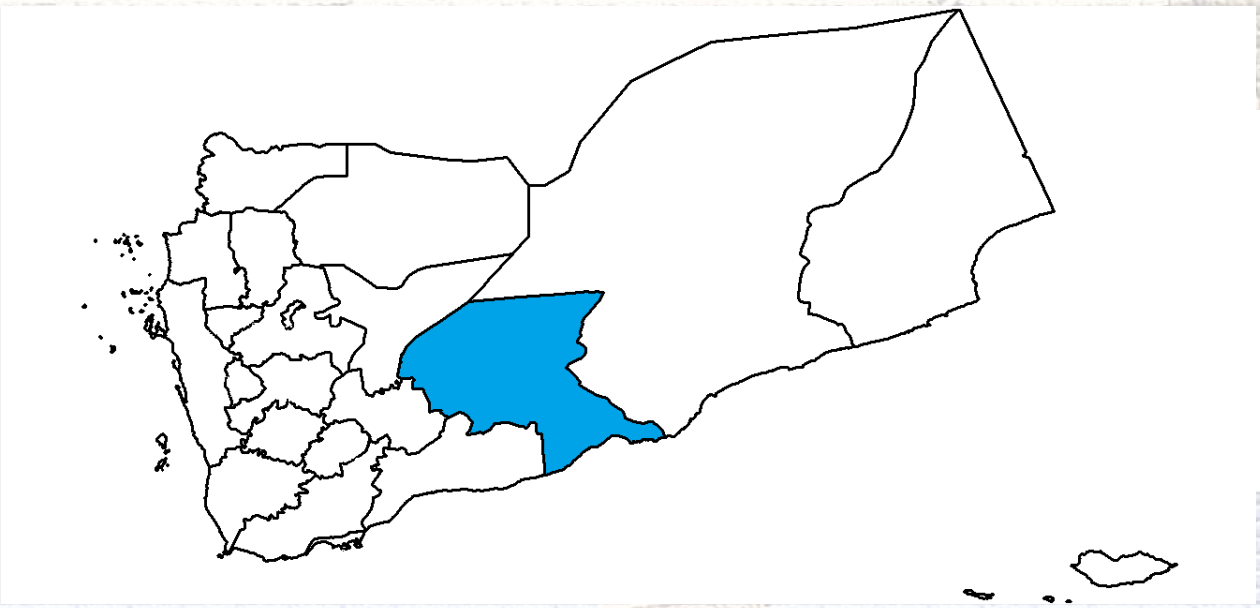
Republic of Yemen

Ministry of Public Health and Population

Nutrition and Mortality Survey Report



Shabwa Governorate, Yemen

14 to 26 January 2017

unicef

مركز الملك سلمان للإغاثة والأعمال الإنسانية

KING SALMAN HUMANITARIAN AID & RELIEF CENTRE

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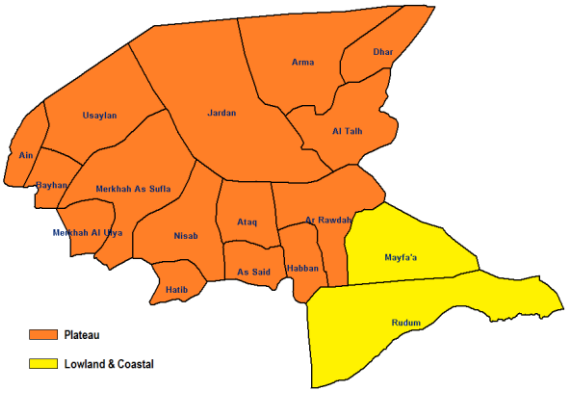
Introduction

The name of Shabwa is referred to the name of the historic city of Shabwa, which was the capital of ancient Hadhramaut that was known as a trade centre for gum (*Luban*) and incense, and station from which trade convoys were travelling towards the rest of Arabian Peninsula and the Mediterranean regions.

Shabwa Governorate is one of the eastern governorates of Yemen that extend from the Arabian Sea Coastal in the South to the Rub Al Khali Desert in the North. The Governorate is bordered by Arabian Sea and Gulf of Aden in the South, Hadhramaut Governorate in the East, Rub Al Khali Desert in the North, and governorates of Marib, Al Baidha and Abyan in the West, with an area of 42,584 square kilometres (13.3% of the country area) and a population size of 619,000 as the per 2016 projection (2.3% of the country population) with a sex ratio of 1.07 male: 1 female.

Figure 1. Shabwa Governorate map shows the survey strata



Administratively, the Governorate consists of 16 districts, Arma, Dhar, Jardan, Usaylan, Al Talh, Ain, Bayhan, Merkhah As Sufla, Merkhah Al Ulya, Nisab, Ataq (that includes the City of Ataq, the capital of the Governorate), Ar Rawdah, Hatib, As Said, Habban, Rudum, and Mayfa'a. Ecologically the Governorate is desert in the north, plateaus in the centre, coastal lowland in the south, and with a chain of mountains in in the west close to maintains of the neighbouring Governorate of Abyan.

The Governorate has a desert climate of hot summer and mild winter tend to be cold during the night. Spring and summer are the rain seasons for Shabwa, and on the other hand, the Governorate receives large amounts of the floods from the mountains of neighbouring governorates at the West. The minimum temperature in the Governorate winter is ranged from 3 degree Celsius, and the maximum in summer is around 31 degree Celsius.

Shabwa Governorate contains 181 health facilities (16 hospitals, 29 health centers and 136 health units), however, 15% of these facilities are not functional due to the current conflict.

Agriculture, apiculture, fishing and fish canning, and oil extraction are the most important economic activities in the Governorates. However during the last two years, these sectors were negatively affected by the conflict.

The peaceful demonstrations and sit-ins started in Shabwa as in other southern governorates in 2007 organized by the Southern Movement (*Herak*). It was gradually raised from reclaiming the rights of the southern public employees both civilian and military to the restoration of the State. As for Abyan, Shabwa was a theatre for AQAP operations since 2011. In 2011 Shabwa joined other governorates in peaceful sit-ins that led to signing the GCC Initiative by different political parties followed by the National Dialogue Conference. After Houthi forces have controlled the Capital Sana'a in September 2014 and allied with forces loyal of the former president, a severe political/military crises raised that

ended as an internal war. In Shabwa, war started in the oil-rich Usaylan District by end of March 2015 involving army forces, Houthis, tribal forces, and airstrikes of the Arab Coalition at the time AQAP captured Azzan. Most recently, clashes between military forces and Houthis are restricted in the two districts of Bayhan and Usaylan, while AQAP is somehow still active but not restricted to known places and they sporadically do some offensive operations.

The level of acute malnutrition in the Governorate was below 10% before the crisis. The Comprehensive Food Security Survey (CFSS) conducted in April 2014 indicated that global acute malnutrition (GAM) in the Governorate is 7.5% with prevalence of the severe type (SAM) of 1.1%. During the crisis, the Emergency Food Security and Nutrition Assessment (EFSNA) conducted in November 2016 indicated a prevalence of GAM of 11.8% with 2.1 SAM. Although SAM levels shown by EFSNA is similar to that in the neighbour governorate of Hadhramaut, GAM in Shabwa is almost half of that of Hadhramaut.

The national nutrition information system has shown that number of SAM admitted children increased from 3,448 (reported by 36 sites) in 2014 to 4,144 case (reported by 69 sites) in 2015 that in 2016 increased to 4,662 (reported by 100 sites)

The pre-crisis IPC that was made in September 2014 has classified Shabwa as Phase 4 (Emergency) governorate with estimation of 54% of households as food insecure. Shabwa still in phase 4 (as per the IPC of June 2016) but food insecurity increased to 64%. The EFSNA conducted in November 2016 indicate that 86% of Shabwa households are food insecure.

Assessment objectives

The overall objective of the survey was to assess the current nutrition situation in Shabwa Governorate and key determinants. Specific objectives are:

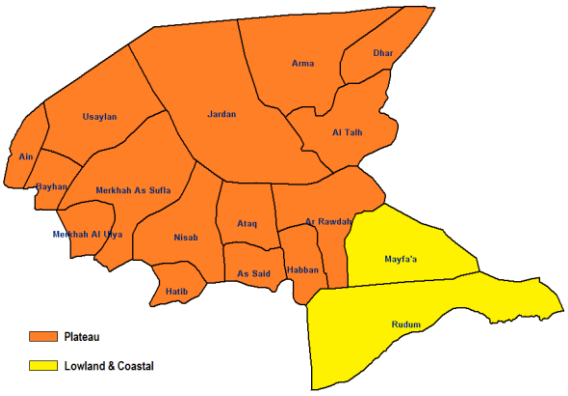
1. To assess the level of acute malnutrition (wasting), stunting and underweight among children aged 6-59 months in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate.
2. To assess the prevalence of exclusive breastfeeding among under six months, breastfeeding continuation at 1 and 2 years, children aged 6 to 23 months with proper complementary feeding practices in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate.
3. To assess the child morbidity through determining the prevalence of diarrhoea, ARI and fever in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate.
4. To assess the routine polio vaccination coverage among children aged 3 to 59 months, measles vaccination coverage among children aged 9 to 59 months and vitamin A supplementation coverage within the last 6 months prior to survey among children aged 6 to 59 months in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate.
5. To assess the level of acute malnutrition among women at child bearing age (15 to 49 years) in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate.
6. To assess the food consumption scoring (FCS) in past 7 days in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate.
7. To assess the mean coping strategy index (CSI) of households in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate.
8. To assess the household practice of a set of stress, crisis and emergency coping strategies in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate.
9. To assess the household head losing of income sources in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate due to the current conflict crisis.

10. To assess the monthly household expenditure of households in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate.
11. To assess the education level of household caregivers in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate.
12. To assess the main household drinking water source, the quality classification of the water sources and the cleanness of drinking water storage in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate.
13. To assess the household latrine type and the quality classification of sanitation facilities in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate.
14. To assess the practice of handwashing with water and soap (or soap alternatives) by household care giver after toilet and before the meal in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate.
15. To assess the crude and under-five mortality rates in Plateau Zone and Lowland & Coastal Zone of Shabwa Governorate during the past 90 days.

Methodology

The Governorate of Shabwa was assessed as two strata. The Plateau Zone that includes 15 districts namely Arma, Dhar, Jardan, Usaylan, Al Talh, Ain, Bayhan, Merkhah As Sufla, Merkhah Al Ulya, Nisab, Ataq, Ar Rawdah, Hatib, As Said, Habban, and part of Rudum District (only Al Madhale' and Hawrah Al Olia), and the Lowland & Coastal Zone that includes the remaining villages of Rudum District and the whole Mayfa'a District Almost 86% of the Governorate population inhabit the Plateau Zone while the remaining 14% inhabit the Lowland and Coastal zone. The assessment was taken place during January 14th to 26th, 2017 after one week of training and logistic preparation.

Figure 1. Shabwa Governorate map shows the survey strata



All clash areas have been excluded from the frame before the selection of clusters. All excluded places are in Plateau Zone. They are:

- Usaylan District: The whole district due to the conflict
- Ain District: The whole district due to the conflict
- Bayhan District: The whole district due to the conflict
- Merkhah Al Ulya District: Al Neqaq *Ozla* due to local tribal clashes

Study and sampling design

A two-staged cluster cross sectional assessment was conducted. The methods used, including sampling design and sample size determination were following SMART approach and ENA for SMART software. The sample size was calculated using the parameters as shown in table 2. The sample size was calculated based on achieving statistical confidence for anthropometric and mortality objectives. Thus, the highest determined size from each of the two objectives was selected.

