JOINT STANDARDIZED EXPANDED NUTRITION SURVEY FINAL REPORT FOR ASSOSA (SHERKOLE, BAMBASI, TONGO, TSORE AND GURE SHEMBOLA) REFUGEE CAMPS BENISHANGUL GUMUZ REGION – ETHIOPIA

SURVEYS CONDUCTED: 09th – 31st October 2017

REPORT COMPLETED: DECEMBER 2017

Jointly coordinated by UNHCR, ARRA, WFP and AAH

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ABBREVIATIONS AND ACRONYMS

AAH	Action Against Hunger
ARRA	Administration for Refugee & Returnee Affairs
BSFP	Blanket Supplementary Feeding Program
CSB+	Corn-Soya-Blend plus
GAM	Global Acute Malnutrition
GFD	General Food Distribution
Hb	Haemoglobin
HFA	Height-for-Age
HAZ	Height-for-Age Z-score
HH	Household
IP	Implementing Partner
IYCF	Infant and young children feeding
Kcal	Kilocalorie
Kg	Kilogram
MUAC	Mid-Upper Arm Circumference
NGO	Non-Governmental Organization
OTP	Outpatient Therapeutic feeding Program
SAM	Severe Acute Malnutrition
SC	Stabilization Center
SFP	Supplementary Feeding Program
TFP	Therapeutic Feeding Program
TSFP	Targeted Supplementary Feeding Program
UNHCR	United Nations High Commissioner for Refugees
WASH	Water Sanitation and Health
WFA	Weight-for-Age
WHZ	Weight-for-Height / Length Z-score
WFH	Weight-for-Height
WFP	World Food Programme
WHO	World Health Organization

ACKNOWLEDGEMENTS

The nutrition and health surveys (2017) in Assosa camps were coordinated jointly by UNHCR, WFP, ARRA and AAH. We would like to recorgnise the important contributions made by individuals and organizations that ensured the smooth implementation of these surveys.

We would also like to acknowledge all agencies involved in planning and conducting the surveys. Our sincere appreciation is extended to ARRA, WFP, and AAH, for providing staff logistics support and supplies for the nutrition surveys. We would like to extend our sincere gratitude to UNHCR nutrition staff, national staff and incentives from both agencies (ARRA and AAH) who have participated in the surveys.

Finally, we sincerely thank the refugees in Assosa camps especially women of reproductive age and children who cooperated with the survey teams in the provision of information and allowed us to take the necessary measurements.

Executive Summary

Assosa refugee camps are situated in Benishangul Gumuz regional state which is located in the West part of Ethiopia. UNHCR Assosa Sub Office comprises five camps namely Sherkole, Bambasi, Tongo, Tsore and the newly established Gure Shembola. In 2017, Standardized Expanded Nutrition Surveys (SENS) were conducted by UNHCR in collaboration with WFP, ARRA and AAH from 9th of October to 31st of October 2017 in all camps.
This was a follow up to the previous SENS surveys conducted in August 2013 and October 2015 with the exception of Gure Shembola camp. Anthropometry and health, Anaemia, Infant and young child feeding (IYCF), Food security, Water, Sanitation and Hygiene (WASH) following the UNHCR SENS guidelines and SMART methodology were covered in all camps. Mortality data was also collected in addition of the above SENS standard Modules.

Objectives of the survey: The overall objective of the health and nutrition survey was to assess the nutritional and health status of the refugee population and deduce workable recommendations to address identified gaps.

Methodology:

The surveys were based on the UNHCR Standardized Expanded Nutrition Survey (SENS) guidelines and SMART methodology for refugee camps. The data were collected by using SMART phones, preinstalled with Open Data Kit (ODK) app Version 1.4.10 for android operating system. Sample sizes were calculated based on the prior prevalence of global acute malnutrition (the higher confidence interval for GAM prevalence). Except for Gure Shembola where the survey was executed exhaustively for all households, Simple Random Sampling Technique was employed in the other four camps.

Two survey groups each with six teams consisting of 6 members (where some of the members replace each other in respective camps) were organized. Each team comprised; team leader, interviewer, translator, anthropometric measurer, anthropometric assistant and haemoglobin measurer. Team leaders and Interviewers were trained for five days in Assosa while measurers for anthropometric and translators were refreshed before commencing the actual survey followed by standardization and pilot test.

The teams collected data simultaneously in the two camps. During data collection, supervisors were assigned to each team. Overall survey activities were coordinated by SENS coordinators from UNHCR, WFP and ARRA in two different locations at the same time. After collecting data for four camps within two weeks, the two core groups were reorganized to conduct the last camp with one of the UNHCR SENS coordinator. The two coordinators were mainly monitoring and following up of the daily data quality by checking the plausibility of the data and giving feedback to data collectors every morning.

Questionnaires for all the SENS modules were uploaded onto android mobile phones for data collection at household and individual level indicators. Every night questionnaires were checked against templates of household lists and for completion. Upon clearance, data were uploaded to server. Anthropometric data was downloaded and analysed for measurement quality of the measurer and feedback was given.

All eligible children aged 0-59 months who are sampled were included in the assessment of anthropometry, measles vaccination and vitamin A coverage, enrolment in the nutrition program, and diarrhoea for the recall period of the last two weeks, haemoglobin test (assessment of nutritional anaemia) where applicable and infant and young child feeding in children aged 0-23 months in all camps except Gure Shembola where all an exhaustive survey was conducted. Household Food Security, WASH and the Women questionnaires were administered in every

other household. ENA for SMART software version 9th July 2015 was employed to analyse anthropometric and mortality data, and Epi info version 3.5.4 was used to analyse other variables.

Summary of key findings

Table 1: Summary of key findings SENS 2017 Refugee camps Assossa – Ethiopia

	Sherkole (% 95% CI)		Bambasi (% 95% CI)		Tongo (% 95% CI)		Tsore (% 95% CI)		Gure-Shembola (Exhaustive)		Classification of public health significance
	No/total	%	No/total	%	No/total	%	No/total	%	No/total	%	
CHILDREN 6-59 months											
Acute Malnutrition (WHO 2006 Growth Standards)											
Prevalence of global malnutrition (<-2 z-score and/or oedema)	18/290	6.2 % (4.0 - 9.6%)	24/372	6.5 % (4.4 - 9.4%)	45/394	11.4 % (8.6 - 14.9%)	30/387	7.8 % (5.5 - 10.9%)	47/483	9.7 %	Critical if ≥ 15%
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	16/290	5.5 % (3.4 - 8.8%)	21/372	5.6 % (3.7 - 8.5%)	34/394	8.6 % (6.2 - 11.8%)	27/387	7.0 % (4.8 - 10.0%)	43/483	8.9 %	
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	2/290	0.7 % (0.2 - 2.5%)	3/372	0.8 % (0.3 - 2.3%)	11/394	2.8 % (1.6 - 4.9%)	3/387	0.8 % (0.3 - 2.3%)	4/483	0.8 %	
Oedema	0/290	0.0%	0/372	0.0%	0/394	0.0%	0/387	0.0%	0/483	0.0%	
Stunting (WHO 2006 Growth Standards)											
Prevalence of stunting (<-2 z-score)	64/276	23.2 % (18.6-28.5%)	132/362	36.5 % (31.7-41.5%)	204/390	52.3 % (47.4-57.2%)	71/377	18.8 % (15.2 - 23.1%)	44/439	10.0 %	Critical if ≥ 40%
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	54/277	19.5 % (15.3 - 24.6%)	87/362	24.0 % (19.9 - 28.7%)	131/390	33.6% (29.1-38.4%)	52/377	13.8 % (10.5 - 17.9%)	38/439	8.7 %	
Prevalence of severe stunting (<-3 z-score)	10/276	3.6 % (2.0 - 6.5%)	45/362	12.4 % (9.4-16.2%)	73/390	18.7 % (15.2-22.9%)	19/377	5.0 % (3.2 - 7.7%)	6/439	1.4 %	
Mid Upper Arm											

	Sherkole (% 95% CI)		Bambasi (% 95% CI)		Tongo (% 95% CI)		Tsore (% 95% CI)		Gure-Shembola (Exhaustive)		Classification of public health significance
	No/total	%	No/total	%	No/total	%	No/total	%	No/total	%	
Circumference (MUAC)											
Prevalence of global malnutrition (< 125 mm and/or oedema)	15/297	5.1 % (3.1 - 8.2%)	18/377	4.8 % (3.0 - 7.4%)	17/402	4.2% (2.7-6.7%)	22/391	5.6 % (3.7 - 8.4%)	12/503	2.4 %	
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	14/297	4.7 % (2.8 - 7.8%)	15/377	4.0 % (2.4 - 6.5%)	15/402	3.7% (2.3-6.1%)	21/391	5.4 % (3.5 - 8.2%)	9/503	1.8 %	
Prevalence of severe malnutrition (< 115 mm and/or oedema)	1/297	0.3 % (0.1 - 1.9%)	3/377	0.8 % (0.3 - 2.3%)	2/402	0.5% (0.1-1.8%)	1/391	0.3 % (0.0 - 1.9%)	3/503	0.6 %	
Programme coverage											
OTP (based on all admission criteria WHZ, Edema and MUAC)	1/5	20.0% (0.5-71.6%)	2/7	28.6% (3.7-71.0%)	2/12	16.7% (2.1-48.4%)	1/5	20.0% (0.5-71.6%)	1/6	16.7%	>90%
TSFP (based on all admission criteria WHZ, and MUAC)	5/28	17.9% (6.1-36.9%)	5/31	16.1% (5.5-33.7%)	16/43	37.2% (23.0-53.3%)	13/42	31.0% (17.6-47.1%)	12/42	28.6%	
BSFP (6-23 months)	53/77	68.8% (57.3-78.9%)	45/122	36.9% (28.3-46.1%)	39/127	30.7% (22.8-39.5%)	79/121	65.3% (56.1-73.7%)	47/136	34.6%	
Measles vaccination with card (9-59 months)	176/275	64.0% (58-69.7%)	177/349	50.7% (45.3-56.1%)	199/382	52.1% (47.0-57.2%)	108/361	29.8% (25.2-34.9%)	2/475	0.4%	
Measles vaccination with card or recall (9-59 months)	264/275	96.0% (93.0-98.0)	343/349	98.3% (96.1-99.3%)	370/382	96.9% (94.4-98.3%)	312/361	86.4% (82.5-89.8%)	326/475	68.6%	Target of ≥ 95%
Vitamin A supplementation coverage with card, within past 6 months (6-59 months)	102/279	40.8% (35.9-46.0%)	154/377	40.8% (35.9-46.0%)	128/399	32.1% (27.6-36.9%)	72/389	18.5% (14.8-22.8%)	2/503	0.4%	Target of ≥ 90%

	Sherkole (% 95% CI)		Bambasi (% 95% CI)		Tongo (% 95% CI)		Tsore (% 95% CI)		Gure-Shembola (Exhaustive)		Classification of public health significance
	No/total	**%**	**No/total**	**%**	**No/total**	**%**	**No/total**	**%**	**No/total**	**%**	
Vitamin A supplementation within past 6 months with card or recall	296/297	99.7% (98.1-100%)	370/377	98.1% (96.0-99.2%)	394/399	98.7% (96.9-99.5%)	383/389	98.5% (96.5-99.4%	386/503	76.7%	
Diarrhoea											
Diarrhoea in last 2 weeks	22/296	7.4% (4.7-11.0%)	14/375	3.7% (2.1-6.3%)	65/400	16.3% (12.8-20.3%)	28/391	7.2% (4.9-10.3%)	92/503	18.3%	
Anaemia											
Total Anaemia (Hb <11 g/dl)	79/295	26.8% (21.8-32.2%)	101/376	26.9% (22.5-31.7%)	98/400	24.5% (20.4-29.1%)	110/390	28.2% (23.8-33.0%)	144/499	28.9%	High if ≥ 40%
Mild (Hb 10-10.9)	46/295	15.6% (11.6-20.2%)	64/376	17.0% (13.4-21.3%)	63/400	15.8% (12.4-19.8%)	80/390	20.5% (16.7-24.9%)	84/499	16.8%	
Moderate (Hb 7-9.9)	32/295	10.8% (7.5-15.0%)	36/376	9.6% (6.9-13.1%)	35/400	8.8% (6.3-12.1%)	29/390	7.4% (5.1-10.6%)	60/499	12%	
Severe (Hb <7)	1/295	0.3% (0.0-1.9%)	1/376	0.3% (0.0-1.7%)	0/400	0.0%	1/390	0.3% (0.0-1.6%)	0/499	0.0%	
CHILDREN 0-23 months											
IYCF indicators											
Timely initiation breast feeding	117/136	86.0% (79.0-91.4)	150/177	84.7% (78.6-89.7%)	134/165	81.2% (74.4-86.9%)	157/175	89.7% (84.2-93.8%)	153/195	78.5%	
Exclusive breastfeeding under 6 months	35/38	92.1% (78.6-99.3%)	47/51	92.2% (81.1-97%)	36/37	97.3% (85.8-99.9%)	43/48	89.6% (77.3-96.5)	33/36	91.7%	
Continued breastfeeding at 1 year (12-15 months)	28/32	87.5% (71.0-96.5)	21/25	84.0 % (63.9-95.5%)	30/34	88.2 (72.5-96.7%)	27/30	90.0% (73.5-97.9%)	34/36	94.4%	
Continued breastfeeding at 2 years (20-23 months)	5/10	50.0% (18.7-81.3%)	10/15	66.7 % (38.4-88.2%)	14/30	46.7 (28.3-65.7%)	13/16	81.3% (54.4-96.0%)	13/25	52.0%	
Introduction of solid, semi-solid or soft foods (6-8 months)	14/22	63.6% (40.7-82.8)	15/28	53.6% (33.9-72.5)	6/17	35.3 (14.2-61.7%)	21/29	72.4% (52.8-87.3)	34/36	94.4%	

	Sherkole (% 95% CI)		Bambasi (% 95% CI)		Tongo (% 95% CI)		Tsore (% 95% CI)		Gure-Shembola (Exhaustive)		Classification of public health significance
	No/total	**%**	**No/total**	**%**	**No/total**	**%**	**No/total**	**%**	**No/total**	**%**	
Consumption of iron-rich or iron-fortified foods (6-23 months)	28/32	87.5% (71.0-96.5)	21/25	84.0% (63.9-95.5%)	98/117	83.8 (75.8-89.9)	104/124	83.9% (76.2-89.9%)	13/25	52.0%	
Bottle feeding (0-23 months)	1/136	0.7% (0.0-4.0)	4/177	2.3% (0.6-5.7%)	0/165	0.0%	176/176	0.0%	4/204	2.0	
WOMEN 15-49 years											
Anaemia (non-pregnant)											
Total Anaemia (Hb <12 g/dl)	15/143	10.5% (6.0-16.7%)	11/139	7.9% (4.0-13.7%)	13/134	9.7% (5.3-16.0%)	14/139	10.1% (5.6-16.3%)	30/274	10.9%	High if ≥ 40%
Mild (Hb 11-11.9)	8/143	5.6% (2.4-10.7%)	7/139	5.0% (2.0-10.1%)	12/134	9.0% (4.7-15.1%)	12/139	8.6% (4.5-14.6%)	25/274	9.1%	
Moderate (Hb 8-10.9)	7/143	4.9% (2.0-9.8%)	3/139	2.2% (0.4-6.2%)	1/134	0.7% (0.0-4.1%)	2/139	1.4% (0.2-5.1%)	5/274	1.8%	
Severe (Hb <8)	0/143	0.0%	1/139	0.7% (0.0-3.9%)	0/134	0.0%	0/139	(0) 0.0%	0/274	0.0%	
Programme coverage , pregnant and lactating											
Pregnant women currently enrolled in the ANC	18/20	90.0% (68.3-95.7%)	34/35	97.1% (85.1-99.9%)	24/28	85.7 (67.3-96.0%)	23/26	88.5% (69.8-97.6%)	50/56	89.3 (78.1-96.0%)	
Pregnant women currently receiving Iron-folic acid pills	17/20	85.0% (62.1-96.8%)	31/35	88.6% (73.3-96.8%)	18/28	64.3 (44.1-81.4%)	21/26	80.8% (60.6-93.4%)	40/56	71.4 (57.8-82.7%)	
FOOD SECURITY											
Food distribution											
Proportion of household with a ration card	186/186	100.0%	196/196	100.0%	176/176	100%	202/202	100.0%	250/250	100%	
Average number of days GFR lasts out of [30 days cycle] days[1]	16.6		17.82		16.26		14.94		21.38		

[1] The duration include food items purchased from cash component in addition to in-kind food items received from general distribution.

	Sherkole (% 95% CI)		Bambasi (% 95% CI)		Tongo (% 95% CI)		Tsore (% 95% CI)		Gure-Shembola (Exhaustive)		Classification of public health significance
	No/total	%	No/total	%	No/total	%	No/total	%	No/total	%	
Average HDDS	4.9 (SD 2.1)		4.59 (SD 1.67)		4.59 (SD 1.67)		4.2 (SD =2.26)		2.99 (1.44SD)		
Proportion of households reporting using the following coping strategies over the past month*:											
Borrowed cash, food or other items with or without interest	174/186	93.5% (89.0-96.6%)	131/181	72.4% (65.3-78.7%)	141/176	80.1 (73.4-85.7%)	191/201	95.0% (91.0-97.6%)	120/249	48.2 (41.8-54.6%)	
Sold any assets that would not have normally sold (furniture, seed stocks, tools, other NFI, livestock etc.)	33/153	17.7% (12.5-24.0%)	72/181	39.8% (32.6-47.3%)	97/176	55.1 (47.4-62.6%)	48/200	24.0% (18.3-30.5%)	93/249	37.3 (31.3-43.7%)	
Requested increased remittances or gifts as compared to normal	5/181	2.7% (0.9-6.2%)	20/180	11.1% (6.9-16.6%)	7/175	4.0 (1.6-8.1%)	4/201	2.0% (0.5-5.0%)	9/249	3.6 (1.7-6.8%)	
Reduced the quantity and/or frequency of meals and snacks	156/186	83.9% (77.8-88.8%)	156/181	86.2% (80.3-90.9%)	129/176	73.3 (66.1-79.7%)	168/201	83.6% (77.7-88.4%)	140/250	56.0 (49.6-62.2)	
Begged	1/186	0.5% (0.0-3.0%)	9/181	5.0% (2.3-9.2%)	8/176	4.5 (2.0-8.8%)	19/201	9.5% (5.8-14.4%)	4/247	1.6 (0.4-4.1%)	
Engaged in potentially risky or harmful activities	8/186	4.3% (1.9-8.3%)	40/180	22.2% (16.3-28.9%)	37/175	21.1 (15.3-27.9%)	6/201	3.0% (1.1-6.4%)	27/248	10.9 (7.3-15.4%)	
Proportion of households reporting using none of the coping strategies over the past month	1/186	0.5% (0.0-3.0%)	4/178	2.2% (0.6-5.7%)	3/174	1.7 (0.4-5.0%)	2/200	1.0% (0.1-3.6%)	19/247	7.7 (4.7-11.8)	
WASH											
Water quality											

	Sherkole (% 95% CI)		Bambasi (% 95% CI)		Tongo (% 95% CI)		Tsore (% 95% CI)		Gure-Shembola (Exhaustive)		Classification of public health significance
	No/total	**%**	**No/total**	**%**	**No/total**	**%**	**No/total**	**%**	**No/total**	**%**	
Proportion of households using improved drinking water source	187/187	100.0%	197/198	99.5% (97.2-100%)	189/191	99.0% (96.3-99.9%)	202/202	100.0%	460/462	99.6% (98.3-99.9%)	
Proportion of households that use a covered or narrow necked container for storing their drinking water	108/186	58.1% (50.6-65.2%)	126/197	64.0% (56.8-70.7%)	99/192	51.6 (44.3-58.8)	96/202	47.5% (40.5-54.7%)	322/463	69.5 (65.1-73.7%)	
Water quantity: Proportion of households that use:											
≥ 20 lpppd	144/187	77.0% (70.3-82.8%)	80/198	40.4% (33.5-47.6%)	74/192	38.5% (31.6-45.8%)	130/202	64.4% (57.3-71.0%)	151/463	32.6 % (28.3-37.1%)	UNHCR target ≥ 20 litres per person / day
15 - <20 lpppd	25/187	13.4% (8.8-19.1%)	48/198	24.2% (18.4-30.8%)	35/192	18.2% (13.0-24.4%)	37/202	18.3% (13.2-24.4%)	77/463	16.6% (13.4-20.4%)	
<15 lpppd	18/187	9.5% (5.8-14.8%)	70/198	35.4% (28.7-42.4%)	83/192	43.2% (36.1-50.6%)	35/202	17.3% (12.4-23.3%)	235/463	50.8% (46.1-55.4%)	
Average consumption (Liters per person per day)	28.7LPPPD		19.58LPPPD		17.76LPPPD		24.6LPPPD		15.77LPPPD		
Proportion of households that say they are satisfied with the drinking water supply	302/346	87.3 (79.3-95.2%)	181/198	91.4% (86.6-94.9%)	130/192	67.7 (60.6-74.3%)	200/202	99.0% (96.5-99.9%)	299/463	64.6% (60.0-68.9%)	
Safe excreta disposal Proportion of households that use:											
An improved excreta disposal facility (improved toilet facility, 1 household)	67/181	37.0% (30.0-44.5%)	140/198	70.7% (63.8-76.9%)	133/158	84.2 (77.5-89.5%)	96/200	48.0% (40.9-55.2%)	136/428	31.8% (27.4-36.5%)	

	Sherkole (% 95% CI)		Bambasi (% 95% CI)		Tongo (% 95% CI)		Tsore (% 95% CI)		Gure-Shembola (Exhaustive)		Classification of public health significance
	No/total	**%**	**No/total**	**%**	**No/total**	**%**	**No/total**	**%**	**No/total**	**%**	
A shared family toilet (improved toilet facility, 2 households)	28/181	15.5% (10.5-21.6%)	4/198	2.0% (0.6-5.1%)	21/158	13.3% (8.4-19.6%)	43/200	21.5% (16.0-27.8%)	38/428	8.9% (6.4-12.1%)	
A communal toilet (improved toilet facility, 3 households or more)	76/181	42.0% (34.7-49.5%)	50/198	25.3% (19.4-31.9%)	3/158	1.9% (0.4-5.4%)	43/200	21.5% (16.0-27.8%)	220/428	51.4% (46.6-56.2%)	
An unimproved toilet (unimproved toilet facility or public toilet)	10/181	5.5% (2.7-9.9%)	4/198	2.0% (0.6-5.1%)	1/158	0.6% (0.0-3.5%)	18/200	9.0% (5.4-13.9%)	34/428	7.9% (5.6-11.0%)	
Proportion of households with children under three years old that dispose of faeces safely	95/98	96.9% (91.3-99.4%)	126/126	100.0%	113/117	96.6 (91.5-99.1%)	105/110	95.5% (89.7-98.5%)	255/274	93.1% (89.4-95.8%)	
MOSQUITO NET COVERAGE											
Mosquito net ownership											
Proportion of households owning at least one mosquito net of any type	82/201	96.5% (93.0-98.6)	89/200	44.5% (37.5-51.7)	18/193	9.3 (5.6-14.3)	NA	NA	250/463	54.0% (49.3-58.6)	Target of >80%
Proportion of households owning at least one LLIN	75/201	37.3% (30.6-44.4%)	89/200	44.5% (37.5-51.7%)	10/193	5.2% (2.5-9.3%)	[2]NA	NA	238/463	51.4% (46.8-56.0%)	
Average number of persons per LLIN (Mean)	7.94		7.1		5.1		NA		5.03		2 persons per LLIN

[2]NA: Mosquito net module were not included in Tsore camp due to the absence of mosquito net distribution.

	Sherkole (% 95% CI)		Bambasi (% 95% CI)		Tongo (% 95% CI)		Tsore (% 95% CI)		Gure-Shembola (Exhaustive)		Classification of public health significance
	No/total	**%**	**No/total**	**%**	**No/total**	**%**	**No/total**	**%**	**No/total**	**%**	
Proportion of total population (all ages) Slept under net of any type	257/905	28.4%	265/1010	26.2	51/988	5.2%	NA		1051/2231	47.1	
Proportion of total population (all ages) Slept under LLIN	234/905	25.9%	263/1010	26.0	26/988	2.6	NA		1021/2231	45.7	
Indoor residual spraying											
Proportion of households covered by IRS	194/210	96.5% (93.0-98.6%)	198/199	99.5% (97.2-100%)	0	0%	NA	NA	186/463	40.2% (35.7-44.8%)	
Crude Death/mortality rate											
CMR (total deaths/10,000 people / day): (95% CI)	0.11 (0.03 -0.46%)		0.06 (0.01 -0.48%)		0.13 (0.1-1.56%)		0.13 (0.03-0.53%)		0.0		Target <1/10,000
U5MR (deaths in children under five/10,000 children under five / day): (95% CI)	0.29 (0.04-2.14%)		0.29 (0.04-2.25%)		0.0		0.33 (0.04-2.45%)		0.0		Target <2/10,000

SUMMARY OF KEY FINDINGS

Summary of Results and Key points

- The prevalence of Global Acute malnutrition (GAM) has remained below 10.0% in all camps except for Tongo refugee camp with 11.4%. Nutrition situation remains the same in all camps as there was no statistically significant change was observed when compared to the SENS result of 2015. The average weighted prevalence of GAM remained almost the same (8.0% in 2017 vs. 8.2% in 2015) while a slight change was noted for SAM (1.1% in 2017 vs. 0.8% in 2015) all which were still within the UNHCR acceptable levels.

- Prevalence of anaemia in the five refugee camps among children age 6-59 months ranged between 24.5% to 28.9% (categorized as medium public health significance by WHO classifications of public health significance) while in women of reproductive age (non-pregnant and 15-49 years) the prevalence was below 20%, acceptable by UNHCR and WHO standards.

- Coverage of BSFP for children aged 6 – 23 months in Bambasi, Tsore and Gure-Shembola was as low at 39%, 31% and 32% respectively. Investigations to explore reasons for the low enrolment are imperative for further improvement of nutritional status of children in the three camps by ensuring access for all of this preventive programme.

- The prevalence of stunting (chronic malnutrition) in Assosa refugee camps remained below the WHO emergency threshold of 40% except for Tongo. Prevalence of stunting however, was only at UNHCR acceptable level of <20% in the two camps of Sherkole and Tsore.

- The prevalence of diarrhoea is slighly high in Gure-Shemebola and Tongo at 18.3% and 16.3% respectively. In the same camps proportion of households receiving below 15 liters per person per day was as higher as 43.2% in Tongo and 50.8% in Gure-Shembola. It was presumed that the high episodes of of diarrhoea may be as a result of low amount of water supplied in some areas within the two camps.

- At least three of the seven key indicators for infant and young child feeding practices showed high coverage. The least coverage of timely initiation of breastfeeding was in Gure-Shembla at 78%. Exclusive breastfeeding was above 89% and bottle feeding ranged from 0% to 2.3%.

- The coverage of measles vaccination in children age 9-59 months met the UNHCR standard (>95%) in the three camps of Sherkole, Bambasi and Tongo while Vitamin A supplementation coverage in 6 – 59 months in addition to the three camps standards was also met (>90%) in Tsore camp. Measles coverage was below 95% in Tsore and Gure-Shembola and Vit. A supplementation was <90% in only in Gure-Shembola.

- While all households were possessing ration cards, the duration of food rations received from general rations and procured from cash components ranged from 15 days in Tsore to 21 days in Gure-Shembola. It should be noted that only in-kind food items were distributed in Gure-Shembola and new arrivals are considered for WFP full ration to allow them settling in the camp. This might have contributed to lifting the average number of days to the difference of almost one week compared to other camps.

- Water supply was slightly below the UNHCR reccomended stardards of an average of $\geq$20 liters per person per day in Bambasi (19.6), Tongo (17.8) and Gure-Shembola (17.8) while Tsore and Shekole met the UNHCR standards (>20 lpppd)

- The proportion of households owning at least one Long Lasting impregnated Net (LLIN) was 37.3% in Sherkole, 44.5% in Bambasi, 5.3% in Tongo and 51.4% in Gure_Shembola of which the coverage was far below the UNHCR recommended standard of >80%. The average number of persons per LLIN was above 5 while the UNHCR standard is 2 persons per LLIN.

  Mass mosquito net distribution was not conducted in Tsore camp for the past three years, and thus, in reference to the SENS guidelines, this information was not collected. During the debriefing in Assosa it was mentioned that mosquito nets were distributed in all camps except for Tsore, where distribution was conducted in 2014 at Ashura temporary site before opening the camp.

- The mortality indicators remained acceptable according to the sphere standards; crude mortality rates are <1 death per 10,000 per day and under five mortality rate <2 deaths per 10,000 per day.

Graphs of Trend of Malnutrition and Anaemia for the past five years (2013 – 2017) in Assosa refugee camps

Figure 1: Trends of global acute malnutrition (GAM) children age 6-59 months

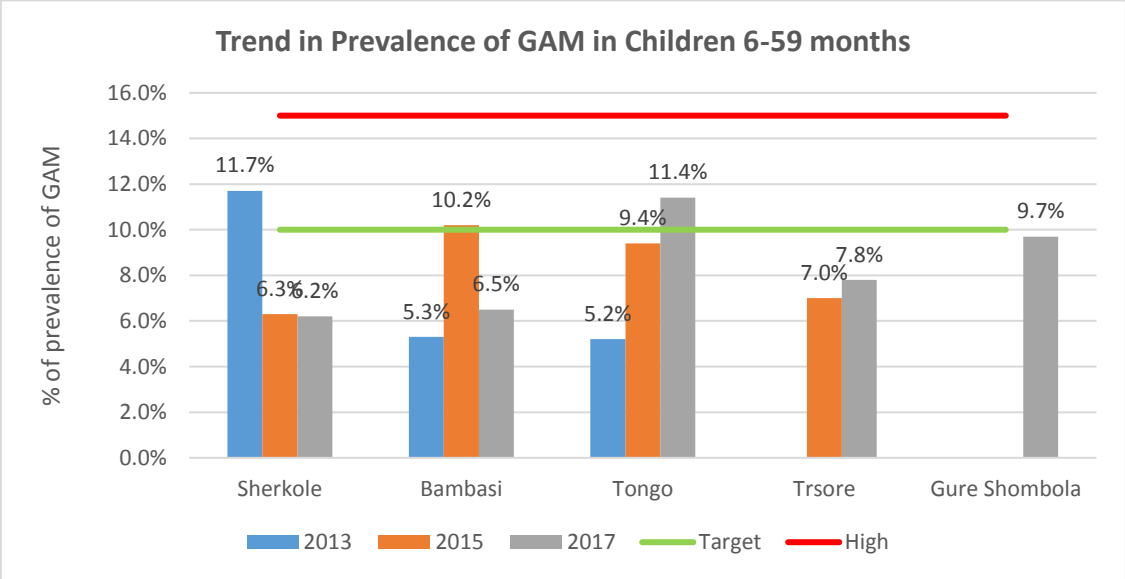


Figure 2: Trends of severe acute malnutrition (SAM)

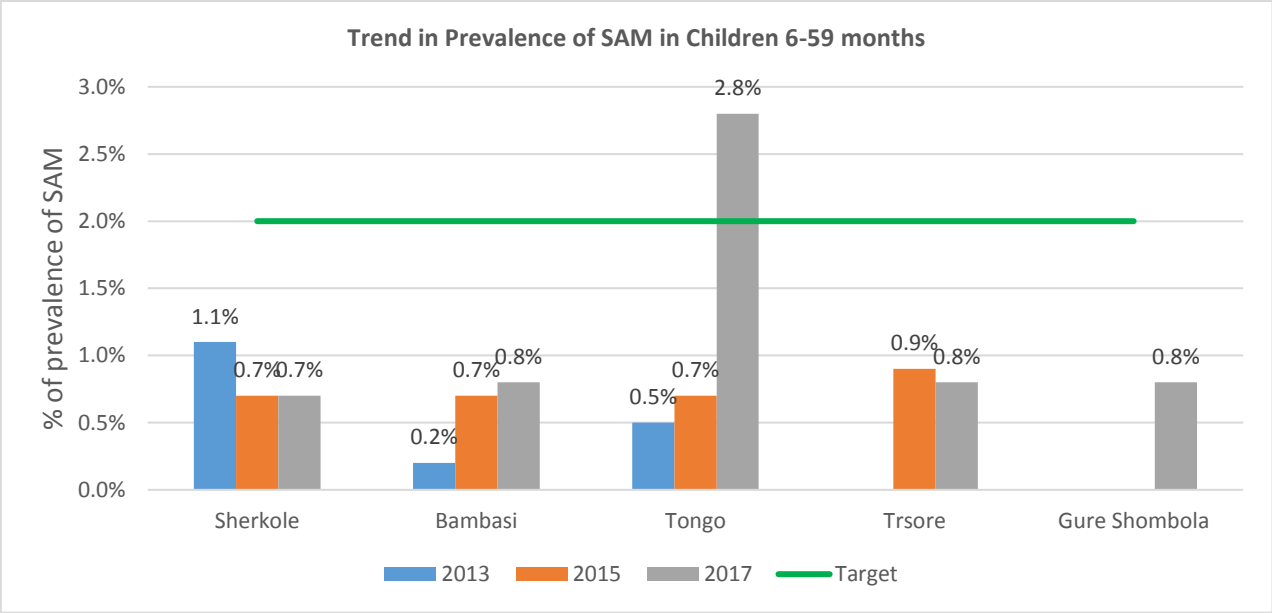


Figure 3: Trends of prevalence of stunting (chronic malnutrition) in children age 6-59 months

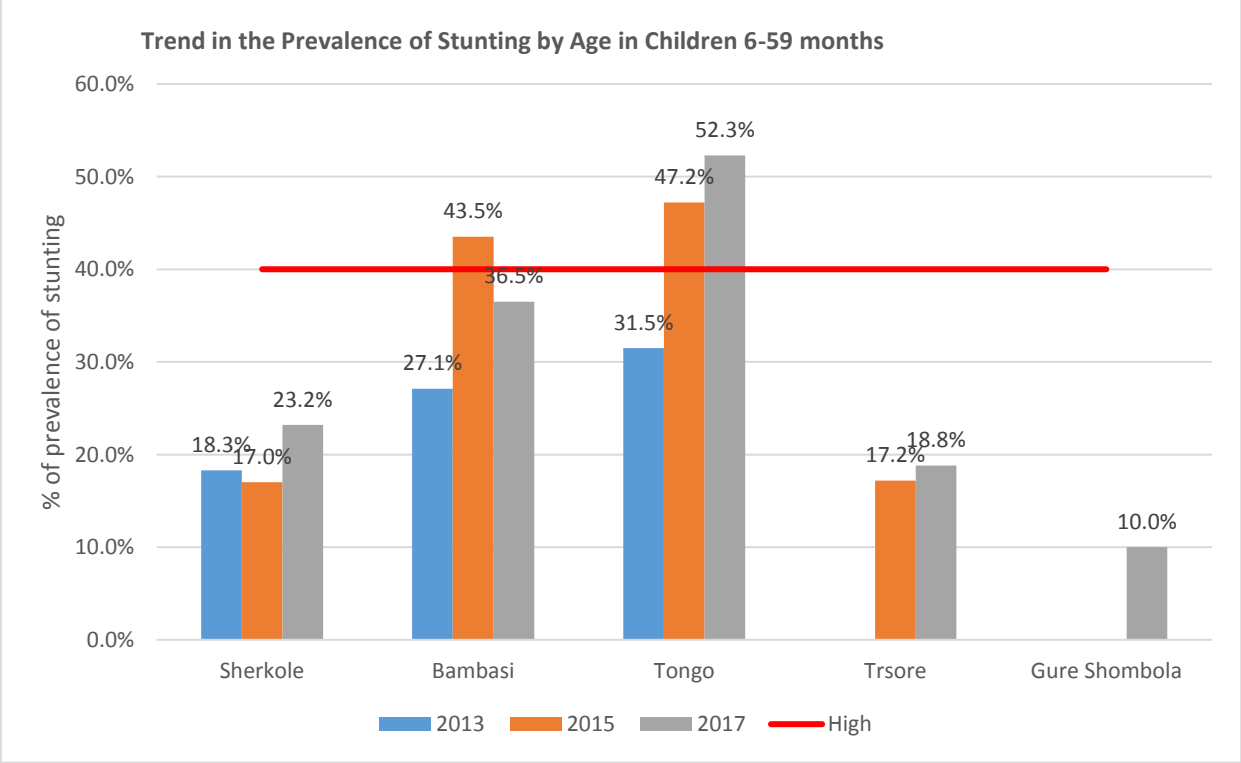


Figure 4: Trends of ANAEMIA for children age 6-59 months

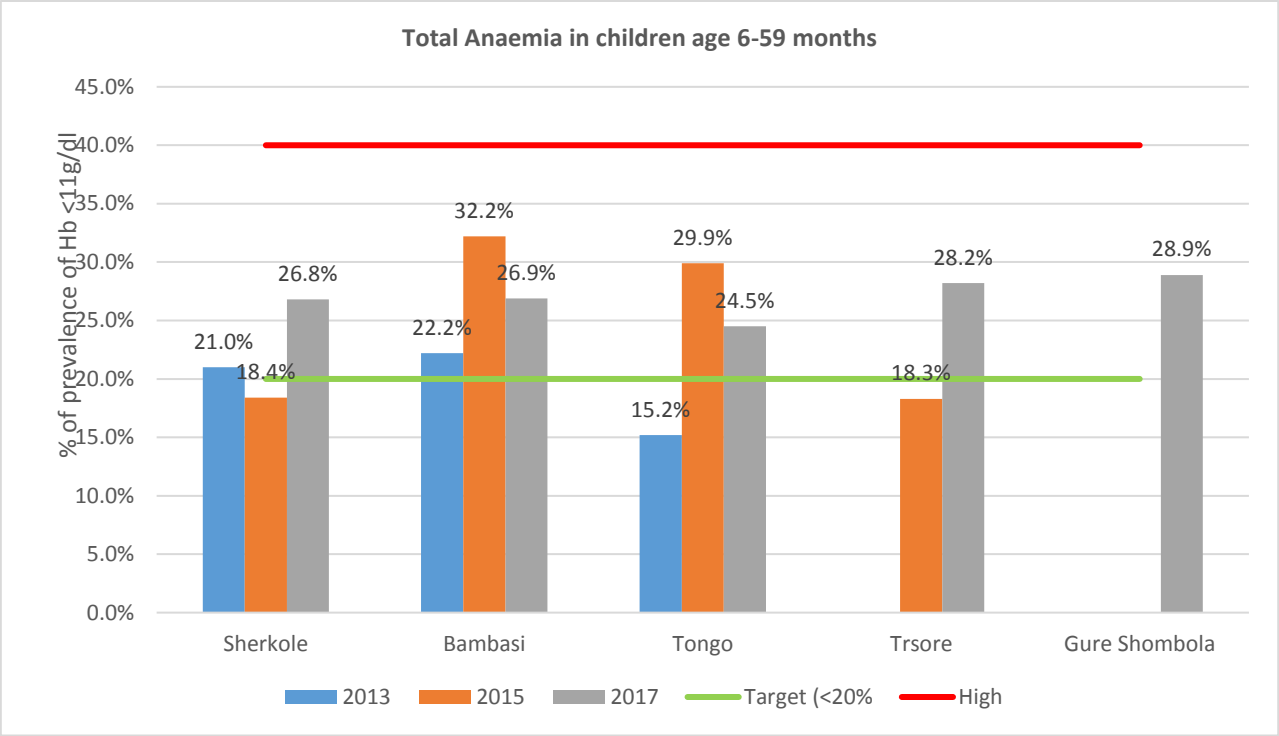
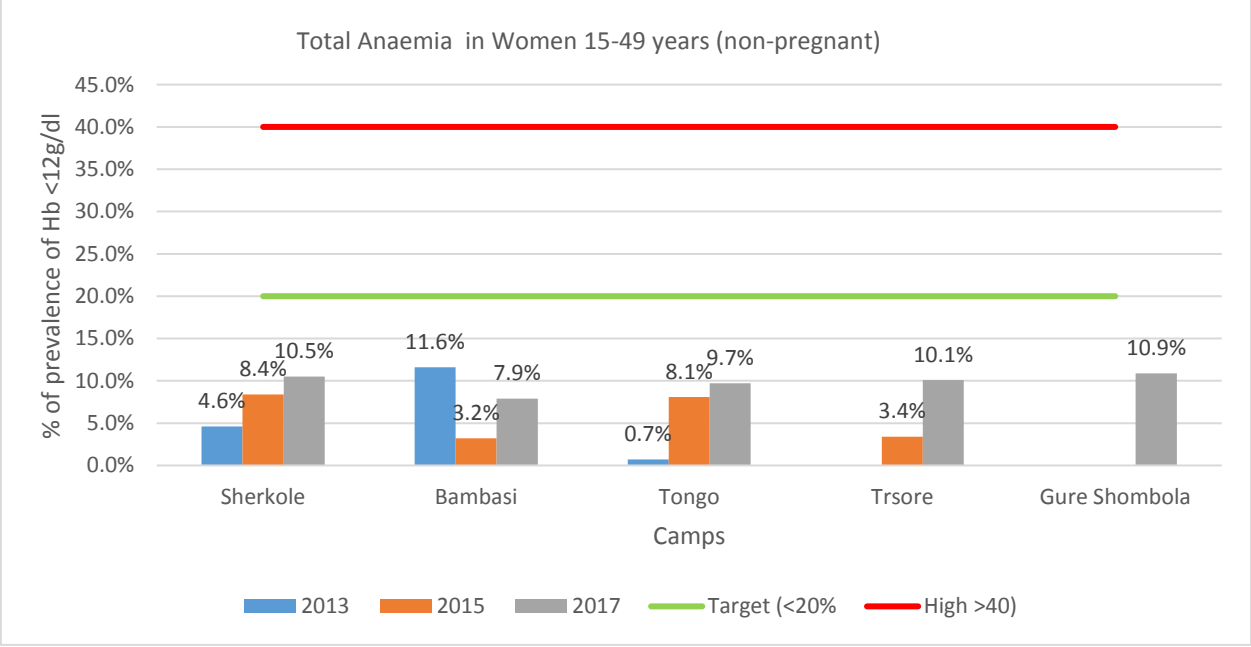


Figure 5: Trends of ANAEMIA for WOMEN age 15 -49 years



Points of discussion

- Prevalence of acute malnutrition in Assosa camps has not significantly changed regardless of ration cuts since November 2015 including severe ration cut that happened from July to September 2017. The stability of nutritional status might have been contributed to the harvesting period that coincided with the time of the survey. On the other hand, frequent ration reduction might have contributed in triggering of positive coping strategies including increased farming. Livelihood interventions exist in the camps like backyard garden, poultry production, small business schemes in all camps (e.g. Bambasi, 180 HH have backyard garden, 26 HH small business, 55 HH poultry farming, according to NRC). Many refugee are also known to work as laborers in the local community. The impact of these various livelihood interventions on food security need to be further explored to adopt lessons learnt to other areas.

Key recommendations

1. Enrolment of SAM and MAM children in the therapeutic and targeted feeding programmes was very low, linked with screening of children using the tradition MUAC cut-off point of 135mm. An addition to capacity building to outreach team and nutrition staff working at BSFP, the use of elevated MUAC cut-off point of 140mm and 150mm for younger (6 – 23 months and older children (24 – 59 months) respectively would increase a window of capturing more children who are acutely malnourished during the second stage of WHZ measurements. Feeding centres are advised to conduct WHZ to all children aged 6 – 59 months at least once in every month at BSFP as well as in the community with the focus of improving feeding centre coverage.

   Investigation for low coverage at BSFP would be imperative to explore reasons for poor registration of children aged 6 -23 months for blanket supplementary feeding services. (**Action made by ARRA, AAH, and UNHCR)**

2. Episodes of diarrhoea were higher in Tongo and Gure-Shembola camps with prevalence of 16.3% and 18.3% respectively. The prevalence might be attributed to high proportion of households (43.2% in Tongo and 50.8% in Gure-Shembola) which were receiving below 15 litres per person per day of water compared to other camps. Despite acceptable average water supply among the entire population, it is recommended to review the water points if they are evenly distributed among the refugee communities. **(UNHCR and ARRA)**

3. Despite Assosa being a malaria endemic area, ownership and subsequent utilization of mosquito nets particularly LLIN was very low. In Tsore camp for example, mass distribution of mosquito nets had not been conducted since its establishment in 2014. Distribution of such core relief items should be given a higher priority to avoid high prevalence of malaria which has adverse impact especially among children and pregnant women. **UNHCR** and **ARRA** should regularly conduct mosquito net retention survey and subsequent replacement where need be. Targeted distribution of this vital item should an ongoing exercise among eligible beneficiaries.

4. Assess and build up on the impact of livelihood interventions on food security for stability observed on GAM prevalence despite severe ration cuts.

5. Review programmes in Tongo and Bambasi to understand the increase in GAM and SAM in Tongo over the past 4 years as well to understand the very high stunting prevalence in both camps.

INTRODUCTION

The Government of Ethiopia has a history of receiving and providing refugee to individuals from neighbouring countries as results of political conflicts. Until end of July 2017, the country was accommodating a total of 847,232 refugees including 58,363 mainly South Sudanese and Sudanese hosted in Sherkole, Bambasi, Tongo Tsore and Gure-Shembola Refugee camps in Benishangul-Gumuz regional state[3]. Among the five refugee camps, Gure-Shembola with 2,835 refugees, remained the newest, established in April 2017 following the influx from South Sudan.

UNHCR and WFP with the support of donors and the government counterpart as well operational partners have been providing humanitarian assistances, including health, WASH, nutrition, and ensuring household food security. The last Standardized Expanded Nutrition Survey (SENS) in Assosa took place from 12th to 31st October 2015 in Sherkole Bambasi, Tongo and Tsore camps, and no followed survey was conducted in 2016.

NUTRITION SITUATION

Nutrition programs were running through ARRA in four camps namely in Sherkole, Bambasi, Tsore and Tongo, and AAH IN Gure Shembola camp with the support from UNHCR and WFP. At the time of the survey, the following nutrition program were operational;-

- Targeted Supplementary Feeding Programmes (TSFP) for Moderately Acute Malnourished (MAM) children 6-59 months, Pregnant & Lactating Women (PLW) and patients with chronic illnesses such as Tuberclosis (TB) and Human Immuno deficiency Virus (HIV).
- Outpatient and inpatient therapeutic feeding programmes for Severely Acute Malnourished (SAM) cases.
- Blanket Supplementary Feeding Programme (BSFP) for all children 6-23 months and Pregnant and Lactating Women (PLW).
- Periodic mass screening of children 6-59 months using MUAC or Weight for Height or a combination

FOOD SECURITY

Food rations increased from October - 2017 onwards to include 13.5kg of cereals (previous 10kg, standard: 16kg), 0.5kg of CSB (standard: 1.5kg). Oil, pulses and salt are provided at full ration while sugar remains absent.
Refugee food rations have been reducing following fund shortfall from WFP and severe reduction emerged between July and August 2017 when cereals was reduced to 10kg per person per month, including 20% for compensation of loses and milling cost. In this period CSB was distributed at 1kg, pulses at 1.5kg and vegetable oil at 0.9kg per person per month and rations were providing 1453kcal against the recommended Sphere and UNHCR standard of 2100kcal per person per day when the portion for compensation of loses and milling cost is

excluded. Sugar has been removed and CSB was further reduced to 0.5kg per person per month in September 2017 and cereals were increased in October 2017 from 10kg to 13.5kg per person per month providing about 1714kcal per person per day (20% cereals excluded). At the time of conducting this surveys, food rations provided in Bambasi and Tongo were 3.5kg of in-kind cereals, 1.5kg of pulses, 0.5kg of CSB, 0.9kg of vegetable oil, 0.15kg of iodized salt and cash of 100Birr meant for 10kg of cereals per person per month. Unlike Bambasi and Tongo camps, 8.5kg of in-kind cereals and a cash of 50Birr meant for 5kg of cereals were distributed per person per month in Sherkole and Bambasi camps. Cash assistance is aimed to create a room for dietary diversity at household level as well as to give a freedom of choice to buy food items that refugee prefers and reduce pressure on selling of food items provided in-kind that are not their favorite. In Gure-Shembola, all items were distributed in-kind with the same rations while sugar remained unavailable across all the camps.

