survey team had to ask from neighbour of the residents' whereabouts. If they were expected to return before the survey team leaves the village/cluster, the survey team had to return to administer the questionnaire on the same day where possible. This HH had an ID, even if the survey team could not be able to revisit them. The survey team continued with the survey by choosing the next HH according to the selection method described above and this HH was not replaced. A HH was considered "absent" when its members slept there last night and went out for the whole day of the survey.

Refusal

If a participant or an entire HH refused to participate, it was considered a refusal, and the individual or the HH was not replaced with another. The refusal was recorded in the data collection control sheet.

HHs without children U5 and/or without women

In HHs with no children aged 0-59 months and/or women between 15 and 49 years, the survey team had to complete the Demography questionnaire and the HH questionnaire (Food security, mosquito net and WASH) if this HH was selected for the HH questionnaire (administered in every other HH). In the data collection control sheet, the team leader wrote the HH's number and indicated that no children between the ages of 0 and 59 months and/or no women between the ages of 15 and 49 belonged to the HH.

Absent Children/Women

The team leader asked the reason for the children's/women's absence. If the child/woman (or children or women) is close to the home, someone should be sent to bring them back. If the child/woman was expected to return before the survey team left the village/cluster, then the survey team had to return before the end of the day to take the measurements. If the child/woman could not be found before the team left the village/cluster, the child/woman's available information (age, sex, etc.) was recorded in the questionnaire and the child/woman was marked as "absent" in the data collection control sheet.

Disabled Children

Disabled children were included in the survey. If a physical deformity prevents the measurement of a child's weight, height or MUAC, the data were recorded as missing, and the remaining data were collected. This information was recorded in the data collection control sheet.

Children in a medical/nutrition centre

Children in a medical/nutrition centre were included in the survey. Where feasible, the team had to go to the centre. If it was not possible to visit the centre, the child was given an ID number and considered absent and not replaced. If the child was too weak to be measured, the anthropometric data were recorded as missing, and the remaining data were collected. This information was also recorded in the data collection control sheet.

3.4. Questionnaire and measurement methods

The questionnaire was divided into four main sections: Demography questionnaire, HH questionnaire (Food Security, Mosquito Net Coverage and WASH), Children questionnaire (anthropometry, health and anaemia) and Women questionnaire (anthropometry, health and anaemia) (See Annex 1). The final survey questionnaire was translated into Kiswahili. The survey questionnaire was pre-tested before the survey, during the survey training and at the pilot test. Interviews were held in Kiswahili or translated to the respective local language if the HH did not understand Kiswahili and information was recorded on an Android Samsung tablet. The survey questionnaires on the tablet were available both in English and Kiswahili.

1- Demography questionnaire (all selected HHs)

The demography module started in 2019 when version 3 of SENS was introduced and aimed to provide key information on the demographic profile of the surveyed population in addition to information to aid in future survey planning.

The Demography module provides information that describes the surveyed population to help understand the context but has to be used in conjunction with more detailed HH Vulnerability/ Socio-economic Assessments undertaken among the same population.

The SENS Demography questionnaire, therefore, intends to provide information on the following priority indicators at the HH level: description of the population demographics, age dependency ratio, average HH size, percentage of children under-5 and non-response rate.

2- HH questionnaire (half of the selected HHs)

Food security

Food security is the key component to achieving optimum foetal and child nutrition. Improving overall food security is therefore critical to improved nutrition, health, and long-term development of children and other HH members, and this is why collecting food security information is important.

The inclusion of the food security module in the SENS survey provides basic information on the existing food security situation among the surveyed population in addition to other detailed assessments.

Many indicators proposed in this module are based on international guidelines (by entities such as FANTA, FAO and WFP), that have been adapted to the refugee context.

The food security module, therefore, aimed to provide an understanding of the current state of food security among the surveyed population, focusing on four areas including access to and use of food, including food assistance, access to and use of cooking fuel, use of negative coping strategies and level of HH dietary diversity. Access to and use of food and food assistance provides information on any food gaps (quantity and quality). Access to cooking fuel demonstrates the extent to which refugee families can cook a meal without having to consider collecting or purchasing firewood. The extent to which negative coping strategies are used is an indicative of the overall stress placed on the surveyed population to meet their food and other basic needs.

Mosquito net coverage

Information on the ownership and utilisation of mosquito nets, more importantly long-lasting insecticidal net (LLINs), is essential to be known in refugee settings where malaria is endemic and LLINs are used as one of the malaria control strategies. Studies have shown an association between malaria and undernutrition among children aged below five years especially in malaria endemic areas.

The main objective of this module was, therefore, to assess the level of ownership and utilization of mosquito nets in the following categories: all HH members (including children under 5, pregnant women and other HH members); children under 5 years of age; and pregnant women.

Water, sanitation and hygiene

Including the basic WASH module in the SENS provides key information for planning interventions to address public health concerns and ensure that basic rights are upheld.
Poor water, sanitation and hygiene have serious consequences for the health and nutrition status of persons of concern to UNHCR.

This module in the SENS survey provides only a few of the core indicators for monitoring WASH programmes at the HH level and has to be used in conjunction with the standard UNHCR WASH KAP undertaken by WASH specialists.

All of the HH SENS survey questions are taken from the UNHCR WASH KAP to harmonise the surveys undertaken in refugee operations.
The SENS WASH questions, therefore, aimed to measure the following indicators at the HH level: access to a protected/treated drinking water source, use of an adequate quantity of water, use of toilets/latrines and access to soap.

3- Children Questionnaire (children from 0 to 59 months of age)

Sex

The child's sex was recorded as “f” or “m”: f = female and m = male.

Age

The date of birth was recorded from any relevant document, such as a birth certificate, family book or vaccination card, which would provide the child's name and birth date. If the date of birth was unknown, the interviewer used the calendar of local events, and the recall of the mother or caregiver was used to estimate the most correct age in months to be recorded on the questionnaire. The birth date will be recorded in the day/month/year (DD/MM/YYYY) format. The UNHCR Manifest was not used to determine the age of children <5 years because it does not reflect the correct birthdate.

Weight

Children were weighed using a SECA Uniscale electronic scale with a precision of 100 grams and a wooden board to stabilize it on the ground. All children were measured naked following the recommended anthropometric methods. Where seemed to be a problem, teams were instructed to take weight inside of the surveyed tent/house, and if this was not possible, the child was allowed to wear a light cloth estimated at 100g maximum. Smaller children who were not able to stand on the scale were measured in their caregiver’s arms using the mother-to-baby function of the scale.

Clothes

Recording of whether the child's weight was measured with or without clothes was as follows.
Y = yes, with clothes
N = no, without clothes

Height/Length

The child's height/length was measured with a precision of 0.1cm by using height boards. Children were measured lightly dressed without shoes, hairpieces or barrettes on their head that could interfere with a correct height measurement. Children less than 87cm height were measured laying down while those 87cm standing height or taller were measured standing.

Measurement
The measurers recorded if they measured height or length.
L = length (recumbent length)
H = height (standing height)

Oedema
Only bilateral pedal oedemas were considered as nutritional oedema. Their presence was detected by applying gentle pressure with the thumbs to the top of both feet for three seconds. If the imprint of the thumbs remained on both feet for a few seconds after releasing the thumbs, the child was considered to have nutritional oedema. Bilateral oedema was diagnosed and not graded. The diagnosis was simply recorded as Y for "Yes" or N for "No". In this case, the survey team had to report to the supervisors/survey manager for verification and subsequent referral to the feeding centre thereafter.

Mid-Upper Arm Circumference (MUAC)
The MUAC was measured in centimetres on the left arm, at the midpoint between the shoulder's tip and the elbow, on a relaxed arm. MUAC was taken only for children between 6 and 59 months of age.

Additional data
Measles vaccination
The interviewer first tried to confirm if the child received measles vaccination by examining an official document (EPI card/clinic card/health card). If there was no document, the interviewer asked the respondent if the child received measles vaccination. Only children aged 9-59 months were assessed for measles vaccination.

Vitamin A supplementation in the past six months
The interviewer first tried to confirm if the child received a vitamin A supplementation by examining an official document (EPI card/clinic card/health card). If there was no document, the interviewer showed the respondent vitamin A blue and red samples and asked him/her if the child had received vitamin A supplementation drops in the mouth in the past six months.

Deworming in the past six months
The deworming status in the past six months was confirmed with an official document (EPI card/clinic card/health card). Where not possible, the interviewer showed the respondent a deworming tablet (mebendazole) and asked if the child had received a "worm medicine" in the past six months.

Diarrhoea episode in the last 2 weeks
A question was asked to caregivers to find out if their children had an episode of diarrhoea in the two weeks preceding the survey. An episode of diarrhoea was defined by the occurrence of at least three liquid stools during the same 24 hours. The enumerators ensured that the respondent understood the definition of diarrhoea by assessing the number of liquid stools the child had within 24 hours.

Use of ORS/zinc during a diarrhoea episode
The interviewer asked the mother/caregiver of the child if received ORS sachets and/or zinc during a diarrhoea episode. An ORS sachet and a zinc pill were shown when asked to recall.

Enrolment into a nutrition programme (TSFP/OTP/SC)
The team leader asked the mother/caregiver of the child if he/she was receiving sachets of Plumpy Nut' or CSB++, by showing her both sachets. If the child was receiving the Plumpy Nut sachets, he/she was enrolled in a therapeutic feeding programme (OTP); if he/she was receiving the CSB++, he/she was enrolled in a supplementary feeding programme (TSFP).

Enrolment into BSFP programme/MNP programme
The team leader asked the mother/caregiver of the child if he/she was receiving CSB++ (children aged >= 6 and <24 months), by showing her sachet. If the child was receiving a CSB++ sachet, he/she was enrolled in the BSFP programme. The team leader asked the mother/caregiver of the child if he/she was a receiving sachet of

MNP (children aged >=24 and <60 months), by showing her sachet. If the child was receiving MNP sachets, he/she was enrolled in the MNP programme.

Haemoglobin concentration (Hb)
The haemoglobin concentration was measured from a blood sample taken at the fingertip and recorded in grams per decilitre using a portable HemoCue Hb 301 analyser. The measure was carried out only if the mother/caregiver consented. All children 6-59 months were assessed for their haemoglobin concentration, in all selected HHs for the survey. If severe anaemia was detected, the child was referred for treatment immediately.

Infant and Young Child Feeding Practices (IYCF) (children from 0 to 23 months of age)
Several questions on breastfeeding practices and complementary feeding practices were asked of the mothers/caregivers of children from 0 to 23 months of age.

4- Women Questionnaire (women from 15 to 49 years of age)

Age
The age was recorded in years on the questionnaire.

Pregnant and lactating status
The team leader asked all women if they were pregnant and/or lactating. If the woman was pregnant, the team did not assess the haemoglobin concentration.

Mid-Upper Arm Circumference (MUAC)
The MUAC was measured in centimetres on the left arm, at the midpoint between the shoulder's tip and the elbow, on a relaxed arm for all women.

Enrolment in an ANC programme - Iron and folic acid supplementation
If the woman was pregnant, the team leader had to ask two additional questions about her enrolment in an antenatal care programme and consumption of iron-folic-acid pills. An iron-folic acid pill image was shown to the pregnant woman when asked to recall.

Post-natal vitamin A supplementation
The team leader asked the woman with children younger than 6 months if she received a vitamin A supplementation after delivery. A vitamin A capsule image was shown when asked to recall.

Enrolment into BSFP programme
The team leader asked all pregnant women and lactating women with infants younger than 6 months if they were actually enrolled in the BSFP programme and if they were receiving the super cereal with sugar.

Haemoglobin concentration (Hb)
The haemoglobin concentration was measured from a blood sample taken at the fingertip and recorded in grams per decilitre or in grams per litre (depending on the HemoCue device used by the team) using a portable HemoCue Hb 301 analyser. The measure was carried out after renewal in advance of the verbal consent. All non-pregnant women were assessed for their haemoglobin concentration, in half of the HHs selected for the survey. If severe anaemia was detected, the woman was referred for treatment immediately.

3.5. Case definitions, inclusion criteria and calculations

Demographic indicators
Age dependency ratio: According to the United Nations Population Division[4] and the World Bank[5], the age dependency ratio is defined as the 'ratio of dependents--people younger than 15 or older than 64--to the working-age population--those aged 15-64' The ratio is used to indicate the pressure/dependency on the working-age population (15 – 64 years) owing to the share of children and elderly in a HH

[4] UN DESA Population Indicators, accessed 12th Sept 2017
[5] World Bank Data Library, accessed 12th Sept 2017

A higher age dependency ratio indicates greater pressure on the working members of a HH, while a lower age dependency ratio represents lesser burden on the family's economic situation It is calculated as follows:

$$\text{Age dependency ratio} = \frac{\text{Number of people aged 0 - 14 years and those aged 65 years and above.}}{\text{Number of people aged 15 - 64 years}}$$

Non-response rate: in sample surveys, the failure to obtain information from a designated individual or HH for any reason (e.g., absence, refusal) is called a non-response. The non-response rate is the proportion of non-responders (individuals or HHs) over the planned sample size.

A HH: In HH surveys, an HH is typically defined as a group of people who live together and routinely eat out of the same pot.

Head of HH: The person responsible for making the decisions for the HH as a whole

Nutritional Anthropometric Indicators
The following cut-offs were used to determine the prevalence of acute malnutrition, stunting and underweight (z-scores) using the WHO 2006 growth references.

Table 7: Cut-offs for the definition of acute malnutrition, stunting and underweight

Classification	Acute Malnutrition or Wasting (WHZ)	Chronic Malnutrition or Stunting (HAZ)	Underweight (WAZ)
Global	<-2SD &/or bilateral oedema	<-2 SD	<-2 SD
Moderate	≥-3 SD & <-2 SD	≥-3 SD & <-2 SD	≥-3 SD & <-2 SD
Severe	<-3 SD &/or bilateral oedema	<-3 SD	<-3 SD

Table 8: Cut-offs for the definition of acute malnutrition based on MUAC in Tanzania

Target	Classification	MUAC Cut-offs
Children 6-59 months	MAM	<125 mm
	SAM	<115 mm

Vitamin A Supplementation, Deworming, Measles vaccination and Two-week prevalence of Diarrhoea
To estimate vitamin A supplementation, deworming coverage, measles vaccination and the two weeks prevalence of diarrhoea, the following formula presented in Table 9 was used.

Table 9: Vit A supp, deworming, measles vaccination coverage and prevalence of diarrhoea

Indicator	Numerator	Denominator
Vitamin A Supplementation	Number of children aged 6-59 months who received at least one high-dose vitamin A supplement in the past six months	Total number of children aged 6-59 months x 100
Deworming	Number of children 12-59 months dewormed in the past six months	Total number of children aged 12-59 months x 100
Measles vaccination	Number of children 9-59 months immunized against measles	Total number of children aged 9-59 months x 100
Diarrhoea	Number of children aged 6-59 months who had diarrhoea in the past two weeks	Total number of children aged 6-59 months x 100

Child enrolment in selective feeding programme:

Coverage of TSFP programme (%) =
100 x
No. of surveyed children with MAM according to TSFP criteria who reported being registered in TSFP
No. of surveyed children with MAM *according to SFP admission criteria*

Coverage of OTP/SC programme (%) =
100 x
No. of surveyed children with SAM according to OTP/SC criteria who reported being registered in OTP/SC
No. of surveyed children with SAM *according to OTP/SC admission criteria*

Infant and Young Child Feeding Practices (IYCF)
IYCF indicators and the formulas that was used to calculate them are detailed below. These indicators and formulas follow the SENS guidelines and the guidelines from WHO "Indicators for assessing IYCF practices".

Children ever breastfed: Proportion of children born in the last 24 months who ever breastfed.

Children born in the last 24 months who were ever breastfed.
Children born in the last 24 months.

Timely initiation of breastfeeding: Proportion of children born in the last 24 months who were breastfed within one hour of birth.

Children born in the last 24 months who were put to the breast within one hour after birth
Children born in the last 24 months

Exclusive breastfeeding under six months: The proportion of infants 0-5 months of age fed exclusively with breast milk.

Infants 0-5 months of age who received only breast milk during the previous day
Infants 0-5 months of age

Exclusive breastfeeding means that the infant receives only breast milk. No other liquids or solids are given – not even water – with the exception of oral rehydration solution or drops/syrups of vitamins, minerals or medicines.

Continued breastfeeding at 1 year: Proportion of children 12-15 months of age who are fed breast milk.

Children 12-15 months of age who received breast milk during the previous day
Children 12-15 months of age

Continued breastfeeding at 2 years: Proportion of children 20-23 months of age who are fed breast milk.

Children 20-23 months of age who received breast milk during the previous day
Children 20-23 months of age

Introduction of complementary foods: Proportion of infants 6-8 months of age who receive solid, semi-solid or soft foods.

Infants 6-8 months of age who received solid, semi-solid or soft foods during the previous day
Infants 6-8 months of age

Consumption of iron rich or iron fortified foods in children aged 6-23 months: Proportion of children 6–23 months of age who receive an iron-rich or iron-fortified food that is specially designed for infants and young children, or that is fortified in the home.

Children 6-23 months of age who received an iron-rich food or a portion of food that was specially designed for infants and young children and was fortified with iron, or a food that was fortified in the home with a product that included iron during the previous day
Children 6-23 months of age

Bottle feeding: Proportion of children 0-23 months of age fed with a bottle.

Children 0–23 months of age who were fed with a bottle during the previous day
Children 0–23 months of age

Anaemia
Anaemia is said to exist when the level of circulating haemoglobin (Hb) in the patient is lower than that of healthy persons of the same age group and sex in the same environment. The most common type of anaemia is due to iron deficiency resulting from inadequate iron intake from foods.
Hb concentrations were reported in g/dL for consistency purposes. Hb levels were categorized according to WHO-recommended cut-offs (Table 10) to determine the prevalence of anaemia (mild, moderate, severe).

Table 10: Haemoglobin levels to diagnose anaemia at sea level (who 2011)

Age/Sex groups	Categories of Anaemia (Hb g/dL)			
	Any form of anaemia	Mild	Moderate	Severe
Children 6-59 months	<11.0	10.9 - 10.0	9.9 - 7.0	< 7.0
Non-pregnant adult females 15-49 years*	<12.0	11.9 - 11.0	10.9 - 8.0	< 8.0

* This category includes lactating women

Residential elevations above sea level are known to increase haemoglobin concentrations. Consequently, the prevalence of anaemia may be underestimated in persons residing at high altitudes if the standard anaemia cut-offs are applied. Table 11 presents the recommended adjustments to the measured haemoglobin concentration among non-pregnant women living in the camps. The Hb concentrations were automatically adjusted in each camp.

Table 11: Altitude adjustments to measured haemoglobin concentrations in the camps

Camp	Altitude (metres above sea level)	Measured haemoglobin adjustment (g/dL)
Nyarugusu	1223.46	-0.2
Nduta	1311.38	-0.3

WASH
The table below provides an overview of the definitions of drinking water and sanitation (toilet) facilities used in the survey and available in Nyarugusu and Nduta refugee camps.

Table 12: Definitions of drinking water and sanitation (toilet) facilities

	Protected/treated source	Un-protected/un-treated source
Drinking water	Public tap/standpipe Handpumps/Boreholes Water seller/Kiosks Piped connection to house (or neighbour's) Protected spring	Unprotected hand-dug well Surface water (lake, pond, dam, river) Unprotected spring Rainwater collection Other

Latrines/toilets	Bottled water, water sachets Tanker trucks	
	Considered a toilet	**Not considered a toilet**
	HH latrine (one HH only) Communal latrine	Open defecation Plastic bag Bucket toilet Other

Food security

Food Consumption Score (FCS): the FCS is a proxy measure of HH food access using dietary diversity and food frequency. Focusing on the seven days before the interview, it records how many days anyone in the HH ate nine categories of foods (including super cereals). Therefore, it is a HH variable and does not measure food frequency or diversity for any individual in the HH. Each food category is given a weight based on the energy and the macro and micronutrient content of the food/food group. This weight is multiplied by the number of days each food category was eaten in the preceding week. The sub-scores for each food group are then summed up to produce a composite FC. The FCS also provides a measure of dietary diversity.

Food Consumption Score Nutritional Quality Analysis (FCS-N): the FCS-N methodology uses the same data collection tool as the FCS. It adds an additional dimension to the FCS by analysing HH nutrition and protein, vitamin A and iron consumption, using the FCS modules, main food groups and sub-groups. The separate food groups improve the measurement of the consumption of particular nutrient-rich foods versus other less nutrient-rich items that belong to the same general food group[6].

Food group: a food group is a group of foods that have similar nutritional properties, such as the cereal group, tuber and roots group, or meat group.

Coping strategies: Coping strategies are behavioural responses to food insecurity, i.e., behaviours that people adopt when they do not have enough food or money to buy food. There are two basic types of coping strategies. One includes the immediate and short-term alteration of food consumption patterns. The other includes the longer-term alteration of income earning, food production patterns, and responses such as asset sales. Most, but not all, coping strategies negatively affect the overall well-being of the HH and the individual.

Mosquito net

Conventionally treated net: a conventionally treated net is a mosquito net treated by dipping in an approved insecticide treatment. It should be re-treated after three washes or at least once a year with recommended insecticide to ensure its continued insecticidal effect.

Indoor Residual Spraying (IRS): IRS is the application of long-acting chemical insecticides on the walls and roofs of all houses and domestic animal shelters in a given area in order to kill the adult vector mosquitoes that land and rest on these surfaces. The primary effects of IRS towards curtailing malaria transmission are: i) to reduce the life span of vector mosquitoes so that they can no longer transmit malaria parasites from one person to another, and ii) to reduce the density of the vector mosquitoes.[7]

Insecticide-treated net (ITN): an insecticide-treated net is a mosquito net that repels, disables, and/or kills mosquitoes coming into contact with insecticide on the netting material. There are two categories of ITNs: conventionally treated nets and long-lasting insecticidal nets.

Malaria: a group of diseases caused by any of four different microorganisms called plasmodia (*Plasmodium falciparum, vivax, ovale,* and *malariae*), which are transmitted by certain species of mosquitoes' malaria is found mostly in tropical and subtropical regions of the world. It can cause anaemia due to haemolysis of red blood cells.

[6] Technical Guidance for the Joint Approach to Nutrition and Food Security Assessment (JANFSA). WFP, UNICEF, October 2016.
[7] Use of indoor residual spraying for scaling up global malaria control and elimination WHO Position Statement, WHO 2006

3.6. Classification of public health problems and targets

Anthropometric data:

UNHCR's target for the prevalence of Global Acute Malnutrition (GAM) is <10%, and the target for the prevalence of Severe Acute Malnutrition (SAM) is <2% for children 6-59 months.

The table below shows the WHO-UNICEF classification of public health significance of the anthropometric results for children under-5 years of age.

Table 13: WHO-UNICEF (2018) classification of public health significance for children U5 years of age

Classification Prevalence thresholds (%)	Critical situation	Serious situation	Poor situation	Acceptable situation	
	Very High	High	Medium	Low	Very low
Wasting	≥ 15	10 - < 15	5 - < 10	2.5 - < 5	< 2.5
Stunting	≥ 30	20 - < 30	10 - < 20	2.5 - < 10	< 2.5
Overweight	≥ 15	10 - < 15	5 - < 10	2.5 - < 5	< 2.5
Underweight*	≥ 30	20 - < 30	10 - < 20	< 10%	

* **Source:** WHO (1995) Physical status: the use and interpretation of anthropometry Report of a WHO Expert Committee Technical Report Series No 854 Geneva, World Health Organization, 1995

Nutrition programme enrolment:

The table below shows the performance indicators for malnutrition treatment programmes according to SPHERE Standards.

Table 14: Performance indicators for MAM and SAM (SPHERE)

Coverage		
Rural areas	**Urban areas**	**Camps**
>50%	>70%	>90%

The target for blanket feeding programme coverage should be >70%.

Coverage of measles vaccination, vitamin A supplementation and deworming in the last 6 months

Table 15: UNHCR targets for measles vaccination, vit A supplementation and deworming coverage

Indicator	Target coverage	Source
Measles vaccination coverage (9-59 m)	95%	UNHCR, Sphere Standards
Vitamin A supplementation in the last 6 months coverage (6-59 m)	>90%	UNHCR
Deworming in the last 6 months coverage (appropriate age group)	75%	WHO

Anaemia

UNHCR target for the prevalence of anaemia in children 6-59 months of age and in women 15-49 years of age should be < 20% corresponding to the 'low' category as defined by WHO and shown in the table below.

Table 16: WHO classification of public health significance

Classification	High	Medium	Low
Prevalence of anaemia	≥40%	20-39%	5-19%

Source: WHO (2000) The Management of Nutrition in Major Emergencies

WASH

The following standard applies to UNHCR WASH programmes.

Table 17: UNHCR WASH programme standard

UNHCR Standard		Indicator target
Average litres per person per day of domestic water collected at HH level from protected/treated sources (with protected containers only)	Emergency standard	≥15 litres
	Post emergency standard	≥20 litres
% HHs with at least 10 L/p drinking water storage capacity	Emergency standard	≥70%
	Post emergency standard	≥80%
% HHs collecting drinking water from protected/treated sources	Emergency standard	≥70%
	Post emergency standard	≥95%
% HHs reporting defecating in a toilet/latrine	Emergency standard	≥60%
	Post emergency standard	≥85%
% HHs with access to soap	Emergency standard	≥70%
	Post emergency standard	≥90%

Food Security

Table 18: Food consumption score

Classification	Poor	Borderline	Acceptable
Food Consumption Score (FCS)	≤21	21.5-35	>35

Mosquito nets coverage

WHO defines a long-lasting insecticidal net as a factory-treated mosquito net made with netting material that has insecticide incorporated within or bound around the fibres. The net must retain its effective biological activity without re-treatment for at least 20 WHO standard washes under laboratory conditions and three years of recommended use.

Table 19: International targets

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

3.7. Survey team

The surveys were coordinated by UNHCR from the outset of planning to the finalization of the survey activities. However, the surveys were a joint effort organized by WFP, UNICEF, Government entities (MoH, MoHA, RAS Kigoma office) and major partners implementing health and nutrition projects in the camps (WVT, MSF, TRCS, MTI, IRC, and CWS). A consultant was hired to coordinate and lead the surveys, in collaboration with three health and nutrition staff members from UNHCR and WFP offices in Kasulu and Kibondo.

The surveys had 6 teams comprising 1 team leader, 1 interviewer, 1 Hb taker 2 measurers and a supervisor. The team leader was responsible for the children's and women's questionnaires. The interviewer was responsible for the demography questionnaire and the HH questionnaire. The measures took the anthropometric measurements, and the Hb takers measured the Hb concentrations. In each team, 2 persons came from the refugee camps. The team supervisor was an overall overseer during data collection, quality check and submission of forms to Kobo Toolbox.

Language

English/Kiswahili language was used for training, communication, and data collection tools. Incentive workers were used to facilitate the translation of English/Kiswahili vis-à-vis the local language (Kirundi/dialects) during the assessment.

Survey training
The main training was organized in Kasulu bringing together the main survey team (Team leaders, Interviewers and Hb takers). The survey training was facilitated by the survey consultant along with team members from UNHCR, WFP and government entities from 29th August 2023, and lasted for 5 days. In each camp, a one-day training was conducted for the measurers.

The training included the following areas:
- An overview of the survey and its objectives
- Interviewing and general communication skills
- Sampling procedure and selection of HHs
- Identification of individuals to measure or interview
- How to complete the questionnaires
- Correct age-in-month estimation or validation using the calendar of local events
- How to make correct anthropometric measurements
- How to take the correct haemoglobin concentration
- The standardization of anthropometric measures: Each measurer had to measure 10 children less than five years of age twice (height, weight). The results of the standardization test by the interviewer were produced immediately to determine if further training and standardization were needed.
- The identification of bilateral oedema and how to refer children with acute malnutrition to the health centre
- Data collection using Mobile Data Collection (MDC).
- Pilot Test

Selection of the Team Leaders
A pre-test at the beginning and a post-test at the end of the training was conducted on all recruited national staff from partners. The selection of the team leaders was made based on the results of the two written tests. The best six highly ranked participants were selected as team leaders and the rest were assigned to interviewer positions.

Standardization of the Anthropometric Tools
All anthropometric tools were tested to ensure that each tool produces the same measure of a standard object (standard weight and wooden stick) prior to the standardisation test for enumerators and data collection. The scales or height boards that did not produce exact measures were marked “faulty” and not used during the exercise.

Before the start of fieldwork, measurers were responsible for reviewing their anthropometric equipment for damage and measuring the standard objects to ensure that the tools were still soundly for measurements. Results were recorded daily on the standardization of anthropometric tools form.

Standardization of the Enumerators
Two standardization tests were organized in one session in Nyarugusu and Nduta camps for 12 measurers. Measurers with good measurement skills were assigned as measurers within a team and the others as assistant-measurers.

Pilot Test
The survey tools were piloted in Nyarugusu Burundian camp. The enumerators were divided into teams. Each team interviewed three HHs in a village not selected for the survey. This process was done to ensure that the methodology and survey equipment were adapted but also to complete the training of enumerators.

3.8. Data collection

Data were collected using Samsung tablets operated by the Android system and the ODK application. At the end of each day, supervisors with support from consultants and other survey managers manually check the tablet questionnaires for completeness, consistency, and accuracy. This check is also imperative for feedback to the teams to improve data collection as the surveys progress. Child data were downloaded and analysed daily with the ENA software. The SMART plausibility report was generated to identify any problems with

anthropometric data collection, such as flags and digit preference for age, height and weight, to improve the quality of the anthropometric data collected as the survey was on-going.
A quick check on Haemoglobin concentration among children and non-pregnant women was conducted by checking the disparities of a number of subjects with low Hb levels between teams and feedback was provided for necessary correction among blood sample takers where applicable.

3.9. Data analysis

The data files were reviewed before analysis. Using ENA for SMART software, anthropometric data for children 6-59 months were analysed. The nutritional indices were cleaned using flexible criterion (+/- 3 SD from the observed mean /SMART flags). The nutrition results were presented in the standard format following the report template from the ENA software (ENA for SMART 2011, Jan 11th, 2020). This format includes GAM, SAM, Stunting, Underweight and Overweight with 95% confidence intervals, calculated based on the WHO 2006 growth references. The remaining data, including composite indicators were created and analysed in Epi-Info 7.2. Weighted prevalence and mean of some indicators were conducted using the “weighting tool” while a comparison between two surveys was conducted using the “CDC calculator”. Findings were presented in table and figure format.

4. Results

4.1. Demographic indicators

Sample size and clusters

The planned and surveyed number of clusters, HHs and children aged 6 – 59 months at survey area are presented in the table below. This provides an estimate of percentage target and non-response rate among survey participants.

Table 20: Sampling Information by Camp.

Survey Area	Sampling Information	Total planned	Total surveyed	% of target	Non-response rate (%)
NYARUGUSU BURUNDIANS	**Number of clusters (where applicable)**	29	29	100%	n/a
	Number of HHs	395	378	95.7%	4.3%
	Number of children 6-59 months	350	475	136%	n/a
NYARUGUSU CONGOLESE	**Number of clusters (where applicable)**	29	29	100%	n/a
	Number of HHs	403	399	99.0%	1.0%
	Number of children 6-59 months	292	503	172%	n/a
NDUTA	**Number of clusters (where applicable)**	26	26	100%	n/a
	Number of HHs	368	359	97.6%	2.4%
	Number of children 6-59 months	330	462	140%	

HH size and composition

The camp population size ranged from 88,168 for Nyarugusu Congolese to 49,889 for Nyarugusu Burundians. The average HH size was 5.5, 5.1 and 4.7 for Nyarugusu Burundians, Congolese and Nduta camps respectively. The proportion of HH size of 1 – 4 persons was the biggest across the three camps, ranging from 40% to 50%. The proportion of HH size of 10 and above persons ranged between 1.7% in Nduta to 49% in Nyarugusu Congolese. The HH composition of members was found evenly distributed and equally represented across the three camps. The percentage of children aged below two years ranged between 10% and 13%, while the proportion of children aged below five years laid between 25% and 30% for Nyarugusu Burundians and Nduta camps, respectively. The proportion of pregnant women was 2.4%, 3.3%, and 3.5% for Nyarugusu Burundians, Nyarugusu Congolese and Nduta camps, respectively.

Table 21 HH size and composition, by camp

HH size and composition	NYARUGUSU BURUNDIANS	NYARUGUSU CONGOLESE	NDUTA
Population size – Total persons	49,889	88,168	75,370
Total population surveyed – Total persons (all ages)	2,086	2,021	1,700

HH size and composition		NYARUGUSU BURUNDIANS	NYARUGUSU CONGOLESE	NDUTA
Total U2 surveyed		213	253	221
Total U5 surveyed		527	583	514
Average HH size		5.5	5.1	4.7
HH size categories	1-4 person(s)	40.3%	40.5%	49.6%
	5-6 persons	25.2%	4.3%	33.2%
	7-9 persons	25.7%	31.7%	15.6%
	≥ 10 persons	8.8%	49.3%	1.7%
HH composition	Children under two	0.57	0.63	0.62
	Children under five	1.40	1.46	1.43
	Children aged 5-14 years	1.64	1.33	1.23
	Members aged 15-64 years	2.45	2.24	2.03
	Members aged 65 years and above	0.05	0.04	0.02
Percent of children U2		10.2%	12.5%	13.0%
Percent of children U5		25.3%	28.8%	30.2%
Percent pregnant women (15-49 years)		2.4%	3.3%	3.5%
Percent of elders (65 years and above)		0.9%	0.7%	0.9%
Sex ratio		0.93	0.82	0.85

Below are the population pyramids showing the population profile by camp.

Figure 8: **Population Pyramid <u>In Nyarugusu Burundians</u>**

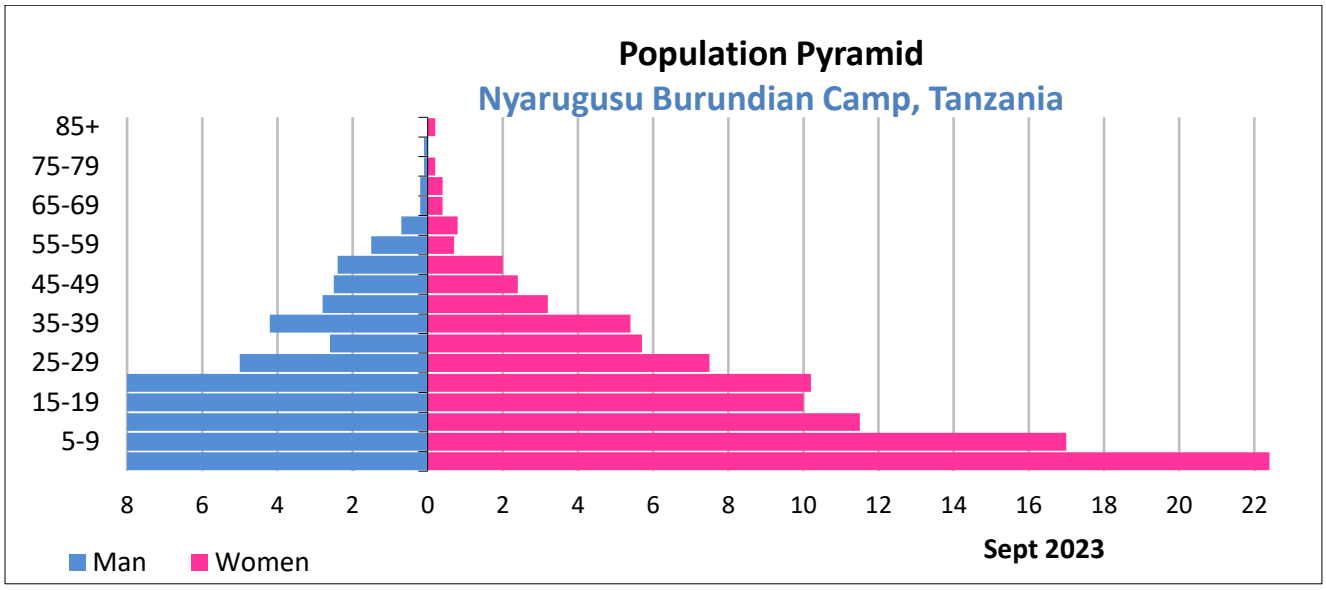


Figure 9: Population Pyramid In Nyarugusu Congolese

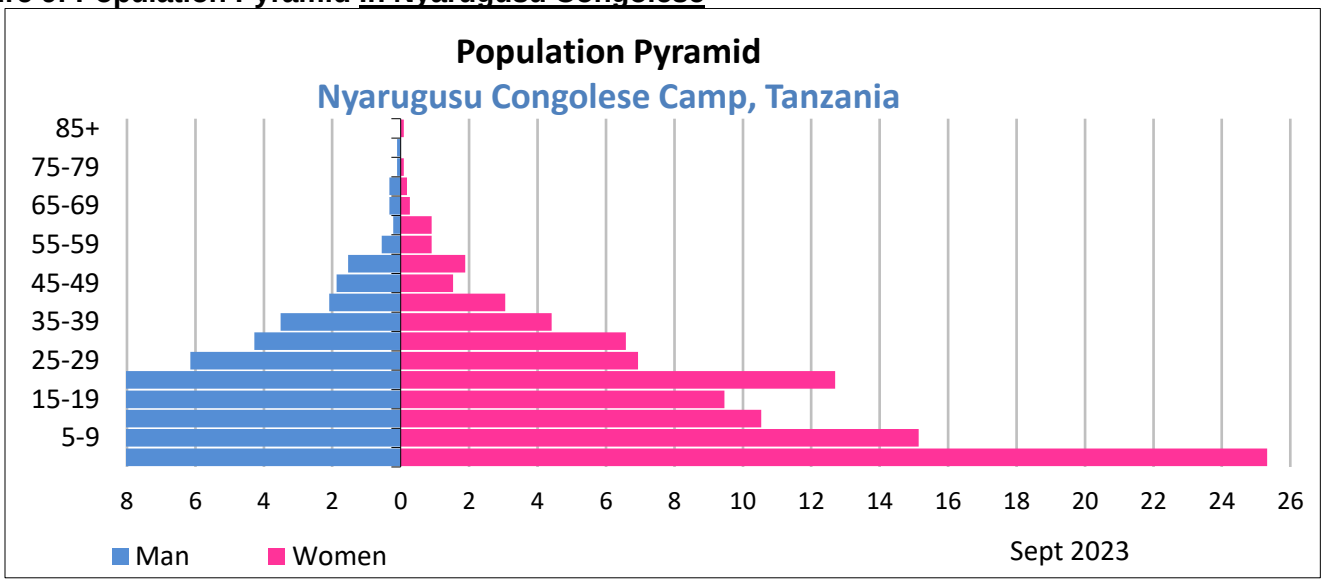
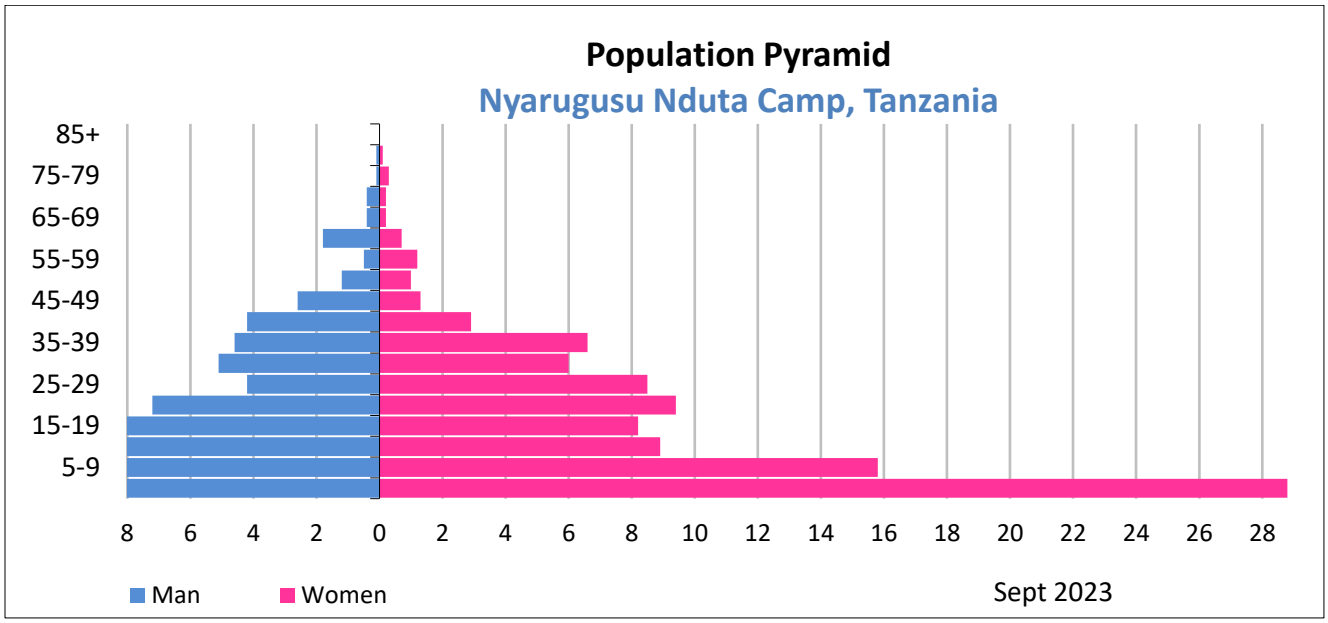


Figure 10: Population Pyramid In Nduta


Population Pyramid
Nyarugusu Nduta Camp, Tanzania
85+
75-79
65-69
55-59
45-49
35-39
25-29
15-19
5-9
8 6 4 2 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28
Man
Women
Sept 2023

HH Head Profile
The female headed HH was 67% in Nyarugusu Burundians, 73% in Nyarugusu Congolese and 67% in Nduta camp. Proportion of elderly headed HH ranged between 3.0% in Nyarugusu Congolese and 3.4% in Nyarugusu Burundians. There was no child headed HH across the three camps and lowest mean age of HH head was 34.6 years in Nyarugusu Congolese.