Table 2. Parameters used in the Sample Size Determination

Parameters	Plateau Zone	Lowland & Coastal Zone
Anthropometry		
Expected prevalence (p)*	21.5	21.5
Relative desired precision (d)	4.5	4.5
Design Effect (DEFF)	1.5	1.5
Average household size†	8.8	8.8
% of U5 in population‡	18.3	18.3
% Non-response	3	3
Mortality		
Estimated crude death rate (CDR) per 10000/day§	0.24	0.24

* DHS 2014
† CSO Statistics
‡ EPI Programme Estimates
§ Abyan Governorate Nutrition and Mortality Survey, 2013 (during the conflict)

Relative desired precision (d) per 10000/day	0.22	0.22
Design Effect (DEFF)	1.5	1.5
Recall period in days (RP)	90	90
Average household size	8.8	8.8
% Non-response	3	3

The sample size calculated was higher in the mortality than in anthropometry. The calculated sample sizes for households was 405 households for each zone. With these numbers of households, the expected numbers of underfive children was 569 children in each zone.

The survey has taken place in 30 clusters in each stratum. These clusters were selected following Probability Proportional to Size (PPS) approach using ENA for SMART software. The number of households per cluster was planned as 14 households in both zones.

The source of the sample frame used in this survey was Shabwa Governorate Health Office. The frame contains a list of villages and sub-villages with a projection of population that is made based on the of the CSO 2004 Census and as updated by Shabwa GHO.

Sampling Procedure (The second stage)

The selection of households at the clusters levels was made following the decision tree mentioned in SMART sampling guideline of June 2012 (Annex 9). For 26 clusters in Plateau Zone and 23 clusters in Coastal & Lowland Zone, households were listed and the sample were selected using simple random sampling (SRS). In the remaining clusters (4 clusters in Plateau Zone and 7 clusters in Coastal & Lowland Zone), segmentation was made, then in the selected segments, all household households were listed and the sample were selected using simple random sampling (SRS). The listing and selection process was made by heads of field teams in collaboration of village leaders and attended villagers. The random walking methods was not used in this survey.

Survey Population and Data Collection Process

The survey population consisted of: 1) anthropometry: children aged 6 to 59, 2) mortality: all people that have lived at the household (currently residing, left, born or died) over a recall period of 9 days starting from the 53rd Anniversary if 14 October Revolution; 3) IYCF: children 0-24 months; 4) morbidity: children 0-59 months. Age estimation was based on birth or immunization card details and/or supported with events calendar, agriculture and fishing seasons, as well as national and local events (Annex 3: Events Calendar and Annex 4: Age determination job aid).

Six field teams and four data entry persons (Annex 2: January 2017 Shabwa Governorate Nutrition Survey Team) were trained for 6 days by the survey manager and the survey field supervisors. The training consisted of anthropometry, filling of questionnaire, and the field procedures following by rigorous standardization exercise (Annex 6: January 2017 Shabwa Governorate Nutrition Survey Standardization Test Report) and field test before commencing the data collection phase. Out of the 6 trained teams, the best 5 teams were selected to complete the data collection over a 12 days period.

Selected households were given a brief overview of the survey and invited to participate. Verbal consent to participate was obtained after the household participant heard the survey overview from the survey team. After consent was given, the survey teams assisted a member from each selected household to complete a questionnaire comprising of 1) background demographics; 2) gender of household head, 3) gender, education and marital status of household caretaker; 4) information on household income and expenditure; 5) WASH indicators; 6) household food consumption and coping strategies; 7) marital status, physiological status and MUAC of woman at child bearing age; 8) child

vaccination and vitamin A supplementation; 9) child anthropometry; 10) child morbidity; 11) IYCF practices; and 12) crude and under-five mortality. (Annex 1: January 2017 Shabwa Governorate Nutrition Survey Questionnaire).

Retrospective mortality data were collected from all randomly selected households, irrespective of presence or absence of children aged 6-59 months. A recall period of 90 days prior to the survey was used.

Measurement Standardization and Quality Control

The survey teams has undergone to a concentrated practical training prior to the survey covering all areas related to the field work including standardisation test of the enumerators. Data quality was ensured through (i) monitoring of fieldwork by field technical supervisors; (ii) crosschecking of filled questionnaires on a daily basis, recording of observations and daily de-briefing and discussion; (iii) confirmation of measles, severe malnutrition especially oedema cases and death cases by supervisors; (iv) daily entry of anthropometric data; (v) doing the plausibility check in daily basis for the overall quality scoring and identification each team quality using 10 scoring criteria (statistical tests), plus ensuring each team was given feedback on the quality of previous day's data before the start of a new day; (v) daily equipment calibration, (vi) additional check done at the data entry level to enable entry only of relevant possible responses and measurements which was assisted by the auto check sheet that was specially designed for the data entry; and (vii) continuous reinforcement of good practices.

Clear job descriptions were provided to field teams during the training and before commencing the data collection in order to ensuring appropriate guidance in completing the assigned tasks. Field team head was reviewing the filed questionnaires and verify the accuracy of the details before the team was leaving the cluster site, thus minimizing possibility of incomplete data (missing variables) and outlier data. The overall plausibility scores were 1% and 5% (excellent) for Plateau Zone and Lowland & Coastal Zone respectively (Annex 5: Assessment Quality Check Report)

Data Entry and Analysis

The data in the filled questionnaires and mortality forms were entered into an Excel spread sheet created for the purpose of this survey. The spreadsheet contained all required self-check formulas as well as converting dates from Hijri to Gregorian. The anthropometrical data then were copied to ENA for SMART for interpretation to z scores as well as creation of the final plausibility check report and results of nutritional anthropometry status tables and curves. Similarly, the data of mortality were transferred to ENA for the analysis purposes and getting out the final death results with population pyramid.

Household variables and the remaining child-related variables (Vaccination, vitamin A supplementation, feeding practices and morbidity) were analysed using Epi Info$^{(TM)}$ 3.5.3. The anthropometry indices (z-scores) for Weight for Height (wasting), Height for Age (stunting) and Weight for Age (underweight) were generated and compared with WHO 2006 Growth Standards. Children/cases with extreme z-score values were flagged and investigated and appropriately excluded in the final analysis if deviating from the observed mean (SMART flags).

In Epi Info, frequencies and cross-tabulations were used to give percentages, means and standard deviations in the descriptive analysis and presentation of general household and child characteristics. Significances was defined as ($P<0.05$).

The classification the nutritional status using the above indices as well as MUAC was made following the WHO classification (WHO 2006) and (WHO 2013).

For IYCF indicators related to breast feeding and complementary feeding, the WHO guidelines on assessing infant and young child feeding practices were used (WHO 2008).

For the calculation of the value for Minimum Dietary Diversity (MDD), a 7 food group score variable was created. The 7 foods groups used for calculation are 1) grains, roots and tubers; 2) legumes and nuts; 3) dairy products (milk, yogurt, cheese); 4) flesh foods (meat, fish, poultry and liver/organ meats); 5) eggs; 6) vitamin-A rich fruits and vegetables; 7) other fruits and vegetables. Another indicator is the Minimum meal frequency (MMF) which is measuring the child consumption for solid, semi-solid, or soft foods. Minimum acceptable diet (MAD) is combining both MDD and MMF. The methods and analysis for the MDD, MMF and MAD were based as recommended by the WHO (WHO 2008).

The classification of MUAC of Women is not made based on the global one but based on that WFP is using for Yemen (CFSS 2011 & CFSS 2014). Woman is considered severely wasted if her MUAC is below 21.3 cm, moderately wasted if her MUAC is equal or more than 21.3 cm and below 22.2 cm, and of normal MUAC if the measurement is not less than 22.2 cm.

For sources of drink water indicators, the sources listed in the classification were classified to improved and unimproved sources. Improver drinking water sources are: 1) House connected piped water; 2) Artesian well; 3) Protected well; 4) Protected spring; and 5) Protected rainwater harvesting. Unimproved sources are: 1) Public tap/ Community point/ Sabeel; 2) Unprotected well; 3) Unprotected spring; 4) Bottled water; 5) Unprotected surface water (Wadi, springs, etc.); 6) Unprotected rainwater harvesting; 7) Water tanker; and 8) any other unclassified sources other those mentioned above.

Sanitation was also classified as improved and unimproved based on the type of latrine. Improved latrines are 1) Flush to piped sewer system; 2) Flush to septic tank; 3) Flush to pit latrine; 4) Ventilated improved pit latrine; 5) Pit latrine with slab; and 6) Composting toilet. Unimproved latrines include 1) Flush to open drain; 2) Flush to DK where; 3) Pit latrine without slab/ open pit; 4) Bucket; 5) Hanging latrine; 6) Defecation in open (in fields, etc.) and 7) any other unclassified sources than those previously mentioned.

Food consumption scores (FCS) were calculated based on the consumption during the last 7 days from the 8 food groups following WFP guidelines. The classification of FCS is not made following the global WFP one but based on the WFP Yemen way as the following:

- Below of equal to 28: Poor food consumption
- Above 28 to 42: Border line food consumption
- Above 42: Acceptable food consumption

The coping strategy index CSI scoring was done following WFP guidelines. It made depending on practicing of a list of 11 coping strategies. Another extended list of coping strategies in this survey was used to determine households who are practicing no coping strategies, stress coping strategies, crisis coping strategies and emergency coping strategies during the last 30 days as shown below:

Stress coping strategies:	Selling households assets/belongings (furniture, jewellery, clothes, etc.)
	Buying food by credit or pawning
	Spending from saving
	Borrowing money
Crisis coping strategies:	Selling of production assets or transport means (sewing machine, car or motorcycle, etc.)
	Consuming the stock of seeds that is reserved for the coming season

	Withdraw children out of school
	Reduce spending on education and health (including drugs)
Emergency coping strategies:	Selling the house or land
	Begging
	Selling the last female of cattle the household has

Results and discussion

The survey sample

A total of 457 and 467 households were targeted by the survey field teams in Plateau Zone and Lowland & Coastal Zone respectively as shown in Table 3. Absence and refusal were less than 3% in Plateau Zone and less than 2% in Lowland & Coastal Zone. Data were collected from a total number of 447 households including 656 children and 1123 women in Plateau Zone and from 461 households including 659 children and 1028 women in Lowland & Coastal.

Table 3. Sampled households, children and women

	Plateau Zone	Lowland and Coastal zone
Targeted households	457	467
Absence	7 (1.53%)	3 (0.64%)
Refusal	3 (0.66%)	3 (0.64%)
Households with completed questionnaires	447 (97.8%)	461 (98.7%)
Households with below 5 years children	311 (69.6%)	315 (68.3%)
Households with below 6 months children	61 (13.6%)	70 (15.2%)
Households with 15 to 49 women	432 (96.6%)	446 (96.7%)
Under 5 years children	656	659
Under 6 months children	71	74
6 to 59 months children	585	585
15 to 49 women	1123	1028
Average household size	9.50	8.90

Household characteristics

Background indicators

Man has been found as a head of the household in 98.2% and 98.5% of households in Plateau Zone and Lowland & Coastal Zone respectively, while woman was found as the main household caretaker in 96.9% and 96.3% of households in Plateau Zone and Lowland & Coastal Zone respectively. Around of 94% and 96% of household heads have been found married in Plateau Zone and Lowland & Coastal Zone respectively.