HEALTH

Basic health services were provided by ARRA with the support of UNHCR in the two camps. The health centers in the camps provides primary health services which comprises of curative and preventive aspects, including outpatient department, inpatient ward, laboratory service, maternal and child health (MCH) and under 5 clinic. There was a reliable referral system that enables treatment of cases which need further medical attention at secondary and tertiary levels. Such cases were referred to Assosa and Addis Ababa hospitals.

WASH

Water, Sanitation and Hygiene services were operational in all camps. Water supply from improved sources within the recommended UNHCR standards of above 20 litres per person per day while majority of refugee uses communal and shared family latrines.

Survey objectives

The main aim of the nutrition survey was to assess the nutritional and health status of the refugee population and formulate workable recommendations to address identified gaps and to monitor the ongoing nutrition, food security, and public health intervention in the refugee camps.

Primary objectives

a. To determine the prevalence of acute malnutrition among children 6-59 months.

b. To determine the prevalence of stunting among children 6-59 months.

c. To assess the two-week period prevalence of diarrhoea among children 6-59 months.

d. To assess the prevalence of anaemia among children 6-59 months and women of reproductive age (non-pregnant, 15-49 years).
e. To determine the coverage of measles vaccination among children 9-59 months.
f. To determine the coverage of vitamin A supplementation in the last six months among children 6-59 months.
g. To assess the two-week period prevalence of diarrhoea among children aged 6- 59 months.
h. To investigate IYCF practices among children 0-23 months
i.
j. To determine the coverage of ration cards and the duration the general food ration lasts for recipient households.
k. To determine the extent to which negative coping strategies are used by households.
l. To assess household dietary diversity.
m. To determine the population's access to, and use of, improved water, sanitation and hygiene facilities.
n. To determine the ownership of mosquito nets (all types and LLINs) in households.
o. To determine the utilisation of mosquito nets (all types and LLINs) by the total population, children 0-59 months and pregnant women.
p. To determine the household coverage of indoor residual spraying.
q. To establish recommendations on actions to be taken to address the situation.

Secondary objectives

a. To estimate the enrollment coverage in selective feeding programs (OTP/SC, TSFP and BSFP) for children 6-59 months
b. To determine enrolment into Antenatal Care clinic and coverage of iron-folic acid supplementation in pregnant women.
c. To assess crude and under-five mortality rates in the camps in the last three months.

Methodology

The surveys were based on the UNHCR Standardized Expanded Nutrition Survey (SENS) guidelines and SMART methodology for refugee camps. The data were collected by using SMART phones, preinstalled with Open Data Kit (ODK) app Version 1.4.10 for android operating system.

Sampling procedure and Sample size

A simple random sampling technique was applied in the four refugee camps of Sherkole, Tsore, Bambasi and Tongo while in Gure-Shembola an exhaustive survey was employed as per SENS guidelines. All households were checked prior to surveys, empty shelters were excluded and sampling frame prepared based on household definition of ***a group of people who live together and routinely eat out of same pot*** was used to determine households to be included in the survey for the above mentioned four camps.

The sample sizes were calculated using ENA for SMART version July 9th, 2015 mainly with reference to the 2015 GAM results. The upper limit of prevalence of GAM in each particular camp was used, desired precision ranged between ±3.4 and ±3.5 while 10% was used for non-responsive and absentee households.

Table 2: Sample size calculation based on ProGres population data - 31st July 2017

Description	Sherkole	Tsore	Bambasi	Tongo	G-Shembola
Expected prevalence, %	9.7%	10.3%	14.3%	13.3%	[4]NA
Desired precision, +/-%	3.5	3.5	3.5	3.4	NA
Total ## households (ProGres)	2,275	2,748	4,224	2139	687
Total ## population	11,590	12,457	16,678	12,248	2835
Total ## population under 5	1,904	2,295	3,652	2,371	656
Average household size	5.1	4.5	5.3	5.7	4.1
% population under five	16.4	18.4	21.9	19.4	23.1
% non-response households	10	10	10	10	NA
# of children to be included	275	290	384	362	exhaustive
# of HH (module 1, module 2-senario1, module 3 & mortalities)	405	432	409	404	exhaustive
# of HH (module 2-women, module 4, 5 & 6)	202	216	205	202	Every other HH

[4] All households were included for anthropometry and Child questionnaire in Gure Shembola

The survey considered all eligible children aged 0-59 months from all selected households for applicable and desired set of variables for instance anthropometric measurements, measles vaccination, vitamin A supplementation, enrolment of the selective nutrition program, diarrhoea for the recall period of the last two weeks, haemoglobin test for assessment of the level of anaemia in children and non-pregnant women of reproductive age, and infant and young child feeding practices among children aged 0-23 months. Other components of the SENS which were assessed after every other household were; Food Security, WASH, Mosquito net coverage, and coverage of Antenatal Care including Iron-folate supplementations.

Questionnaire and Measurement Methods

Questionnaire

The questionnaires were prepared in English language and administered in Arabic and Nuer (Gure Shembola) language via translators. Standardization and pre testing was done before the actual survey.

Six questionnaires were designed and uploaded to mobiles through ODK software to provide information on the relevant indicators of the different target groups as indicated in the survey objectives. The six questionnaires covered the following modules

Module 1, 2a & 3: (Children 0-59 months)
This included questions and measures on children aged 6-59 months. Information was collected on anthropometric status, oedema, enrolment in selective feeding programmes, immunization (measles), vitamin A supplementation in the last six months, morbidity from diarrhoea in past two weeks, and haemoglobin assessment. Questions related to IYCF were automatically displayed when assessing children aged 0 – 23 months in the same questionnaire.

Module 2b: (Women 15-49 years)
This included measurement of levels of haemoglobin in non-pregnant women aged 15 – 49 years and information for pregnant women aimed to assess coverage ANC, iron and folate pills.

Module 4: (Food Security)
This included questions on access and use of the GFD ration, coping mechanisms when the GFD ran out ahead of time, household dietary diversity.

Module 5: (WASH)
This included questions on the quantity of water used per household and the satisfaction with the drinking water supply, hygiene and sanitation.

Additional Module: (Mortality)
This included questions related to mortality in the last three months among the whole population.

Measurement methods

Household-level indicators

Mortality: Unlike previous surveys, mortality questionnaires were formatted into ODK system and uploaded to mobiles for interviewing.

Food security: The questionnaire used was adopted from the UNHCR's Standardized Expanded Nutrition Survey Guidelines for Refugee Populations.

WASH: The questionnaire used was adopted from the UNHCR's Standardized Expanded Nutrition Survey Guidelines for Refugee Populations.

Mosquito net: The questionnaire used was adopted from the UNHCR's Standardized Expanded Nutrition Survey Guidelines for Refugee Populations.

Individual-level indicators

Sex of children: recorded as male or female.

Birth date or age in months for children 0-59 months: the exact date of birth (day, month, and year) was recorded from birth certificates and checked on an EPI card or child health card. If no reliable proof of age was available, age was estimated in months using a local event calendar. In addition to local events calendar, the child's length/height was used for inclusion; the child had to measure between 65 cm and 110 cm.

Age of women 15-49 years: unlike children, the exact date of birth of women was not recorded but only the rounded figure in years.

Weight of children 6-59 months: measurements were taken to the closest 100 grams using an electronic scale (SECA scale) with a wooden board to stabilize it on the ground. All children were weighed without clothes.

Height/Length of children 6-59 months: children's height or length was taken to the closest millimeter using a wooden height board. Height was used to decide on whether a child should be measured lying down (length) or standing up (height). Children less than 87cm were measured lying down, while those greater than or equal to 87cm were measured standing up.

Oedema in children 6-59 months: bilateral Oedema was assessed by applying gentle thumb pressure on to the tops of both feet of the child for a period of three seconds and thereafter observing for the presence or absence of an indent.

MUAC of children 6-59 months: MUAC was measured at the mid-point of the left upper arm between the elbow and the shoulder and taken to the closest millimeter using a standard tape. MUAC was recorded in centimeters.

Child enrolment in selective feeding programme for children 6-59 months: selective feeding programme enrolment status was assessed for the outpatient therapeutic programme and for the supplementary feeding programme. This was verified by card or showing the mother or care giver the samples of the products given at the different programs

Measles vaccination in children 6-59 months: measles vaccination was assessed by checking for the measles vaccine on the EPI card if available or by asking the caregiver to recall if no EPI card was available. For ease of data collection, results were recorded on all children 6-59 months but were only analysed for children aged 9-59 months

Vitamin A supplementation in last 6 months in children 6-59 months: whether the child received a vitamin A capsule over the past six months was recorded from the EPI card or health card if available or by asking the caregiver to recall if no card is available. A vitamin A capsule was shown to the caregiver when asked to recall.

Haemoglobin concentration in children 6-59 months and women 15-49 years: Hb concentration was taken from a capillary blood sample from the fingertip and recorded to the closest gram per decilitre by using the portable HemoCue Hb 301+ Analyser (HemoCue, Sweden). If severe anaemia was detected, the child or the woman was referred for treatment immediately.

Diarrhoea in last 2 weeks in children 6-59 months: an episode of diarrhoea was defined as three loose stools or more in 24 hours. Caregivers were asked if their child had suffered episodes of diarrhoea in the past two weeks.

ANC enrolment and iron and folic acid pills coverage: if the surveyed woman was pregnant, she was assessed by card or recall whether she was enrolled in the ANC programme and was receiving iron-folic acid pills.

Post-natal vitamin A supplementation: If the surveyed woman delivered a baby in the last six months, she was assessed by card or recall whether she had received vitamin A supplement after delivery.

Infant and young child feeding practices in children 0-23 months: Infant and young child feeding practices were assessed based on the UNHCR's Standardized Expanded Nutrition Survey Guidelines for Refugee Populations Version 2 (2013)

Referrals: Children aged 6-59 months were referred to nutrition/ health centre/post for treatment when MUAC was < 12.5 cm, WHZ WAS <-2 z-score, when oedema was present, or when haemoglobin was < 7.0 g/dL. Women of reproductive age were referred to the hospital for treatment when haemoglobin was < 8.0 g/dL.

Case Definitions, Inclusion Criteria and Calculations

Mortality: The crude death rate (CMR) was expressed as the number of deaths per 10,000 persons per day. The formula below was applied:
Crude Death Rate (CMR) = 10,000/a*f/ (b+f/2-e/2+d/2-c/2)
Where:
a = Number of recall days
b = Number of current household residents
c = Number of people who joined household during recall period
d = Number of people who left household during recall period
e = Number of births during recall period
f = Number of deaths during recall period

Malnutrition in children 6-59 months: Acute malnutrition was defined using weight-for-height index values or the presence of oedema and classified as show in the table below. Main results are reported after analysis using the WHO 2006 Growth Standards.

Table 3: Definitions of acute malnutrition using weight-for-height and/or oedema in children 6–59 months

Categories of acute malnutrition	Percentage of median (NCHS Growth Reference 1977 only)	Z-scores (NCHS Growth Reference 1977 and WHO Growth Standards 2006)	Bilateral oedema
Global acute malnutrition	<80%	< -2 z-scores	Yes/No
Moderate acute malnutrition	<80% to ≥70%	< -2 z-scores and ≥ -3 z-scores	No
Severe acute malnutrition	>70%	> -3 z-scores	Yes
	<70%	< -3 z-scores	Yes/No

Stunting, also known as chronic malnutrition was defined using height-for-age index values and was classified as severe or moderate based on the cut-offs shown below. Main results are reported according to the WHO Growth Standards 2006.

Table 4: Definitions of stunting using height-for-age in children 6–59 months

Categories of stunting	Z-scores (WHO Growth Standards 2006 and NCHS Growth Reference 1977)
Stunting	<-2 z-scores
Moderate stunting	<-2 z-score and >=-3 z-score
Severe stunting	<-3 z-scores

Underweight was defined using the weight-for-age index values and was classified as severe or moderate based on the following cut-offs. Main results are reported according to the WHO Growth Standards 2006.

Table 5: Definitions of underweight using weight-for-age in children 6–59 months

Categories of underweight	Z-scores (WHO Growth Standards 2006 and NCHS Growth Reference 1977)
Underweight	<-2 z-scores
Moderate underweight	<-2 z-scores and >=-3 z-scores
Severe underweight	<-3 z-scores

Mid Upper Arm Circumference (MUAC) values were used to define malnutrition according to the following cut-offs in children 6-59 months:

Table 6: Low MUAC values cut-offs in children 6-59 months

Categories of low MUAC values	
<12.5 cm:	Global acute malnutrition
≥ 11.5 cm and <12.5 cm:	Moderate acute malnutrition
< 11.5 cm:	Severe acute malnutrition

Child enrolment in selective feeding programme for children 6-59 months: Feeding programme coverage is estimated during the nutrition survey using the direct method as follows (reference: Emergency Nutrition Assessment: Guidelines for field workers. Save the Children. 2004):

Coverage of SFP programme (%) =

$$100 \times \frac{\textit{No. of surveyed children with MAM according to SFP admission criteria who reported being registered in SFP}}{\textit{No. of surveyed children with MAM according to SFP admission criteria}}$$

Coverage of TFP programme (%) =

$$100 \times \frac{\textit{No. of surveyed children with SAM according to OTP admission criteria who reported being registered in OTP}}{\textit{No. of surveyed children with SAM according to OTP admission criteria}}$$

Infant and young child feeding practices in children 0-23 months
Infant and young child feeding practices were assessed as follows based on the UNHCR SENS IYCF module (Version 1.3 (March 2012).

Timely initiation of breastfeeding in children aged 0-23 months*:*

Proportion of children 0-23 months who were put to the breast within one hour of birth
Children 0-23 months who were put to the breast within one hour of birth
Children 0-23 months of age

Exclusive breastfeeding under 6 months*:*
Proportion of infants 0–5 months of age who are fed exclusively with breast milk: (including expressed breast milk or from a wet nurse, ORS, drops or syrups (vitamins, breastfeeding minerals, medicines)
Infants 0–5 months of age who received only breast milk during the previous day
Infants 0–5 months of age

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

Introduction of solid, semi-solid or soft 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

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

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

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 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 who are 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 in children 6-59 months and women of reproductive age:
Anaemia was classified according to the following cut-offs in children 6-59 months and non-pregnant women of reproductive age. Pregnant women were not included in this surveys for the assessment of anaemia as recommended by UNHCR {pregnant women are not to be included in routine nutrition surveys for the assessment of anaemia due sample size issues, (usually a small number of pregnant women are found) as well as the difficulties in assessing gestational age in pregnant women)}.

Table 7: Definition of anaemia (WHO 2000)

Age/Sex groups	Categories of Anaemia (Hb g/dL)			
	Total	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

1.3.5 Classification of public health problems and targets

Mortality: The following thresholds are used for mortality.

Table 8: Mortality benchmarks for defining crisis situations

Emergency threshold
CDR > 1/10,000 / day: 'very serious' CDR > 2 /10,000 /day: 'out of control' CDR > 5 /10,000 /day: 'major catastrophe' (double for U5MR thresholds)

Anthropometric data: The target for the prevalence of global acute malnutrition (GAM) for children 6-59 months of age by camp, country and region should be < 10% and the target for the prevalence of severe acute malnutrition (SAM) should be <2%. Table 1.8 shows the classification of public health significance of the anthropometric results for children under-5 years of age according to WHO:

Table 9: Classification of public health significance for children under 5 years of age

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

Selective feeding programmes:

Table 10: Performance indicators for selective feeding programmes *

	Recovery	Case fatality	Defaulter rate	Coverage		
				Rural areas	Urban areas	Camps
SFP	>75%	<3%	<15%	>50%	>70%	>90%
TFP	>75%	<10%	<15%	>50%	>70%	>90%

* UNHCR and WFP selective feeding guideline 2011 and SPHERE standards for performance

Measles vaccination coverage: UNHCR recommends target coverage of 95% (same as Sphere Standards).

Vitamin A supplementation coverage: UNHCR performance indicator; target for vitamin A supplementation coverage for children aged 6-59 months by camp, country and region should be >90%.

Anemia data*:* As per global Standard (WHO and UNHCR) the prevalence of anaemia in children 6-59 months of age and in women 15-49 years of age should be low i.e. <20%. The severity of the public health situation should be classified according to WHO criteria as shown below.

Table 11: Classification of public Health significance (WHO 2000)

Prevalence %	High	Medium	Low
Anaemia	≥40	20-39	5-19

WASH: Diarrhoea contributes to high infant and child morbidity and mortality by directly affecting children's nutritional status. WASH interventions are one of the key interventions to reduce the incidence of diarrheal diseases. Hygienic conditions and adequate access to safe water and sanitation services is a matter of ensuring human dignity and is recognised as a fundamental human right. The following standards (amongst others) apply to UNHCR WASH programmes:

Table 12: UNHCR WASH Programme Standards

UNHCR Standard	Indicator
Average quantity of water available per person/day	> or = 20 liters
Latrine provision	20 people/latrine
Soap provision	> 250 g per person per month

Training, coordination and supervision

Core survey teams (Team leader and Interviewer) were trained for 5 days in Assosa. A total of two core survey groups were organized to conduct the surveys simultaneously in two different camps. And each team consists six members (Team Leader, anthropometry measurer,

anthropometric assistant, Interviewer, HB measurer and translator). Other team members were refreshed at their respective camps, followed by standardization and pilot test. The survey was coordinated and supervised by technical experts from UNHCR, ARRA and WFP.

Data Collection and Analysis

With the aforementioned team organization, the data collection lasted for 4 days in each camps. Each survey teams were trained and equiped with all the necessary equipments and mobile phones to collect data. Everday records were checked before being transfered to the server. Some data were checked against the paper Household Listing form and key information back up templates, either confirmed or marked to be returned to the team for correction and/or confirmation the following day (in case of any error).
Records were downloaded from the server each evening. Data for children 6-59 months were then transferred from the .csv files into ENA for SMART software to generate Plausibility check. Feedback were given to the teams in every morning for their attention on the following data collection day.

PRESENTATION OF RESULTS

Table 13: Targeted number of children aged 6 – 59 months against the actual number of children surveyed

	Camp				
	Tongo	Gure Shambola	Sherkole	Tsore	Bambasi
Targeted number of children to be surveyed	362	Exhaustive	275	290	384
Actual number of children surveyed	402	Exhaustive	297	391	377
Percentage coverage	111%	NA	108%	134.8%	98.2%

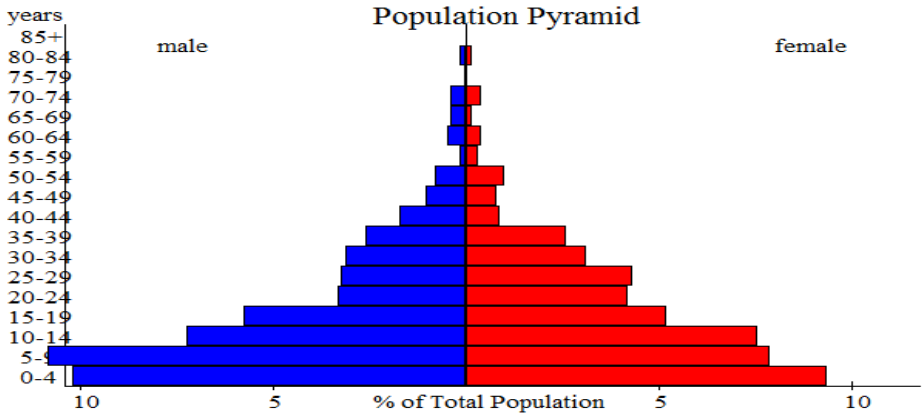
The recommended sample representation according to UNHCR SENS guidelines were attained in all camps with coverage above 80% of targeted number of children to be surveyed.

RESULTS FROM SHERKOLE

Table 14: Distribution of age and sex of sample

	Boys		Girls		Total		Ratio
AGE (mo.)	no.	%	no.	%	no.	%	Boy: Girl
6-17	47	61.0	30	39.0	77	25.9	1.6
18-29	39	58.2	28	41.8	67	22.6	1.4
30-41	42	46.7	48	53.3	90	30.3	0.9
42-53	29	59.2	20	40.8	49	16.5	1.5
54-59	8	57.1	6	42.9	14	4.7	1.3
Total	165	55.6	132	44.4	297	100.0	1.3

Figure 6 : Population pyramid for Sherkole Camp



Anthropometric results (based on WHO standards 2006) in Sherkole:

Table 15: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

	All n = 291	**Boys** n = 161	**Girls** n = 130
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(18) 6.2 % (3.9 - 9.6 95% C.I.)	(9) 5.6 % (3.0 - 10.3 95% C.I.)	(9) 6.9 % (3.7 - 12.6 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(16) 5.5 % (3.4 - 8.7 95% C.I.)	(9) 5.6 % (3.0 - 10.3 95% C.I.)	(7) 5.4 % (2.6 - 10.7 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(2) 0.7 % (0.2 - 2.5 95% C.I.)	(0) 0.0 % (0.0 - 2.3 95% C.I.)	(2) 1.5 % (0.4 - 5.4 95% C.I.)

The prevalence of oedema is 0.0 %

Figure 7: Distribution of weight-for-height z-scores (based on WHO Growth Standards) in Sherkole

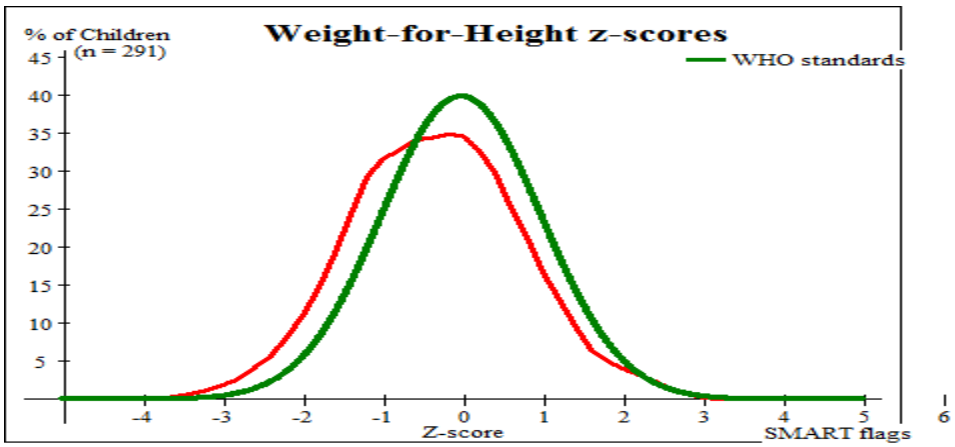


Figure 8: Trends in the prevalence of global and severe acute malnutrition based on WHO Growth Standards in children 6-59 months from 2013-2017 in Sherkole.

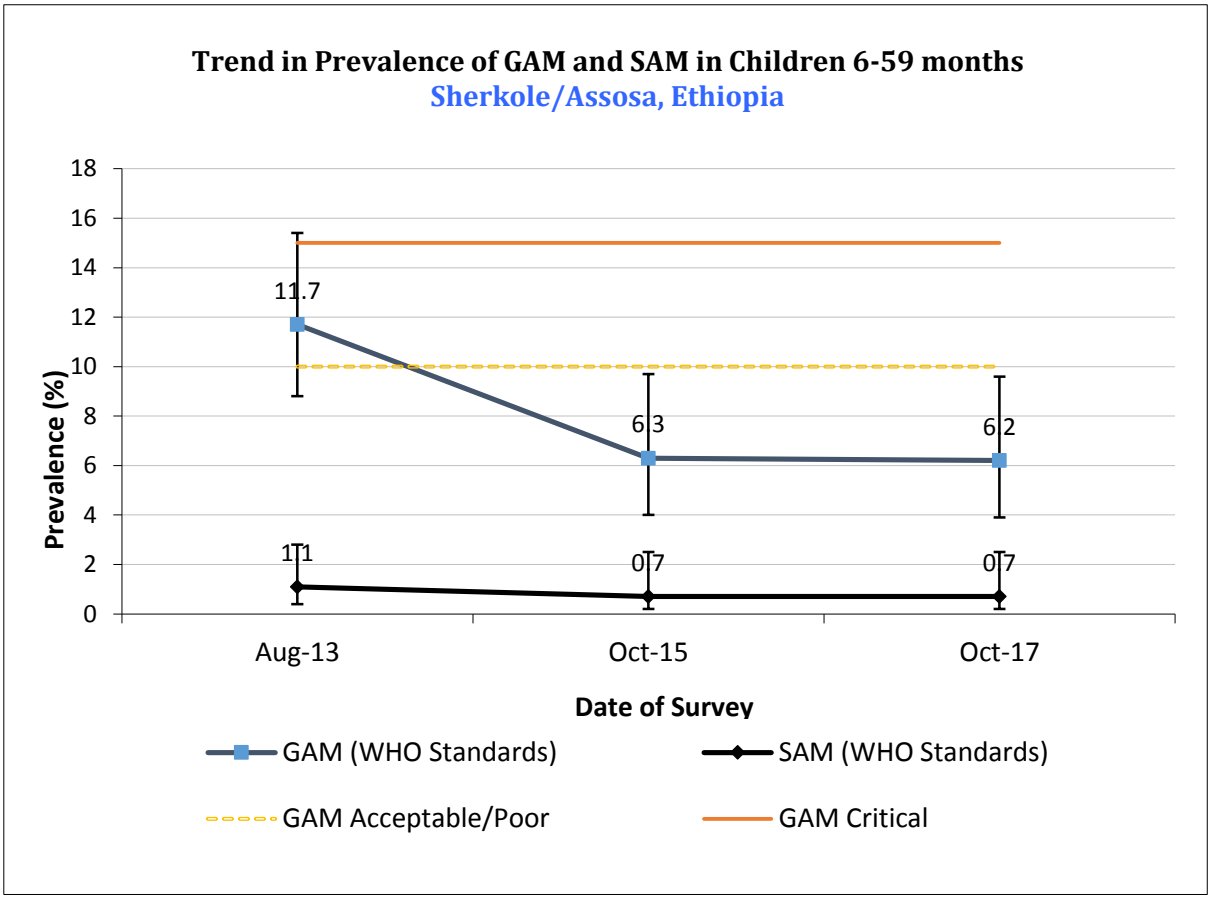


Table 16: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

Age (mo)	Total no.	Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	76	0	0.0	6	7.9	70	92.1	0	0.0
18-29	65	1	1.5	5	7.7	59	90.8	0	0.0
30-41	87	0	0.0	2	2.3	85	97.7	0	0.0
42-53	49	1	2.0	3	6.1	45	91.8	0	0.0
54-59	14	0	0.0	0	0.0	14	100.0	0	0.0
Total	291	2	0.7	16	5.5	273	93.8	0	0.0

Figure 9: Trend in the prevalence of Wasting by age, Sherkole, 2017

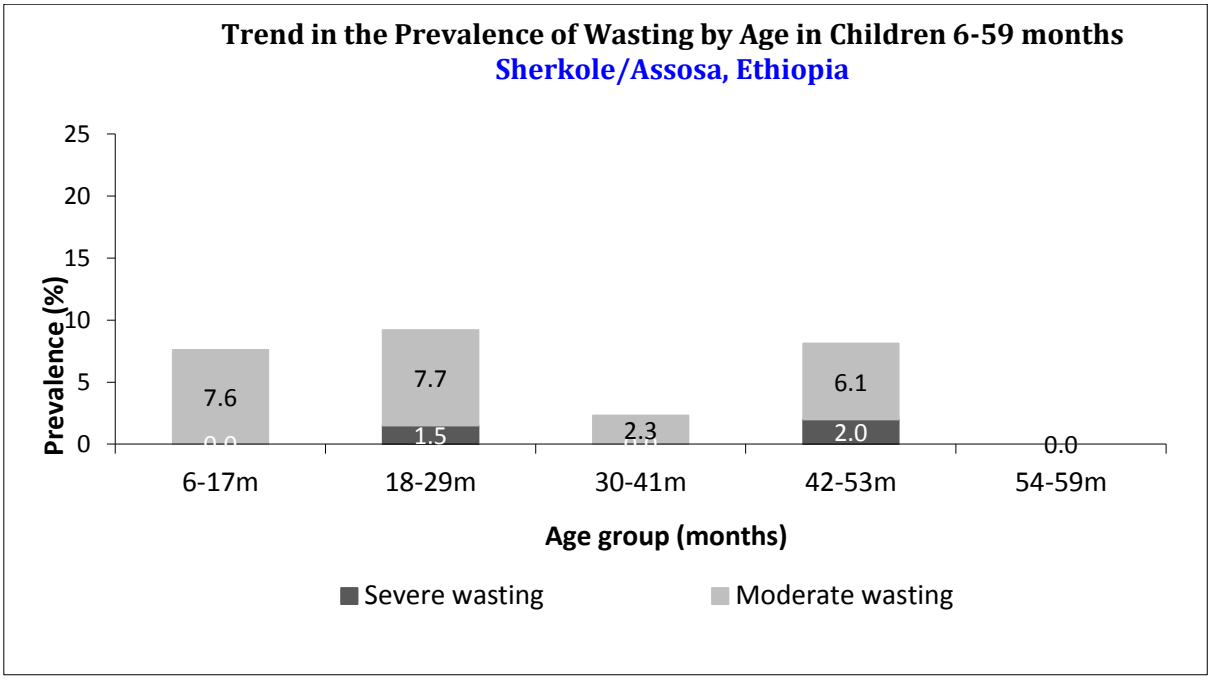


Table 17: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 4 (1.3 %)	Not severely malnourished No. 293 (98.7 %)

Table 18: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex

	All n = 297	Boys n = 165	Girls n = 132
Prevalence of global malnutrition (< 125 mm and/or oedema)	(15) 5.1 % (3.1 - 8.2 95% C.I.)	(6) 3.6 % (1.7 - 7.7 95% C.I.)	(9) 6.8 % (3.6 - 12.5 95% C.I.)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	(14) 4.7 % (2.8 - 7.8 95% C.I.)	(5) 3.0 % (1.3 - 6.9 95% C.I.)	(9) 6.8 % (3.6 - 12.5 95% C.I.)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	(1) 0.3 % (0.1 - 1.9 95% C.I.)	(1) 0.6 % (0.1 - 3.4 95% C.I.)	(0) 0.0 % (0.0 - 2.8 95% C.I.)

Table 19: Prevalence of acute malnutrition by age, based on MUAC cut off's and/or oedema

Age (mo)	Total no.	Severe wasting (< 115 mm)		Moderate wasting (>= 115 and < 125 mm)		Normal (> = 125 mm)		Edema	
		No.	%	No.	%	No.	%	No.	%
6-17	77	0	0.0	8	10.4	69	89.6	0	0.0
18-29	67	1	1.5	6	9.0	60	89.6	0	0.0
30-41	90	0	0.0	0	0.0	90	100.0	0	0.0
42-53	49	0	0.0	0	0.0	49	100.0	0	0.0
54-59	14	0	0.0	0	0.0	14	100.0	0	0.0
Total	297	1	0.3	14	4.7	282	94.9	0	0.0

Table 20: Prevalence of underweight based on weight-for-age z-scores by sex

	All n = 286	Boys n = 157	Girls n = 129
Prevalence of underweight (<-2 z-score)	(41) 14.3 % (10.7 - 18.9 95% C.I.)	(24) 15.3 % (10.5 - 21.7 95% C.I.)	(17) 13.2 % (8.4 - 20.1 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(34) 11.9 % (8.6 - 16.2 95% C.I.)	(21) 13.4 % (8.9 - 19.6 95% C.I.)	(13) 10.1 % (6.0 - 16.5 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(7) 2.4 % (1.2 - 5.0 95% C.I.)	(3) 1.9 % (0.7 - 5.5 95% C.I.)	(4) 3.1 % (1.2 - 7.7 95% C.I.)

Table 21: Prevalence of underweight by age, based on weight-for-age z-scores

Age (mo)	Total no.	Severe underweight (<-3 z-score)		Moderate underweight (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Edema	
		No.	%	No.	%	No.	%	No.	%
6-17	72	1	1.4	12	16.7	59	81.9	0	0.0
18-29	63	3	4.8	7	11.1	53	84.1	0	0.0
30-41	88	2	2.3	9	10.2	77	87.5	0	0.0
42-53	49	1	2.0	5	10.2	43	87.8	0	0.0
54-59	14	0	0.0	1	7.1	13	92.9	0	0.0
Total	286	7	2.4	34	11.9	245	85.7	0	0.0

Table 22: Prevalence of stunting based on height-for-age z-scores and by sex

	All n = 277	Boys n = 152	Girls n = 125
Prevalence of stunting (<-2 z-score)	(64) 23.1 % (18.5 - 28.4 95% C.I.)	(41) 27.0 % (20.5 - 34.5 95% C.I.)	(23) 18.4 % (12.6 - 26.1 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(54) 19.5 % (15.3 - 24.6 95% C.I.)	(34) 22.4 % (16.5 - 29.6 95% C.I.)	(20) 16.0 % (10.6 - 23.4 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(10) 3.6 % (2.0 - 6.5 95% C.I.)	(7) 4.6 % (2.2 - 9.2 95% C.I.)	(3) 2.4 % (0.8 - 6.8 95% C.I.)

Figure 10: Distribution of height –for Age z-scores (based on WHO Growth Standards)

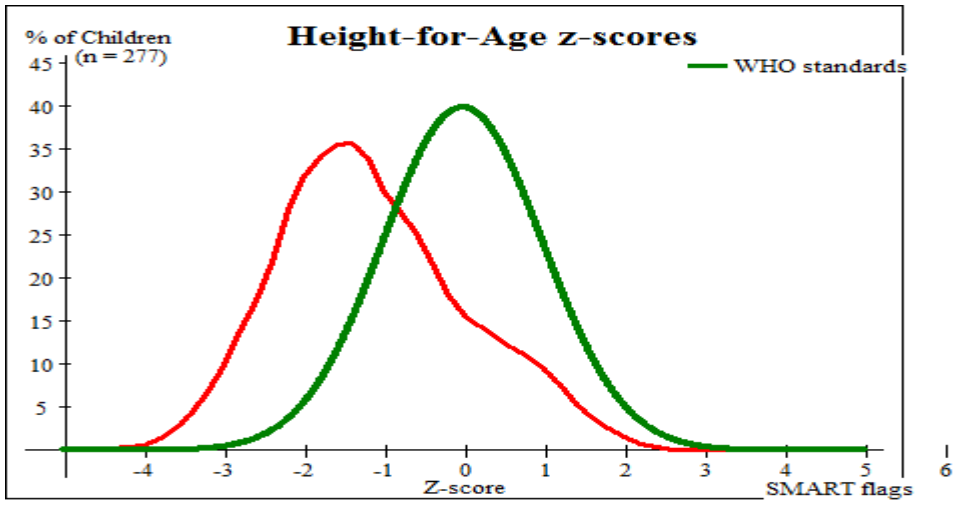


Figure 11: Trends in the prevalence of stunting in children 6-59 months in Sherkole.

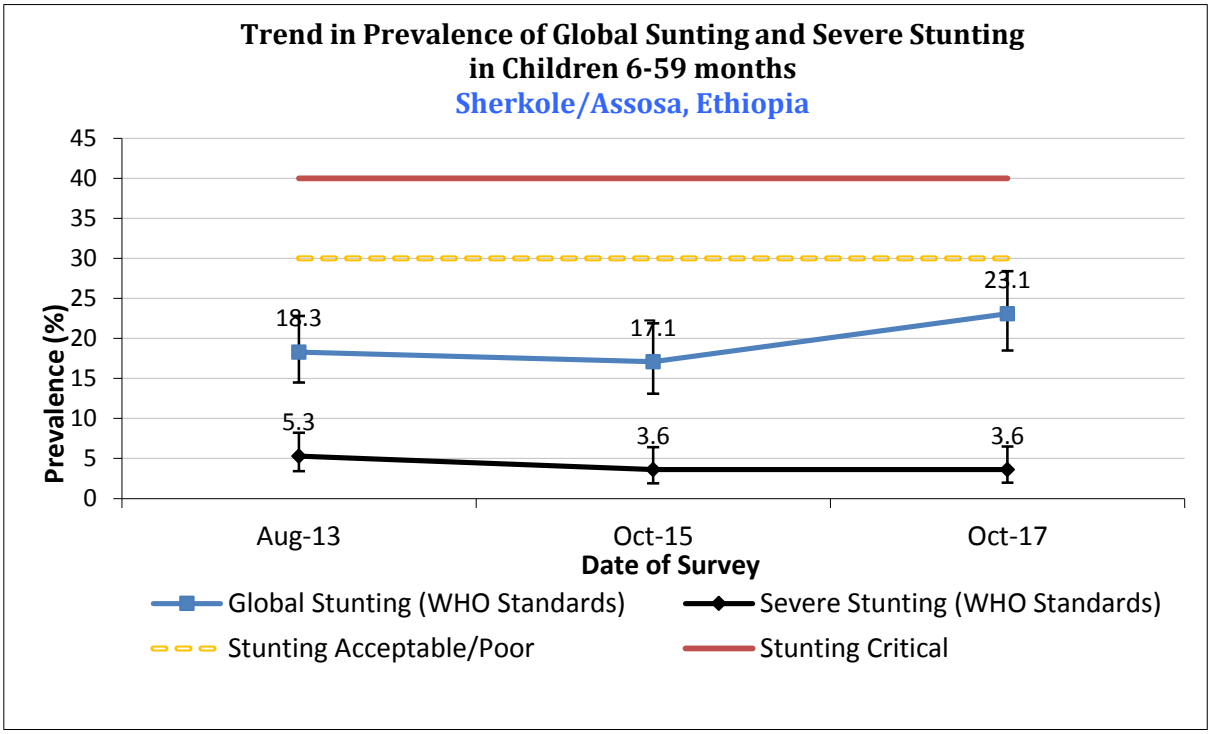


Table 23: Prevalence of stunting by age based on height-for-age z-scores

Age (mo)	Total no.	Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
		No.	%	No.	%	No.	%
6-17	72	2	2.8	22	30.6	48	66.7
18-29	63	7	11.1	7	11.1	49	77.8
30-41	80	1	1.3	15	18.8	64	80.0
42-53	48	0	0.0	7	14.6	41	85.4
54-59	14	0	0.0	3	21.4	11	78.6
Total	277	10	3.6	54	19.5	213	76.9

Figure 12: Trend of prevalence of stunting by age in Sherkole, 2017.

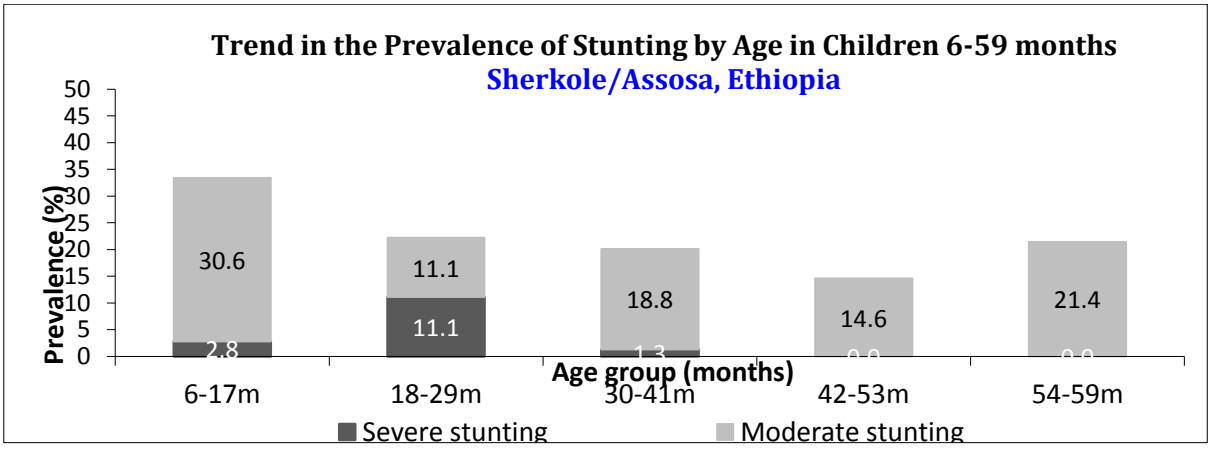


Table 24: Mean z-scores, Design Effects and excluded subjects

Indicator	n	Mean z-scores ± SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	291	-0.34±1.05	1.00	0	6
Weight-for-Age	286	-0.89±1.06	1.00	0	11
Height-for-Age	277	-1.14±1.14	1.00	0	20

Mortality results (retrospectively 90 days)

Table 25: Mortality rates

CMR (total deaths/10,000 people / day): 0.11 (0.03 -0.46) (95% CI)
U5MR (deaths in children under five/10,000 children under five / day): 0.29 (0.04-2.14, 95% CI)

Feeding programme coverage results in Sherkole

Table 26: Programme coverage for acutely malnourished children in Sherkole

	Number/total	% (95% CI)
Supplementary feeding programme coverage	5/28	17.9% (6.1-36.9)
Therapeutic feeding programme coverage	1/5	20.0% (0.5-71.6%)
Blanket supplementary feeding program (BSFP) 6-35 months	53/77	68.8% (57.3-78.9%)

Measles vaccination coverage results in Sherkole

Table 27: Measles vaccination coverage for children aged 9-59 months (or other context-specific target group) (n= 275)

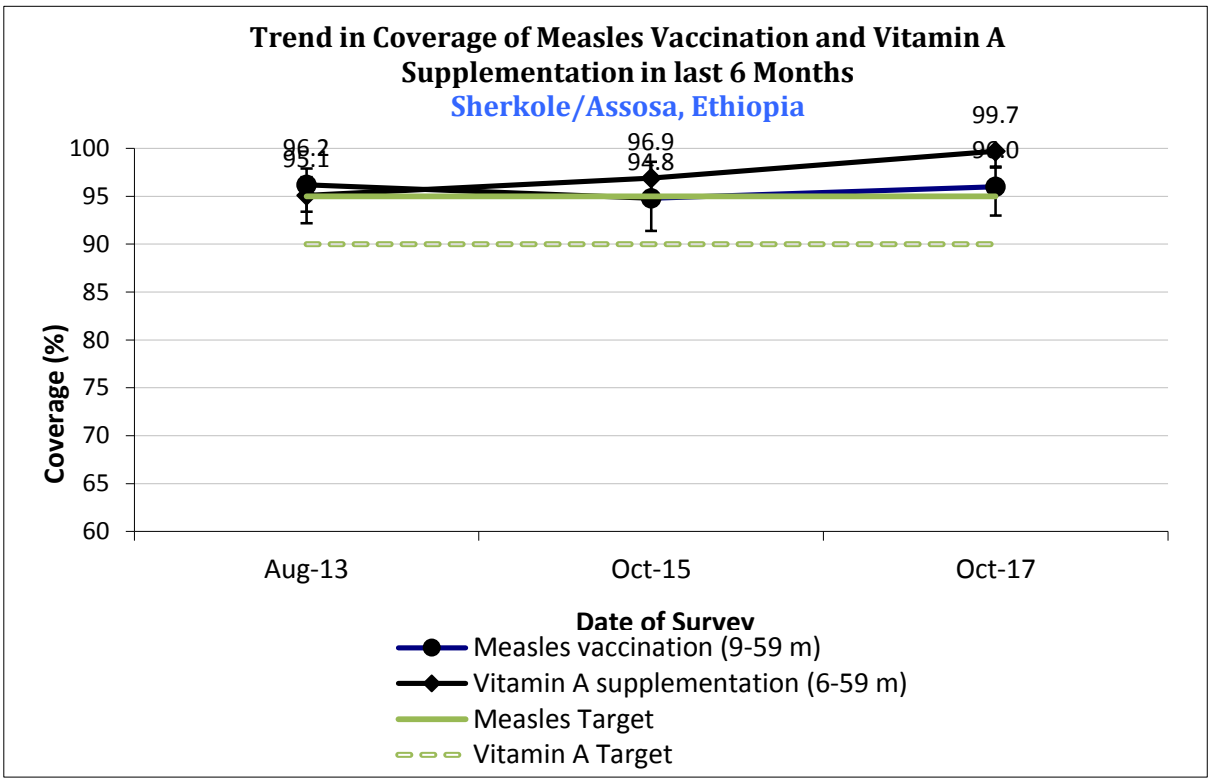
	Measles (with card) n=176	Measles (with card or confirmation from mother) n=264
YES	64.0% (58-69.7, 95% CI)	96.0% (93.0-98.0)

Vitamin A supplementation coverage results in Sherkole

Table 28Table 29: Vitamin A supplementation for children aged 6-59 months within past 6 months (or other context-specific target group) (n=297)

	Vitamin A capsule (with card) n=102	Vitamin A capsule (with card or confirmation from mother) n=296
YES	40.8% (35.9-46.0 95% CI)	99.7% (98.1-100.0)

Figure 13: Trends in the coverage of measles vaccination and vitamin A supplementation IN LAST 6 MONTHS in children 6-59 months 2013-2017



Diarrhoea results in Sherkole

Table 30: Period prevalence of diarrhoea

	Number/total	% (95% CI)
Diarrhoea in the last two weeks	22/296	7.4% (4.7-11.0%)

Anaemia results in Sherkole

Table 31: Prevalence of TOTAL anaemia, ANAEMIA CATEGORIES, and MEAN haemoglobin concentration in children 6-59 months of age

	Number/ total	Prevalence (%) and 95% CI
Total Anaemia (Hb<11.0 g/dL)	79/295	26.8% (21.8-32.2%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	46/295	15.6% (11.6-20.2%)
Moderate Anaemia (7.0-9.9 g/dL)	32/295	10.8% (7.5-15%)
Severe Anaemia (<7.0 g/dL)	1/295	0.3% (0.0-1.9%)
Mean Hb (g/dL) **(SD / 95% CI)**	11.61 SD =1.34 [Min 6.9- Max 15.8]	

[range]	

Figure 14: Trends in anaemia categories in children 6-59 months from 2013-2017

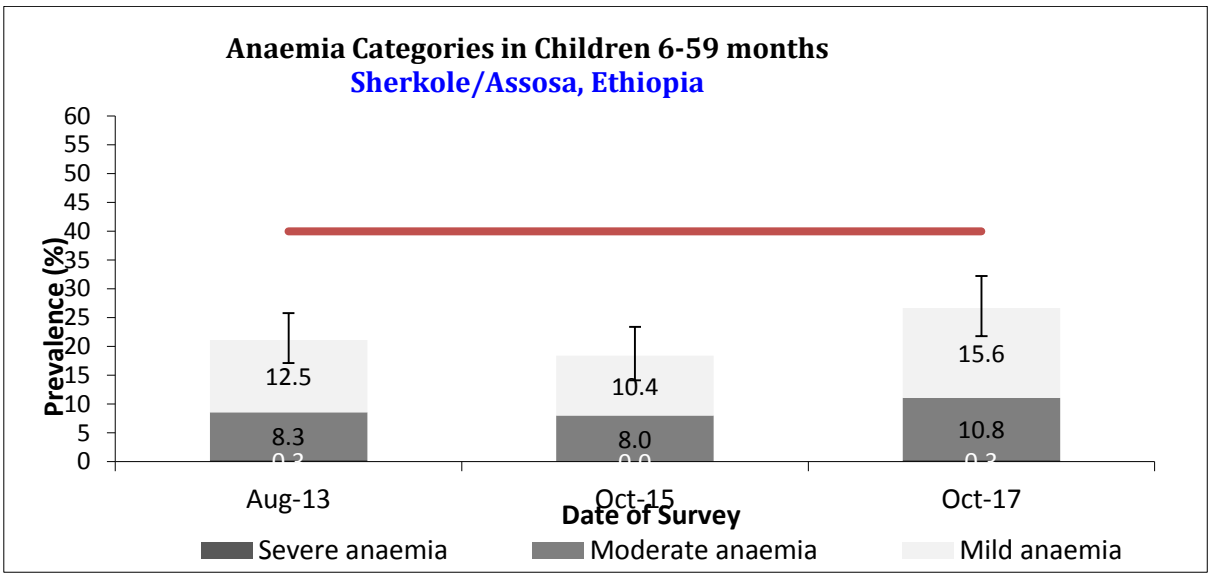


Table 32: Prevalence of MODERATE AND SEVERE anaemia in children 6-59 months of age BY AGE GROUP

Age group	No.	Severe Anaemia (<7.0 g/dL)		Moderate Anaemia (7.0-9.9 g/dL)		Mild Anaemia (Hb 10.0-10.9 g/dL)		Total Anaemia (Hb<11.0 g/dL)		Normal (Hb≥11.0 g/dL)	
		no	%	no	%	no	%	no	%	no	%
6-23	95	1	1.1%	21	22.1%	21	22.1%	43	45.3%	52	54.7%
24-35	80	0	0	5	6.3%	19	23.8%	24	30%	56	70.0%
36-59	120	0	0	6	5.0%	6	5.0%	12	10.0%	108	90.0%
Total	295	1	0.3%	32	10.8%	46	15.6%	79	26.8%	216	73.2%

Infant and Young Children Feeding (IYCF) Children 0-23 months in Sherkole

Table 33: Prevalence of Infant and Young Child Feeding Practices Indicators

Indicator	Age range	Number/total	Prevalence (%) and 95% CI
Timely initiation of breastfeeding	(0-23 months)	117/136	86.0% (79.0-91.4)
Exclusive breastfeeding under 6 months	(0-5 months)	35/38	92.1% (78.6-99.3%)

Continued breastfeeding at 1 year	(12-15 months)	28/32	87.5% (71.0-96.5)
Continued breastfeeding at 2 years	(20-23 months	5/10	50.0% (18.7-81.3%)
Introduction of solid, semi-solid or soft foods	(6-8 months)	14/22	63.6% (40.7-82.8)
Consumption of iron-rich or iron-fortified foods	(6-23 months)	70/94	74.5% (64.4-82.9%)
Bottle feeding	(0-23 months)	1/136	0.7% (0.0-4.0)

Note that when IYCF indicators are collected in nutritional surveys based on anthropometric sample of children aged 0-59 months, it is not feasible to achieve a large enough sample size for some of the indicators to be estimated as precisely as desired, especially for indicators covering a very narrow age range (e.g. 12-15 months, 6-8 months). Hence, IYCF indicators need to be interpreted with care.