Table 22: HH head profile, by camp

Survey Area	N	NYARUGUSU BURUNDIANS		N	NYARUGUSU CONGOLESE		N	NDUTA	
		n	% (95% CI)		n	% (95% CI)		n	% (95% CI)
Female headed HHs (working age 15-64 years)	377	254	67.4% (57.3 - 77.5)	399	291	72.9% (65.4 - 80.5)	359	239	66.6% (56.5 - 76.7)
Male headed HHs (working age 15-64 years)	377	110	29.2% (19.0 - 39.4)	399	96	24.1% (17.1 - 31.0)	359	109	30.4% (20.4 - 40.3)
Children headed HHs (under 15 years)	0	0	0%	0	0	0%	0	0	0%
Elderly headed HHs (65 years and above)	377	13	3.4% (1.8 - 5.1)	399	12	3.0% (1.0 - 5.0)	359	11	3.1% (1.3 - 4.8)
Mean age of HH head in years		37.1 Years [17 - 80]			34.6 Years [16 – 88]			35.2 Years [17 - 81]	

Age dependency ratio
The mean age dependency ratio was 1.6 in each of the three camps.

Table 23: **Age dependency ratio*, by camp**

Age dependency ratio	NYARUGUSU BURUNDIANS N = 375	NYARUGUSU CONGOLESE N = 396	NDUTA N = 355
Mean (95% CI) [range]	1.6 (1.4 - 1.7) [0 – 7]	1.6 (1.5 - 1.8) [0 – 7]	1.6 (1.5 - 1.7) [0 – 8]

***Age dependency ratio** = $\frac{\text{Number of people aged 0 -14 years and those aged ≥65 years}}{\text{Number of people aged 15 – 64 years.}}$

Table 24: **Age dependency ratio categories by HH, by camp**

Survey Area	Age dependency categories		Age dependency ratio	Number / Total	% (95% CI)
NYARUGUSU BURUNDIANS	Category I	1 dependent or less per non-dependent member	≤ 1	178/375	47.5% (43.2 - 51.7)
	Category II	Up to 3 dependents per 2 non-dependent members	1.1-1.5	56/375	14.9% (10.4 - 19.5)

Survey Area	Age dependency categories		Age dependency ratio	Number / Total	% (95% CI)
	Category III	Up to 2 dependents per non-dependent members	1.6-2.0	69/375	18.4% (13.9 - 22.9)
	Category IV	More than 2 dependents per non-dependent members	≥2.1	72/375	19.2% (14.4 - 24.1)
NYARUGUSU CONGOLESE	Category I	1 dependent or less per non-dependent member	≤ 1	208/396	52.5% (46.3 - 58.7)
	Category II	Up to 3 dependents per 2 non-dependent members	1.1-1.5	56/396	14.1% (9.7 - 18.6)
	Category III	Up to 2 dependents per non-dependent members	1.6-2.0	49/396	12.4% (7.8 - 16.9)
	Category IV	More than 2 dependents per non-dependent members	≥2.1	83/396	21.0% (17.2 - 24.8)
NDUTA	Category I	1 dependent or less per non-dependent member	≤ 1	173/355	48.7% (43.4 - 54.1)
	Category II	Up to 3 dependents per 2 non-dependent members	1.1-1.5	46/355	13.0% (8.5 - 17.4)
	Category III	Up to 2 dependents per non-dependent members	1.6-2.0	71/355	20.0% (17.2 - 22.8)
	Category IV	More than 2 dependents per non-dependent members	≥2.1	65/355	18.3% (13.9 - 22.7)

4.2. Children 6 – 50 months

Age and Sex Distribution

Proportion of age groups ranged between 43% in children aged 6-11 months in Nyarugusu Burundians and 64% in 12-23 months in the same camp. Overall sex ratio of Boys to Girls was 0.9 in Nduta and 1.1 in Nyarugusu Burundians and Congolese camps.

Table 25: Children 6-59 months - distribution of age and sex of sample **in Nyarugusu Burundian camp**

	Boys		Girls		Total		Ratio
Age (months)	**no.**	**%**	**no.**	**%**	**no.**	**%**	**Boy: Girl**
6-11	27	42.9	36	57.1	63	13.3	0.8
12-23	68	64.2	38	35.8	106	22.3	1.8
24-35	51	45.5	61	54.5	112	23.6	0.8
36-47	59	60.2	39	39.8	98	20.6	1.5
48-59	47	49.0	49	51.0	96	20.2	1.0
Total	252	53.1	223	46.9	475	100.0	1.1

Table 26: Children 6-59 months - distribution of age and sex of sample in **Nyarugusu Congolese camp**

	Boys		Girls		Total		Ratio
Age (months)	**no.**	**%**	**no.**	**%**	**no.**	**%**	**Boy: Girl**
6-11	36	48.0	39	52.0	75	14.9	0.9
12-23	60	51.3	57	48.7	117	23.3	1.1
24-35	58	47.9	63	52.1	121	24.1	0.9
36-47	60	55.6	48	44.4	108	21.5	1.3
48-59	46	56.1	36	43.9	82	16.3	1.3
Total	260	51.7	243	48.3	503	100.0	1.1

Table 27: Children 6-59 months - distribution of age and sex of sample **in Nduta camp**

	Boys		Girls		Total		Ratio
Age (months)	**no.**	**%**	**no.**	**%**	**no.**	**%**	**Boy: Girl**
6-11	26	51.0	25	49.0	51	11.0	1.0
12-23	56	46.7	64	53.3	120	26.0	0.9
24-35	49	47.6	54	52.4	103	22.3	0.9
36-47	39	46.4	45	53.6	84	18.2	0.9
48-59	52	50.0	52	50.0	104	22.5	1.0
Total	222	48.1	240	51.9	462	100.0	0.9

Time of arrival

Table 28: Children's arrival profile by camp

Survey Area	N	Old stayers before March 2023 influx		New arrivals since March 2023 influx	
		n	% (95% CI)	n	% (95% CI)
NYARUGUSU CONGOLESE	503	419	83.3% (71.2 - 95.5)	84	16.7% (4.6 - 28.9)

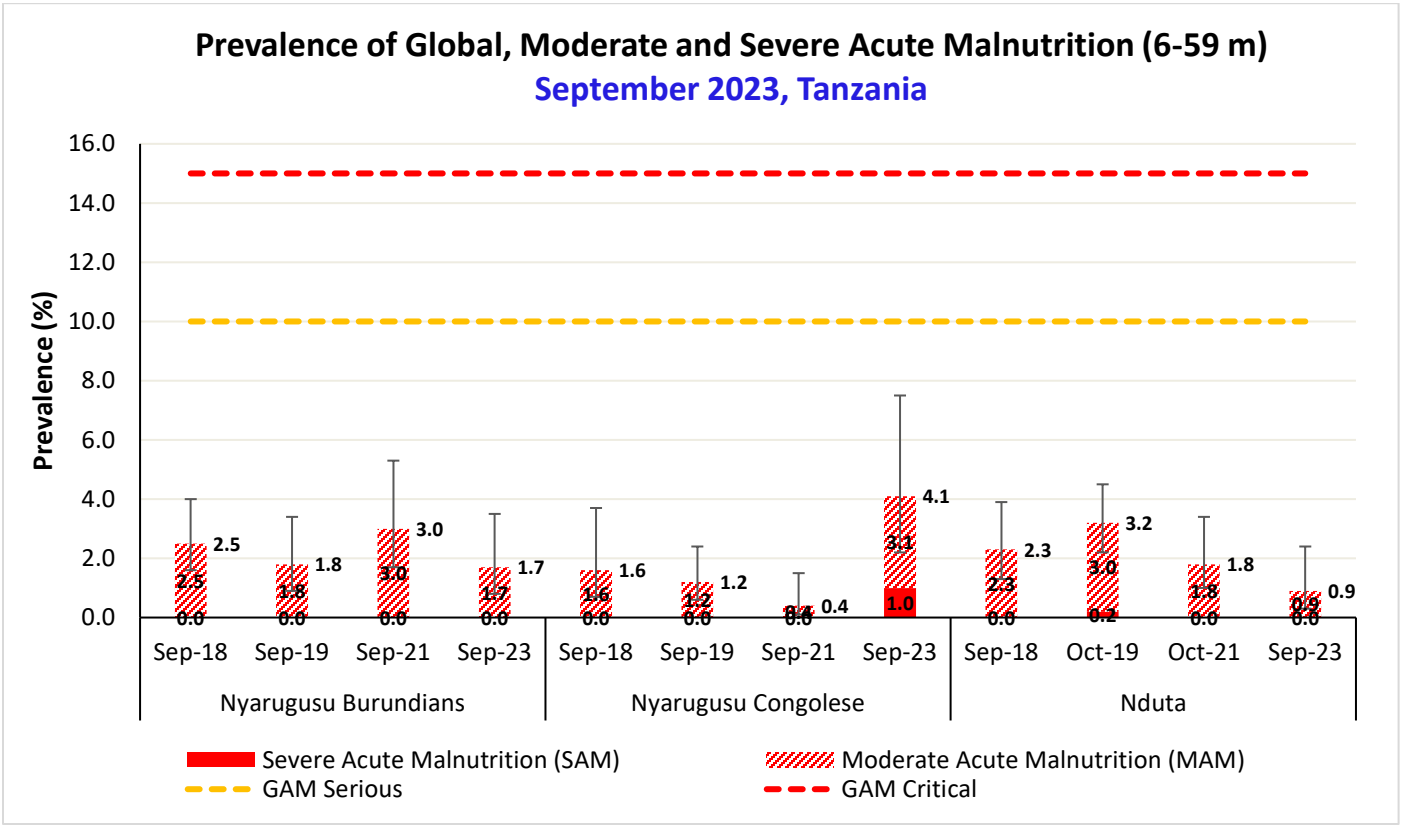
Anthropometric results (based on WHO Growth Standards 2006)
The prevalence of global acute malnutrition (GAM) based on weight for height expressed in Z-scores and/or oedema was 1.7% for Nyarugusu Burundians, 4.1% for Nyarugusu Congolese, and 0.9% for Nduta camp. While boys seemed the most affected among Nyarugusu Burundians, Nduta and Nyarugusu Congolese boys and girls were equally affected.

Table 29: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex, by camp.

Survey Area	N	Global Acute Malnutrition (WHZ <-2 z-score and/or oedema)						Moderate Acute Malnutrition (WHZ <-2 z-score and ≥-3 z-score)		Severe Acute Malnutrition (WHZ <-3 z-score and/or oedema)	
		All		Boys		Girls		All		All	
		n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
Nyarugusu Burundians	465	8	1.7% (0.8 -3.5)	5	2.0% (0.7 - 5.5)	3	1.4% (0.5 - 4.1)	8	1.7% (0.8 -3.5)	0	0%
Nyarugusu Congolese	490	20	4.1% (2.2 - 7.5)	10	4.0% (2.1 - 7.6)	10	4.2% (1.7 - 10.0)	15	3.1% (1.6 - 5.9	5	1.0% (0.4 - 2.9
Nduta	458	4	0.9 % (0.3 - 2.4)	2	(0.9 % (0.2 - 3.9)	2	0.8 % (0.2 - 3.6)	4	0.9 % (0.3 - 2.4)	0	0%

The prevalence of oedema is 1.0% in Nyarugusu Congolese camp.

Figure 11: The prevalence of global and severe acute malnutrition based on WHO growth standards in children 6-59 months from 2018-2023, by camp.



An increase of prevalence of GAM between 2021 and 2023 with upper limit of the CI above the 5% threshold.

Table 30: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema, in Nyarugusu Burundians.

		Severe wasting (<-3 z-score)		Moderate wasting (≥ -3 and <-2 z-score)		Normal (≥ -2 z score)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	59	0	0.0	1	1.7	58	98.3	0	0.0
12-23	105	0	0.0	2	1.9	103	98.1	0	0.0
24-35	111	0	0.0	1	0.9	110	99.1	0	0.0
36-47	95	0	0.0	2	2.1	93	97.9	0	0.0
48-59	95	0	0.0	2	2.1	93	97.9	0	0.0
Total	465	0	0.0	8	1.7	457	98.3	0	0.0

Table 31: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema, in Nyarugusu Congolese

		Severe wasting (<-3 z-score)		Moderate wasting (≥ -3 and <-2 z-score)		Normal (≥ -2 z score)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	73	0	0.0	3	4.1	70	95.9	0	0.0

12-23	113	0	0.0	2	1.8	107	94.7	4	3.5
24-35	118	0	0.0	5	4.2	112	94.9	1	0.8
36-47	104	0	0.0	5	4.8	99	95.2	0	0.0
48-59	82	0	0.0	0	0.0	82	100.0	0	0.0
Total	490	0	0.0	15	3.1	470	95.9	5	1.0

Table 32: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema, in Nduta

		Severe wasting (<-3 z-score)		Moderate wasting (≥ -3 and <-2 z-score)		Normal (≥ -2 z score)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11m	51	0	0.0	2	3.9	49	96.1	0	0.0
12-23m	118	0	0.0	1	0.8	117	99.2	0	0.0
24-35m	103	0	0.0	0	0.0	103	100.0	0	0.0
36-47m	83	0	0.0	0	0.0	83	100.0	0	0.0
48-59m	103	0	0.0	1	1.0	102	99.0	0	0.0
Total	458	0	0.0	4	0.9	454	99.1	0	0.0

Graphs of prevalence of wasting disaggregated by age as presented in **Figure 12-14** are shown in the figures below.

Figure 12: Prevalence of wasting by age in children 6-59 months in Nyarugusu Burundians camp

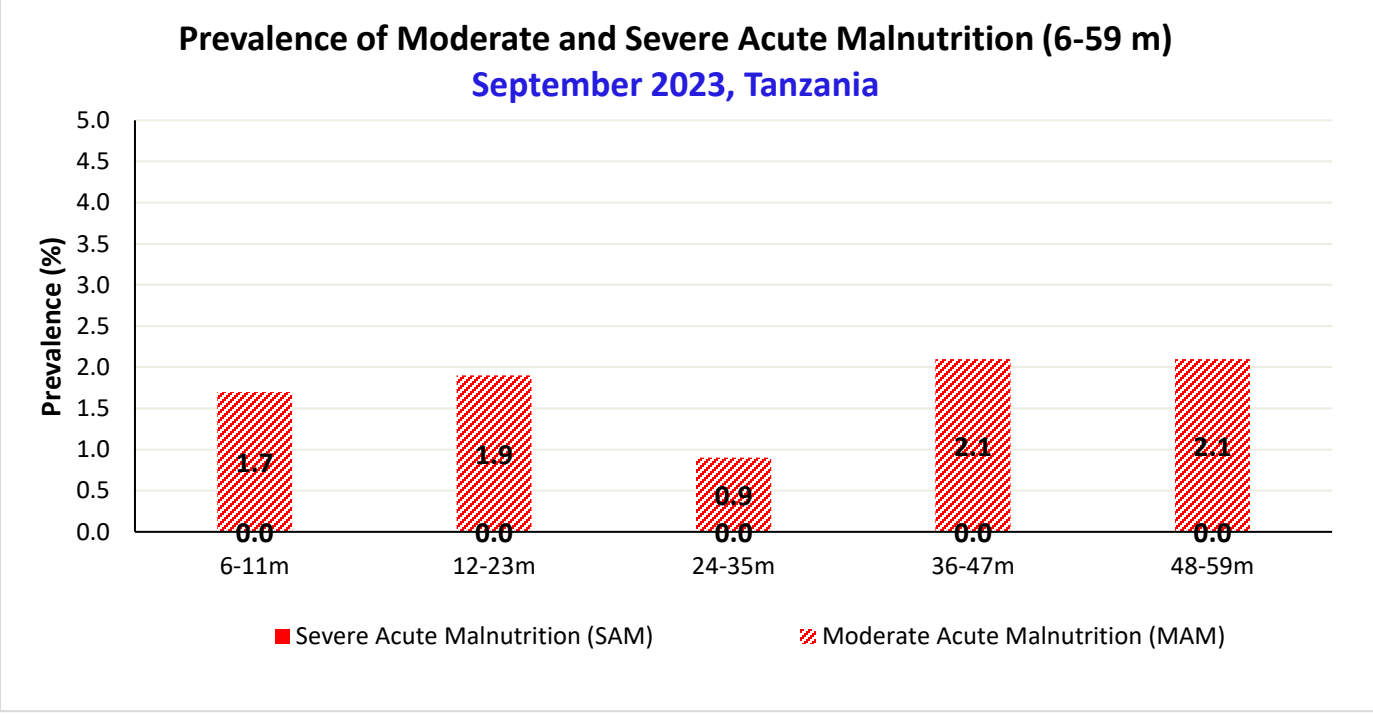


Figure 13: Prevalence of wasting by age in children 6-59 months in Nyarugusu Congolese camp

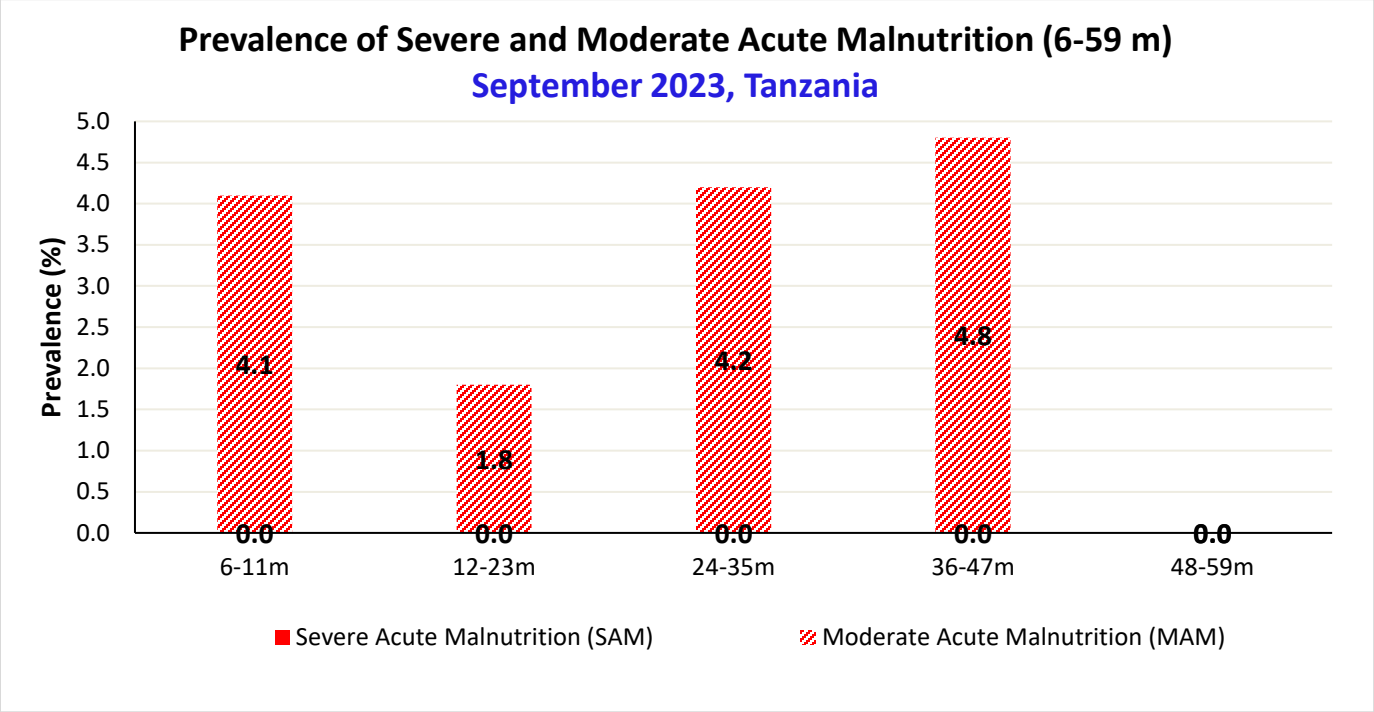


Figure 14: Prevalence of wasting by age in children 6-59 months in Nduta camp

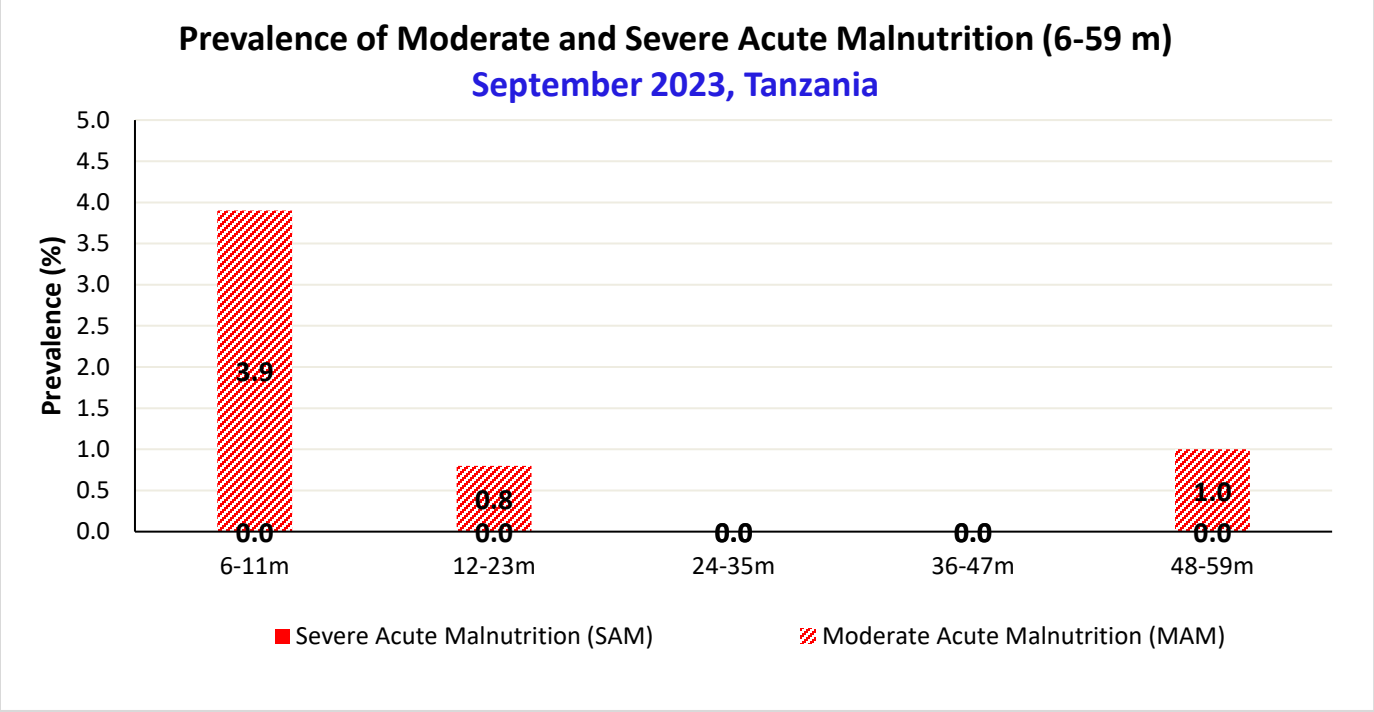
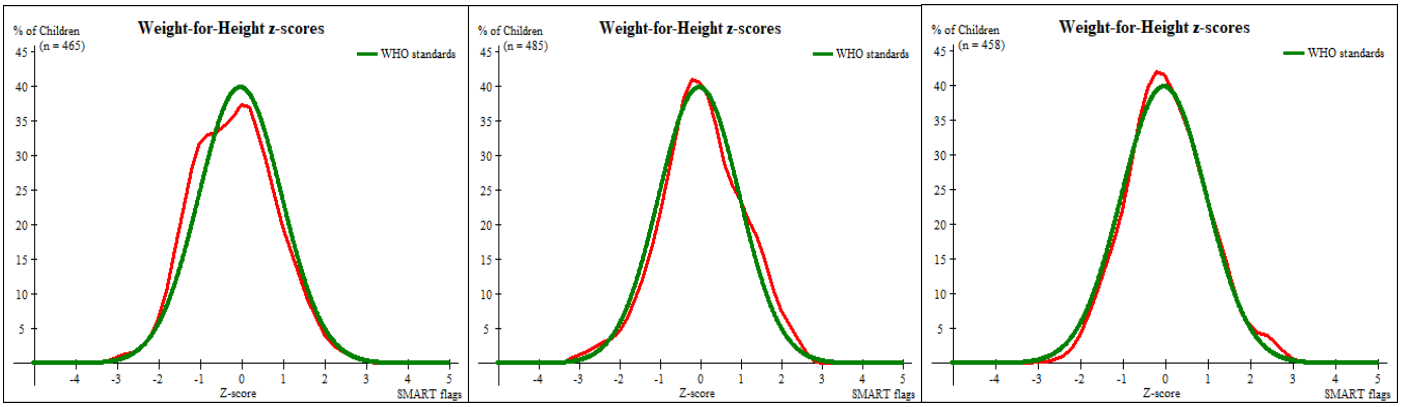


Figure 15: Distribution of weight-for-height z-scores (based on WHO growth standards; the reference population is shown in green, and the surveyed population is shown in red) of survey population in Nyarugusu Burundians, Nyarugusu Congolese and Nduta Camps respectively, compared to the reference population.



The prevalence of MUAC malnutrition ranged between 1.1% in Nduta to 2.6 in Nyarugusu Congolese camp. The prevalence in Nyarugusu Burundians was 1.9%

Table 33: Prevalence of MUAC malnutrition, by camp

Survey Area	N	Prevalence of MUAC < 125 mm and/or oedema						Prevalence of MUAC < 125 mm and >= 115 mm, no oedema		Prevalence MUAC < 115 mm and/or oedema	
		All		Boys		Girls		All		All	
		n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
Nyarugusu Burundians	473	9	1.9% (0.8 - 4.4)	6	2.4% (1.0 - 5.7)	3	1.3% (0.4 - 4.1)	8	1.7% (0.7 - 4.0)	1	0.2% (0.0 - 1.6)
Nyarugusu Congolese	501	13	2.6% (1.6 - 4.3)	7	2.7 % (1.2 - 6.1)	6	2.5 % (1.1 - 5.3)	7	1.4 % (0.7 - 2.8)	6	1.2 % (0.5 - 3.0)
Nduta	459	5	1.1% (0.5 - 2.5)	2	0.9% (0.2 - 3.7)	3	1.3% (0.4 - 3.8)	5	1.1% (0.5 - 2.5)	0	0%

Table 34: Prevalence of MUAC malnutrition by age, based on MUAC cut off's and/or oedema, <u>in Nyarugusu Burundians</u>

		MUAC < 115 mm		MUAC >= 115 mm and < 125 mm		MUAC > = 125 mm		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	63	1	1.6	5	7.9	57	90.5	0	0.0
12-23	106	0	0.0	3	2.8	103	97.2	0	0.0
24-35	112	0	0.0	0	0.0	112	100.0	0	0.0
36-47	96	0	0.0	0	0.0	96	100.0	0	0.0
48-59	96	0	0.0	0	0.0	96	100.0	0	0.0
Total	473	1	0.2	8	1.7	464	98.1	0	0.0

Table 35: Prevalence of MUAC malnutrition by age, based on MUAC cut off's and/or oedema, <u>in Nyarugusu Congolese</u>

	MUAC < 115 mm	MUAC >= 115 mm and < 125 mm	MUAC > = 125 mm	Oedema

Age (mo)	Total no.	No.	%	No.	%	No.	%	No.	%
6-11	75	1	1.3	3	4.0	71	94.7	0	0.0
12-23	116	1	0.9	5	4.3	110	94.8	4	3.4
24-35	121	0	0.0	0	0.0	121	100.0	1	0.8
36-47	107	0	0.0	0	0.0	107	100.0	0	0.0
48-59	82	0	0.0	0	0.0	82	100.0	0	0.0
Total	501	2	0.4	8	1.6	491	98.0	5	1.0

Table 36: Prevalence of MUAC malnutrition by age, based on MUAC cut off's and/or oedema, in Nduta

		MUAC < 115 mm		MUAC >= 115 mm and < 125 mm		MUAC > = 125 mm		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	50	0	0.0	3	6.0	47	94.0	0	0.0
12-23	119	0	0.0	2	1.7	117	98.3	0	0.0
24-35	103	0	0.0	0	0.0	103	100.0	0	0.0
36-47	84	0	0.0	0	0.0	84	100.0	0	0.0
48-59	103	0	0.0	0	0.0	103	100.0	0	0.0
Total	459	0	0.0	5	1.1	454	98.9	0	0.0

Table 37: Prevalence of acute malnutrition based on WHZ, and/or MUAC and/or oedema, by camp.

Survey Area	**N**	**Global Acute Malnutrition** (WHZ <-2 z-score and/or MUAC<125mm and/or oedema)						**Moderate Acute Malnutrition** (WHZ <-2 z-score and ≥-3 z-score) and/or (MUAC<125mm and >=115mm)		**Severe Acute Malnutrition** (WHZ <-3 z-score and/or MUAC<115mm and/or oedema)	
		All		**Boys**		**Girls**		**All**		**All**	
		n	**% (95% CI)**	**n**	**% (95% CI)**	**n**	**% (95% CI)**	**n**	**% (95% CI)**	**n**	**% (95% CI)**
Nyarugusu Burundians	469	16	3.4% (1.5 - 5.3)	9	3.6% (1.1 - 6.2)	7	3.2% (0.7 - 5.6)	14	3.0% (1.2 -4.8)	2	0.4% (0.0 - 1.0)
Nyarugusu Congolese	492	23	4.7% (2.2 - 7.2)	10	4.0% (1.4 - 6.6	13	5.4% (1.6 - 9.2)	18	3.7% (1.6 - 5.7)	5	1.0% (0.0 - 2.1)
Nduta	460	7	1.5% (0.5 - 2.6)	3	1.4% (0 - 2.9)	4	1.7% (0.1 - 3.3)	7	1.5% (0.5 - 2.6)	0	0%

The prevalence of underweight ranged between 13% in Nyarugusu Congolese and 17% in Nyarugusu Burundian camps. The prevalence was 16% in Nduta camp. Disaggregation by sex indicated a statistically significance between boys and girls in Nyarugusu Burundians, boys being the most affected group compared to girls, while the prevalence was the same among boys and girls in Nyarugusu Congolese and Nduta camps.

Table 38: Prevalence of underweight based on weight-for-age z-scores and by sex, by camp.

Survey Area	**N**	**Prevalence of underweight** (<-2 z-score)	**Prevalence of moderate underweight** (<-2 z-score and	**Prevalence of severe underweight** (<-3 z-score)

								>=-3 z-score)			
		All		Boys		Girls		All		All	
		n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)
Nyarugusu Burundians	470	80	17.0% (13.3 - 21.5)	55	22.1% (17.3 - 27.8)	25	11.3% (7.4 - 17.0)	72	15.3% (11.7 - 19.8)	8	1.7% (0.8 - 3.8)
Nyarugusu Congolese	495	64	12.9% (9.9 - 16.8)	37	14.6% (10.7 - 19.7)	27	11.2% (7.3 - 16.7)	56	11.3% (8.6 - 14.8)	8	1.6% (0.8 - 3.3)
Nduta	458	73	15.9% (14.0 - 18.1)	35	15.9% (11.1 - 22.3)	38	16.0% (12.3 - 20.5)	63	13.8% (11.8 - 16.0)	10	2.2 % (1.3 - 3.7)

Table 39: Prevalence of underweight by age based on weight-for-age z-scores, and oedema in Nyarugusu Burundians

		Severe underweight (<-3 z-score)		Moderate underweight (≥ -3 and <-2 z-score)		Normal (≥ -2 z score)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	60	1	1.7	10	16.7	49	81.7	0	0.0
12-23	106	1	0.9	25	23.6	80	75.5	0	0.0
24-35	112	2	1.8	11	9.8	99	88.4	0	0.0
36-47	96	1	1.0	16	16.7	79	82.3	0	0.0
48-59	96	3	3.1	10	10.4	83	86.5	0	0.0
Total	470	8	1.7	72	15.3	390	83.0	0	0.0

Table 40: Prevalence of underweight by age based on weight-for-age z-scores, and oedema in Nyarugusu Congolese

		Severe underweight (<-3 z-score)		Moderate underweight (≥ -3 and <-2 z-score)		Normal (≥ -2 z score)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	75	1	1.3	8	10.7	66	88.0	0	0.0
12-23	112	5	4.5	17	15.2	90	80.4	4	3.6
24-35	119	1	0.8	19	16.0	99	83.2	1	0.8
36-47	107	1	0.9	5	4.7	101	94.4	0	0.0
48-59	82	0	0.0	7	8.5	75	91.5	0	0.0
Total	495	8	1.6	56	11.3	431	87.1	5	1.0

Table 41: Prevalence of underweight by age based on weight-for-age z-scores, and oedema in Nduta

		Severe underweight (<-3 z-score)		Moderate underweight (≥ -3 and <-2 z-score)		Normal (≥ -2 z score)		Oedema	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	51	2	3.9	6	11.8	43	84.3	0	0.0

12-23	118	2	1.7	18	15.3	98	83.1	0	0.0
24-35	102	4	3.9	15	14.7	83	81.4	0	0.0
36-47	84	1	1.2	3	3.6	80	95.2	0	0.0
48-59	103	1	1.0	21	20.4	81	78.6	0	0.0
Total	458	10	2.2	63	13.8	385	84.1	0	0.0

Prevalence of stunting was 44% in Nyarugusu Burundians, 36% in Nyarugusu Congolese and 52% in Nduta. Disaggregation by sex indicated statically significant difference between boys and girls in Nyarugusu Burundians. Boys were the most affected group compared to girls.

Table 42: Prevalence of stunting based on height-for-age z-scores and by sex, by camp.

Survey Area	**N**	**Prevalence of stunting** (<-2 z-score)						**Prevalence of moderate stunting** (<-2 z-score and >=-3 z-score)		**Prevalence of severe stunting** (<-3 z-score)	
		All		**Boys**		**Girls**		**All**		**All**	
		n	**% (95% CI)**	**n**	**% (95% CI)**	**n**	**% (95% CI)**	**n**	**% (95% CI)**	**n**	**% (95% CI)**
Nyarugusu Burundians	459	200	43.6% (36.9 - 50.5)	125	51.4% (43.5 - 59.3)	75	34.7% (27.2 - 43.1)	138	30.1% (24.7 - 36.1)	62	13.5% (9.9 - 18.1)
Nyarugusu Congolese	496	178	35.9% (29.5 - 42.8)	105	40.7% (33.1 - 48.7)	73	30.7% (23.6 - 38.8)	120	24.2% (19.9 - 29.0)	58	11.7% (8.5 - 15.9)
Nduta	453	236	52.1 % (46.3 - 57.8)	115	52.3 % (43.2 - 61.2)	121	51.9% (44.6 - 59.2)	154	34.0 % (29.0 - 39.3)	82	18.1% (15.6 - 21.0)

The prevalence of stunting remained critical for at least the past five years across the three camps.

Figure 16: Prevalence of global and severe stunting based on growth standards in children 6-59 months from 2018-2023, by camp.