Illiteracy was found high among household caretakers who are women in majority. 75% and 72% of them in Plateau Zone and Lowland & Coastal Zone respectively were found illiterate, while less than 5% are with basic and higher education. Details are in table 4

Table 4. Background data on household head and household caretaker

Background indicator	Plateau Zone		Lowland & Coastal Zone	
	N	% (95% CI)	N	% (95% CI)
The gender of household head				
Man	439	98.2 (96.4 – 99.2)	454	98.5 (96.8 – 99.3)
Woman	8	1.8 (0.8 – 3.6)	7	1.5 (0.7 – 3.2)
The gender of household caretaker				

Background indicator	Plateau Zone		Lowland & Coastal Zone	
	N	% (95% CI)	N	% (95% CI)
Woman	433	96.9 (94.7 – 98.2)	444	96.3 (94.0 – 97.8)
Man	14	3.1 (1.8 – 5.3)	17	3.7 (2.2 – 6.0)
Marital Status of Household head				
Married	419	93.7 (91.0 – 95.7)	443	96.1 (93.8 – 97.6)
Widow	27	6.0 (4.1 – 8.8)	12	2.6 (1.4 – 4.6)
Single	1	0.2 (0.0 - 1.4)	4	0.9 (0.3 – 2.4)
Divorced	0	0 (0.0 – 0.0)	2	0.4 (0.1 – 1.7)
Education level of household caretaker				
Illiterate	335	74.9 (70.6 - 78.8)	332	72.0 (67.6 – 76.0)
Can read and write	93	20.8 (17.2 - 24.9)	109	23.6 (19.9 – 27.8)
Basic education	10	2.2 (1.1 - 4.2)	11	2.4 (1.3 – 4.4)
Secondary education	6	1.3 (0.5 - 3.0)	8	1.7 (0.8 – 3.5)
Higher education (university, college or institute)	3	0.7 (0.2 - 2.1)	1	0.2 (0.0 – 1.4)

Household income situation

As seen in table 5, only 25.1% of households in Plateau Zone and 11.4% in Lowland & Coastal Zone reported losing partially or fully their income sources during the current crisis (since March 2015). These levels are lower than those found by surveys done in 2015 and 2016 in some other governorates.

Table 5. Crisis effect on the household income

indicator	Plateau Zone		Lowland & Coastal Zone	
	N	% (95% CI)	N	% (95% CI)
The impact on household income				
Regular salary or income has not been affected	329	74.9 (70.6 – 78.9)	405	88.6 (85.3 – 91.3)
Salary or income partially or totally lost	110	25.1 (21.1 – 29.4)	52	11.4 (8.7 – 14.7)

Median expenditures as shown in table 6 are ranged from 50,000 to 60,000 Yemeni Rials in Lowland & Coastal Zone and Plateau Zone respectively[**]. Higher expenditure was found in those households who are practicing crisis coping strategies.

Table 6. Median monthly household expenditure in Yemeni Rials distributed based on type of coping strategies

Income median	Plateau Zone	Lowland & Coastal Zone
	Median (±SD)	Median (±SD)
Monthly expenditure in YR (n=444, 460)	60,000 (45,565)	50,000 (34,501)
Monthly expenditure means based on category of coping strategy (in 30 days)		

[**] The average rate of 1 USD in January 2017 is YR 300 in parallel market.

Income median	Plateau Zone	Lowland & Coastal Zone
	Median (±SD)	Median (±SD)
No coping strategy (n=193, 188)	56,000 (46,827)	55,000 (40,011)
Stress coping strategy (n=216, 251)	60,000 (45,248)	50,000 (29,190)
Crisis coping strategy (n=18, 15)	75,000 (35,614)	60,000 (42,322)
Emergency coping strategy (n=17, 6)	60,000 (47,842)	45,000 (24,280)

Water, sanitation and hygiene

As shown in table 7, unprotected wells and unprotected rainwater harvesting are the main two sources for drinking water in Plateau Zone (47.2%), while piped water connected to households and artesian wells are the main sources for drinking water in Lowland & Coastal Zone (52.9%).

Using of improved drinking water sources is significantly higher in Lowland & Coastal Zone (61.2%) than in Plateau Zone (35.7%). Treatment of water before drinking is rare in both survey zones. Storage of drinking water was found clean in about 68% of households in Plateau Zone and about 79% of households in Lowland & Coastal Zone.

Using of flush toilet is the main in the two survey zone, however for Plateau Zone the majority is using flush to septic tank (33.3%) while in Lowland & Coastal Zone, the majority is using flush to open drain (45.8%). In total, using of improved latrine is higher in Plateau Zone (46.8%) than in Lowland & Coastal Zone (38.2%). Defecation in open was found as a practice reported by 15.4% and 12.4% of households in Plateau Zone and Lowland & Coastal Zone respectively as shown in Table 7.

Handwashing with water and soap (or soap alternatives) practiced by household caretakers was mentioned as after the toilet in 49.8% and 54.7% of households in Plateau Zone and Lowland & Coastal Zone respectively, and as 62.9% and 59% in Plateau Zone and Lowland & Coastal Zone respectively as before meal.

Table 7. Water, sanitation and hygiene indicators

	Plateau Zone		Lowland & Coastal Zone	
WASH indicators	**N**	**% (95% CI)**	**N**	**% (95% CI)**
The main household drinking water main source				
House connected piped water	81	18.2 (14.8 – 22.2)	147	31.9 (27.7 – 36.4)
Unprotected well	106	23.8 (20.0 – 28.1)	55	11.9 (9.2 – 15.3)
Artesian well	56	12.6 (9.7 – 16.1)	97	21.0 (17.5 – 25.1)
Unprotected rainwater harvesting	104	23.4 (19.6 – 27.6)	0	0.0 (0.0 – 0.0)
Water tanker	44	9.9 (7.4 – 13.1)	49	10.6 (8.0 – 13.9)
Protected well	16	3.6 (2.1 – 5.9)	38	8.2 (6.0 – 11.2)
Bottled water	26	5.8 (3.9 – 8.6)	18	3.9 (2.4 – 6.2)
Unprotected spring	6	1.3 (0.5 – 3.1)	30	6.5 (4.5 – 9.3)
Public tap/ Community point/ Sabeel	0	0.0 (0.0 – 0.0)	15	3.3 (1.9 – 5.4)
Unprotected surface water (Wadi, springs, etc.)	0	0.0 (0.0 – 0.0)	12	2.6 (1.4 – 4.6)
Protected rainwater harvesting	3	0.7 (0.2 – 2.1)	0	0.0 (0.0 – 0.0)

	Plateau Zone		Lowland & Coastal Zone	
WASH indicators	**N**	**% (95% CI)**	**N**	**% (95% CI)**
Protected spring	3	0.7 (0.2 – 2.1)	0	0.0 (0.0 – 0.0)
Category of the main household drinking water main source				
Improved	159	35.7 (31.3 – 40.4)	282	61.2 (56.5 - 65.6)
Unimproved	286	64.3 (59.6 – 68.7)	179	38.8 (34.4 - 43.5)
Treatment of water before drinking (n=425, 436)	5	1.2 (0.4 – 2.9)	17	3.9 (2.4 – 6.3)
Cleanness od drinking water storage (n=443, 461)	302	68.2 (63.6 – 72.4)	365	79.2 (75.1 – 82.7)
The main facility for defecation				
Flush to open drain	133	29.8 (25.6 – 34.3)	211	45.8 (41.2 – 50.4)
Flush to septic tank	149	33.3 (29.0 – 37.9)	76	16.5 (13.3 – 20.3)
Defecation in open (in fields, etc.)	69	15.4 (12.3 – 19.2)	57	12.4 (9.6 – 15.8)
Flush to piped sewer system	27	6.0 (4.1 – 8.8)	81	17.6 (14.3 – 21.4)
Flush to pit latrine	29	6.5 (4.5 – 9.3)	9	2.0 (1.0 – 3.8)
Pit latrine without slab/ open pit	33	7.4 (5.2 – 10.3)	2	0.4 (0.1 – 1.7)
Flush to DK where	1	0.2 (0.0 – 1.4)	14	3.0 (1.7 – 5.2)
Pit latrine with slab	3	0.7 (0.2 – 2.1)	7	1.5 (0.7 – 3.2)
Ventilated improved pit latrine	1	0.2 (0.0 – 1.4)	3	0.7 (0.2 – 2.1)
Hanging latrine	2	0.4 (0.1 – 1.8)	1	0.2 (0.0 – 1.4)
The type of the latrine				
Improved	209	46.8 (42.1 – 51.5)	176	38.2 (33.8 – 42.8)
Unimproved	238	53.2 (48.5 – 57.9)	285	61.8 (57.2 – 66.2)
Handwashing practice by household caretaker				
After the toilet (n=410, 422)	204	49.8 (44.8 – 54.7)	231	54.7 (49.9 – 59.5)
Before meal (n=410, 422)	258	62.9 (58.0 – 67.6)	249	59.0 (54.1 – 63.7)

Household food security

Food consumption scoring (FCS) was calculated based on the food consumption of 8 groups during the last 7 days and classified using the WFP (Yemen) thresholds. As shown in table 8 below, 72.9% of households was found food insecure in the Plateau Zone in compare to 52.9% in Lowland & Coastal Zone.

Table 8: Food consumption classification

	Plateau Zone		Lowland & Coastal Zone	
Food consumption classification	**N**	**% (95% CI)**	**N**	**% (95% CI)**
Household food consumption (WFP Yemen classification)				
Acceptable	121	27.1 (23.1 – 31.5)	217	47.1 (42.5 – 51.7)
borderline	130	29.1 (25.0 – 33.6)	164	35.6 (31.2 – 40.2)
Poor	196	43.8 (39.2 – 48.6)	80	17.4 (14.1 – 21.2)

Coping strategies were measured using the full coping strategy index (CSI). The mean scores in the zones of Shabwa Governorate were found as 3.08 in Plateau Zone and 2.29 in Lowland & Coastal Zone. The average CSI for those have not practiced coping strategies during the last 30 days was 0.67 and 0.54 in Plateau Zone and Lowland & Coastal Zone respectively, while it is the highest among those reported practicing crisis coping strategies with mean CSI of 11.67 and 8.73 in Plateau Zone and Lowland & Coastal Zone respectively as seen in table 9.

For the two survey zones, means CSI in different food consumption groupings were found lower in 'acceptable' group and higher in 'poor' groups as shown in the table 9.