About 86.0% of children below 2 years had been introduced to breast milk within an hour of birth (Table 33). And 92.1% of infants (0-5) from the sample have reported that exclusively breastfed. About 87.5% of the sampled children have maintained breastfeeding until 1st year of birth, whilst half (50%) were still breastfeeding at 2 years. Consumption of iron rich foods were reported as 74.5%. Only about 63.6% of 6-8 months children had been introduced to solid foods. The proportion of children who were bottle fed the day before the survey were 0.7%.

Figure 15: Nutrition survey results (IYCF indicators) from 2013-2017

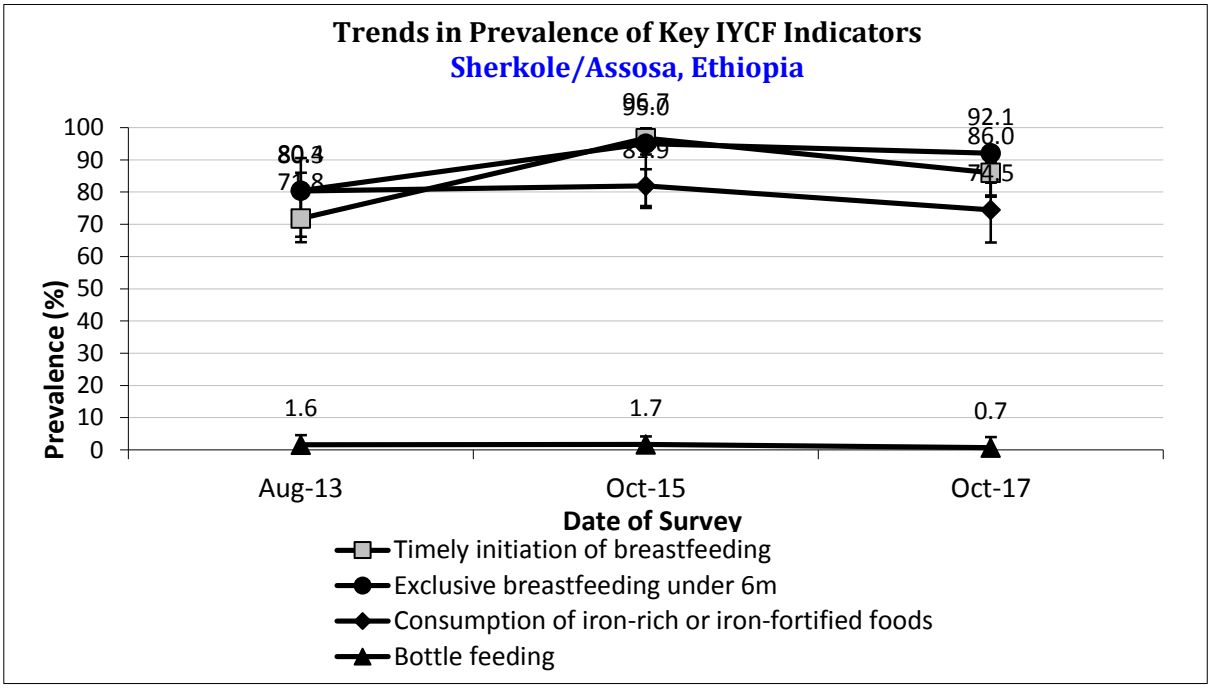


Table 34: Infant formula intake in children aged 0-23 months

	Number/total	% (95% CI)
Proportion of children aged 0-23 months who receive infant formula (fortified or non-fortified)	2/136	1.5% (0.2-5.2%)

Table 35: CSB+ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF	54/97	55.7% (45.2-65.8%)

Table 36: CSB++ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF++	46/97	47.4% (37.2-57.8%)

Women 15-49 years in Sherkole

Table 37: Women physiological status and age

Physiological status	Number/total	% of sample
Non-pregnant	20/165	12.1% (7.6-18.1%)
Pregnant	145/165	87.9% (81.9-92.4%)
Mean age and (SD) [range]	26.18 years and SD = 7.9 [min 15 & max 49.0]	

Anaemia prevalence for women 15-49 years non pregnant

Table 38: Prevalence of anaemia and haemoglobin concentration in non-pregnant women of reproductive age (15-49 years)

Anaemia - Women of reproductive age 15-49 years	**All** n = 143
Total Anaemia (<12.0 g/dL)	(15) 10.5% (6.0-16.7, 95% CI)
Mild Anaemia (11.0-11.9 g/dL)	(7) 4.9% (2.0-9.8,95% CI)
Moderate Anaemia (8.0-10.9 g/dL)	(8) 5.6% (2.4-10.7,95% CI)
Severe Anaemia (<8.0 g/dL)	(0) 0.0%
Mean Hb, g/dL **(SD)** **[range]**	13.36g/dl SD =1.38 [7.0-16.8]

Figure 16: Trends in anaemia categories in women 15-49 years from 2013-2017

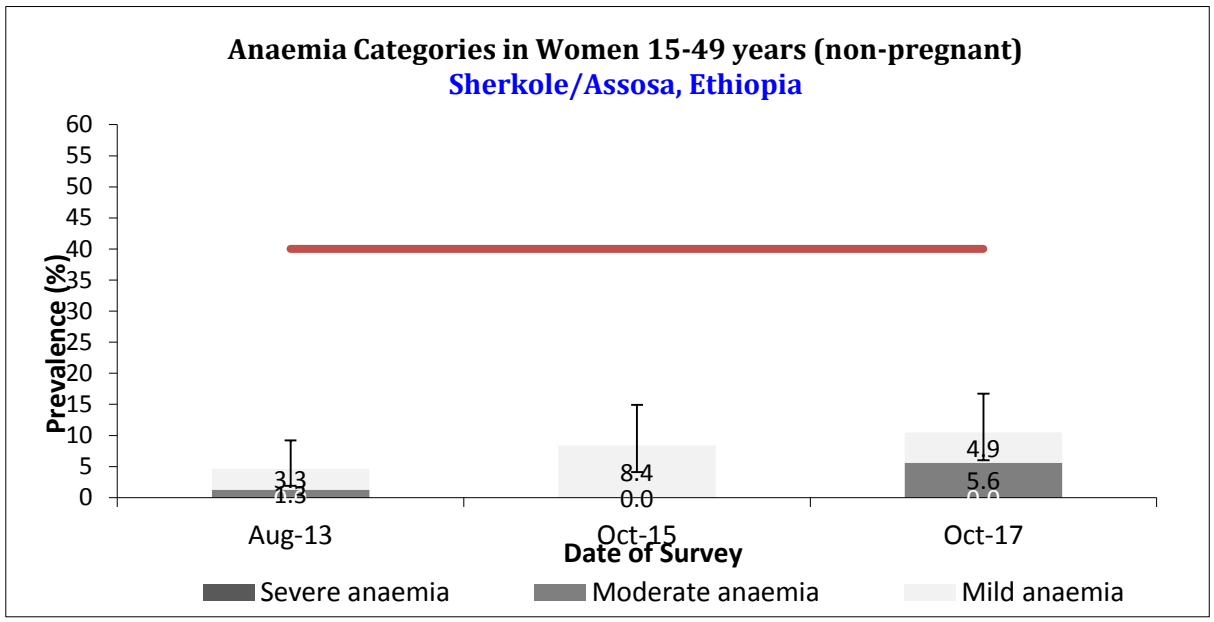
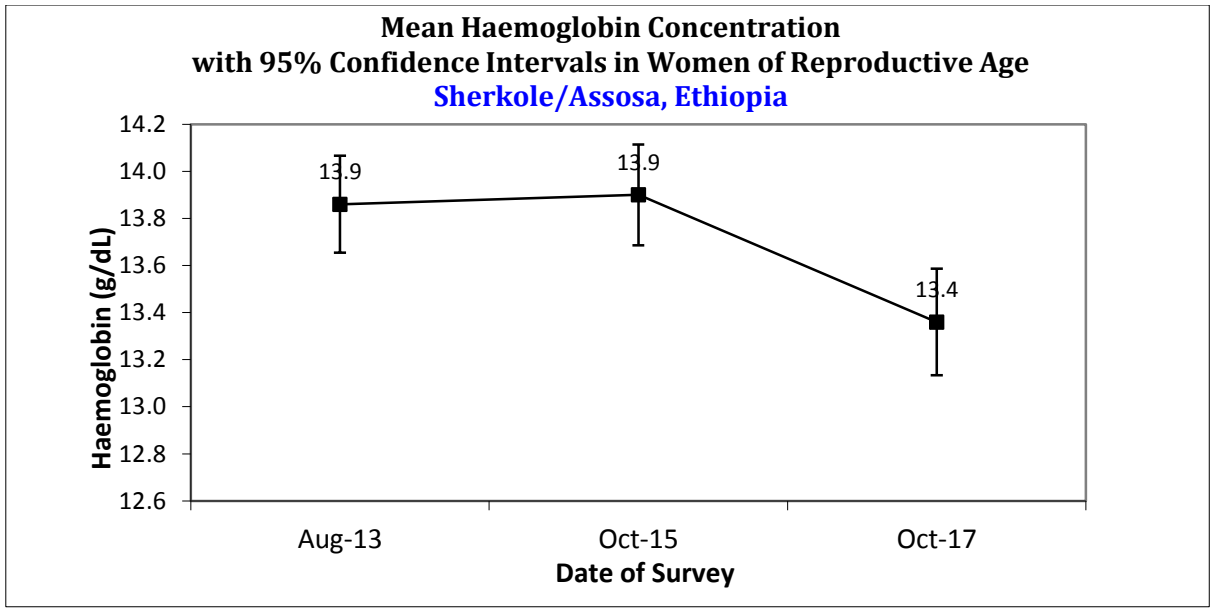


Figure 17: Mean Heamoglobin concentration Trend in Sherkole Camp 2013-2017.



Antenatal Care Enrolment

Table 39: ANC enrolment and iron-folic acid pills coverage among pregnant women (15-49 years)

	Number /total	% (95% CI)
Currently enrolled in ANC programme	18/20	90.0% (68.3-95.7%)
Currently receiving iron-folic acid pills	17/20	85.0% (62.1-96.8%)

Food security in Sherkole

Ration card coverage

Table 40: Ration card coverage

	Number/total	% (95% CI)
Proportion of households with a ration card	186/186	100.0%

Reported duration of general food ration

Table 41: Reported duration of general food ration

Average number of days the food ration lasts (Standard deviation or 95% CI)	Average duration (%) in relation to the theoretical duration of the ration*
16.6 out of 30 days	55.3%

Table 42: Reported duration of general food ration 2

	Number/ total	% (95% CI)
Proportion of households reporting that the food ration lasts the entire duration of the cycle	136/178	76.4% (69.5-82.4%)
Proportion of households reporting that the food ration lasted:		
≤75% of the cycle 30 days	26/178	14.6% (9.8-20.7%)
>75% of the cycle 30 days	152/178	85.4% (79.3-90.2%)

Negative coping strategies results

Table 43: Coping strategies used by the surveyed population over the past month

	Number/total	% (95% CI)
Proportion of households reporting using the following coping strategies over the past month*:		
Borrowed cash, food or other items *with or without interest*	174/186	93.5% (89.0-96.6%)
Sold any assets that would not have normally sold (furniture, seed stocks, tools, other NFI, livestock etc.)	33/153	17.7% (12.5-24.0%)
Requested increased remittances or gifts as compared to normal	5/181	2.7% (0.9-6.2%)
Reduced the quantity and/or frequency of meals	156/186	83.9% (77.8-88.8%)

Begged	1/186	0.5% (0.0-3.0%)
Engaged in potentially risky or harmful activities	8/186	4.3% (1.9-8.3%)
Proportion of households reporting using none of the coping strategies over the past month	1/186	0.5% (0.0-3.0%)

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

Household dietary Diversity Score and Consumption of Micronutrient rich foods

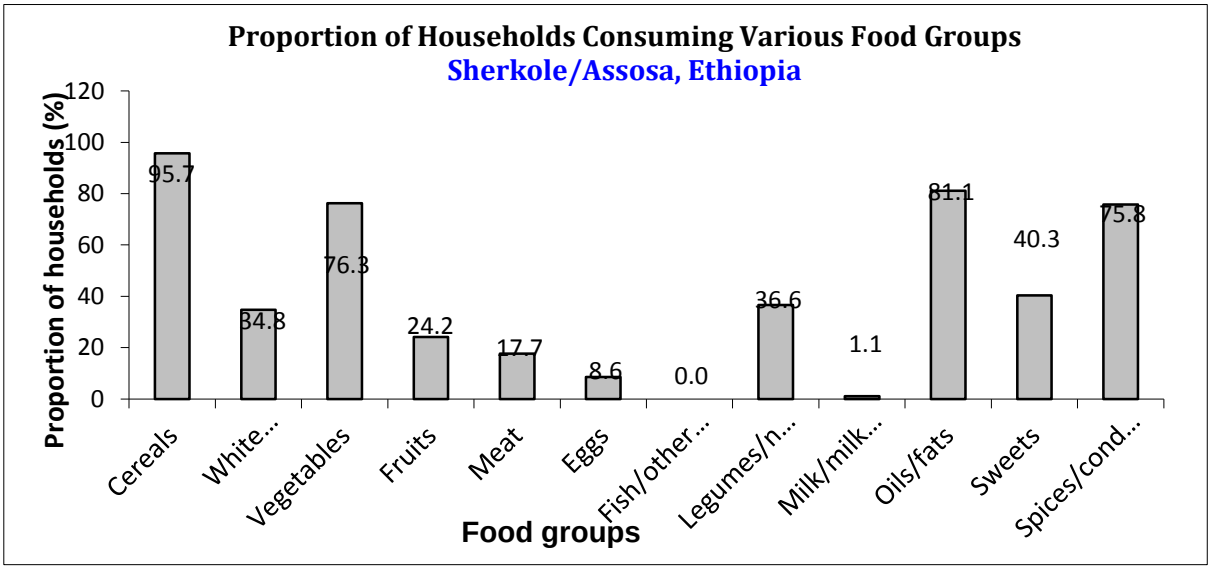
Table 44: Average HDDS

	Mean (Standard deviation or 95% CI)
Average HDDS	4.9 (SD 2.1)

Table 45: Consumption of micronutrient rich foods by households

	Number/Total	**% and 95% CI**
Proportion of households *not consuming any* vegetables, fruits, meat, eggs, fish/seafood, and milk/milk products	40/186	21.5% (15.8-28.1%)
Proportion of households consuming either a plant or animal source of vitamin A	119/184	64.7% (57.3-71.6%)
Proportion of households consuming organ meat/flesh meat, or fish/seafood (food sources of haem iron)	33/186	17.7% (12.5-24.0%)

Figure 18: Proportion of Households Consuming Various Food Groups



WASH in Sherkole

Water Quality

Table 46: Water Quality

	Number/total	% (95% CI)
Proportion of households using an improved drinking water source	187/187	100.0%
Proportion of households that use a covered or narrow necked container for storing their drinking water	108/186	58.1% (50.6-65.2)

Water Quantity

Table 47: Water Quantity: Amount of litres of water used per person per day

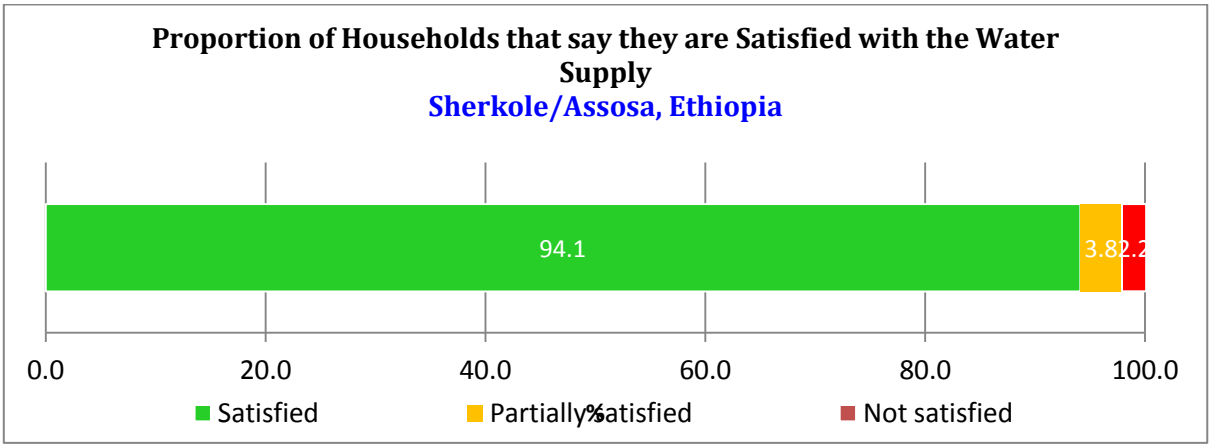
Proportion of households that use:	Number/total	% (95% CI)
≥ 20 lpppd	144/187	77.0% (70.3-82.8%)
15 – <20 lpppd	25/187	13.4% (8.8-19.1%)
<15 lpppd	18/187	9.6% (5.8-14.8%)
Average consumption (Liters per person per day)	28.7LPPPD	

Table 48: Satisfaction with water supply

	Number/total	% (95% CI)
Proportion of households that say they are satisfied with the drinking water supply	302/346	87.3 (79.3-95.2)

Shortage of containers were mentioned as a main reason for dissatisfaction

Figure 19: Proportion of households that say they are satisfied with the water supply



Excreta disposal

Table 49: Safe Excreta disposal

	Number/total	% (95% CI)
Proportion of households that use:		
An improved excreta disposal facility (improved toilet facility, 1 household)	67/181	37.0% (30.0-44.5%)
A shared family toilet (improved toilet facility, 2 households)	28/181	15.5% (10.5-21.6%)
A communal toilet (improved toilet facility, 3 households or more)	76/181	42.0% (34.7-49.5%)
An unimproved toilet (unimproved toilet facility or public toilet)	10/181	5.5% (2.7-9.9%)
Proportion of households with children under three years old that dispose of faeces safely	95/98	96.9% (91.3-99.4%)

Improved facility which is not shared (only for one household) percentage was reported to be only 37.0%. Percentages of households with children under three 3 years and dispose excreta safely was 96.9%.

Figure 20: Proportion of Households with Children under the age of 3 years old whose (last) Stools were Disposed of Safely

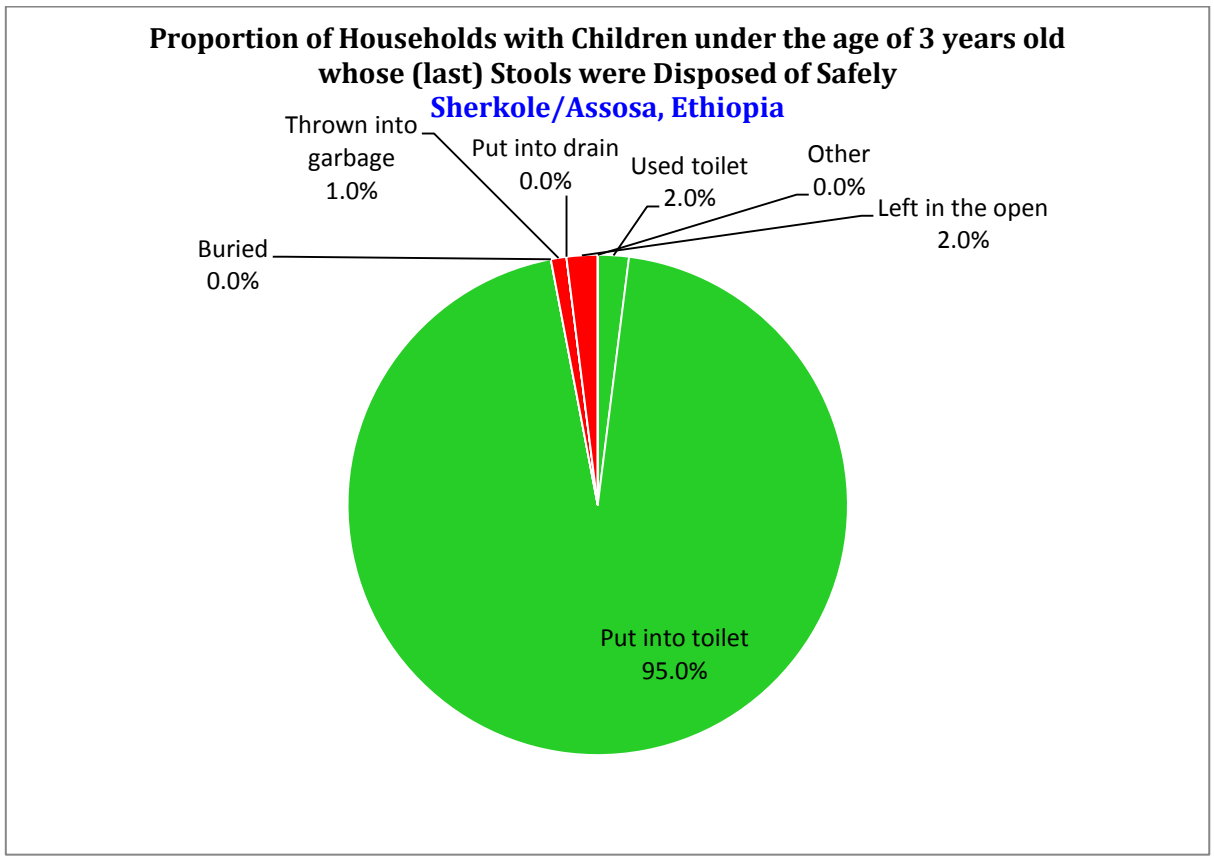
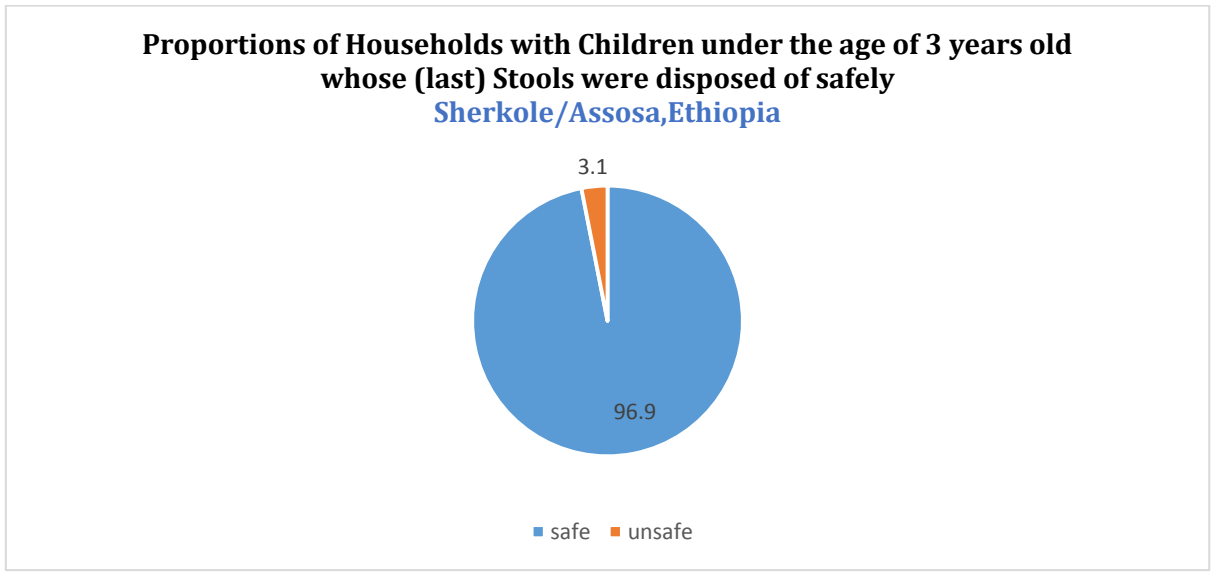


Figure 21: Households with children <3yrs old that dispose of faeces safely



Mosquito Net Coverage

Mosquito net ownership

Table 50: Household Mosquito net ownership in Sherkole

	Number/total	% (95% CI)
Proportion of households owning at least one mosquito net of any type	82/201	96.5% (93.0-98.6)
Proportion of households owning at least one LLIN	75/201	37.3%(30.6-44.4)

Amongst the surveyed Households, 96.5% of the sampled population own at least one mosquito net of any type and 37.3% of them have LLIN.

Figure 22: Household owner ship of at least one mosquito net of any type in Sherkole

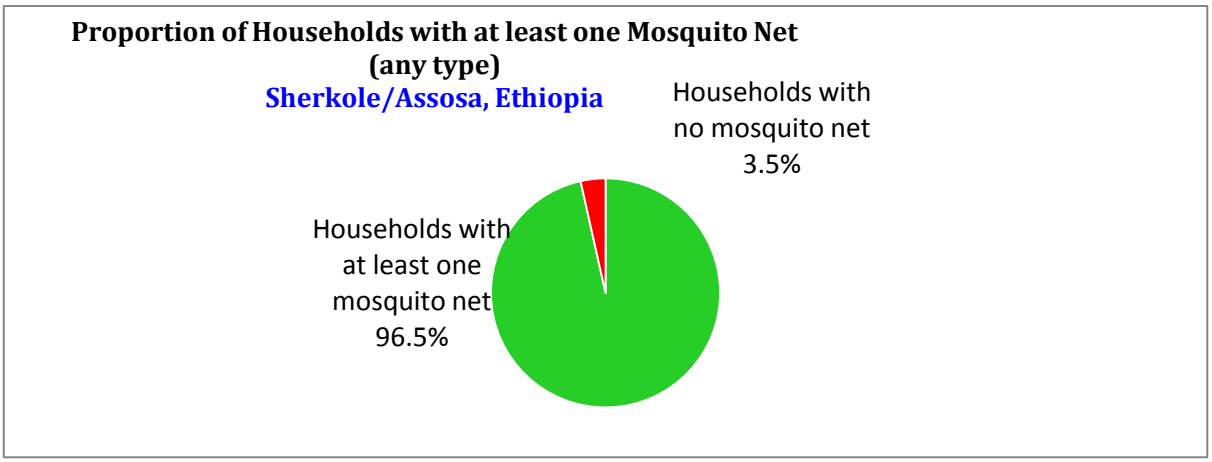


Figure 23: Household ownership of at least one LLIN Sherkole

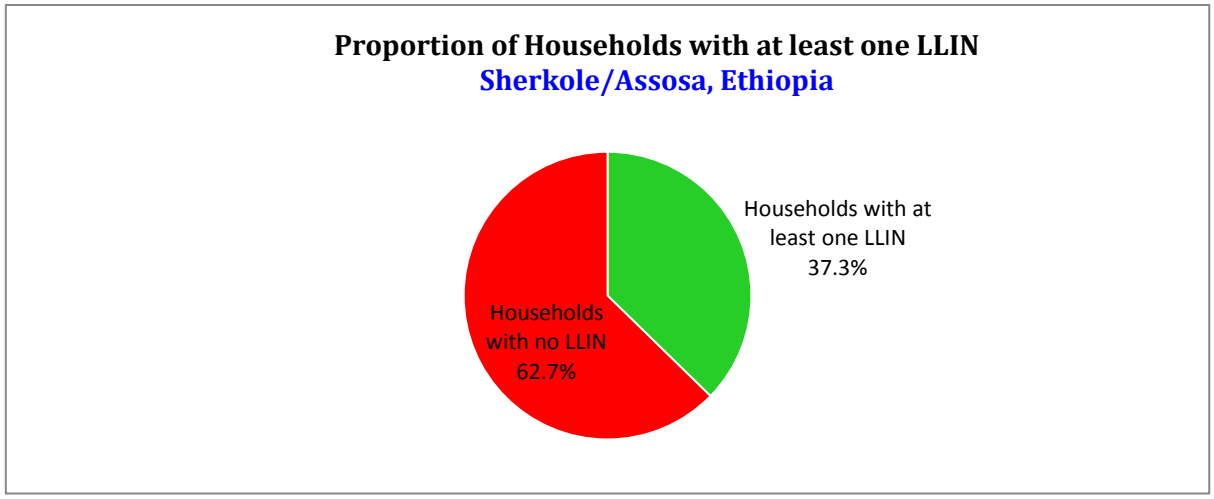


Table 51: Number of nets Sherkole

Average number of LLINs per household	Average number of persons per LLIN
1.39	7.94

Mosquito net Utilization

Table 52: Mosquito net Utilisation Sherkole

	Total population (all ages)		0-59 months		Pregnant	
	Total No= 905	%	Total No=201	%	Total No= 29	%
Slept under net of any type	257	28.4%	92	45.8%	11	37.9%
Slept under LLIN	234	25.9%	84	41.8%	9	31.0%

One fourth (25.9%) of the surveyed population slept under an LLIN mosquito net. Use of LLIN mosquito nets was slightly higher among children aged 0-59 months as compared to pregnant women (Table 52).

Figure 24: Mosquito Net Utilisation by sub-groups

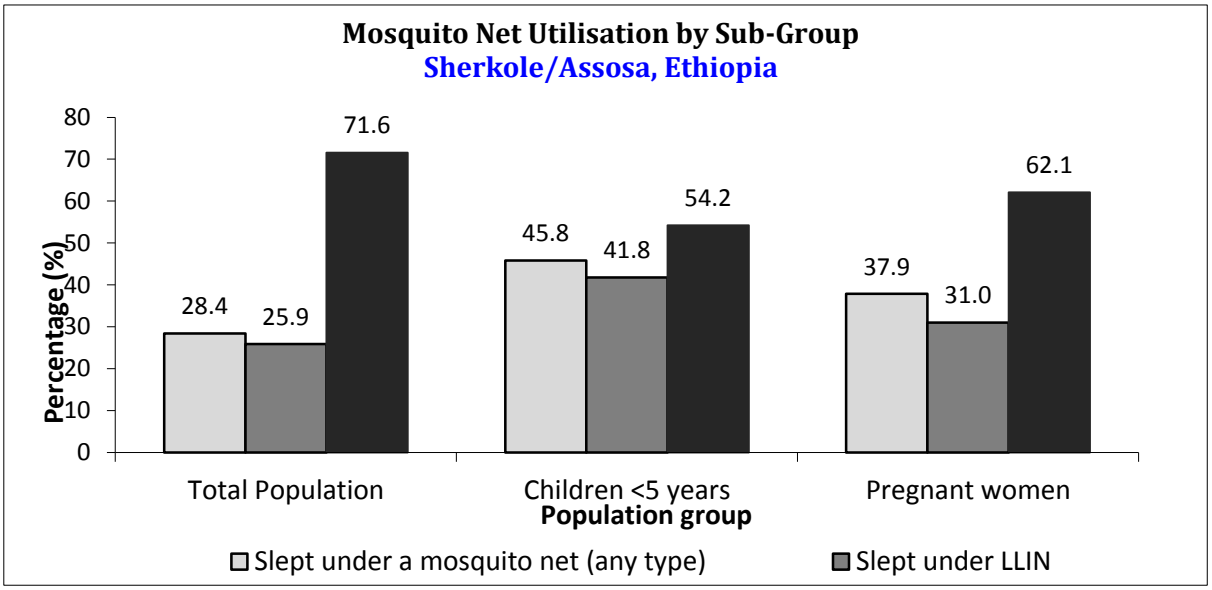


Table 53: Indoor Residual Spraying Household Coverage Sherkole

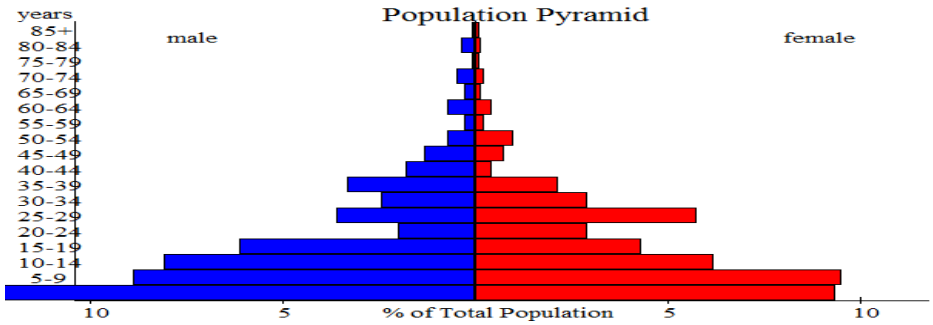
	Number/total	% (95% CI)
Proportion of household covered by IRS	194/210	96.5% (93.0-98.6%)

RESULTS FROM BAMBASI

Table 54: Distribution of age and sex of sample

	Boys		Girls		Total		Ratio
AGE (mo.)	no.	%	no.	%	no.	%	Boy: Girl
6-17	56	62.9	33	37.1	89	23.6	1.7
18-29	58	59.2	40	40.8	98	26.0	1.5
30-41	47	56.0	37	44.0	84	22.3	1.3
42-53	42	52.5	38	47.5	80	21.2	1.1
54-59	12	46.2	14	53.8	26	6.9	0.9
Total	215	57.0	162	43.0	377	100.0	1.3

Figure 25: Population pyramid for Bambasi Camp



Anthropometric results (based on WHO standards 2006) in Bambasi:

Table 55: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

	All n = 372	**Boys** n = 212	**Girls** n = 160
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(24) 6.5 % (4.4 - 9.4 95% C.I.)	(9) 4.2 % (2.2 - 7.9 95% C.I.)	(15) 9.4 % (5.8 - 14.9 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(21) 5.6 % (3.7 - 8.5 95% C.I.)	(8) 3.8 % (1.9 - 7.3 95% C.I.)	(13) 8.1 % (4.8 - 13.4 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(3) 0.8 % (0.3 - 2.3 95% C.I.)	(1) 0.5 % (0.1 - 2.6 95% C.I.)	(2) 1.3 % (0.3 - 4.4 95% C.I.)

The prevalence of oedema is 0.0 %

Figure 26: Distribution of weight-for-height z-scores (based on WHO Growth Standards) in Bambasi

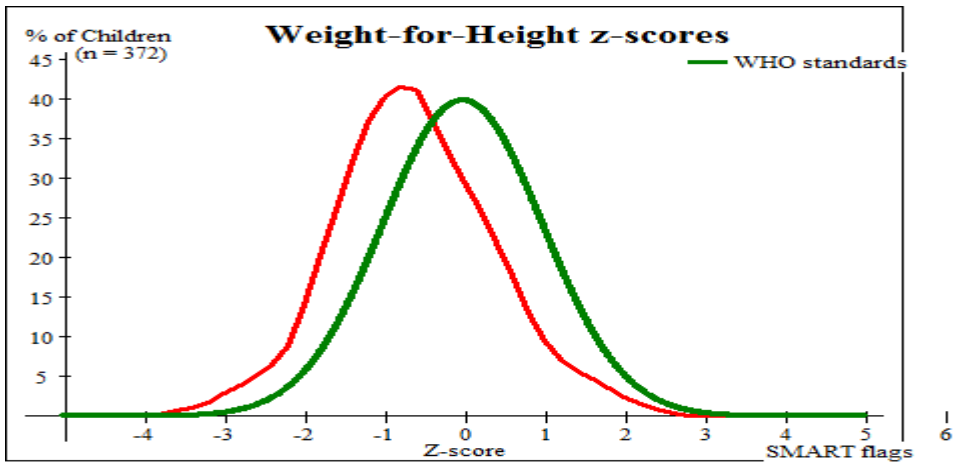


Figure 27: Trends in the prevalence of global and severe acute malnutrition based on WHO Growth Standards in children 6-59 months from 2013-2017 in Bambasi

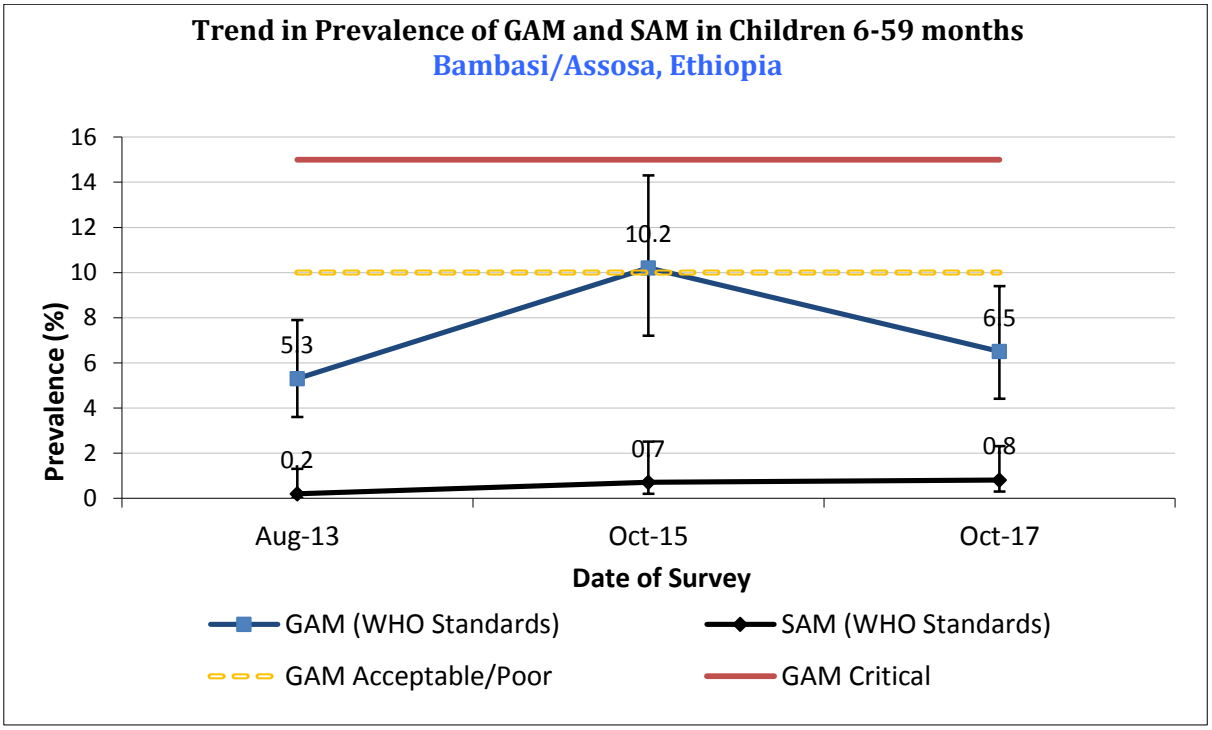


Table 56: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

Age (mo)	Total no.	Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	88	0	0.0	4	4.5	84	95.5	0	0.0
18-29	98	2	2.0	5	5.1	91	92.9	0	0.0
30-41	81	0	0.0	5	6.2	76	93.8	0	0.0
42-53	79	1	1.3	6	7.6	72	91.1	0	0.0
54-59	26	0	0.0	1	3.8	25	96.2	0	0.0
Total	372	3	0.8	21	5.6	348	93.5	0	0.0

Figure 28: Trend in the prevalence of Wasting by age, Bambasi, 2017

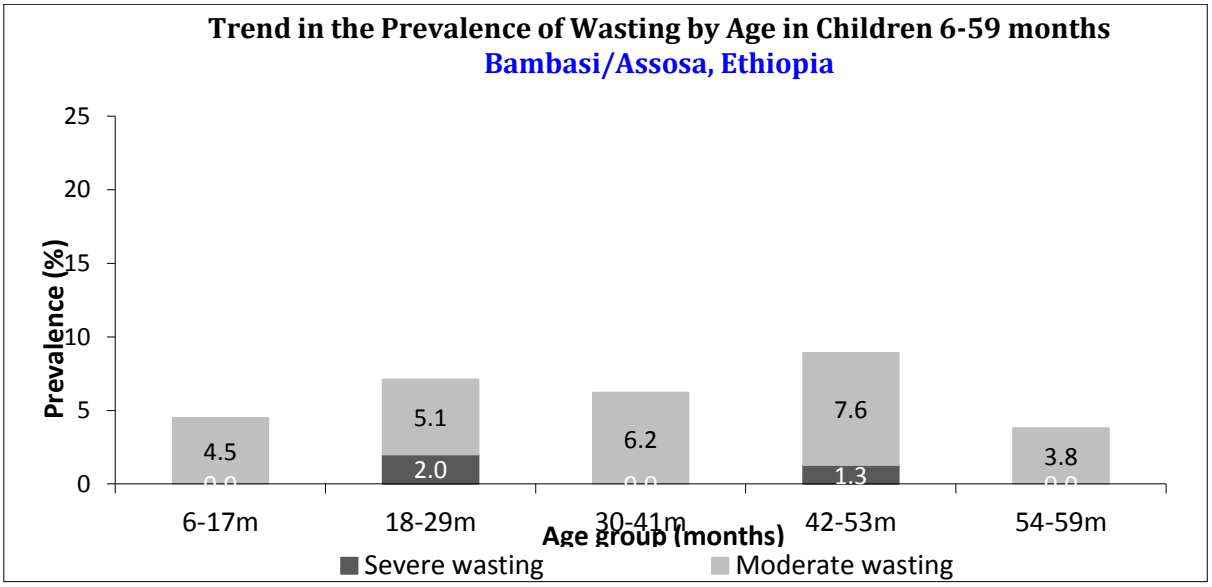


Table 57: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 5 (1.3 %)	Not severely malnourished No. 372 (98.7 %)

Table 58: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex

	All n = 377	Boys n = 215	Girls n = 162
Prevalence of global malnutrition (< 125 mm and/or oedema)	(18) 4.8 % (3.0 - 7.4 95% C.I.)	(8) 3.7 % (1.9 - 7.2 95% C.I.)	(10) 6.2 % (3.4 - 11.0 95% C.I.)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	(15) 4.0 % (2.4 - 6.5 95% C.I.)	(7) 3.3 % (1.6 - 6.6 95% C.I.)	(8) 4.9 % (2.5 - 9.4 95% C.I.)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	(3) 0.8 % (0.3 - 2.3 95% C.I.)	(1) 0.5 % (0.1 - 2.6 95% C.I.)	(2) 1.2 % (0.3 - 4.4 95% C.I.)

Table 59: Prevalence of acute malnutrition by age, based on MUAC cut off's and/or oedema

Age (mo)	Total no.	Severe wasting (< 115 mm)		Moderate wasting (>= 115 and < 125 mm)		Normal (> = 125 mm)		Edema	
		No.	%	No.	%	No.	%	No.	%
6-17	89	1	1.1	9	10.1	79	88.8	0	0.0
18-29	98	2	2.0	3	3.1	93	94.9	0	0.0
30-41	84	0	0.0	2	2.4	82	97.6	0	0.0
42-53	80	0	0.0	1	1.3	79	98.8	0	0.0
54-59	26	0	0.0	0	0.0	26	100.0	0	0.0
Total	377	3	0.8	15	4.0	359	95.2	0	0.0

Table 60: Prevalence of underweight based on weight-for-age z-scores by sex

	All n = 373	Boys n = 213	Girls n = 160
Prevalence of underweight (<-2 z-score)	(89) 23.9 % (19.8 - 28.4 95% C.I.)	(44) 20.7 % (15.8 - 26.6 95% C.I.)	(45) 28.1 % (21.7 - 35.5 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(73) 19.6 % (15.9 - 23.9 95% C.I.)	(37) 17.4 % (12.9 - 23.0 95% C.I.)	(36) 22.5 % (16.7 - 29.6 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(16) 4.3 % (2.7 - 6.9 95% C.I.)	(7) 3.3 % (1.6 - 6.6 95% C.I.)	(9) 5.6 % (3.0 - 10.3 95% C.I.)

Table 61: Prevalence of underweight by age, based on weight-for-age z-scores

Age (mo)	Total no.	Severe underweight (<-3 z-score)		Moderate underweight (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Edema	
		No.	%	No.	%	No.	%	No.	%
6-17	89	1	1.1	12	13.5	76	85.4	0	0.0
18-29	95	4	4.2	20	21.1	71	74.7	0	0.0
30-41	84	5	6.0	17	20.2	62	73.8	0	0.0
42-53	79	3	3.8	19	24.1	57	72.2	0	0.0
54-59	26	3	11.5	5	19.2	18	69.2	0	0.0
Total	373	16	4.3	73	19.6	284	76.1	0	0.0

Table 62: Prevalence of stunting based on height-for-age z-scores and by sex

	All n = 362	Boys n = 208	Girls n = 154
Prevalence of stunting (<-2 z-score)	(132) 36.5 % (31.7 - 41.5 95% C.I.)	(82) 39.4 % (33.0 - 46.2 95% C.I.)	(50) 32.5 % (25.6 - 40.2 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(87) 24.0 % (19.9 - 28.7 95% C.I.)	(59) 28.4 % (22.7 - 34.8 95% C.I.)	(28) 18.2 % (12.9 - 25.0 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(45) 12.4 % (9.4 - 16.2 95% C.I.)	(23) 11.1 % (7.5 - 16.0 95% C.I.)	(22) 14.3 % (9.6 - 20.7 95% C.I.)