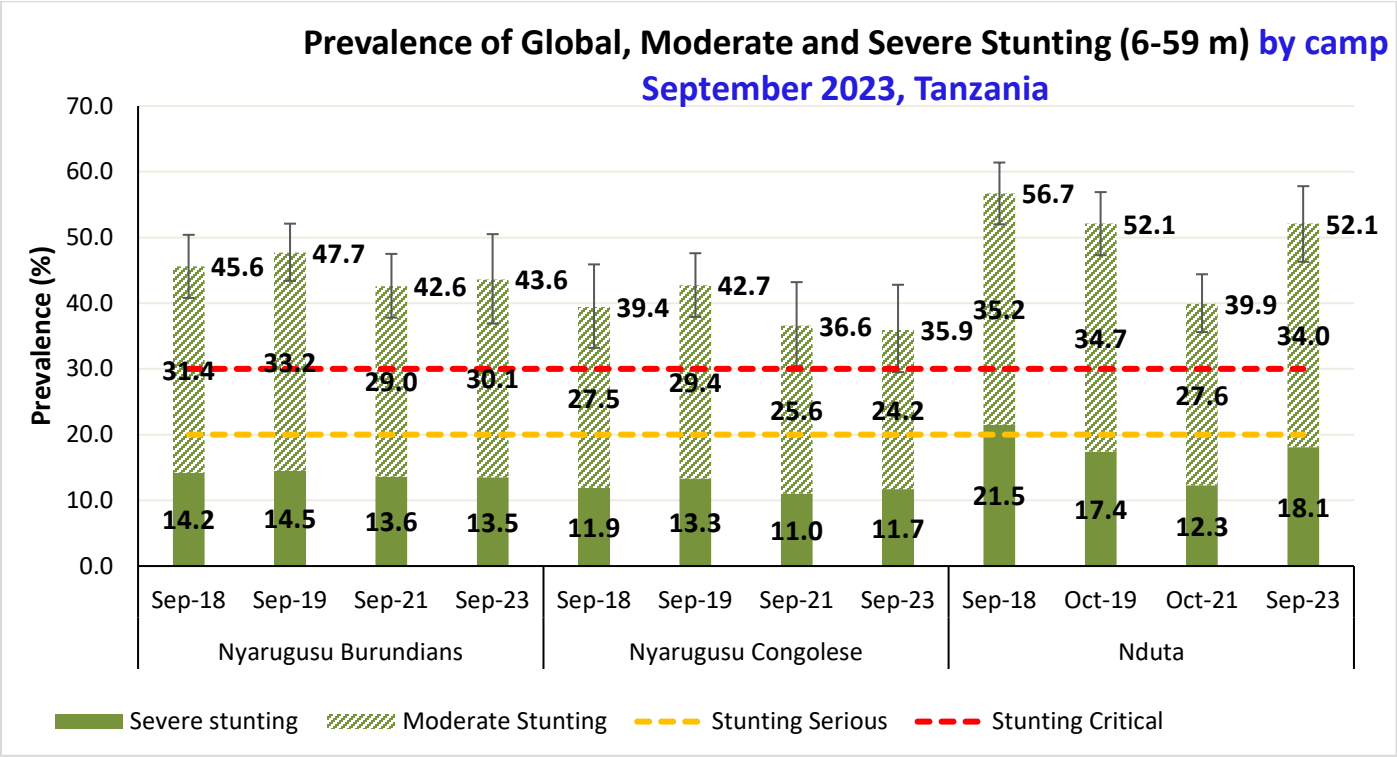


Table 43: Prevalence of stunting by age based on height-for-age z-scores, in Nyarugusu Burundians

		Severe stunting (<-3 z-score)		Moderate stunting (≥ -3 and <-2 z-score)		Normal (≥ -2 z score)	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	60	5	8.3	15	25.0	40	66.7
12-23	102	22	21.6	35	34.3	45	44.1
24-35	109	18	16.5	29	26.6	62	56.9
36-47	94	10	10.6	33	35.1	51	54.3
48-59	94	7	7.4	26	27.7	61	64.9
Total	459	62	13.5	138	30.1	259	56.4

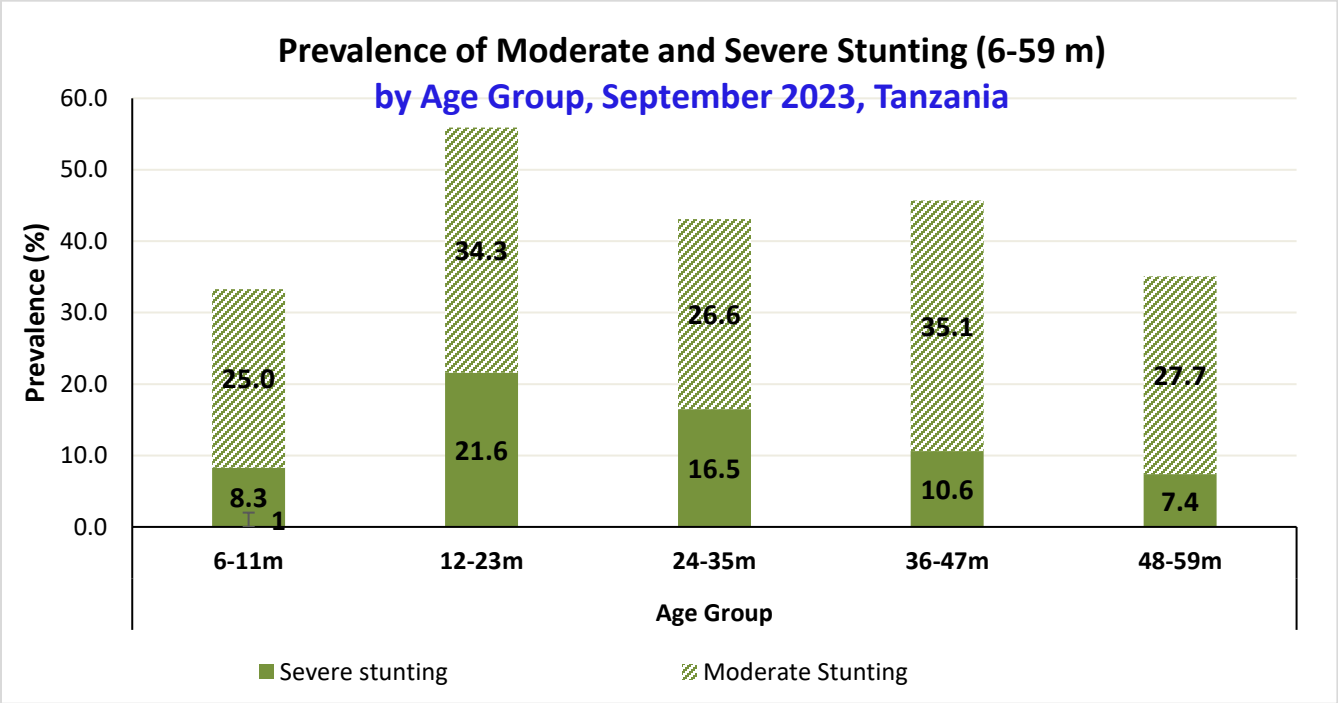
Table 44: Prevalence of stunting by age based on height-for-age z-scores, in Nyarugusu Congolese

		Severe stunting (<-3 z-score)		Moderate stunting (≥ -3 and <-2 z-score)		Normal (≥ -2 z score)	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	75	5	6.7	19	25.3	51	68.0
12-23	114	25	21.9	22	19.3	67	58.8
24-35	119	14	11.8	28	23.5	77	64.7
36-47	106	7	6.6	31	29.2	68	64.2
48-59	82	7	8.5	20	24.4	55	67.1
Total	496	58	11.7	120	24.2	318	64.1

Table 45: Prevalence of stunting by age based on height-for-age z-scores, in Nduta

		Severe stunting (<-3 z-score)		Moderate stunting (≥ -3 and <-2 z-score)		Normal (≥ -2 z score)	
Age (mo)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-11	49	9	18.4	11	22.4	29	59.2
12-23	117	28	23.9	37	31.6	52	44.4
24-35	101	19	18.8	39	38.6	43	42.6
36-47	83	11	13.3	31	37.3	41	49.4
48-59	103	15	14.6	36	35.0	52	50.5
Total	453	82	18.1	154	34.0	217	47.9

Figure 17: Prevalence of stunting by age in children 6-59 months in Nyarugusu Burundians.



The prevalence of stunting was much higher among children aged 12 – 23 months Nyarugusu Burundian camp. Results, however, should be interpreted with caution given the small sample size of the age categories.

Figure 18: Prevalence of stunting by age in children 6-59 months in Nyarugusu Congolese.

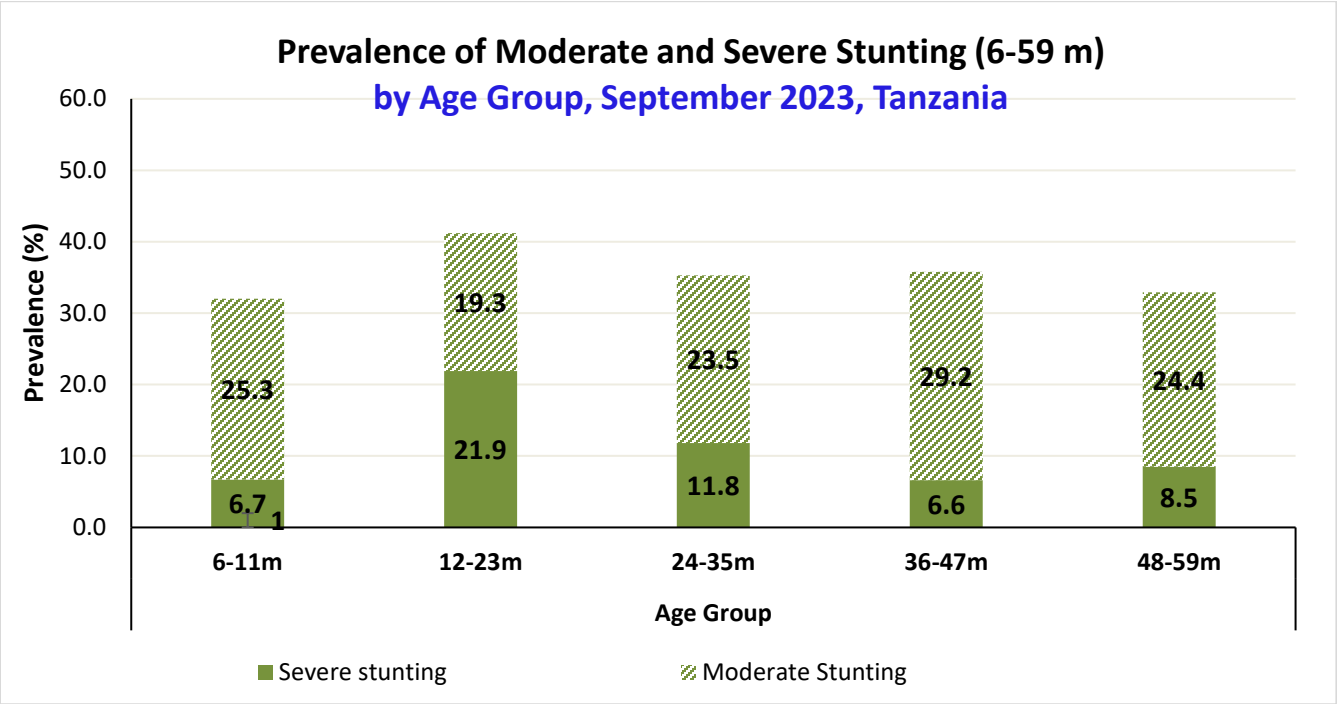


Figure 19: Prevalence of stunting by age in children 6-59 months in Nduta

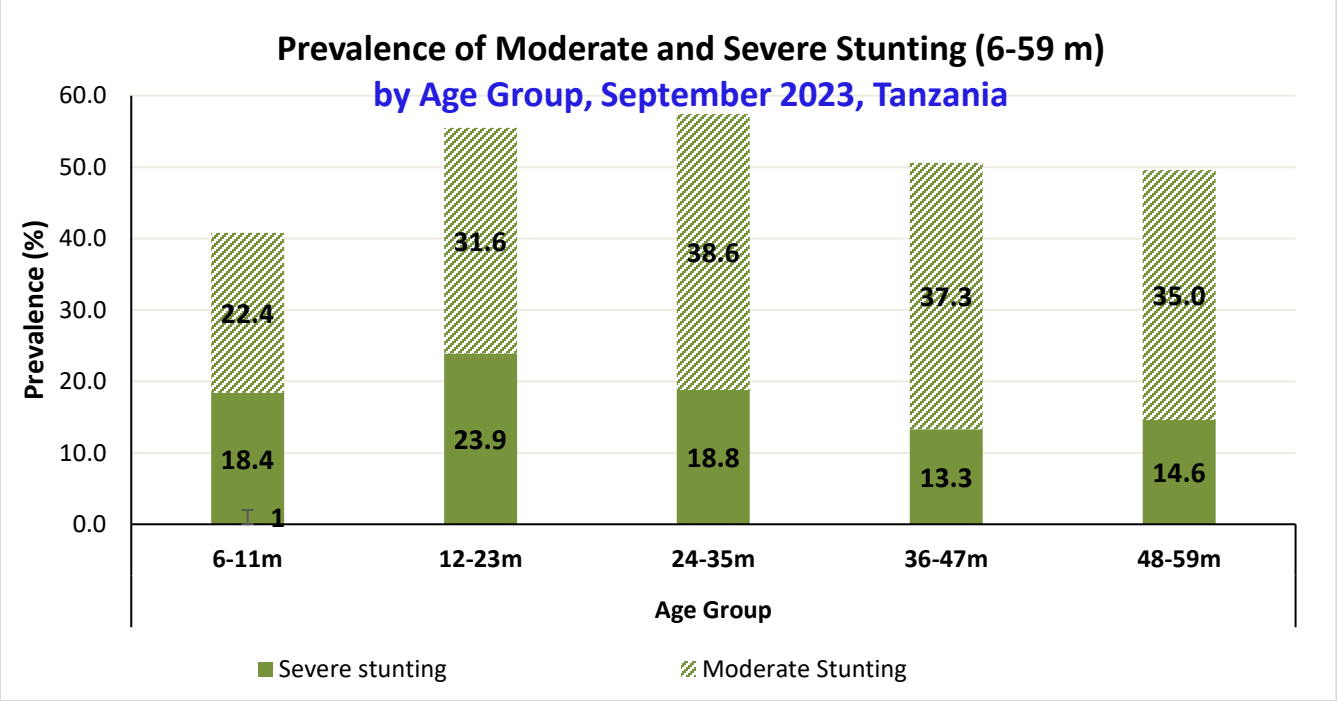
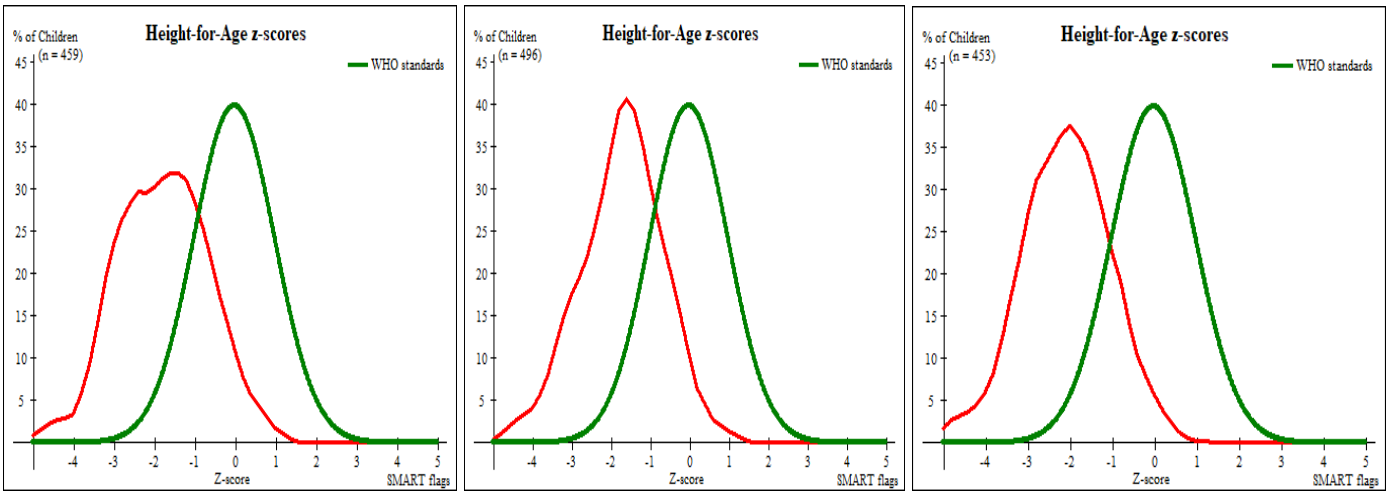


Figure 20: Distribution of height-for-age z-scores (based on WHO growth standards; the reference population is shown in green, and the surveyed population is shown in red) of survey population in Nyarugusu Burundians, Nyarugusu Congolese and Nduta camps compared to the reference population.



Prevalence of overweight was 1.7% in Nyarugusu Burundians, 3.1% in Nyarugusu Congolese and 3.5% in Nduta. Prevalence of severe overweight was zero across the three camps.

Table 46: Prevalence of overweight based on weight-for-height z-scores (no oedema), by camp.

Survey Area	N	Prevalence of overweight (>2 z-score)		Prevalence of severe overweight (>3 z-score)	
		n	% (95% CI)	n	% (95% CI)
Nyarugusu Burundians	465	8	1.7% (0.8 - 3.5)	0	0.0% (0.0 - 0.0)
Nyarugusu Congolese	490	15	3.1% (1.9 - 5.0)	0	0.0% (0.0 - 0.0)
Nduta	458	16	3.5 % (2.1 - 5.8)	0	0.0% (0.0 - 0.0

Table 47: Prevalence of overweight by age based on weight-for-height z-scores (no oedema), <u>in Nyarugusu Burundians</u>

		Prevalence of overweight (>2 z-score)		Prevalence of severe overweight (>3 z-score)	
Age (months)	**Total no.**	**No.**	**%**	**No.**	**%**
6-11	59	2	3.4	0	0.0
12-23	105	2	1.9	0	0.0
24-35	111	0	0.0	0	0.0
36-47	95	2	2.1	0	0.0
48-59	95	2	2.1	0	0.0
Total	465	8	1.7	0	0.0

Table 48: Prevalence of overweight by age based on weight-for-height z-scores (no oedema), <u>in Nyarugusu Congolese</u>

		Prevalence of overweight (>2 z-score)		Prevalence of severe overweight (>3 z-score)	
Age	**Total no.**	**No.**	**%**	**No.**	**%**

(months)					
6-11	73	2	2.7	0	0.0
12-23	113	1	0.9	0	0.0
24-35	118	4	3.4	0	0.0
36-47	104	6	5.8	0	0.0
48-59	82	2	2.4	0	0.0
Total	490	15	3.1	0	0.0

Table 49: Prevalence of overweight by age based on weight-for-height z-scores (no oedema), in Nduta

		Prevalence of overweight (>2 z-score)		Prevalence of severe overweight (>3 z-score)	
Age (months)	**Total no.**	**No.**	**%**	**No.**	**%**
6-11	51	3	5.9	0	0.0
12-23	118	4	3.4	0	0.0
24-35	103	4	3.9	0	0.0
36-47	83	3	3.6	0	0.0
48-59	103	2	1.9	0	0.0
Total	458	16	3.5	0	0.0

Presentation of mean z-score, design effects and excluded data from analysis by camp was much higher for stunting indicator (14) in Nyarugusu Burundians.

Table 50: Mean z-scores, design effects and excluded subjects, by camp

Indicator	n	Mean z-scores ± SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Nyarugusu Burundians					
Weight-for-Height	465	-0.16±0.99	1.00	2	8
Weight-for-Age	470	-1.08±0.97	1.31	2	3
Height-for-Age	459	-1.78±1.10	2.09	2	14
Nyarugusu Congolese					
Weight-for-Height	485	0.06±1.01	1.67	7	11
Weight-for-Age	495	-0.93±0.93	1.24	7	1
Height-for-Age	496	-1.72±1.04	2.27	2	5
Nduta					
Weight-for-Height	458	0.07±0.95	1.00	2	2
Weight-for-Age	458	-1.11±0.95	1.00	2	2
Height-for-Age	453	-2.08±1.02	1.41	2	7

* Contains for WHZ and WAZ the children with oedema.

The flagging criteria were “SMART flags” and ranging between -3 and +3 from the observed mean.

Enrolment in nutrition programmes results.

Enrolment into TSFP and OTP/SC was 36% and 0% for Nyarugusu Burundians, and 17% and 20% for Nyarugusu Congolese, respectively. In Nduta camp the coverage was calculated only for TSFP (57%) since no child was eligible for enrolment at OTP/SC during the survey. Results, however, should be interpreted with care given the small sample size.

Table 51: Programme enrolment for acutely malnourished children based on MUAC, WHZ and/or Oedema by camp.

Survey Area	Programme	Number/total	% (95% CI)
Nyarugusu Burundians	Supplementary feeding programme (TSFP) enrolment	5/14	35.7% (6.6 - 64.8)
	Therapeutic (OTP/SC) feeding programme enrolment	0/1	0.0%
Nyarugusu Congolese	Supplementary feeding programme (TSFP) enrolment	3/18	16.7% (1.1 - 32.2)
	Therapeutic (OTP/SC) feeding programme enrolment	1/5	20.0% (0.0 - 89.0)
Nduta	Supplementary feeding programme (TSFP) enrolment	4/7	57.1% (7.7 – 100.0)
	Therapeutic (OTP/SC) feeding programme enrolment	0/0	0.0%

The calculations were computed based on MUAC, WHZ and oedema criteria. Children with WHZ flags were excluded from the coverage analysis.

The blanket supplementary feeding program among children aged 6-23 months was 99% for Nyarugusu Burundians, 96% for Nyarugusu Congolese and 100% for Nduta. Children in this program were receiving Super Cereal Plus.

Table 52: Coverage of the blanket supplementary feeding programme in younger children by camp

Survey Area	Programme	Number/total	% (95% CI)
Nyarugusu Burundians	Blanket supplementary feeding programme (BSFP)	159/161	98.8% (97.0 – 100)
	Product name	Super cereal plus	
	Target age group	6 – 23 months	
Nyarugusu Congolese	Blanket supplementary feeding programme (BSFP)	181/189	95.8% (92.5 - 99.1)
	Product name	Super cereal plus	
	Target age group	6 – 23 months	
Nduta	Blanket supplementary feeding programme (BSFP)	166/166	100%
	Product name	Super cereal plus	
	Target age group	6 – 23 months	

Coverage of blanket supplementation on MNP in children aged 24 – 59 months was 99.0% for Nyarugusu Burundian camp, 97.7% for Nyarugusu Congolese and 99.7 for Nduta camp. MNP was introduced to curb stunting and the prevalence of anaemia.

Table 53: Coverage of MNP supplementation to older children by camp

Survey Area	Programme	Number/total	% (95% CI)
Nyarugusu Burundians	Blanket supplementary feeding programme (BSFP)	299/302	99.0% (97.9 – 100)
	Product name	MNP	
	Target age group	24 – 59 months	
Nyarugusu Congolese	Blanket supplementary feeding programme (BSFP)	303/310	97.7% (95.8 - 99.7)

	Product name	MNP	
	Target age group	24 – 59 months	
Nduta	Blanket supplementary feeding programme (BSFP)	286/287	99.7% (98.9 – 100)
	Product name	MNP	
	Target age group	24 – 59 months	

Measles vaccination coverage results

Coverage for measles vaccination based on recall and EPI card was 98,0% in Nyarugusu Burundians, 97.8 in Nyarugusu Congolese and 98.8 in Nduta. The coverage by card was slightly low in Nduta camp (83%) compared to other camps.

Table 54: Measles vaccination coverage for children aged 9-59 months by camp.

Survey Area	N	Measles vaccination with card		Measles vaccination with card or confirmation from mother	
		n	% (95% CI)	n	% (95% CI)
Nyarugusu Burundians	447	411	91.9% (86.2 - 97.7)	438	98.0% (96.6 - 99.3)
Nyarugusu Congolese	464	412	88.8% (82.0 - 95.6)	454	97.8% (96.3 - 99.4)
Nduta	431	358	83.1% (76.5 - 89.6)	426	98.8% (97.6 – 100)

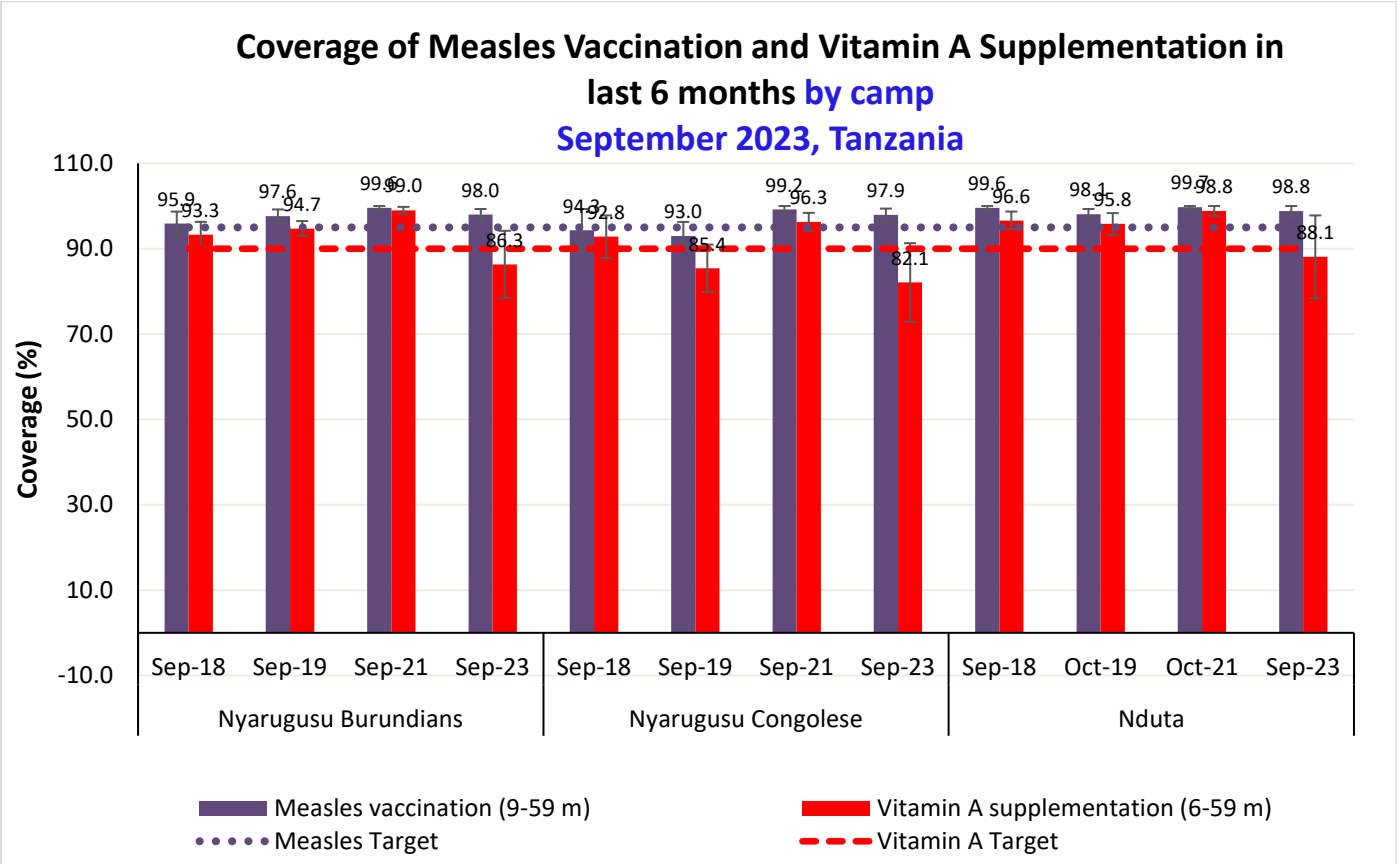
Vitamin A supplementation coverage results

Coverage of vitamin A supplementation based on recall and confirmation from the card was 86.3% in Nyarugusu Burundians, 82.1% in Nyarugusu Congolese and 88.1% in Nduta. The coverage by card was as low as 40.7% in Nduta compared to 77.7% and 60.6% for Nyarugusu Burundians and Congolese, respectively.

Table 55: Vitamin A supplementation coverage for children aged 6-59 months within the past 6 months, by camp.

Survey Area	N	Vitamin A supplementation in last 6 months with card		Vitamin A supplementation in last 6 months with card or confirmation from mother	
		n	% (95% CI)	n	% (95% CI)
Nyarugusu Burundians	475	369	77.7% (67.2 - 88.2)	410	86.3% (78.5 - 94.2)
Nyarugusu Congolese	503	305	60.6% (47.8 - 73.5)	413	82.1% (72.9 - 91.3)
Nduta	462	188	40.7% (27.7 - 53.7)	407	88.1% (78.4 - 97.8)

Figure 21: Coverage of measles vaccination, and vitamin a supplementation in last 6 months in children 6-59 months from 2018-2023, by camp.



Deworming coverage results

The coverage for deworming among children aged 12-59 months was 42.6% in Nyarugusu Burundians, 9.4% in Nyarugusu Congolese and 14.2% in Nduta camps. Note that this was included to assess routine deworming at health facilities. No large campaigns were carried along with deworming in the past six months.

Table 56: Deworming coverage for children aged 12-59 months within the past 6 months by camp.

Survey Area	N	Deworming within the past 6 months	
		n	% (95% CI)
Nyarugusu Burundians	399	170	42.6% (27.7 - 57.5)
Nyarugusu Congolese	425	40	9.4% (0.1 - 18.8)
Nduta	410	58	14.2% (8.7 - 19.6)

Diarrhoea results

Prevalence of diarrhoea among children aged 6-59 was 12% in Nyarugusu Burundians, 11% in Nyarugusu Congolese and 9.1% in Nduta.

Table 57: Period prevalence of diarrhoea, by camp

Survey Area	N	Diarrhoea in the last two weeks	
		n	% (95% CI)
Nyarugusu Burundians	474	56	11.8% (7.4 - 16.3)
Nyarugusu Congolese	502	55	11.0% (6.4 - 15.5)
Nduta	461	42	9.1% (5.7 - 12.5)

Among children who had episodes of diarrhoea, 64% in Nyarugusu Burundian, 51% in Nyarugusu Congolese and 48% in Nduta camp used ORS, while 89% in Nyarugusu Burundians, 51% in Nyarugusu Congolese and 57% in Nduta used zinc tablets for treatment of diarrhoea.

Table 58: ORS and zinc use during diarrhoea episode by camp.

Survey Area	N	ORS use during diarrhoea episode		Zinc tablet or syrup use during diarrhoea episode	
		n	% (95% CI)	n	% (95% CI)
Nyarugusu Burundians	56	36	64.3% (37.4 - 91.2)	50	89.3% (75.7 – 100)
Nyarugusu Congolese	55	28	50.9% (29.4 - 72.4)	28	50.9% (29.4 - 72.4)
Nduta	42	20	47.6% (28.3 - 66.9)	24	57.1% (38.3 - 76.0)

Anaemia results

The total anaemia in children aged 6 – 59 months was 41% in Nyarugusu Burundians, 44% in Nyarugusu Congolese and 34% in Nduta camp. The mean haemoglobin concentration, however, was above 11.1g/dL for Nyarugusu Burundian and Congolese, and 11.5g/dL for Nduta camp. There were 2 children in Nyarugusu Burundians, 4 in Nyarugusu Congolese and 2 in Nduta camp with severe anaemia.

Disaggregation by age indicated a high prevalence of anaemia in children aged 6 – 23 months. The total anaemia in this age group was 46% in Nyarugusu Burundians, 57% in Nyarugusu Congolese and 41% in Nduta. Prevalence of moderate and severe anaemia in the same age group was 26% in Nyarugusu Burundians, 22% in Nyarugusu Congolese and 15% in Nduta camp. The mean haemoglobin concentration was below 11.0g/dL for Nyarugusu Burundians and Congolese, and 11.2g/dL in Nduta.

Prevalence of anaemia in children aged 24 – 59 months was 38% in Nyarugusu Burundians, 37% in Nyarugusu Congolese and 29% in Nduta. The mean haemoglobin concentration in this age group was above 11.0 g/dL in the three camps. The proportion of children with severe and moderate anaemia ranged between 12% in Nduta camp and 17% in Nyarugusu Burundians.

Table 59: Prevalence of total anaemia, anaemia categories, and mean haemoglobin concentration in children 6-59 months of age and by age group, **in Nyarugusu Burundian camp**

	6-59 months N = 472	**6-23 months** N=168	**24-59 months** N=304
Total Anaemia (Hb<11.0 g/dL)	(194) 41.1% (34.0 - 48.2)	(78) 46.4% (37.9 - 54.9)	(116) 38.2% (30.2 - 46.1)
Mild Anaemia (Hb 10.0-10.9 g/dL)	(100) 21.2% (16.9 - 25.5)	(35) 20.8% (13.1 - 28.6)	(65) 21.4% (16.4 - 26.4)
Moderate Anaemia (7.0-9.9 g/dL)	(92) 19.5% (13.6 - 25.4)	(42) 25.0% (17.5 - 32.6)	(50) 16.5% (10.4 - 22.5)
Severe Anaemia (<7.0 g/dL)	(2) 0.4% (0.0 - 1.0)	(1) 0.6% (0.0 - 1.8)	(1) 0.3% (0.0 - 1.0)
Mean Hb (g/dL) (95% CI) [range]	11.1g/dL (10.9 - 11.4) [5.6 - 15.7]	10.8g/dL (10.6 - 11.1) [5.6 - 14.5]	11.3g/dL (11.0 - 11.6) [6.8 - 15.7]

Table 60: Prevalence of moderate and severe anaemia in children 6-59 months of age and by age group, **in Nyarugusu Burundians**

	6-59 months N = 472	6-23 months N = 168	24-59 months N = 304
Moderate and Severe Anaemia (Hb<10.0 g/dL)	(94) 19.9% (13.8 - 26.1)	(43) 25.6% (17.7 - 33.5)	(51) 16.8% (10.3 - 23.2)

Table 61: Prevalence of total anaemia, anaemia categories, and mean haemoglobin concentration in children 6-59 months of age and by age group, in Nyarugusu Congolese

		6-59 months N = 500	6-23 months N= 191	24-59 months N= 309
Total Anaemia (Hb<11.0 g/dL)		(221) 44.2% (38.4 - 50.1)	(108) 56.6% (49.0 - 64.1)	(113) 36.6% (29.8 - 43.4)
Mild Anaemia (Hb 10.0-10.9 g/dL)		(143) 28.6% (24.8 - 32.4)	(67) 35.1% (28.2 - 41.9)	(76) 24.6% (19.7 - 29.5)
Moderate Anaemia (7.0-9.9 g/dL)		(74) 14.8% (10.1 - 19.5)	(38) 19.9% (13.0 - 26.8)	(36) 11.7% (7.5 - 15.8)
Severe Anaemia (<7.0 g/dL)		(4) 0.8% (0.0 - 1.6)	(3) 1.6% (0.0 - 3.4)	(1) 0.3% (0.0 – 1.0)
Mean Hb (g/dL) (95% CI) [range]	**Cluster design***	11.1g/dL (10.9 - 11.2) [6.0 - 14.2]	10.7g/dL (10.5 - 10.9) [6.0 - 14.1]	11.3g/dL (11.1 - 11.5) [6.8 - 14.2]

Table 62: Prevalence of moderate and severe anaemia in children 6-59 months of age and by age group, in Nyarugusu Congolese

	6-59 months N = 500	6-23 months N = 191	24-59 months N = 309
Moderate and Severe Anaemia (Hb<10.0 g/dL)	(78) 15.6% (11.0 - 20.2)	(41) 21.5% (14.5 - 28.4)	(37) 12.0% (8.0 – 16.0)

Table 63: Prevalence of total anaemia, anaemia categories, and mean haemoglobin concentration in children 6-59 months of age and by age group, in Nduta

		6-59 months N = 460	6-23 months N = 170	24-59 months N = 290
Total Anaemia (Hb<11.0 g/dL)		(154) 33.5% (28.0 - 38.9)	(70) 41.2% (32.0 - 50.4)	(84) 29.0% (23.3 - 34.7)
Mild Anaemia (Hb 10.0-10.9 g/dL)		(94) 20.4% (16.2 - 24.7)	(44) 25.9% (18.4 - 33.4)	(50) 17.2% (12.5 - 22.0)
Moderate Anaemia (7.0-9.9 g/dL)		(58) 12.7% (9.8 - 15.4)	(24) 14.1% (9.9 - 18.4)	(34) 11.7% (8.2 - 15.3)
Severe Anaemia (<7.0 g/dL)		(2) 0.4% (0.0 - 1.1)	(2) 1.2% (0 - 2.8)	(0) 0% 0.0 – 0.0
Mean Hb (g/dL) (95% CI) [range]	**Cluster design***	11.5g/dL (11.3 - 11.7) [6.9 - 15.3]	11.2g/dL (10.9 - 11.5) [6.9 - 14.8]	11.7g/dL (11.5 - 11.9) [7.6 - 15.3]

Table 64: Prevalence of moderate and severe anaemia in children 6-59 months of age and by age group, in Nduta

	6-59 months	6-23 months	24-59 months

	N = 460	N = 170	N = 290
Moderate and Severe Anaemia (Hb<10.0 g/dL)	(60) 13.0% (10.1 – 16.0)	(26) 15.3% (10.5 - 20.1)	(34) 11.7% (8.2 - 15.2)

Anaemia prevalence (mild, moderate, and severe) and mean Hb results in children 6-59 from 2018 to 2023 are presented in figure 22, 23 and 24 below.

Figure 22: Prevalence of anaemia by categories in children 6-59 months from 2018-2023, by camp.