Table 9. Means of CSI

	Plateau Zone	Lowland & Coastal Zone
Coping Strategy Index (CSI)	**Mean (±SD)**	**Mean (±SD)**
Coping strategy index (CSI) in 7 days (n=445, 459)	3.08 (7.61)	2.29 (6.26)
CSI means based on category of coping strategy (in 30 days)		
No coping strategy (n=194, 188)	0.67 (4.31)	0.54 (2.23)
Stress coping strategy (n=216, 250)	4.38 (8.04)	3.23 (7.13)
Crisis coping strategy (n=18, 15)	11.67 (16.22)	8.73 (14.28)
Emergency coping strategy (n=17, 6)	5.06 (7.29)	1.67 (4.08)
CSI means based on food consumption (WFP Yemen classification)		
Acceptable (n=121, 216)	0.41 (1.74)	1.35 (5.09)
borderline (n=130, 163)	2.38 (7.18)	2.80 (6.11)
Poor (n=194, 80)	5.22 (9.35)	3.76 (8.67)

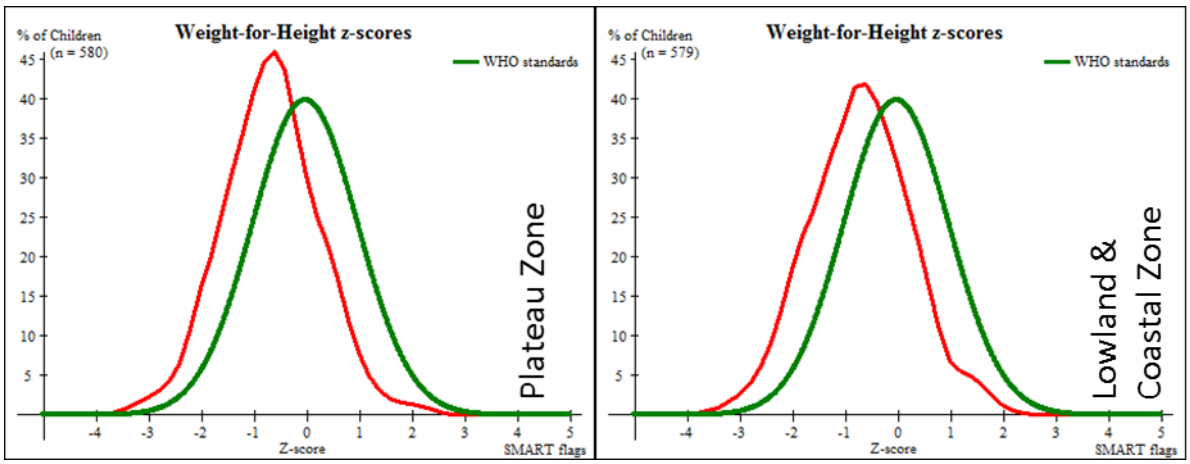
Child Nutrition

Acute malnutrition by WHZ

The survey showed a prevalence of global acute malnutrition (GAM) of 6.2% and 8.5% in Plateau Zone and Lowland & Coastal Zone respectively with no significance difference between the two zones. Boys show higher GAM rates than girls but only in Lowland & Coastal Zone the difference was statistically significant (X2=7.014, P<0.001). Severe acute malnutrition (SAM) prevalence has been found as 0.7% in the two zones (tables 10a and 10b). No single oedema case was reported in the survey. The graphs in figure 2 show some shift to the left of the survey population when compared with the reference

population, which is implying a presence of malnutrition. The current GAM levels in both zones classifies Shabwa as 'poor' as per the WHO categorization of the severity.

Figure 2. The survey children WHZ scores distribution vs the reference population in the two survey zones



Levels of GAM and SAM in both survey zones of Shabwa found by the current SMART survey are closer to that found by CFSS of April 2014 (7.5% GAM and 1.1% SAM), while these levels were bit lower than that shown by EFSNA of November 2016 (11.8% GAM and 2.1% SAM).

Table 10a. Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex in Plateau Zone

	All **n = 580**	**Boys** **n = 283**	**Girls** **n = 297**
Prevalence of global malnutrition	(36) 6.2 % (4.3 - 8.9 95% C.I.)	(20) 7.1 % (4.6 - 10.6 95% C.I.)	(16) 5.4 % (2.8 - 10.2 95% C.I.)
Prevalence of moderate malnutrition	(32) 5.5 % (3.6 - 8.3 95% C.I.)	(19) 6.7 % (4.3 - 10.3 95% C.I.)	(13) 4.4 % (2.0 - 9.2 95% C.I.)
Prevalence of severe malnutrition	(4) 0.7 % (0.2 - 2.4 95% C.I.)	(1) 0.4 % (0.0 - 2.7 95% C.I.)	(3) 1.0 % (0.2 - 4.6 95% C.I.)

The prevalence of oedema is 0.0 %

Table 10b. Prevalence of acute malnutrition based on weight-for-height z-scores (and/or oedema) and by sex in Lowland & Coastal Zone

	All **n = 579**	**Boys** **n = 297**	**Girls** **n = 282**
Prevalence of global malnutrition	(49) 8.5 % (5.0 - 14.1 95% C.I.)	(34) 11.4 % (6.9 - 18.5 95% C.I.)	(15) 5.3 % (2.3 - 11.7 95% C.I.)
Prevalence of moderate malnutrition	(45) 7.8 % (4.7 - 12.6 95% C.I.)	(32) 10.8 % (6.8 - 16.7 95% C.I.)	(13) 4.6 % (2.1 - 9.9 95% C.I.)
Prevalence of severe malnutrition	(4) 0.7 % (0.3 - 1.8 95% C.I.)	(2) 0.7 % (0.2 - 2.7 95% C.I.)	(2) 0.7 % (0.2 - 2.9 95% C.I.)

The prevalence of oedema is 0.0 %

Tables 11a and 11b show that GAM (by WHZ-score criteria) in the two survey zones is higher in older children (24 – 59 months) than in younger children aged 24 to 59 months. The difference was

statistically significant in the Plateau Zone (P<0.01) while it was not significant in the Lowland & Coastal Zone. In Plateau Zone diarrhoea has shown association with acute malnutrition in older group while this association was not seen in younger group or in the Lowland & Coastal Zone.

Table 11a. Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema in Plateau Zone

Age (months)	Total no.	Severe wasting		Moderate wasting		Wasting	
		No.	%	No.	%	No.	%
6-23	199	0	0.0	5	2.5	5	2.5
24-59	381	4	1.0	27	7.1	31	8.1
Total	580	4	0.7	32	5.5	36	6.2
Statistical test		X2=0.850, df=1, P=0.357*				X2=7.102, df=1, P=0.008	

* Corrected (Yates)

Table 11b. Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema in Lowland & Coastal Zone

Age (mo)	Total no.	Severe wasting		Moderate wasting		Wasting	
		No.	%	No.	%	No.	%
6-23	194	2	1	10	5.2	12	6.2
24-59	385	2	0.5	35	9.1	37	9.6
Total	579	4	0.7	45	7.8	49	8.5
Statistical test		X2=0.029*, df=1, P=0.865				X2=1.953, df=1, P=0.162	

* Corrected (Yates)

Acute malnutrition by MUAC

Table 12a and 12b show that prevalence of MUAC below 12.5 cm (GAM by MUAC) were 2.1% and 2.6% in Plateau Zone and Lowland & Coastal Zone respectively while the prevalence of MUAC below 11.5 cm (SAM by MUAC) was 0.7% in the two survey zones. GAM by MUAC was insignificantly higher in boys than in girls in Plateau Zone while it was significantly higher in girls in Lowland & Coastal Zone (X2=6.034, P<0.05). GAM by MUAC found by the current survey is almost half of that found by EFSNA 2016 (5.2%) while SAM by MUAC of the current survey is closer to that of EFSNA 2016 (0.5%).

Unlike the GAM by WHZ, tables 13a and 13b show that GAM prevalence by MUAC were higher in young children (6 – 23 months) (4.5% and 6.7% in Plateau Zone and Lowland & Coastal Zone respectively) than in older children aged 24 to 59 months (0.8% and 0.5% in Plateau Zone and Lowland & Coastal Zone respectively). Differences were significance with P<0.01 and P<0.001 in Plateau Zone and Lowland & Coastal Zone respectively.

Table 12a. Prevalence of acute malnutrition based on MUAC cut offs (and/or oedema) and by sex in Plateau Zone

	All **n = 580**	**Boys** **n = 284**	**Girls** **n = 296**
Prevalence of global malnutrition	(12) 2.1 % (1.1 - 3.8 95% C.I.)	(7) 2.5 % (1.1 - 5.3 95% C.I.)	(5) 1.7 % (0.7 - 3.9 95% C.I.)
Prevalence of moderate malnutrition	(8) 1.4 % (0.7 - 2.8 95% C.I.)	(5) 1.8 % (0.8 - 4.0 95% C.I.)	(3) 1.0 % (0.3 - 3.1 95% C.I.)
Prevalence of severe malnutrition	(4) 0.7 % (0.3 - 1.8 95% C.I.)	(2) 0.7 % (0.2 - 2.8 95% C.I.)	(2) 0.7 % (0.2 - 2.8 95% C.I.)

The prevalence of oedema is 0.0 %

Table 12b. Prevalence of acute malnutrition based on MUAC cut offs (and/or oedema) and by sex in Lowland & Coastal Zone

	All **n = 581**	**Boys** **n = 298**	**Girls** **n = 283**
Prevalence of global malnutrition	(15) 2.6 % (1.2 - 5.5 95% C.I.)	(3) 1.0 % (0.3 - 3.0 95% C.I.)	(12) 4.2 % (1.9 - 9.0 95% C.I.)
Prevalence of moderate malnutrition	(11) 1.9 % (0.8 - 4.2 95% C.I.)	(3) 1.0 % (0.3 - 3.0 95% C.I.)	(8) 2.8 % (1.2 - 6.3 95% C.I.)
Prevalence of severe malnutrition	(4) 0.7 % (0.3 - 1.8 95% C.I.)	(0) 0.0 % (0.0 - 0.0 95% C.I.)	(4) 1.4 % (0.5 - 3.8 95% C.I.)