Figure 29: Distribution of height –for Age z-scores (based on WHO Growth Standards)

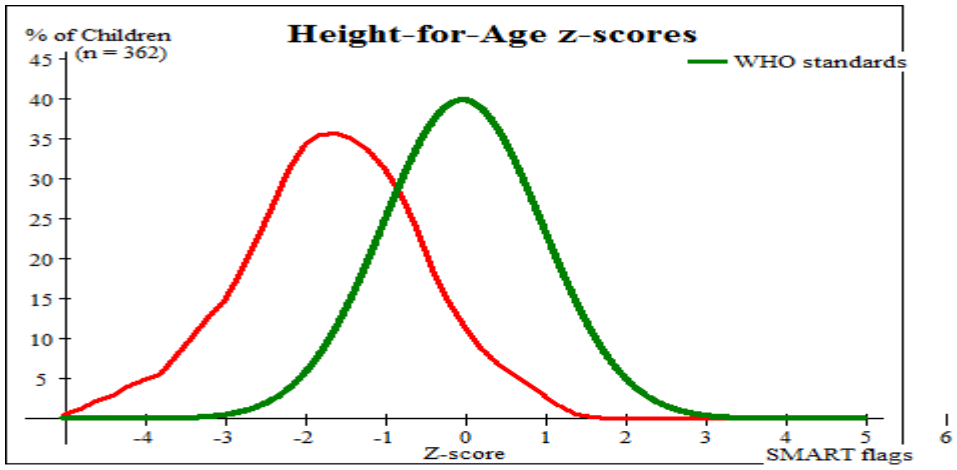


Figure 30: Trends in the prevalence of stunting in children 6-59 months in Bambasi.

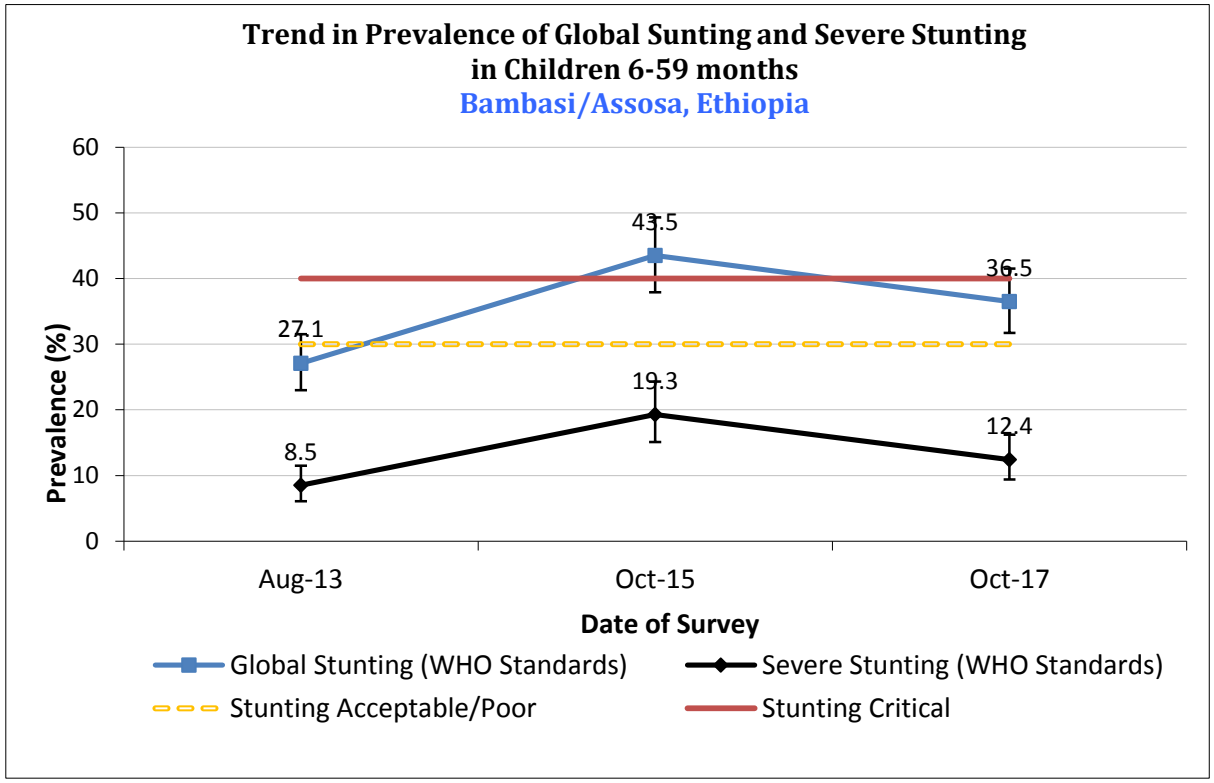


Table 63: Prevalence of stunting by age based on height-for-age z-scores

Age (mo)	Total no.	Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
		No.	%	No.	%	No.	%
6-17	85	4	4.7	25	29.4	56	65.9
18-29	93	16	17.2	24	25.8	53	57.0
30-41	80	12	15.0	19	23.8	49	61.3
42-53	79	8	10.1	15	19.0	56	70.9
54-59	25	5	20.0	4	16.0	16	64.0
Total	362	45	12.4	87	24.0	230	63.5

Figure 31: Trend of prevalence of stunting by age in Bambasi, 2017.

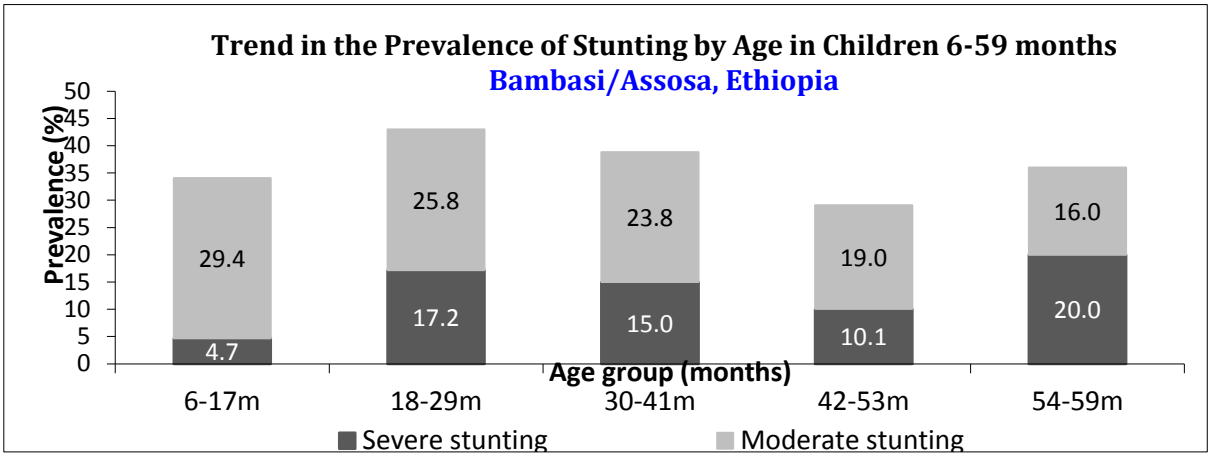


Table 64: Mean z-scores, Design Effects and excluded subjects

Indicator	n	Mean z-scores ± SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	372	-0.62±0.99	1.00	0	5
Weight-for-Age	373	-1.33±0.96	1.00	0	4
Height-for-Age	362	-1.64±1.10	1.00	0	15

Mortality results (retrospectively 90 days)

Table 65: Mortality rates

CMR (total deaths/10,000 people / day): 0.06(0.01 -0.48) (95% CI)
U5MR (deaths in children under five/10,000 children under five / day): 0.29 (0.04-2.25, 95% CI)

Feeding programme coverage results in Bambasi

Table 66: Programme coverage for acutely malnourished children in Bambasi

	Number/total	% (95% CI)
Supplementary feeding programme coverage	5/33	15.2% (5.1-31.9%)
Therapeutic feeding programme coverage	2/7	28.6% (3.7-71.0%)
Blanket supplementary feeding program (BSFP) 6-35 months	41/106	38.7% (29.4-48.6%)

Measles vaccination coverage results in Bambasi

Table 67: Measles vaccination coverage for children aged 9-59 months (or other context-specific target group) (n= 349)

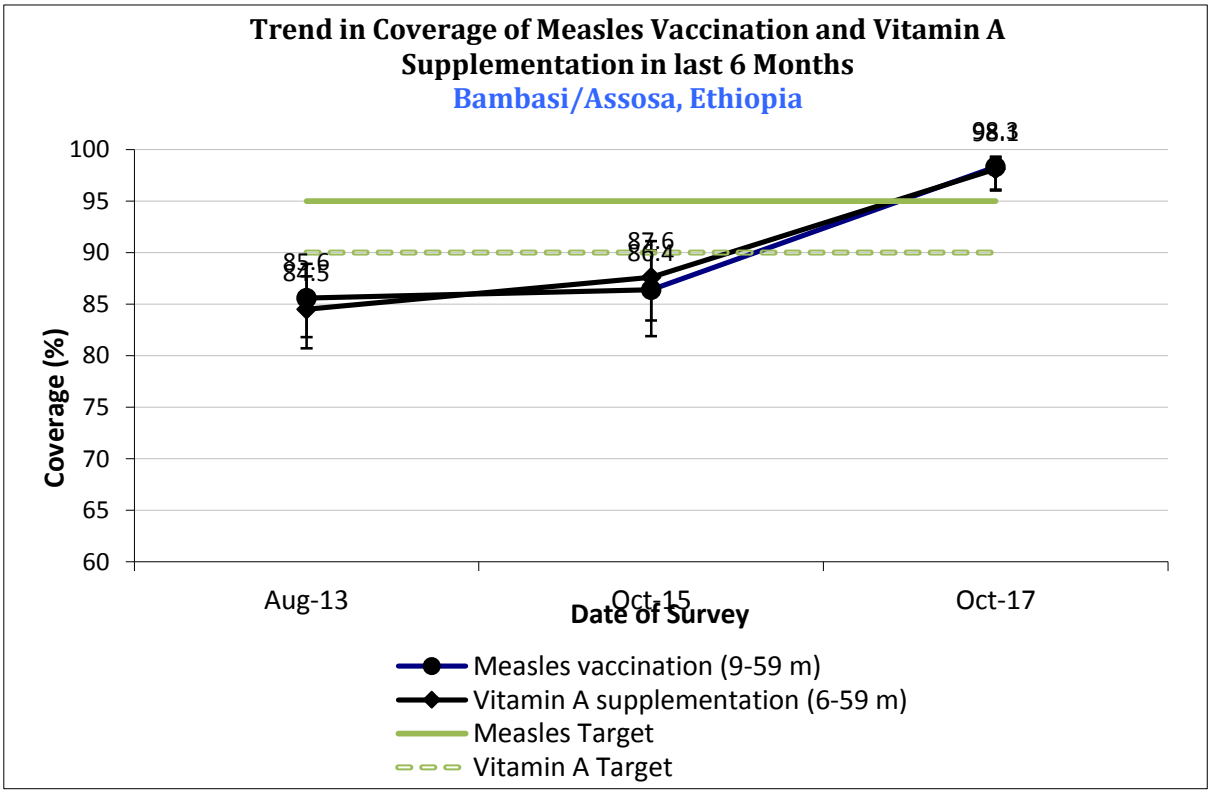
	Measles (with card) n=177	Measles (with card or confirmation from mother) n=343
YES	50.7% (45.3-56.1 95% CI)	98.3% (96.1-99.3%)

Vitamin A supplementation coverage results in Bambasi

Table 68: Vitamin A supplementation for children aged 6-59 months within past 6 months (or other context-specific target group) (n=377)

	Vitamin A capsule (with card) n=154	Vitamin A capsule (with card or confirmation from mother) n=370
YES	40.8% (35.9-46.0 95% CI)	98.1% (96.0-99.2%)

Figure 32: Trends in the coverage of measles vaccination and vitamin A supplementation IN LAST 6 MONTHS in children 6-59 months 2013-2017



Diarrhoea results in Bambasi

Table 69: Period prevalence of diarrhoea

	Number/total	% (95% CI)
Diarrhoea in the last two weeks	14/375	3.7 %(2.1-6.3%)

Anaemia results in Bambasi

Table 70: Prevalence of TOTAL anaemia, ANAEMIA CATEGORIES, and MEAN haemoglobin concentration in children 6-59 months of age

	Number/ total	Prevalence (%) and 95% CI
Total Anaemia (Hb<11.0 g/dL)	101/376	26.9% (22.5-31.7%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	64/376	17.0% (13.4-21.3%)
Moderate Anaemia (7.0-9.9 g/dL)	36/376	9.6% (6.9-13.1%0
Severe Anaemia (<7.0 g/dL)	1/376	0.3% (0.0-1.7%)
Mean Hb (g/dL) **(SD / 95% CI)** **[range]**	11.61 SD =1.29 [Min 6.3- Max 15.9]	

Figure 33: Trends in anaemia categories in children 6-59 months from 2013-2017

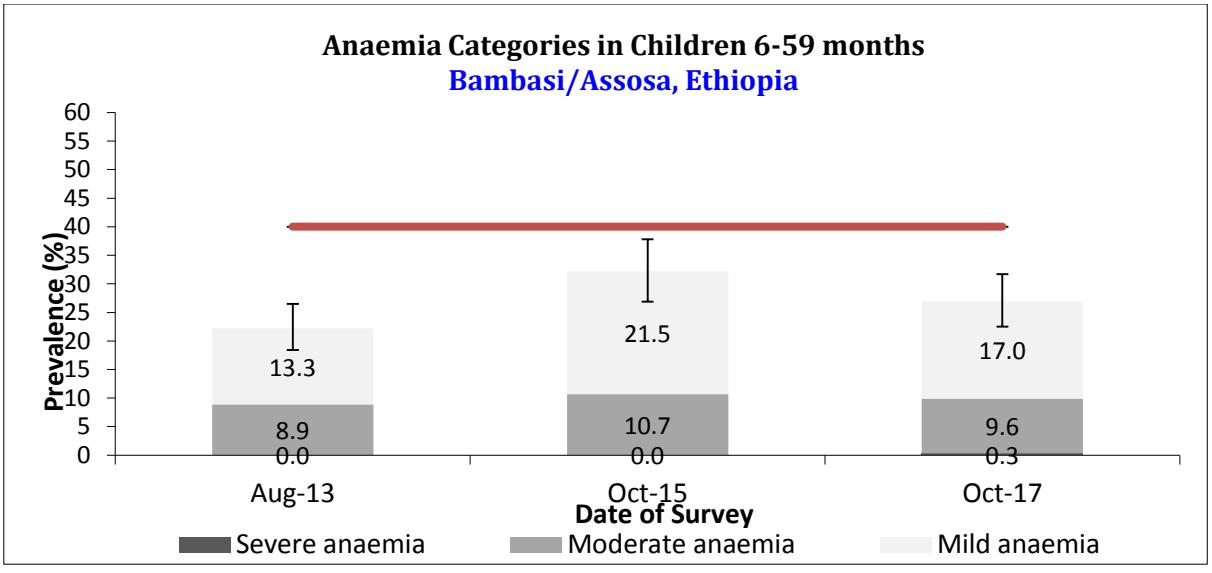


Table 71: Prevalence of MODERATE AND SEVERE anaemia in children 6-59 months of age BY AGE GROUP

Age group	No.	Severe Anaemia (<7.0 g/dL)		Moderate Anaemia (7.0-9.9 g/dL)		Mild Anaemia (Hb 10.0-10.9 g/dL)		Total Anaemia (Hb<11.0 g/dL)		Normal (Hb≥11.0 g/dL)	
		no	%	no	%	no	%	no	%	no	%
6-23	125	1	0.8%	20	16.0%	30	24%	51	40.8%	74	59.2%
24-35	97	0	0	9	9.3%	14	14.4%	23	23.7%	74	76.3%
36-59	154	0	0	7	4.5%	20	13%	27	17.5%	127	82.5%
Total	376	1	0.3%	36	9.6%	64	17.0%	101	26.9%	275	73.1%

Infant and Young Children Feeding (IYCF) Children 0-23 months in Bambasi

Table 72: Prevalence of Infant and Young Child Feeding Practices Indicators

Indicator	Age range	Number/total	Prevalence (%) and 95% CI
Timely initiation of breastfeeding	(0-23 months)	150/177	84.7% (78.6-89.7%)
Exclusive breastfeeding under 6 months	(0-5 months)	47/51	92.2% (81.1-97%)
Continued breastfeeding at 1 year	(12-15 months)	21/25	84.0 (63.9-95.5%)
Continued breastfeeding at 2 years	(20-23 months	10/15	66.7 (38.4-88.2%)
Introduction of solid, semi-solid or soft foods	(6-8 months)	15/28	53.6% (33.9-72.5)
Consumption of iron-rich or iron-fortified foods	(6-23 months)	110/124	88.7% (81.8-93.7)
Bottle feeding	(0-23 months)	4/177	2.3% (0.6-5.7%)

Note that when IYCF indicators are collected in nutritional surveys based on anthropometric sample of children aged 0-59 months, it is not feasible to achieve a large enough sample size for some of the indicators to be estimated as precisely as desired, especially for indicators covering a very narrow age range (e.g. 12-15 months, 6-8 months). Hence, IYCF indicators need to be interpreted with care.

About 84.7% of children below 2 years had been introduced to breast milk within an hour of birth (Table 72). And 92.2% of infants (0-5) from the sample have reported that exclusively breastfed. About 84.0% of the sampled children have maintained breastfeeding until 1st year of birth, whilst less than half 66.7% were still breastfeeding at 2 years. Consumption of iron rich

foods were reported as 88.7%. Only about half (53.6%) of 6-8 months children had been introduced to solid foods. The proportion of children who were bottle fed the day before the survey were 2.3%.

Figure 34: Nutrition survey results (IYCF indicators) from 2013-2017

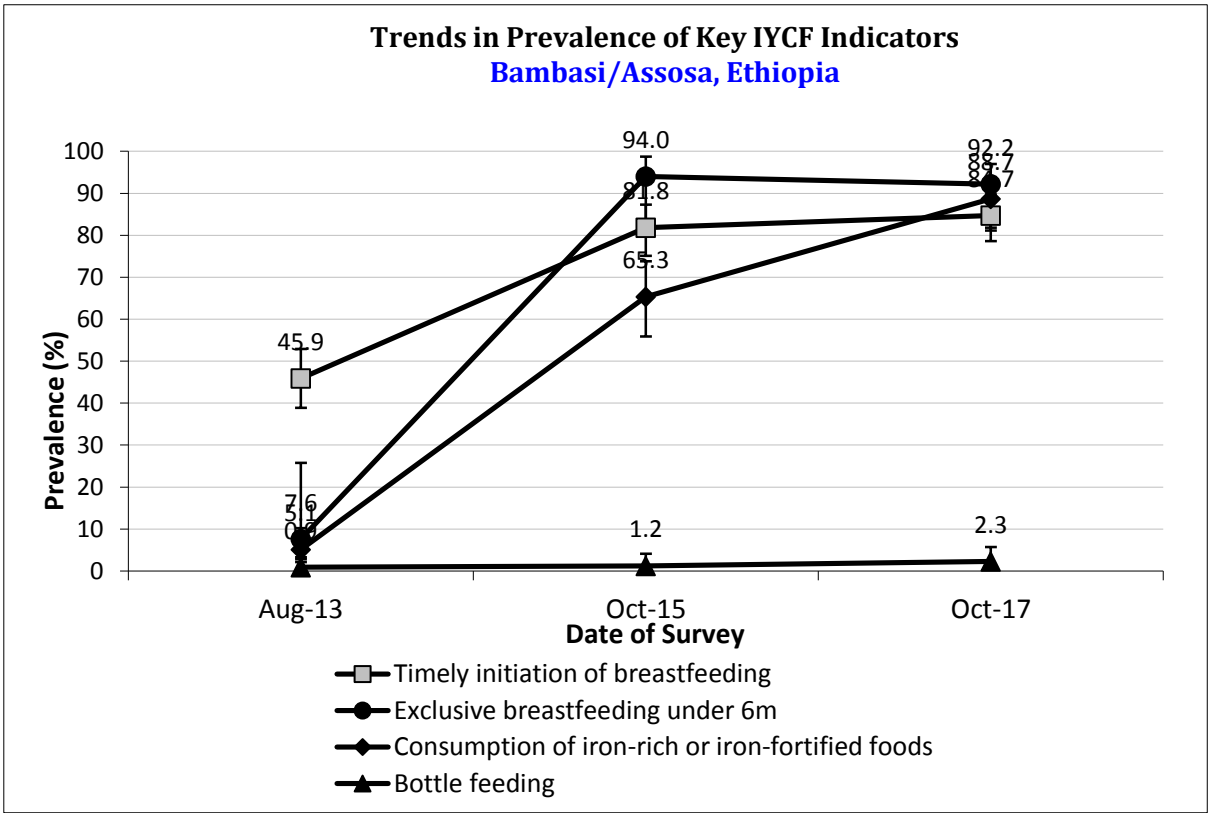


Table 73: Infant formula intake in children aged 0-23 months

	Number/total	% (95% CI)
Proportion of children aged 0-23 months who receive infant formula (fortified or non-fortified)	1/176	0.6 (0.0-3.1)

Table 74: CSB+ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF	41/125	32.8 (24.7-41.8)

Table 75: CSB++ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF++	66/124	53.2 (44.1-62.2)

Women 15-49 years in Bambasi

Table 76: Women physiological status and age

Physiological status	Number/total	% of sample
Non-pregnant	35/174	20.1 %(14.4-26.8%)
Pregnant	139/174	79.9% (73.2-85.6%)
Mean age and (SD) [range]	26.09 years and SD = 7.01 [min 15 & max 48.0]	

Anaemia Prevalence for Women of 15-49 years non pregnant

Table 77: Prevalence of anaemia and haemoglobin concentration in non-pregnant women of reproductive age (15-49 years)

Anaemia - Women of reproductive age 15-49 years	All n = 139
Total Anaemia (<12.0 g/dL)	(11) 7.9% (4.0-13.7, 95% CI)
Mild Anaemia (11.0-11.9 g/dL)	(7) 5.0% (2.0-10.1,95% CI)
Moderate Anaemia (8.0-10.9 g/dL)	(3) 2.2% (0.4-6.2,95% CI)
Severe Anaemia (<8.0 g/dL)	(1) 0.7% (0.0-3.9,95% CI)
Mean Hb, g/dL (SD) [range]	13.6g/dl SD =1.35 [7.0-16.8]

Figure 35: Trends in anaemia categories in women 15-49 years from 2013-2017

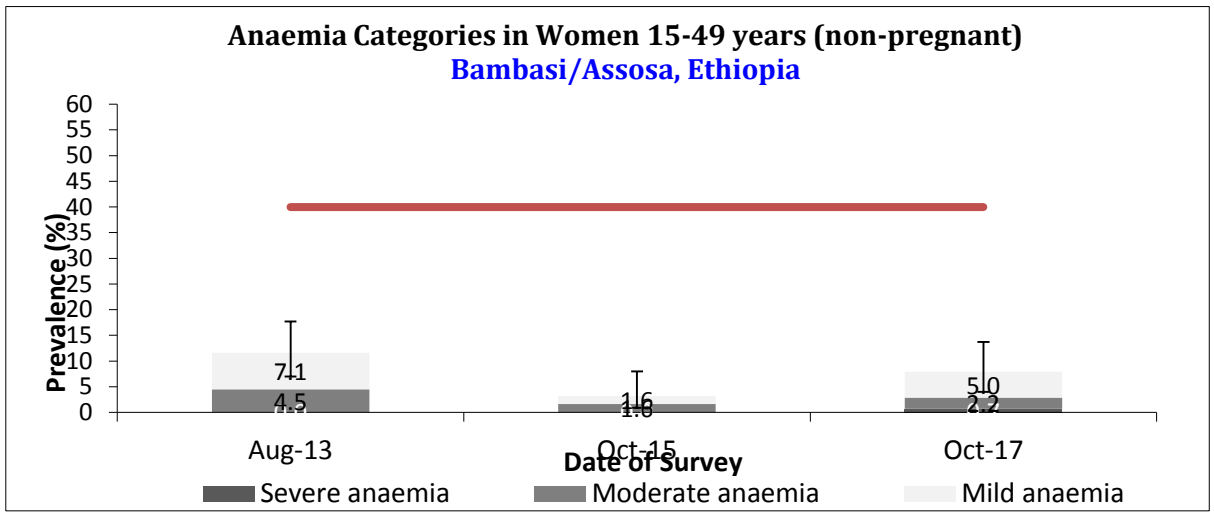
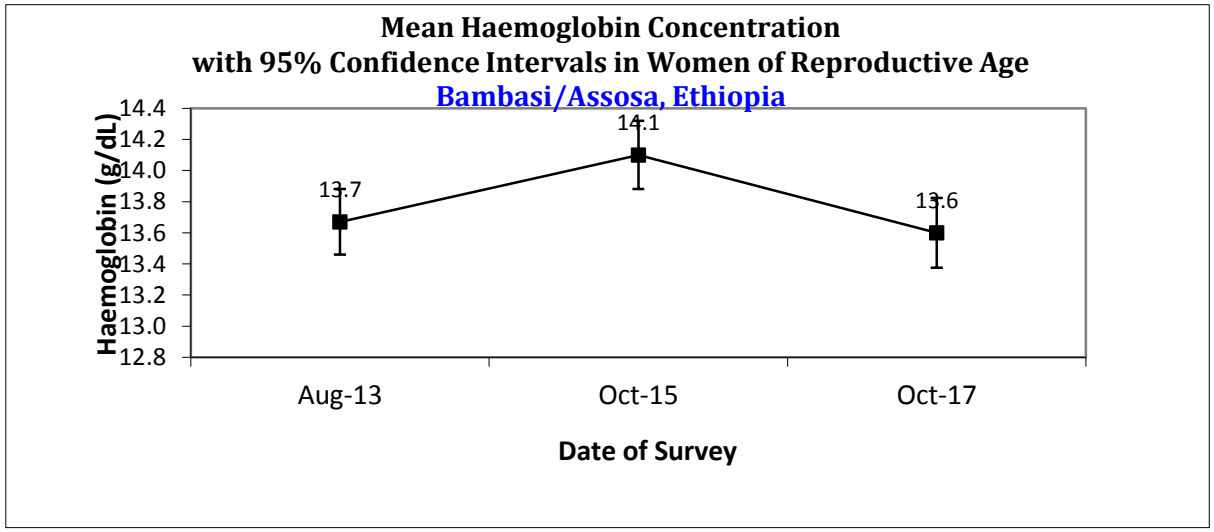


Figure 36: Mean Heamoglobin concentration Trend in Bambasi Camp 2013-2017.



Antenatal Care Practice

Table 78: ANC enrolment and iron-folic acid pills coverage among pregnant women (15-49 years)

	Number /total	% (95% CI)
Currently enrolled in ANC programme	34/35	97.1% (85.1-99.9%)
Currently receiving iron-folic acid pills	31/35	88.6% (73.3-96.8%)

Food security in Bambasi

Ration card coverage

Table 79: Ration card coverage

	Number/total	% (95% CI)
Proportion of households with a ration card	196/196	100%

Duration of General Food Ration

Table 80: Reported duration of general food ration

Average number of days the food ration lasts (Standard deviation or 95% CI)	Average duration (%) in relation to the theoretical duration of the ration*
17.8 days out of 30	59.3%

Table 81: Reported duration of general food ration 2

	Number/ total	% (95% CI)
Proportion of households reporting that the food ration lasts the entire duration of the cycle	16/196	8.2% (4.7-12.9%)
Proportion of households reporting that the food ration lasted:		
≤75% of the cycle 30 days	154/196	78.6% (72.2-84.1%)
>75% of the cycle 30 days	42/196	21.4% (15.9-27.8%)

Negative coping strategies results

Table 82: Coping strategies used by the surveyed population over the past month

	Number/total	% (95% CI)
Proportion of households reporting using the following coping strategies over the past month*:		
Borrowed cash, food or other items *with or without interest*	131/181	72.4% (65.3-78.7%)
Sold any assets that would not have normally sold (furniture, seed stocks, tools, other NFI, livestock etc.)	72/181	39.8% (32.6-47.3%)
Requested increased remittances or gifts as compared to normal	20/180	11.1% (6.9-16.6%)
Reduced the quantity and/or frequency of meals	156/181	86.2% (80.3-90.9%)

Begged	9/181	5.0% (2.3-9.2%)
Engaged in potentially risky or harmful activities	40/180	22.2% (16.3-28.9%)
Proportion of households reporting using none of the coping strategies over the past month	4/178	2.2% (0.6-5.7%)

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

Household Dietary diversity and Consumption of Micronutrient rich foods

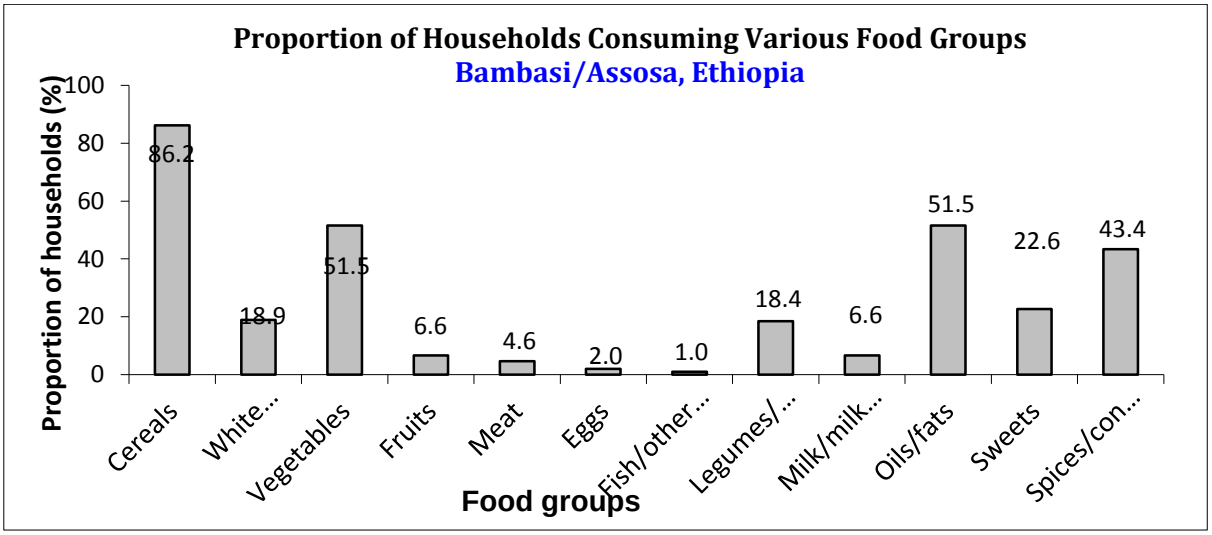
Table 83: Average HDDS

	Mean (Standard deviation or 95% CI)
Average HDDS	4.59 (SD 1.67)

Table 84: Consumption of micronutrient rich foods by households

	Number/Total	**% and 95% CI**
Proportion of households *not consuming any* vegetables, fruits, meat, eggs, fish/seafood, and milk/milk products	84/196	42.9% (35.8-50.1%)
Proportion of households consuming either a plant or animal source of vitamin A	90/192	46.9% (39.7-54.2%)
Proportion of households consuming organ meat/flesh meat, or fish/seafood (food sources of haem iron)	11/196	5.6% (2.8-9.8%)

Figure 37: Proportion of Households Consuming Various Food Groups



WASH in Bambasi

Water Quality

Table 85: Water Quality

	Number/total	% (95% CI)
Proportion of households using an improved drinking water source	197/198	99.5% (97.2-100%)
Proportion of households that use a covered or narrow necked container for storing their drinking water	126/197	64.0% (56.8-70.7%)

Water Quantity

Table 86: Water Quantity: Amount of litres of water used per person per day

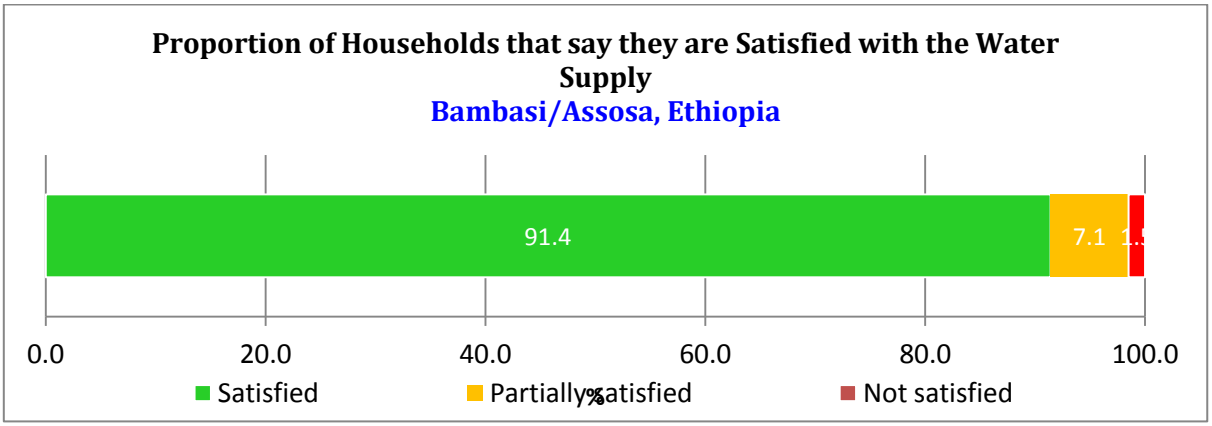
Proportion of households that use:	Number/total	% (95% CI)
≥ 20 lpppd	80/198	40.4% (33.5-47.6%)
15 – <20 lpppd	48/198	24.2% (18.4-30.8%)
<15 lpppd	70/198	35.4% (28.7-42.4%)
Average consumption (Liters per person per day)	19.58LPPPD	

Table 87: Satisfaction with water supply

	Number/total	% (95% CI)
Proportion of households that say they are satisfied with the drinking water supply	181/198	91.4% (86.6-94.9%)

Long distance and irregularities of water supply were mentioned as a reason for

Figure 38: Proportion of households that say they are satisfied with the water supply



Excreta Disposal

Table 88: Safe Excreta disposal

	Number/total	% (95% CI)
Proportion of households that use:		
An improved excreta disposal facility (improved toilet facility, 1 household)	140/198	70.7% (63.8-76.9%)
A shared family toilet (improved toilet facility, 2 households)	4/198	2.0% (0.6-5.1%)
A communal toilet (improved toilet facility, 3 households or more)	50/198	25.3% (19.4-31.9%)
An unimproved toilet (unimproved toilet facility or public toilet)	4/198	2.0% (0.6-5.1%)
Proportion of households with children under three years old that dispose of faeces safely	126/126	100.0%

Improved facility which is not shared (only for one household) percentage was reported to be 70.7%. Percentages of households with children under three 3 years and dispose excreta safely was 100%.

Figure 39: Proportion of Households with Children under the age of 3 years old whose (last) Stools were Disposed of Safely

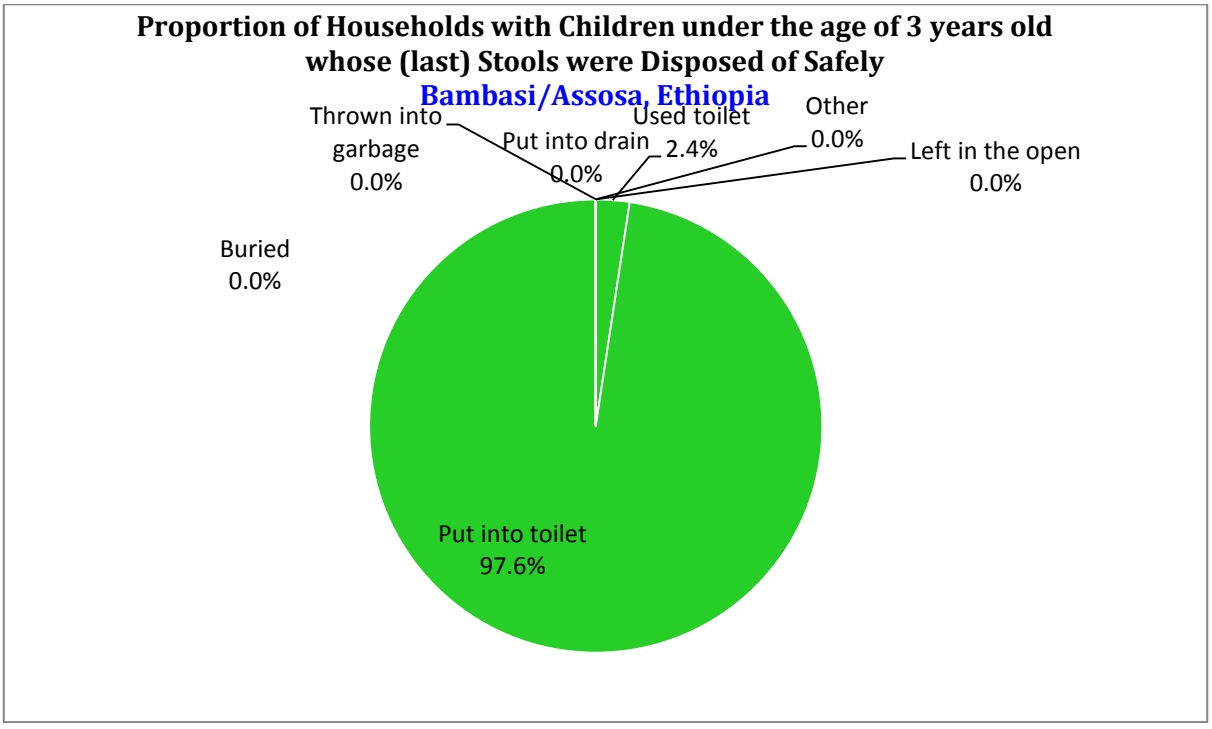
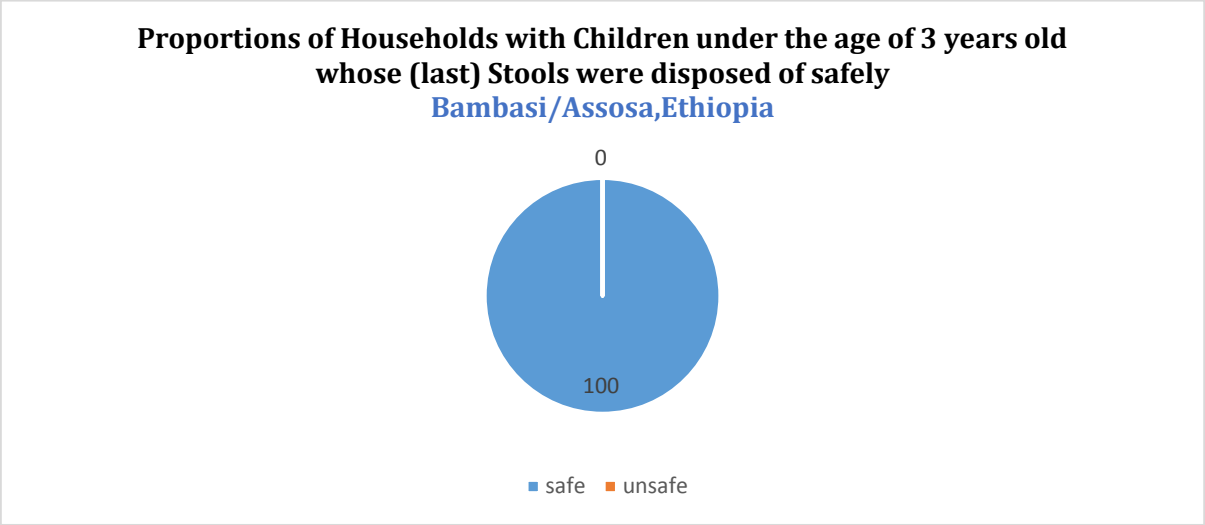


Figure 40: Households with children <3yrs old that dispose of faeces safely



Mosquito Net Coverage

Mosquito net ownership

Table 89: Household Mosquito net ownership in Bambasi

	Number/total	% (95% CI)
Proportion of households owning at least one mosquito net of any type	89/200	44.5% (37.5-51.7)
Proportion of households owning at least one LLIN	85/200	42.5% (35.6-49.7)

Amongst the surveyed Households, less than half (44.5%) of the sampled population own at least one mosquito net of any type and 42.5% of them have LLIN.

Figure 41: Household owner ship of at least one mosquito net of any type in Bambasi

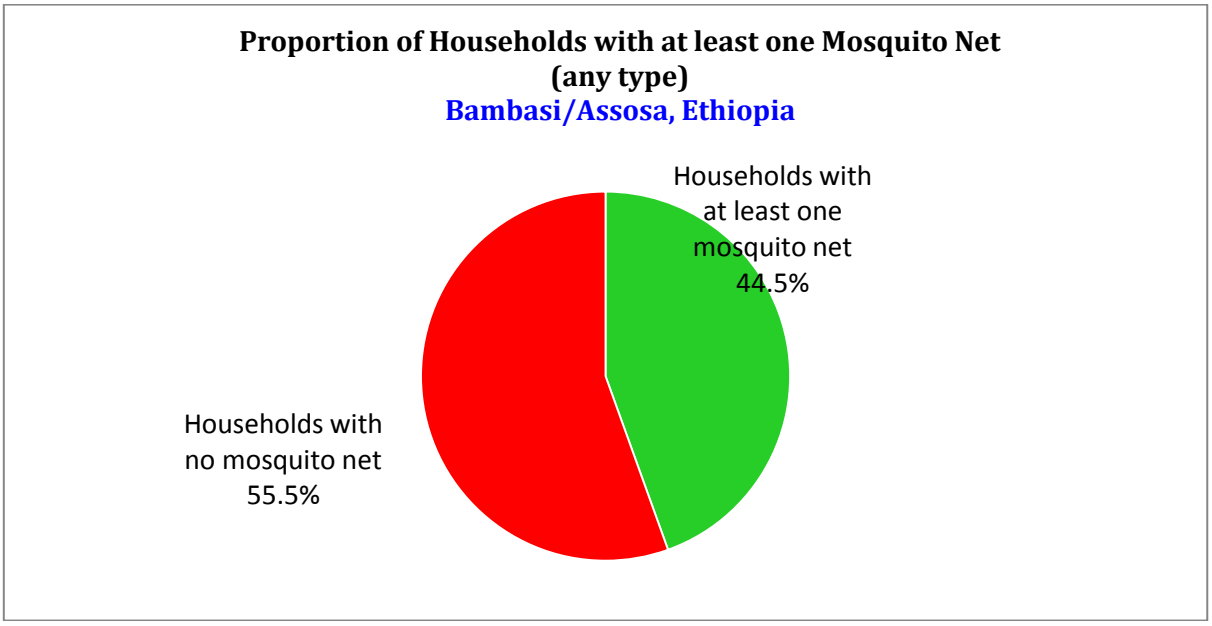


Figure 42: Household ownership of at least one LLIN Bambasi

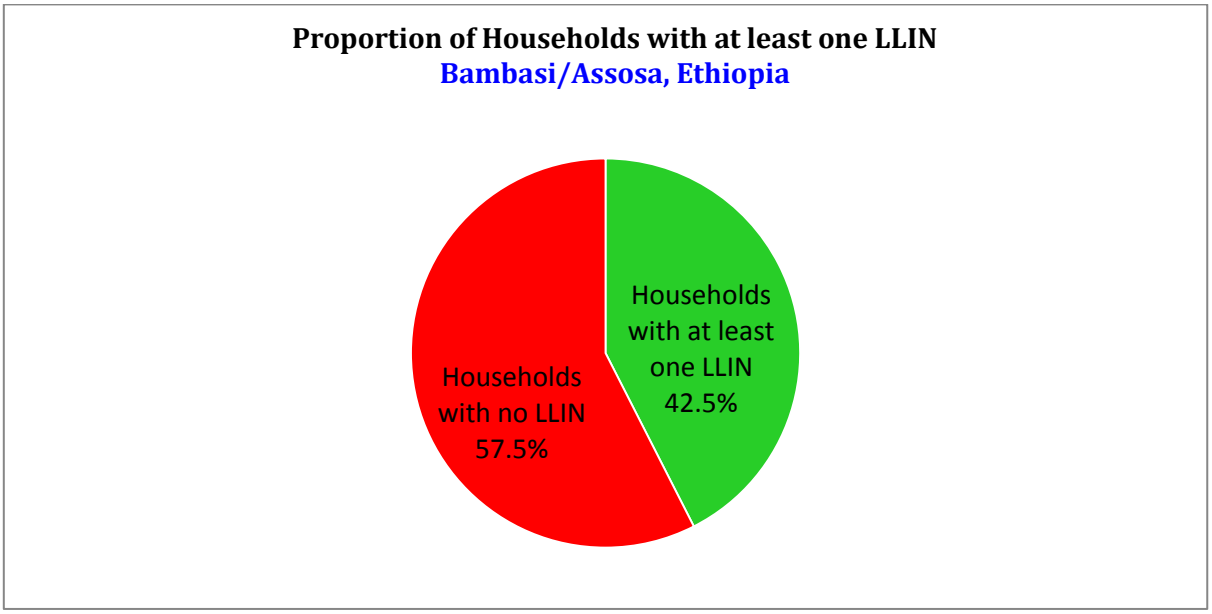


Table 90: Number of nets Bambasi

Average number of LLINs per household	Average number of persons per LLIN
1.6	5.05

Mosquito net Utilization

Table 91: Mosquito net Utilisation Bambasi

	Total population (all ages)		0-59 months		Pregnant	
	Total No= 1010	%	Total No= 250	%	Total No= 42	%
Slept under net of any type	265	26.2	94	37.6	18	42.8
Slept under LLIN	263	26.0	93	37.2	18	42.8

About a quarter (26.2%) of the surveyed population slept under an LLIN mosquito net. Use of LLIN mosquito nets was slightly higher among pregnant women in comparison to use among children aged 0-59 months.

Figure 43: Mosquito Net Utilisation by sub-groups

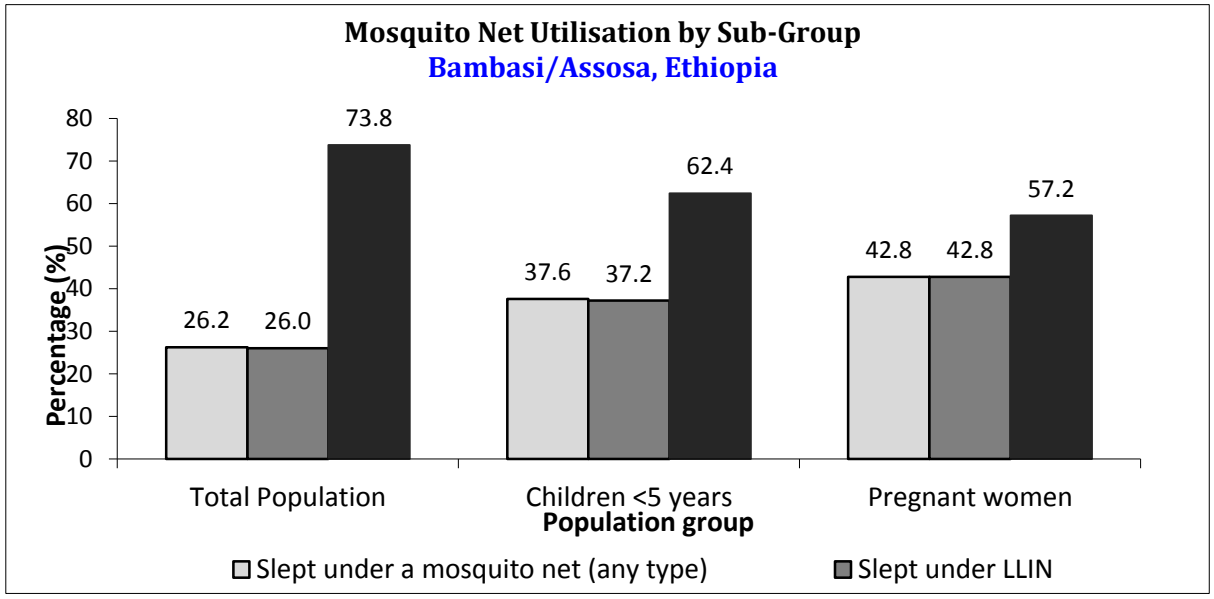


Table 92: Indoor Residual Spraying Household Coverage Bambasi

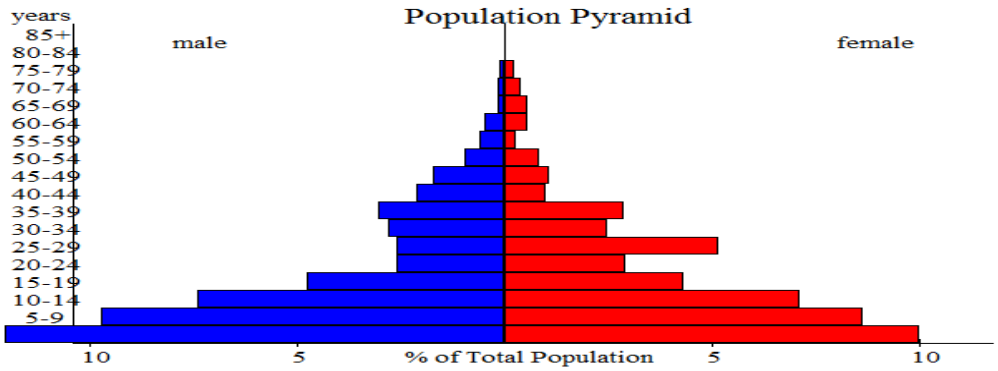
	Number/total	% (95% CI)
Proportion of household covered by IRS	198/199	99.5% (97.2-100%)

RESULTS FROM TONGO

Table 93: Distribution of age and sex of sample

	Boys		Girls		Total		Ratio
AGE (mo.)	no.	%	no.	%	no.	%	Boy: Girl
6-17	45	57.0	34	43.0	79	19.7	1.3
18-29	53	56.4	41	43.6	94	23.4	1.3
30-41	52	51.0	50	49.0	102	25.4	1.0
42-53	57	56.4	44	43.6	101	25.1	1.3
54-59	14	53.8	12	46.2	26	6.5	1.2
Total	221	55.0	181	45.0	402	100.0	1.2

Figure 44: Population pyramid for Tongo Camp



Anthropometric results (based on WHO standards 2006) in Tongo:

Table 94: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

	All n = 394	**Boys** n = 216	**Girls** n = 178
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(45) 11.4 % (8.6 - 14.9 95% C.I.)	(23) 10.6 % (7.2 - 15.5 95% C.I.)	(22) 12.4 % (8.3 - 18.0 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(34) 8.6 % (6.2 - 11.8 95% C.I.)	(18) 8.3 % (5.3 - 12.8 95% C.I.)	(16) 9.0 % (5.6 - 14.1 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(11) 2.8 % (1.6 - 4.9 95% C.I.)	(5) 2.3 % (1.0 - 5.3 95% C.I.)	(6) 3.4 % (1.6 - 7.2 95% C.I.)