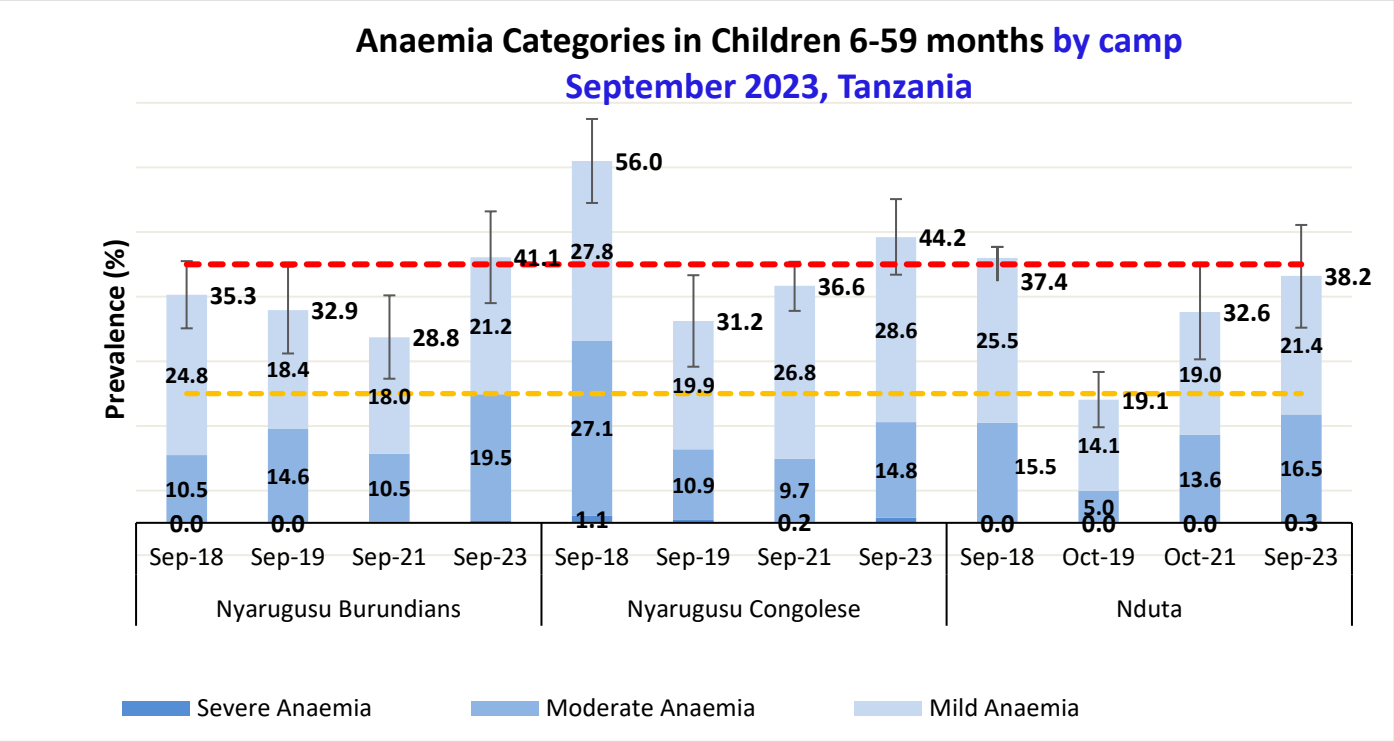


Figure 23: Prevalence of Total anaemia (<11 g/dl), and Moderate and Severe Anaemia (<10g/dl) With 95% CI in children 6-59m from 2018-2023, by camp.

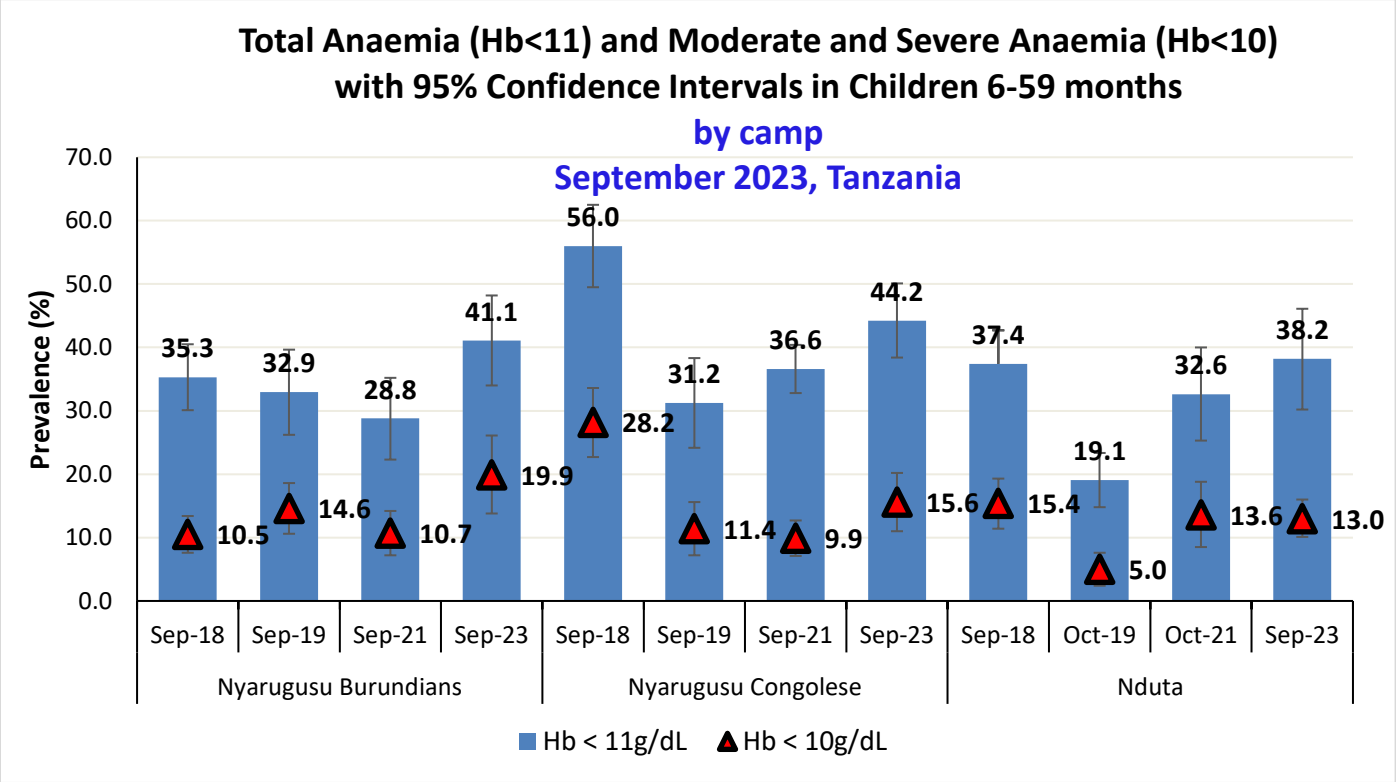
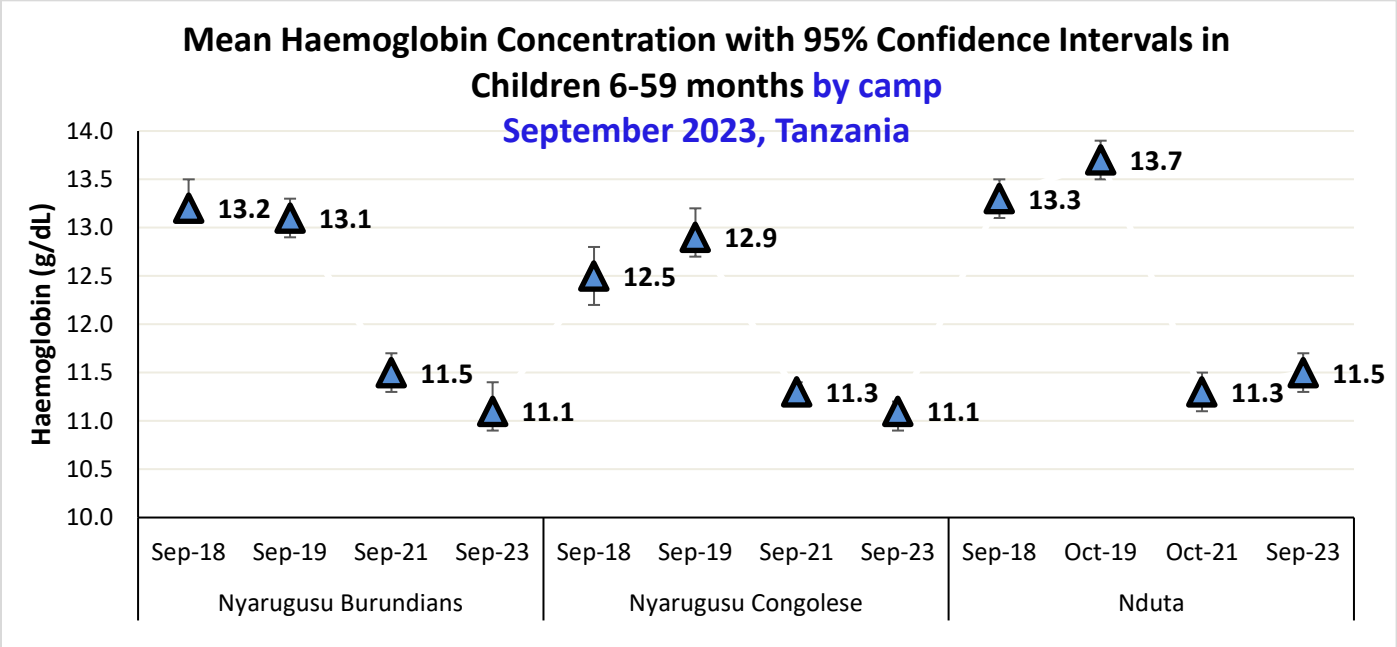


Figure 24: Mean haemoglobin concentration with 95% CI in Children 6-59m From 2018-2023, by camp.



4.3. Children 0–23 months

The timely initiation of breastfeeding in children aged 0-23months ranged between 77% in Nyarugusu Congolese and 84% in Nduta camp. Exclusive breastfeeding in children aged 0-5 months was 71% in Nyarugusu Congolese, 76% in Nyarugusu Burundians and 83% in Nduta. Predominant breastfeeding among children aged below 6 months was above 80% across the three camps. While the proportion of children breastfeeding at one

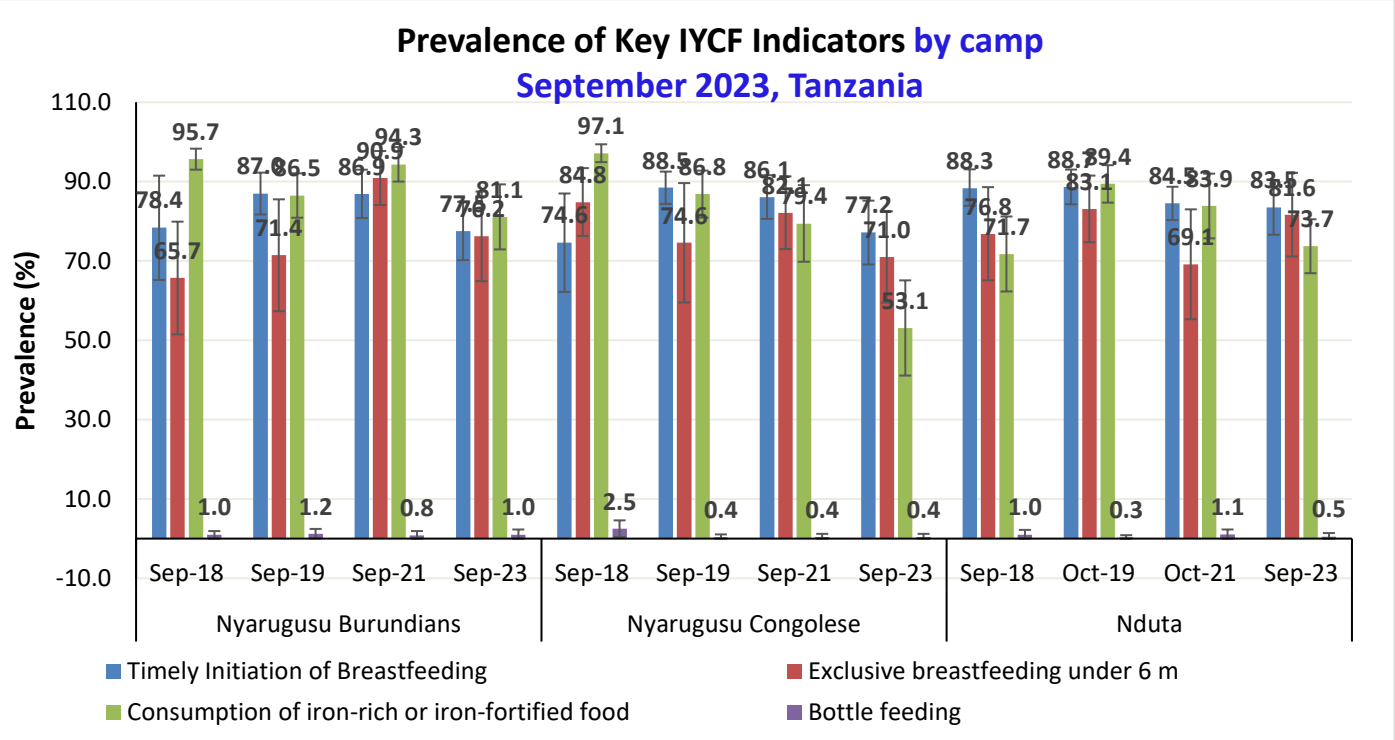
year was at least 90% in the three camps, children who were breastfeeding at two years counted at approximately half and below. The proportion of children who had started solid, semi-solid or soft food was at least 70% and prevalence of children consuming iron rich food was 53%, 74% and 81% for Nyarugusu Congolese, Nduta and Nyarugusu Burundians respectively. (See table below)

Table 65: Prevalence of infant and young child feeding practices indicators, by camp.

Survey Area	N	Nyarugusu Burundians		N	Nyarugusu Congolese		N	Nduta	
		n	% (95% CI)		n	% (95% CI)		n	% (95% CI)
WHO INDICATORS									
Timely initiation of breastfeeding (0-23 months)	200	155	77.5% (70.2 - 84.9)	254	196	77.2% (69.1 - 85.2)	218	182	83.5% (76.6 - 90.4)
Exclusive breastfeeding under 6 months (0-5 months)	42	32	76.2% (64.9 - 87.5)	62	44	71.0% (59.5 - 82.5)	49	40	81.6% (71.1 - 92.2)
Predominant breastfeeding under 6 months (0-5 months)	42	36	85.7% (75.0 - 96.5)	62	52	83.9% (74.6 - 93.2)	49	44	89.8% (80.3 - 99.3)
Continued breastfeeding at 1 year (12-15 months)	33	30	90.9% (77.9 – 100)	38	34	89.5% (80.0 - 99.0)	40	38	95.0% (88.0 – 100)
Continued breastfeeding at 2 years (20-23 months)	43	23	53.5% (30.91 - 76.1)	39	15	38.5% (20.6 - 56.4)	37	15	40.5% (21.8 - 59.3)
Introduction of solid, semi-solid or soft foods (6-8 months)	28	25	89.3% (78.3 - 100)	40	28	70.0% (49.6 - 90.4)	31	26	83.9% (70.6 - 97.1)
Consumption of iron-rich or iron-fortified foods (6-23 months)	169	137	81.1% (72.9 - 89.3)	192	102	53.1% (41.1 - 65.1)	171	126	73.7% (66.9 - 80.5)
Bottle feeding (0-23 months)	211	2	1.0% (0 - 2.3)	256	1	0.4% (0.0 - 1.2)	220	1	0.5% (0.0 - 1.4)
UNHCR INDICATORS									
No breastfeeding under 6 months (0-5 months)	42	0	0	63	3	4.8% (0.0 - 10.2)	49	2	4.1% (0.0 - 9.7)
No breastfeeding under 12 months (0-11 months)	105	1	1.0% (0.0 - 2.9)	139	5	3.6% (0.4 - 6.8)	100	3	3.0% (0.0 - 6.3)

Note:
Results in the above table should be interpreted with caution since, it was not feasible to achieve a large sample size for some IYCF indicators (e.g., 12-15 months, 6-8 months) given the nature of the survey which was primarily based on GAM in children aged 6-59 months. As a result, the confidence limits may be too wide and hence under or overestimate the prevalence of the indicator.

Figure 25: Key IYCF indicators from 2018-2023, by camp



Prevalence of intake

Infant formula

The proportion of children aged 0 – 23 months receiving infant formula was 1% and below across the three camps.

Table 66: Infant formula intake in children aged 0-23 months, by camp.

Survey Area	N	The proportion of children aged 0-23 months who receive infant formula (fortified or non-fortified)	
		n	% (95% CI)
Nyarugusu Burundians	211	2	1.0% (0.0 - 2.3
Nyarugusu Congolese	256	2	0.8% (0.0 - 1.9)
Nduta	220	0	0.0% (0.0 – 0.0)

Fortified blended foods.

Proportion of intake of FBF++ was 75% in Nyarugusu Burundians, 48% in Nyarugusu Congolese 73% in Nduta.

Table 67: FBF++ intake in children aged 6-23 months, by camp.

Survey Area	N	Proportion of children aged 6-23 months who receive FBF++	
		n	% (95% CI)
Nyarugusu Burundians	169	127	75.1% (62.9 - 87.4)

Nyarugusu Congolese	193	93	48.2% (36.9 - 59.5)
Nduta	171	124	72.5% (65.9 - 79.2)

4.4. Women 15 – 49 years

Physiological status among women of reproductive age showed a proportion of pregnant women ranging from 12% in Nyarugusu Burundians to 19% in Nduta. The proportion of women who were lactating infants below 6 months was 26% in Nduta, 27% in Nyarugusu Congolese and 29% in Nyarugusu Burundians.

Table 68: women's physiological status and age by camp

Survey Area	N	Non-pregnant, non-lactating		Pregnant		Lactating with an infant less than 6 months		Lactating with an infant greater than 6 months		Mean age in years
		n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	n	% (95% CI)	[min, max]
Nyarugusu Burundians	233	109	46.8% (40.4 - 53.2)	28	12.4% (8.3 - 16.4)	26	29.2% (20.8 - 37.6)	63	70.8% (62.4 - 79.2)	27.2Yrs [15-49]
Nyarugusu Congolese	238	86	36.1% (29.8 - 42.5)	33	14.5% (9.6 - 19.3)	30	27.3% (19.9 - 34.6)	80	72.7% (65.4 - 80.1)	26.4Yrs [15 – 49]
Nduta	195	60	30.8% (23.8 - 37.70	35	18.7% (13.0 - 24.5)	24	26.1% (14.6 - 37.6)	68	73.9% (62.4 - 85.4)	28.5Yrs [15 – 48]

The age of women who participated in the surveys was 27 years for Nyarugusu Burundians, 26 for Nyarugusu Burundians and 29 years for Nduta camp.

MUAC in women

Cut-off points for MUAC were set at 220mm for non-pregnant, non-lactating and 230mm for pregnant women adopted from Tanzania Ministry of Health, Community Development, Gender, Elderly and Children[8]. There was no prevalence of MUAC malnutrition in non-pregnant and non-lactating women in all three camps.

Table 69:Prevalence of MUAC malnutrition in non-pregnant, non-lactating women, by camp

Survey Area	N	Prevalence of MUAC < 220 mm	
		n	% (95% CI)
Nyarugusu Burundians	109	1	0.9% (0 - 2.8)
Nyarugusu Congolese	85	4	4.7% (0.2 - 9.2)
Nduta	60	2	3.3% (0.0 - 8.1)

The prevalence of MUAC malnutrition among pregnant and lactating women with an infant less than 6 months was 1.9% in Nyarugusu Burundians, 1.6% in Nyarugusu Congolese and 3.4% in Nduta.

Table 70: Prevalence of MUAC malnutrition in pregnant and lactating women with an infant less than 6 months, by camp

Survey Area	N	Prevalence of MUAC < 230 mm	
		n	% (95% CI)
Nyarugusu Burundians	53	1	1.9% (0.0 - 5.8)
Nyarugusu Congolese	63	1	1.6% (0.0 - 4.8)
Nduta	59	2	3.4% (0.0 - 8.4)

Note:
The prevalence of MUAC should be interpreted with caution given the small sample size which may lead into under or overestimation of the results.

[8] Nutrition assessment, Counselling and Support: *JOB AIDS for Health Facility-based Service Provider*. (MoHCDGEC, 2016)

BSFP enrolment

Enrolment at BSFP starts during the second trimester of the women's gestation period and continues until six months post-delivery. Coverage of BSFP among PLW with children below 6 months was 97% in Nyarugusu Congolese and 100% in Nyarugusu Burundian and Nduta.

Table 71: Coverage of BSFP for pregnant and lactating women of children below 6 months by Camp

Survey Area	Programme	Number/total	% (95% CI)
Nyarugusu Burundians	Blanket feeding programme enrolment	26/26	100%
	Product name	Super cereal	
	Target age group	Pregnant & Lactating under 6 months	
Nyarugusu Congolese	Blanket feeding programme enrolment	29/30	96.7% (89.6 – 100)
	Product name	Super cereal	
	Target age group	Pregnant & Lactating under 6 months	
Nduta	Blanket feeding programme enrolment	24/24	100%
	Product name	Super cereal	
	Target age group	Pregnant & Lactating under 6 months	

Utilization of BSFP rations

Proportion of beneficiaries received food rations at BSFP prior to the surveys was 100% across the three camps, however, sharing of the received rations with other family members was 59% in Nyarugusu Burundian, 50% in Nyarugusu Congolese and 56% in Nduta. Selling was reported by one beneficiary constituting 2.6% of the total recipients in the latter camp.

Table 72: Utilization of BSFP rations, by camp

Survey Area	Received ration		Not shared		Shared		Sold	
	n/N	% (95% CI)	n/N	% (95% CI)	n/N	% (95% CI)	n/N	% (95% CI)
Nyarugusu Burudians	39/39	100%	11/39	28.2% (14.1 - 42.3)	23/39	59.0% (41.8 - 76.2)	1/39	2.6% (0.0-8.0)
Nyarugusu Congolese	42/42	100%	18/42	42.9% (21.3 - 64.5)	21/42	50.0% (28.2 - 71.8)	0/42	0.0%
Nduta	48/48	100%	18/48	37.5% (16.6 - 58.4)	27/48	56.3% (33.2 - 79.3)	0/48	0.0%

Anaemia

Prevalence of anaemia among non-pregnant women aged 15 to 49 years was 23% in Nyarugusu Burundians, 24% in Nyarugusu Congolese and 15% in Nduta. One case of severe anaemia was found in Nyarugusu Burundian camp. The mean haemoglobin concentration was 12.9g/dL in Nyarugusu Burundians, 12.7g/dL Nyarugusu Congolese and 13.5g/dL in Nduta.

Table 73: Prevalence of total anaemia, anaemia categories, and mean haemoglobin concentration in non-pregnant women of reproductive age (15-49 years), by camp

	Nyarugusu Burundians	Nyarugusu Congolese	Nduta N= 152

	N = 198	N= 192	
Total Anaemia (Hb<12.0 g/dL)	(45) 22.7% (14.2 - 31.3)	(46) 24.0% (16.3 - 31.6)	(22) 14.5% (6.3 - 22.7)
Mild Anaemia (Hb 11.0-11.9 g/dL)	(24) 12.1% (6.5 - 17.7)	(27) 14.1% (8.0 - 20.1)	(16) 10.5% (3.8 - 17.3)
Moderate Anaemia (8.0-10.9 g/dL)	(20) 10.1% (5.0 - 15.2)	(19) 9.9% (4.3 - 15.5)	(6) 4.0% (0.3 - 7.6)
Severe Anaemia (<8.0 g/dL)	(1) 0.5% (0 - 1.5)	0%	0%
Mean Hb (g/dL) **(95% CI)** **[range]**	12.9g/dL (12.6 - 13.2) [7.6 - 16.2	12.7g/dL (12.4 - 13.0) [8.2 - 16.5]	13.5g/dL (13.2 - 13.8 [9.2 - 16.6]

Figure 26: Prevalence of anaemia by categories in women of reproductive age (non-pregnant) from 2018-2023, by camp.

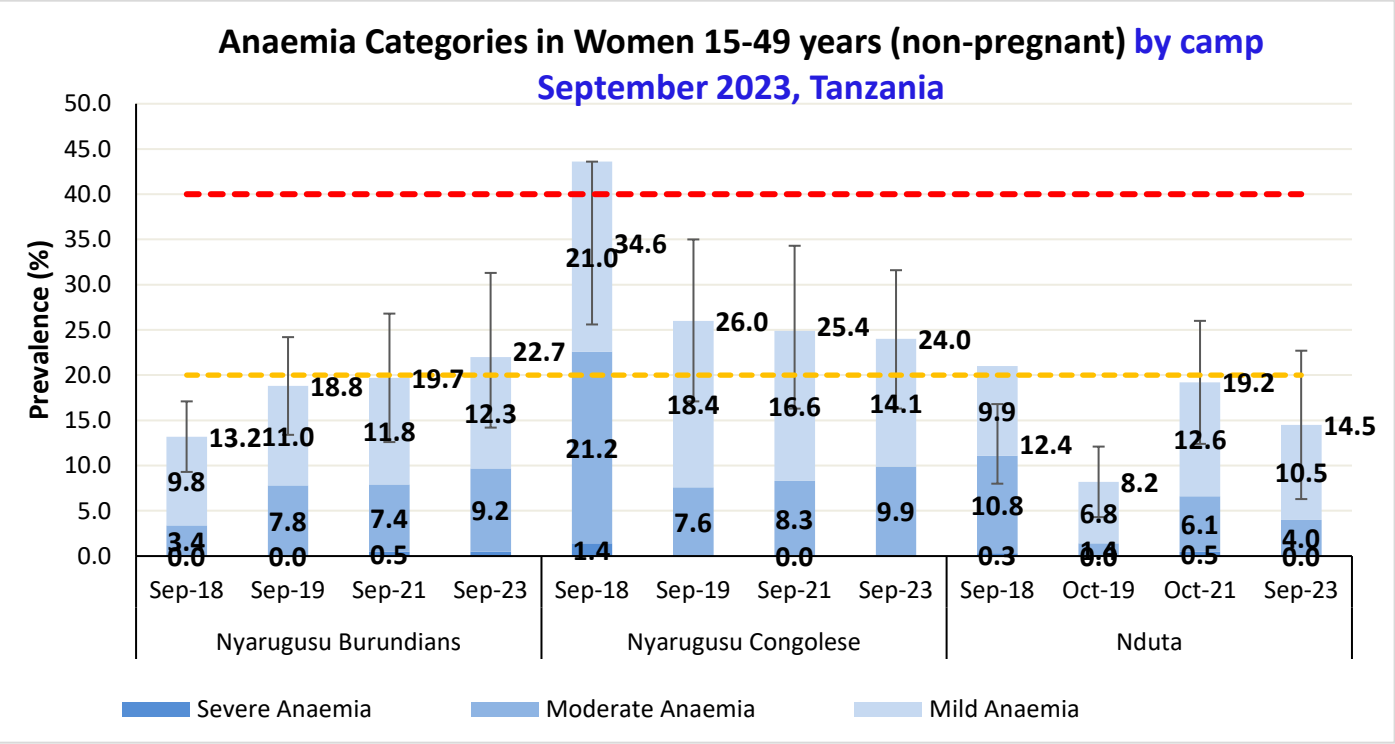
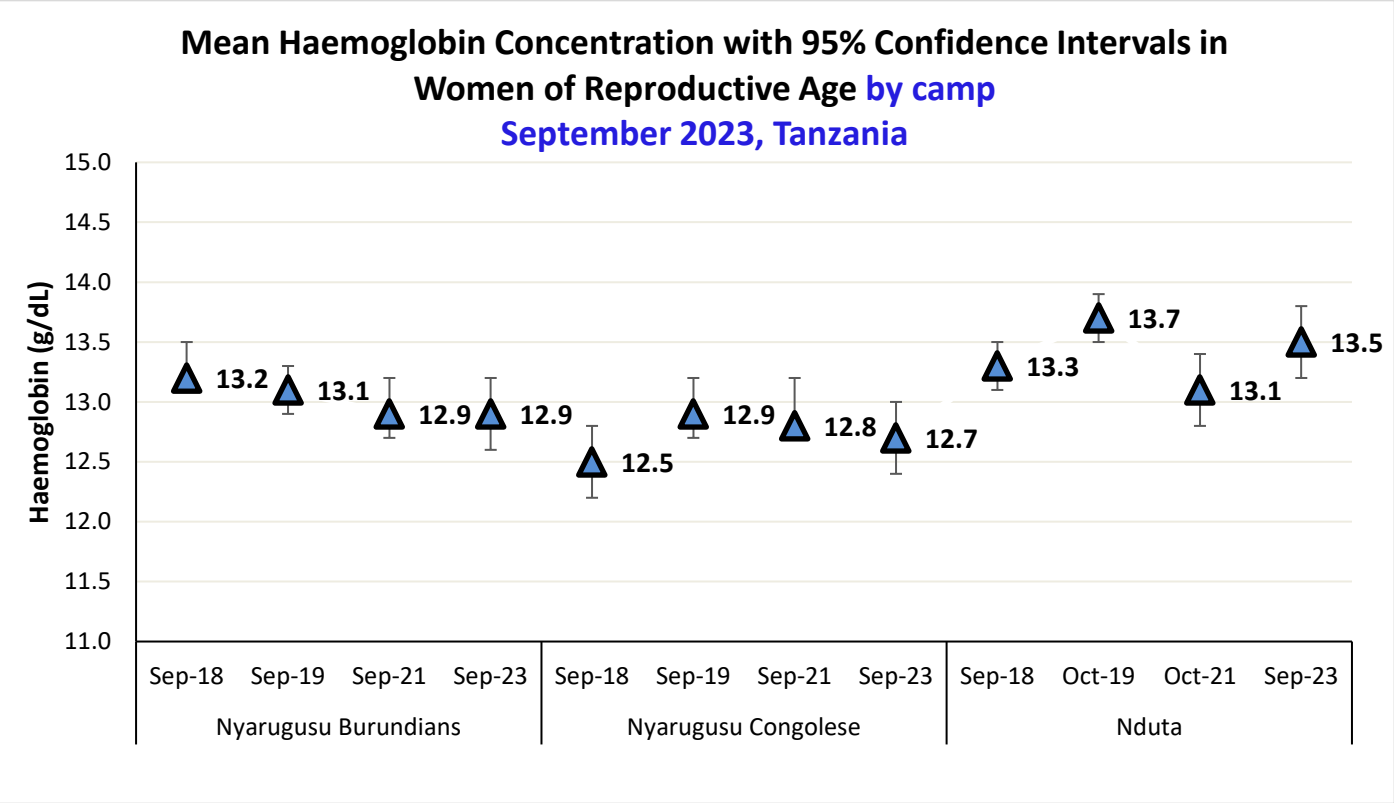


Figure 27: Mean haemoglobin concentration with 95% ci in women of reproductive age (non-pregnant) from 2019-2023, by camp.



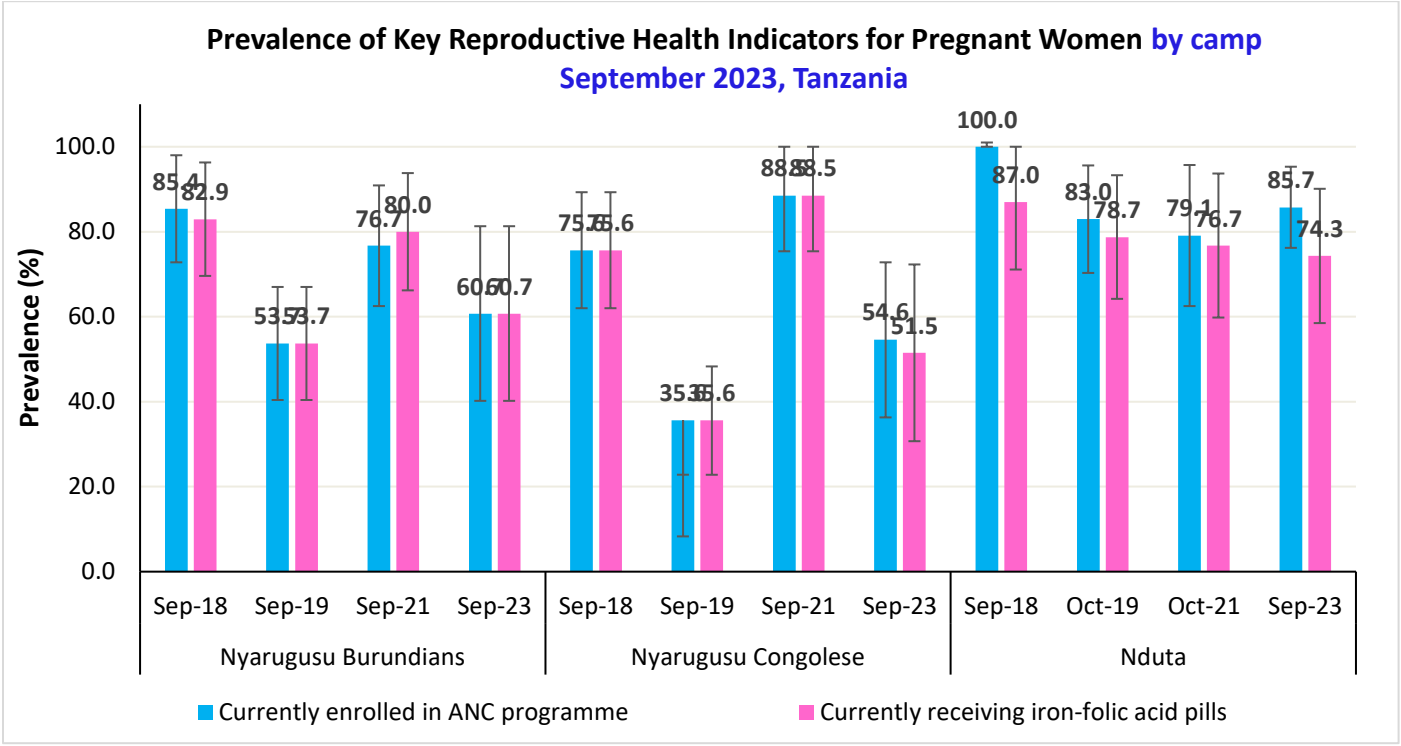
ANC Enrolment

Coverage of ANC enrolment was 61% in Nyarugusu Burundians, 55% in Nyarugusu Congolese and 86% in Nduta. Proportion of pregnant women receiving IFAS was 61% in Nyarugusu Burundians, 52% in Nyarugusu Congolese, 74% in Nduta.

Table 74: ANC enrolment and iron-folic acid pills coverage among pregnant women (15-49 years), by camp

Survey Area	N	Currently enrolled in ANC programme		Currently receiving iron-folic acid pills	
		n	% (95% CI)	n	% (95% CI)
Nyarugusu Burundians	28	17	60.7% (40.2 - 81.3)	17	60.7% (40.2 - 81.3)
Nyarugusu Congolese	33	18	54.6% (36.3 - 72.8)	17	51.5% (30.7 - 72.3)
Nduta	35	30	85.7% (76.2 - 95.3)	26	74.3% (58.5 - 90.1)

Figure 28: ANC enrolment and coverage of iron-acid folic supplementation in pregnant women 15-49 years from 2019-2023, by camp.


Prevalence of Key Reproductive Health Indicators for Pregnant Women by camp
September 2023, Tanzania
Prevalence (%)
100.0
80.0
60.0
40.0
20.0
0.0
85.4
82.9
53.7
76.7
80.0
60.7
75.6
35.6
88.5
54.6
51.5
100.0
87.0
83.0
78.7
79.1
76.7
85.7
74.3
Sep-18
Sep-19
Sep-21
Sep-23
Nyarugusu Burundians
Sep-18
Sep-19
Sep-21
Sep-23
Nyarugusu Congolese
Sep-18
Oct-19
Oct-21
Sep-23
Nduta
Currently enrolled in ANC programme
Currently receiving iron-folic acid pills

4.5. Food Security

Food security data was collected from at least 99.5% of the planned number of HHs in the three camps.

Table 75: Food security sampling information by camp

Total HHs surveyed for Food Security	Planned	Actual	% of target
Nyarugusu Burundians	194	193	99.5%
Nyarugusu Congolese	199	199	100%
Nduta	181	180	99.5%

Access to food assistance

Refugees in the three camps receive in-kind food assistance distributed through general rations based on 28 days cycle. The ration entitlements per person per day are 380g of cereals, 120g of pulses, 20g of oil, 25g of super cereal and 5g of salt, which aims to provide 2,100kcal. Rations distributed in the last cycle prior to SENS (cycle 8) were 230g of cereals, 50g of pulses, 8g of oil and 5g of salt, aimed to provide 1,073 Kcal per person per day (50% of full rations). However, the general rations increased to 60% in cycle 8 following an increase of cereals by 60g of wheat in the refugee food basket.

Table 76: Food assistance type, amount and distribution schedule for the last distribution in Nyarugusu Burundians, Congolese and Nduta camps.

Type	Distribution schedule (days)	Commodities/products distributed	Amount per person per day (g/day)	Kcal per person per day
In-kind	28	Maize meal	230	833
	28	Legumes	50	170
	28	Oil	8	71
	28	Salt	5	0
			293	**1,073**

The proportion of HHs receiving in-kind assistance ranged between 99% - 100% across the three camps. See Table 77 below.

Table 77: Food assistance coverage

Survey Area	N	The proportion of HHs receiving an in-kind food assistance	
		n	% (95% CI)
Nyarugusu Burundians	193	191	99.0% (97.5 – 100)
Nyarugusu Congolese	199	199	100%
Nduta	180	180	100%

Out of the HHs reporting not to have access to food assistance among Nyarugusu Burundians had the following reasons: -
½ said it was because they were not given a ration card, even if they were eligible; ½ said it was because they were registered but determined not active.

In-kind food distribution

Refugees received food rations calculated to cover 28 days per distribution cycle. The mean duration of the food lasted from general food distribution was reported to be 19.2 days for Nyarugusu Burundians, 17.2 days for Nyarugusu Congolese and 18 days for Nduta. This shows that in some household food did not last until the end of the distribution cycle.

Table 78: Reported duration of general food distribution, by camp.

Average number of days the general food distribution lasts	Nyarugusu Burundian N = 191	Nyarugusu Congolese N = 193	Nduta N = 180
Mean (Days) (95% CI) [range]	19.2 days (18.2 - 20.1) [7 - 28]	17.2 days (16.4 – 18.0) [7 – 30]	18.0 days (17.1 - 19.0) [1 – 30]

Coverage of basic needs

The tables 79, 80 and 81 below describes some basic needs that a particular HH could not afford if were not provided as an assistance to refugees.