The prevalence of oedema is 0.0 %

Table 13a. Prevalence of acute malnutrition by age, based on MUAC cut offs and/or oedema in Plateau Zone

Age (months)	**Total no.**	**Severe wasting**		**Moderate wasting**		**Wasting**	
		No.	**%**	**No.**	**%**	**No.**	**%**
6-23	200	2	1.0	7	3.5	9	4.5
24-59	380	2	0.5	1	0.3	3	0.8
Total	580	4	0.7	36	5.4	12	2.1
Statistical test		X2=0.016*, df=1, P=0.899				X2=7.167*, df=1, P=0.007	

* Corrected (Yates)

Table 13b. Prevalence of acute malnutrition by age, based on MUAC cut offs and/or oedema in Lowland & Coastal Zone

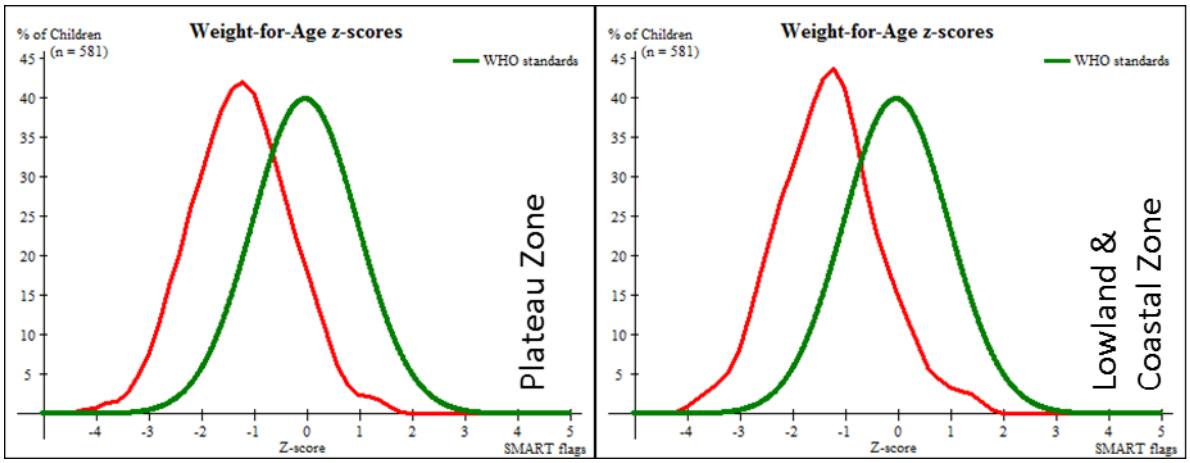
Age (months)	Total no.	Severe wasting		Moderate wasting		Wasting	
		No.	%	No.	%	No.	%
6-23	195	4	2.1	9	4.6	13	6.7
24-59	386	0	0.0	2	0.5	2	0.5
Total	581	4	0.7	11	1.9	15	2.6
Statistical test		X2=5.255*, df=1, P=0.022				X2=19.473, df=1, P=0.000	

* Corrected (Yates)

Underweight

The survey has shown an underweight prevalence of 20.1% in Plateau Zone and 22.9% Lowland & Coastal Zone. Severe underweight was found as 2.2% in Plateau Zone and 3.3% in Lowland & Coastal Zone (Tables 14a and 14b). Underweight was higher in boys than in girls in the two survey zone but only in Plateau Zone the difference was significant (X2=4.12, P<0.05). No significance differences were found between the two survey zones. With these levels of underweight that exceed 20% but below 30%, Shabwa Governorate is classified as 'high prevalence' according to WHO categorisation of the public health significance.

Figure 3. The survey children WAZ scores distribution vs the reference population in the two survey zones



These levels of underweight found by the current SMART survey are slightly lower than that of CFSS of April 2014 (25.2%) and EFSNA of November 2016 (24.8%), but much lower in regard to the severe underweight (7.2% by CFSS 2014 and 6.8% by EFSNA 2016).

Table 14a. Prevalence of underweight based on weight-for-age z-scores by sex in Plateau Zone

	All n = 581	Boys n = 284	Girls n = 297
Prevalence of underweight	(117) 20.1 % (15.1 - 26.3 95% C.I.)	(67) 23.6 % (17.3 - 31.2 95% C.I.)	(50) 16.8 % (11.6 - 23.8 95% C.I.)
Prevalence of moderate underweight	(104) 17.9 % (13.7 - 23.1 95% C.I.)	(60) 21.1 % (15.6 - 27.9 95% C.I.)	(44) 14.8 % (10.4 - 20.6 95% C.I.)
Prevalence of severe underweight	(13) 2.2 %	(7) 2.5 %	(6) 2.0 %

	(1.2 - 4.0 95% C.I.)	(1.1 - 5.4 95% C.I.)	(0.9 - 4.3 95% C.I.)

Table 14b. Prevalence of underweight based on weight-for-age z-scores by sex in Lowland & Coastal Zone

	All **n = 581**	**Boys** **n = 298**	**Girls** **n = 283**
Prevalence of underweight	(133) 22.9 % (17.5 - 29.3 95% C.I.)	(71) 23.8 % (17.3 - 31.9 95% C.I.)	(62) 21.9 % (16.2 - 29.0 95% C.I.)
Prevalence of moderate underweight	(114) 19.6 % (15.3 - 24.8 95% C.I.)	(61) 20.5 % (15.7 - 26.3 95% C.I.)	(53) 18.7 % (13.3 - 25.7 95% C.I.)
Prevalence of severe underweight	(19) 3.3 % (1.5 - 6.9 95% C.I.)	(10) 3.4 % (1.0 - 11.0 95% C.I.)	(9) 3.2 % (1.4 - 6.9 95% C.I.)

In both survey zones, table 15a and 15b show that underweight is significantly higher in children aged 24 to 59 months (24.6% and 27.5% in Plateau Zone and Lowland & Coastal Zone respectively) than in children aged 6 to 23 months (11.6% and 13.8% in Plateau Zone and Lowland & Coastal Zone respectively). Severe underweight has also been found higher in older children but the difference was insignificant.

Table 15a. Prevalence of underweight by age, based on weight-for-age z-scores in Plateau Zone

Age (months)	**Total no.**	**Severe underweight**		**Moderate underweight**		**Underweight**	
		No.	**%**	**No.**	**%**	**No.**	**%**
6-23	199	1	0.5	22	11.1	23	11.6
24-59	382	12	3.1	82	21.5	94	24.6
Total	581	13	2.2	104	17.9	262	39.6
Statistical test		X2=3.046*, df=1, P=0.081				X2=13.854, df=1, P=0.000	

* Corrected (Yates)

Table 15b. Prevalence of underweight by age, based on weight-for-age z-scores in Lowland & Coastal Zone

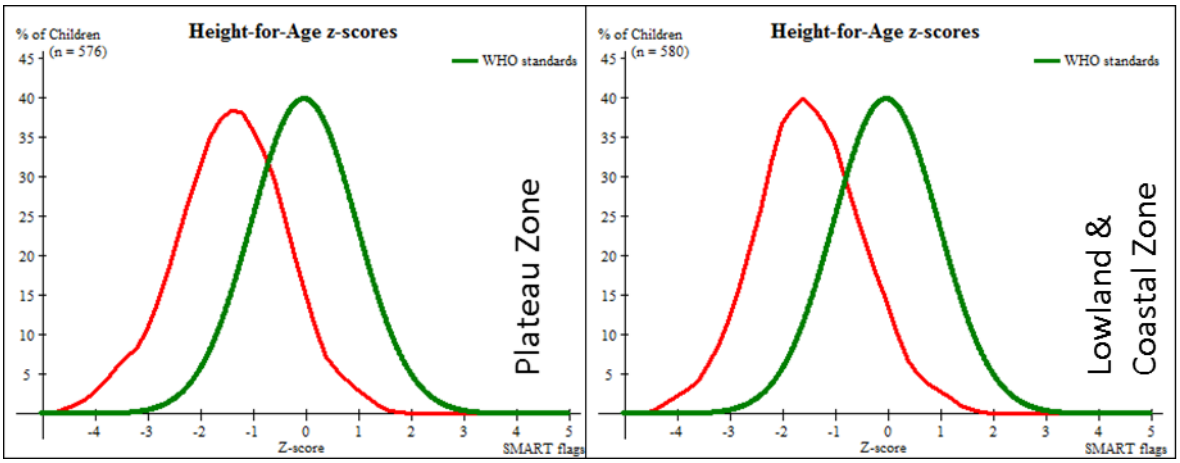
Age (months)	**Total no.**	**Severe underweight**		**Moderate underweight**		**Underweight**	
		No.	**%**	**No.**	**%**	**No.**	**%**
6-23	195	3	1.5	24	12.3	27	13.8
24-59	386	16	4.1	90	23.3	106	27.5
Total	581	19	3.3	114	19.6	133	22.9
Statistical test		X2=2.783, df=1, P=0.095				X2=13.605, df=1, P=0.000	

Stunting

The stunting prevalence was found as of 26.2% in Plateau Zone and 28.4% in Lowland & Coastal Zone. Severe stunting levels were found as 7.6% and 6% in Plateau Zone and Lowland & Coastal Zone respectively (Tables 16a and 16b). No significance differences was found between survey zones in both stunting and severe stunting. Boyes show higher levels than girls in the two survey zones, however the only significant difference found was that of severe stunting in the Plateau Zone

(X2=4.305, P<0.05). With these levels of stunting that exceed 40% but below 30%, Shabwa Governorate is classified as 'medium prevalence' according to WHO categorisation of the public health significance.

Figure 4. The survey children HAZ scores distribution vs the reference population in the two survey zones



Levels of stunting and severe stunting found by the current SMART survey were much lower than that reported by CFSS 2014 (37.2% stunting and 16.6% severe stunting), but much closer to that found by EFSNA 2016 (26.6% stunting and 6.9% severe stunting).

Table 16a. Prevalence of stunting based on height-for-age z-scores and by sex in Plateau Zone

	All **n = 576**	**Boys** **n = 280**	**Girls** **n = 296**
Prevalence of stunting	(151) 26.2 % (20.7 - 32.6 95% C.I.)	(81) 28.9 % (22.6 - 36.2 95% C.I.)	(70) 23.6 % (17.4 - 31.2 95% C.I.)
Prevalence of moderate stunting	(107) 18.6 % (14.2 - 24.0 95% C.I.)	(53) 18.9 % (13.9 - 25.3 95% C.I.)	(54) 18.2 % (13.1 - 24.8 95% C.I.)
Prevalence of severe stunting	(44) 7.6 % (5.0 - 11.6 95% C.I.)	(28) 10.0 % (6.6 - 14.8 95% C.I.)	(16) 5.4 % (3.1 - 9.3 95% C.I.)

Table 16b. Prevalence of stunting based on height-for-age z-scores and by sex in Lowland & Coastal Zone

	All **n = 580**	**Boys** **n = 298**	**Girls** **n = 282**
Prevalence of stunting	(165) 28.4 % (23.4 - 34.1 95% C.I.)	(88) 29.5 % (22.7 - 37.4 95% C.I.)	(77) 27.3 % (21.4 - 34.1 95% C.I.)
Prevalence of moderate stunting	(130) 22.4 % (18.0 - 27.5 95% C.I.)	(71) 23.8 % (18.5 - 30.1 95% C.I.)	(59) 20.9 % (15.9 - 27.1 95% C.I.)
Prevalence of severe stunting	(35) 6.0 % (4.2 - 8.6 95% C.I.)	(17) 5.7 % (2.9 - 11.0 95% C.I.)	(18) 6.4 % (3.7 - 10.7 95% C.I.)

Tables 17a and 17b shows that stunting is higher in children aged 24 to 59 months (28.2% and 30.6% in Plateau Zone and Lowland & Coastal Zone respectively) than in children aged 6 to 23 months (22.3% and 24.2% in Plateau Zone and Lowland & Coastal Zone respectively). However these differences are statistically insignificant.