The prevalence of oedema is 0.0 %

Figure 45: Distribution of weight-for-height z-scores (based on WHO Growth Standards) in Tongo

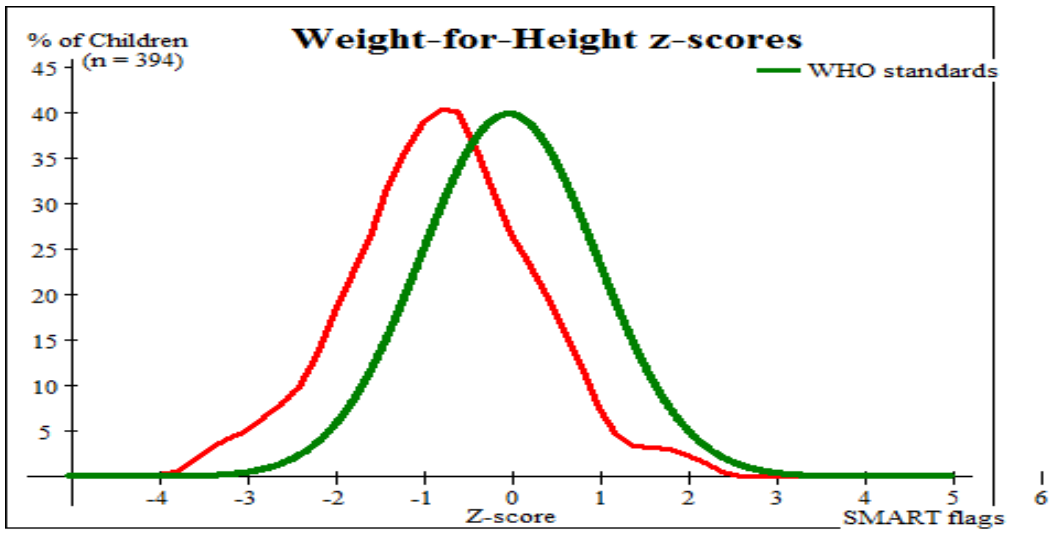


Figure 46: Trends in the prevalence of global and severe acute malnutrition based on WHO Growth Standards in children 6-59 months from 2013-2017 in Tongo

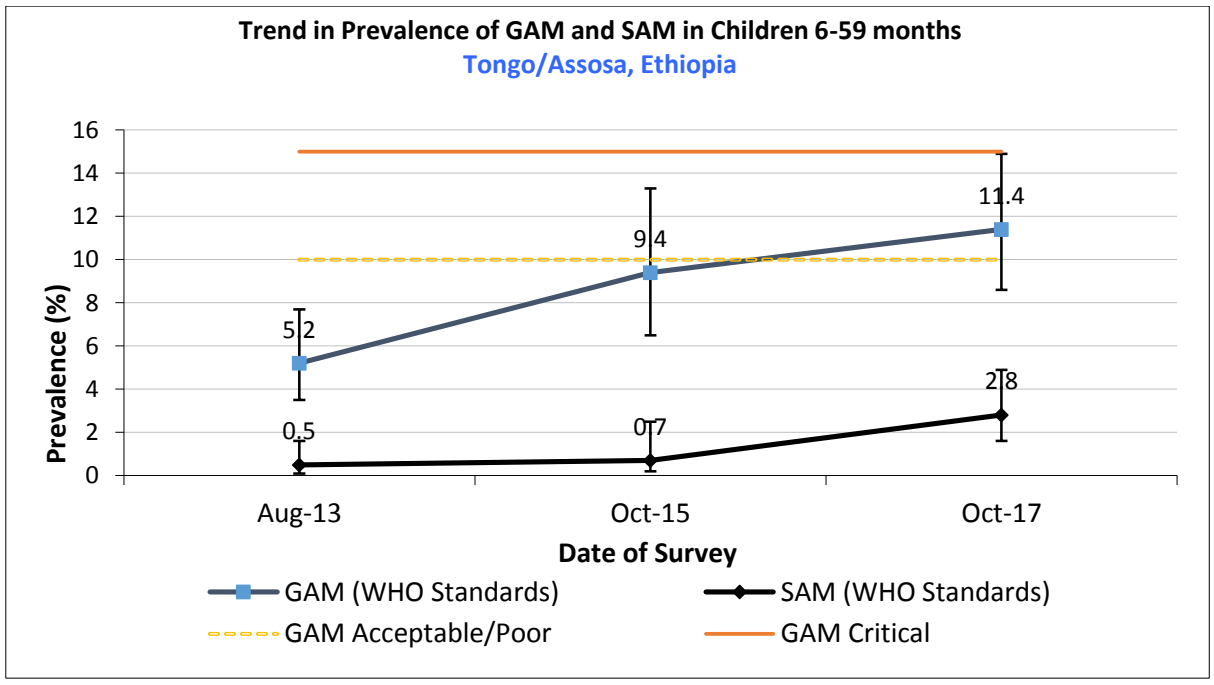


Table 95: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

Age (mo)	Total no.	Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	76	3	3.9	9	11.8	64	84.2	0	0.0
18-29	93	2	2.2	11	11.8	80	86.0	0	0.0
30-41	100	2	2.0	5	5.0	93	93.0	0	0.0
42-53	100	3	3.0	6	6.0	91	91.0	0	0.0
54-59	25	1	4.0	3	12.0	21	84.0	0	0.0
Total	394	11	2.8	34	8.6	349	88.6	0	0.0

Figure 47: Trend in the prevalence of Wasting by age, Tongo, 2017

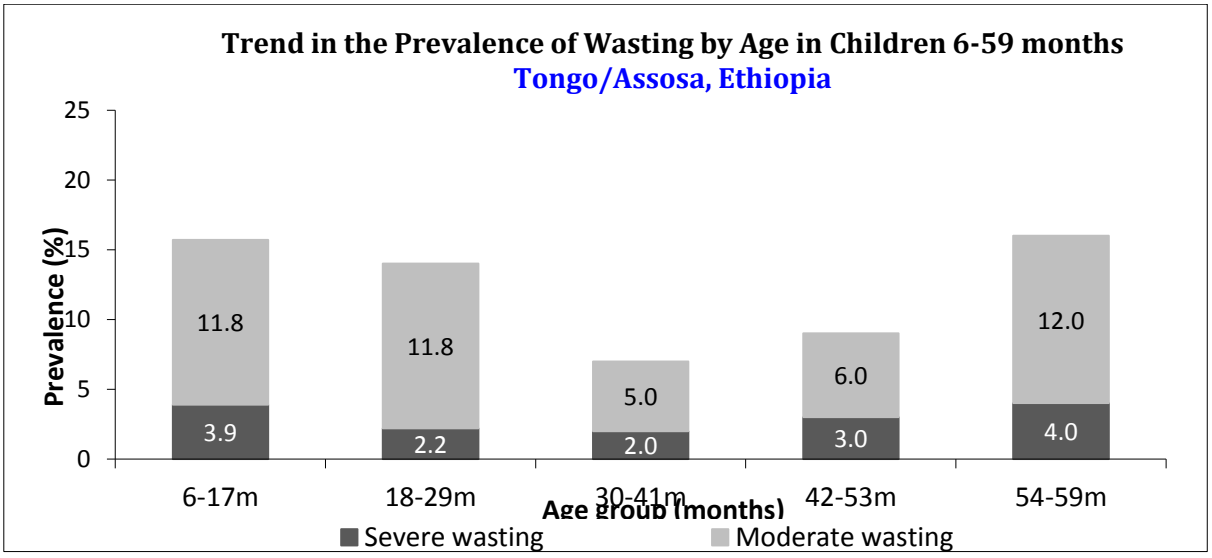


Table 96: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 12 (3.0 %)	Not severely malnourished No. 388 (97.0 %)

Table 97: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex

	All n = 402	Boys n = 221	Girls n = 181
Prevalence of global malnutrition (< 125 mm and/or oedema)	(17) 4.2 % (2.7 - 6.7 95% C.I.)	(8) 3.6 % (1.8 - 7.0 95% C.I.)	(9) 5.0 % (2.6 - 9.2 95% C.I.)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	(15) 3.7 % (2.3 - 6.1 95% C.I.)	(6) 2.7 % (1.3 - 5.8 95% C.I.)	(9) 5.0 % (2.6 - 9.2 95% C.I.)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	(2) 0.5 % (0.1 - 1.8 95% C.I.)	(2) 0.9 % (0.2 - 3.2 95% C.I.)	(0) 0.0 % (0.0 - 2.1 95% C.I.)

Table 98: Prevalence of acute malnutrition by age, based on MUAC cut off's and/or oedema

Age (mo)	Total no.	Severe wasting (< 115 mm)		Moderate wasting (>= 115 and < 125 mm)		Normal (> = 125 mm)		Edema	
		No.	%	No.	%	No.	%	No.	%
6-17	79	0	0.0	6	7.6	73	92.4	0	0.0
18-29	94	1	1.1	8	8.5	85	90.4	0	0.0
30-41	102	0	0.0	1	1.0	101	99.0	0	0.0
42-53	101	0	0.0	0	0.0	101	100.0	0	0.0
54-59	26	1	3.8	0	0.0	25	96.2	0	0.0
Total	402	2	0.5	15	3.7	385	95.8	0	0.0

Table 99: Prevalence of underweight based on weight-for-age z-scores by sex

	All n = 396	Boys n = 216	Girls n = 180
Prevalence of underweight (<-2 z-score)	(134) 33.8 % (29.4 - 38.6 95% C.I.)	(75) 34.7 % (28.7 - 41.3 95% C.I.)	(59) 32.8 % (26.3 - 39.9 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(96) 24.2 % (20.3 - 28.7 95% C.I.)	(53) 24.5 % (19.3 - 30.7 95% C.I.)	(43) 23.9 % (18.2 - 30.6 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(38) 9.6 % (7.1 - 12.9 95% C.I.)	(22) 10.2 % (6.8 - 14.9 95% C.I.)	(16) 8.9 % (5.5 - 14.0 95% C.I.)

Table 100: Prevalence of underweight by age, based on weight-for-age z-scores

Age (mo)	Total no.	Severe underweight (<-3 z-score)		Moderate underweight (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Edema	
		No.	%	No.	%	No.	%	No.	%
6-17	75	8	10.7	17	22.7	50	66.7	0	0.0
18-29	94	12	12.8	22	23.4	60	63.8	0	0.0
30-41	101	8	7.9	22	21.8	71	70.3	0	0.0
42-53	101	8	7.9	26	25.7	67	66.3	0	0.0
54-59	25	2	8.0	9	36.0	14	56.0	0	0.0
Total	396	38	9.6	96	24.2	262	66.2	0	0.0

Table 101: Prevalence of stunting based on height-for-age z-scores and by sex

	All n = 390	Boys n = 215	Girls n = 175
Prevalence of stunting (<-2 z-score)	(204) 52.3 % (47.4 - 57.2 95% C.I.)	(117) 54.4 % (47.7 - 60.9 95% C.I.)	(87) 49.7 % (42.4 - 57.0 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(131) 33.6 % (29.1 - 38.4 95% C.I.)	(73) 34.0 % (28.0 - 40.5 95% C.I.)	(58) 33.1 % (26.6 - 40.4 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(73) 18.7 % (15.2 - 22.9 95% C.I.)	(44) 20.5 % (15.6 - 26.4 95% C.I.)	(29) 16.6 % (11.8 - 22.8 95% C.I.)

Figure 48: Distribution of height –for Age z-scores (based on WHO Growth Standards)

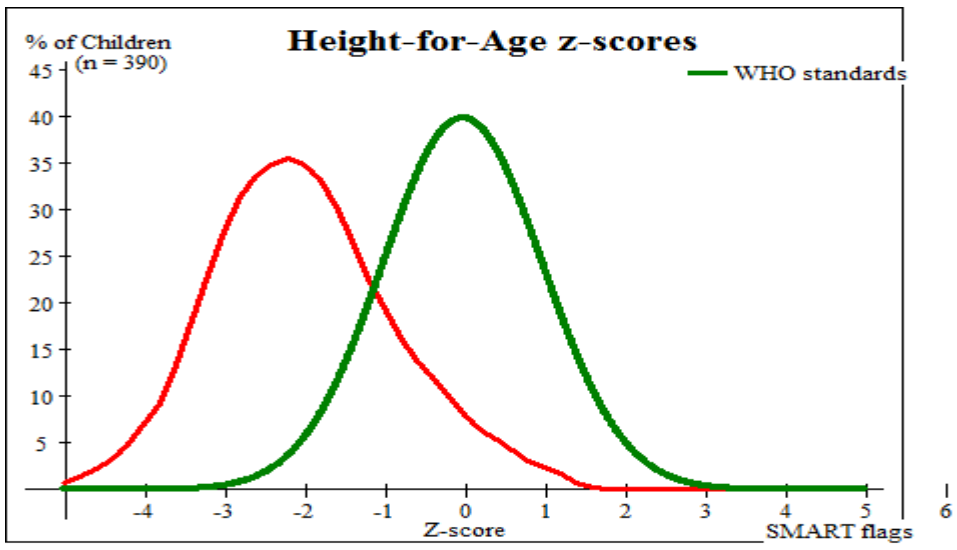


Figure 49: Trends in the prevalence of stunting in children 6-59 months in Tongo

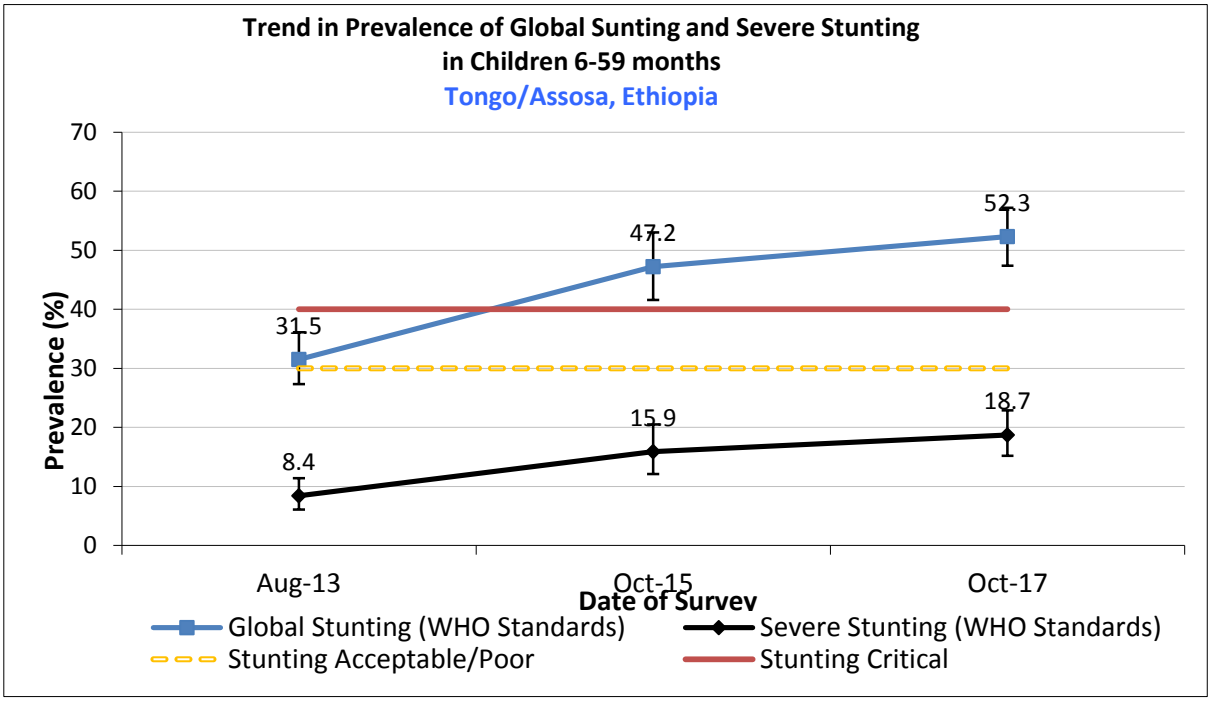


Table 102: Prevalence of stunting by age based on height-for-age z-scores

Age (mo)	Total no.	Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
		No.	%	No.	%	No.	%
6-17	77	9	11.7	23	29.9	45	58.4
18-29	91	27	29.7	38	41.8	26	28.6
30-41	99	18	18.2	31	31.3	50	50.5
42-53	99	16	16.2	29	29.3	54	54.5
54-59	24	3	12.5	10	41.7	11	45.8
Total	390	73	18.7	131	33.6	186	47.7

Figure 50: Trend of prevalence of stunting by age in Tongo, 2017.

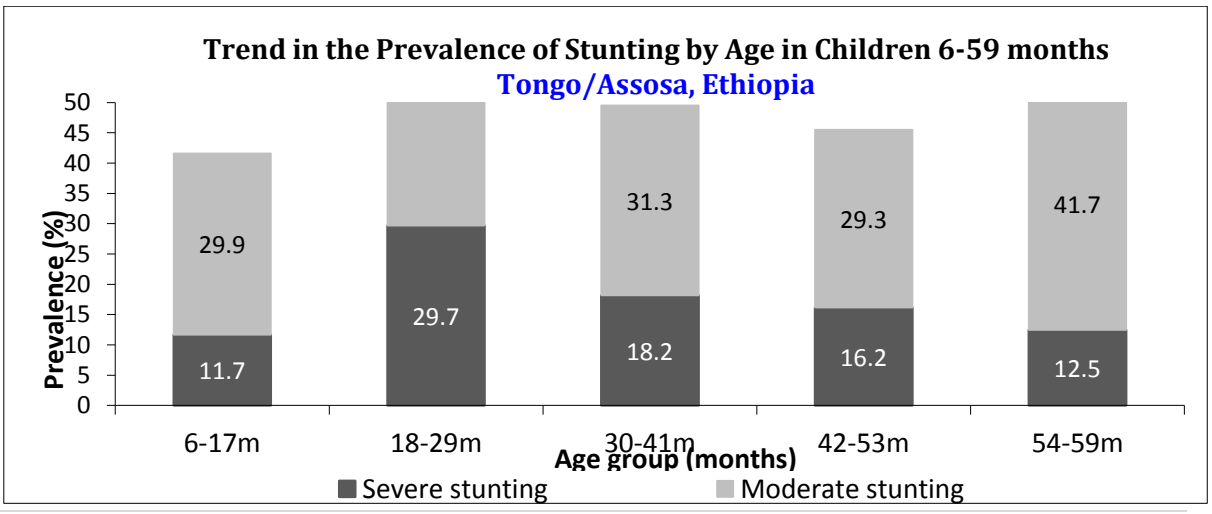


Table 103: Mean z-scores, Design Effects and excluded subjects

Indicator	n	Mean z-scores ± SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	483	-0.76±1.01	1.00	5	15
Weight-for-Age	491	-0.60±1.03	1.00	2	10
Height-for-Age	439	-0.29±1.34	1.00	1	63

Mortality results (retrospectively 90 days)

Table 104: Mortality rates

CMR (total deaths/10,000 people / day): 0.13(0.1-1.56) (95% CI)
U5MR (deaths in children under five/10,000 children under five / day): 0.0(95% CI)

Feeding programme coverage results in Tongo

Table 105: Programme coverage for acutely malnourished children in Tongo

	Number/total	% (95% CI)
Supplementary feeding programme coverage	16/43	37.2% (23.0-53.3%)
Therapeutic feeding programme coverage	2/12	16.7% (2.1-48.4%)
Blanket supplementary feeding program (BSFP) 6-35 months	39/127	30.7% (22.8-39.5%)

Measles vaccination coverage results in Tongo

Table 106: Measles vaccination coverage for children aged 9-59 months (or other context-specific target group) (n= 382)

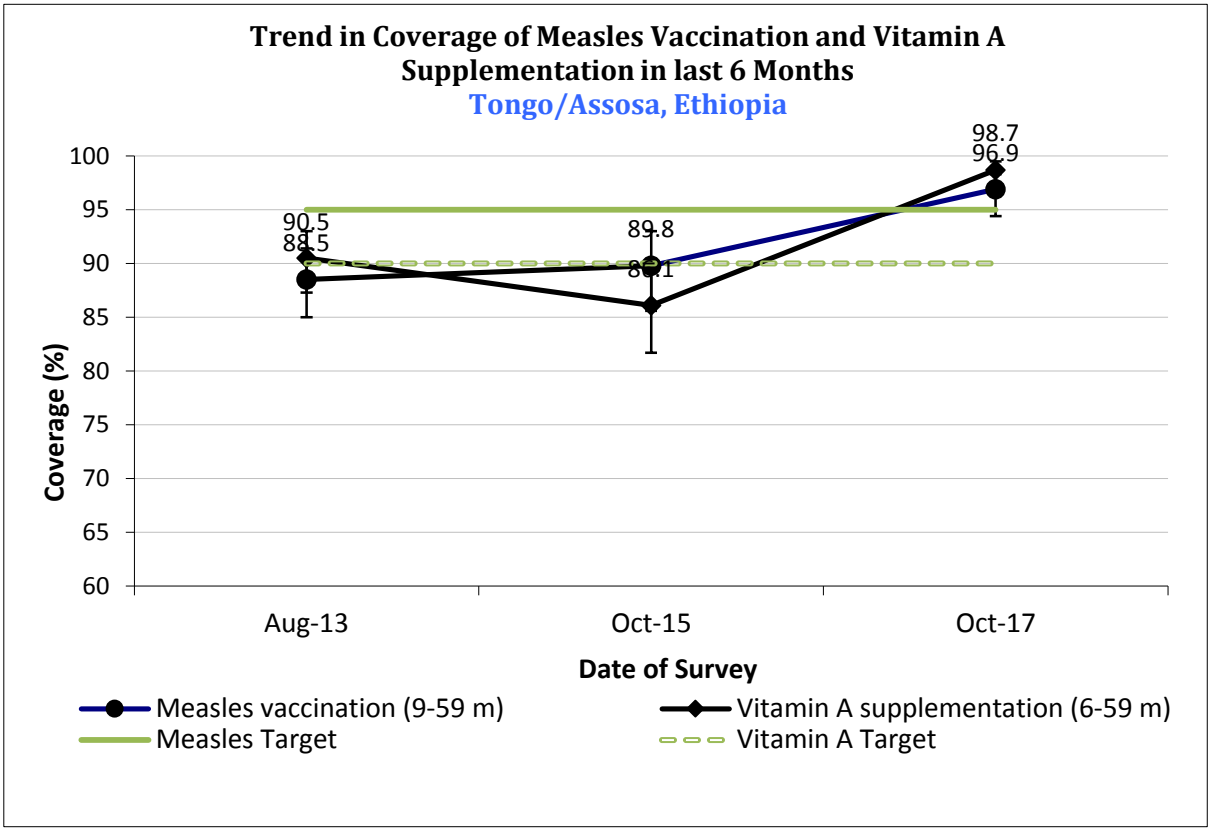
	Measles (with card) n=199	Measles (with card or confirmation from mother) n=370
YES	52.1% (47.0-57.2 95% CI)	96.9% (94.4-98.3%)

Vitamin A supplementation coverage results in Tongo

Table 107: Vitamin A supplementation for children aged 6-59 months within past 6 months (or other context-specific target group) (n=399)

	Vitamin A capsule (with card) n=128	Vitamin A capsule (with card or confirmation from mother) n=394
YES	32.1% (27.6-36.9 95% CI)	98.7% (96.9-99.5%)

Figure 51: Trends in the coverage of measles vaccination and vitamin A supplementation IN LAST 6 MONTHS in children 6-59 months 2013-2017



Diarrhoea results in Tongo

Table 108: Period prevalence of diarrhoea

	Number/total	% (95% CI)
Diarrhoea in the last two weeks	65/400	16.3% (12.8-20.3%)

Anaemia results in Tongo

Table 109: Prevalence of TOTAL anaemia, ANAEMIA CATEGORIES, and MEAN haemoglobin concentration in children 6-59 months of age

	Number/ total	Prevalence (%) and 95% CI
Total Anaemia (Hb<11.0 g/dL)	98/400	24.5% (20.4-29.1%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	63/400	15.8% (12.4-19.8%)
Moderate Anaemia (7.0-9.9 g/dL)	35/400	8.8% (6.3-12.1%)
Severe Anaemia (<7.0 g/dL)	0/400	0.0
Mean Hb (g/dL)	11.8	
(SD / 95% CI)	S.D = 1.3	

[range]	(Min 7.7, Max 15.3)

Figure 52: Trends in anaemia categories in children 6-59 months from 2013-2017

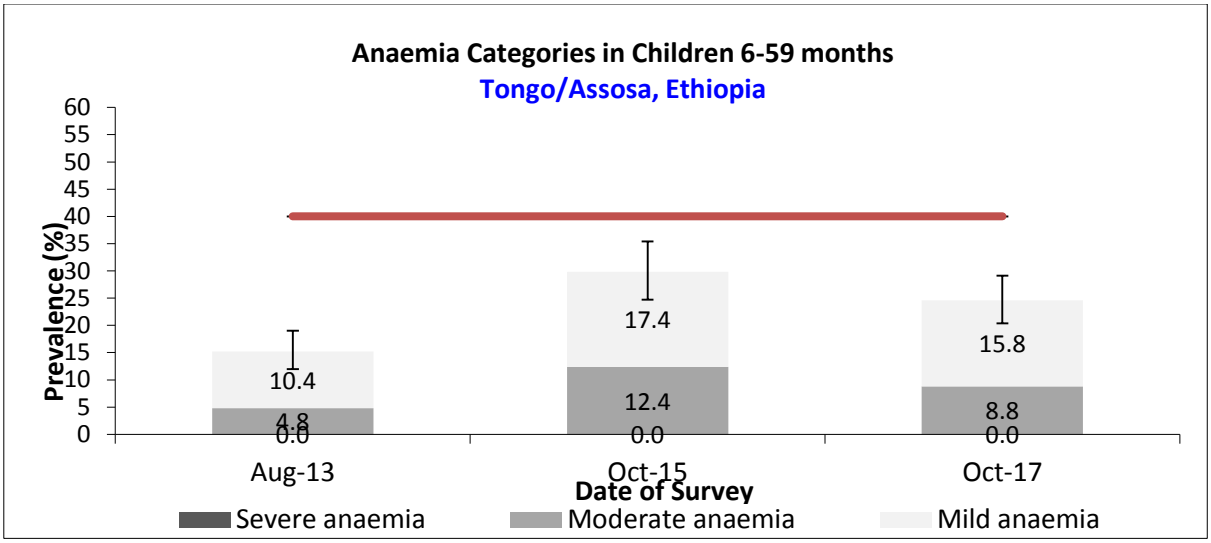


Table 110: Prevalence of MODERATE AND SEVERE anaemia in children 6-59 months of age BY AGE GROUP

Age group	No.	Severe Anaemia (<7.0 g/dL)		Moderate Anaemia (7.0-9.9 g/dL)		Mild Anaemia (Hb 10.0-10.9 g/dL)		Total Anaemia (Hb<11.0 g/dL)		Normal (Hb≥11.0 g/dL)	
		no	%	no	%	no	%	no	%	no	%
6-23	130	0	0	22	16.9%	24	18.5%	46	35.4%	84	64.6%
24-35	87	0	0	6	6.9%	15	17.2%	21	24.1%	66	75.9%
36-59	182	0	0	7	3.8%	24	13.2%	31	17.0%	151	83.0%
Total	400	0	0	35	8.8%	63	15.8%	98	24.5%	302	75.5%

Infant and Young Children Feeding (IYCF) Children 0-23 months in Tongo

Table 111: Prevalence of Infant and Young Child Feeding Practices Indicators

Indicator	Age range	Number/total	Prevalence (%) and 95% CI
Timely initiation of breastfeeding	(0-23 months)	134/165	81.2 (74.4-86.9)

Exclusive breastfeeding under 6 months	(0-5 months)	36/37	97.3 (85.8-99.9)
Continued breastfeeding at 1 year	(12-15 months)	30/34	88.2 (72.5-96.7)
Continued breastfeeding at 2 years	(20-23 months	14/30	46.7 (28.3-65.7)
Introduction of solid, semi-solid or soft foods	(6-8 months)	6/17	35.3 (14.2-61.7)
Consumption of iron-rich or iron-fortified foods	(6-23 months)	98/117	83.8 (75.8-89.9)
Bottle feeding	(0-23 months)	0/165	0

Note that when IYCF indicators are collected in nutritional surveys based on anthropometric sample of children aged 0-59 months, it is not feasible to achieve a large enough sample size for some of the indicators to be estimated as precisely as desired, especially for indicators covering a very narrow age range (e.g. 12-15 months, 6-8 months). Hence, IYCF indicators need to be interpreted with care.

More than three fourth of (81.2%) of children below 2 years had been introduced to breast milk within an hour of birth (Table 111). Almost all of (97.3%) infants (0-5) from the sample have reported that exclusively breastfed. About 88.2% of the sampled children have maintained breastfeeding until 1st year of birth, whilst less than half (46.7%) were still breastfeeding at 2 years. Consumption of iron rich foods were reported as 83.8%. Only one third (35.3%) of 6-8 months children had been introduced to solid foods. The proportion of children who were bottle fed the day before the survey were 0%.

Figure 53: Nutrition survey results (IYCF indicators) from 2013-2017

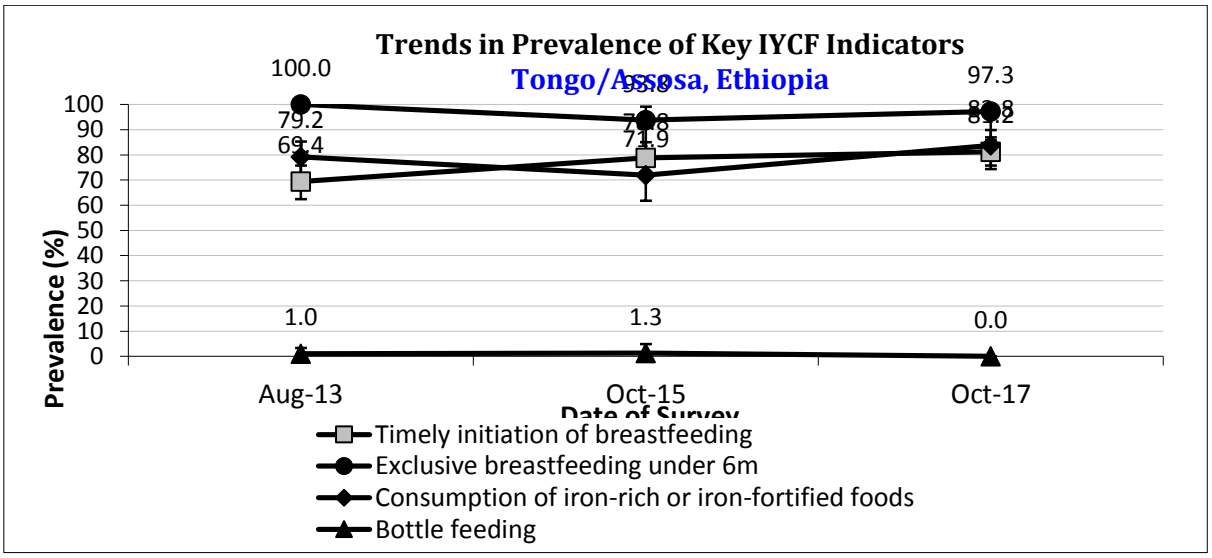


Table 112: Infant formula intake in children aged 0-23 months

	Number/total	% (95% CI)

Proportion of children aged 0-23 months who receive infant formula (fortified or non-fortified)	1/165	0.6 (0.0-3.3)

Table 113: CSB+ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF	38/120	31.7 (23.5-40.8)

Table 114: CSB++ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF++	69/127	54.3 (45.3-63.2)

Women 15-49 years in Tongo

Table 115: Women physiological status and age

Physiological status	Number/total	% of sample
Non-pregnant	134/162	82.7% (76.0-88.2%)
Pregnant	28 /162	17.3% (11.8-24.0%
Mean age and (SD) [range]	28.41 years and SD = 9.13 [min 15 & max 48.0]	

Anaemia Prevalence among Women of 15-49 years non pregnant

Table 116: Prevalence of anaemia and haemoglobin concentration in non-pregnant women of reproductive age (15-49 years)

Anaemia - Women of reproductive age 15-49 years	**All** n = 134
Total Anaemia (<12.0 g/dL)	(13) 9.7% (5.3-16.0 95% CI)
Mild Anaemia (11.0-11.9 g/dL)	(12) 9.0% (4.7-15.1 95% CI)
Moderate Anaemia (8.0-10.9 g/dL)	(1) 0.7% (0.0-4.1 95% CI)
Severe Anaemia (<8.0 g/dL)	(0) 0 (0-0 95% CI)
Mean Hb, g/dL (SD) [range]	13.78 g/dL 1.3 [10.6-17.6]

Figure 54: Trends in anaemia categories in women 15-49 years from 2013-2017

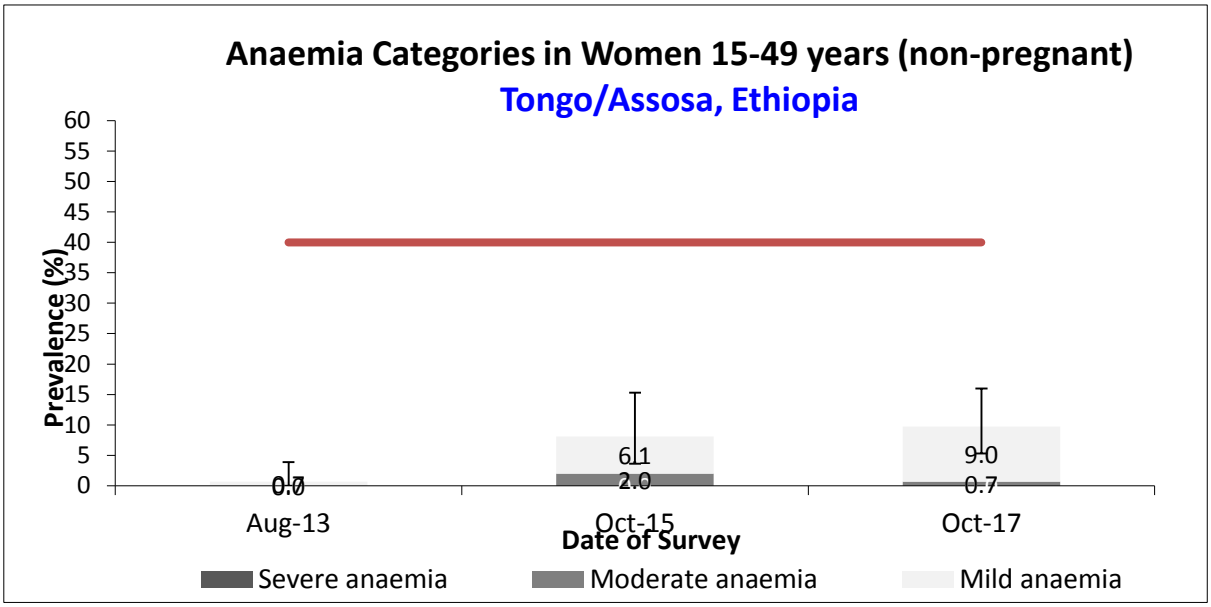
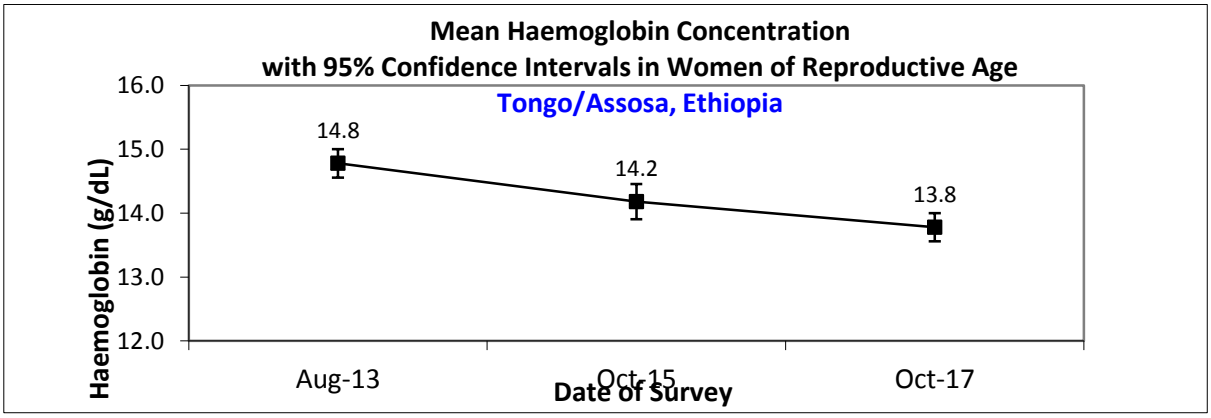


Figure 55: Mean Heamoglobin concentration Trend in Tongo Camp 2013-2017.



Antenatal Care Practice

Table 117: ANC enrolment and iron-folic acid pills coverage among pregnant women (15-49 years)

	Number /total	% (95% CI)
Currently enrolled in ANC programme	24/28	85.7 (67.3-96.0)
Currently receiving iron-folic acid pills	18/28	64.3 (44.1%-81.4)

Food security in Tongo

Ration card coverage

Table 118: Ration card coverage

	Number/total	% (95% CI)
Proportion of households with a ration card	176/176	100%

Duration of General Food Ration

Table 119: Reported duration of general food ration

Average number of days the food ration lasts (Standard deviation or 95% CI)	Average duration (%) in relation to the theoretical duration of the ration*
16.26 days out of 30	54.2%

Table 120: Reported duration of general food ration 2

	Number/ total	% (95% CI)
Proportion of households reporting that the food ration lasts the entire duration of the cycle	3/176	1.7 (0.4-4.9)
Proportion of households reporting that the food ration lasted:		
≤75% of the cycle 30 days	156/176	88.6 (83.0-92.9)
>75% of the cycle 30 days	20/176	11.4 (7.1-17.0)

Negative coping strategies results

Table 121: Coping strategies used by the surveyed population over the past month

	Number/total	% (95% CI)
Proportion of households reporting using the following coping strategies over the past month*:		
Borrowed cash, food or other items *with or without interest*	141/176	80.1 (73.4-85.7)
Sold any assets that would not have normally sold (furniture, seed stocks, tools, other NFI, livestock etc.)	97/176	55.1 (47.4-62.6)
Requested increased remittances or gifts as compared to normal	7/175	4.0 (1.6-8.1)
Reduced the quantity and/or frequency of meals	129/176	73.3 (66.1-79.7)

Begged	8/176	4.5 (2.0-8.8)
Engaged in potentially risky or harmful activities	37/175	21.1 (15.3-27.9)
Proportion of households reporting using none of the coping strategies over the past month	3/174	1.7 (0.4-5.0)

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

Household Dietary Diversity Score and Consumption of Micronutrient rich foods

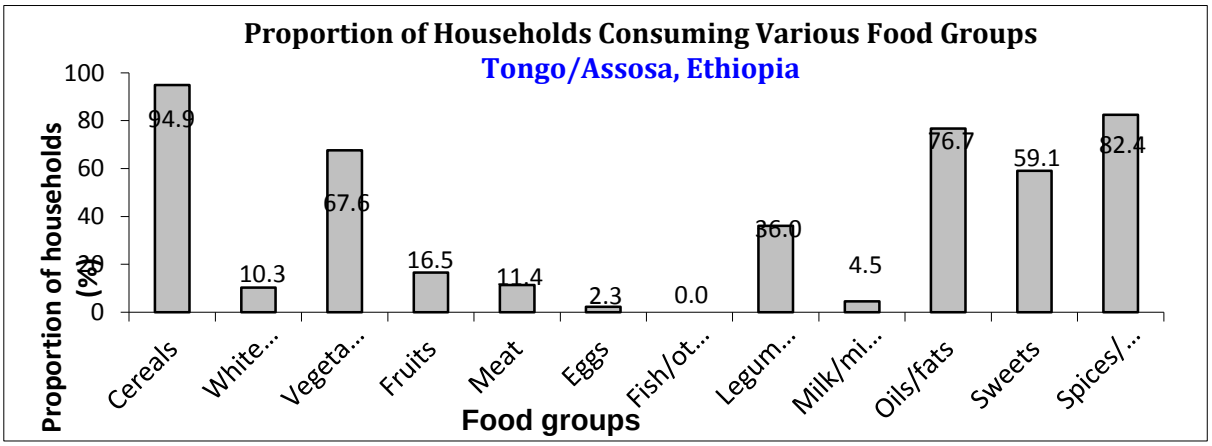
Table 122: Average HDDS

	Mean (Standard deviation or 95% CI)
Average HDDS	4.59 (SD 1.67)

Table 123: Consumption of micronutrient rich foods by households

	Number/Total	**% and 95% CI**
Proportion of households *not consuming any* vegetables, fruits, meat, eggs, fish/seafood, and milk/milk products	46/176	26.1 (19.8-33.3)
Proportion of households consuming either a plant or animal source of vitamin A	91/173	52.6 (44.9-60.2)
Proportion of households consuming organ meat/flesh meat, or fish/seafood (food sources of haem iron)	20/176	11.4 (7.1-17.0)

Figure 56: Proportion of Households Consuming Various Food Groups



WASH in Tongo

Water Quality

Table 124: Water Quality

	Number/total	% (95% CI)
Proportion of households using an improved drinking water source	189/191	99.0 (96.3-99.9)
Proportion of households that use a covered or narrow necked container for storing their drinking water	99/192	51.6 (44.3-58.8)

Water Quantity

Table 125: Water Quantity: Amount of litres of water used per person per day

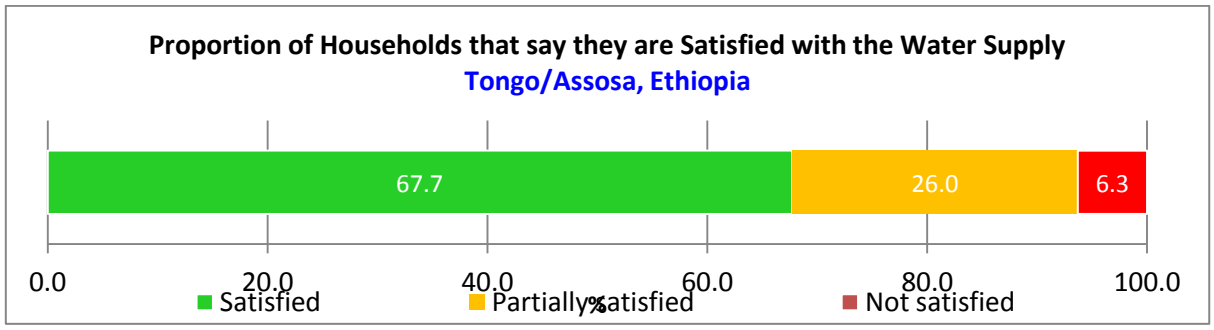
Proportion of households that use:	Number/total	% (95% CI)
≥ 20 lpppd	74/192	38.5 (31.6-45.8)
15 – <20 lpppd	35/192	18.2 (13.0-24.4)
<15 lpppd	83/192	43.2 (36.1-50.6)
Average consumption (Liters per person per day)	17.76LPPPD	

Table 126: Satisfaction with water supply

	Number/total	% (95% CI)
Proportion of households that say they are satisfied with the drinking water supply	130/192	67.7 (60.6-74.3)

Not enough water supply, long distance and irregularities of water supply were mentioned as a reason for dissatisfaction

Figure 57: Proportion of households that say they are satisfied with the water supply



Excreta disposal

Table 127: Safe Excreta disposal

	Number/total	% (95% CI)
Proportion of households that use:		
An improved excreta disposal facility (improved toilet facility, 1 household)	133/158	84.2 (77.5-89.5)
A shared family toilet (improved toilet facility, 2 households)	21/158	13.3 (8.4-19.6)
A communal toilet (improved toilet facility, 3 households or more)	3/158	1.9 (0.4-5.4)
An unimproved toilet (unimproved toilet facility or public toilet)	1/158	0.6 (0.0-3.5)
Proportion of households with children under three years old that dispose of faeces safely	113/117	96.6 (91.5-99.1)

Improved facility which is not shared (only for one household) percentage was reported to be 84.2%. Percentages of households with children under three 3 years and dispose excreta safely was 96.6%.