Table 79: Description of basic needs not met by the HHs, In Nyarugusu Burundians

Basic needs not met by the HHs:	Number/total	% (95% CI)
Food	166/193	86.0% (71.8 – 100)
Water	81/193	42.0% (26.0 - 57.9)
Hygiene items, clothes, shoes	94/193	48.7% (33.6 - 63.8)
Health costs (including medicines)	20/193	10.4% (1.8 - 18.9)
Rent, shelter repair, HH items (e.g. mattress, blankets, jerrycan), utilities and bills (e.g. electricity, water bills, phone calling credit)	84/193	43.5% (28.5 - 58.6)
Firewood / fuel for cooking or heating	116/193	60.1% (46.5 - 73.7)
Assets for a livelihood activity (e.g., seeds, tools, farming, fishing, petty trade, etc.)	11/193	5.7% (0.0 - 11.5)
Debts repayment	16/193	8.3% (2.6 - 14.0)
Saved some money, support other family members, relatives, friends	4/193	2.1% (0.0 - 4.1)
Education (e.g., school fees, uniform, books)	17/193	8.8% (2.3 - 15.3)
Other	3/193	1.6% (0.0 - 3.3)

Table 80: Description of basic needs not met by the HHs, In Nyarugusu Congolese

Basic needs not met by the HHs:	Number/total	% (95% CI)

Food	163/199	81.9% (68.6 - 95.2)
Water	56/199	28.1% (12.9 - 43.4)
Hygiene items, clothes, shoes	102/199	51.3% (37.9 - 64.6)
Health costs (including medicines)	32/199	16.1% (4.8 - 27.3)
Rent, shelter repair, HH items (e.g. mattress, blankets, jerrycan), utilities and bills (e.g. electricity, water bills, phone calling credit)	91/199	45.7% (32.2 - 59.2)
Firewood / fuel for cooking or heating	111/199	55.8% (41.8 - 69.7)
Assets for a livelihood activity (e.g., seeds, tools, farming, fishing, petty trade, etc.)	10/199	5.0% (0.3 - 9.8)
Debts repayment	30/199	15.1% (2.6 - 27.6)
Saved some money, support other family members, relatives, friends	4/199	2.0% (0.1 - 4.0)
Education (e.g., school fees, uniform, books)	18/199	9.1% (0.9 - 17.2)
Other	0/199	0.0%

Table 81: Description of basic needs not met by the HHs, in Nduta

Basic needs not met by the HHs:	Number/total	% (95% CI)
Food	147/180	81.7% (66.7 - 96.6)
Water	24/180	13.3% (5.4 - 21.2)
Hygiene items, clothes, shoes	90/180	50.0% (36.4 - 63.6)
Health costs (including medicines)	35/180	19.4% (6.9 – 32.0)
Rent, shelter repair, HH items (e.g. mattress, blankets, jerrycan), utilities and bills (e.g. electricity, water bills, phone calling credit)	104/180	57.8% (43.5 - 72.1)
Firewood / fuel for cooking or heating	108/180	60.0% (46.4 - 73.6)
Assets for a livelihood activity (e.g., seeds, tools, farming, fishing, petty trade, etc.)	13/180	7.2% (0.4 - 14.0)
Debts repayment	39/180	21.7% (8.4 - 34.9)
Saved some money, support other family members, relatives, friends	3/180	1.7% (0.0 - 3.6)
Education (e.g., school fees, uniform, books)	17/180	9.4% (0.1 - 18.8)
Other	0/180	0.0%

During the assessment, HHs were asked to report whether they managed to meet all basic needs, partially or not . The proportion of HHs reporting meeting all basic needs by 100% was 0.5% in Nyarugusu Congolese and

none in Nyarugusu Burundians and Nduta camps. The proportion of HH reporting that met basic needs by 50% and above was 95.3% for Nyarugusu Burundians, 95.0% for Nyarugusu Congolese and 96.7% for Nduta camp.

Table 82: HHs by categories of coverage of basic needs, by camp

Survey Area	Proportion of HHs in each category of coverage of basic needs	Number/total	% (95% CI)
Nyarugusu Burundians	All basic needs are met (100%)	0/193	0.0%
	More half basic needs are met (>50%)	184/193	95.3% (90.5 – 100)
	Few basic needs are met (<50%)	9/193	4.7% (0.0 - 9.5)
	Basic needs are not met (0%)	0/193	0.0%
Nyarugusu Congolese	All basic needs are met (100%)	1/199	0.5% (0.0 - 1.5)
	More half basic needs are met (>50%)	189/199	95.0% (89.0 – 100)
	Few basic needs are met (<50%)	9/199	4.5% (0.0 - 10.5)
	Basic needs are not met (0%)	0/199	0.0%
Nduta	All basic needs are met (100%)	0/180	0.0%
	More half basic needs are met (>50%)	174/180	96.7% (93.2 – 100)
	Few basic needs are met (<50%)	6/108	3.3% (0.0 - 6.8)
	Basic needs are not met (0%)	0/180	0.0%

Access to cooking fuel.

The proportion of HHs using wood was 95% for Nyarugusu Burundians, 86% for Nyarugusu Congolese and 99% for Nduta.

Table 83: Cooking fuel use in Nyarugusu Burundians

Proportion of HHs using the following cooking fuel:	Number/total	% (95% CI)
Wood	151/159	95.0% (91.6 - 98.4)
Charcoal	8/159	5.0% (1.7 - 8.4)
Kerosene	0/159	0.0%
Biogas	0/159	0.0%
Liquid petroleum gas (LPG)	0/159	0.0%
Ethanol	0/159	0.0%
Briquettes	0/159	0.0%
Other	0/159	0.0%

Table 84: Cooking fuel use in Nyarugusu Congolese

Proportion of HHs using the following cooking fuel:	Number/total	% (95% CI)
Wood	118/137	86.1% (76.2 - 96.1)
Charcoal	15/137	11.0% (2.6 - 19.3)
Kerosene	0/137	0.0%
Biogas	0/137	0.0%
Liquid petroleum gas (LPG)	0/137	0.0%
Ethanol	0/137	0.0%
Briquettes	0/137	0.0%
Other	4/137	2.9% (0.0 – 9.0)

Table **85:** Cooking fuel use in Nduta

Proportion of HHs using the following cooking fuel:	Number/total	% (95% CI)
Wood	174/175	99.4% (98.2 – 100)
Charcoal	0/175	0.0%
Kerosene	0/175	0.0%
Biogas	0/175	0.0%
Liquid petroleum gas (LPG)	0/175	0.0%
Ethanol	0/175	0.0%
Briquettes	1/175	0.6% (0.0 - 1.8)
Other	0/175	0.0%

Table 86: Cooking fuel assistance coverage, by camp

Survey Area	N	Proportion of HHs receiving cooking fuel assistance	
		n	% (95% CI)
Nyarugusu Burundians	193	40	20.7%

			(13.7 - 27.8)
Nyarugusu Congolese	198	18	9.1% (3.9 - 14.3)
Nduta	180	15	8.3% (4.4 - 12.3)

Table 87: Reported duration of cooking fuel assistance, by camp.

Average number of days the cooking fuel assistance lasts	Nyarugusu Burundians N = 39	Nyarugusu Congolese N= 17	Nduta N=15
Mean (days) **(95% CI)** **[range]**	13.4 days (11.0 - 15.8) [2 - 30]	10.1 days (5.4 - 14.7) [2 - 30]	11.5 Days (8.7 - 14.4) [4 - 21]

Negative Coping Strategies Adopted over the Past 4 Weeks

During the SENS, schools were closed, and shelters in the camps are provided free of charge, thus, information on these two indicators were not collected. In Nyarugusu Burundians, the strategy that was highly adopted by many HHs was to take out new loans or borrow money, which counted about 50%. The least adopted negative coping strategy was engaging in potentially risky or harmful activities, which counted at about 0%. The proportion of HHs reporting using one or more negative coping strategies over the past 4 weeks was 80%.

Table 88: Negative coping strategies used by the surveyed population in Nyarugusu Burundians over the past 4 weeks.

The proportion of HHs reporting using the following negative coping strategies over the past 4 weeks*:	Number/total	% (95% CI)
Sold any assets that would not have normally sold	37/192	19.3% (11.3 - 27.3)
Ask for money from strangers (begging)	25/193	13.0% (7.3 - 18.6)
Send HH members under the age of 16 to work	18/193	9.3% (3.5 - 15.1)
Send a member of the HH to work far away	49/193	25.4% (13.1 - 37.7)
Engage in potentially risky or harmful activities	0/193	0.0%
Skip paying rent /debt repayments to meet other needs	76/191	39.8% (27.7 - 51.9)
Take out new loans or borrowed money	97/193	50.3% (39.1 - 61.4)
Reduce expenditure on hygiene items, water, baby items, health or education in order to meet HH food needs	79/192	41.2% (28.8 - 53.5)
The proportion of HHs reporting using one or more negative coping strategies over the past 4 weeks	155/193	80.3% (70.8 - 89.9)

***** The total will be over 100% as HHs may use several negative coping strategies.

In Nyarugusu Congolese, the most preferred negative coping strategy was “Take out new loans or borrowed money” at 43.2% followed by “Skip paying rent /debt repayments to meet other needs” at 39.7%. The least adopted negative coping strategy was “Engage in potentially risky or harmful activities” at 1%. The proportion of HHs reporting using one or more negative coping strategies over the past 4 weeks was 58%.

Table 89: Negative coping strategies used by the surveyed population in Nyarugusu Congolese over the past 4 weeks.

The proportion of HHs reporting using the following negative coping strategies over the past 4 weeks*:	Number/total	% (95% CI)
Sold any assets that would not have normally sold	26/199	13.1% (8.0 - 18.2)
Ask for money from strangers (begging)	10/199	5.0% (1.2 - 8.8)
Send HH members under the age of 16 to work	6/199	3.0% (0.8 - 5.3)
Send a member of the HH to work far away	22/199	11.1% (6.1 - 16.1)
Engage in potentially risky or harmful activities	2/199	1.0% (0.0 - 2.4)
Skip paying rent /debt repayments to meet other needs	79/199	39.7% (28.9 - 50.5
Take out new loans or borrowed money	86/199	43.2% (32.1 - 54.4)
Reduce expenditure on hygiene items, water, baby items, health or education in order to meet HH food needs	57/199	28.6% (16.9 - 40.4)
Proportion of HHs reporting using one or more negative coping strategies over the past 4 weeks	116/199	58.3% (46.1 - 70.5)

***** The total will be over 100% as HHs may use several negative coping strategies.

The most preferred negative coping strategy in Nduta camp was taking out new loans or borrowing money (44%) and the least preferred negative coping strategy was engaging in potentially risky or harmful activities (2%). The proportion of HHs reporting using one or more negative coping strategies over the past 4 weeks was 67%.

Table 90: Negative coping strategies used by the surveyed population in Nduta over the past 4 weeks.

The proportion of HHs reporting using the following negative coping strategies over the past 4 weeks*:	Number/total	% (95% CI)
Sold any assets that would not have normally sold	18/180	10.0% (3.8 - 16.2)
Ask for money from strangers (begging)	12/180	6.7% (1.6 - 11.8)
Send HH members under the age of 16 to work	8/180	4.4% (0.8 - 8.1)
Send a member of the HH to work far away	49/180	27.2% (14.6 - 39.8)
Engage in potentially risky or harmful activities	3/180	1.7% (0.0 - 3.6)
Skip paying rent /debt repayments to meet other needs	57/180	31.7% (22.4 - 40.9)
Take out new loans or borrow money	80/180	44.4% (33.0 - 55.9)
Reduce expenditure hygiene on items, water, baby items, health or education in order to meet HH food needs	54/180	30.0% (14.7 - 45.4)
Proportion of HHs reporting using one or more negative coping strategies over the past 4 weeks	121/180	67.2% (52.9 - 81.6)

***** The total will be over 100% as HHs may use several negative coping strategies.

Negative coping strategies adopted over the past 7 days.
The most preferred negative coping strategy in Nyarugusu Burundians was “Limit portion sizes at mealtime” (91%) and the least preferred negative coping strategy was borrowing food or relying on help from a friend or relative (76%).

Table 91: Negative coping strategies used by the surveyed population in Nyarugusu Burundians over the past 7 days.

Proportion of HHs reporting using the following negative coping strategies over the past 7 days*:	Number/total	% (95% CI)
Rely on less preferred and/or less expensive foods	172/193	89.1% (82.0 - 96.2)
Borrow food, or rely on help from a friend or relative	147/193	76.2% (67.5 - 84.8)
Reduce the number of meals eaten in a day	170/193	88.1% (81.9 - 94.3)
Limit portion sizes at mealtime	175/193	90.7% (85.3 - 96.0)
Reduce consumption by adults so children can eat	157/193	81.4% (74.6 - 88.1)

***** The total will be over 100% as HHs may use several negative coping strategies.

In Nyarugusu Congolese, the most adopted negative coping strategy over the 7 days recall period was relying on less preferred and/or less expensive foods, counted at 90%. The least adopted was “Borrow food or rely on help from a friend or relative, which accounted for 56%.

Table 92: Negative coping strategies used by the surveyed population in Nyarugusu Congolese over the past 7 days.

The proportion of HHs reporting using the following negative coping strategies over the past 7 days*:	Number/total	% (95% CI)
Rely on less preferred and/or less expensive foods	178/199	89.5% (84.1 - 94.8)
Borrow food, or rely on help from a friend or relative	119/199	59.8% (48.7 - 70.9)
Reduce the number of meals eaten in a day	153/199	76.9% (67.0 - 86.8)
Limit portion sizes at mealtime	157/199	78.9% (68.9 - 88.9)
Reduce consumption by adults so children can eat	131/199	65.8% (54.7 - 77.0)

***** The total will be over 100% as HHs may use several negative coping strategies.

In Nduta camp, the most adopted negative coping strategy over the 7 days recall period was relying on less preferred and/or less expensive foods, counted at 93%.

Table 93: Negative coping strategies used by the surveyed population in Nduta over the past 7 days.

The proportion of HHs reporting using the following negative coping strategies over the past 7 days*:	Number/total	% (95% CI)

Rely on less preferred and/or less expensive foods	167/180	92.8% (87.5 - 98.0)
Borrow food, or rely on help from a friend or relative	124/180	68.9% (60.6 - 77.2)
Reduce the number of meals eaten in a day	147/180	81.7% (73.4 - 89.9)
Limit portion sizes at mealtime	156/180	86.7% (79.9 - 93.5)
Reduce consumption by adults so children could eat	136/180	75.6% (66.9 - 84.3)

***** The total will be over 100% as HHs may use several negative coping strategies.

Reduced Coping Strategy Index

Average reduced coping strategy index (rCSI) was 34 for Nyarugusu Burundians, 27 for Nyarugusu Congolese and 32 for Nduta camp from 0 to 56 across the three camps.

Table 94:Average rCSI*, by camp

Average rCSI		**Nyarugusu Burundians** N = 193	**Nyarugusu Congolese** N= 199	**Nduta** N= 180
Mean (95% CI) [range]	**Cluster design****	33.6 (28.5 - 38.7) [0 - 56]	27.4 (21.4 - 33.5) [0 - 56]	32.3 (27.2 - 37.5) [0 - 56]

*Maximum rCSI is 56.

Food Consumption Score (FCS) and FSC-Nutrition (FCS-N) results

The mean FCS was 41 in Nyarugusu Burundians, 48 in Nyarugusu Congolese and 42 in Nduta ranging from 12 in Nyarugusu Congolese to 89 in Nduta camp.

Table 95: Average FCS* by camp

Average FCS				
		Nyarugusu Burundians	**Nyarugusu Congolese**	**Nduta**
Mean (95% CI) [range]	**Cluster design****	41.1 (39.6 - 42.5) [20.5 - 74]	48.2 (45.8 - 50.5) [12.0 - 89.5]	42.1 (39.9 - 44.3) [19.5 - 89]

*Maximum FCS is 112 (129.5 if specialized nutritious foods are included).

The proportion of HHs consuming food at an acceptable level was 77% for Nyarugusu Burundians, 92% for Nyarugusu Congolese and 83% for Nduta. The proportion of HHs with poor consumption scores was 1.6% in Nyarugusu Burundians, 2.5% in Nyarugusu Congolese and 1.7% in Nduta.

Table 96: Food consumption score by category, by camp

Survey Area	FCS profiles*	Number/total	% (95% CI)
Nyarugusu Burundians	Acceptable FCS > 35	149/193	77.2% (69.3 - 85.1)
	Borderline 21.5≤FCS≤35	41/193	21.2% (13.5 - 29.0)
	Poor FCS≤21	3/193	1.6% (0.0 - 3.3)
Nyarugusu Congolese	Acceptable FCS > 35	183/199	92.0% (87.6 - 96.2)
	Borderline 21.5≤FCS≤35	11/199	5.5% (1.5 - 9.6)
	Poor FCS≤21	5/199	2.5% (0.4 - 4.6)
Nduta	Acceptable FCS > 35	149/180	82.8% (74.0 - 91.6)
	Borderline 21.5≤FCS≤35	28/180	15.6% (6.9 - 24.2)
	Poor FCS≤21	3/180	1.7% (0.0 - 3.6)

*In countries where HHs have a high sugar and oil consumption (oil and sugar eaten daily - ~7 days per week), cut-off points of 28 (poor/borderline) and 42 (borderline/acceptable) are usually recommended.

Consumption of protein rich foods was high followed by vitamin A rich food and lastly, haem-iron rich foods. About 67% of the surveyed HH never consumed haem-iron in a week among Nyarugusu Burundians.

Table 97: Consumption frequency categories of each nutrient rich food groups (FCS-N) in Nyarugusu Burundians

Nutrient rich food groups	Consumption frequency categories	Number/total	% (95% CI)
Vitamin A rich foods	Never	37/193	19.2% (10.2 - 28.1
	Sometimes	114/193	59.1% (50.4 - 67.8)
	At least daily	42/193	21.8% (14.7 - 28.8)
Protein rich foods	Never	7/193	3.6% (0 - 7.3)
	Sometimes	33/193	17.1% (7.6 - 26.6)
	At least daily	153/193	79.3% (69.1 - 89.4)
Haem iron rich foods	Never	129/193	66.8% (59.5 - 74.2)
	Sometimes	59/193	30.6% (23.4 - 37.8)
	At least daily	5/193	2.6% (0.4 - 4.8)

About 90% of HHs in Nyarugusu Congolese were consuming protein rich foods daily while consumption of vitamin A rich and Haem-iron rich food was 34% and 14% respectively.

Table 98: Consumption frequency categories of each nutrient rich food groups (FCS-N) in Nyarugusu Congolese

Nutrient rich food groups	Consumption frequency categories	Number/total	% (95% CI)
Vitamin A rich foods	Never	19/199	9.6% (4.4 - 14.7)
	Sometimes	112/199	56.3% (45.9 - 66.6)
	At least daily	68/199	34.2% (23.2 - 45.1)
Protein rich foods	Never	3/199	1.5% (0.0 - 3.2)
	Sometimes	18/199	9.1% (4.7 - 13.4)
	At least daily	178/199	89.5% (84.7 - 94.2)
Haem iron rich foods	Never	53/199	26.6% (15.7 - 37.6)
	Sometimes	119/199	59.8% (48.7 - 70.9)
	At least daily	27/199	13.6% (6.0 - 21.2)

In Nduta, 82% of the visited HHs were consuming protein rich food at least daily. Consumption of vitamin A rich food were met by 37% and 4% were consuming haem-iron rich food at least daily.

Table 99: Consumption frequency categories of each nutrient rich food groups (FCS-N) in Nduta

Nutrient rich food groups	Consumption frequency categories	Number/total	% (95% CI)
Vitamin A rich foods	Never	12/180	6.7% (2.1 - 11.2)
	Sometimes	102/180	56.7% (48.8 - 64.6)
	At least daily	66/180	36.7% (27.5 - 45.9)
Protein rich foods	Never	9/180	5.0% (1.3 - 8.7)
	Sometimes	24/180	13.3% (5.4 - 21.3)
	At least daily	147/180	81.7% (70.4 - 93.0)
Haem iron rich foods	Never	103/180	57.2% (44.6 - 70.0)
	Sometimes	70/180	38.9% (27.2 - 50.6)
	At least daily	7/180	3.9% (0.4 - 7.3)

Acquisition of food items was mainly through in-kind assistance across the three camps. Proportion of HHs acquiring food through in-kind assistance was 69% in Nyarugusu Burundians, 64% in Nyarugusu Congolese and 59% in Nduta.

Table 100: Food acquisition sources, by camp

Survey Area	Food acquisition sources	Number/total	% (95% CI)
Nyarugusu Burundians	Purchase (using with their own cash)	48/193	24.9% (9.1 - 40.7)
	Own production (crops, livestock, fishing/hunting, gathering)	0/193	0.0%
	Traded goods/services, barter	2/193	1.0% (0.0 - 2.6)
	Borrowed (loan/credit from traders)	10/193	5.2% (0.0 - 10.6)
	Received as gift (from family relatives or friends/neighbour)	0/193	0.0%
	In-kind food assistance	133/193	68.9% (50.6 - 87.2)
	Other	0/193	0.0%
Nyarugusu Congolese	Purchase (using with their own cash)	61/199	30.7% (14.1 - 47.2)
	Own production (crops, livestock, fishing/hunting, gathering)	1/199	0.5% (0.0 - 1.5)
	Traded goods/services, barter	3/199	1.5% (0.0 - 3.2)
	Borrowed (loan/credit from traders)	7/199	3.5% (0.7 - 6.3)
	Received as gift (from family relatives or friends/neighbour)	0/199	0.0%

	In-kind food assistance	127/199	63.8% (46.4 - 81.2)
	Other	0/199	0.0%
Nduta	Purchase (using with their own cash)	57/180	31.7% (14.6 - 48.7)
	Own production (crops, livestock, fishing/hunting, gathering)	0/180	0.0%
	Traded goods/services, barter	7/180	3.9% (0.0 - 8.5)
	Borrowed (loan/credit from traders)	10/180	5.6% (0.0 - 11.6)
	Received as gift (from family relatives or friends/neighbour)	0/180	0.0%
	In-kind food assistance	106/180	58.9% (41.3 - 76.5
	Other	0/180	0.0%

Figure 29: Trends of food consumption profiles and rCSI from 2019 to 2023, by camp

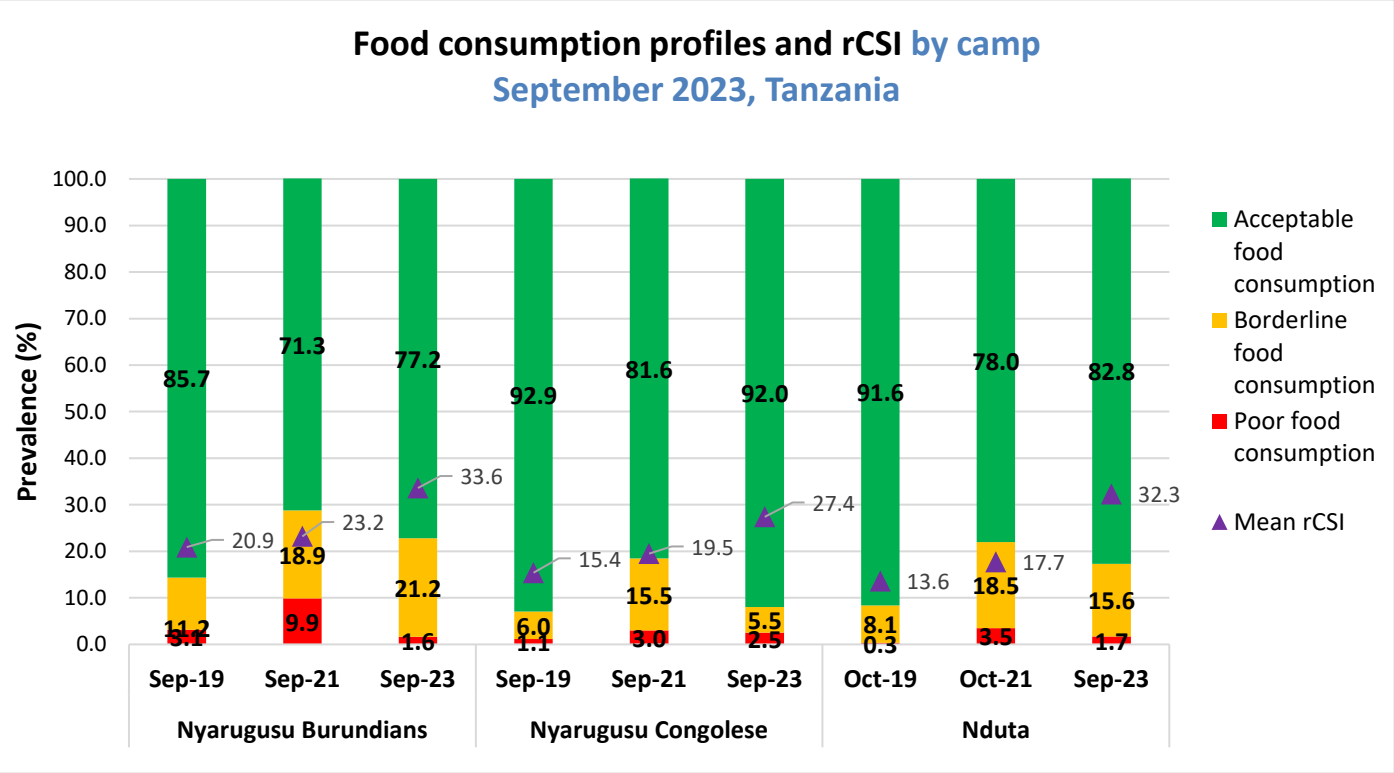


Figure 30: Trends of frequency consumption of protein, vitamin A and haem iron rich foods from 2019 to 2023, <u>in Nyarugusu Burundians</u>.

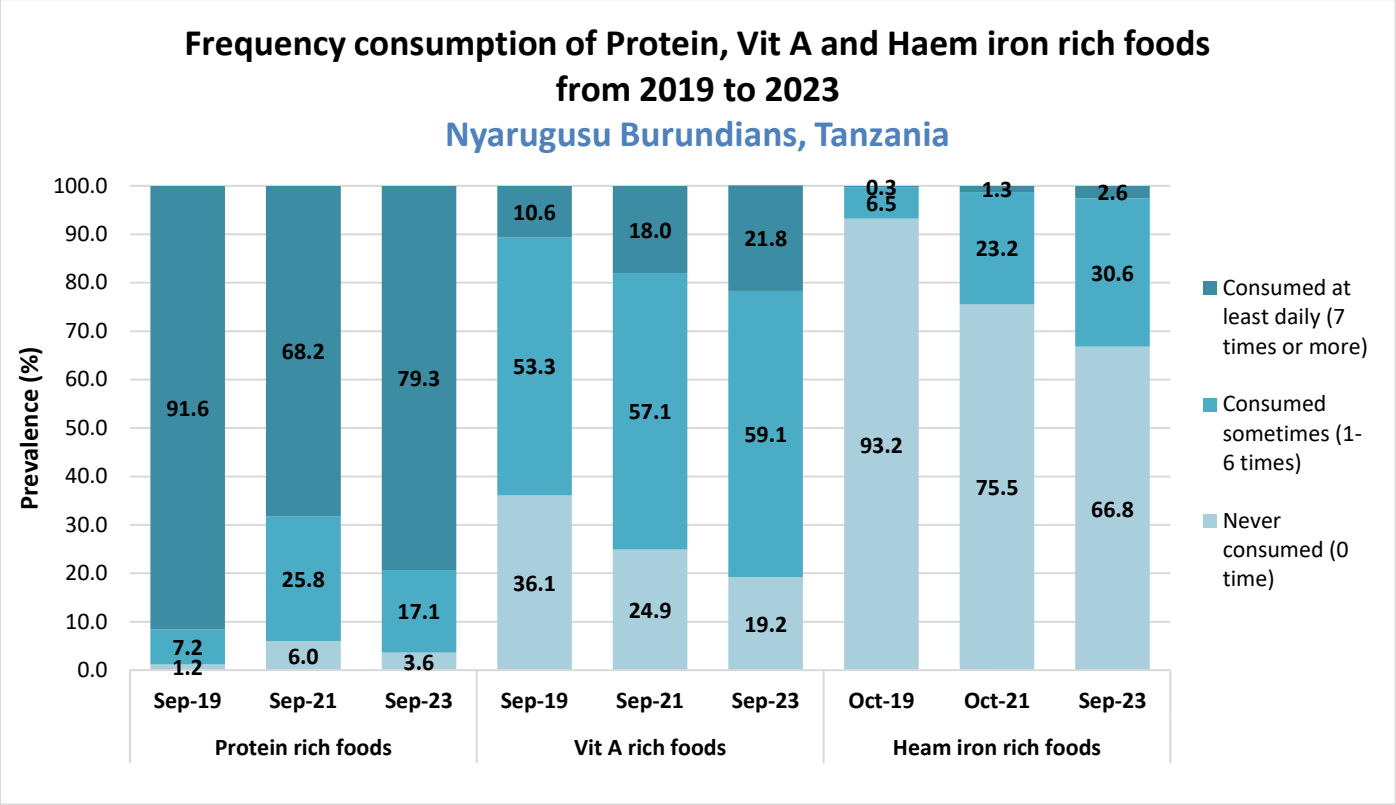


Figure 31: Trends of frequency consumption of protein, vitamin A and haem iron rich foods from 2019 to 2023, in Nyarugusu Congolese

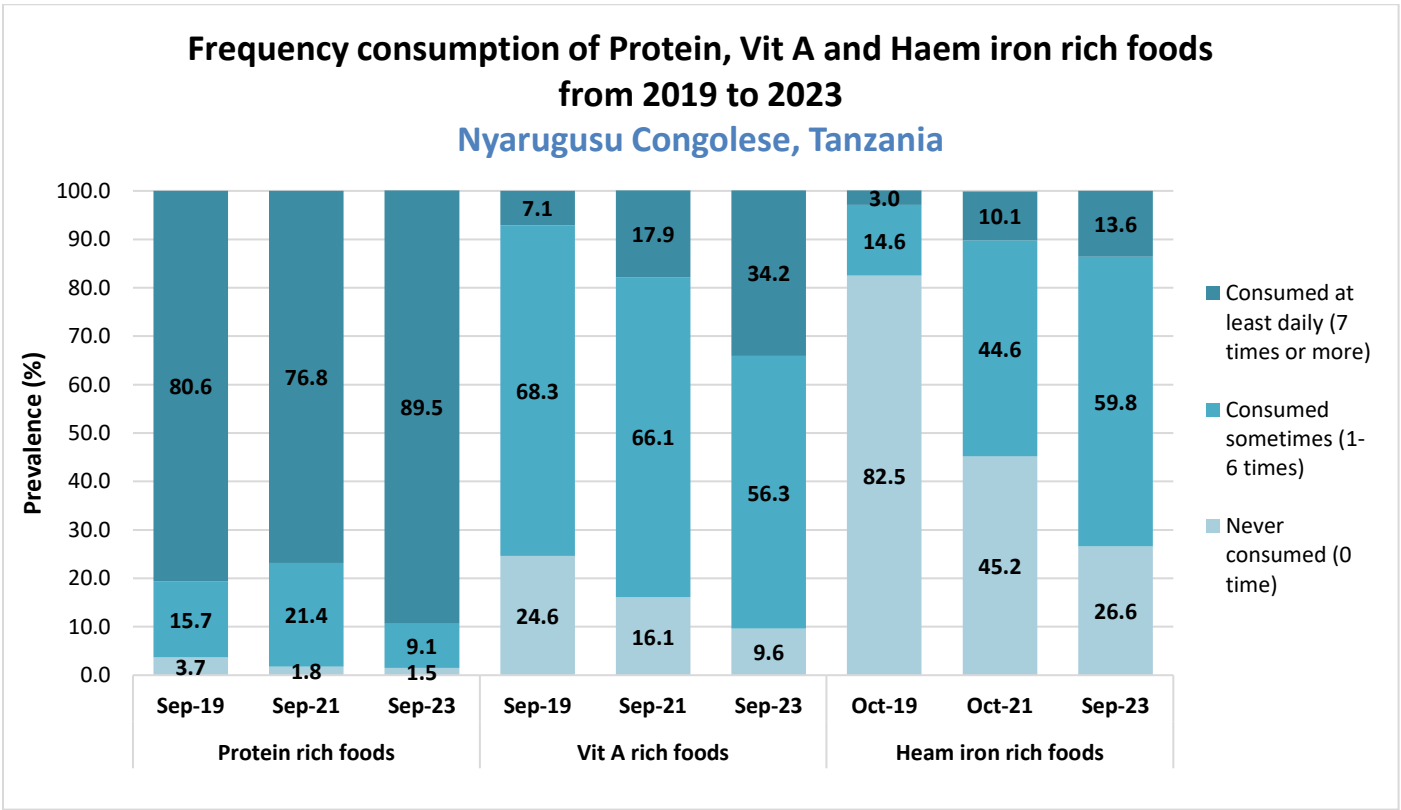
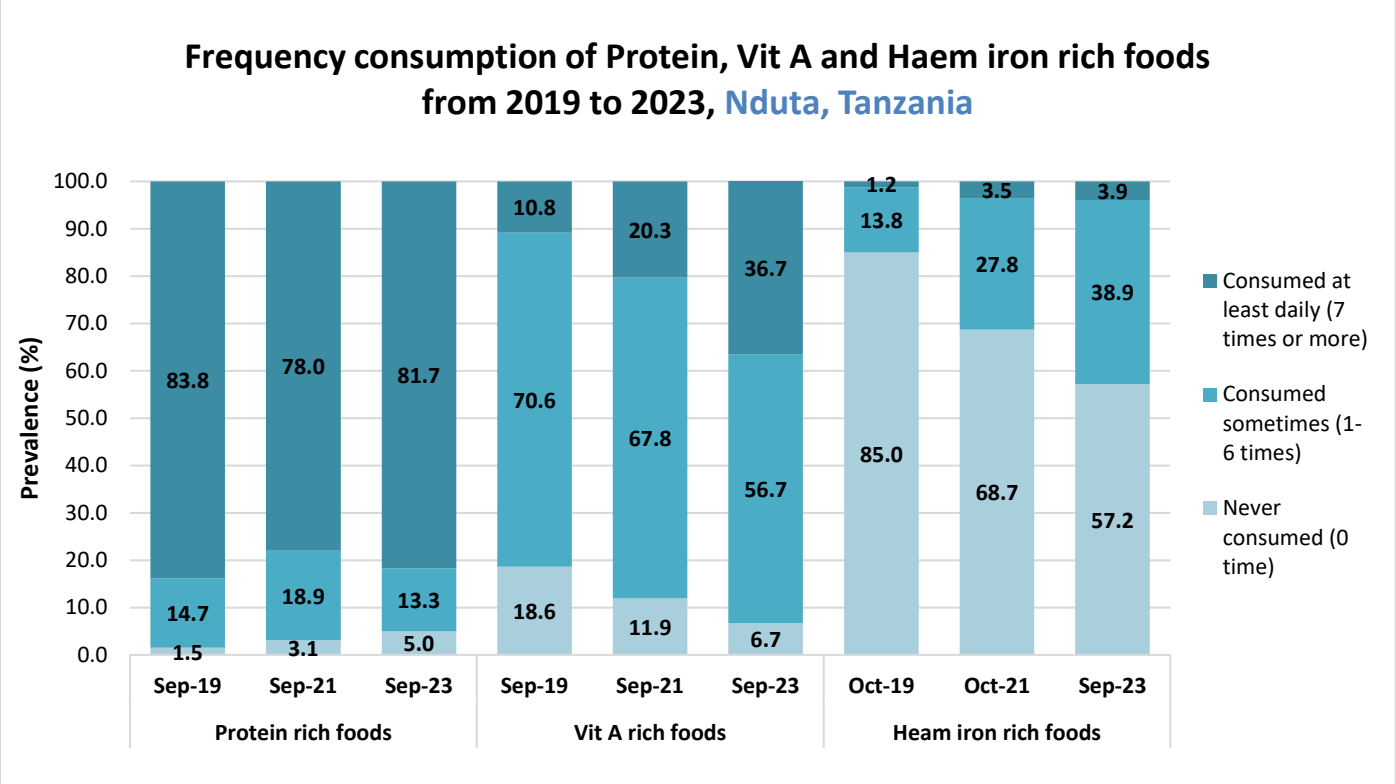


Figure 32: Trends of frequency consumption of protein, vitamin A and haem iron rich foods from 2019

to 2023, **in Nduta**



4.6. Mosquito Net Coverage

A total of 193 HH in Nyarugusu Burundians, 197 HH in Nyarugusu Congolese and 179 HH in Nduta were surveyed for Mosquito net.

Table 101: Mosquito net coverage sampling information by camp

Total HHs surveyed for Mosquito net coverage	Planned	Actual	% of target
Nyarugusu Burundians	194	193	99.5%
Nyarugusu Congolese	199	197	99.0%
Nduta	181	179	98.9%

The observed mosquito nets were Permanents, Olyset Lyzanet and Pandanet.

Table 102: List of mosquito net brand name observed during assessment by camp.

	Nyarugusu Burundians	Nyarugusu Congolese	Nduta
LLIN mosquito net brands observed during the survey	Permanet Olyset Lyzanet	Lyzanet Olyset Pandanet Permanet Royal Sentry	Olyset Pandanet Permanet
Non-LLIN mosquito net brands observed during the survey	Unnamed	None	None

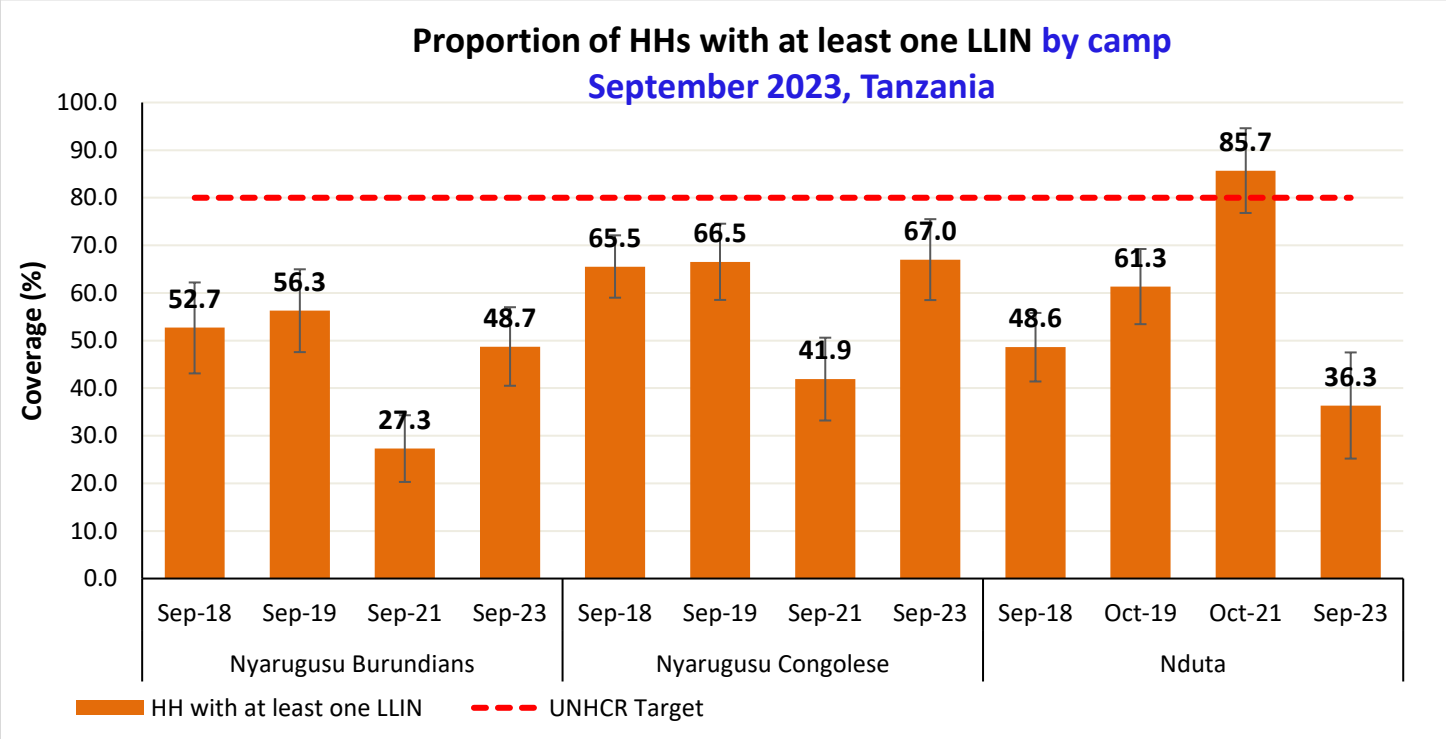
Proportion of HHs owning at least one mosquito net of any type was 50% in Nyarugusu Burundians, 67% in Nyarugusu Congolese, and 36% in Nduta. Proportion of HHs owning at least one LLIN was 49% in Nyarugusu Burundians while in Nduta and Nyarugusu Congolese all mosquito net were LLIN.