Table 17a. Prevalence of stunting by age based on height-for-age z-scores in Plateau Zone

Age (months)	Total no.	Severe stunting		Moderate stunting		Stunting	
		No.	%	No.	%	No.	%
6-23	197	14	7.1	30	15.2	44	22.3
24-59	379	30	7.9	77	20.3	107	28.2
Total	576	44	7.6	107	18.6	151	26.2
Statistical test		X2=0.120, df=1, P=0.729				X2=2.331, df=1, P=0.167	

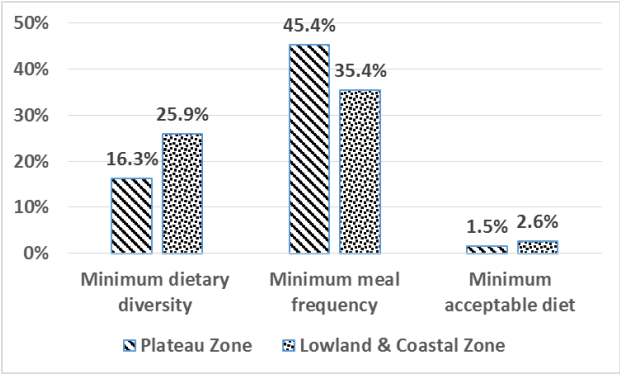
Table 17b. Prevalence of stunting by age based on height-for-age z-scores in Lowland & Coastal Zone

Age (months)	Total no.	Severe stunting		Moderate stunting		Stunting	
		No.	%	No.	%	No.	%
6-23	194	7	3.6	40	20.6	47	24.2
24-59	386	28	7.3	90	23.3	118	30.6
Total	580	35	6.0	130	22.4	165	28.4
Statistical test		X2=3.026, df=1, P=0.082				X2=2.552, df=1, P=0.110	

IYCF practices

Among all children aged 0 to 23 months, almost 71% and 67% who have been breastfed either exclusively or partially in the previous day to the survey in Plateau Zone and Lowland Zone respectively. Breastfeeding levels in Shabwa are lower than the national ones. Less than third of children are continuing the breastfeeding at the second year while exclusive breastfeeding ranged from 6.8% in Lowland & Coastal Zone to 7.1% in Plateau Zone.

Figure 5. Complementary feeding practice in children aged 6 to 23 months



The young child feeding practices has also been found as inappropriate with 16.3% and 25.9% of children aged 6 to 23 months in Plateau Zone and Lowland & Coastal Zone respectively who are receiving an accepted diversified diets (composed of 4 food groups or more). Around 45% and 35% of breastfed and on-breastfed children aged 6 to 23 months in Plateau Zone and Lowland & Coastal Zone respectively received the age appropriate number of meals, while levels of minimum acceptable diet are too low as less than 3% in the two survey zones (figure 5 and table 18).

Table 18. IYCF indicators

	Plateau Zone		Lowland & Coastal Zone	
Indicator	**N**	**% (95% CI)**	**N**	**% (95% CI)**
Breastfed yesterday	190	71.4 (65.6 – 76.8)	180	67.2 (61.2 – 72.8)
Exclusive breastfeeding	5	7.1 (2.4 – 15.9)	5	6.8 (2.2 – 15.1)
Continued breastfeeding at 1 year	37	82.2 (67.9 – 92.0)	21	56.8 (39.5 – 72.9)
Continued breastfeeding at 2 years	8	22.9 (10.4 – 40.1)	14	31.8 (18.6 – 47.6)

	Plateau Zone		Lowland & Coastal Zone	
Indicator	**N**	**% (95% CI)**	**N**	**% (95% CI)**
Minimum dietary diversity	32	16.3 (11.4 – 22.3)	50	25.9 (19.9 – 32.7)
Minimum meal frequency	89	45.4 (38.3 – 52.7)	68	35.4 (28.7 – 42.6)
Minimum acceptable diet	3	1.5 (0.3 – 4.4)	5	2.6 (0.9 – 6.0)

Child morbidity

Table 19 shows the prevalence of diarrhoea, ARI and fever within two weeks preceding the survey. Diarrhoea level around 21% shown by this survey is lower than those found by SMART surveys conducted in other governorates since 2012. It is lower than that shown by DHS 2013 for Shabwa Governorate (26.6%) and then the national level (31.2%). ARI and fever levels were found in the two survey zones were found high as 42% to 46% for ARI and 55% to 59% for fever which are higher than national levels those shown by the DHS 2013 (12.3% for ARI and 31.8% for fever)

Table 19. Child morbidity within the last two weeks prior to the survey

	Plateau Zone		Lowland & Coastal Zone	
Indicator	**N**	**% (95% CI)**	**N**	**% (95% CI)**
Diarrhoea	145	22.8 (19.6 – 26.3)	138	21.0 (18.0 – 24.4)
Acute respiratory infection	271	42.1 (38.2 – 46.0)	303	46.3 (42.4 – 50.2)
Fever	356	55.4 (51.4 – 59.2)	389	59.4 (55.5 – 36.2)

Vitamin A supplementation and child vaccination

Low coverage of vitamin A supplementation within the last 6 months among children aged 6 to 59 months as shown in table 20 (25% in Plateau Zone and 15% in Lowland & Coastal Zone). The reason behind this low levels is the postponing of the polio vaccination mass campaign from October 2016 to February 2017 that also jointly includes the mass vitamin A supplementation of all children aged 6 to 59 months. The routine polio vaccination was found significantly higher in Plateau Zone (61%) than in Lowland & Coastal Zone (44%). Similarly for measles vaccination that was found significantly higher in Plateau Zone (61%) than in Lowland & Coastal Zone (43%)

Table 20. Vitamin A supplementation and child vaccination

	Plateau Zone		Lowland & Coastal Zone	
Indicator	**N**	**% (95% CI)**	**N**	**% (95% CI)**
Vitamin A supplementation within the last 6 months (for children aged 96 to 59 months)	143	25.2 (21.7 – 29.0)	88	15.4 (12.6 – 18.7)
Routine polio vaccination (by card) among children aged 3 months and above	247	43.3 (39.2 – 47.4)	130	22.6 (19.3 – 26.3)
Routine polio vaccination (by recall) among children aged 3 months and above	103	18.0 (15.0 – 21.5)	120	20.9 (17.7 – 24.5)
Routine polio vaccination (by card and recall) among children aged 3 months and above	350	61.3 (57.1 – 65.3)	250	43.6 (39.5 – 47.7)

	Plateau Zone		Lowland & Coastal Zone	
Indicator	**N**	**% (95% CI)**	**N**	**% (95% CI)**
Measles vaccination (by card) among children aged 9 months and above	218	41.4 (37.1 – 45.7)	110	20.0 (16.8 – 23.6)
Measles vaccination (by recall) among children aged 9 months and above	103	19.5 (16.3 – 23.2)	126	22.9 (19.5 – 26.7)
Measles vaccination (by card and recall) among children aged 9 months and above	321	60.9 (56.6 – 65.1)	236	42.9 (38.7 – 47.2)

Women nutrition

Using the WFP Yemen MUAC cut offs for classifying acute malnutrition among women aged 15 to 49 years, table 21 shows that GAM and SAM level are 18.7% and 9.8% respectively in Plateau Zone and 19.7% and 11.6% respectively in Lowland & Coastal Zone. Lactating mothers have lower levels than pregnant women and other women who are neither lactating nor pregnant

Table 21. Acute malnutrition among women at child bearing age

Indicator	**Plateau Zone**		**Lowland & Coastal Zone**	
	Global acute malnutrition N (%) (95% CI)	**Severe acute malnutrition N (%) (95% CI)**	**Global acute malnutrition N (%) (95% CI)**	**Severe acute malnutrition N (%) (95% CI)**
Women at child bearing age (15 – 49 years)	202 (18.7) (16.4 - 21.2)	106 (9.8) (8.1 - 11.8)	199 (19.7) (17.3 – 22.3)	117 (11.6) (9.7 – 13.7)
Lactating mothers	28 (15.2) (8.5 - 17.1)	13 (7.1) (3.8 - 11.8)	34 (18.7) (13.3 – 25.1)	21 (11.5) (7.3 – 17.1)
Pregnant women	16 (17.0) (10.1 – 26.2)	9 (9.6) (4.5 – 17.4)	22 (24.4) (16.0 – 34.6)	16 (17.8) (10.5 – 27.3)
Neither lactating nor pregnant	165 (19.9) (17.2 – 22.9)	82 (10.5) (8.5 – 12.9)	143 (19.5) (16.7 – 22.6)	80 (10.9) (8.8 – 13.4)

Mortality

Using a recall period of 90 days, the crude death rate found in Plateau Zone is 0.16 (95% CI 0.07 – 0.34) per 10,000 per day and in Lowland & Coastal Zone is 0.24 (95% CI 0.11 – 0.53) per 10,000 per day. Under-five death rate has not been reported in this survey.

Associations of the nutritional status

Acute malnutrition

In Plateau Zone, acute malnutrition was found associated with existence of diarrhoea and ARI two weeks prior to the survey ($P<0.05$ and $P<0.01$ respectively). Lower levels were found in households those use improved latrines ($P<0.05$). For food consumption, those classified as 'poor' are the highest GAM levels ($P<0.05$) as shown in table 22. In this zone, severe acute malnutrition was only found associated with diarrhoea ($P<0.05$) as shown in table 23.

In **Lowland & Coastal Zone**, acute malnutrition was also found associated with latrine type and food consumption. Lower GAM levels were found among those use improved latrines (P<0.01) and those categorised as 'acceptable' food consumption (P<0.001). Lower GAM levels were also found in households with clean drinking water storage (P<0.05) as shown in table 22.

When MUAC was used to determine the acute malnutrition, the global acute malnutrition in **Plateau Zone** was found associated with diarrhoea, ARI and fever (P<0.05). GAM (by MUAC criteria) in this Zone was also found lower in households where caretakers are practising handwashing with soap after toilet (P<0.05). For **Lowland & Coastal Zone**, GAM (by MUAC criteria) was found lower in households where caretakers are practising handwashing with soap before meal (P<0.05) as shown in table 24.

Table 22. Associations of acute malnutrition (by WHZ)

Indicator	Global acute malnutrition (by WHZ)		Statistical test
	N	%	
Plateau Zone			
Diarrhoea (n=564)			X2=4.186, df=1, P=0.041
Yes (n=134)	13	9.7	
No (n=430)	21	4.9	
ARI (n=570)			X2=7.481, df=1, P=0.006
Yes (n=248)	23	9.3	
No (n=322)	12	3.7	
Latrine type (n=580)			X2=4.177, df=1, P=0.041
Improved (n=289)	12	4.2	
Unimproved (n=291)	24	8.2	
FCS category (n=580)			X2=6.634, df=2, P=0.036
Acceptable (n=174)	7	4.0	
borderline (n=170)	7	4.1	
Poor (n=236)	22	9.3	
Lowland & Coastal Zone			
Cleanness of drinking water storage (n=579)			X2=6.446, df=1, P=0.011
Yes (n=478)	34	7.1	
No (n=101)	15	14.9	
Latrine type (n=579)			X2=7.155, df=1, P=0.007
Improved (n=221)	10	4.5	
Unimproved (n=358)	39	10.9	
FCS category (n=579)			X2=14.819, df=2, P=0.0006
Acceptable (n=293)	12	4.1	
borderline (n=201)	27	13.4	
Poor (n=85)	10	11.8	

Table 23. Associations of severe acute malnutrition (by WHZ)

Indicator	Severe acute malnutrition (by WHZ)		Statistical test
	N	%	
Plateau			
Diarrhoea (n=564) Yes (n=135) No (n=429)	 3 0	 2.2 0.0	X2=5.844*, df=1, P=0.016

* Yates' chi-square

Table 24. Associations of acute malnutrition (by MUAC)

Indicator	Global acute malnutrition (by MUAC)		Statistical test
	N	%	
Plateau Zone			
Diarrhoea (n=564) Yes (n=135) No (n=429)	 6 5	 4.4 1.2	X2=4.186*, df=1, P=0.041
ARI (n=570) Yes (n=249) No (n=321)	 9 3	 3.6 0.9	X2=4.887, df=1, P=0.027
Fever (n=570) Yes (n=316) No (n=254)	 11 1	 3.5 0.4	X2=6.512, df=1, P=0.011
Washing hand after toilet (n=539) Yes (n=261) No (n=278)	 2 10	 0.8 3.6	X2=4.956, df=1, P=0.026
Lowland & Coastal Zone			
Washing hand before meal (n=537) Yes (n=344) No (n=193)	 3 8	 0.9 4.1	X2=5.070*, df=1, P=0.024

* Yates' chi-square

Underweight

In **Plateau Zone**, ARI is the only sickness that was found associated with underweight and severe underweight (P<0.01 and P<0.05 respectively). Higher levels of underweight were found in children of illiterate or lower education caretakers (P<0.01). Associations of underweight were also found significant with using of improved drinking water sources (P<0.01) and using of improved latrines (P<0.05). For household expenditures, higher rates of underweight were found in households of the lowest and the second quintiles (P<0.05), while for food consumption, higher rates were found in households those classified as 'poor' consumption (food insecure households) (P<0.01). Both underweight and severe underweight were found higher in households where caretakers have not mentioned handwashing after toilet P<0.05), while only washing hand before meal was associated

only with lower levels with underweight (P<0.01) but has not significant association with severe cases. Details are presented in tables 25 and 26.