Figure 58: Proportion of Households with Children under the age of 3 years old whose (last) Stools were Disposed of Safely

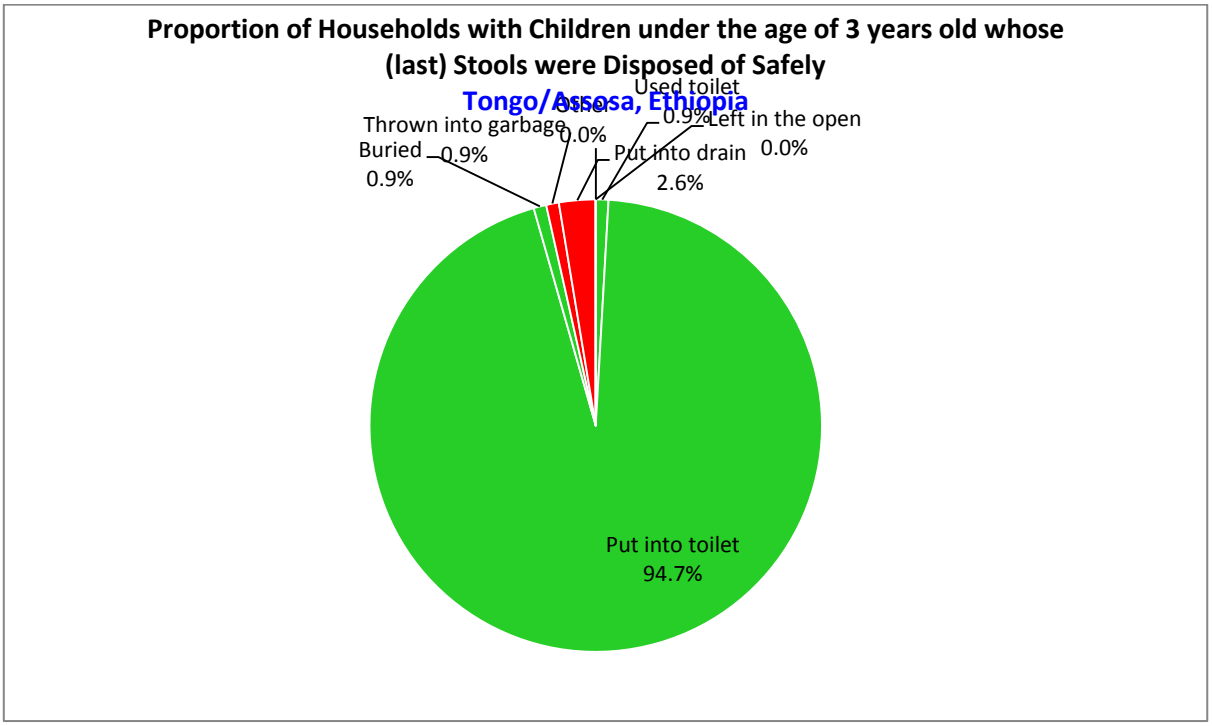
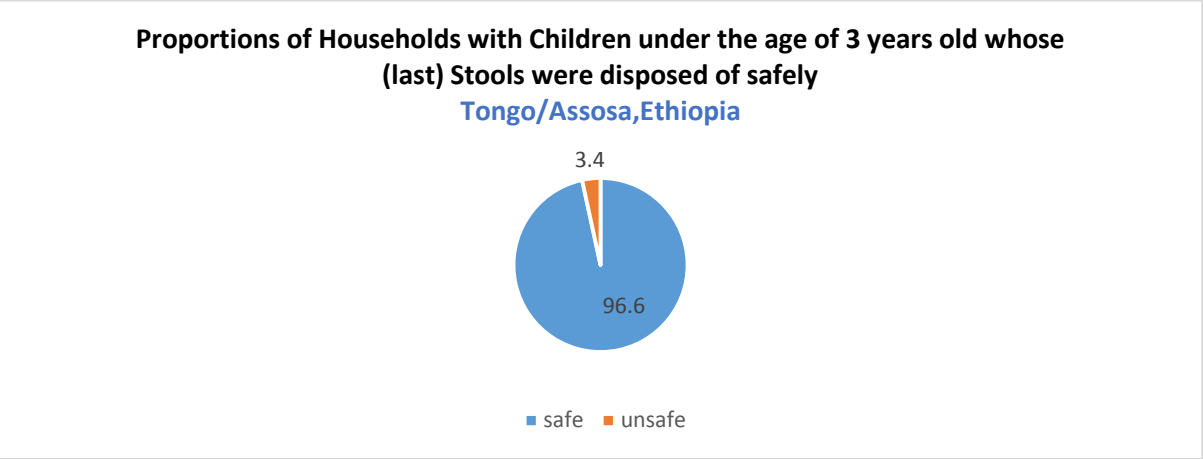


Figure 59: Households with children <3yrs old that dispose of faeces safely



Mosquito Net Coverage

Mosquito net ownership

Table 128: Household Mosquito net ownership in Tongo

	Number/total	% (95% CI)
Proportion of households owning at least one mosquito net of any type	18/193	9.3 (5.6-14.3)
Proportion of households owning at least one LLIN	10/193	5.2 (2.5-9.3)

Amongst the surveyed Households, only 9.3% own at least one mosquito net of any type and 5.2% of them have LLIN (Table 128).

Figure 60: Household owner ship of at least one mosquito net of any type in Tongo

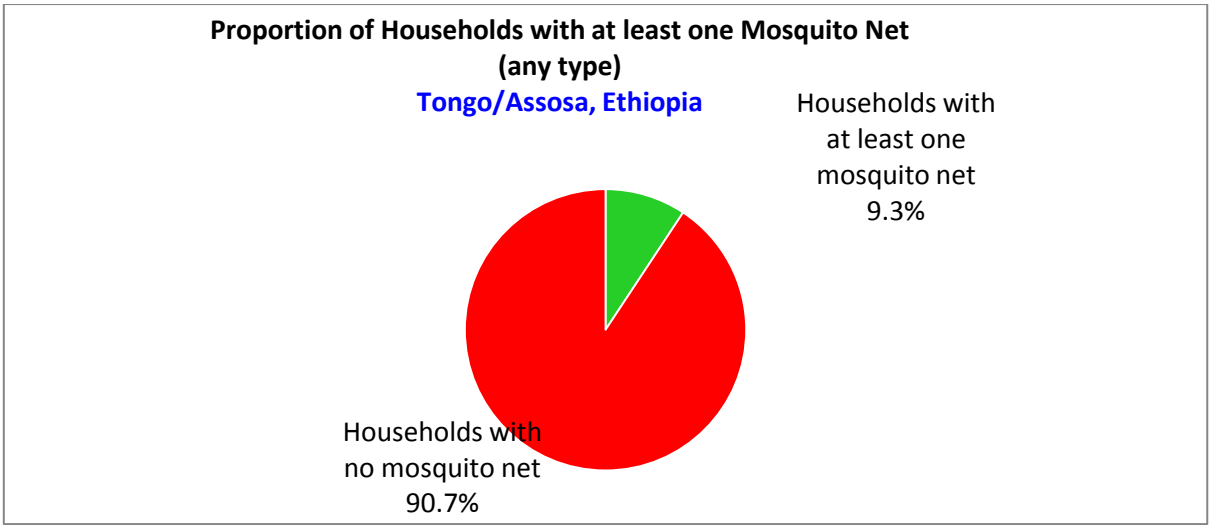


Figure 61: Household ownership of at least one LLIN Tongo

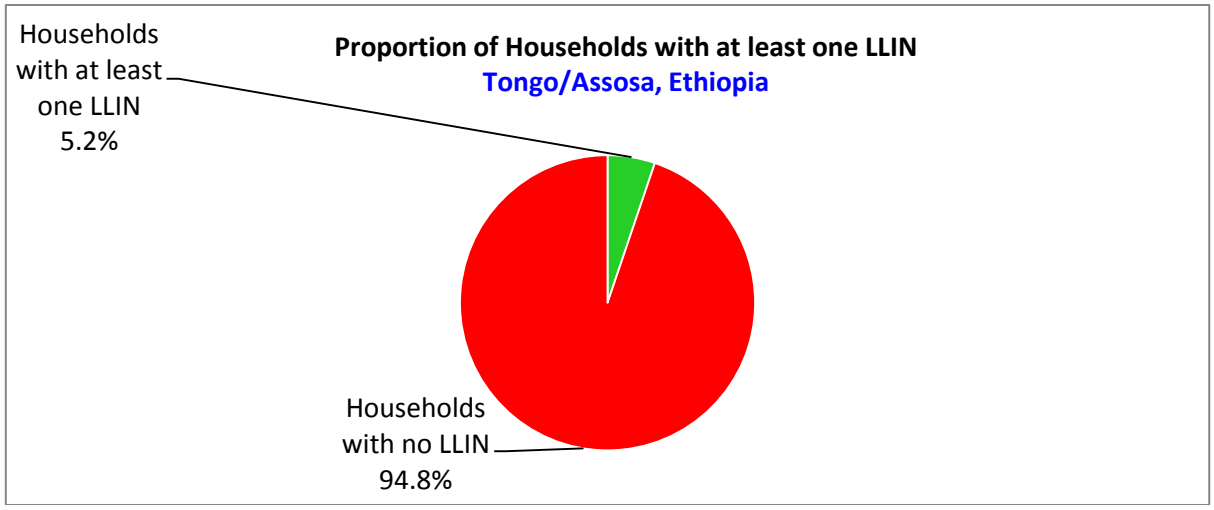


Table 129: Number of nets Tongo

Average number of LLINs per household	Average number of persons per LLIN
0.6	5.1

Mosquito net Utilization

Table 130: Mosquito net Utilisation Tongo

	Total population (all ages)		0-59 months		Pregnant	
	Total No= 985	%	Total No= 259	%	Total No= 48	%
Slept under net of any type	51	5.2%	24	9.3	4	8.3
Slept under LLIN	26	2.6	14	5.4	2	4.2

Only 2.6% of the surveyed population slept under an LLIN mosquito net (Table 130). Use of LLIN mosquito nets was slightly higher among children aged 0-59 months in comparison to use among pregnant women.

Figure 62: Mosquito Net Utilisation by sub-groups

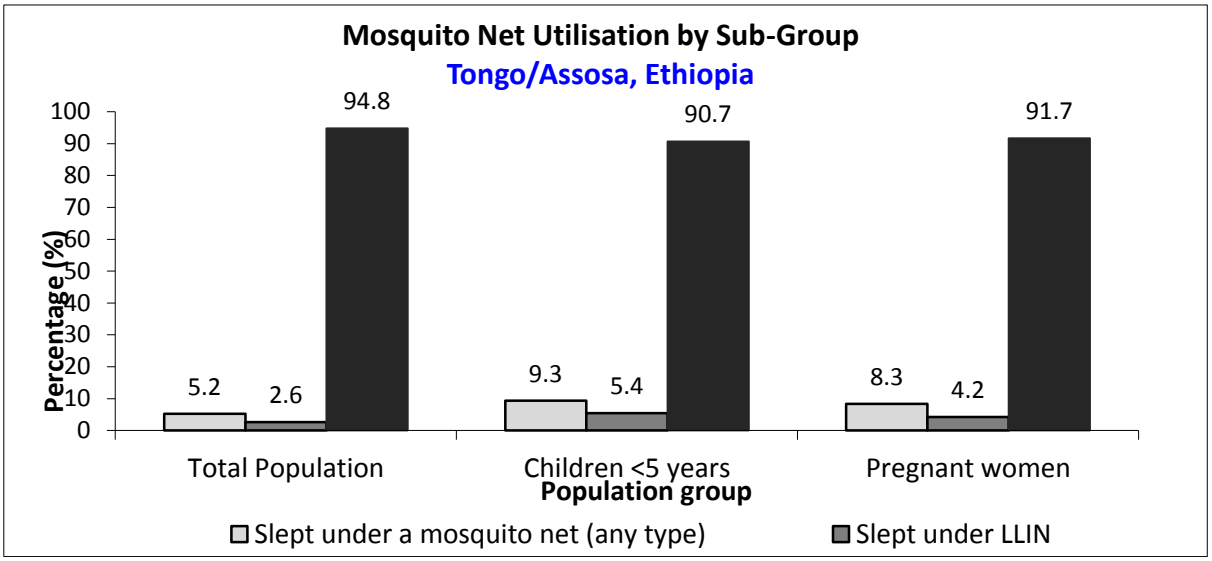


Table 131: Indoor Residual Spraying Household Coverage Tongo

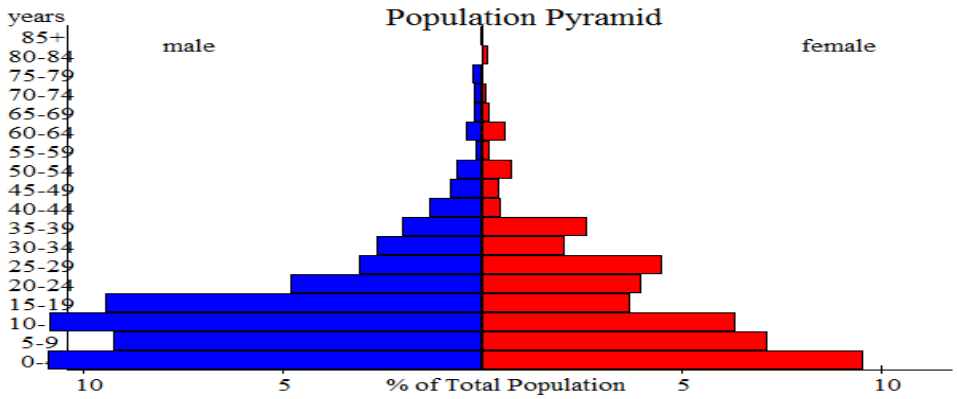
	Number/total	% (95% CI)
Proportion of household covered by IRS	0	0%

RESULTS FROM TSORE

Table 132: Distribution of age and sex of sample

	Boys		Girls		Total		Ratio
AGE (mo.)	no.	%	no.	%	no.	%	Boy: Girl
6-17	49	50.0	49	50.0	98	25.1	1.0
18-29	45	48.4	48	51.6	93	23.8	0.9
30-41	64	58.2	46	41.8	110	28.1	1.4
42-53	44	58.7	31	41.3	75	19.2	1.4
54-59	8	53.3	7	46.7	15	3.8	1.1
Total	210	53.7	181	46.3	391	100.0	1.2

Figure 63: Population pyramid for Tsore Camp



Anthropometric results (based on WHO standards 2006) in Tsore:

Table 133: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

	All n = 387	**Boys** n = 209	**Girls** n = 178
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(30) 7.8 % (5.4 - 11.0 95% C.I.)	(21) 10.0 % (6.4 - 15.3 95% C.I.)	(9) 5.1 % (2.7 - 9.3 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(27) 7.0 % (4.9 - 9.9 95% C.I.)	(19) 9.1 % (5.7 - 14.2 95% C.I.)	(8) 4.5 % (2.3 - 8.7 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(3) 0.8 % (0.2 - 2.4 95% C.I.)	(2) 1.0 % (0.2 - 3.8 95% C.I.)	(1) 0.6 % (0.1 - 4.1 95% C.I.)

The prevalence of oedema is 0.0 %

Figure 64: Distribution of weight-for-height z-scores (based on WHO Growth Standards) in Tsore

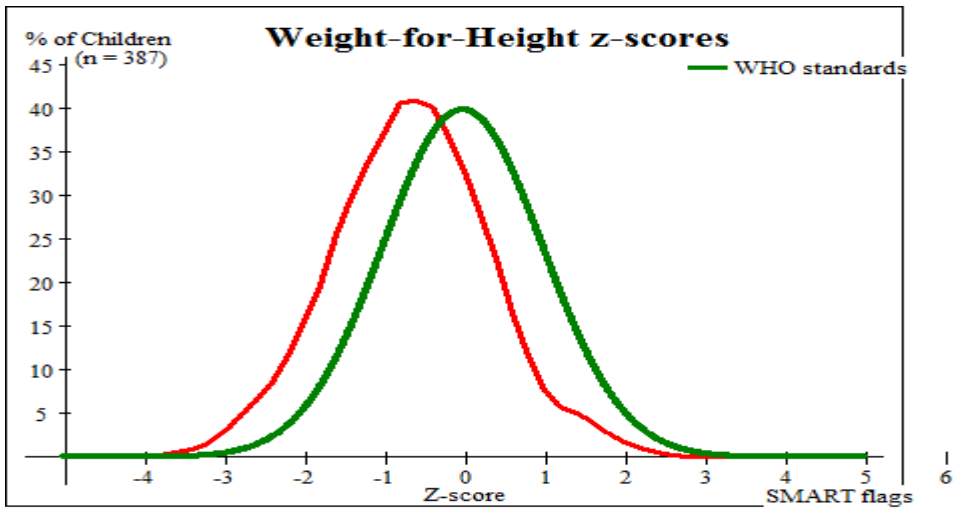


Figure 65: Trend in prevalence of global and severe acute malnutrition based on WHO Growth Standards in children 6-59 months from 2015-2017 in Tsore

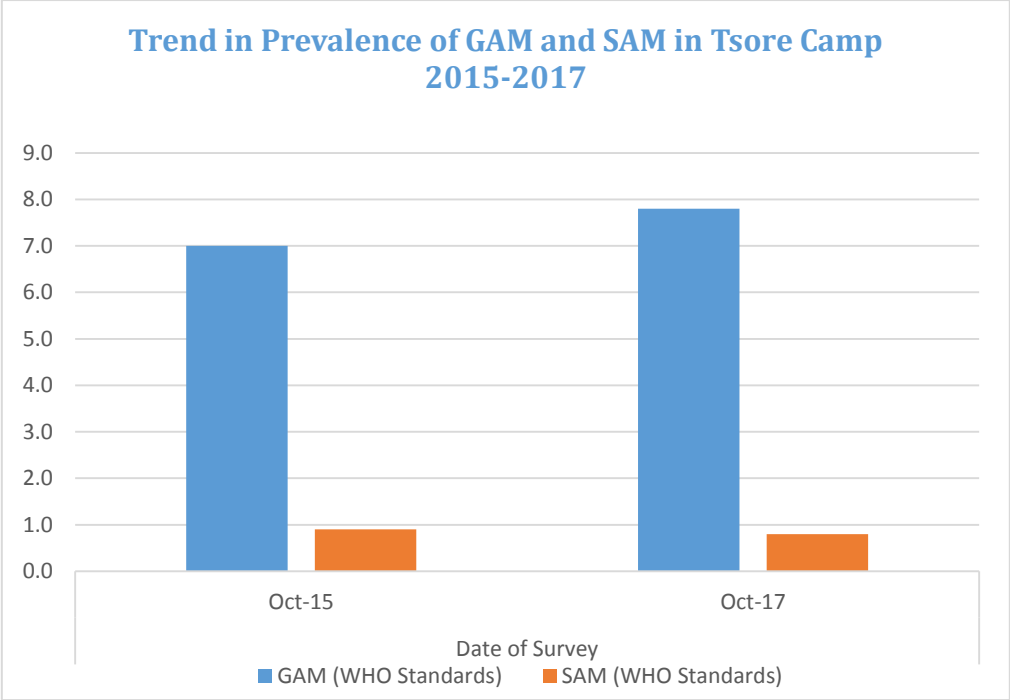


Table 134: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

Age (mo)	Total no.	Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	97	1	1.0	10	10.3	86	88.7	0	0.0
18-29	90	1	1.1	2	2.2	87	96.7	0	0.0
30-41	110	1	0.9	7	6.4	102	92.7	0	0.0
42-53	75	0	0.0	6	8.0	69	92.0	0	0.0
54-59	15	0	0.0	2	13.3	13	86.7	0	0.0
Total	387	3	0.8	27	7.0	357	92.2	0	0.0

Figure 66: Trends in the Prevalence of Wasting by Age in Children 6-59 months in Tsore Camps

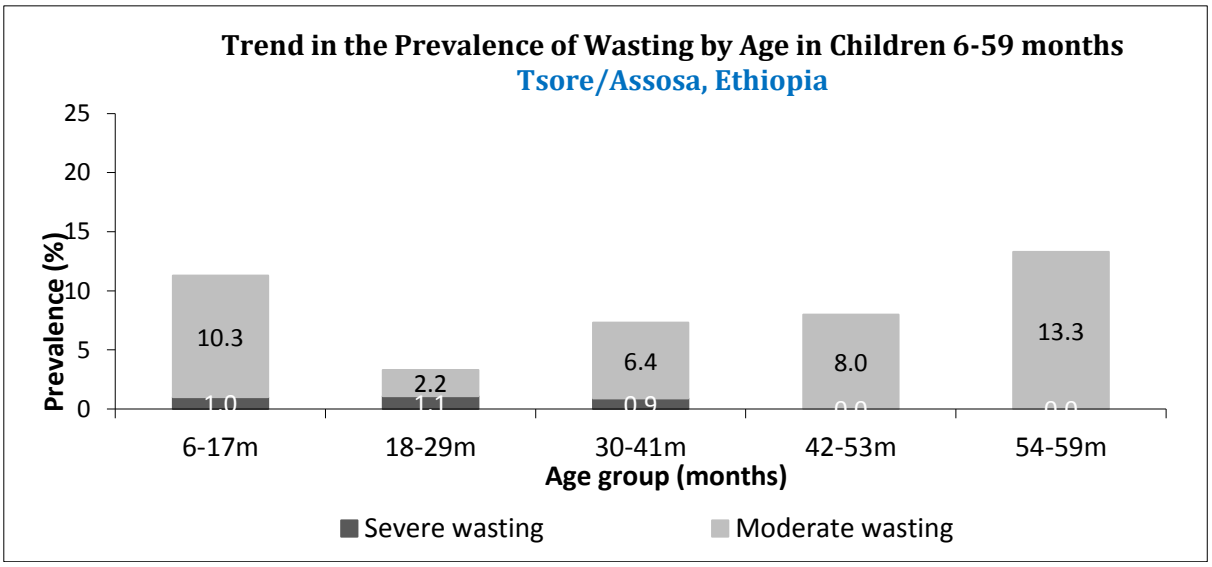


Table 135: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 4 (1.0 %)	Not severely malnourished No. 386 (99.0 %)

Table 136: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex

	All n = 391	Boys n = 210	Girls n = 181
Prevalence of global malnutrition (< 125 mm and/or oedema)	(22) 5.6 % (3.7 - 8.4 95% C.I.)	(12) 5.7 % (3.3 - 9.8 95% C.I.)	(10) 5.5 % (3.0 - 10.0 95% C.I.)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	(21) 5.4 % (3.5 - 8.2 95% C.I.)	(12) 5.7 % (3.3 - 9.8 95% C.I.)	(9) 5.0 % (2.6 - 9.4 95% C.I.)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	(1) 0.3 % (0.0 - 1.9 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(1) 0.6 % (0.1 - 4.1 95% C.I.)

Table 137: Prevalence of acute malnutrition by age, based on MUAC cut off's and/or oedema

Age (mo)	Total no.	Severe wasting (< 115 mm)		Moderate wasting (>= 115 and < 125 mm)		Normal (> = 125 mm)		Edema	
		No.	%	No.	%	No.	%	No.	%
6-17	98	1	1.0	14	14.3	83	84.7	0	0.0
18-29	93	0	0.0	6	6.5	87	93.5	0	0.0
30-41	110	0	0.0	1	0.9	109	99.1	0	0.0
42-53	75	0	0.0	0	0.0	75	100.0	0	0.0
54-59	15	0	0.0	0	0.0	15	100.0	0	0.0
Total	391	1	0.3	21	5.4	369	94.4	0	0.0

Table 138: Prevalence of underweight based on weight-for-age z-scores by sex

	All n = 386	Boys n = 206	Girls n = 180
Prevalence of underweight (<-2 z-score)	(60) 15.5 % (12.4 - 19.4 95% C.I.)	(37) 18.0 % (13.1 - 24.1 95% C.I.)	(23) 12.8 % (8.6 - 18.6 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(47) 12.2 % (9.1 - 16.1 95% C.I.)	(32) 15.5 % (10.9 - 21.6 95% C.I.)	(15) 8.3 % (4.9 - 13.9 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(13) 3.4 % (1.9 - 5.9 95% C.I.)	(5) 2.4 % (1.0 - 5.6 95% C.I.)	(8) 4.4 % (2.2 - 8.9 95% C.I.)

Table 139: Prevalence of underweight by age, based on weight-for-age z-scores

Age (mo)	Total no.	Severe underweight (<-3 z-score)		Moderate underweight (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Edema	
		No.	%	No.	%	No.	%	No.	%
6-17	94	3	3.2	9	9.6	82	87.2	0	0.0
18-29	92	5	5.4	14	15.2	73	79.3	0	0.0
30-41	110	4	3.6	12	10.9	94	85.5	0	0.0
42-53	75	1	1.3	12	16.0	62	82.7	0	0.0
54-59	15	0	0.0	0	0.0	15	100.0	0	0.0
Total	386	13	3.4	47	12.2	326	84.5	0	0.0

Table 140: Prevalence of stunting based on height-for-age z-scores and by sex

	All n = 377	**Boys** n = 201	**Girls** n = 176
Prevalence of stunting (<-2 z-score)	(71) 18.8 % (15.3 - 22.9 95% C.I.)	(47) 23.4 % (18.3 - 29.3 95% C.I.)	(24) 13.6 % (9.5 - 19.3 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(52) 13.8 % (10.5 - 17.9 95% C.I.)	(38) 18.9 % (14.3 - 24.6 95% C.I.)	(14) 8.0 % (5.1 - 12.3 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(19) 5.0 % (3.2 - 7.8 95% C.I.)	(9) 4.5 % (2.4 - 8.1 95% C.I.)	(10) 5.7 % (3.1 - 10.2 95% C.I.)

Figure 67: Distribution of height –for Age z-scores (based on WHO Growth Standards)

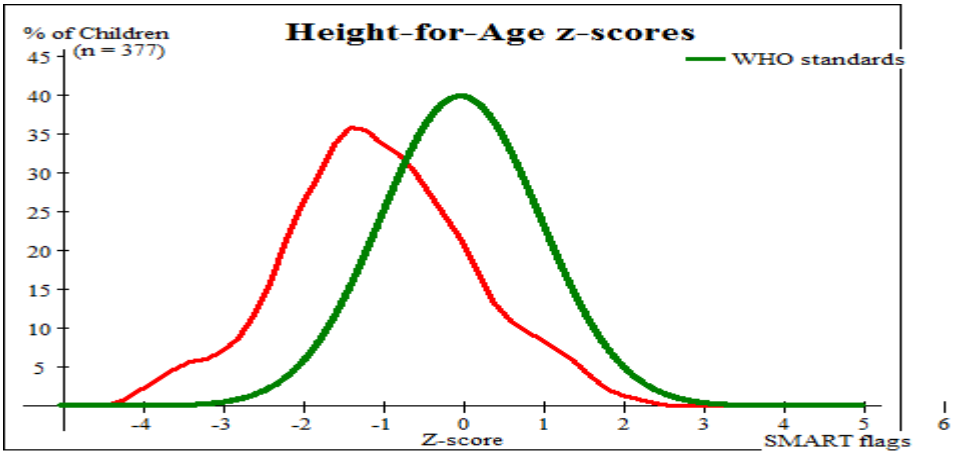


Figure 68: Trend in prevalence of Stunting based on WHO Growth Standards in children 6-59 months from 2015-2017 in Tsore

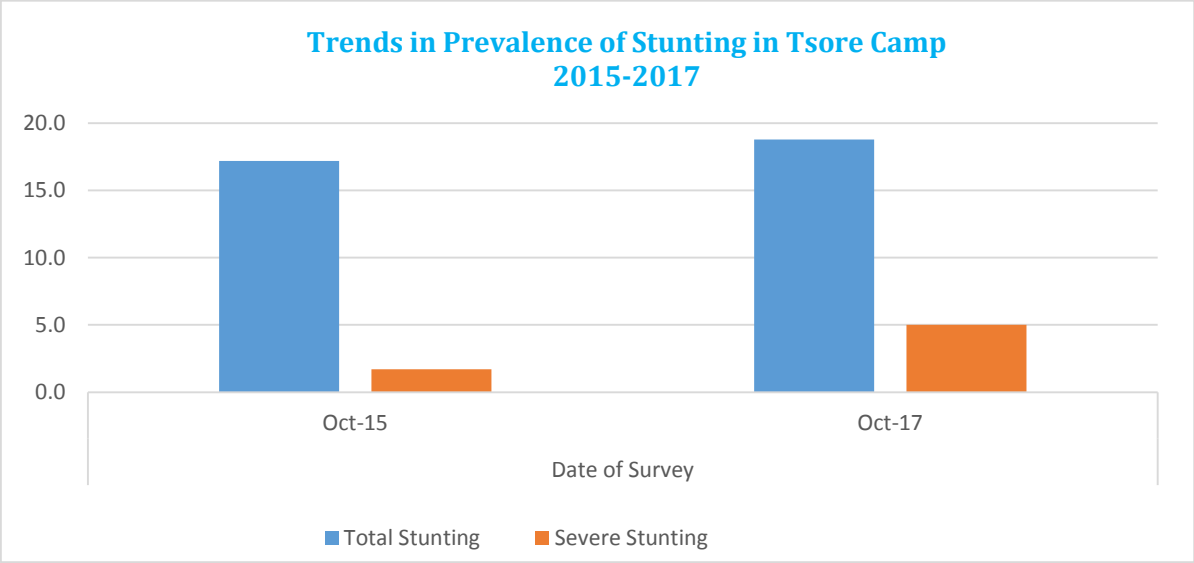


Table 141: Prevalence of stunting by age based on height-for-age z-scores

Age (mo)	Total no.	Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
		No.	%	No.	%	No.	%
6-17	91	1	1.1	12	13.2	78	85.7
18-29	88	11	12.5	11	12.5	66	75.0
30-41	108	5	4.6	16	14.8	87	80.6
42-53	75	2	2.7	13	17.3	60	80.0
54-59	15	0	0.0	0	0.0	15	100.0
Total	377	19	5.0	52	13.8	306	81.2

Figure 69: Trend in the prevalence of Stunting by Age in Children 6-59 months in Tsore.

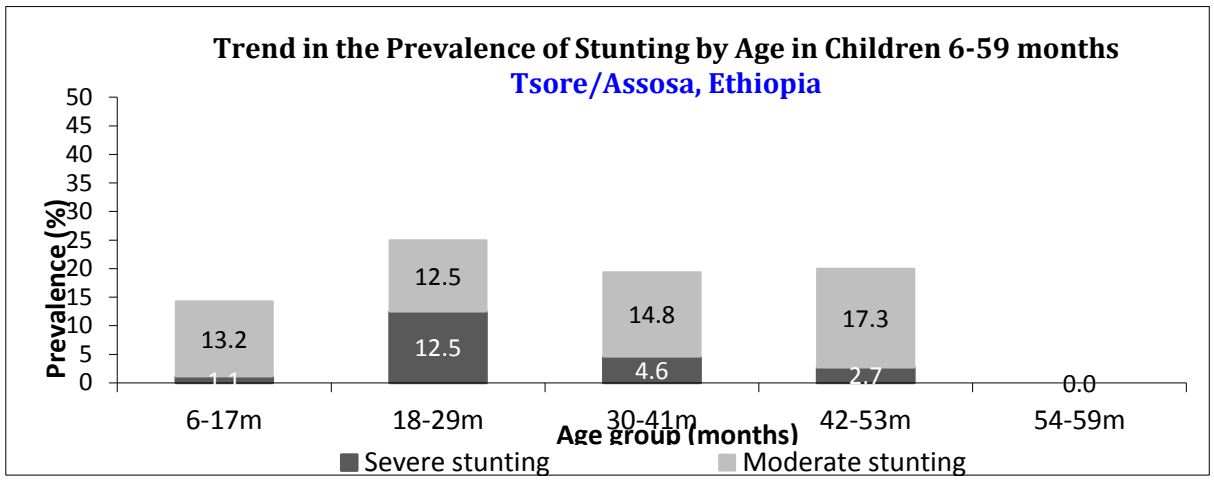


Table 142: Mean z-scores, Design Effects and excluded subjects

Indicator	n	Mean z-scores ± SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	387	-0.66±0.97	1.03	1	3
Weight-for-Age	386	-1.02±0.98	1.00	1	4
Height-for-Age	377	-1.05±1.14	1.00	0	14

Mortality results

Table 143: Mortality rates

CMR (total deaths/10,000 people / day): 0.13(0.03-0.53) (95% CI)
U5MR (deaths in children under five/10,000 children under five / day): 0.33 (0.04-2.45,95% CI)

Feeding programme coverage results in Tsore

Table 144: Programme coverage for acutely malnourished children in Tongo

	Number/total	% (95% CI)
Supplementary feeding programme coverage	13/42	31.0% (17.6-47.1%)
Therapeutic feeding programme coverage	1/5	20.0% (0.5-71.6%)
Blanket supplementary feeding program (BSFP) 6-35 months	79/121	65.3% (56.1-73.7%)

Measles vaccination coverage results in Tsore

Table 145: Measles vaccination coverage for children aged 9-59 months (or other context-specific target group) (n= 361)

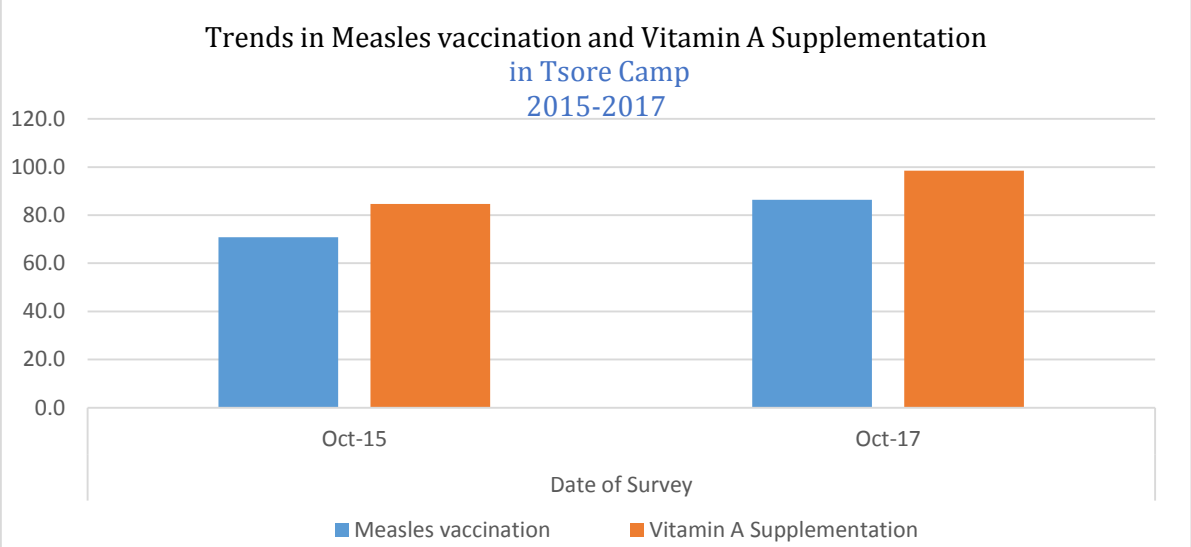
	Measles (with card) n=108	Measles (with card or confirmation from mother) n=312
YES	29.8% (25.2-34.9 95% CI)	86.4% (82.5-89.8%)

Vitamin A supplementation coverage results in Tsore

Table 146: Vitamin A supplementation for children aged 6-59 months within past 6 months (or other context-specific target group) (n=389)

	Vitamin A capsule (with card) n=72	Vitamin A capsule (with card or confirmation from mother) n=383
YES	18.5% (14.8-22.8 95% CI)	98.5% (96.5-99.4%)

Figure 70: Trends in the coverage of measles vaccination and vitamin A supplementation IN LAST 6 MONTHS in children 6-59 months 2013-2017



Diarrhoea results in Tsore

Table 147: Period prevalence of diarrhoea

	Number/total	% (95% CI)
Diarrhoea in the last two weeks	28/391	7.2% (4.9-10.3%)

Anaemia results in Tsore

Table 148: Prevalence of TOTAL anaemia, ANAEMIA CATEGORIES, and MEAN haemoglobin concentration in children 6-59 months of age

	Number/ total	Prevalence (%) and 95% CI
Total Anaemia (Hb<11.0 g/dL)	110/390	28.2% (23.8-33.0%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	80/390	20.5% (16.7-24.9%)
Moderate Anaemia (7.0-9.9 g/dL)	29/390	7.4% (5.1-10.6%)
Severe Anaemia (<7.0 g/dL)	1/390	0.3% (0.0-1.6%)
Mean Hb (g/dL) **(SD / 95% CI)** **[range]**	11.7 S.D = 1.3 (Min 6.6, Max 15.5)	

Figure 71: Trends in anaemia categories in children 6-59 months from 2013-2017

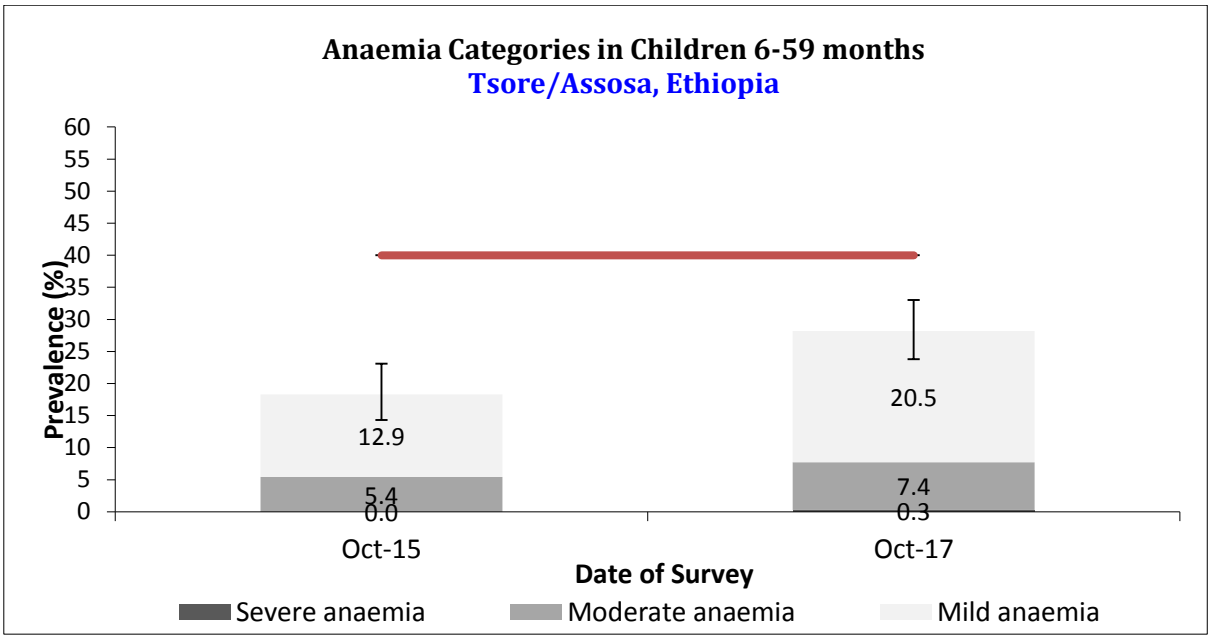


Table 149: Prevalence of MODERATE AND SEVERE anaemia in children 6-59 months of age BY AGE GROUP

Age group	No.	Severe Anaemia (<7.0 g/dL)		Moderate Anaemia (7.0-9.9 g/dL)		Mild Anaemia (Hb 10.0-10.9 g/dL)		Total Anaemia (Hb<11.0 g/dL)		Normal (Hb≥11.0 g/dL)	
		no	%	no	%	no	%	no	%	no	%
6-23	127	0	0	19	15%	42	33.1%	61	48%	66	52%
24-35	112	0	0	5	4.5%	21	18.8%	26	23.2%	86	76.8%
36-59	151	1	0.7%	5	3.3%	17	11.3%	23	15.2%	128	84.8%
Total	390	0	0	35	8.8%	63	15.8%	98	24.5%	302	75.5%

Infant and Young Children Feeding (IYCF) Children 0-23 months in Tsore

Table 150: Prevalence of Infant and Young Child Feeding Practices Indicators

Indicator	Age range	Number/total	Prevalence (%) and 95% CI
Timely initiation of breastfeeding	(0-23 months)	157/175	89.7% (84.2-93.8%)
Exclusive breastfeeding under 6 months	(0-5 months)	43/48	89.6%(77.3-96.5)
Continued breastfeeding at 1 year	(12-15 months)	27/30	90.0% (73.5-97.9%)
Continued breastfeeding at 2 years	(20-23 months	13/16	81.3% (54.4-96.0%)
Introduction of solid, semi-solid or soft foods	(6-8 months)	21/29	72.4%(52.8-87.3)
Consumption of iron-rich or iron-fortified foods	(6-23 months)	104/124	83.9% (76.2-89.9%)
Bottle feeding	(0-23 months)	0/176	0.0%

Note that when IYCF indicators are collected in nutritional surveys based on anthropometric sample of children aged 0-59 months, it is not feasible to achieve a large enough sample size for some of the indicators to be estimated as precisely as desired, especially for indicators covering a very narrow age range (e.g. 12-15 months, 6-8 months). Hence, IYCF indicators need to be interpreted with care.

As per the report, 89.7% of children below 2 years had been introduced to breast milk within an hour of birth (Table 150). 89.6% infants (0-5) from the sample have been reported that they are exclusively breastfed. About 90% of the sampled children have maintained breastfeeding until 1st year of birth, whilst more three fourth (81.3%) were still breastfeeding at 2 years. Consumption of iron rich foods were reported as 83.9%. About two third (72.4%) of 6-8 months

children had been introduced to solid foods. The proportion of children who were bottle fed the day before the survey were 0%.

Figure 72: Trends of Key IYCF indicators from 2015-2017

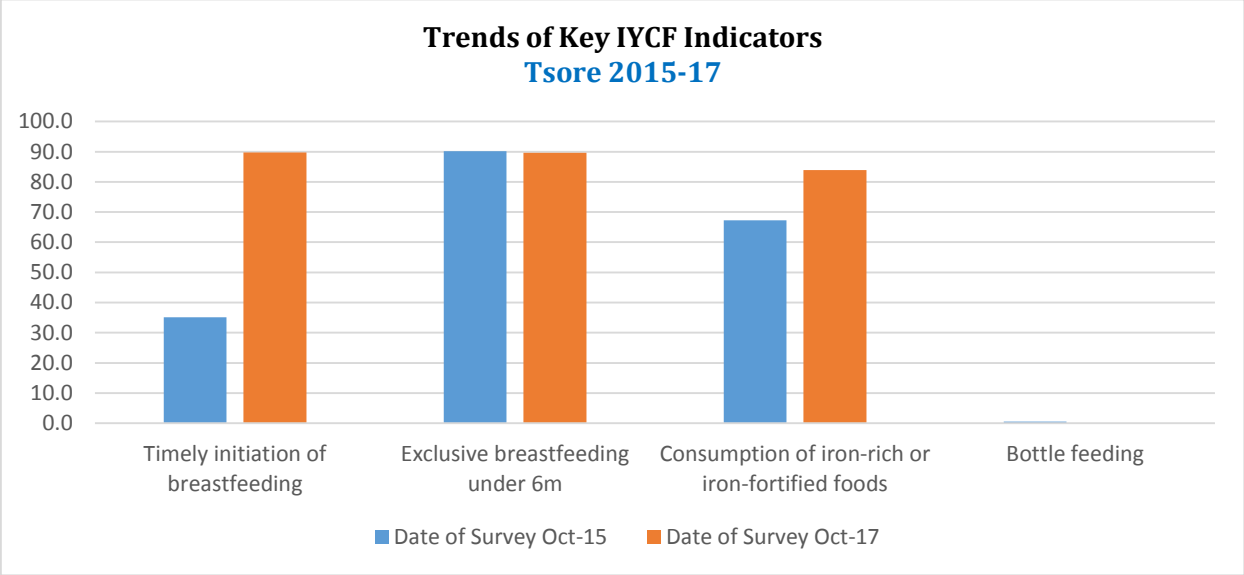


Table 151: Infant formula intake in children aged 0-23 months

	Number/total	% (95% CI)
Proportion of children aged 0-23 months who receive infant formula (fortified or non-fortified)	3/175	1.7 %(0.4-4.9%)

Table 152: CSB+ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF	70/125	56.0% (46.8-64.9%)

Table 153: CSB++ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF++	57/126	45.2% (36.4-54.3%)

Women 15-49 years in Tsore

Table 154: Women physiological status and age

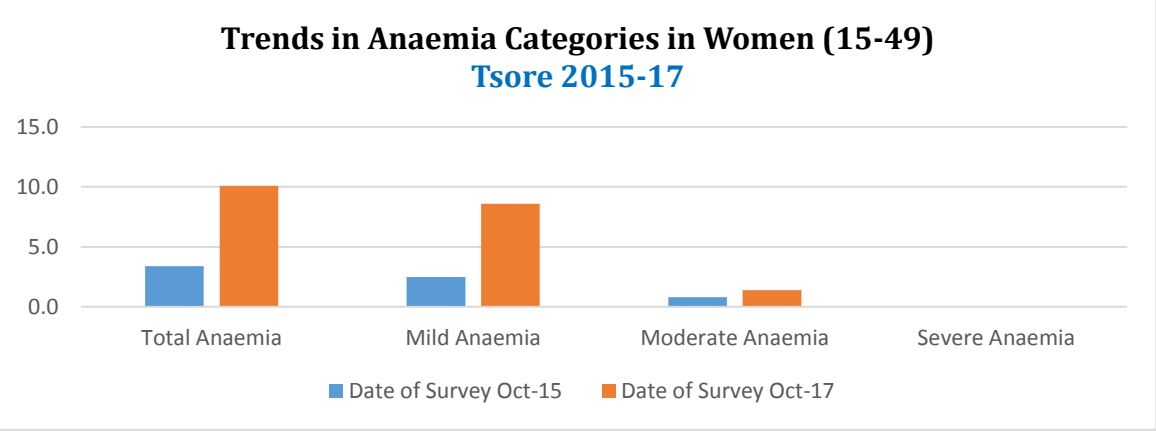
Physiological status	Number/total	% of sample
Non-pregnant	140/167	84.3% (77.9-89.5%)
Pregnant	26 /167	15.7% (10.5-22.1%)
Mean age and (SD) [range]	26.72 years SD =6.95 [15.0-49.0 years]	

Anaemia Prevalence for Women of 15-19 years non pregnant

Table 155: Prevalence of anaemia and haemoglobin concentration in non-pregnant women of reproductive age (15-49 years)

Anaemia - Women of reproductive age 15-49 years	All n = 139
Total Anaemia (<12.0 g/dL)	(14)10.1% (5.6-16.3%)
Mild Anaemia (11.0-11.9 g/dL)	(12)8.6% (4.5-14.6%)
Moderate Anaemia (8.0-10.9 g/dL)	(2)1.4% (0.2-5.1%)
Severe Anaemia (<8.0 g/dL)	(0) 0.0%
Mean Hb, g/dL **(SD)** **[range]**	13.54g/dl SD=1.23 [10.8-16.9]

Figure 73: Trends in anaemia categories in women 15-49 years from 2015-2017



Antenatal Care Practice

Table 156: ANC enrolment and iron-folic acid pills coverage among pregnant women (15-49 years)

	Number /total	% (95% CI)
Currently enrolled in ANC programme	23/26	88.5% (69.8-97.6%)
Currently receiving iron-folic acid pills	21/26	80.8% (60.6-93.4%)

Food security in Tsore

Ration card coverage

Table 157: Ration card coverage

	Number/total	% (95% CI)
Proportion of households with a ration card	202/202	100.0%

Duration of General Food Ration

Table 158: Reported duration of general food ration

Average number of days the food ration lasts (Standard deviation or 95% CI)	Average duration (%) in relation to the theoretical duration of the ration*
14.94 SD =4.897	49.8%

Table 159: Reported duration of general food ration 2

	Number/ total	% (95% CI)
Proportion of households reporting that the food ration lasts the entire duration of the cycle	136/195	69.7% (62.8-76.1%)
Proportion of households reporting that the food ration lasted:		
≤75% of the cycle 30 days	63/199	31.7% (25.3-38.6%)
>75% of the cycle 30 days	136/199	68.3% (61.4-74.7%)

Negative coping strategies results

Table 160: Coping strategies used by the surveyed population over the past month

	Number/total	% (95% CI)
Proportion of households reporting using the following coping strategies over the past month*:		
Borrowed cash, food or other items *with or without interest*	191/201	95.0% (91.0-97.6%)

Sold any assets that would not have normally sold (furniture, seed stocks, tools, other NFI, livestock etc.)	48/200	24.0% (18.3-30.5%)
Requested increased remittances or gifts as compared to normal	4/201	2.0% (0.5-5.0%)
Reduced the quantity and/or frequency of meals	168/201	83.6% (77.7-88.4%)
Begged	19/201	9.5% (5.8-14.4%)
Engaged in potentially risky or harmful activities	6/201	3.0% (1.1-6.4%)
Proportion of households reporting using none of the coping strategies over the past month	2/200	1.0% (0.1-3.6%)