Table 103: HH mosquito net ownership by camp

Survey Area	N	Proportion of total HHs owning at least one mosquito net of any type		Proportion of total HHs owning at least one LLIN	
		n	% (95% CI)	n	% (95% CI)
Nyarugusu Burundians	193	97	50.3% (41.3 - 59.2)	94	48.7% (40.5 - 57.0)
Nyarugusu Congolese	197	132	67.0% (58.5 - 75.5)	132	67.0% (58.5 - 75.5)
Nduta	179	65	36.3% (25.2 - 47.5)	65	36.3% (25.2 - 47.5)

Trend of mosquito net ownership from 2018 to 2023 by camp is presented in the figure below.

Figure 33: HH ownership of at least one llin from 2018 to 2023, by camp



Mean number of LLIN per HH was 1.5 in Nyarugusu Burundians, 1.6 for Nyarugusu Congolese and 1.2 for Nduta. The average number of persons per LLIN was 7.2 for Nyarugusu Burundians, 4.8 for Nyarugusu Congolese, and 10.8 for Nduta the UNHCR target is 2 persons per LLIN.

Table 104: Number of nets by camp

Survey Area	N	Average number of LLINs per HH	Average number of persons per LLIN
		Mean	Mean
Nyarugusu Burundians	142	1.5	7.2

Nyarugusu Congolese	210	1.6	4.8
Nduta	80	1.2	10.8

Mosquito net utilization

Utilization of mosquito nets remained a challenge among Burundians and Congolese refugees. The proportion of total population sleeping under mosquito net of any type was 37%, 47% for under-fives and 61% for pregnant women, while those sleeping under LLIN was 35% for the total population, 45% for under-fives and 54% for pregnant women in Nyarugusu Burundians. In Nyarugusu Congolese the proportion of the total population sleeping under mosquito net of any type was 51%, 64% for under-fives and 82% for pregnant women, while those sleeping under LLIN were 51%, 64% and 82% for total population, under-fives and pregnant women respectively. In Nduta camp the proportion of the total population sleeping under for mosquito net of any type was 25%, 31% for under-fives and 59%, for pregnant women. Proportion of population sleeping under LLIN remained the same as for non-LLIN.

Table 105: Mosquito net utilisation by sub-group, by camp

	Camp	Proportion of total population (all ages)		Proportion of 0-59 months		Proportion of pregnant women	
		N = 1024	**%**	**N = 279**	**%**	**N = 28**	**%**
Slept under net of any type	**Nyarugusu Burundians**	376	36.7%	131	47.0%	17	60.7%
Slept under LLIN		361	35.3%	126	45.2%	15	53.6%
		N = 1011	**%**	**N = 297**	**%**	**N = 34**	**%**
Slept under net of any type	**Nyarugusu Congolese**	519	51.3%	189	63.6%	30	88.2%
Slept under LLIN		517	50.6%	189	63.6%	30	88.2%
		N = 865	**%**	**N = 280**	**%**	**N = 34**	**%**
Slept under net of any type	**Nduta**	217	25.1%	88	31.4%	20	58.8%
Slept under LLIN		217	25.1%	88	31.4%	20	58.8%

Figure 34: Mosquito net utilisation by sub-group, by camp

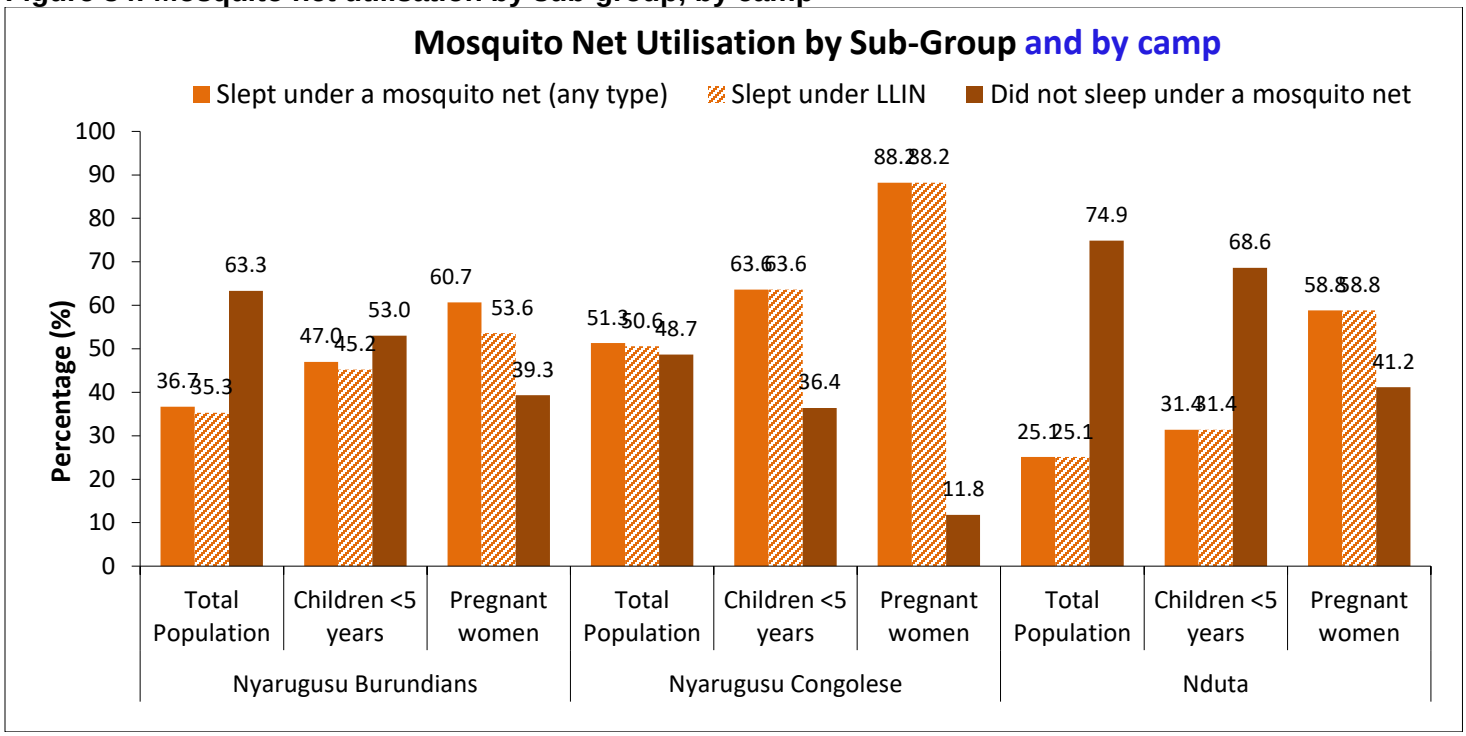


Table 106: Indoor residual spraying HH coverage in the last 12 months, by camp

Survey Area	N	Proportion of HHs covered by IRS in the last 12 months	
		N	% (95% CI)
Nyarugusu Burundians	193	191	99.0% (97.0 – 100)
Nyarugusu Congolese	183	155	84.7% (72.1 - 97.3)
Nduta	179	172	96.1% (90.9 – 100.0)

4.7. WASH

Proportion of surveyed HHs was 99.5% in Nyarugusu Burundians and Congolese, and 98% for Nduta camp.

Table 107: Wash sampling information by camp

Total HHs surveyed for WASH	Planned	Actual	% of target
Nyarugusu Burundians	194	193	99.5%
Nyarugusu Congolese	199	198	99.5%
Nduta	181	178	98.3%

Proportion of HHs collecting drinking water from protected/treated sources was at least 99% in Nyarugusu Burundians and Congolese, and 100% for Nduta. Proportion of HHs with at least 10 litres per person drinking water storage was 61% for Nyarugusu Burundians, 77% for Nyarugusu Congolese and 57% for Nduta.

Table 108: Water quality by camp

Survey Area	N	Proportion of HHs collecting drinking water from protected/treated sources		Proportion of HHs with at least 10 litres/person drinking water storage capacity	
		n	% (95% CI)	n	% (95% CI)
Nyarugusu Burundians	193	191	99.0% (97.5 – 100)	118	61.1% (52.5 - 69.8)
Nyarugusu Congolese	198	196	99.0% (97.6 – 100)	152	76.8% (66.8 - 86.8)
Nduta	178	178	100%	101	56.7% (45.7 - 67.8)

The average number of litres per person per day (LPPPD) of domestic water collected at HH level from protected or treated sources with containers of any type was 30 litres for Nyarugusu Burundians, 25 litres for Nyarugusu Congolese and 25 litres for Nduta. The average number of litres per person per day of domestic water collected at HH level from protected or treated sources with protected containers only (containers with lids) was 24 litres for Nyarugusu Burundians, 21 litres for Nyarugusu Congolese and 17 litres for Nduta.

Table 109: Water quantity 1: Number of litres of water used per person per day, by camp.

Survey Area	N	Average # L/p/d of domestic water collected at HH level, from protected/treated sources with containers of any type	Average # L/p/d of domestic water collected at HH level, from protected/treated sources with protected containers only
		Mean (SD, or 95% CI)	Mean (SD, or 95% CI)
Nyarugusu Burundians	193	30.1 (23.1 - 37.1)	23.5 (16.7 - 30.9)
Nyarugusu Congolese	198	24.7 (19.0 - 30.4)	20.7 (15.4 - 26.0)
Nduta	178	24.7 (19.2 - 30.2)	17.4 (11.6 - 23.3)

In Nyarugusu Burundians, proportion of HHs consuming domestic water ≥20 LPPPD, between 15 and 20 LPPPD and below 15 LPPPD collected from protected or treated sources with protected containers only was 47%, 7%

and 47% respectively. In Nyarugusu Congolese it was 44%, 12% and 44% respectively while in Nduta camp proportions were 37%, 7%, 56% respectively.

Table 110: Water quantity 2: Number of litres of water used per person per day by category, by camp.

Survey Area	N	Proportion of HHs that use domestic water collected from protected/treated sources with protected containers only: ≥ 20 lpppd	Proportion of HHs that use domestic water collected from protected/treated sources with protected containers only: 15-<20 lpppd	Proportion of HHs that use domestic water collected from protected/treated sources with protected containers only: <15 lpppd
		% (95% CI)	% (95% CI)	% (95% CI)
Nyarugusu Burundians	193	46.6% (35.9 - 57.4)	6.7% (3.0 - 10.5)	46.6% (35.9 - 57.4)
Nyarugusu Congolese	198	44.4% (33.4 - 55.5)	11.6% (7.3 - 16.0)	43.9% (31.4 - 56.4)
Nduta	178	36.5% (23.8 - 49.3)	7.3% (4.0 - 10.7)	56.2% (43.6 - 68.8)

HHs were assessed on accessibility to soap by asking respondents to bring soap. If the soap was presented within one minute, the HH was considered have access to soap. Any type of soap including bar soap, liquid soap, powder detergent, and soapy water was accepted except ash, soil, sand or other handwashing agents. The proportion of HHs with access to soap was 79% in Nyarugusu Burundians, 81% in Nyarugusu Congolese and 47% in Nduta.

Table 111: Access to soap by camp

Survey Area	N	Proportion of HHs with access to soap	
		n	% (95% CI)
Nyarugusu Burundians	193	153	79.3% (69.8 - 88.8)
Nyarugusu Congolese	198	160	80.8% (67.9 - 93.8)
Nduta	178	83	46.6% (31.2 - 62.0)

Proportion of HHs using toilet was 100% in Nyarugusu Burundians, 99.5% in Nyarugusu Congolese and 99.4% in Nduta.

Table 112: Toilet/latrine use by camp.

Survey Area	N	Proportion of HHs reporting defecating in a toilet	
		n	% (95% CI)
Nyarugusu Burundians	193	193	100%
Nyarugusu Congolese	198	197	99.5% (98.5 – 100)
Nduta	178	177	99.4% (98.3 – 100)

4.8. Limitations

Exact birthdate: Some children who had no reliable documentation for reference of their birthdate especially among new arrivals in Nyarugusu Congolese and Nduta among some refugees that relocated from Mtendeli camp. In this case the local event calendar was used to estimate the children's age, and the age may not be accurate.

5. Discussion

5.1. Nutritional status of children and women

The sex of children was equally represented in Nyarugusu Burundians and Congolese (1.1) indicating a slightly higher number of boys than girls in these two camps. Proportion of boys to girls in Nduta camp was 0.9 suggesting fewer boys compared to girls. However, there was no statistically significant difference between the number of boys and girls in the three camps.

The prevalence of GAM presented in WHZ <-2SD z-score was 1.7% (0.8 - 3.5), 4.1%, (2.2 - 7.5) 0.9%, (0.3 - 2.4) in Nyarugusu Burundians, Nyarugusu Congolese and Nduta camps. According to the classification of public health significance by WHO-UNICEF in Table 13, prevalence in the three camps remained within the acceptable situation at least in the past 4 years. Considering the upper limits of confidence limits, the prevalence of GAM for Nyarugusu Congolese was above 5%, categorized as a poor situation. The weighted GAM prevalence was 2.4% compared to 1.8% recorded in 2021, an increase attributed to an increase in GAM in the Nyarugusu Congolese camp. However, when compared to the host community (2.5%), there was no difference between the two population[9]. An increase in prevalence of GAM was linked with the new influx of Congolese in which GAM showed a statistically significant difference between new arrivals and old stayers (P=003). New arrivals were 5.3 times likely to get into malnutrition compared to old stayers.

The combined prevalence of global acute malnutrition based on both WHZ and MUAC, was 3.4% (1.5 - 5.3), 4.7% (2.2 - 7.2) and 1.5% (0.5 - 2.6) in Nyarugusu Burundians, Nyarugusu Congolese and Nduta camps respectively. However, the upper limit of CI for Nyarugusu Congolese was above the WHO-UNICEF threshold of 5%, with is categorized as “poor situation”.

Prevalence of combined severe acute malnutrition was 0.4% (0.0 - 1.0) in Nyarugusu Burundians, 1.0% (0.0 - 2.1) in Nyarugusu Congolese and none in Nduta camp. The upper limit of SAM in Nyarugusu Congolese was above 2% threshold acceptable by the UNHCR.

The prevalence of total stunting, a measure of chronic malnutrition in children aged 6 – 59 months, remained high in the three camps. The prevalence was 43.6% (36.9 - 50.5) in Nyarugusu Burundians, 35.9% (29.5-42.8) for Nyarugusu Congolese and 52.1% (46.3-57.8) in Nduta. Overall, the weighted prevalence of stunting was 43.4%, categorized as “critical situation” or “very high” according to classification of public health significance for children under 5 years by WHO-UNICEF (2018). Prevalence of severe stunting was 13.5% (9.9-18.1) in Nyarugusu Burundians, 11.7% (8.5-15.9) in Nyarugusu Congolese and 18.1% (15.6-21.0) in Nduta camp. Compared to previous years, prevalence of stunting has shown no significant change despite the ongoing efforts to address the situation among Burundians and Congolese refugee camps. The Kigoma region benchmark stands at 42% according to the 2018 SMART survey indicating same situation as for refugee communities.

The prevalence of MUAC among pregnant and lactating women with children aged below 6 months were 1.9% (0.0 - 5.8), 1.6% (0.0 - 4.8) and 3.4% (0.0 - 8.4) for Nyarugusu Burundian, Nyarugusu Congolese and Nduta camps respectively. Low MUAC in pregnant women is a proxy indicator of inadequate macro and micronutrients including iodine, iron, folate, calcium and zinc which may cause anaemia, pre-eclampsia, haemorrhage, and even death of the mother. Inadequate minerals and vitamins may also lead to stillbirth, low birthweight, wasting and developmental delays for children. However, a significant improvement was noted when compared to the past two years where prevalence was 3.3% in Nyarugusu Burundians, 3.9% in Nyarugusu Congolese, and 14% in Nduta camp.

5.2. Programme coverage

Coverage for measles vaccination with a card or confirmation from the mother in children aged 9 – 59 months was above the WHO-UNICEF target of 95% in the three camps. However, the coverage ranged between 83% in Nduta and 92% in Nyarugusu Burundians based on confirmation from the card. Some parents and caretakers of children in Nduta camp claimed that cards were lost during the relocation process from Mtendeli during camp closure in 2022, and in Nyarugusu Congolese cards were missing in some of the new arrivals that crossed the

[9] Tanzania Demographic and Health Survey and Malaria Survey Indicators, 2022.

border into Tanzania from March 2023. Among the long stayers, some cards being poorly kept were already torn or worn-out to not readable. An ad hoc campaign was organized by the government in collaboration with UNICEF, WHO and UNHCR to vaccinate children aged 6 – 59 months following an outbreak of measles in Nyarugusu camp in 2023.

The coverage of vitamin A supplementation (VAS) in children aged 6 – 59 months based on confirmation from the card was 77.7% (67.2 - 88.2) in Nyarugusu Burundians, 60.6% (47.8 - 73.5) in Nyarugusu Congolese and 40.7% (27.7 - 53.7) in Nduta. Coverage of VAS with card and confirmation from the mother/caregiver was 86.3% (78.5 - 94.2), 82.1% (72.9 - 91.3) and 88.1% (78.4 - 97.8) in the three camps respectively, which is below the WHO-UNICEF target of 90%. The reasons for low coverage of VAS were like the afore discussion for measles.

The number of children with moderate acute malnutrition based on WHZ and MUAC which were found during the survey was 14 in Nyarugusu Burundians, 18 in Nyarugusu Congolese and 7 in Nduta. Among these, children who were enrolled in TSFP were as fewer as five cases (36%), three cases (17%) and four cases 57%) for the three camps respectively. Number of children with severe acute malnutrition was one case – not enrolled in OTP/SC (0%) and five whom only one case (20%) was in the program. There was no SAM case found in Nduta camp. Inadequate nutritional screening of children using WHZ and MUAC criteria at community level may have contributed to the low coverage in feeding programmes. It is further, imperative to conduct nutritional screening considering the two anthropometric indicators independently[10] and consistently, at community level and/or during distribution of nutrition communities (Super cereal/MNP) to children attending the blanket feeding program.

Coverage of deworming in children aged 12 – 59 months was 42.6% (27.7 - 57.5) Nyarugusu Burundians, 9.4% (0.1 - 18.8) in Nyarugusu Congolese and 14.2% in Nduta. Although SENS guidelines do not recommend including the deworming if was not included in large campaigns of VAS, the team suggested to include it for analysis against anaemia. Results, however, did not show statistical association between deworming and anaemia among the surveyed children ($p>0.05$).

Blanket supplementations of Super cereal in children aged 6 – 23 months and MNP in 24 – 59 months were introduced in Tanzania refugee operation to combat micronutrient deficiency disorders including anaemia for years now. In these surveys, coverage of BSFP among children aged 6 – 23 months was 98.8% (97.0 – 100) in Nyarugusu Burundians, 95.8% (92.5 - 99.1) in Nyarugusu Congolese and 100% in Nduta. In Nyarugusu camp, a statistically significant difference ($p<0.05$) was found between duration of stay in the camp and enrolment in BSFP. The odds ratio indicated that long stayers were 9.9 more times likely to be enrolled into the BSFP compared to new arrivals. Coverage of MNP enrolment in children aged 24 – 59 months was 99.0% (97.9 – 100) in Nyarugusu Burundians, 97.7% (95.8 - 99.7) in Nyarugusu Congolese and 99.7% (98.9 – 100) in Nduta.

The ANC coverage for pregnant women was 60.7% (40.2 - 81.3) in Nyarugusu Burundians, 54.6% (36.3 - 72.8) and 85.7% (76.2 - 95.3) in Nduta. It has been a challenge raise the coverage since many pregnant women prefer super cereal plus to boost food rations through enrolment into BSFP which starts from the second trimester, hence, a delayed enrolment into ANC. Proportion of pregnant women receiving IFAS was 60.7% (40.2 - 81.3) in Nyarugusu Burundians, 51.5% (30.7 - 72.3) in Nyarugusu Congolese and 74.3% (58.5 - 90.1) in Nduta. Coverage of BSFP among PLW was 96.7% (89.6 – 100) in Nyarugusu Congolese and 100% in Nyarugusu Burundians and Nduta camps. The program aims to improve maternal nutrition through consumption of super cereal at 150 g/p/d, however, about half of the women receiving the commodity admitted of sharing the received rations with other family members. This reduces amount of nutrients intended to PLW and may ruin the efforts to avert stunting in children aged below five years.

5.3. Anaemia in young children and women

Prevalence of anaemia in children aged 6 – 59 months was above 40% in Nyarugusu Burundians, and Nyarugusu Congolese, categorized as “High” and above 20% in Nduta categorised as “Medium” by WHO classification of public health significance. The mean Hb concentration, however, was just above the cut-off point of 11.0g/dL. Children aged below two years were the most affected, with prevalence ranging from 41% in Nduta to 57% in Nyarugusu Congolese with the mean Hb concentration below WHO cut-off of 11g/dL in Nyarugusu Burundians and Congolese. Prevalence of moderate and severe anaemia in children aged 6 – 59 months was

[10] https://bmcnutr.biomedcentral.com/articles/10.1186/s40795-016-0049-7

20% in Nyarugusu Burundians, 16% in Nyarugusu Congolese and 13% in Nduta. In these surveys, a total of 8 under-fives children were severely anaemic (Hb<7.0) in the three camps.

An increase in prevalence of anaemia from 29% to 41% in Nyarugusu Burundians, 37% to 44% in Nyarugusu Congolese and 33% to 38% within the past two years was noted. The change, however, was not statistically significant across the three camps. Similarly, there was no change (p≥0.05) in prevalence of anaemia in children aged 6 – 23 months between 2021 and 2023. Trend of prevalence of global (Hb<11g/dL) anaemia among under-five children has never been "Low" in at least the past five years despite the efforts taken the magnitude. An increasing trend was vivid in Nyarugusu Congolese and Nduta between 2019 and 2023, suggesting worsening situation of Hb concentration among under-fives. Cultural and traditional practices in addition to low food diversity due to poor access of food varieties including haem-iron rich foods may be among determinants exacerbating the prevalence.

Prevalence of anaemia (Hb<12g/dL) in non-pregnant women aged 15 to 49 years was 23% in Nyarugusu Burundians, 24% in Nyarugusu Congolese and 15% in Nduta. The prevalence was at "Low" level in Nduta camp and "Medium" in Nyarugusu Burundians and Congolese based on WHO classification of public health significance. Trend of proportion of non-pregnant women with Hb concentration below 12g/dL has been gradually increasing from 13% among Nyarugusu Burundians, gradually deceasing from 35% in Nyarugusu Congolese and almost constant in Nduta camp. The mean Hb concentration has been maintained above the cut-off (12g/dL) over the past five years among refugees in Nyarugusu and Nduta, suggesting a remarkable achievement of efforts put to address anaemia among this vulnerable group. Evidence have revealed "High" prevalence of anaemia (45%) among Tanzanians non-pregnant women[11].

5.4. IYCF indicators

Proportion of infants receiving breastmilk within the first hour after birth was 76% in Nyarugusu Burundians, 77% in Nyarugusu Congolese and 84% in Nduta, all being below the UNHCR target of 85%. When compared to 2021 surveys proportions for this indicator maintained at the same level. Proportion of infants undergone exclusive breastfeeding was below UNHCR target of above or equal to 75% in Nyarugusu Burundians and Congolese. The proportion was 82% in Nduta camp, compared to 80% in 2021. Prevalence of children consuming iron-rich food in Nyarugusu Burundians and Nduta above the UNHCR target of >60%, and below the threshold in Nyarugusu Congolese. There was no evidence of the decrease in proportion in Nyarugusu Congolese from 80% in 2021 to 53% in 2023, though it may be linked to new arrivals. The national prevalence of timely initiation of breastfeeding stands at 70% and EBF at 64%, hence, same as refugees[12].

5.5. Food Security

Food security among the refugees in Tanzania usually relies on assistance from WFP. Food assistance is provided in in-kind form, distributed through general ration on 28 days distribution cycle. Full rations contain 380g of cereals, 120g of pulses, 50g of super cereal with sugar, 20g vegetable oil and 5g of salt intended to provide 2,166kcal per person per day as recommended by WHO and Sphere standards. However, the funding constraints have compelled WFP to reduce the general food ratio from December 2019 to date while maintaining targeted food rations at 100%.

A month prior to the surveys food rations were distributed at 50% resulting in fewer days for rations to last, ranging from 17 days in Nyarugusu Congolese to 19 days in Nyarugusu Burundians. This compelled refugees to continue being involved in negative coping strategies, including relying on less preferred or less expensive foods, borrowing food, or relying on help from a friend or relative, reducing the number of meals eaten in a day, limiting portion sizes at mealtime, and reduce consumption by adults so children could eat.

Other negative coping strategies were selling assets that would not have normally sold, begging, sending a member of the household under the age of 16 to work, send a member of the household to work far away, engaging in potentially risky or harmful activities, skipping paying debts to meet other needs, take out new loans or borrowed money, and reduce expenditure on hygiene items, water, baby items, health or education in order

[11] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8674738/#B9
[12] Tanzania Demographic and Health Indicators and Malaria Survey

to meet household food needs. Proportion of households using one or more negative coping strategies in the recall period of 4 weeks was thus, 80% in Nyarugusu Burundians, 58% in Nyarugusu Congolese and 67% for Nduta compared to 81%, 64% and 79% in 2021 surveys for the three camps respectively.

The mean reduced coping strategy index (iCSI) showed a statistically significant increase between 2021 and 2023 surveys from 23 to 34 and 18 to 33 among Burundians living in Nyarugusu and Nduta camps respectively, contributed by statistically significant increase in proportion of households reducing the number of meals eaten in a day, limiting portion sizes at mealtime and reducing consumption by adults so children could eat in both locations. The above levels of rCSI being above 11 may suggest a severe food insecure situation[13].

Contrary, the proportion of households consuming diverse of food based (FCS) at acceptable levels was 77% in Nyarugusu Burundians, 92% in Nyarugusu Congolese and 83% in Nduta. However, FCS-N showed high proportion of daily consumption of protein rich food, moderate for vitamin A rich food and poor for haem-iron rich food in the three camps. Proportion of households never consuming haem-iron rich foods in a week was 66.8% in Nyarugusu Burundians, 27% in Nyarugusu Congolese and 57% in Nduta. Low consumption of haem-iron rich foods may have attributed to the low levels of haemoglobin concentration, contributing to high prevalence of anaemia among fives among the PoCs in the camps. Limited livelihood opportunities, inadequate backyard gardens and perceived low income may be the hypothesized factors attributing to inadequate household dietary diversity, hence, exacerbated undernutrition.

5.6. Mosquito net coverage

Proportion of HHs owning at least one mosquito net of any type ranged between 36% to 67% in Nduta and Nyarugusu Congolese respectively. All observed nets in Nyarugusu Congolese and Nduta were LLINs while three non-LLIN were found in Nyarugusu Burundians. Average number of LLINs per HH was 1.5 in Nyarugusu Burundians, 1.6 in Nyarugusu Congolese and 1.2 in Nduta leading to average number of persons sharing one LLIN ranging from approximately 5 in Nyarugusu Congolese to 11 in Nduta. Ownership of mosquito net among HHs in Tanzania operation has been below the UNHCR target of 80% and an average of 2 persons per LLIN for over five years now. Funding shortage had compelled UNHCR to provide LLINs only to pregnant women and under-fives. According to TDHIMS, 2022, proportion of HHs owning at least one LLIN in Kigoma region is 71% and average number of LLIN per HH is 1.5 which is only comparable to Nyarugusu Burundians and Congolese. The host communities stand far better when compared to Burundians refugees in Nduta camp.

The proportion total population slept under LLINs was as low as 35% in Nyarugusu Burundians, 51% in Nyarugusu Congolese and 25% in Nduta. Utilization of LLINs among under-fives and pregnant women 45% and 53% in Nyarugusu Burundians, 64% and 88% in Nyarugusu Congolese, and 31% and 59% for Nduta camp respectively. Proportion of under-fives sleeping under LLIN in the host communities of Kigoma region was 78% and 85.5% for pregnant women.

An IRS organized by the government was conducted in host communities and refugee camps in late 2022 aimed to reduce the density as well as life span of vector mosquitoes so that they can no longer transmit malaria parasites from one person to another. Proportion of HHs that were sprayed was 99% in Nyarugusu Burundians, 85% in Nyarugusu Congolese and 96% in Nduta. The triad has reduced prevalence of malaria to 28% among under-fives although it is still significantly high when compared to 12.7% for the same age group in the host communities of Kigoma region.

5.7. WASH

The proportion of HHs collecting drinking water from protected/treated sources was at least 99% in Nyarugusu Burundians and Nyarugusu Congolese camps. Proportion of HHs with at least 10 litres per person drinking water storage capacity was 61% for Nyarugusu Burundians, 77% for Nyarugusu Congolese and 57% for Nduta. There was statistically significant increase on this indicator in Nyarugusu Burundians where the proportion was 40% in 2019.

[13] Comparing HH Food Consumption Indicators to Inform Acute Food Insecurity Phase Classification, Dec 2015

Amount of domestic water per capita per day collected from protected or treated sources with containers of any type was 30 litres for Nyarugusu Burundians and 25 litres for Nyarugusu Congolese and Nduta camps which is within the UNHCR target of 20 litres. Proportion of HHs that uses 20 LPPPD or above of domestic water collected from protected/treated sources with protected containers only was 47% for Nyarugusu Burundians, 44% for Nyarugusu Congolese and 37% for Nduta. Availability of adequate water is thought to have contributed to the slightly decreased prevalence of diarrhoea from 16% and 17% to 12% and 11% in Nyarugusu Burundian and Congolese, and statistically significant decrease from 17% to 9% in Nduta when compared to 2021 survey.
A bar soap is usually distributed at the ration of 250g per person per month along with general food rations. The proportion of HHs that had soap during the assessments was 79% for Nyarugusu Burundians, 81% for Nyarugusu Congolese and 47% for Nduta. The survey in Nduta was conducted a week prior to general food distribution, thus, soap rations received in previous distribution was concluding.
Camps with lowest proportion of HHs using toilet was Nduta with 99.4%. The proportions in Nyarugusu Congolese and Burundians we 99.5% and 100% respectively. Generally, use of toilets was excellent across the three camps in Nyarugusu and Nduta.

6. Conclusions

The persistent issues with stunting and anaemia among children, along with low coverage of moderate acute malnutrition programs and other health interventions, paint a concerning picture. The misuse of distributed nutrition commodities and the high prevalence of malaria adds additional layers of complexity.

There's a need for a comprehensive approach to address not only the immediate nutrition and health concerns but also the underlying factors contributing to the challenges, such as the unstable food pipeline, limited livelihood opportunities and lack of access to markets. Finding ways to improve nutritional screening, increase coverage of essential health interventions, prioritize high impact nutrition interventions including strengthening of nutrition sensitive programs, and address negative coping strategies could make a significant impact.

Collaboration with relevant authorities, NGOs, and the community itself might be crucial in developing and implementing effective strategies. It's not just about treating the symptoms but also addressing the root causes to create sustainable improvements in the health and nutrition well-being of the refugees in the camps.

7. Recommendations and priorities

7.1. Short Term Recommendations:

1. **Fortified Food Promotion:** Promote consumption of fortified food products and proper use of supplementary foods among vulnerable groups, focusing on addressing anaemia and other micronutrient deficiencies disorders.
2. **EBF Awareness:** Increase awareness on Exclusive Breastfeeding (EBF) to lactating pregnant mothers, emphasizing to seek advice from healthcare providers in case of discomfort while breastfeeding during pregnancy.
3. **Strengthen Linkages:** Strengthen linkages between Targeted Supplementary Feeding Program (TSFP) and Blanket Supplementary Feeding Program (BSFP) while continuing existing nutrition programs.
4. **Increase CHWs:** Increase the number of Community Health Workers (CHWs) to the recommended ratio of 1:500 for active case finding and better uptake of nutrition program services.
5. **WASH Promotion:** Strengthen WASH promotion through effective dissemination of key messages on latrine usage, handwashing, and ensure an adequate number of hygiene promoters.
6. **Community Health Structure Review:** Review the community health structure, focusing on active case finding, education for new arrivals, identification of pregnant women, disease surveillance, and mortality surveillance.
7. **IYCF Awareness:** Strengthen awareness and protection of IYCF through baby tents, mother-to-mother support groups, and hiring professionals for lactation counselling.
8. **Distribution Network Review:** Review the distribution network to ensure equity and adequate water supply, emphasizing the importance of water storage.
9. **Multi-sectoral Collaboration:** Enhance multi-sectoral collaboration among partners delivering humanitarian services for optimal IYCF practices and control of specialized nutritious food items.
10. **Monthly Soap Distribution:** Ensure consistent monthly distribution of soap, prioritizing vulnerable populations, and promote awareness on its proper usage.
11. **Dignity Kits for Pregnant Women:** Provide dignity kits to pregnant women at their first visit during the first trimester to promote early enrolment in Antenatal Care (ANC) and increase coverage of Iron and Folic Acid (IFA) pills supplementation.

7.2. Medium Term Recommendations:

1. **KAP Survey on IYCF:** Conduct a Knowledge, Attitudes, and Practices (KAP) survey on Infant and Young Child Feeding (IYCF) to identify factors hindering optimal feeding.
2. **Refresher Training on MIYCAN/IYCF:** Conduct refresher training on Maternal, Infant, and Young Child Nutrition (MIYCAN/IYCF) for national staff, incentive workers, and community leaders.
3. **LLIN Distribution:** Ensure regular distribution of Long-Lasting Insecticidal Nets (LLIN) to pregnant women and children below five years.
4. **Immunization Strengthening:** Strengthen routine measles vaccination, vitamin A supplementation, and deworming through defaulter tracing and house-to-house checking of immunization status.
5. **Food Security Assessment:** Conduct an expanded food security assessment to understand household-level causes of food insecurity and design appropriate interventions.
6. **Anaemia Reduction Strategy:** Finalize an anaemia reduction strategy targeting children under two and pregnant women, considering micronutrient supplementation to include non-pregnant women of child-bearing age.
7. **Water Usage Assessment:** Conduct an in-depth assessment on knowledge and practice regarding water usage, adequacy, and quality of water containers.
8. **Soap Access:** Investigate low access to soap and develop interventions to increase prevalence.

7.3. Long Term Recommendations:

1. **Breastfeeding Corners:** Consider establishing breastfeeding corners at health facilities to enhance optimal IYCF practices.
2. **Livelihood Opportunities:** Advocate for livelihood opportunities for refugees through developmental initiatives to improve their economic status.
3. **Increased Food Rations:** Advocate for more resources to increase food rations at the household level.
4. **Nutrition Causal Analysis:** Investigate causes of persistent undernutrition, especially stunting and anaemia, through a Nutrition Causal Analysis.
5. **Nutrition Sensitive Interventions:** Promote nutrition-sensitive interventions, including backyard kitchen gardens emphasizing Vitamin A and iron-rich foods.

8. References

Ministry of Health, Community Development, Gender, Elderly and Children, Ministry of Health. 2022. *Tanzania Demographic and Health Survey and Malaria Indicator Survey Final Report:* Dar Es Salaam and Zanzibar, Tanzania.

SMART. *Standardized Monitoring and Assessment of Relief and Transitions*. Available at: https://smartmethodology.org/

Tanzania Food and Nutrition Centre. 2018. *Tanzania National Nutrition survey.*

UNHCR. 2018, *Community and Household Survey (CHS),* UNHCR Tanzania

UNHCR. 2018. *Standardized Expanded Nutrition Survey Full Report*.

UNHCR. 2019. *Standardized Expanded Nutrition Survey Full Report*.

UNHCR. 2021. *Standardized Expanded Nutrition Survey Full Report*.

UNHCR. 2023. *ProGres database,* UNHCR Tanzania, July 2023

UNHCR. *Standardised Expanded Nutrition Survey (SENS) for Refugee Populations, Module 1: Demography, A practical step-by-step guide, Version 3* (2018).

UNHCR. *Standardised Expanded Nutrition Survey (SENS) for Refugee Populations, Module 2: Athropometry and Health, A practical step-by-step guide, Version 3* (2018).

UNHCR. *Standardised Expanded Nutrition Survey (SENS) for Refugee Populations, Module 3: Amaemia, A practical step-by-step guide, Version 3* (2018).

UNHCR. *Standardised Expanded Nutrition Survey (SENS) for Refugee Populations, Module 4: Infant and Young Child Feeding (IYCF), A practical step-by-step guide, Version 3* (2018).

UNHCR. *Standardised Expanded Nutrition Survey (SENS) for Refugee Populations, Module 5: Food Security, A practical step-by-step guide, Version 3* (2018).

UNHCR. *Standardised Expanded Nutrition Survey (SENS) for Refugee Populations, Module 6: Mosquito Net Coverage, A practical step-by-step guide, Version 3* (2018).

UNHCR. *Standardised Expanded Nutrition Survey (SENS) for Refugee Populations, Module 7: Water, Sanitation and Hygiene (WASH), A practical step-by-step guide, Version 3* (2018).

WFP. 2012. *Calculation of household food security outcome indicators,* WFP – VAM

WHO. *Management of severe acute malnutrition in infants and children.* Available at: https://www.who.int/elena/titles/full_recommendations/sam_management/en/

9. Acknowledgements

List of government departments, international agencies, international NGOs, national NGOs and other organizations that supported or participated in the survey.

- Ministry of Home Affairs
- Ministry of Health
- Tanzania Food and Nutrition Center
- UNHCR
- WFP
- UNICEF
- IRC
- MTI
- WVI
- TRCS

- CWS

List the individuals involved in the survey.