In **Lowland & Coastal Zone**, the prevalence of underweight was found higher in rural areas (25.1% than in urban areas (15.0%) (P<0.05). Unlike in Plateau Zone, diarrhoea is the only sickness that showed association with severe underweight (P<0.05) but not the overall underweight. Lower underweight levels were found in households with clean drinking water storage (P<0.001). Lower underweight and severe levels were found in households those use improved drinking water sources (P<0.05), while using of improved latrine is associated with lower levels if underweight (P<0.05) but not severe underweight. Food secure households show lower levels of both underweight and severe underweight (P<0.001. Details are presented in tables 25 and 26.

Table 25. Associations of underweight

Indicator	**Underweight**		**Statistical test**
	N	**%**	
Plateau Zone			
ARI (n=571)			X2=11.823, df=1, P=0.001
Yes (n=249)	66	26.5	
No (n=322)	48	14.9	
Household caretaker education (n=581)			X2=13.717*, df=4, P=0.008
Illiterate (n=412)	100	24.3	
Read and write (n=139)	14	10.1	
Basic education (n=17)	3	17.6	
Secondary education (n=10)	0	0.0	
Higher education (n=3)	0	0.0	
Drinking water source type (n=568)			X2=10.382, df=1, P=0.001
Improved (n=230)	30	13.0	
Unimproved (n=338)	81	24.0	
Latrine type (n=581)			X2=6.37, df=1, P=0.012
Improved (n=289)	46	15.9	
Unimproved (n=292)	71	24.3	
Expenditure quintile (n=573)			X2=13.0509, df=4, P=0.011
Lowest (n=74)	19	25.7	
Second (n=125)	37	29.6	
Middle (n=89)	15	16.9	
Fourth (n=96)	18	18.8	
Highest (n=189)	27	14.3	
FCS category (n=581)			X2=9.355, df=2, P=0.009
Acceptable (n=175)	27	15.4	
borderline (n=170)	28	16.5	
Poor (n=236)	62	26.3	

Indicator	Underweight		Statistical test
	N	%	
Washing hand after toilet (n=540)			X2=6.139, df=1, P=0.013
Yes (n=262)	40	15.3	
No (n=278)	66	23.7	
Washing hand before meal (n=540)			X2=7.929, df=1, P=0.005
Yes (n=310)	48	15.5	
No (n=230)	58	25.2	
Lowland & Coastal Zone			
Type of residence (n=581)			X2=5.792, df=1, P=0.016
Rural (n=454)	114	25.1	
Urban (n=127)	19	15.0	
Cleanness of drinking water storage (n=581)			X2=19.344, df=1, P=0.0000
Yes (n=480)	93	19.4	
No (n=101)	40	39.6	
Drinking water source type (n=581)			X2=6.257, df=1, P=0.012
Improved (n=372)	73	19.6	
Unimproved (n=209)	60	28.7	
Latrine type (n=581)			X2=5.558, df=1, P=0.018
Improved (n=221)	39	17.6	
Unimproved (n=360)	94	26.1	
FCS category (n=581)			X2=19.804, df=2, P=0.0001
Acceptable (n=294)	45	15.3	
borderline (n=202)	64	31.7	
Poor (n=85)	24	28.2	

* Yates' chi-square

Table 26. Associations of severe underweight

Indicator	Severe underweight		Statistical test
	N	%	
Plateau Zone			
ARI (n=571)			X2=6.004, df=1, P=0.014
Yes (n=249)	10	4.0	
No (n=322)	3	0.9	
Washing hand after toilet (n=540)			X2=4.137, df=1, P=0.042
Yes (n=262)	2	0.8	
No (n=278)	9	3.2	
Lowland & Coastal Zone			

Indicator	Severe underweight		Statistical test
	N	%	
Diarrhoea (n=579)			X2=4.634*, df=1, P=0.031
Yes (n=116)	8	6.9	
No (n=463)	11	2.4	
Drinking water source type (n=581)			X2=4.099, df=1, P=0.043
Improved (n=372)	8	2.2	
Unimproved (n=209)	11	5.3	
FCS category (n=581)			X2=14.382*, df=2, P=0.0008
Acceptable (n=294)	3	1.0	
borderline (n=202)	15	7.4	
Poor (n=85)	1	1.2	

* Yates' chi-square

Stunting

In **Plateau Zone**, ARI is the only sickness associated with stunting (P<0.01). Stunting levels were also found higher among children living in households with expenditures at lowest and second quintiles (P<0.01). For association with WASH indicators, lower levels of stunting and severe stunting were found associated with improved drinking water sources (P<0.01), while using of improved latrines was found associated with lower levels of severe stunting (P<0.05). Washing hand before meal was found associated with lower levels of both stunting and severe stunting (P<0.01) while washing hand after toilet was found associated only with lower levels of severe stunting (P<0.01. Details are presented in tables 27 and 28.

In **Lowland & Coastal Zone**, more cases of stunting were found in rural areas than in urbans (P<0.01). Higher stunting levels were also seen in household those reported partial of full loss of income (P<0.05). For WASH indicators, improved drinking water sources were found associated with lower levels of stunting and severe stunting levels (P<0.001 and P<0.05 respectively), while cleanness of drinking water storage was fond associated with lower levels of stunting (P<0.001). Household with acceptable FCS (food secure) were found with lower levels of stunting than food insecure households (P<0.01). Details are presented in tables 27 and 28.

Table 27. Associations of stunting

Indicator	Stunting		Statistical test
	N	%	
Plateau Zone			
ARI (n=566)			X2=9.148, df=1, P=0.002
Yes (n=246)	80	32.5	
No (n=320)	68	21.3	
Drinking water source type (n=563)			X2=8.494, df=1, P=0.004
Improved (n=227)	44	19.4	
Unimproved (n=336)	102	30.4	
Expenditure quintile (n=569)			X2=14.393, df=4, P=0.0061
Lowest (n=74)	26	35.1	
Second (n=124)	44	35.5	
Middle (n=89)	21	23.6	
Fourth (n=96)	23	24.0	
Highest (n=186)	35	18.8	
Washing hand before meal (n=535)			X2=6.713, df=1, P=0.0096
Yes (n=305)	63	20.7	
No (n=230)	70	30.4	
Lowland & Coastal Zone			
Type of residence (n=580)			X2=9.548, df=1, P=0.002
Rural (n=454)	143	31.5	
Urban (n=126)	22	17.5	
Loss of income (n=570)			X2=4.952, df=1, P=0.026
Yes (n=484)	147	30.4	
No (n=86)	16	18.6	
Cleanness of drinking water storage (n=580)			X2=26.639, df=1, P=0.0000
Yes (n=479)	115	24.0	
No (n=101)	50	49.5	
Drinking water source type (n=580)			X2=14.035, df=1, P=0.0002
Improved (n=371)	86	23.2	
Unimproved (n=209)	79	37.8	
FCS category (n=580)			X2=11.025, df=2, P=0.004
Acceptable (n=294)	66	22.4	
borderline (n=201)	72	35.8	
Poor (n=85)	27	31.8	

Table 28. Associations of severe stunting

Indicator	Severe stunting		Statistical test
	N	%	
Plateau Zone			
Drinking water source type (n=563) Improved (n=227) Unimproved (n=336)	 8 32	 3.5 9.5	X2=7.389, df=1, P=0.007
Latrine type (n=576) Improved (n=286) Unimproved (n=290)	 14 30	 4.9 10.3	X2=6.061, df=1, P=0.014
Washing hand after toilet (n=535) Yes (n=259) No (n=276)	 12 30	 4.6 10.9	X2=7.183, df=1, P=0.007
Washing hand before meal (n=535) Yes (n=305) No (n=230)	 16 26	 5.2 11.3	X2=6.653, df=1, P=0.0099
Lowland & Coastal Zone			
Drinking water source type (n=580) Improved (n=371) Unimproved (n=209)	 16 19	 4.3 9.1	X2=5.383, df=1, P=0.020

As a summary of all associations explained above, table 29 presents all determinants and background factors related to household, household caretaker and child and the type of association (if existed) either negative or positive.

Table 29. Summary of associations of different malnutrition forms with different determinants included in the survey

Determinants	GAM (by WHZ)	SAM (by WHZ)	GAM (by MUAC)	SAM (by MUAC)	Underweight	Severe underweight	Stunting	Severe stunting
Plateau Zone								
ARI	+	○	+	○	+	+	+	○
Diarrhoea	+	+	+	○	○	○	○	○
Using improved drinking water source type	○	○	○	○	-	○	-	-
Expenditure quintile	○	○	○	○	-	○	-	○
Food insecurity (using FCS)	+	○	○	○	+	○	○	○
Fever	○	○	+	○	○	○	○	○

Determinants	GAM (by WHZ)	SAM (by WHZ)	GAM (by MUAC)	SAM (by MUAC)	Underweight	Severe underweight	Stunting	Severe stunting
Household caretaker education	○	○	○	○	-	○	○	○
Using improved latrine type	-	○	○	○	-	○	○	-
Washing hand after toilet	○	○	-	○	-	-	○	-
Washing hand before meal	○	○	○	○	-	○	-	-
Lowland & Coastal Zone								
Cleanness of drinking water storage	-	○	○	○	-	○	-	○
Diarrhoea	○	○	○	○	○	+	○	○
Using improved drinking water source type	○	○	○	○	-	-	-	-
Food insecurity (using FCS)	+	○	○	○	+	+	+	○
Using improved latrine type	-	○	○	○	-	○	○	○
Loss of income	○	○	○	○	○	○	+	○
Type of residence (being rural)	○	○	○	○	+	○	+	○
Washing hand after toilet	○	○	-	○	○	○	○	○

Child nutrition in related to mother nutrition

In **Plateau Zone**, more stunting levels were found in children of wasted mothers (P<0.05). In **Lowland & Coastal Zone**, both GAM and SAM as defined by WHZ were found higher in children of wasted mothers (P<0.001 and P<0.05 respectively). GAM as defined by MUAC was also found higher in children of wasted mothers (P<0.01). Similarly, higher underweight and severe underweight levels were found in children of wasted mothers (P<0.01). Details are presented in tables 30.