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

Household Dietary Diversity Score and Consumption of Micronutrient rich foods

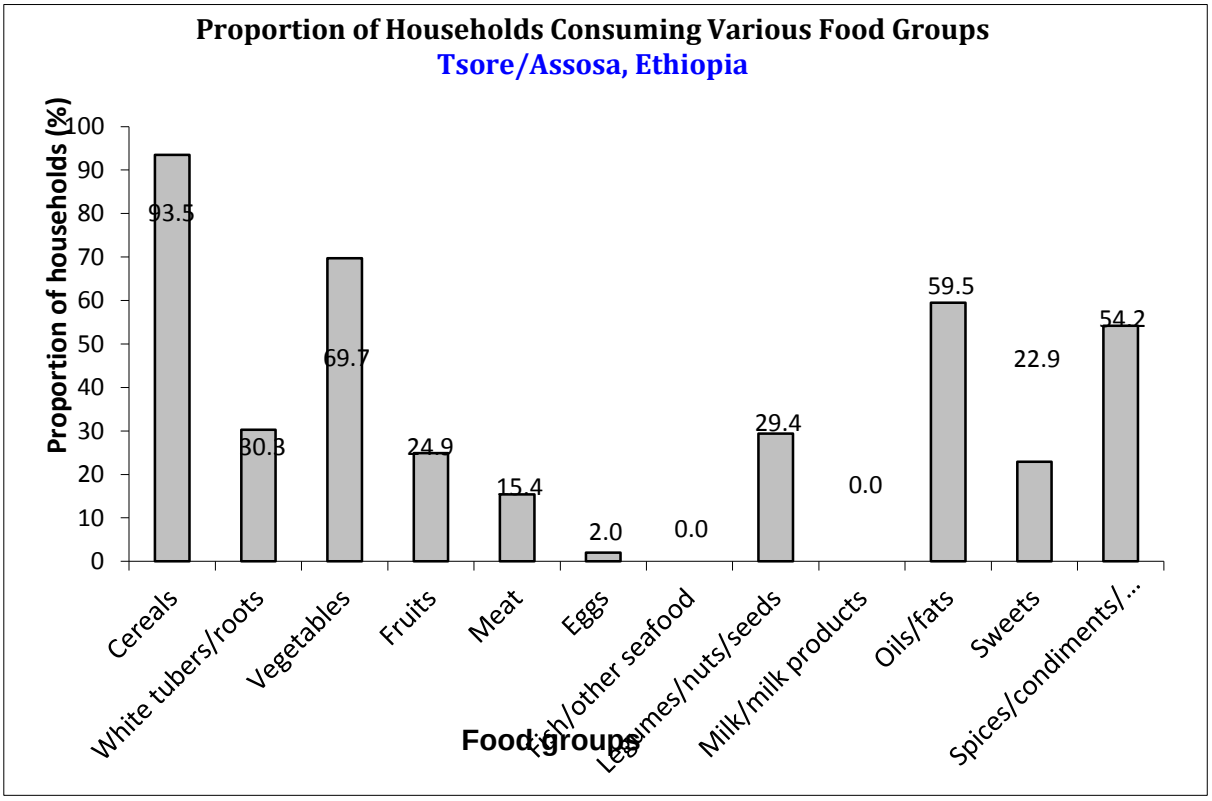
Table 161: Average HDDS

	Mean (Standard deviation or 95% CI)
Average HDDS	4.2 SD =2.26

Table 162: Consumption of micronutrient rich foods by households

	Number/Total	**% and 95% CI**
Proportion of households *not consuming any* vegetables, fruits, meat, eggs, fish/seafood, and milk/milk products	60/201	29.9% (23.6%)
Proportion of households consuming either a plant or animal source of vitamin A	107/201	53.2% (46.1-60.3%)
Proportion of households consuming organ meat/flesh meat, or fish/seafood (food sources of haem iron)	31/201	15.4% (10.7-21.2%)

Figure 74: Proportion of Households Consuming Various Food Groups


Proportion of Households Consuming Various Food Groups
Tsore/Assosa, Ethiopia
Proportion of households (%)
100
90
80
70
60
50
40
30
20
10
0
93.5
30.3
69.7
24.9
15.4
2.0
0.0
29.4
0.0
59.5
22.9
54.2
Cereals
White tubers/roots
Vegetables
Fruits
Meat
Eggs
Fish/other seafood
Legumes/nuts/seeds
Milk/milk products
Oils/fats
Sweets
Spices/condiments/...
Food groups

WASH in Tsore

Water Quality

Table 163: Water Quality

	Number/total	% (95% CI)
Proportion of households using an improved drinking water source	202/202	100.0%
Proportion of households that use a covered or narrow necked container for storing their drinking water	96/202	47.5% (40.5-54.7%)

Water Quantity

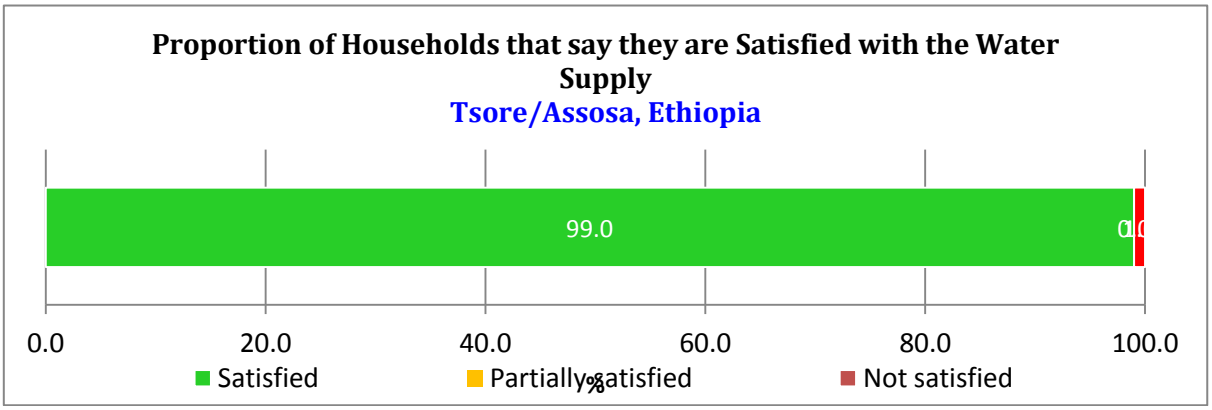
Table 164: Water Quantity: Amount of litres of water used per person per day

Proportion of households that use:	Number/total	% (95% CI)
≥ 20 lpppd	130/202	64.4% (57.3-71.0%)
15 – <20 lpppd	37/202	18.3% (13.2-24.4%)
<15 lpppd	35/202	17.3% (12.4-23.3%)
Average consumption (Liters per person per day)	24.6LPPPD	

Table 165: Satisfaction with water supply

	Number/total	% (95% CI)
Proportion of households that say they are satisfied with the drinking water supply	200/202	99.0% (96.5-99.9%)

Figure 75: Proportion of households that say they are satisfied with the water supply



Excreta disposal

Table 166: Safe Excreta disposal

	Number/total	% (95% CI)
Proportion of households that use:		
An improved excreta disposal facility (improved toilet facility, 1 household)	96/200	48.0% (40.9-55.2%)
A shared family toilet (improved toilet facility, 2 households)	43/200	21.5% (16.0-27.8%)
A communal toilet (improved toilet facility, 3 households or more)	43/200	21.5% (16.0-27.8%)
An unimproved toilet (unimproved toilet facility or public toilet)	18/200	9.0% (5.4-13.9%)
Proportion of households with children under three years old that dispose of faeces safely	105/110	95.5% (89.7-98.5%)

Improved facility which is not shared (only for one household) percentage was reported to be 48.0%. Percentages of households with children under three 3 years and dispose excreta safely was 95.5% (Table 166).

Figure 76: Proportion of Households with Children under the age of 3 years old whose (last) Stools were Disposed of Safely

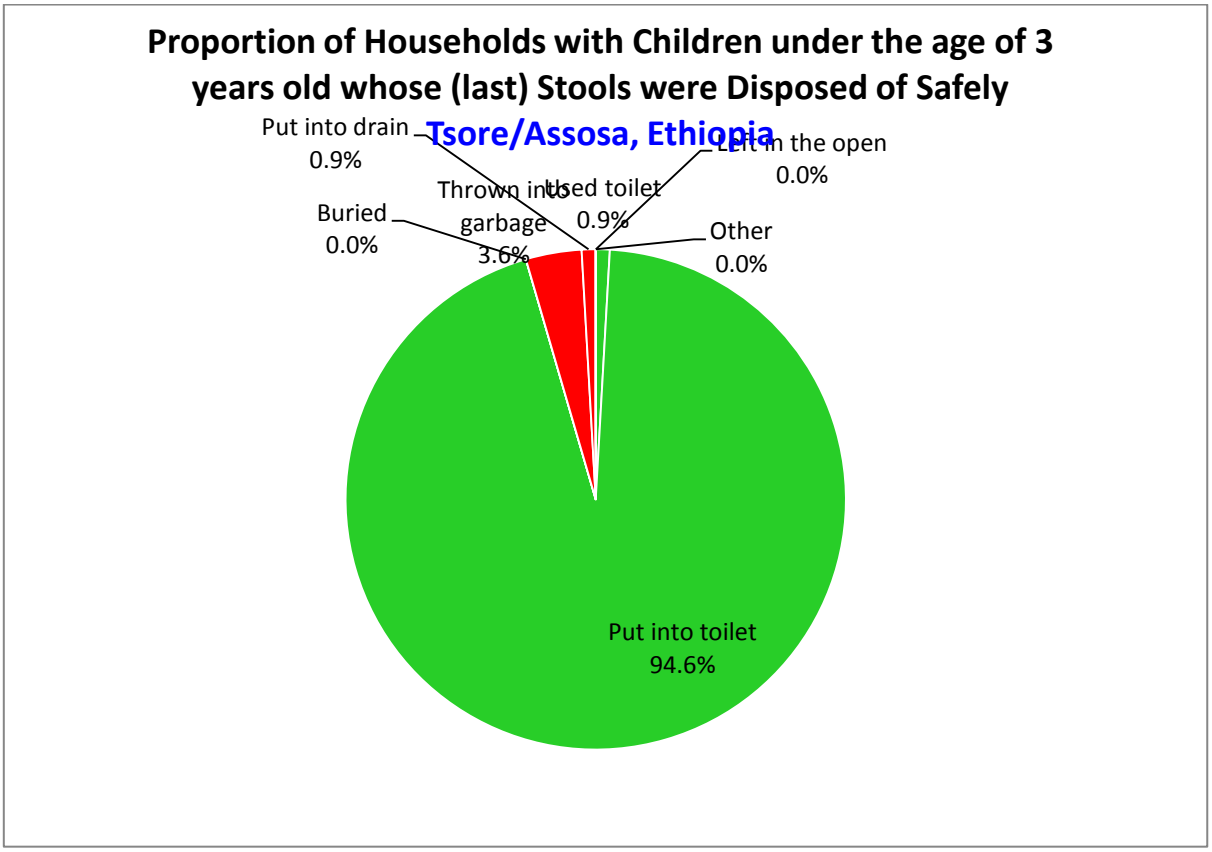
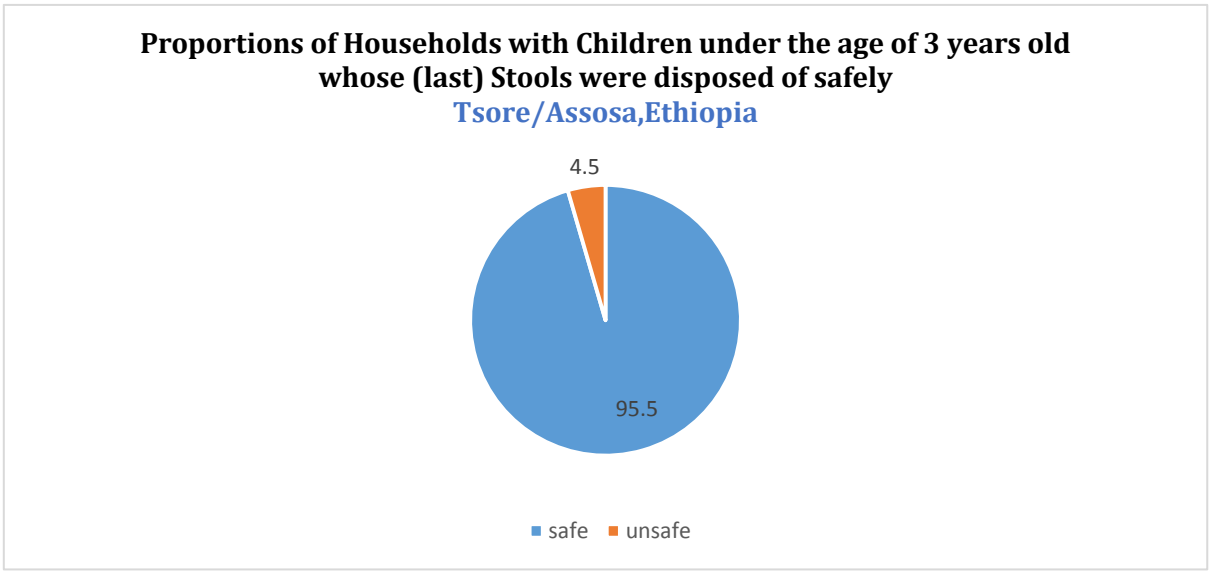


Figure 77: Households with children <3yrs old that dispose of faeces safely

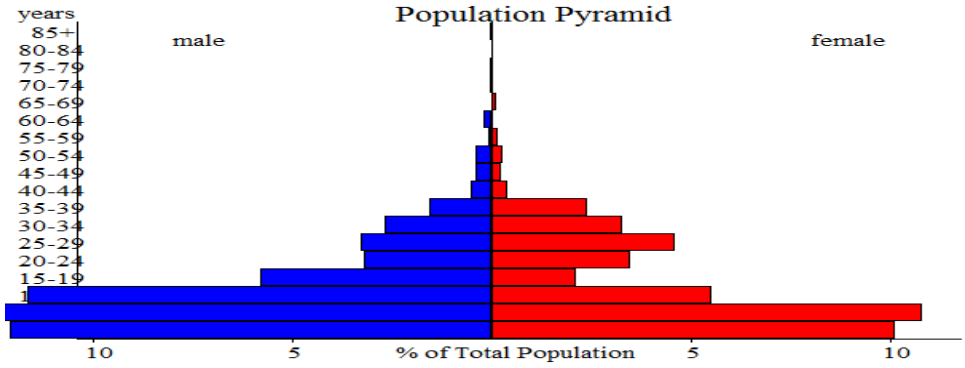


RESULTS FROM GURE SHEMBOLA

Table 167: Distribution of age and sex of sample

	Boys		Girls		Total		Ratio
AGE (mo.)	no.	%	no.	%	no.	%	Boy: Girl
6-17	54	50.9	52	49.1	106	21.1	1.0
18-29	79	60.3	52	39.7	131	26.0	1.5
30-41	78	60.0	52	40.0	130	25.8	1.5
42-53	57	55.9	45	44.1	102	20.3	1.3
54-59	21	61.8	13	38.2	34	6.8	1.6
Total	289	57.5	214	42.5	503	100.0	1.4

Figure 78: Population pyramid for Gure Shembola Camp



Anthropometric results (based on WHO standards 2006) in Gure Shembola:

Table 168: Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex

	All n = 483	**Boys** n = 278	**Girls** n = 205
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(47) 9.7 % (7.4 - 12.7 95% C.I.)	(30) 10.8 % (7.7 - 15.0 95% C.I.)	(17) 8.3 % (5.2 - 12.9 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema)	(43) 8.9 % (6.7 - 11.8 95% C.I.)	(27) 9.7 % (6.8 - 13.8 95% C.I.)	(16) 7.8 % (4.9 - 12.3 95% C.I.)

Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(4) 0.8 % (0.3 - 2.1 95% C.I.)	(3) 1.1 % (0.4 - 3.1 95% C.I.)	(1) 0.5 % (0.1 - 2.7 95% C.I.)

The prevalence of oedema is 0.0 %

Figure 79: Distribution of weight-for-height z-scores (based on WHO Growth Standards) in Gure Shembola

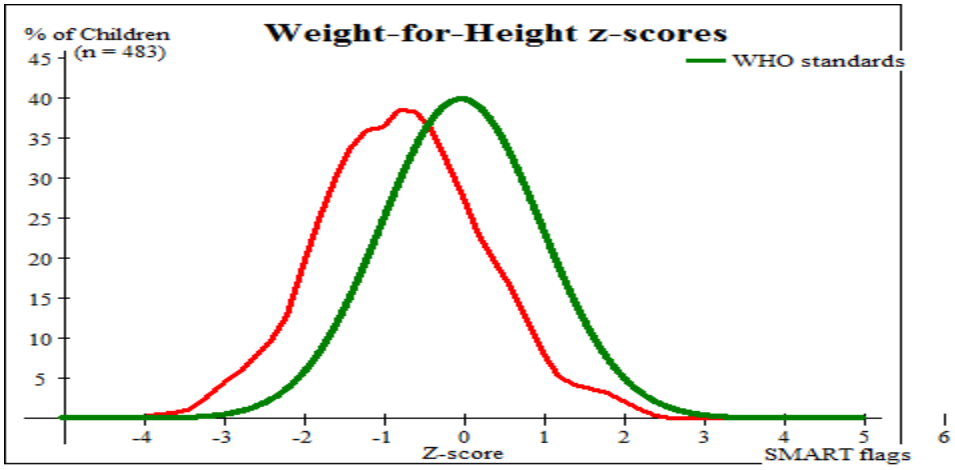


Table 169: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

Age (mo)	Total no.	Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
		No.	%	No.	%	No.	%	No.	%
6-17	103	1	1.0	10	9.7	92	89.3	0	0.0
18-29	124	2	1.6	10	8.1	112	90.3	0	0.0
30-41	126	1	0.8	6	4.8	119	94.4	0	0.0
42-53	98	0	0.0	9	9.2	89	90.8	0	0.0
54-59	32	0	0.0	8	25.0	24	75.0	0	0.0
Total	483	4	0.8	43	8.9	436	90.3	0	0.0

Figure 80: Trend of prevalence of Wasting by age in Gure Shembola, 2017

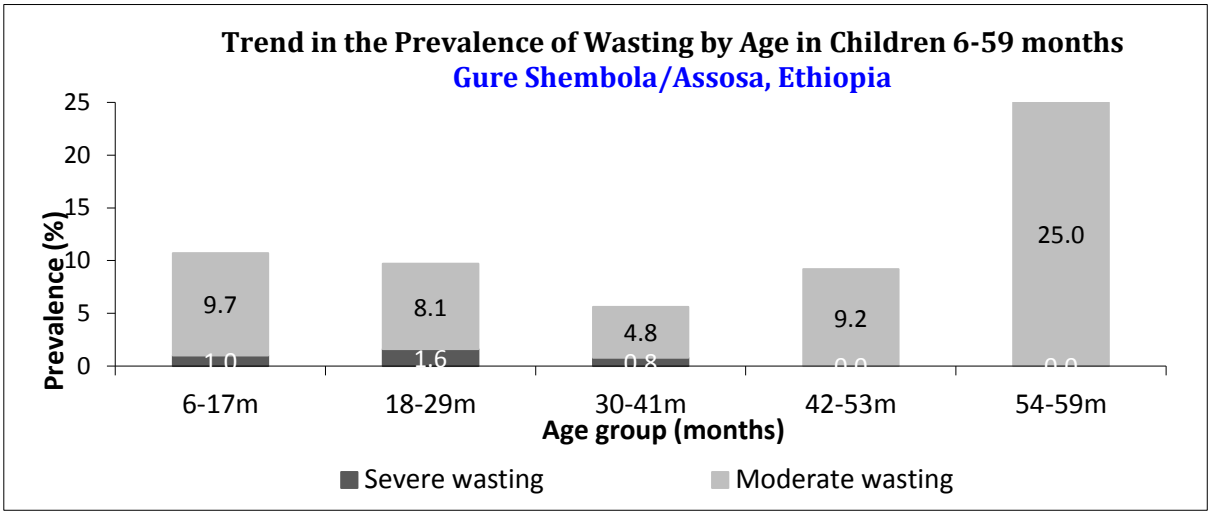


Table 170: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

	<-3 z-score	>=-3 z-score
Oedema present	Marasmic kwashiorkor No. 0 (0.0 %)	Kwashiorkor No. 0 (0.0 %)
Oedema absent	Marasmic No. 10 (2.0 %)	Not severely malnourished No. 488 (98.0 %)

Table 171: Prevalence of acute malnutrition based on MUAC cut off's (and/or oedema) and by sex

	All n = 503	**Boys** n = 289	**Girls** n = 214
Prevalence of global malnutrition (< 125 mm and/or oedema)	(12) 2.4 % (1.4 - 4.1 95% C.I.)	(5) 1.7 % (0.7 - 4.0 95% C.I.)	(7) 3.3 % (1.6 - 6.6 95% C.I.)
Prevalence of moderate malnutrition (< 125 mm and >= 115 mm, no oedema)	(9) 1.8 % (0.9 - 3.4 95% C.I.)	(4) 1.4 % (0.5 - 3.5 95% C.I.)	(5) 2.3 % (1.0 - 5.4 95% C.I.)
Prevalence of severe malnutrition (< 115 mm and/or oedema)	(3) 0.6 % (0.2 - 1.7 95% C.I.)	(1) 0.3 % (0.1 - 1.9 95% C.I.)	(2) 0.9 % (0.3 - 3.3 95% C.I.)

Table 172: Prevalence of acute malnutrition by age, based on MUAC cut off's and/or oedema

Age (mo)	Total no.	Severe wasting (< 115 mm)		Moderate wasting (>= 115 and < 125 mm)		Normal (> = 125 mm)		Edema	
		No.	%	No.	%	No.	%	No.	%
6-17	79	0	0.0	6	7.6	73	92.4	0	0.0
18-29	94	1	1.1	8	8.5	85	90.4	0	0.0
30-41	102	0	0.0	1	1.0	101	99.0	0	0.0
42-53	101	0	0.0	0	0.0	101	100.0	0	0.0
54-59	26	1	3.8	0	0.0	25	96.2	0	0.0
Total	402	2	0.5	15	3.7	385	95.8	0	0.0

Table 173: Prevalence of underweight based on weight-for-age z-scores by sex

	All n = 396	Boys n = 216	Girls n = 180
Prevalence of underweight (<-2 z-score)	(134) 33.8 % (29.4 - 38.6 95% C.I.)	(75) 34.7 % (28.7 - 41.3 95% C.I.)	(59) 32.8 % (26.3 - 39.9 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(96) 24.2 % (20.3 - 28.7 95% C.I.)	(53) 24.5 % (19.3 - 30.7 95% C.I.)	(43) 23.9 % (18.2 - 30.6 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(38) 9.6 % (7.1 - 12.9 95% C.I.)	(22) 10.2 % (6.8 - 14.9 95% C.I.)	(16) 8.9 % (5.5 - 14.0 95% C.I.)

Table 174: Prevalence of underweight by age, based on weight-for-age z-scores

Age (mo)	Total no.	Severe underweight (<-3 z-score)		Moderate underweight (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Edema	
		No.	%	No.	%	No.	%	No.	%
6-17	106	2	1.9	6	5.7	98	92.5	0	0.0
18-29	131	0	0.0	3	2.3	128	97.7	0	0.0
30-41	130	0	0.0	0	0.0	130	100.0	0	0.0
42-53	102	1	1.0	0	0.0	101	99.0	0	0.0
54-59	34	0	0.0	0	0.0	34	100.0	0	0.0
Total	503	3	0.6	9	1.8	491	97.6	0	0.0

Table 175: Prevalence of stunting based on height-for-age z-scores and by sex

	All n = 439	Boys n = 250	Girls n = 189
Prevalence of stunting (<-2 z-score)	(44) 10.0 %	(24) 9.6 %	(20) 10.6 %

	(7.6 - 13.2 95% C.I.)	(6.5 - 13.9 95% C.I.)	(7.0 - 15.8 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(38) 8.7 % (6.4 - 11.7 95% C.I.)	(19) 7.6 % (4.9 - 11.6 95% C.I.)	(19) 10.1 % (6.5 - 15.2 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(6) 1.4 % (0.6 - 2.9 95% C.I.)	(5) 2.0 % (0.9 - 4.6 95% C.I.)	(1) 0.5 % (0.1 - 2.9 95% C.I.)

Figure 81: Distribution of height –for Age z-scores (based on WHO Growth Standards)

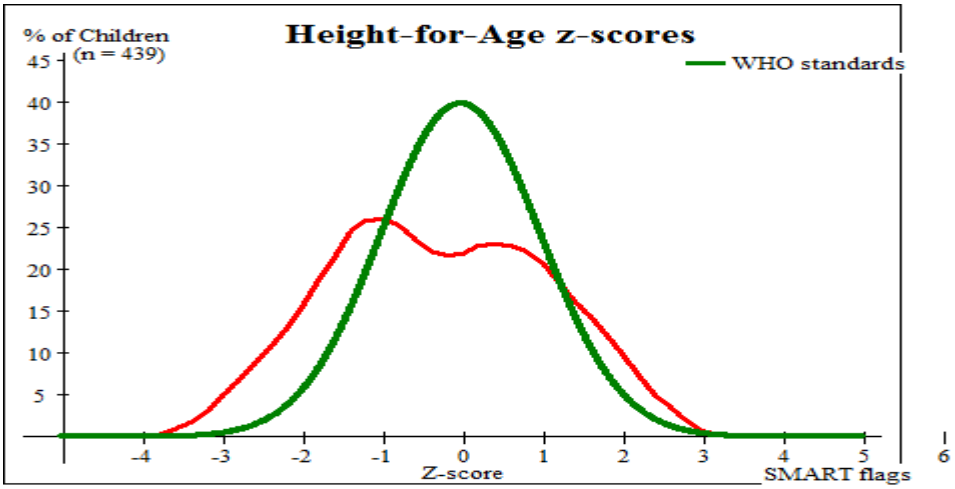


Table 176: Prevalence of stunting by age based on height-for-age z-scores

Age (mo)	Total no.	Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
		No.	%	No.	%	No.	%
6-17	93	0	0.0	5	5.4	88	94.6
18-29	111	3	2.7	20	18.0	88	79.3
30-41	113	1	0.9	5	4.4	107	94.7
42-53	90	2	2.2	7	7.8	81	90.0
54-59	32	0	0.0	1	3.1	31	96.9
Total	439	6	1.4	38	8.7	395	90.0

Figure 82: Trends Prevalence of Stunting by age in Gure Shembola, 2017.

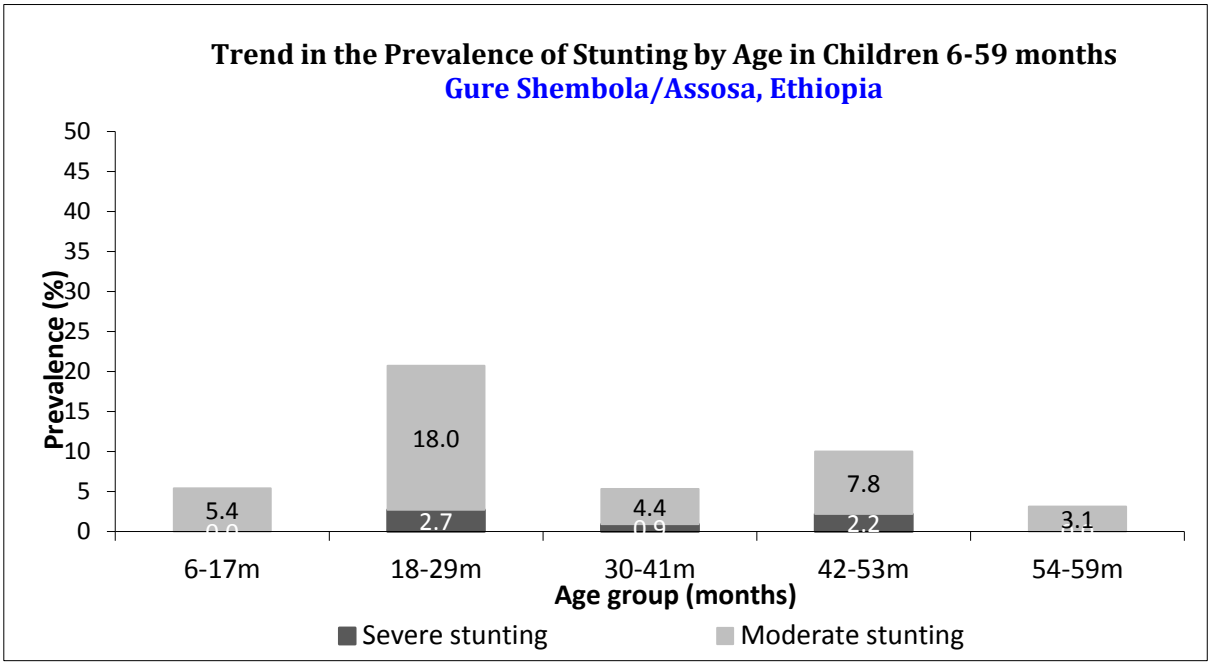


Table 177: Mean z-scores, Design Effects and excluded subjects

Indicator	n	Mean z-scores ± SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	483	-0.76±1.01	1.00	5	15
Weight-for-Age	491	-0.60±1.03	1.00	2	10
Height-for-Age	439	-0.29±1.34	1.00	1	63

* contains for WHZ and WAZ the children with oedema.

Mortality results

Table 178: Mortality rates

CMR (total deaths/10,000 people / day): 0.0 (95% CI)
U5MR (deaths in children under five/10,000 children under five / day): 0.0(95% CI)

Feeding programme coverage results in Gure Shembola

Table 179: Programme coverage for acutely malnourished children in Gure Shembola

	Number/total	% (95% CI)
Supplementary feeding programme coverage	16/48	33.3 (20.4-48.4)
Therapeutic feeding programme coverage	1/6	16.7 (0.4-64.1)
Blanket supplementary feeding program (BSFP) 6-35 months	51/162	31.5% (24.4-39.2%)

Measles vaccination coverage results in Gure Shembola

Table 180: Measles vaccination coverage for children aged 9-59 months (or other context-specific target group) (n= 475)

	Measles (with card) n=2	Measles (with card or confirmation from mother) n=326
YES	0.4% (0.1-1.7, 95% CI)	68.6 % (64.2-72.7,95% CI)

Vitamin A supplementation coverage results in Gure Shembola

Table 181: Vitamin A supplementation for children aged 6-59 months within past 6 months (or other context-specific target group) (n=503)

	Vitamin A capsule (with card) n=2	Vitamin A capsule (with card or confirmation from mother) n=386
YES	0.4% (0.1-1.6 95% CI)	76.7% [72.7-80.3,95% CI]

Diarrhoea results in Gure Shembola

Table 182: Period prevalence of diarrhoea

	Number/total	% (95% CI)
Diarrhoea in the last two weeks	95/503	18.3 (15.1-22.0)

Anaemia results in Gure Shembola

Table 183: Prevalence of TOTAL anaemia, ANAEMIA CATEGORIES, and MEAN haemoglobin concentration in children 6-59 months of age

	Number/ total	Prevalence (%) and 95% CI
Total Anaemia (Hb<11.0 g/dL)	144/499	28.9% (25-33.1%)
Mild Anaemia (Hb 10.0-10.9 g/dL)	84/499	16.8% (13.7-20.5%)
Moderate Anaemia (7.0-9.9 g/dL)	60/499	12% (9.4-15.3%)
Severe Anaemia (<7.0 g/dL)	0/499	0.0
Mean Hb (g/dL) **(SD / 95% CI)** **[range]**	11.6 S.D = 1.3 (Min 7.3, Max 15.7)	

Table 184: Prevalence of MODERATE AND SEVERE anaemia in children 6-59 months of age BY AGE GROUP

Age group	No.	Severe Anaemia (<7.0 g/dL)		Moderate Anaemia (7.0-9.9 g/dL)		Mild Anaemia (Hb 10.0-10.9 g/dL)		Total Anaemia (Hb<11.0 g/dL)		Normal (Hb≥11.0 g/dL)	
		no	%	no	%	no	%	no	%	no	%
6-23	168	0	0	36	21.4%	48	28.6%	84	50.0%	84	50.0%
24-35	108	0	0	12	11.1%	17	15.7%	29	26.9%	79	73.1%
36-59	223	0	0	12	5.4%	19	8.5%	31	13.9%	192	86.1%
Total	499	0	0	60	12.0%	84	16.8%	144	28.9%	355	71.1%

Infant and Young Children Feeding (IYCF) Children 0-23 months in Gure Shembola

Table 185: Prevalence of Infant and Young Child Feeding Practices Indicators

Indicator	Age range	Number/total	Prevalence (%) and 95% CI
Timely initiation of breastfeeding	(0-23 months)	153/195	78.5 (72-84)
Exclusive breastfeeding under 6 months	(0-5 months)	33/36	91.7 (77.5-98.2)
Continued breastfeeding at 1 year	(12-15 months)	34/36	94.4(81.3-99.3)
Continued breastfeeding at 2 years	(20-23 months	13/25	52.0(31.3-72.2)

Introduction of solid, semi-solid or soft foods	(6-8 months)	10/28	25.7(18.6-55.9)
Consumption of iron-rich or iron-fortified foods	(6-23 months)	142/163	87.1(81-91.8)
Bottle feeding	(0-23 months)	4/204	2.0(0.5-4.9)

Note that when IYCF indicators are collected in nutritional surveys based on anthropometric sample of children aged 0-59 months, it is not feasible to achieve a large enough sample size for some of the indicators to be estimated as precisely as desired, especially for indicators covering a very narrow age range (e.g. 12-15 months, 6-8 months). Hence, IYCF indicators need to be interpreted with care.

Three fourth of (78.5%) of children below 2 years had been introduced to breast milk within an hour of birth (Table 185). 91.7% infants (0-5) from the sample have reported that they have been exclusively breastfed. About 94.4% of the sampled children have maintained breastfeeding until 1st year of birth, whilst half (52.0%) were still breastfeeding at 2 years. Consumption of iron rich foods were reported as 87.1%. Only a quarter (35.3%) of 6-8 months children had been introduced to solid foods. The proportion of children who were bottle fed the day before the survey were 2.0%.

Figure 83: Nutrition survey results (IYCF indicators) from 2017

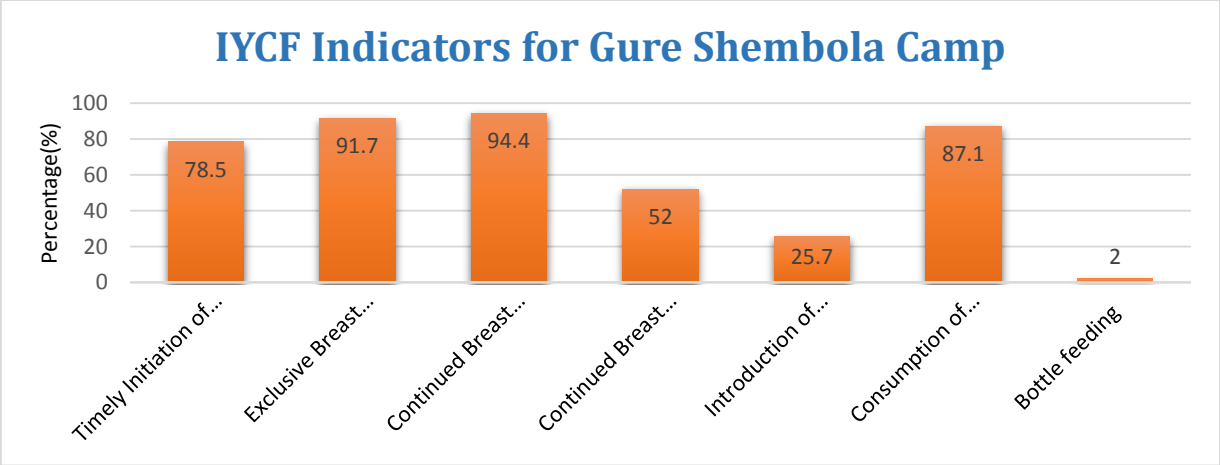


Table 186: Infant formula intake in children aged 0-23 months

	Number/total	% (95% CI)
Proportion of children aged 0-23 months who receive infant formula (fortified or non-fortified)	5/204	2.5 (0.8-5.6)

Table 187: CSB+ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF	43/168	25.6% (19.2-32.9)

Table 188: CSB++ intake in children aged 6-23 months

	Number/total	% (95% CI)
Proportion of children aged 6-23 months who receive FBF++	112/167	67.1% [59.4-74.1]

Women 15-49 years in Gure Shembola

Table 189: Women physiological status and age

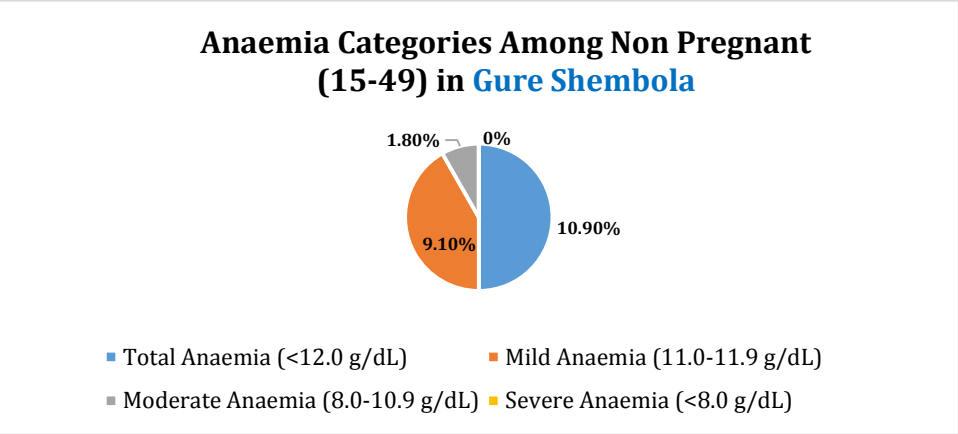
Physiological status	Number/total	% of sample
Non-pregnant	276/332	83.1% (78.7-87.0%)
Pregnant	56 /332	16.9% (13.1-21.4%
Mean age and (SD) [range]	27.19 years and SD = 7.2 [min 15 & max 48.0]	

Anaemia Prevalence for Women of 15-49 years non pregnant

Table 190: Prevalence of anaemia and haemoglobin concentration in non-pregnant women of reproductive age (15-49 years)

Anaemia - Women of reproductive age 15-49 years	All n = 274
Total Anaemia (<12.0 g/dL)	(30) 10.9% (7.5-15.3, 95% CI)
Mild Anaemia (11.0-11.9 g/dL)	(25) 9.1% (6-13.2, 95% CI)
Moderate Anaemia (8.0-10.9 g/dL)	(5) 1.8% (0.6-4.2 95% CI)
Severe Anaemia (<8.0 g/dL)	(0) 0 (0-0 95% CI)
Mean Hb, g/dL (SD) [range]	13.59 g/dL 1.29 SD [8.8-17.7]

Figure 84: Anaemia categories in non-pregnant women 15-49 years, 2017



Antenatal Care Practice

Table 191: ANC enrolment and iron-folic acid pills coverage among pregnant women (15-49 years)

	Number /total	% (95% CI)
Currently enrolled in ANC programme	50/56	89.3 (78.1-96.0)
Currently receiving iron-folic acid pills	40/56	71.4 (57.8-82.7)

Food security in Gure Shembola

Ration card coverage

Table 192: Ration card coverage

	Number/total	% (95% CI)
Proportion of households with a ration card	250/250	100%

Duration of General Food Ration

Table 193: Reported duration of general food ration

Average number of days the food ration lasts (Standard deviation or 95% CI)	Average duration (%) in relation to the theoretical duration of the ration*
21.3 days out of 30	71.0%

Table 194: Reported duration of general food ration 2

	Number/ total	% (95% CI)
Proportion of households reporting that the food ration lasts the entire duration of the cycle	7/250	2.8 [1.1-5.7]
Proportion of households reporting that the food ration lasted:		
≤75% of the cycle 30 days	148/250	59.2 [52.8-65.4]
>75% of the cycle 30 days	102/250	40.8 [34.6-47.2]

Negative coping strategies results

Table 195: Coping strategies used by the surveyed population over the past month

	Number/total	% (95% CI)
Proportion of households reporting using the following coping strategies over the past month*:		
Borrowed cash, food or other items *with or without interest*	120/249	48.2 [41.8-54.6]
Sold any assets that would not have normally sold (furniture, seed stocks, tools, other NFI, livestock etc.)	93/249	37.3 [31.3-43.7]
Requested increased remittances or gifts as compared to normal	9/249	3.6 [1.7-6.8]
Reduced the quantity and/or frequency of meals	140/250	56.0 [49.6-62.2]
Begged	4/247	1.6 [0.4-4.1]
Engaged in potentially risky or harmful activities	27/248	10.9 [7.3-15.4]
Proportion of households reporting using none of the coping strategies over the past month	19/247	7.7 [4.7-11.8]

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

Household Dietary Diversity Score and Consumption of Micronutrient Rich Foods

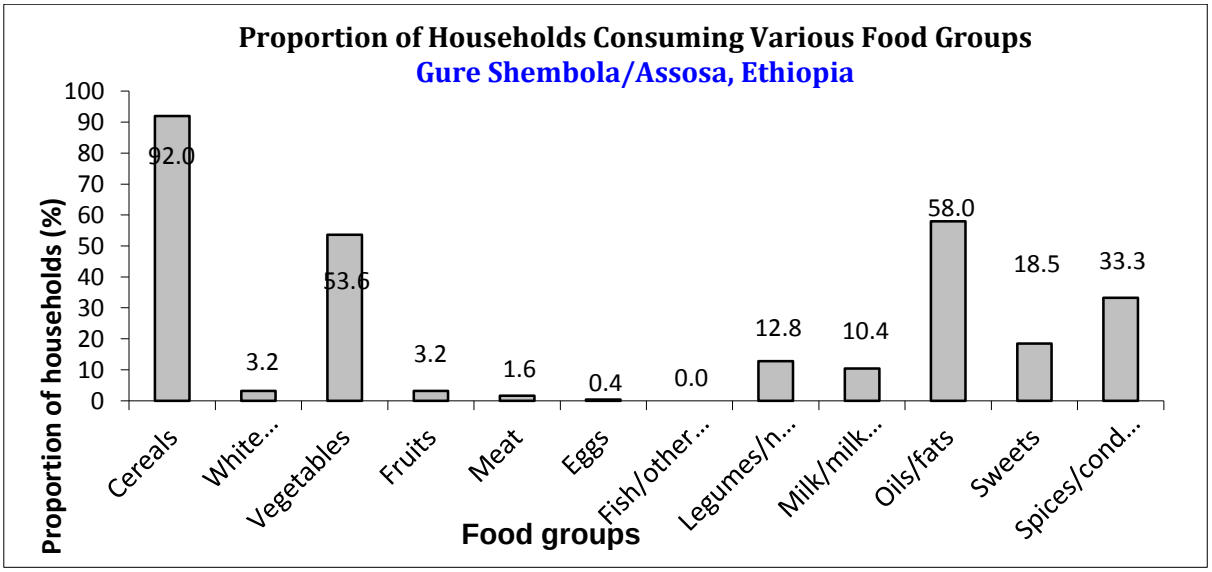
Table 196: Average HDDS

	Mean (Standard deviation or 95% CI)
Average HDDS	2.99 (1.44SD)

Table 197: Consumption of micronutrient rich foods by households

	Number/Total	% and 95% CI
Proportion of households *not consuming any* vegetables, fruits, meat, eggs, fish/seafood, and milk/milk products	113/250	45.2 (38.9-51.6)
Proportion of households consuming either a plant or animal source of vitamin A	81/249	32.5 [26.7-38.7]
Proportion of households consuming organ meat/flesh meat, or fish/seafood (food sources of haem iron)	4/250	1.6 [0.4-4]

Figure 85: Proportion of Households Consuming Various Food Groups



Cereals, oils, vegetables and spices are among the most consumed foods, while sea foods, animal products and poultry are the list consumed foods in Gure Shembola Camp as per the result of dietary recall 24hr prior to the survey.

WASH in Gure Shembola

Water Quality

Table 198: Water Quality

	Number/total	% (95% CI)
Proportion of households using an improved drinking water source	460/462	99.6 (98.3-99.9)
Proportion of households that use a covered or narrow necked container for storing their drinking water	322/463	69.5 (65.1-73.7)

Water Quantity

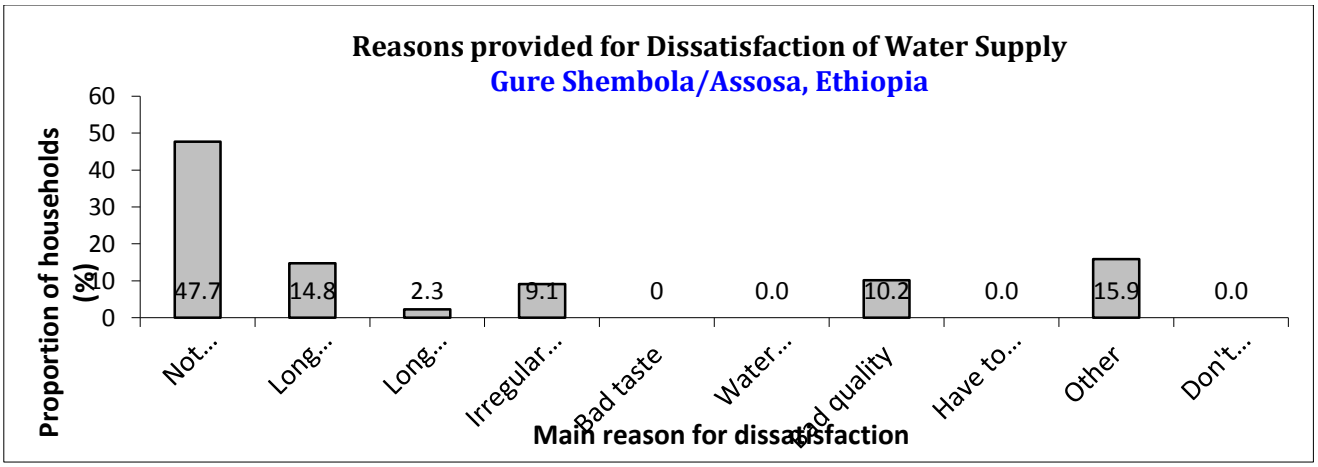
Table 199: Water Quantity: Amount of litres of water used per person per day

Proportion of households that use:	Number/total	% (95% CI)
≥ 20 lpppd	151/463	32.6 (28.3-37.1)
15 – <20 lpppd	77/463	16.6 (13.4-20.4)
<15 lpppd	235/463	50.8 (46.1-55.4)
Average consumption (Liters per person per day)	15.77LPPPD	

Table 200: Satisfaction with water supply

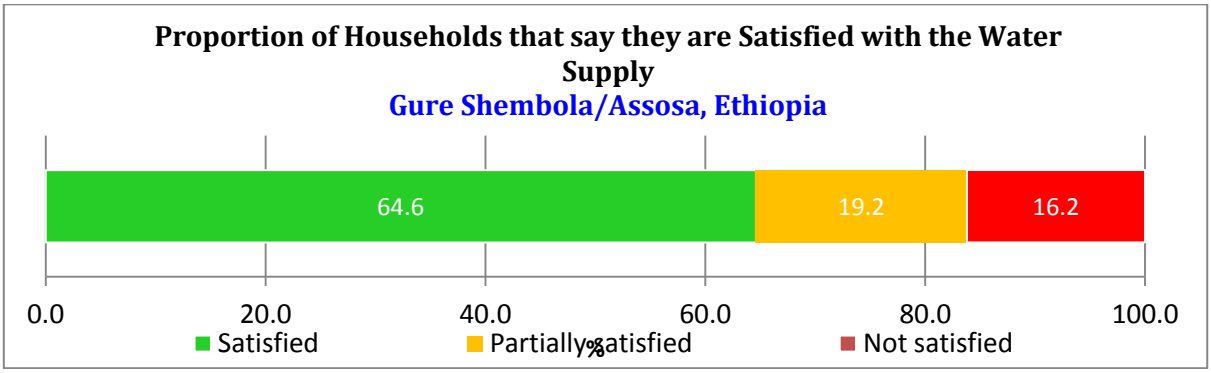
	Number/total	% (95% CI)
Proportion of households that say they are satisfied with the drinking water supply	299/463	64.6 (60.0-68.9)

Figure 86: Reasons provided for dissatisfaction of water supply in Gure Shembola, 2017.