S/N	Name	Function title	Location	Survey position
1	Tiras Nkala	SENS consultant	UNHCR - Kasulu	Coordinator
2	Malika Shakya	Public Health Officer	UNHCR - Kasulu	Manager/Supervisor
3	Zahara Hazali	F/S & nutrition associate	UNHCR - Kasulu	Manager/Supervisor
4	Deogratius Dyumurushi	Public Health Associate	UNHCR - Kibondo	Manager/Supervisor
5	John Rusabi	Warehouse Manager	UNHCR - Kasulu	Supervisor
6	Erick Killel	Research officer	TFNC – Dar Es Salaam	Manager/Supervisors
7	Samson Ndimanga	Senior Research officer	TFNC – Dar Es Salaam	Manager/Supervisors
8	Sarah Luzangi	Nutritionist	WFP - Kasulu	Manager/Supervisors
9	James Ngalaba	Regional Nutrition Officer	RAS - Kigoma	Manager/Supervisors
10	Mercy Msirikale	Public Health Officer	MoHA - Nyarugusu	Supervisor
11	Onesmo Kastabu	Public health officer	MoHA - Nduta	Supervisor
12	Modesta Katambi	Nutritionist	TRCS - Nyarugusu	Interviewer
13	Theodora Byera.	Nutritionist	WVI-Nyarugusu	Team Leader
14	Vasco Chusi	Nutritionist	IRC - Kibondo	Team Leader
15	Rachel Mwambene	Nutritionist	CWS-Nyarugusu	Team Leader
16	Jonathan Sayi	Assistant Nutrition Officer	MTI-Nduta	Blook taker
17	Isaya P. Kasebele	Nutritionist	WVI-Nyarugusu	Team Leader
18	Noela P. Chacha	Nutritionist	WVI-Nyarugusu	Team Leader
19	Issa Nalinga	HIS Officer	TRCS-Nyarugusu	Blood taker
20	James P. Kimambo	Nutritionist	TRCS-Nyarugusu	Team Leader
21	Ayubu Menyo	Nutrition Officer	MTI-Nduta	Blood taker
22	Ezekia Lodern Mgeni	Registration specialist	MTI-Nyarugusu	Blood taker
23	Ndagano Frank Byagusa	HIS Officer	IRC-Nduta	Blood taker
24	Alice Niyonganji	Incentive Staff	WVI-Nyarugusu	Measurer
25	Alimasi Bintu	Incentive staff	TRCS-Nyarugusu	Measurer
26	Bahati Jean Taki	Incentive Staff	WVI-Nyarugusu	Measurer
27	Bandirubusa Thomas	Incentive Staff	IRC-Nduta	Measurer
28	Bukuru Anatory	Incentive Staff	IRC-Nduta	Measurer
29	Ciza Eric	Incentive Staff	WVI-Nduta	Measurer
30	Epimack Biratunganye	Incentive staff	WVI-Nduta	Assistant measurer
31	Eric Nambajiman	Incentive Staff	MTI-Nduta	Assistant measurer
32	Esperence Wachawaseme	Incentive Staff	TRCS-Nyarugusu	Assistant measurer
33	Jeannette Nindabira	Incentive Staff	WVI-Nduta	Assistant Measurer
34	Jeannette Niyonzima	Incentive Staff	WVI-Nduta	Assistant Measurer
35	Lukozi Saidi	Incentive Staff	TRCS-Nyarugusu	Assistant Measurer

36	Manirakiza Private	Incentive Staff	IRC-Nduta	Measurer
37	Meshack Ngezehayo	Incentive Staff	MTI-Nduta	Assistant measurer
38	Mlole Mayungo	Incentive Staff	MTI-Nyarugusu	Measurer
39	Mmaninwa Saleh	Incentive Staff	TRCS-Nyarugusu	Measurer
40	Mukamarakoze Gerardine	Incentive staff	IRC-Nduta	Measurer
41	Munezero Fabien	Incentive staff	WVI-Nduta	Measurer
42	Musa Tumaini	Incentive staff	WVI-Nyarugusu	Measurer
43	Ndaihimbazi Yokonia	Incentive Staff	IRC-Nduta	Measurer
44	Nduwimana Nestor	Incentive staff	WVI-Nduta	Assistant measurer
45	Ngena Lubunga	Incentive Staff	WVI-Nyarugusu	Measurer
46	Niyokindi Sperence	Incentive Staff	MTI-Nduta	Measurer
47	Niyongabo Abdukalim	Incentive Staff	MTI-Nyarugusu	Measurer
48	Niyonizigiye Aline	Incentive Staff	IRC-Nduta	Measurer
49	Niyonzima Seraphine	Incentive Staff	IRC-Nduta	Measurer
50	Nizigimana Goreth	Incentive Staff	WVI-Nyarugusu	Assistant measurer
51	Nshimirimana Desire	Incentive Staff	MTI-Nyarugusu	Assistant measurer
52	Sabimana Selestin	Incentive Staff	IRC-Nduta	Assistant Measurer
53	Shimirima Viane	Incentive Staff	IRC-Nduta	Assistant Measurer
54	Simbizi Reonsi	Incentive Staff	WVI-Nyarugusu	Assistant Measurer
55	Sindayigaya Vincent	Incentive Staff	TRCS-Nyarugusu	Assistant Measurer
56	Tambwe Amisi	Incentive Staff	TRCS-Nyarugusu	Blood taker

10. Appendices

Appendix 1: Data quality check

Plausibility checks for: Nyarugusu Burundians Camp

Standard/Reference used for z-score calculation: WHO standards 2006
(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	**Score**
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (1.7 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.183)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.596)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (5)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**2** (9)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (4)
Standard Dev WHZ	Excl	SD	<1.1	<1.15	<1.20	>=1.20	
.			and	and	and	or	
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**0** (0.99)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (0.12)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.19)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=0.451)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**2** %

The overall score of this survey is 2 %, this is excellent.

Plausibility checks for: Nyarugusu Congolese Camp

Standard/Reference used for z-score calculation: WHO standards 2006
(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	**Score**
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (2.2 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	

(Significant chi square)			0	2	4	10	**0** (p=0.448)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**4** (p=0.026)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (7)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**2** (10)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (6)
Standard Dev WHZ	Excl	SD	<1.1 and	<1.15 and	<1.20 and	>=1.20 or	
.							
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**0** (1.01)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.11)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.02)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=0.053)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**6** %

The overall score of this survey is 6 %, this is excellent.

Plausibility checks for: Nduta Camp

Standard/Reference used for z-score calculation: WHO standards 2006
(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	**Score**
Flagged data	Incl	%	0-2.5	>2.5-5.0	>5.0-7.5	>7.5	
(% of out of range subjects)			0	5	10	20	**0** (0.4 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.402)
Age ratio(6-29 vs 30-59)	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.316)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (3)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**2** (8)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**0** (7)
Standard Dev WHZ	Excl	SD	<1.1 and	<1.15 and	<1.20 and	>=1.20 or	
.							
.	Excl	SD	>0.9	>0.85	>0.80	<=0.80	
			0	5	10	20	**0** (0.95)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**1** (0.21)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	

```
                                        0      1          3          5         0 (0.01)

Poisson dist WHZ-2       Excl     p    >0.05 >0.01    >0.001    <=0.001
                                        0      1          3          5         0 (p=0.639)

OVERALL SCORE WHZ =                    0-9   10-14    15-24      >25         3 %
```

The overall score of this survey is 3 %, this is excellent.

Appendix 2: Assignment of clusters

Nyarugusu Burundians

Geographical unit	Population size	Assigned cluster
Zone 8, Village B4	113	1
Zone 8, Village E4	132	2
Zone 8, Village G4	118	3
Zone 8, Village J4	90	4
Zone 8, Village M4	147	5
Zone 8, Village O4	128	6
Zone 8, Village Q4	88	7
Zone 8, Village U4	78	8
Zone 9, Village D5	70	9
Zone 9, Village G5	68	10
Zone 9, Village J5	90	11
Zone 9, Village M5	100	12
Zone 9, Village S5	108	13
Zone 9, Village U5	53	14
Zone 9, Village W5	25	15
Zone 9, Village X5	80	16
Zone 10, Village A6	110	17
Zone 10, Village I6	76	18
Zone 11, Village B7	61	19
Zone 11, Village E7	39	20
Zone 12, Village R8	138	21
Zone 11, Village K7	72	22

Zone 12, Village M8	103	23
Zone 11, Village F7	67	24
Zone 9, Village O5	126	25
Zone 10, Village E6	51	26
Zone 12, Village C8	66	27
Zone 12, Village G8	44	28
Zone 13, Village R9	42	29

Nyarugusu Congolese

Geographical unit	Population size	Assigned cluster
Zone 1, Village B1	611	1
Zone 1, Village C1	210	2
Zone 1, Village E1	353	3
Zone 2, Village A2	292	4
Zone 2, Village B2	448	5
Zone 2, Village G2	337	6
Zone 3, Village G1	317	7
Zone 3, Village I1	250	8
Zone 3, Village L1	281	9
Zone 3, Village N1	383	10
Zone 4, Village L2	134	11
Zone 4, Village R2	255	12
Zone 5, Village A3	377	13
Zone 5, Village B3	357	14
Zone 5, Village D3	270	15
Zone 6, Village O1	425	16
Zone 6, Village P1	280	17
Zone 6, Village R1	586	18
Zone 6, Village S1	176	19
Zone 7, Village F3	300	20
Zone 7, Village H3	349	21
Zone 7, Village O3	254	22
Zone 14, Village A10	771	23
Zone 14, Village B10	829	24

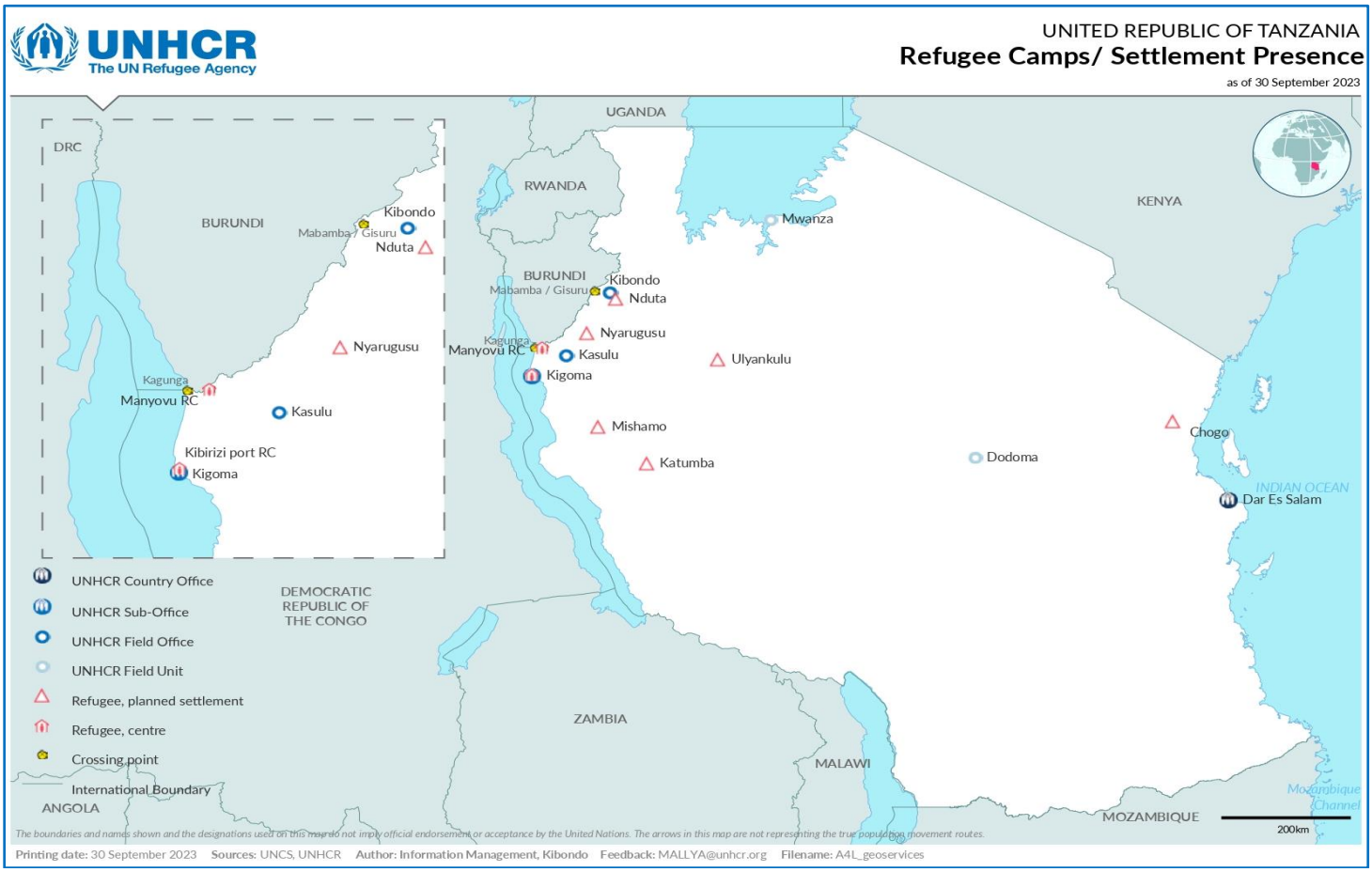
Zone 14, Village C10	633	25
Zone 14, Village D10	507	26
Zone 14, Village E10	725	27
Zone 14, Village E10		28
Deaprture	299	29

Nduta Camp

Geographical unit	Population size	Assigned cluster
Zone 1, Village 17	100	1
Zone 1, Village 23	105	2
Zone 2, Village 10	30	3
Zone 3, Village 1	123	4
Zone 3, Village 8	94	5
Zone 4, Village 6	86	6
Zone 5, Village 4	50	7
Zone 6, Village 11	64	8
Zone 7, Village 1	74	9
Zone 7, Village 6	64	10
Zone 8, Village 13	71	11
Zone 8, Village 21	42	12
Zone 9, Village 11	43	13
Zone 9, Village 22	77	14
Zone 10, Village 1	34	15
Zone 11, Village 11	78	16
Zone 11, Village 21	51	17
Zone 12, Village 1	87	18
Zone 12, Village 26	54	19
Zone 12, Village 8	85	20
Zone 13, Village 21	82	21
Zone 13, Village 8	53	22

Zone 14, Village 3	38	23
Zone 15, Village 7	21	24
Zone 17, Village 5	42	25
Zone 18, Village 9	57	26

Appendix 3: Maps of survey area

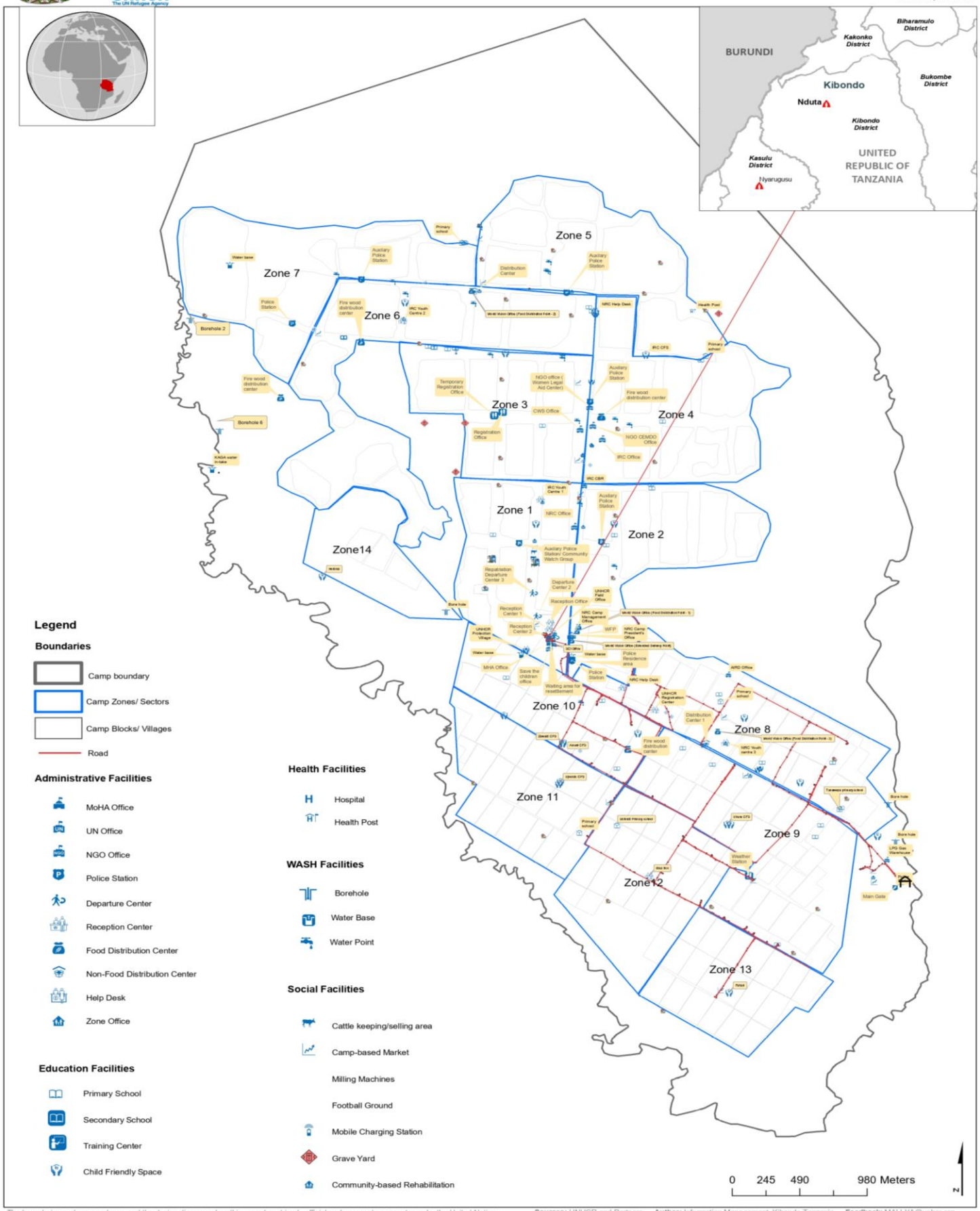


Nyarugusu camp

Tanzania

Nyarugusu Camp Overview

as of 30 September 2023



Legend

Boundaries

- Camp boundary
- Camp Zones/ Sectors
- Camp Blocks/ Villages
- Road

Administrative Facilities

- MoHA Office
- UN Office
- NGO Office
- Police Station
- Departure Center
- Reception Center
- Food Distribution Center
- Non-Food Distribution Center
- Help Desk
- Zone Office

Education Facilities

- Primary School
- Secondary School
- Training Center
- Child Friendly Space

Health Facilities

- Hospital
- Health Post

WASH Facilities

- Borehole
- Water Base
- Water Point

Social Facilities

- Cattle keeping/selling area
- Camp-based Market
- Milling Machines
- Football Ground
- Mobile Charging Station
- Grave Yard
- Community-based Rehabilitation

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

Sources: UNHCR and Partners **Author:** Information Management, Kibondo Tanzania **Feedback:** MALLYA@unhcr.org

Appendix 4: UNHCR – SENS Questionnaire

Greeting and reading of rights:

THIS STATEMENT IS TO BE READ TO THE HEAD OF THE HOUSEHOLD OR, IF THEY ARE ABSENT, ANOTHER ADULT MEMBER OF THE HOUSE BEFORE THE INTERVIEW. DEFINE HEAD OF HOUSEHOLD AS MEMBER OF THE FAMILY WHO MANAGES THE FAMILY RESOURCES AND IS THE FINAL DECISION MAKER IN THE HOUSE.

- Hello, my name is _____ and I work with _____. We would like to invite your household to participate in a survey that is looking at the nutrition and health status of people living in this camp.
- Taking part in this survey is totally your choice. You can decide to not participate, or if you do participate you can stop taking part in this survey at any time for any reason. If you stop being in this survey, it will not have any negative effects on how you or your household is treated or what assistance you receive.
- If you agree to participate, we will ask you some questions about your family and we will also measure all the children in the household who are older than 6 months and younger than 5 years and women between 15 and 49 years. In addition to these assessments, we will test a small amount of blood from the finger of the children and women to see if they have anaemia.
- Before we start to ask you any questions or take any measurements, we will ask you to give us your verbal consent. Be assured that any information that you will provide will be kept strictly confidential.
- You can ask me any question that you have about this survey before you decide to participate or not.

If you do not understand the information or if your questions were not answered to your satisfaction, do not declare your consent on this form. Thank you.

DEMOGRAPHY
1 questionnaire per household

THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO THE HEAD OF THE HOUSEHOLD OR, IF THEY ARE ABSENT, ANOTHER ADULT MEMBER OF THE HOUSEHOLD.

No	QUESTION	ANSWER CODES	
SECTION IDENTIFICATION THIS SECTION IS TO BE COMPLETED IN ALL SELECTED HOUSEHOLDS. THIS MODULE IS MANDATORY TO COMPLETE.			
ID1	Camp Name **CAMPNAME**	|_____|	
ID3	Zone Code / Number **ZONE**		|___|___|
ID4	Village Code / Number **VILLAGE**		|___|___|
ID5	Date of interview (dd/mm/yyyy) **SURVDAT**	Day/Month/Year…..|___|___| /|___|___| / |___|___||___|___|	

ID6	Cluster Number **CLUSTER**		|___|___|
ID7	Team Number **TEAM**		|___|
ID8	Household Number **HH**		|___|___|

No	QUESTION	ANSWER CODES	
SECTION DM1: Household Head Information			
Note	THESE QUESTIONS NEED TO BE ASKED TO THE HEAD OF THE HOUSEHOLD OR, IF THEY ARE ABSENT, ANOTHER ADULT MEMBER OF THE HOUSEHOLD.		
DM1	Was consent given for conducting the interview using Mobile Data Collection (use of smartphone)? ENSURE THAT YOU HAVE INTRODUCED THE TEAM AND INFORMED THEM ABOUT THE INTERVIEW. **MDCCONST**	Yes ..... 1 No ..... 2 Absent 3	|___| **IF ANSWER IS 2 or 3 STOP HERE**
DM2	What is the sex of the household head? THE HOUSEHOLD HEAD IS THE PERSON RESPONSIBLE FOR MAKING THE DECISIONS FOR THE HOUSEHOLD AS A WHOLE. USE THE TERM AGREED UPON DURING THE TRAINING. **HHHSEX**	Male ..... m Female..... f	|___|
DM3	What is the age of the household head (years)? YOU DO NOT NEED TO SEE PROOF OF AGE. **Lower limit=6** **Upper limit=98** **HHHAGE**	RECORD THE NUMBER IN YEARS IF KNOWN. RECORD 97 IF 97 YEARS OR OLDER. RECORD 98 IF UNKNOWN.	|___|___| years
SECTION DM2: Survey of Household Members			
DM4	What is the total number of household members? **Lower limit=1** **Upper limit=30**	RECORD THE NUMBER.	|___|___| people

	DMHHSIZE		
Note	ASK INTERVIEWEE IF THOSE ARE ALL THE MEMBERS IN THE HOUSEHOLD AND THAT NO ONE IS MISSING. THESE QUESTIONS NEED TO BE COMPLETED FOR EACH HH MEMBER WHO LIVES IN THE HOUSEHOLD.		
DM5	Name of household member ONLY WRITE FIRST NAME. **NAME**	|_____|	
DM6	What is the sex of the household member? **HHMSEX**	Male ..... m Female..... f	|___|
DM7	What is the age of the household member (years)? YOU DO NOT NEED TO SEE PROOF OF AGE. **Lower limit=0** **Upper limit=98** **HHMAGE**	RECORD THE NUMBER IN YEARS IF KNOWN. IF AGE IS LESS THAN 1 YEAR, RECORD 0. RECORD 97 IF 97 YEARS OR OLDER. RECORD 98 IF UNKNOWN.	|___|___| years
DM8	Is the household member currently pregnant? **HHMPREG**	Yes ..... 1 No ..... 2 Don't know..... 8	|___|
DM9	Was consent given for taking the GPS coordinates of the household? **GPSCONST**	Yes ..... 1 No 2	|___|
Note	Summary messages WRITE DOWN THE SUMMARY DATA PROVIDED BELOW ON THE PARTICIPANTS AND MEASURES CONTROL SHEET.		
DM10	**Total number of children under 5 (0-4 years)** |___|___| **children under-5** **TOTU5**		
DM11	**Total number of women aged 15-49 years** |___|___| **women** **TOTWM**		
DM12	**Total number of pregnant women aged 15-49 years** |___|___| **pregnant women** **TOTPREG**		

	Interviewer: I confirm that questionnaire is complete: yes/no
	Supervisor: I confirm that questionnaire is complete.: yes/no MESSAGE TO INTERVIEWER: DO NOT ANSWER THIS QUESTION.

Summary			
Years old	**Female**	**Male**	**Total**
U2 (0-1 years)	|___|___| TOTFU2	|___|___| TOTMU2	|___|___| TOTU2
U5 (0-4 years)	|___|___| TOTFU5	|___|___| TOTMU5	|___|___| TOTU5
5-14 (5-14 years)	|___|___| TOTF514	|___|___| TOTM514	|___|___| TOT514
14 years or younger (0-14 years)	|___|___| TOTFU15	|___|___| TOTMU15	|___|___| TOTU15
Between 15 years and 64 years	|___|___| TOTF1564	|___|___| TOTM1564	|___|___| TOT1564
65 years and older	|___|___| TOTF65OLD	|___|___| TOTM65OLD	|___|___| TOT65OLD
Total household size (all ages)	|___|___| HHFSIZE	|___|___| HHMSIZE	|___|___| DMHHSIZE

FOOD SECURITY
1 questionnaire per household

THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO THE MAIN CARETAKER WHO IS RESPONSIBLE FOR COOKING THE MEALS.

No	QUESTION	ANSWER CODES	
SECTION IDENTIFICATION THIS SECTION IS TO BE COMPLETED IN ALL SELECTED HOUSEHOLDS. THIS MODULE IS MANDATORY TO COMPLETE.			
ID1	Camp Name **CAMPNAME**	|_____|	
ID3	Zone Code / Number **ZONE**		|___|___|
ID4	Village Code / Number **VILLAGE**		|___|___|
ID5	Date of interview (dd/mm/yyyy) **SURVDAT**	Day/Month/Year.....|___|___| /|___|___| / |___|___||___|___|	
ID6	Cluster Number **CLUSTER**		|___|___|
ID7	Team Number **TEAM**		|___|
ID8	Household Number **HH**		|___|___|

No	QUESTION	ANSWER CODES	
SECTION FS1: Food assistance and cooking fuel			
Note	THIS QUESTIONNAIRE NEED TO BE ASKED TO THE MAIN CARETAKER WHO IS RESPONSIBLE FOR COOKING THE MEALS.		
FS1	Was consent given for conducting the interview? ENSURE THAT YOU HAVE INTRODUCED THE TEAM AND INFORMED THEM ABOUT THE INTERVIEW. **FSCONST**	Yes ..... 1 No ..... 2 Absent..... 3	|___| **IF ANSWER IS 2 or 3 STOP HERE**
FS2	Does your household receive food assistance (general in-kind food distribution) **FOODASS**	Yes ..... 1 No ..... 2 Don't know 8	|___| **IF ANSWER IS 1 OR 8 GO TO FS4**

FS3	Why do you not have access to the food assistance programmes **YNOFOODA**	Ration card and/or cash grants and/or food voucher not given even if eligible ... 1 Not registered ... 2 Registered but determined not eligible .. 3 Other ... 6 Don't know ... 8	|___|
FS4	Does your household have a ration card for general in-kind food? **RCARD**	Yes ... 1 No ... 2 Don't know ... 8	|___| **IF ANSWER IS 1 OR 8 GO TO FS6**
FS5	Why do you not have a ration card? **YNORCARD**	Not given one at registration even if eligible ... 1 Lost card ... 2 Traded/sold card ... 3 Not registered ... 4 Registered but determined not eligible .. 5 Other ... 6 Don't know ... 8	|___| **GO TO FS7**
FS6	How many days did the food from the general in-kind food distribution from the [INSERT] cycle of [INSERT LAST CYCLE MONTH] last? 30 days Last distribution=19th-24th August **Lower limit=1** **Upper limit=98** **GFDLAST**	RECORD THE NUMBER OF DAYS IF KNOWN. RECORD 98 IF UNKNOWN.	|___|___|
FS7	Overall, to what extent are you currently able to meet the basic needs of your household? **EXTNEEDS**	All basic needs are met (100%) ... 1 More half basic needs are met (>50%) ... 2 Half basic needs are met (50%) ... 3 Few basic needs are met (<50%) ... 4 Basic needs are not met (0%) ... 5 Don't know ... 8	|___| **IF ANSWER IS 1 OR 8 GO TO FS9**
FS8	Which of your household's basic needs can you not afford? SELECT ALL THAT APPLY.	Food ... 01 Water ... 02 Hygiene items, clothes, shoes ... 03 Health costs (including medicines) ... 04 Rent, shelter repair, household items (e.g. mattress, blanket, jerrycan), utilities and bills (e.g. electricity, water bills, phone calling credit) ... 05	|___|___|

	NEEDSNOT: FOODB / WATERB / HYGIENEB / HEALTHB / HOUSEB / FUELB / LIVELIB / DEBTSB / SAVINGB / EDUCAB / OTHERB / DKNB	Firewood/fuel for cooking or heating ... 06 Assets for a livelihood activity (e.g. seeds, tools, farming, fishing, petty trade, etc.) ... 07 Debt repayment ... 08 Save some money or support other family members, relatives, friends ... 09 Education (e.g. school fees, uniform, books) ... 10 Other ... 96 Don't know ... 98	
FS9	What cooking fuel does your household usually use? **HHFUEL**	Wood ... 01 Charcoal ... 02 Kerosene ... 03 Biogas ... 04 Liquid petroleum gas (LPG) ... 05 Ethanol ... 06 Briquettes ... 07 Other ... 96 Don't know ... 98	|___|___|
FS10	Does your household receive cooking fuel assistance? **FUEL**	Yes ... 1 No ... 2 Don't know ... 8	|___| **IF ANSWER IS 2 or 8 GO TO FS12**
FS11	How many days did the fuel from the [INSERT] cycle of [INSERT LAST CYCLE MONTH] last? **Lower limit=1** **Upper limit=98** **FUELLAST**	RECORD THE NUMBER OF DAYS IF KNOWN (RECORD 98 IF UNKNOWN)	|___|___|
SECTION FS2: Coping Strategies and Reduced Coping Strategy Index (rCSI)			
Note	EXPLAIN TO THE RESPONDENT THAT THE QUESTIONS APPLY TO ALL HOUSEHOLD MEMBERS AND NOT ONLY TO HIM/HER.		
FS12	In the past 4 weeks, have you or anyone in your household needed to stop a child from attending school? **SCHOOL**	Yes ... 1 No ... 2 Don't know ... 8	|___|
FS13	In the past 4 weeks, have you or anyone in your household needed to sold any assets that would not have normally sold in order to buy food or basic goods (e.g. sold items such as a car, motorbike, plough, sewing machine, tools, seed stock, livestock, productive land)?	Yes ... 1 No ... 2 Don't know ... 8	|___|

	SELLLIV		
FS14	In the past 4 weeks, have you or anyone in your household needed to ask for money from strangers (begging)? **BEG**	Yes ..... 1 No ..... 2 Don't know 8	|___|
FS15	In the past 4 weeks, have you or anyone in your household needed to move to a poorer quality shelter? **SHELTER**	Yes ..... 1 No ..... 2 Don't know 8	|___|
FS16	In the past 4 weeks, have you or anyone in your household needed to send household members under the age of 16 to work? **CHILDLAB**	Yes ..... 1 No ..... 2 Don't know 8	|___|
FS17	In the past 4 weeks, have you or anyone in your household needed to send a member of the household to work far away? **WORKAWAY**	Yes ..... 1 No ..... 2 Don't know 8	|___|
FS18	In the past 4 weeks, have you or anyone in your household needed to engage in activities for money or items that you feel puts you or other members of your household at risk of harm (e.g. illegal activities like hunting, fishing, survival sex, drug dealing, early marriage, joining armed groups, etc.)? **RISKYACT**	Yes ..... 1 No ..... 2 Don't know 8	|___|
FS19	In the past 4 weeks, have you or anyone in your household needed to skip paying rent / debt repayments to meet other needs? **RENTDEBT**	Yes ..... 1 No ..... 2 Don't know 8	|___|
FS20	In the past 4 weeks, have you or anyone in your household needed to take out new loans or borrowed money? **LOANBRW**	Yes ..... 1 No ..... 2 Don't know 8	|___|
FS21	In the past 4 weeks, have you or anyone in your household needed to reduce expenditure hygiene items, water, baby items, health or education in order to meet household food needs? **REDUCE**	Yes ..... 1 No ..... 2 Don't know 8	|___|

Note	EXPLAIN TO THE RESPONDENT THAT THE QUESTIONS APPLY TO ALL HOUSEHOLD MEMBERS AND NOT ONLY TO HIM/HER.		
FS22	In the past 7 days, how many days did your household rely on less preferred and/or less expensive food due to lack of food or money to buy food? **Lower limit=0** **Upper limit=7** **LESSEXP**	RECORD THE NUMBER OF DAYS, FROM 0-7.	|___|
FS23	In the past 7 days, how many days did your household borrow food or rely on help from a friend or relative due to lack of food or money to buy food? **Lower limit=0** **Upper limit=7** **BRW**	RECORD THE NUMBER OF DAYS, FROM 0-7.	|___|
FS24	In the past 7 days, how many days did your household reduce the number of meals eaten in a day due to lack of food or money to buy food? **Lower limit=0** **Upper limit=7** **LESSMEAL**	RECORD THE NUMBER OF DAYS, FROM 0-7.	|___|
FS25	In the past 7 days, how many days did your household limit portion sizes at mealtime due to lack of food or money to buy food? **Lower limit=0** **Upper limit=7** **REDMEAL**	RECORD THE NUMBER OF DAYS, FROM 0-7.	|___|
FS26	In the past 7 days, how many days did your household reduce consumption by adults so children could eat, due to lack of food or money to buy food? IN HOUSEHOLDS WIHTOUT CHILDREN, THE ANSWER SHOULD BE '0'. **Lower limit=0** **Upper limit=7** **REDADULT**	RECORD THE NUMBER OF DAYS, FROM 0-7.	|___|
SECTION FS3 : FCS and FCS-N			

FS27	How many days over the last 7 days, did members of your household eat the following food items, prepared and/or consumed at home? READ THE LIST OF FOODS AND DO NOT PROBE. ONLY RECORD THE CONSUMPTION OF SIGNIFICANT QUANTITIES OF FOOD BY THE HOUSEHOLD. WRITE '0' IF NOT CONSUMED IN THE LAST 7 DAYS.	
		Number of days eaten in past 7 days
	1. In the past 7 days, how many days did your household eat any cereals for example **maize, corn soy blend, barley, buckwheat, millet, oats, rice, sorghum, etc.** or any foods made from these such as **bread, porridge, noodles, ugali, pasta**. Or any roots and tubers for example **green bananas, parsnip, taro, plantains, white potatoes, white yam, white cassava, white sweet potato, etc.** or any foods made from roots or tubers. **CRLROTU**	|___| **Lower limit=0** **Upper limit=7**
	2. In the past 7 days, how many days did your household eat any pulses, nuts and /or seeds for example **beans, peas, lentils, peanuts, cashew nuts, pigeon peas, groundnuts, pumpkin seeds, etc.** or any foods made from these such as **peanut butter** **PULSE**	|___| **Lower limit=0** **Upper limit=7**
	3. In the past 7 days, how many days did your household eat any dairy products for example **fresh milk, sour milk, infant formula, cheese, yogurt** **MILK**	|___| **Lower limit=0** **Upper limit=7**
	4. In the past 7 days, how many days did your household eat any meat, fish and eggs for example **goat, beef, chicken, pork, organ meat, fish including canned tuna, eggs** **PROT**	|___| **IF ANSWER IS 0 GO TO QUESTION 5** **Lower limit=0** **Upper limit=7**
	4.1. In the past 7 days, how many days did your household eat any meat such as **beef, goat, lamb, mutton, pork, chicken, duck, agouti frogs, snakes, insects, etc.** **FLSHMT**	|___| **Lower limit=0** **Upper limit=7**
	4.2. In the past 7 days, how many days did your household eat any organ meat or blood-based food for example **liver, kidney, heart, etc.** **ORGMT**	|___| **Lower limit=0** **Upper limit=7**

	4.3. In the past 7 days, how many days did your household eat any fresh or dried fish or shellfish for example **tuna, sardines, shrimp, etc.** **FISHSF**	|___| **Lower limit=0** **Upper limit=7**
	4.4. In the past 7 days, how many days did your household eat any eggs for example **eggs from chicken, duck, guinea fowl, etc.** **EGGS**	|___| **Lower limit=0** **Upper limit=7**
	5. In the past 7 days, how many days did your household eat any vegetables and leaves for example **spinach, cassava leaves, onion, carrot, lettuce, cabbage, pepper, tomato, eggplant, zucchini, etc.** **VEGL**	|___| **IF ANSWER IS 0 GO TO QUESTION 6** **Lower limit=0** **Upper limit=7**
	5.1. In the past 7 days, how many days did your household eat **carrots, or pumpkin, or squash, or sweet potato that are yellow or orange inside or red sweet pepper** **VITAV**	|___| **Lower limit=0** **Upper limit=7**
	5.2. In the past 7 days, how many days did your household eat any dark green leafy vegetables for example **spinach, pumpkin leaves, cassava leaves, etc.** **GREENV**	|___| **Lower limit=0** **Upper limit=7**
	6. In the past 7 days, how many days did your household eat any fruits for example **mango, pineapple, avocados, banana, coconut flesh, lemon, orange, watermelon, etc.** or 100% fruit juice made from these fruits **FRT**	|___| **IF ANSWER IS 0 GO TO QUESTION 7** **Lower limit=0** **Upper limit=7**
	6.1. In the past 7 days, how many days did your household eat **mangoes (ripe, fresh and dried), ripe papaya, passion fruit (ripe)** **VITAFRT**	|___| **Lower limit=0** **Upper limit=7**
	7. In the past 7 days, how many days did your household eat **red palm nut or red palm sauce or foods made with red palm oil** **PALMOIL**	|___| **Lower limit=0** **Upper limit=7**
	8. In the past 7 days, how many days did your household eat any oils and fats added to food or used for cooking for example **vegetable/nut oil, butter, margarine, mayonnaise, palm oil**	|___| **Lower limit=0** **Upper limit=7**

	FATS		
	9. In the past 7 days, how many days did your household eat any sweets, sweetened soda or drinks, sugary foods for example **sugar, honey, syrup, soda drinks, chocolates, candies, cookies, sweet biscuits and cakes** **SWTS**	|___| **Lower limit=0** **Upper limit=7**	
	10. In the past 7 days, how many days did your household eat any spices, condiments and beverages for example **black pepper, salt, chilies, fish powder, ginger, herbs, magi cubes, ketchup, mustard, coffee, tea, milk/cream in small quantities, etc.** **SPICE**	|___| **Lower limit=0** **Upper limit=7**	
	11. In the past 7 days, how many days did your household eat **CSB+, CSB++ or Plumpy Nut'** **SPENUTF**	|___| **Lower limit=0** **Upper limit=7**	
FS28	How was this food acquired? **FOODSOU**	Purchase (using cash grants and/or with their own cash).....01 Own production (crops, livestock, fishing/hunting, gathering) .....02 Traded goods/services, barter .....03 Borrowed (loan/credit from traders) .....04 Receive as gift (from family relatives or friend/neighbor.....05 In-kind food assistance (GFD, BSFP) .....06 Other .....96 Don't know 98	|___|___|
ID9	Please take a GPS reading AVOID TAKING IT INSIDE THE HOUSE OR UNDER TREES (TO MAKE IT FASTER). **GPS**	|_____|	
	Interviewer: I confirm that questionnaire is complete: yes/no		
	Supervisor: I confirm that questionnaire is complete.: yes/no MESSAGE TO INTERVIEWER: DO NOT ANSWER THIS QUESTION.		

MOSQUITO NET COVERAGE
1 questionnaire per household

THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO THE HEAD OF THE HOUSEHOLD OR, IF THEY ARE ABSENT, ANOTHER ADULT MEMBER OF THE HOUSEHOLD.

No	QUESTION	ANSWER CODES	
SECTION IDENTIFICATION THIS SECTION IS TO BE COMPLETED IN ALL SELECTED HOUSEHOLDS. THIS MODULE IS MANDATORY TO COMPLETE.			
ID1	Camp Name **CAMPNAME**	|_____|	
ID3	Zone Code / Number **ZONE**		|___|___|
ID4	Village Code / Number **VILLAGE**		|___|___|
ID5	Date of interview (dd/mm/yyyy) **SURVDAT**	Day/Month/Year…..|___|___| /|___|___| / |___|___||___|___|	
ID6	Cluster Number **CLUSTER**		|___|___|
ID7	Team Number **TEAM**		|___|
ID8	Household Number **HH**		|___|___|

No	QUESTION	ANSWER CODES	
SECTION TN1: Details on the Household			
Note	THESE QUESTIONS NEED TO BE ASKED TO THE HEAD OF THE HOUSEHOLD OR, IF THEY ARE ABSENT, ANOTHER ADULT MEMBER OF THE HOUSEHOLD.		
TN1	Was consent given for conducting the interview? ENSURE THAT YOU HAVE INTRODUCED THE TEAM AND INFORMED THEM ABOUT THE INTERVIEW. **TNCONST**	Yes .....1 No .....2 Absent 3	|___| **IF ANSWER IS 2 or 3 STOP HERE**
TN2	What is the total number of household numbers? RECORD NUMBER.		|___|___|

	TNHHSIZE		
TN3	How many people live in this household and slept here last night? RECORD NUMBER. **TOTHH**		|___|___|
TN4	How many children 0-59 months live in this household and slept here last night? RECORD NUMBER OR TYPE 0 IF THERE AREN'T ANY CHILDREN BELOW 5 YEARS. **TOTCH**		|___|___|
TN5	How many pregnant women live in this household and slept here last night? RECORD NUMBER OR TYPE 0 IF THERE AREN'T ANY PREGNANT WOMEN. **TOTPW**		|___|___|
TN6	Do you have mosquito bed nets in this household that can be used while sleeping? **MOSNETS**	Yes .....1 No .....2 Don't know 8	|___| **IF ANSWER IS 2 OR 8 STOP NOW**
TN7	How many of these mosquito bed nets that can be used while sleeping does your household have? PROBE FOR ANY NETS CURRENTLY NOT IN USE THAT ARE BEING SAVED OR STORED (STILL IN THEIR PACKAGE). RECORD REPORTED NUMBER. **Lower limit=1** **Upper limit=10** **NUMNETS**		|___|___| Nets
SECTION TN2: Observation of Bed Nets THIS SECTION IS TO BE COMPLETED FOR ALL BED NETS USED FOR SLEEPING REPORTED BY THE RESPONDENT.			
Note	THESE QUESTIONS ARE ASKED FOR EACH BED NET USED FOR SLEEPING REPORTED BY THE RESPONDENT.		
TN8	Can the bed net be observed? ASK RESPONDENT TO SHOW YOU THE NET IN THE HOUSEHOLD. **NETSOBS**	Yes .....1 No 2	|___| **IF ANSWER IS 2 SKIP TO TN11**

TN9	What is the brand of the net observed? LOOK AT THE TAG ON THE NET. IF THERE IS NONE OR IS UNREADABLE, SELECT 'UNIDENTIFIABLE'/'DON'T KNOW. **NETBRAND**	DAWAPLUS.....01 DURANET.....02 INTERCEPTOR.....03 LIFENET.....04 MAGNET.....05 MIRANET.....06 OLYSET.....07 PANDANET.....08 PERMANET.....09 ROYALSENTRY.....10 SAFENET.....11 VEERALIN.....12 YALE.....13 YORKOOL.....14 Other (please specify).....96 Unidentifiable/Don't know.....98	|___|___| **IF ANSWER IS 96 GO TO TN10**
TN10	If other, please specify the brand name of net **BRANDOTH**	|_____|	
	TOTLN		|___|___|

SECTION TN3: Survey of household members

THIS SECTION IS TO BE COMPLETED FOR EACH HH MEMBER WHO LIVES HERE AND SLEPT HERE LAST NIGHT.

Note	THESE QUESTIONS NEED TO BE COMPLETED FOR EACH HH MEMBER WHO LIVES IN THE HOUSEHOLD AND SLEPT HERE LAST NIGHT.		
TN11	ID of household member **HHMID**		|___|
TN12	What is the sex of the household member? **HHMSEX**	Male.....m Female.....f	|___|
TN13	How old is the household member? **HHMAGE**	<5 years.....1 ≥5 years.....2	|___|
TN14	Is the household member currently pregnant? **HHMPREG**	Yes.....1 No.....2 Don't know.....8	|___|
TN15	Did the household member sleep under a net last night? **SLPNET**	Yes.....1 No.....2 Don't know.....8	|___|
TN16	Select the brand of the net under which the household member slept	RESPONSES FROM TN9 SHOWN HERE. EXAMPLE:	|___|___|

	ASK THE RESPONDENT TO PHYSICALLY IDENTIFY WHICH OF THE OBSERVED NETS S/HE SLEPT UNDER. **SLPBRAND**	NETBRAND1-PERMANET NETBRAND2-PERMANET NETBRAND3-Unidentifiable/Don't know NETBRAND4- OLYSET	
ID9	Please take a GPS reading AVOID TAKING IT INSIDE THE HOUSE OR UNDER TREES (TO MAKE IT FASTER). **GPS**	|_____|	
Note	Error messages		
	The total number of children in the household declared at the beginning of the form (TN4) does not match the number of children you have entered in the group (TN14). Please review to ensure they match.		
	The total number of pregnant woman in the household you declared at the beginning of the form (TN5) does not match the number of pregnant woman you have entered (TN15). Please review to ensure they match.		
	Interviewer: I confirm that questionnaire is complete: yes/no		
	Supervisor: I confirm that questionnaire is complete.: yes/no MESSAGE TO INTERVIEWER: DO NOT ANSWER THIS QUESTION.		

	Summary		
	Total household members	**Total <5**	**Total Pregnant**
Slept under a net of any type	**TN17** |___|___| **TOTSLPNT**	**TN19** |___|___| **TOTCHNT**	**TN21** |___|___| **TOTPWNT**
Slept under an LLIN	**TN18** |___|___| **TOTSLPLN**	**TN20** |___|___| **TOTCHLN**	**TN22** |___|___| **TOTPWLN**

WASH
1 questionnaire per household

THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO THE HEAD OF THE HOUSEHOLD OR, IF THEY ARE ABSENT, ANOTHER ADULT MEMBER OF THE HOUSEHOLD.

No	QUESTION	ANSWER CODES	
SECTION IDENTIFICATION THIS SECTION IS TO BE COMPLETED IN ALL SELECTED HOUSEHOLDS. THIS MODULE IS MANDATORY TO COMPLETE.			
ID1	Camp Name **CAMPNAME**	|_____|	
ID3	Zone Code / Number **ZONE**		|___|___|
ID4	Village Code / Number **VILLAGE**		|___|___|
ID5	Date of interview (dd/mm/yyyy) **SURVDAT**	Day/Month/Year.....|___|___| /|___|___| / |___|___||___|___|	
ID6	Cluster Number **CLUSTER**		|___|___|
ID7	Team Number **TEAM**		|___|
ID8	Household Number **HH**		|___|___|

No	QUESTION	ANSWER CODES	
SECTION WS1: WASH interview questions			
Note	THESE QUESTIONS NEED TO BE ASKED TO THE HEAD OF THE HOUSEHOLD OR, IF THEY ARE ABSENT, ANOTHER ADULT MEMBER OF THE HOUSEHOLD.		
WS1	Was consent given for conducting the interview? ENSURE THAT YOU HAVE INTRODUCED THE TEAM AND INFORMED THEM ABOUT THE INTERVIEW. **WSCONST**	Yes ..... 1 No ..... 2 Absent 3	|___| **IF ANSWER IS 2 or 3 STOP HERE**
WS2	What is the total number of household members?		|___|___|

	RECORD NUMBER. **HHSIZE**		
WS3	What is the principal source of drinking water for members of your household? SELECT ONE BUT DO NOT PROMPT WITH RESPONSES. CONSIDER DRINKING WATER ONLY. **SOURCE**	Public tap/standpipe ..... 01 Handpumps/boreholes ..... 02 Water seller/kiosks..... 03 Piped connection to house (or neighbour's house)..... 04 Protected spring ..... 05 Bottled water, water sachets ..... 06 Tanker trucks..... 07 Unprotected hand-dug well ..... 08 Surface water (lake, pond, dam, river)... 09 Unprotected spring ..... 10 Rain water collection..... 11 Other ..... 96 Don't know 98	|___|___|
WS4	Where do you and your household members (excluding children under 5) usually go to defecate? SELECT ONE BUT DO NOT PROMPT WITH RESPONSES. **TOILET**	Household latrine..... 1 Communal latrine..... 2 Open defecation..... 3 Plastic bag..... 4 Bucket toilet ..... 5 Other ..... 6 Don't know 8	|___|
SECTION WS2: WASH observation questions			
Note	EXPLAIN TO THE RESPONDENT THAT THESE QUESTIONS RELATE TO WATER USED FOR DOMESTIC PURPOSES. THIS INCLUDES: DRINKING, COOKING/FOOD PREPARATION, BATHING, AND PERSONAL HYGIENE PLUS LAUNDRY AND OTHER HOUSEHOLD CLEANING. EXCLUDED FROM THIS ARE ANIMAL USE, BRICKMAKING OR OTHER INDUSTRY, OR AGRICULTURE/GARDENING (NON DOMESTIC).		
WS5	Please show me the soap you have in the household. **SOAP**	Presented within one minute..... 1 Not presented within one minute/no soap 2	|___|
WS6	How many containers do you have to <u>collect</u> or <u>store</u> water for domestic purposes for your house? Please show me all of them one by one RECORD ONE BY ONE. CHECK FOR ALL OF THE CONTAINERS. DO NOT INCLUDE BROKEN, LEAKING, OR NON-FUNCTIONAL CONTAINERS. **Lower limit=0** **Upper limit=25** **CONTAINER**		|___|___|

WS7	What is the type of container? **TYPE**	Jerrycan ..... 01 Bucket..... 02 Basin ..... 03 Bottle ..... 04 Saucepan ..... 05 Drums ..... 06 Other 96	|___|___|
WS8	What is the volume of container? ENTER THE AMOUNT OF LITRES THIS CONTAINER CAN HOLD TO THE NEAREST 0.5L **Lower limit=0.5L** **Upper limit=300.0L** **LITER**		|___|___|___| .|___| litres
WS9	Is the container covered? **PROTECT**	Yes ..... 1 No ..... 2 Don't know 8	|___|
WS10	Number of journeys made with container for the collection of water for domestic purposes yesterday? This includes all water collected morning, afternoon and evening. PLEASE ENTER '0' IF HOUSEHOLD DID NOT FILL IT YESTERDAY. **Lower limit=0** **Upper limit=10** **NUMTRIPS**		|___|___| journeys
ID9	Please take a GPS reading AVOID TAKING IT INSIDE THE HOUSE OR UNDER TREES (TO MAKE IT FASTER). **GPS**	|_____|	
	Interviewer: I confirm that questionnaire is complete: yes/no		
	Supervisor: I confirm that questionnaire is complete.: yes/no MESSAGE TO INTERVIEWER: DO NOT ANSWER THIS QUESTION.		

CHILDREN 0-59 ANTHROPOMETRY, HEALTH, IYCF & ANAEMIA
1 questionnaire per child 0-59 months

THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO ALL CHILDREN BETWEEN 0-59 MONTHS IF THE IYCF MODULE IS INCLUDED

No	QUESTION	ANSWER CODES	
SECTION IDENTIFICATION THIS SECTION IS TO BE COMPLETED IN ALL SELECTED HOUSEHOLDS. THIS MODULE IS MANDATORY TO COMPLETE.			
ID1	Camp Name **CAMPNAME**	|_____|	
ID3	Zone Code / Number **ZONE**		|___|___|
ID4	Village Code / Number **VILLAGE**		|___|___|
ID5	Date of interview (dd/mm/yyyy) **SURVDAT**	Day/Month/Year.....|___|___| /|___|___| / |___|___||___|___|	
ID6	Cluster Number **CLUSTER**		|___|___|
ID7	Team Number **TEAM**		|___|
ID8	Household Number **HH**		|___|___|

No	QUESTION	ANSWER CODES	
SECTION CHILD1: Details of the Child 0-59 months THIS SECTION IS TO BE ADMINISTERED TO ALL CHILDREN IN THE SELECTED HOUSEHOLDS BETWEEN 0-59 MONTHS.			
Note	THESE QUESTIONS NEED TO BE ASKED TO THE MOTHER OR THE MAIN CAREGIVER.		
CH1	ID Number **ID**		|___|___|
CH2	Was consent given for conducting the interview and the measurements? ENSURE THAT YOU HAVE INTRODUCED THE TEAM AND INFORMED THEM ABOUT THE INTERVIEW AND THE MEASUREMENTS. **CHCONST**	Yes.....1 No.....2	|___| **IF ANSWER IS 2 STOP HERE**

CH3	Name of the child ONLY WRITE FIRST NAME. **CHNAME**	|_____|	
CH4	Sex of [NAME OF CHILD]? **SEX**	Male .....m Female.....f	|___|
CH5	Do you have an official age documentation for [NAME OF CHILD]? **XDOBK**	Yes .....1 No 2	|___| **IF ANSWER IS 2 GO TO CH7**
CH6	[NAME OF CHILD]'s date of birth THE EXACT BIRTH DATE SHOULD ONLY BE TAKEN FROM AN AGE DOCUMENTATION SHOWING DAY, MONTH AND YEAR OF BIRTH. FOR PAPER-BASED SURVEYS: RECORD FROM AGE DOCUMENTATION. LEAVE BLANK IF NO VALID AGE DOCUMENTATION. **BIRTHDAT**	Day/Month/Year.....|___|___| /|___|___| / ___|___||___|___|	
CH7	Age of [NAME OF CHILD] in months **Lower limit=0 months** **Upper limit=59.99 months** **MONTHS**	SINCE NO AGE DOCUMENTATION IS AVAILABLE, ESTIMATE AGE USING A LOCAL EVENTS CALENDAR.	|___|___|months
Note	Verify that the child is ${MONTHS} months old. Remember, if they are older than 59 months; they are not eligible for inclusion, and you should stop here.		
SECTION CHILD2: Nutrition, Health and Anaemia Status of the Child 6-59 months THIS SECTION IS TO BE ADMINISTERED TO ALL CHILDREN BETWEEN 6 AND 59 MONTHS OF AGE.			
CH8	Is [NAME OF CHILD] currently present in the household? **CHPRES**	Yes .....1 No 2	|___| **IF ANSWER IS 2 GO TO CH15**
CH9	[NAME OF CHILD]'s weight in kilograms (±0.1kg) DON'T FORGET THE DECIMAL. **Lower limit=3.0kg** **Upper limit=31.0kg** **WEIGHT**		|___|___|. |___| kg
CH10	Was the [NAME OF CHILD] dressed with clothes for the weight measurement?	Yes .....y No .....n	|___|

	CLOTHES		
CH11	[NAME OF CHILD]'s length/height in cm (±0.1cm) DON'T FORGET THE DECIMAL. **Lower limit=54.0cm** **Upper limit=124.0cm** **HEIGHT**		|___|___|___|. |___| cm
CH12	Was [NAME OF CHILD] measured lying down or standing up? **MEASURE**	Child lying down ..... l Child standing up ..... h	|___|
CH13	Clinical examination: Does the [NAME OF CHILD] present bilateral pitting oedema? **EDEMA**	Yes ..... y No ..... n	|___|
CH14	[NAME OF CHILD]'s middle upper arm circumference (MUAC) in cm (±0.1cm) MEASURE LEFT ARM. DON'T FORGET THE DECIMAL. **Lower limit=7.0cm** **Upper limit=23.5cm** **MUAC**		|___|___|. |___| cm
CH15	Is [NAME OF CHILD] currently being treated in [NAME OF NUTRITION PROGRAMMES] for malnutrition? SHOW CSB++ SACHET AND PLUMPY NUT **ENROL**	Yes, SFP ..... 1 Yes, TFP (OTP/SC) ..... 2 No ..... 3 Don't know 8	|___|
CH16	Is [NAME OF CHILD] currently enrolled in the BSFP? SHOW CSB++ SACHET **BSFPCSB**	Yes ..... 1 No ..... 2 Don't know 8	|___|
CH17	Is [NAME OF CHILD] currently receiving MNPs sachets? SHOW MNPs SACHET **BSFPMNP**	Yes ..... 1 No ..... 2 Don't know 8	
CH18	Has [NAME OF CHILD] been vaccinated against measles?	Yes, card ..... 1 Yes, recall 2	|___|

	CHECK VACCINATION CARD (ONLY FOR CHILDREN OLDER THAN 9 MONTHS). **MEASLES**	No or don't know 3	
CH19	Has [NAME OF CHILD] received a vitamin A capsule in the past six months? CHECK VACCINATION/HEALTH CARD AND SHOW CAPSULE. **VITA**	Yes, card ..... 1 Yes, recall ..... 2 No or don't know 3	|___|
CH20	Was [NAME OF CHILD] given any drug for intestinal worms in the last six months? SHOW TABLET OF MEBENDAZOLE. **DEWORM**	Yes ..... 1 No ..... 2 Don't know 8	|___|
CH21	Has [NAME OF CHILD] had diarrhoea in the past 2 weeks? CASE DEFINITION: THREE OR MORE LOOSE OR LIQUID STOOLS DURING 24 HOURS. **DIAR**	Yes ..... 1 No ..... 2 Don't know 8	|___| **IF ANSWER IS 2 OR 8 GO TO CH24**
CH22	Did you give ORS sachets to [NAME OF CHILD] when s/he had diarrhoea? SHOW ORS SACHET. **DIARORS**	Yes ..... 1 No ..... 2 Don't know 8	|___|
CH23	Did you give zinc tablets or syrup to [NAME OF CHILD] when s/he had diarrhoea? SHOW ZINC TABLET OR SYRUP. **DIARZINC**	Yes ..... 1 No ..... 2 Don't know 8	|___|
CH24	Units of measurement of your HemoCue device (g/dL or g/L) **HBUNIT**	g/dL ..... gdl g/L ..... gl	|___|___|___|
CH25	[NAME OF CHILD]'s haemoglobin (Hb) in g/dL (±0.1 g/dL) or in g/L (±1g/L) APPLICABLE ONLY IF HB MEASURED IN G/DL: DON'T FORGET THE DECIMAL. **Lower limit=2.0 g/dL** **Upper limit=22.0 g/dL**		|___|___|. |___|g/dL OR |___|___|___|g/L

	CHHB		
CH26	**Automatic referral for child with signs of acute malnutrition who is not already enrolled in a nutrition programme:** • Child needs to be referred for moderate acute malnutrition (if MUAC<12.5 cm and MUAC≥11.5 cm and/or WHZ<-2 and WHZ≥-3 and if ENROL equals to 3 or 8). • Child needs to be referred for severe acute malnutrition (if MUAC<11.5 cm and/or WHZ<-3 and/or bilateral pitting oedema is yes and if ENROL equals to 3 or 8). FILL OUT A REFERRAL FORM: ONE SLIP IS FOR THE MOTHER/CAREGIVER AND THE OTHER IS FOR THE HEALTH FACILITY. **REFMAM/REFSAM**		
CH27	**Automatic referral for child who has severe anaemia:** • Child needs to be referred for severe anaemia (if Hb<7.0g/dL). FILL OUT A REFERRAL FORM: ONE SLIP IS FOR THE MOTHER/CAREGIVER AND THE OTHER IS FOR THE HEALTH FACILITY. **REFANEM**		
SECTION IYCF1: Breastfeeding Status of the Child 0-23 months (part 1) THIS SECTION IS TO BE ADMINISTERED TO THE MOTHER OR THE MAIN CAREGIVER WHO IS RESPONSIBLE FOR FEEDING THE CHILD AND THE CHILD SHOULD BE BETWEEN 0 AND 23 MONTHS OF AGE.			
Note	THESE QUESTIONS NEED TO BE ASKED TO THE MOTHER OR THE MAIN CAREGIVER WHO IS RESPONSIBLE FOR FEEDING THE CHILD.		
IF1	Has [NAME OF CHILD] ever been breastfed? **EVERBF**	Yes.....1 No.....2 Don't know.....8	|___| **IF ANSWER IS 2 or 8 GO TO IF4**
IF2	How long after birth did you first put [NAME OF CHILD] to the breast? **INITBF**	Less than one hour.....1 Between 1 and 23 hours.....2 More than 24 hours.....3 Don't know.....8	|___|
IF3	Was [NAME OF CHILD] breastfed yesterday during the day or at night? **YESTBF**	Yes.....1 No.....2 Don't know.....8	|___|
SECTION IYCF2: Breastfeeding Status of the Child 0-23 months (part 2) THIS SECTION IS TO BE ADMINISTERED TO THE MOTHER OR THE MAIN CAREGIVER WHO IS RESPONSIBLE FOR FEEDING THE CHILD AND THE CHILD SHOULD BE BETWEEN 0 AND 23 MONTHS OF AGE.			
IF4	Now I would like to ask you about liquids that [NAME OF CHILD] may have had yesterday during the day and at night. I am interested in whether your child had the item even if it was combined with other foods. Yesterday, during the day or at night, did [NAME] receive any of the following? ASK ABOUT EVERY LIQUID. EVERY QUESTION MUST HAVE AN ANSWER. IF ITEM WAS GIVEN, SELECT 'YES'. IF ITEM WAS NOT GIVEN, SELECT 'NO'. IF CAREGIVER DOES NOT KNOW, SELECT 'DON'T KNOW'.		

			Yes	No	DK
	4A. Plain water **WATER**	4A.....1		2	8
	4B. Infant formula, for example **Lactogen, NAN** **INFORM**	4B.....1		2	8
	4C. Milk such as tinned, powdered, or fresh animal milk, for example **Nido, Cowbell, Tanga Fresh, Al-mudhish, first choice** **MILK**	4C.....1		2	8
	4D. Juice or juice drinks, for example **Ceres, Azam, Mo juice**, **etc.** **JUICE**	4D.....1		2	8
	4E. Clear broth **BROTH**	4E.....1		2	8
	4F. Sour milk or yogurt, for example **Asas, Tanga Fresh, Serengeti, Dar Fresh, Mara Milk** **YOGURT**	4F.....1		2	8
	4G. Thin porridge, for example made with maize, sorghum, millet, cassava or finger millet **THINPOR**	4G.....1		2	8
	4H. Tea or coffee with milk **WHTEACOF**	4H.....1		2	8
	4I. Any other water-based liquids, for example sodas **Azam Cola, Pepsi, Twist, Coca cola**, other sweet drinks, herbal infusion, gripe water, **clear tea with no milk, black coffee**, ritual fluids (**togwa**) **WATLQD**	4I.....1		2	8
IF5	Yesterday, during the day or at night, did [NAME] eat solid or semi-solid (soft, mushy) food? **FOOD**	Yes.....1 No..... 2 Don't know..... 8		|___|	
SECTION IYCF3: Bottle Feeding for the Child 0-23 months					
IF6	Did [NAME OF CHILD] drink anything from a bottle with a nipple yesterday during the day or at night? **BOTTLE**	Yes.....1 No..... 2 Don't know..... 8		|___|	

SECTION IYCF4: Iron-fortified or Iron-rich Foods for the Child 6-23 months			
IF7	Now I would like to ask you about some particular foods [NAME OF CHILD] may eat. I am interested in whether your child had the item even if it was combined with other foods. Yesterday, during the day or at night, did [NAME] consume any of the following? ASK ABOUT EVERY ITEM. EVERY QUESTION MUST HAVE AN ANSWER. IF ITEM WAS GIVEN, SELECT 'YES'. IF ITEM WAS NOT GIVEN, SELECT 'NO'. IF CAREGIVER DOES NOT KNOW, SELECT 'DON'T KNOW'.	Yes No DK	
	7A. Any meat such as beef, pork, lamb, goat, chicken, liver, kidney, heart or other organ meats, fresh or dried fish, sardines, seafood, insects, etc. **FLESHFD**	7A.....1 2 8	
	7B. CSB+ **FBF**	7B.....1 2 8	
	7C. CSB++ **FBFSUPER**	7C.....1 2 8	
	7D. Plumpy'Nut® SHOW SACHET. **RUTF**	7D.....1 2 8	
	7G. Iron fortified infant formula, for example **Lactogen, NAN** **INFORMFE**	7G.....1 2 8	
	7H. Iron fortified solid, semi-solid or soft foods designed specifically for infants and young children, for example **Cerelac, Weetabix** **FOODFE**	7H.....1 2 8	
IF8	Yesterday, during the day or at night, did [NAME] consume any food to which you added a MNPs sachet like this? SHOW MICRONUTRIENT POWDER SACHET. **MNP**	Yes.....1 No..... 2 Don't know..... 8	|___|
ID9	Please take a GPS reading	|_____|	

	AVOID TAKING IT INSIDE THE HOUSE OR UNDER TREES (TO MAKE IT FASTER). **GPS**	
	Interviewer: I confirm that questionnaire is complete: yes/no	
	Supervisor: I confirm that questionnaire is complete.: yes/no MESSAGE TO INTERVIEWER: DO NOT ANSWER THIS QUESTION.	

WOMEN ANTHROPOMETRY, HEALTH & ANAEMIA
1 questionnaire per woman 15-49 years

THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO ALL ELIGIBLE WOMEN AGED BETWEEN 15 AND 49 YEARS IN THE SELECTED HOUSEHOLD.

No	QUESTION	ANSWER CODES	
SECTION IDENTIFICATION THIS SECTION IS TO BE COMPLETED IN ALL SELECTED HOUSEHOLDS. THIS MODULE IS MANDATORY TO COMPLETE.			
ID1	Camp Name **CAMPNAME**	|_____|	
ID3	Zone Code / Number **ZONE**		|___|___|
ID4	Village Code / Number **VILLAGE**		|___|___|
ID5	Date of interview (dd/mm/yyyy) **SURVDAT**	Day/Month/Year.....|___|___| /|___|___| / |___|___||___|___|	
ID6	Cluster Number **CLUSTER**		|___|___|
ID7	Team Number **TEAM**		|___|
ID8	Household Number **HH**		|___|___|

No	QUESTION	ANSWER CODES	
SECTION WM1: Details of the Woman 15-49 years THIS SECTION IS TO BE ADMINISTERED TO ALL ELIGIBLE WOMEN AGED BETWEEN 15 AND 49 YEARS IN THE SELECTED HOUSEHOLDS.			
Note	THESE QUESTIONS NEED TO BE ASKED TO EACH ELIGIBLE WOMAN.		
WM1	ID Number **WMID**		|___|
WM2	Was consent given for conducting the interview and the measurements? ENSURE THAT YOU HAVE INTRODUCED THE TEAM AND INFORMED THEM ABOUT THE INTERVIEW AND THE MEASUREMENTS.	Yes ..... 1 No ..... 2 Absent 3	|___| **IF ANSWER IS 2 OR 3 STOP HERE**

	WMCONST		
WM3	Name of the woman ONLY WRITE FIRST NAME. **WMNAME**	|_____|	
WM4	Age of [NAME OF WOMAN] in years ONLY WOMEN BETWEEN 15 AND 49 ARE BEING INTERVIEWED. **Lower limit=15 years** **Upper limit=49 years** **WMAGE**		|___|___|years
SECTION WM2: Anthropometry, Physiological and Anaemia Status of the Woman 15-49 years THIS SECTION IS TO BE ADMINISTERED TO ALL ELIGIBLE WOMEN BETWEEN 15 AND 49 YEARS IN THE SELECTED HOUSEHOLD.			
WM5	Are you pregnant? **PREGNANT**	Yes ..... 1 No ..... 2 Don't know 8	|___| **IF ANSWER IS 2 OR 8 GO TO WM8**
WM6	Are you currently enrolled in the ANC programme? **ANC**	Yes ..... 1 No ..... 2 Don't know 8	|___|
WM7	Are you currently receiving iron-folate pills? SHOW PILL. **FEREC**	Yes ..... 1 No ..... 2 Don't know 8	|___|
WM8	Are you currently breastfeeding? **LACTAT**	Yes ..... 1 No ..... 2 Don't know 8	|___| **IF ANSWER IS 2 OR 8 GO TO WM11**
WM9	Is the child you are breastfeeding younger than 6 months old? **LACTATU6**	Yes ..... 1 No ..... 2 Don't know 8	|___| **IF ANSWER IS 2 OR 8 GO TO WM11**
WM10	In the first two months after delivery, did you receive a vitamin A supplementation? SHOW CAPSULE. **WMVITA**	Yes ..... 1 No ..... 2 Don't know 8	|___|

WM11	Are you currently enrolled in the BSFP? SHOW CSB++ SACHET. **WMBSFP**	Yes ..... 1 No ..... 2 Don't know 8	|___|
WM12	[NAME OF WOMAN]'s MUAC in cm (±0.1cm) MEASURE LEFT ARM. DON'T FORGET THE DECIMAL. **Lower limit=16.0 cm** **Upper limit=50.0 cm** **WMMUAC**		|___|___|. |___| cm
WM13	Units of measurement of your HemoCue device (g/dL or g/L) **WMHBUNIT**	g/dL ..... gdl g/L ..... gl	|___|
WM14	[NAME OF WOMAN]'s haemoglobin in g/dL (±0.1 g/dL) or in g/L (±1g/L) APPLICABLE ONLY IF HB MEASURED IN G/DL: DON'T FORGET THE DECIMAL. **Lower limit=2.0 g/gL** **Upper limit=22.0 g/dL** **WMHB**		|___|___|. |___| g/dL OR |___|___|___| g/L
ID9	Please take a GPS reading AVOID TAKING IT INSIDE THE HOUSE OR UNDER TREES (TO MAKE IT FASTER). **GPS**	|_____|	
WM15	**Automatic referral for woman who has severe anaemia:** Woman needs to be referred for severe anaemia (if Hb<8.0g/dL). FILL OUT A REFERRAL FORM: ONE SLIP IS FOR THE WOMAN AND THE OTHER IS FOR THE HEALTH FACILITY. **WMREFAN**		
	Interviewer: I confirm that questionnaire is complete: yes/no		
	Supervisor: I confirm that questionnaire is complete.: yes/no MESSAGE TO INTERVIEWER: DO NOT ANSWER THIS QUESTION.		

Appendix 5: Local event calendar used to estimate age – Sept 2023

Calendar of Events 2018-2023 – SENS Surveys, Refugee Camps, Tanzania – Data Collection: September					
Season & Agricultural calendar	**Religious Holidays/National Holidays**	**National Events**	**Regional / Local Events**	**Month / Year**	**Age (month)**
Beginning long rain		Primary School National Exam		September 2023	0
Dry season	Nane Nane day: 8th Eid El Adha: 12th			August 2023	1
Dry season Start cotton selling	Saba Saba day: 7th		Rwandan independence and Liberation Day	July 2023	2
Dry season Cotton harvesting	End of Ramadan: 3rd WRD: 20th	Vitamin A/Deworming Mass campaign		June 2023	3
End long rain Cotton harvesting	Worker's day: 1st Beginning of Ramadan: 5th		Gatumba events	May 2023	4
End long rain	Sheikh Abeid Amani Karume day: 7th Easter: 21st Union Day: 26th		Genocide	April 2023	5
Long rain	Women's day: 8th			March 2023	6
Long rain	Valentine's day: 14th		Heroes Day on 1st Rentree scolaire: 2nd	February 2023	7
Long rain	New Year's Day: 1st Zanzibar Revolution: 12th			January 2023	8
Long rain Cotton planting	HIV/AIDS day: 1st Independence Day: 9th Christmas: 25th Boxing day: 26th	Vitamin A/Deworming Mass campaign	Umunsi w'abamugaye, Iminsi 16 yo kurwanya ihohoterwa	December 2022	9
Long rain Cotton planting	Mawlid: 20th			November 2022	10
Beginning long rain Cotton planting	Nyerere Day: 14th			October 2022	11
Beginning long rain		Primary School National Exam		September 2022	12
Dry season	Nane Nane day: 8th Eid El Adha: 21st		Rwandan independence and Liberation Day	August 2022	13
Dry season Start cotton selling	Saba Saba day: 7th			July 2022	14
Dry season	End of Ramadan: 15th	Vitamin A/Deworming Mass campaign	Gatumba events	June 2022	15

Cotton harvesting	WRD: 20th				
End long rain Cotton harvesting	Worker's day: 1st Beginning of Ramadan: 16th		Genocide	May 2022	16
End long rain	Easter: 1st Sheikh Abeid Amani Karume day: 7th Union Day: 26th			April 2022	17
Long rain			Heroes Day on 1st Rentree scolaire: 2nd	March 2022	18
Long rain	Valentine's day: 14th			February 2022	19
Long rain	New Year's Day: 1st Zanzibar Revolution: 12th		Umunsi w'abamugaye, Iminsi 16 yo kurwanya ihohoterwa	January 2022	20
Long rain Cotton planting	HIV/AIDS day: 1st Independence Day: 9th Christmas: 25th Boxing day: 26th	Vitamin A/Deworming Mass campaign		December 2021	21
Long rain Cotton planting	Mawlid: 30th			November 2021	22
Beginning long rain Cotton planting	Nyerere Day: 14th			October 2021	23
Beginning long rain		Primary School National Exam		September 2021	24
Dry season	Nane Nane day: 8th Eid El Adha:31st		Rwandan independence and Liberation Day	August 2021	25
Dry season Start cotton selling	Saba Saba day: 7th			July 2021	26
Dry season Cotton harvesting	End of Ramadan:24th WRD: 20th	Vitamin A/Deworming Mass campaign	Gatumba events	June 2021	27
End long rain Cotton harvesting	Worker's day: 1st Beginning of Ramadan: 26th		Genocide	May 2021	28
End long rain	Sheikh Abeid Amani Karume day: 7th Easter: 16th Union Day: 26th			April 2021	29
Long rain			Heroes Day on 1st Rentree scolaire: 2nd	March 2021	30
Long rain	Valentine's day: 14th			February 2021	31

Long rain	New Year's Day: 1st Zanzibar Revolution: 12th		Umunsi w'abamugaye, Iminsi 16 yo kurwanya ihohoterwa	January 2021	32
Long rain Cotton planting	HIV/AIDS day: 1st Independence Day: 9th Mwalid: 11th Christmas: 25th Boxing day: 26th	Vitamin A/Deworming Mass campaign		December 2020	33
Long rain Cotton planting				November 2020	34
Beginning long rain Cotton planting	Nyerere Day: 14th			October 2020	35
Beginning long rain	Eid El Adha:12th	Primary School National Exam		September 2020	36
Dry season	Nane Nane day: 8th		Rwandan independence and Liberation Day	August 2020	37
Dry season Start cotton selling	End of Ramadan: 5th Saba Saba day: 7th			July 2020	38
Dry season Cotton harvesting	Beginning of Ramadan: 6th WRD: 20th	Vitamin A/Deworming Mass campaign	Gatumba events	June 2020	39
End long rain Cotton harvesting	Worker's day: 1st		Genocide	May 2020	40
End long rain	Sheikh Abeid Amani Karume day: 7th Union Day: 26th			April 2020	41
Long rain	Easter: 27th		Heroes Day on 1st Rentree scolaire: 2nd	March 2020	42
Long rain	Nilad-un-Nabi: 4th Valentine's day: 14th			February 2020	43
Long rain	New Year's Day: 1st Zanzibar Revolution: 12th		Umunsi w'abamugaye, Iminsi 16 yo kurwanya ihohoterwa	January 2020	44
Long rain Cotton planting	HIV/AIDS day: 1st Independence Day: 9th Christmas: 25th Boxing day: 26th	Vitamin A/Deworming Mass campaign Swearing ceremony		December 2019	45
Long rain Cotton planting				November 2019	46

Beginning long rain Cotton planting	Nyerere Day: 14th	Presidential Elections		October 2019	47
Beginning long rain	Eid El Adha:23rd	Primary School National Exam		September 2019	48
Dry season	Nane Nane day: 8th		Rwandan independence and Liberation Day	August 2019	49
Dry season Start cotton selling	Saba Saba day: 7th End of Ramadan: 16th			July 2019	50
Dry season Cotton harvesting	Beginning of Ramadan: 17th WRD: 20th	Vitamin A/Deworming Mass campaign	Gatumba events	June 2019	51
End long rain Cotton harvesting	Worker's day: 1st		Genocide	May 2019	52
End long rain	Sheikh Abeid Amani Easter: 5th Karume day: 7th Union Day: 26th			April 2019	53
Long rain			Heroes Day on 1st Rentree scolaire: 2nd	March 2019	54
Long rain	Valentine's day: 14th			February 2019	55
Long rain	New Year's Day: 1st Mawlid: 2nd Zanzibar Revolution: 12th		Umunsi w'abamugaye, Iminsi 16 yo kurwanya ihohoterwa	January 2019	56
Long rain Cotton planting	HIV/AIDS day: 1st Independence Day: 9th Christmas: 25th Boxing day: 26th	Vitamin A/Deworming Mass campaign		December 2018	57
Long rain Cotton planting				November 2018	58
Beginning long rain Cotton planting	Eid El Adha:4th Nyerere Day: 14th			October 2018	59
Beginning long rain		Primary School National Exam		September 2018	60