Not enough water supply, long waiting que, bad quality and irregularities of water supply were mentioned as a reason for dissatisfaction

Figure 87: Proportion of households that say they are satisfied with the water supply



Excreta disposal

Table 201: Safe Excreta disposal

	Number/total	% (95% CI)
Proportion of households that use:		
An improved excreta disposal facility (improved toilet facility, 1 household)	136/428	31.8% (27.4-36.5)
A shared family toilet (improved toilet facility, 2 households)	38/428	8.9% (6.4-12.1)
A communal toilet (improved toilet facility, 3 households or more)	220/428	51.4% (46.6-56.2)
An unimproved toilet (unimproved toilet facility or public toilet)	34/428	7.9% (5.6-11.0)
Proportion of households with children under three years old that dispose of faeces safely	255/274	93.1% (89.4-95.8)

Improved facility which is not shared (only for one household) percentage was reported to be only 31.8%. Percentages of households with children under three 3 years and dispose excreta safely was 93.1% (Table 201).

Figure 88: Proportion of Households with Children under the age of 3 years old whose (last) Stools were Disposed of Safely

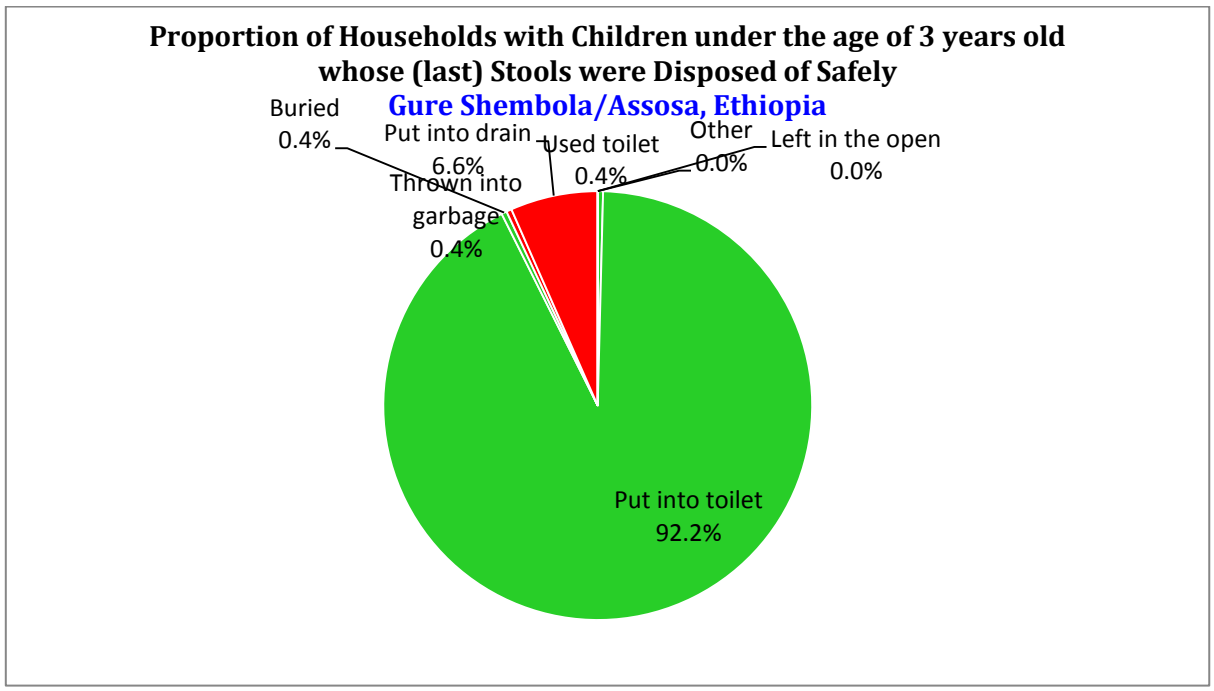
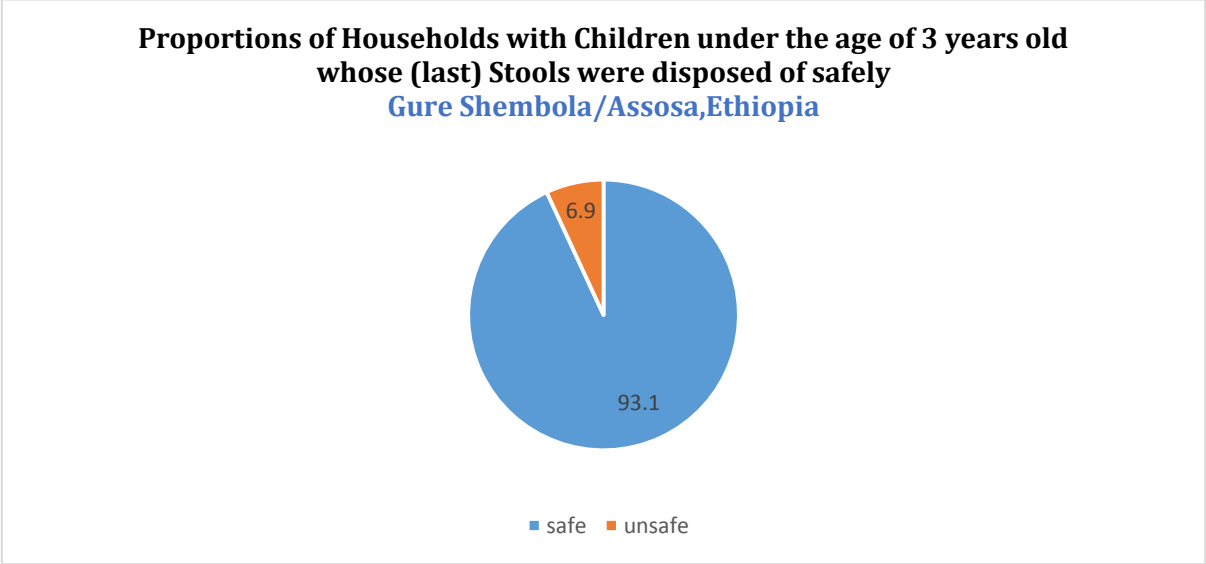


Figure 89: Households with children <3yrs old that dispose of faeces safely



Mosquito Net Coverage

Mosquito net ownership

Table 202: Household Mosquito net ownership in Gure Shembola

	Number/total	% (95% CI)
Proportion of households owning at least one mosquito net of any type	250/463	54.0 (49.3-58.6)
Proportion of households owning at least one LLIN	238/463	51.4 (46.8-56.0)

Amongst the surveyed Households, 54% own at least one mosquito net of any type and 51.4% of them have LLIN (Table 202).

Figure 90: Household owner ship of at least one mosquito net of any type in Gure Shembola

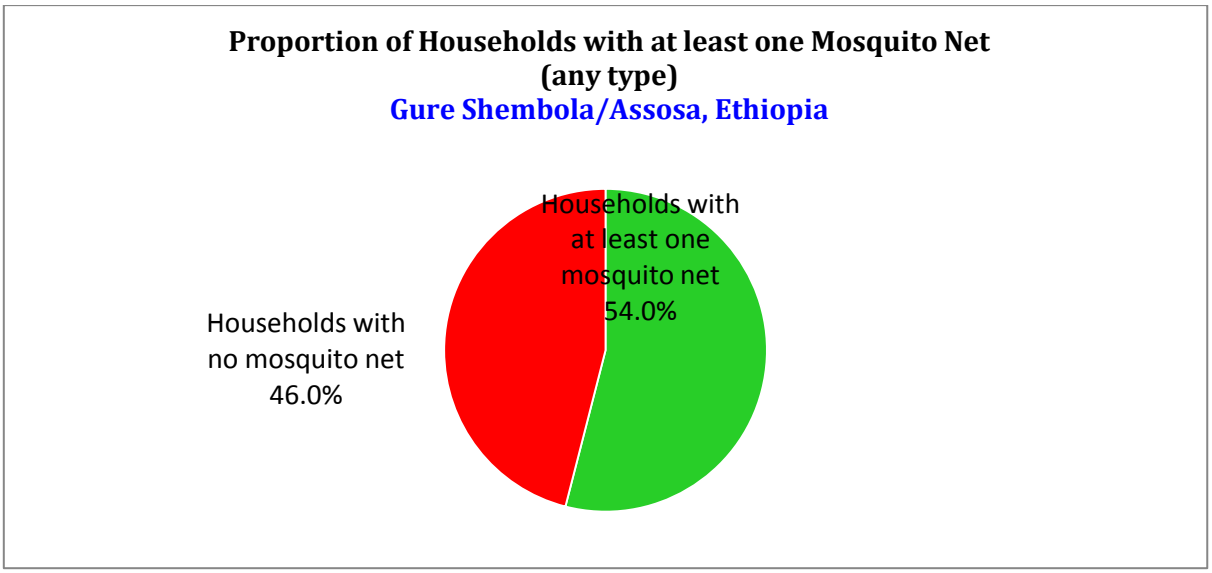


Figure 91: Household ownership of at least one LLIN Gure Shembola

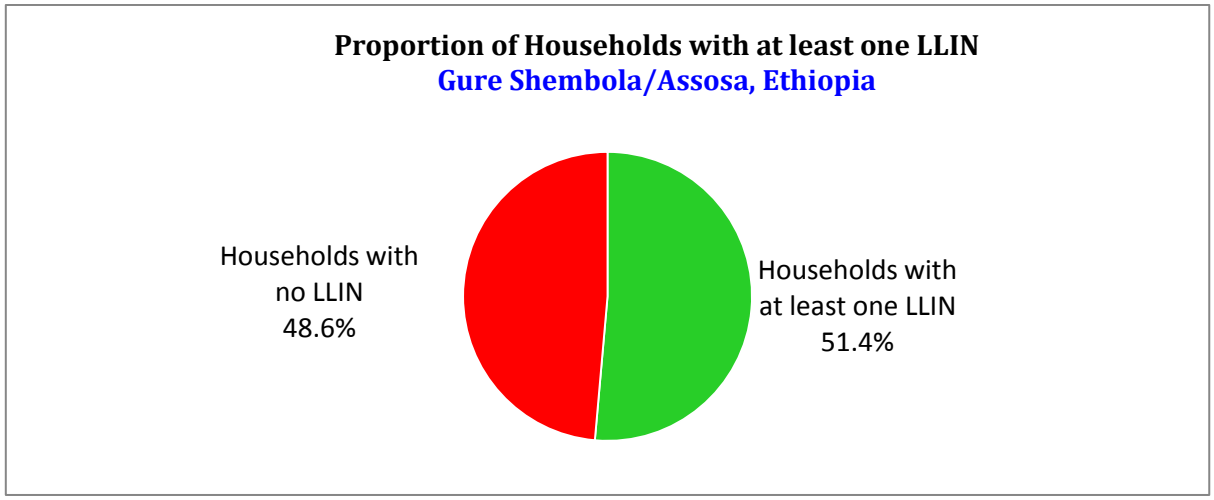


Table 203: Number of nets Gure Shembola

Average number of LLINs per household	Average number of persons per LLIN
1.76	5.03

Mosquito net Utilization

Table 204: Mosquito net Utilisation Gure Shembola

	Total population (all ages)		0-59 months		Pregnant	
	Total No= 2231	%	Total No= 556	%	Total No= 104	%
Slept under net of any type	1051	47.1	294	52.9	50	48.1
Slept under LLIN	1021	45.7	283	50.9	48	46.1

About 45.7% of the surveyed population slept under an LLIN mosquito net. Use of LLIN mosquito nets was slightly higher among children aged 0-59 months in comparison to use among pregnant women (Table 204).

Figure 92: Mosquito Net Utilisation by sub-groups

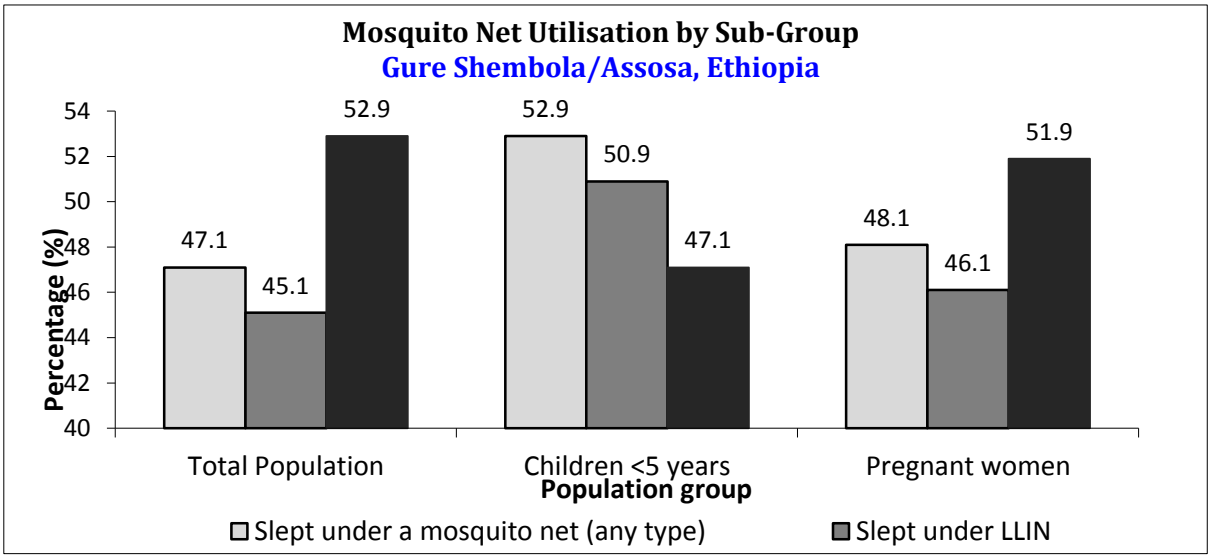


Table 205: Indoor Residual Spraying Household Coverage Gure Shembola

	Number/total	% (95% CI)
Proportion of household covered by IRS	186/463	40.2 (35.7-44.8)

DISCUSSION

In all camps of Assosa Operation, the prevalence of Global Acute malnutrition (GAM) has remained below UNHCR acceptable threshold (10.0%) except for Tongo refugee camp where GAM rate is 11.4%. However, slight increment which is not statistically significant when compared to 2015 showing that the situation has remained unchanged in Tongo. The average weighted prevalence of GAM remained almost the same (8.0% in 2017 vs. 8.2% in 2015) while a slight change was noted for SAM (1.1% in 2017 vs. 0.8% in 2015) all which were still within the UNHCR acceptable levels.

Stunting prevalence in all camps has been observed to be below critical threshold (<40%) except for Tongo camp (52.3%). Depsite this, all camps are above the UNHCR acceptable level of 20% except for Tsore (18.8%) and Gure Shembola (10%). Stunting rate is more prevalent in younger age group (18-29) than other categories. This may be attributed by poor IYCF practices especially complementary feeding where timely introduction of semi solid foods was poor in Tongo (35.3%), Bambasi (53.6%) and Sherkole (63.6%) but relatively better in Tsore (72.4%) and Gure Shembola (94.4%).

Enrolment of SAM and MAM children in the therapeutic and targeted supplementary feeding programmes was very low ranging from 16.7% to 28.6% for OTP and from 17.9% to 37.2% at TSFP. This might be linked to the commonly used MUAC cut-off point of 135mm of which children below that but above 125mm are subjected for the second stage of WHZ measurement. Studies have shown that more than 75% of acutely malnourished by WHZ measurement are missed during MUAC screening based on the above mentioned cut-off point.

The blanket supplementary feeding programme is one of the main preventive programmes in the camps that are designed to ensure that children aged 6-23 months receive adequate supplementary food to prevent malnutrition. Coverage of BSFP for children aged 6 – 23 months in Bambasi, Tsore and Gure-Shembola was as low at 39%, 31% and 32% respectively. Investigations to explore reasons for the low enrolment would be imperative for further improvement of nutritional status of children in the three camps.

Prevalence of anaemia in the five refugee camps among children age 6-59 months ranged between 24.5% to 28.9% (categorized as medium public health significance by WHO classifications of public health significance) while in women of reproductive age (non-pregnant and 15-49 years) the prevalence was below 20%, acceptable by UNHCR and WHO standards.

The prevalence of diarrhoea is slighly high in Gure-Shemebola and Tongo at 18.3% and 16.3% respectively. In the same camps proportion of households receiving below 15 liters per person per day was as high as 43.2% in Tongo and 50.8% in Gure-Shembola. It was presumed that the high episodes of of diarrhoea may be linked to the low amount of water supplied in some areas of the two camps that could possibly hinder adequate hygiene practices.

At least three of the seven key indicators for infant and young child feeding practices showed high prevalence. The least prevalence of timely initiation of breastfeeding was in Gure-Shembola at 78%. Exclusive breastfeeding was above 89% and bottle feeding ranged from 0% to 2.3%.

The coverage of measles vaccination in children age 9-59 months met the UNHCR standard (>95%) in the three camps of Sherkole, Bambasi and Tongo while Vitamin A supplementation coverage in 6 – 59 months in addition to the three camps standards was also met (>90%) in

Tsore camp. Measles coverage was below 95% in Tsore and Gure-Shembola and Vit. A supplementation was <90% in only in Gure-Shembola. This is of concern considering that immunization and Vitamin A supplementation is supposed to be executed at the reception centers on arrival of the refugees.

While all households were possessing ration cards, the duration of food rations received from general rations and procured from cash components ranged from 15 days in Tsore to 21 days in Gure-Shembola. It should be noted that only in-kind food items were distributed in Gure-Shembola and new arrivals are considered for WFP full ration to allow them settling in the camp. This might have contributed to the higher average number of days the GFD food lasted in Gure Shembola compared to the other camps.

Water supply was slightly below the UNHCR reccomended stardards of an average of ≥20 liters per person per day in Bambasi (19.6), Tongo (17.8) and Gure-Shembola (17.8) while Tsore and Shekole met the UNHCR standards (>20 lppd)

The proportion of households owning at least one Long Lasting impregnated Net (LLIN) was 37.3% in Sherkole, 44.5% in Bambasi, 5.3% in Tongo and 51.4% in Gure_Shembola of which the coverage was far below the UNHCR recommended standard of >80%. The average number of persons per LLIN was above 5 while the UNHCR standard is 2 persons per LLIN.

Mass mosquito net distribution had never been conducted in Tsore camp for the past three years, and thus, in reference to the SENS guidelines, this information was not collected. During the debriefing in Assosa it was mentioned that mosquito nets were distributed in all camps except for Tsore, where distribution was conducted in 2014 at Ashura temporary site before opening the camp.

The mortality indicators remained acceptable according to the sphere standards; crude mortality rates are <1 death per 10,000 per day and under five mortality rate <2 deaths per 10,000 per day.

CONCLUSION

The prevalence of global acute malnutrition remains relatively unchanged at a weighted GAM of 8.0% which is below the WHO threshold of 15% and the UNHCR acceptable level of 10% despite the ongoing GFD ration cuts since November 2015. The stability of nutritional status might have been contributed to the harvesting period that coincided with the time of the survey. According to the partners on the ground, refugees reportedly work as laborers in the local community due to the frequent ration reduction which might have contributed in triggering of positive coping strategies including increased farming. Livelihood interventions exist in the camps like backyard garden, poultry production, small business schemes in all camps (e.g. Bambasi, 180 HH have backyard garden, 26 HH small business, 55 HH poultry farming, according to NRC). The impact of these various livelihood interventions on food security need to be further explored to adopt lessons learnt to other areas.

RECOMMENDATIONS

6. Despite of the acceptable average water supply among the entire population, it is recommended to review the water points if they are evenly distributed among the refugee communities (Tongo and Gure Shembola where diarrhoea rate is higher).

7. Ownership and subsequent utilization of mosquito nets particularly LLIN was very low. In Tsore camp for example, mass distribution of mosquito nets had not been conducted since its establishment in 2014. Distribution of such core relief items should be given a higher priority to avoid high prevalence of malaria which has adverse impact especially among children and pregnant women. **UNHCR** and **ARRA** should regularly conduct mosquito net retention survey and subsequent replacement where need be. Targeted distribution of this vital item should an ongoing exercise among eligible beneficiaries.

8. Assess the positive impact of livelihood intervention towards the stability of HH food security despite the severe ration cut in order to build up on the existing capacities.

9. Review programmes in Tongo and Bambasi to understand the increase in GAM and SAM in Tongo over the past 4 years as well to understand the very high stunting prevalence in both camps.

10. Enrolment of SAM and MAM children in the therapeutic and targeted feeding programmes was very low, linked with screening of children using the tradition MUAC cut-off point of 135mm. An addition to capacity building to outreach team and nutrition staff working at BSFP, the use of elevated MUAC cut-off point of 140mm and 150mm for younger (6 – 23 months and older children (24 – 59 months) respectively would increase a window of capturing more children who are acutely malnourished during the second stage of WHZ measurements. Feeding centres are advised to conduct WHZ to all children aged 6 – 59 months at least once in every month at BSFP as well as in the community with the focus of improving feeding centre coverage.

11. Investigation for low coverage at BSFP would be imperative to explore reasons for poor registration of children aged 6 -23 months for blanket supplementary feeding services. (**Action made by ARRA, AAH, and UNHCR)**

ANNEX 1: Plausibility check for: Sherkole 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** (2.0 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**2** (p=0.056)
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=0.380)
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	**0** (7)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**2** (9)
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** (1.05)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (0.07)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (-0.06)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**4** %

The overall score of this survey is 4 %, this is excellent.

ANNEX 2: Plausibility check for: Bambasi 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** (1.3 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**4** (p=0.006)
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=0.154)
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	**2** (12)
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** (0.17)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**1** (0.21)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**9** %

The overall score of this survey is 9 %, this is excellent.

ANNEX 3: Plausibility check for: ETH_ASS_TONGO_DATA.as

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 (% of out of range subjects)	Incl	%	0-2.5 0	>2.5-5.0 5	>5.0-7.5 10	>7.5 20	**0** (1.5 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	**4** (p=0.046)
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	**0** (p=0.241)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**0** (7)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**2** (11)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**2** (9)
Standard Dev WHZ . .	Excl Excl	SD SD	<1.1 and >0.9 0	<1.15 and >0.85 5	<1.20 and >0.80 10	>=1.20 or <=0.80 20	**0** (1.03)
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	**0** (0.00)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	**0** (0.14)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	**0** (p=)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**8** %

The overall score of this survey is 8 %, this is excellent.

ANNEX 4 : Plausibility check for: Tsore 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** (0.8 %)
Overall Sex ratio	Incl	p	>0.1	>0.05	>0.001	<=0.001	
(Significant chi square)			0	2	4	10	**0** (p=0.142)
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=0.249)
Dig pref score - weight	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**2** (8)
Dig pref score - height	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**4** (15)
Dig pref score - MUAC	Incl	#	0-7	8-12	13-20	> 20	
			0	2	4	10	**2** (9)
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** (0.97)
Skewness WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (0.06)
Kurtosis WHZ	Excl	#	<±0.2	<±0.4	<±0.6	>=±0.6	
			0	1	3	5	**0** (0.12)
Poisson dist WHZ-2	Excl	p	>0.05	>0.01	>0.001	<=0.001	
			0	1	3	5	**0** (p=0.558)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**8** %

The overall score of this survey is 8 %, this is excellent.

ANNEX 5: Plausibility check for: ETH_GURE_SHEMBOLA_CH_DATA.as

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 (% of out of range subjects)	Incl	%	0-2.5 0	>2.5-5.0 5	>5.0-7.5 10	>7.5 20	**5** (3.0 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	**4** (p=0.001)
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	**0** (p=0.598)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**0** (6)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**4** (13)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**0** (7)
Standard Dev WHZ . .	Excl Excl	SD SD	<1.1 and >0.9 0	<1.15 and >0.85 5	<1.20 and >0.80 10	>=1.20 or <=0.80 20	**0** (1.01)
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	**0** (0.12)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	**0** (0.02)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	**0** (p=)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**13** %

The overall score of this survey is 13 %, this is good.

ANNEX 6: Questionnaire

UNHCR Standardised Expanded Nutrition Survey (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 *[organisation/institution*]. 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.

- UNHCR is sponsoring this nutrition survey.
- 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, I will ask you some questions about your family and I will also measure the weight and height of all the children in the household who are older than 6 months and younger than 5 years In addition to these assessments, I 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.

Note that in some camps, the words 'block' and 'section' may not be used and other words may be used for these. Adapt the wording accordingly.

CAPITAL LETTERS refer to instructions for the surveyors and should not be read to the respondent.

CHILDREN 6-59 MONTHS ANTHROPOMETRY, HEALTH AND ANAEMIA: 1 questionnaire per cluster / zones / sections *(*THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO ALL CHILDREN BETWEEN 6 AND 59 MONTHS OF AGE*)*

Section code / number:_____**Block code / number**: _____

Date of interview (dd/mm/yyyy): |__|__|/|__|__|/|__|__||__|__|	**Cluster Number (*in cluster survey only*)** |__|__|	**Team number** |__|

CH1	**CH2**	**CH3**	**CH4**	**CH5**	**CH6**	**CH7**	**CH8**	**CH9**	**CH10**	**CH11**	**CH12**	**CH13**	**CH14**	**CH15**
ID	**HH**	**Consent given** 1=Yes 2=No 3=Absent	**Sex** (m/f)	**Birthdate*** dd/mm/yyyy	**Age**** (months)	**Weight** (kg) ±100g	**Height** (cm) ±0.1cm	**Oedema** (y/n)	**MUAC** (mm)	**Child enrolled** 1=SFP 2=TFP 3=None	**Measles** 1=Yes card 2=Yes recall 3=No or don't know	**Vit. A in past 6 months** (SHOW CAPSULE) 1=Yes card	**Diarrhoea in past 2 weeks** 1=Yes 2=No 3=Don't know	**Hb** *(g/L or g/dL)*

												2=Yes recall 3=No or don't know		
01				/ /										
02				/ /										
03				/ /										
04				/ /										
05				/ /										
06				/ /										
07				/ /										
08				/ /										
09				/ /										
…				/ /										

*The exact birth date should only be taken from an age documentation showing day, month and year of birth. It is only recorded if an official age documentation is available; if the mother recalls the exact date, this is not considered to be reliable enough. **Leave blank if no official age documentation is available.**

**If no age documentation is available, estimate age using local event calendar. If an official age documentation is available, record the age in months from the date of birth.

WOMEN ANAEMIA: 1 questionnaire per cluster / zones / sections (THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO ALL WOMEN AGED BETWEEN 15 AND 49 YEARS IN THE SELECTED HOUSEHOLD)

Section code / number:___**Block code / number**: _____

Date of interview (dd/mm/yyyy): |__|__|/|__|__|/|__|__||__|__|	**Cluster Number (*in cluster survey only*)** |__|__|	**Team number** |__|

WM1	**WM2**	**WM3**	**WM4**	**WM5**	**WM6**	**WM7**	**WM8**
ID	**HH**	**Consent given** 1=Yes 2=No 3=Absent	**Age** (years)	**Are you pregnant?** 1=Yes 2=No (GO TO HB) 8=Don't know (GO TO HB)	**Are you currently <u>enrolled</u> in the ANC programme?** 1=Yes 2=No 8=Don't know	**Are you currently <u>receiving</u> iron-folate pills (*SHOW PILL*)?** 1=Yes (STOP NOW) 2=No (STOP NOW)	**Hb** (g/L or g/dL)

						8=Don't know (STOP NOW)	
01							
02							
03							
04							
05							
06							
07							
08							
09							
10							
11							
12							
…							

IYCF: 1 questionnaire per child 0-23 months *(*THIS QUESTIONNAIRE 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)

Section code / number:_____**Block code / number**: _____**Consent** : yes / no / absent

Date of interview (dd/mm/yyyy)	**Cluster Number (*in cluster survey only*)**	
|__|__|/|__|__|/|__|__||__|__|	|__|__|	
Team Number	**ID Number**	**HH Number**
|__|	|__|__|__|	|__|__|__|

No	**QUESTION**	**ANSWER CODES**	
SECTION IF1			
IF1	Sex	Male .....1 Female 2	|__|
IF2	Birthdate RECORD FROM AGE DOCUMENTATION.	Day/Month/Year.....|__|__| /|__|__| / |__|__||__|__|	

	LEAVE BLANK IF NO VALID AGE DOCUMENTATION.		
IF3	Child's age in months	IF AGE DOCUMENTATION NOT AVAILABLE, ESTIMATE USING EVENT CALENDAR. IF AGE DOCUMENTATION AVAILABLE, RECORD THE AGE IN MONTHS FROM THE DATE OF BIRTH.	|__|__|
IF4	Has [NAME] ever been breastfed?	Yes.....1 No.....2 Don't know.....8	|__| **IF ANSWER IS 2 or 8 GO TO IF7**
IF5	How long after birth did you first put [NAME] to the breast?	Less than one hour.....1 Between 1 and 23 hours.....2 More than 24 hours.....3 Don't know.....8	|__|
IF6	Was [NAME] breastfed yesterday during the day or at night?	Yes.....1 No.....2 Don't know.....8	|__|
SECTION IF2			
IF7	Now I would like to ask you about liquids that [NAME] 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. IF ITEM WAS GIVEN, CIRCLE '1'. IF ITEM WAS NOT GIVEN, CIRCLE '2'. IF CAREGIVER DOES NOT KNOW, CIRCLE '8'. EVERY LINE MUST HAVE A CODE. REPLACE AND ADAPT THE TEXT HIGHLIGHTED IN GREY TO THE CONTEXT.		

	THE TEXT IN *ITALICS* NEEDS TO BE DELETED FROM THE FINAL SURVEY QUESTIONNAIRE – THE LIST THAT IS PROVIDED BELOW IS AN EXAMPLE.				
			Yes	No	DK
	7A. Plain water	7A……1		2	8
	7B. Infant formula, for example [INSERT LOCALLY AVAILABLE BRAND NAMES OF INFANT FORMULA, *ALL TYPES*]	7B……1		2	8
	7C. Milk such as tinned, powdered, or fresh animal milk, for example [INSERT LOCALLY AVAILABLE BRAND NAMES OF TINNED AND POWDERED MILK]	7C……1		2	8
	7D. Juice or juice drinks, for example [INSERT LOCALLY AVAILABLE BRAND NAMES OF JUICE DRINKS]	7D……1		2	8
	7E. Clear broth	7E……1		2	8
	7F. Sour milk or yogurt, for example [INSERT LOCAL NAMES]	7F……1		2	8
	7G. Thin porridge, for example [INSERT LOCAL NAMES]	7G……1		2	8
	7H. Tea or coffee with milk	7H……1		2	8
	7I. Any other water-based liquids, for example [INSERT OTHER WATER-BASED LIQUIDS AVAILABLE IN THE LOCAL SETTING				

	AND USE LOCAL NAMES] (e.g. *sodas, other sweet drinks, herbal infusion, gripe water, clear tea with no milk, black coffee, ritual fluids)*	7I……..1 2 8	
IF8	Yesterday, during the day or at night, did [NAME] eat solid or semi-solid (soft, mushy) food?	Yes……..1 No……..2 Don't know……..8	|___|
SECTION IF3			
IF9	Did [NAME] drink anything from a bottle with a nipple yesterday during the day or at night?	Yes……..1 No……..2 Don't know……..8	|___|
SECTION IF4			
IF10	IS CHILD AGED 6-23 MONTHS? REFER TO IF2 / IF3	Yes……..1 No……..2	|___| **IF ANSWER IS 2 STOP NOW**
IF11	Now I would like to ask you about some particular foods [NAME] 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. IF ITEM WAS GIVEN, CIRCLE '1'. IF ITEM WAS NOT GIVEN, CIRCLE '2'. IF CAREGIVER DOES NOT KNOW, CIRCLE '8'. EVERY LINE MUST HAVE A CODE. REPLACE AND ADAPT THE TEXT HIGHLIGHTED IN GREY TO THE CONTEXT.		

	THE TEXT IN *ITALICS* NEEDS TO BE DELETED FROM THE FINAL SURVEY QUESTIONNAIRE – THE LIST THAT IS PROVIDED BELOW IS AN EXAMPLE. IF A CATEGORY OF IRON-RICH FOOD (11A-11H) IS NOT AVAILABLE IN THE SETTING, DELETE IT FROM THE QUESTIONNAIRE BUT KEEP THE ORIGINAL QUESTION NUMBERS AND DO NOT CHANGE.	Yes No DK
	11A. [INSERT COMMON MEAT, FISH, POULTRY AND LIVER/ORGAN FLESH FOODS USED THE LOCAL SETTING] *(e.g. beef, goat, lamb, mutton, pork, rabbit, chicken, duck, liver, kidney, heart)*	11A……..1 2 8
	11B. [INSERT FBF AVAILABLE IN THE LOCAL SETTING AND USE LOCAL NAMES] (e.g. CSB+, WSB+)	11B……..1 2 8
	11C. [INSERT FBF++ AVAILABLE IN THE LOCAL SETTING AND USE LOCAL NAMES] *(e.g. CSB++, WSB++)*	11C……..1 2 8
	11D. [INSERT RUTF PRODUCTS AVAILABLE IN THE LOCAL SETTING AND USE LOCAL NAMES] *(e.g. Plumpy'Nut®, eeZeePaste™)* (SHOW SACHET)	11D……..1 2 8
	11E. [INSERT RUSF PRODUCTS AVAILABLE IN THE LOCAL SETTING AND USE LOCAL NAMES] *(e.g. <u>Plumpy'Sup®)</u>* (SHOW SACHET)	11E……..1 2 8
	11F. [INSERT LNS PRODUCTS AVAILABLE IN THE LOCAL SETTING AND USE LOCAL NAMES] *(e.g. Nutributter®, Plumpy'doz®)* (SHOW SACHET / POT)	11F……..1 2 8

	11G. [INSERT LOCALLY AVAILABLE BRAND NAMES OF *IRON FORTIFIED* INFANT FORMULA *ONLY*] *(e.g. Nan, S26 infant formula)*	11G……..……..1 2 8	
	11H. [INSERTST ANY *IRON FORTIFIED* SOLID, SEMI-SOLID OR SOFT FOODS DESIGNED SPECIFICALLY FOR INFANTS AND YOUNG CHILDREN AVAILABLE IN THE LOCAL SETTING THAT ARE DIFFERENT THAN DISTRIBUTED COMMODITIES AND USE LOCALLY AVAILABLE BRAND NAMES] *(e.g. Cerelac, Weetabix)*	11H……..1 2 8	
IF12	**In a setting where micronutrient powders are used:** Yesterday, during the day or at night, did [NAME] consume any food to which you added a [INSERT LOCAL NAME FOR MICRONUTRIENT POWDER OR SPRINKLES] like this? (SHOW MICRONUTRIENT POWDER SACHET)	Yes……..…1 No……..…2 Don't know……..8	|__|

WASH: 1 questionnaire per household *(*THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO THE MAIN CARETAKER OR, IF THEY ARE ABSENT, ANOTHER ADULT MEMBER OF THE HOUSEHOLD)

Section code / number:_____**Block code / number**: _____**Consent** : yes / no / absent

Date of interview (dd/mm/yyyy)	**Cluster Number (*in cluster survey only*)**
|__|__|/|__|__|/|__|__||__|__|	|__|__|
Team Number	**HH Number**
|__|	|__|__|__|

No	**QUESTION**	**ANSWER CODES**	
SECTION WS1			
WS 1	How many people live in this household and slept here last night?	|__|__|	
WS 2	What is the ***main*** source of drinking water for members of your household? ADAPT LIST TO LOCAL SETTING BEFORE SURVEY.	Piped water ..... 01 Public tap/standpipe ..... 02 Tubewell/borehole (& pump) ..... 03 Protected dug well..... 04 Protected spring..... 05 Rain water collection..... 06	

	WHEN ADAPTING THE LIST, KEEP THE ORIGINAL ANSWER CODES AND DO NOT CHANGE. DO NOT READ THE ANSWERS SELECT ONE ONLY	UNHCR Tanker ..... 07 Unprotected spring ..... 08 Unprotected dug well ..... 09 Small water vendor ..... 10 Tanker truck ..... 11 Bottled water ..... 12 Surface water (e.g. river, pond) ..... 13 Other ..... 96 Don't know 98	|__|__|
WS 3	Are you satisfied with the water supply? THIS RELATES TO THE DRINKING WATER SUPPLY	Yes ..... 1 No ..... 2 Partially ..... 3 Don't know 8	|__| **IF ANSWER IS 1, 3 OR 8 GO TO WS5**
WS 4	What is the ***main*** reason you are not satisfied with the water supply? ADAPT LIST TO LOCAL SETTING BEFORE SURVEY. DO NOT READ THE ANSWERS SELECT ONE ONLY	Not enough ..... 01 Long waiting queue ..... 02 Long distance ..... 03 Irregular supply ..... 04 Bad taste ..... 05 Water too warm ..... 06 Bad quality ..... 07 Have to pay ..... 08 Other ..... 96 Don't know 98	|__|__|

WS 5	What kind of toilet facility does this household use? ADAPT LIST TO LOCAL SETTING BEFORE SURVEY. WHEN ADAPTING THE LIST, KEEP THE ORIGINAL ANSWER CODES AND DO NOT CHANGE. DO NOT READ THE ANSWERS SELECT ONE ONLY	Flush to piped sewer system.....01 Flush to septic system.....02 Pour-flush to pit.....03 VIP/simple pit latrine with floor/slab .....04 Composting/dry latrine.....05 Flush or pour-flush elsewhere.....06 Pit latrine without floor/slab.....07 Service or bucket latrine .....08 Hanging toilet/latrine.....09 No facility, field, bush, plastic bag10	|__|__| **IF ANSWER IS 10 GO TO WS7**
WS 6	How many ***households*** share this toilet? THIS INCLUDES THE SURVEYED HOUSEHOLD	RECORD NUMBER OF HOUSEHOLDS IF KNOWN (RECORD 96 IF PUBLIC TOILET OR 98 IF UNKNOWN) **SUPERVISOR SELECT ONE ONLY** Not shared (**1 HH**).....1 Shared family (**2 HH**).....2 Communal toilet (**3 HH or more**)....3 Public toilet (**in market or clinic etc**.) .....4 Don't know 8	|__|__| Households |__|
WS 7	Do you have children under three years old?	Yes.....1 No.....2	|__| **IF ANSWER IS 2 GO TO WS9**

WS 8	The last time [NAME OF YOUNGEST CHILD] passed stools, what was done to dispose of the stools? DO NOT READ THE ANSWERS SELECT ONE ONLY	Child used toilet/latrine.....01 Put/rinsed into toilet or latrine.....02 Buried.....03 Thrown into garbage.....04 Put/rinsed into drain or ditch.....05 Left in the open.....06 Other.....96 Don't know 98	|__|__|

SECTION WS2

Observation Based Questions (*done after the initial questions to ensure the flow of the interview is not broken*)

No	OBSERVATION / QUESTION	ANSWER			
WS9	CALCULATE THE TOTAL AMOUNT OF WATER USED BY THE HOUSEHOLD PER DAY THIS RELATES TO ALL SOURCES OF WATER (DRINKING WATER AND NON-DRINKING WATER SOURCES)	Please show me the containers you used yesterday for collecting water ASSIGN A NUMBER TO EACH CONTAINER	Capacity in litres	Number of journeys made with each container	Total litres **SUPERVISOR TO COMPLETE** **HAND CALCULATION**
		1 E.g. jerry can	25 L	1 x	25
		2 E.g. jerry can	10 L	2 x	20
		3 E.g. jerry can	5 L	2 x	10
		4 E.g. jerry can	5 L	1 x	5
		5 E.g. bucket	50 L	1 x	50

		6			
		7			
		8			
		9			
		10			
		Total litres used by household			110
WS10	Please show me where you store your drinking water. ARE THE DRINKING WATER CONTAINERS COVERED OR NARROW NECKED?	All are .....1 Some are..... 2 None are 3			|__|

FOOD SECURITY: 1 questionnaire per household *(*THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO THE MAIN CARETAKER WHO IS RESPONSIBLE FOR COOKING THE MEALS)

Section code / number:_____**Block code / number**: _____**Consent** : yes / no / absent

Date of interview (dd/mm/yyyy)	**Cluster Number (*in cluster survey only*)**
|__|__|/|__|__|/|__|__||__|__|	|__|__|
Team Number	**HH Number**
|__|	|__|__|__|

No	QUESTION	ANSWER CODES	
SECTION FS1			
FS1	Does your household have a ration card?	Yes.....1 No 2	|___| **IF ANSWER IS 1 GO TO FS3**
FS2	Why do you not have a ration card?	Not given one at registration.....1 Lost card.....2 Traded/sold card .....3 Not registered but eligible.....4 Not eligible (not in targeting criteria) .....5 Other 6	|___| **GO TO FS5**
FS3	Does your household receive full or reduced ration? (OPTIONAL)	Full……..…1 Half……..2 Other……..6	|___| **IF ANSWER IS 2 OR 6 GO TO FS5**
FS4	How many days did the food from the general food aid ration from the [INSERT] cycle of [INSERT MONTH] last?	RECORD THE NUMBER OF DAYS IF KNOWN (RECORD 98 IF UNKNOWN)	|__|__|
FS5	In the last month, have you or anyone in your household borrowed cash, food or other items with or without interest?	Yes.....1 No .....2 Don't know 8	|___|

FS6	In the last month, have you or anyone in your household sold any assets that you would not have normally sold (furniture, seed stocks, tools, other NFI, livestock etc.)?	Yes.....1 No.....2 Don't know.....8	|___|
FS7	In the last month, have you or anyone in your household requested increased remittances or gifts as compared to normal?	Yes.....1 No.....2 Don't know.....8	|___|
FS8	In the last month, have you or anyone in your household reduced the quantity and / or frequency of meals and snacks?	Yes.....1 No.....2 Don't know.....8	|___|
FS9	In the last month, have you or anyone in your household begged?	Yes.....1 No.....2 Don't know.....8	|___|
FS10	In the last month, have you or anyone in your household engaged in: [ADD LIST OF POTENTIALLY RISKY OR HARMFUL ACTIVITIES SUCH AS LOCAL ILLEGAL ACTIVITIES] or any other risky or harmful activities?	Yes.....1 No.....2 Don't know.....8	|___|
SECTION FS2			
FS11	Now I would like to ask you about the types of foods that you or anyone else in your household ate yesterday during the day and at night. I am interested in whether you or anyone else in your household had the item even if it was combined with other foods. I am interested in knowing about meals, beverages and snacks eaten or drank inside or outside the home.		

	READ THE LIST OF FOODS AND DO NOT PROBE. PLACE A *ONE* IN THE BOX IF ANYONE IN THE HOUSEHOLD ATE THE FOOD IN QUESTION, PLACE A *ZERO* IN THE BOX IF NO ONE IN THE HOUSEHOLD ATE THE FOOD. REPLACE AND ADAPT THE TEXT HIGHLIGHTED IN GREY TO THE CONTEXT. THE TEXT IN *ITALICS* NEEDS TO BE DELETED FROM THE FINAL SURVEY QUESTIONNAIRE – THE LIST THAT IS PROVIDED BELOW IS AN EXAMPLE.	
	1. Any [INSERT CEREALS LOCALLY AVAILABLE] (*e.g. wheat, corn/maize, corn soy blend, barley, buckwheat, millet, oats, rice, rye, sorghum, teff*) or any foods made from these such as [INSERT LOCAL FOODS] (*e.g. bread, porridge, noodles, ugali, nshima, paste*)	1……|___|
	2. Any [INSERT WHITE ROOTS AND TUBERS LOCALLY AVAILABLE] *(e.g. green bananas, lotus root, parsnip, taro, plantains, white potatoes, white yam, white cassava, white sweet potato)* or any foods made from roots such as [INSERT LOCAL FOODS]	2……|___|
	3A. Any [INSERT VITAMIN A RICH VEGETABLES AND TUBERS LOCALLY AVAILABLE] *(e.g. carrot, pumpkin, squash, or sweet potato that are orange inside, red sweet pepper)*	3A……|___|
	3B. Any [INSERT DARK GREEN LEAFY VEGETABLES LOCALLY AVAILABLE INLCUDING WILD FORMS AND VITAMIN A RICH LEAVES] (*e.g. amaranth, arugula, cassava leaves, kale, spinach*)	3B……|___|
	3C. Any [INSERT ANY OTHER VEGETABLES LOCALLY AVAILABLE] *(e.g. bamboo shoots, cabbage, green pepper, tomato, onion, eggplant, zucchini)*	3C……|___|
	4A. Any [INSERT VITAMIN A RICH FRUITS LOCALLY AVAILABLE], and 100% fruit juice made from these *(e.g. mango (ripe, fresh and dried), cantaloupe melon (ripe), apricot (fresh or dried), ripe papaya, passion fruit (ripe), dried peach)*	4A……|___|

	4B. Any [INSERT ANY OTHER FRUITS LOCALLY AVAILABLE INCLUDING WILD FRUITS], and 100% fruit juice made from these *(e.g. apple, avocados, banana, coconut flesh, lemon, orange)*	4B……..…|___|
	5A. Any [INSERT ORGAN MEAT OR BLOOD-BASED FOODS LOCALLY AVAILABLE] *(e.g. liver, kidney, heart)*	5A……..…|___|
	5B. Any [INSERT FLESH MEAT LOCALLY AVAILABLE] *(e.g. beef, goat, lamb, mutton, pork, rabbit, chicken, duck, cane rat, guinea pig, rat, agouti frogs, snakes, insects)*	5B……..……|___|
	6. Any eggs from [INSERT EGGS LOCALLY AVAILABLE] *(e.g. eggs from chicken, duck, guinea fowl)*	6……..…|___|
	7. Any [INSERT FRESH, DRIED OR CANNED FISH OR SHELLFISH LOCALLY AVAILABLE] *(e.g. anchovies, tuna, sardines, shark, whale, roe/fish eggs, clam, crab, lobster, crayfish, mussels, shrimp, octopus, squid, sea snails)*	7……..…|___|
	8. Any [INSERT LEGUMES, NUTS AND SEEDS LOCALLY AVAILABLE] *(e.g. dried peas, dried beans, lentils, nuts, seeds)* or any foods made from these such as [INSERT LOCAL FOODS] *(e.g. hummus, peanut butter)*	8……..……|___|
	9. Any [INSERT MILK AND MILK PRODUCTS LOCALLY AVAILABLE] *(e.g. milk, infant formula, cheese, kiefer, yogurt)*	9……..…|___|
	10. Any [INSERT OILS AND FATS LOCALLY AVAILABLE] added to food or used for cooking *(e.g. vegetable oil, ghee or butter)*	10……..…|___|

	11. Any [INSERT SWEETS, SWEETENED SODA OR JUICE DRINKS AND SUGARY FOODS LOCALLY AVAILABLE] *(e.g. sugar, honey, soda drinks, chocolates, candies, cookies, sweet biscuits and cakes)*	11……..……..…..…|___|
	12. Any [INSERT SPICES, CONDIMENTS AND BEVERAGES LOCALLY AVAILABLE] *(e.g. black pepper, salt, chillies, soy sauce, hot sauce, fish powder, fish sauce, ginger, herbs, magi cubes, ketchup, mustard, coffee, tea, beer, alcoholic beverages like wine, hard spirits)*	12……..…..…|___|