Table 30. Associations of mother and child malnutrition

Indicator	N	%	Statistical test
Plateau Zone			
	Stunting		
Wasting among mothers (n=566) Yes (n=92) No (n=474)	 33 114	 35.9 24.1	X2=5.598, df=1, P=0.018

Indicator	N	%	Statistical test
Lowland & Coastal Zone			
	Global acute malnutrition (by WHZ)		
Wasting among mothers (n=569) Yes (n=100) No (n=469)	 19 29	 19.0 6.2	X2=17.529, df=1, P=0.0000
	Severe acute malnutrition (by WHZ)		
Wasting among mothers (n=569) Yes (n=100) No (n=469)	 3 1	 3.0 0.2	X2=5.613*, df=1, P=0.018
	Global acute malnutrition (by MUAC)		
Wasting among mothers (n=571) Yes (n=100) No (n=471)	 7 8	 7.0 1.7	X2=7.109*, df=1, P=0.008
	Underweight		
Wasting among mothers (n=571) Yes (n=100) No (n=471)	 33 96	 33.0 20.4	X2=7.51, df=1, P=0.006
	Severe underweight		
Wasting among mothers (n=571) Yes (n=100) No (n=471)	 9 10	 9.0 2.1	X2=10.083*, df=1, P=0.001

* Yates' chi-square

Recommendations

The survey reported almost same malnutrition level in both zones. Acute malnutrition was ranged from 6.2% to 8.5%, underweight from 20.1% to 22.9% and stunting from 26.2% to 28.4%. These levels are classified as poor for acute malnutrition, high prevalence for underweight and medium prevalence for stunting. Infant and young child feeding practices are extremely poor and even below the national levels. Vitamin A supplementation during the last 6 months was found only in every fourth child. More than the half of children were suffering from diarrhoea, respiratory infection and/or fever.

Socioeconomic situation was found poor, with illiteracy rate of more than 70% of household caretakers (mostly women), and with expenditure rate of less than US$ 7 per day for a house hold with average 9 members.

Three out of 5 households are using unimproved drinking water source and more than 50% are using unimproved latrine facilities. Only half of household caretakers were found practicing hand washing with water and soup after toilet and little more of ere found practicing hand washing before meal. Malnutrition among women at child bearing age was found in every fifth woman.

Child nutrition status was found associated with morbidity (especially acute malnutrition and diarrhoea in children aged 24 to 59 months in Plateau Zone). Acute malnutrition and underweight levels were found associated with type of drinking water sources, cleanness of drinking water storage, type of latrine, hand washing after toilet and before meal, expenditure, food consumption score (food security level), and caretaker education.

Concerning these findings and the general situation of the country during the current crisis the following recommendations can be suggested to be translated to proper action points:

- The poor Infant and young child feeding practices should be addressed through intensive education campaigns targeted schools, women movements and other community platforms. Education of communities on using local available foods for feeding young child is critically required.
- WASH interventions including those made through C4D activities are required, to improve levels of utilization improved latrines, improved drinking water sources, and mobilise for hand washing to be a regular practice by household members. C4D activities should include prevention of child illnesses particularly ARI and diarrhoeal diseases
- Expansion the CMAM programme is required especially for the SAM treatment components (OTP and TFC) as this is a lifesaving service which is very important to be provided in conflict times.
- Support is needed to assure supplement children with vitamin A every six months with the aim to achieving minimal levels stated by Sphere Standards.
- For future surveys in Shabwa, there is no need to divide the governorate into two survey zones. The Governorate can be considered as one survey stratum.

Global, moderate and severe acute malnutrition prevalence used for caseload calculation

For CMAM programme planning purposes, the child is considered acutely malnourished in case at least one of the three criteria is existed, the first one is the WHZ below -2, the second is the existence of oedema, and the third is the child mid-upper arm circumference (MUAC) is below 125 mm. Similarly for severely acute malnutrition (SAM), the child is considered SAM if his WHZ is below -3, and/or the oedema is existed, and the third is the child MUAC is below 125 mm. Such analysis is crucial for calculation of caseload and for programme planning purposes. Table 31 shows combined acute malnutrition figures at the zone level as well the weighted ones for the governorate level.

Table 31. Combined acute malnutrition (based on WHZ and MUAC) for CMAM Planning purposes

		N	%	95% Confidence Limits	
				Lower	Upper
Plateau (n = 582) (Unweighted)	Moderate	36	6.2%	4.4%	8.5%
	Severe	7	1.2%	0.5%	2.6%
	Moderate and Severe	43	7.4%	5.5%	9.9%
Lowland & Coastal (n = 581) (Unweighted)	Moderate	49	8.4%	6.4%	11.1%
	Severe	8	1.4%	0.6%	2.8%
	Moderate and Severe	57	9.8%	7.6%	12.6%
Shabwa (n = 1163) (Weighted)	Moderate	76	6.5%	4.7%	8.9%
	Severe	14	1.2%	0.5%	2.6%
	Moderate and Severe	90	7.7%	5.8%	10.3%

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Annexes

Annex 1: Shabwa January 2017 Nutrition Survey Questionnaire

استبيان رقم: .....

الجمهورية اليمنية
وزارة الصحة العامة والسكان
مكتب الصحة العامة والسكان بمحافظة .....

تقييم الحالة التغذوية والوفيات في محافظة .....، شهر 2017م

استبيان الأسرة (نموذج 1)

أولاً. يتم الشرح للساكنين في المسكن (البالغين منهم) عن التقييم والتعريف بالجهة القائمة عليه والأشخاص العاملين فيه (أعضاء الفريق)، ثم بعد ذلك الحصول على الموافقة الشفهية منهم.

الموافقة			
	.1	نعم	
انتقل إلى الصفحة التالية	.2	لا	

هل الأسرة مقيمة أم نازحة؟

.1	مقيمة.	
.2	نازحة	

في حال الأسرة المقيمة. هل تقيم معكم اسرة أو اسر نازحة؟

.1	نعم	في حال وجود اسرة نازحة تعيش مع اسرة مقيمة فينبغي تعبئة بيانات الاسرتين في استبيانين منفصلين عدا استمارة الوفيات فيجب ان تكون استمارة واحدة للأسرتين، وترفق مع استبيان الأسرة المقيمة.
.2	لا	

المديرية	العزلة	القرية/ الحارة

تاريخ المقابلة	يوم	شهر	سنة				رقم مسلسل الأسرة بحسب حصر العينة	
		Ø	2	Ø	1	7		

اسم رب الأسرة:	

فريق التقييم رقم	الفريق	الاسم	التوقيع
	الباحثة 1		
	الباحثة 2		
	رئيس الفريق		
	المشرف الميداني		

بين فيما إذا كان هناك:

.1	غياب الأسرة عند الزيارة الأولى ويتطلب الأمر زيارة ثانية	
.2	غياب طفل عند الزيارة الأولى ويتطلب الأمر زيارة ثانية*	

* عند غياب الطفل، تستكمل كل بياناته عدا القياسات الإنثروبومترية والأوديما حيث تستكمل عند حضوره.

ملاحظة: البيانات في الغلاف هي للاستخدام الميداني والإداري من قبل أعضاء الفريق.

استبيان رقم: .....

يملئ من قبل رئيس الفريق (تستخدم لإدخال البيانات)

تاريخ المقابلة	يوم		شهر		سنـــــة			
			Ø		2	Ø	1	7

رقم الفريق	

رمز القرية / الحارة		رمز العزلة		
رمز المديرية		رمز المحافظة		
رقم طبقة التقييم		رقم العنقود		

هل المنطقة حضرية (1) أم ريفية (2)	

غياب الأسرة حتى بعد الزيارة الثانية (1 نعم ، 2 لا)	
الموافقة (1 نعم ، 2 لا) إذا (لا) إنتقل إلى الأسرة التالية	

رقم استبيان الأسرة			
الاسرة مقيمة (1) أم نازحة (2)			
في حال الاسرة المقيمة، هل تأوي اسرة نازحة (1 نعم ، 2 لا)			
مسلسل الأسرة النازحة			

العمل المكتبي

	الاسم	اليوم		الشهر		السنة			
مدخل البيانات									
مدخل البيانات									
المراجعة									

الملاحظات

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استبيان رقم: .....

س 001: بيانات عن الأسرة (الأحياء فقط والذين يعيشون حاليا في الأسرة)

H001a	عدد أفراد الأسرة (الأحياء فقط الذين يعيشون حاليا في الأسرة يوم الزيارة)	العدد	
H001b	عدد الأطفال أقل من 5 سنوات (الأحياء فقط الذين يعيشون حاليا في الأسرة يوم الزيارة)	العدد	
H001c	عدد الأطفال أقل من 6 أشهر (الأحياء فقط الذين يعيشون حاليا في الأسرة يوم الزيارة)	العدد	
H001d	عدد النساء بسن 15 – 49 عاما (الأحياء فقط اللاتي يعشن حاليا في الأسرة يوم الزيارة)	العدد	

س 002: بيانات عن جنس رب الأسرة (الشخص الذي يتكفل بالإنفاق على الأسرة)

H002	ما نوع رب الأسرة		
	1.	ذكر	
	2.	أنثى	

س 003 – س 005: بيانات عن راعي الأسرة (الشخص الذي يقوم برعاية الأسرة وخصوصا الأطفال)

H003	ما نوع راعي الأسرة		
	1.	ذكر.	
	2.	أنثى.	

H004	الحالة الاجتماعية لراعي الأسرة		
	1.	متزوج .	
	2.	أرمل.	
	3.	مطلق.	
	4.	حانق.	
	5.	عازب.	

H005	المستوى التعليمي لراعي الأسرة		
	1.	أمي.	
	2.	يقرأ ويكتب.	
	3.	تعليم أساسي.	
	4.	تعليم ثانوي.	
	5.	تعليم عالي (جامعة أو كلية أو معهد).	

استبيان رقم: .....

س 006 – س 007: بيانات عن دخل الأسرة وإنفاقها

H006	هل تأثر دخل الأسرة منذ .....(تحدد الفترة)؟			
	1.	نعم.		
	2.	لا .		
	3.	لا أعرف .		

H007	كم متوسط (الإنفاق) المصروف للأسرة بالريال؟		قيمة الإنفاق (ريال)	
	1.	الإنفاق اليومي		
	2.	الإنفاق الأسبوعي		
	3.	الإنفاق الشهري		
		الإجمالي		

س 008 – س 013: بيانات عن الماء والإصحاح البيئي والنظافة

H008	ما هو المصدر الرئيسي لمياه الشرب في منزلكم؟ (خيار واحد فقط)			إنتقل إلى
	1.	مشروع مياه موصل إلى المنازل (حكومية أو خاصة)		
	2.	حنفية عامة /نقطة مياه مجتمعية / مياه السبيل		
	3.	بئر ارتوازية		
	4.	بئر مغطاة		
	5.	بئر غير محمي		
	6.	عين مغطاة		
	7.	عين ماء غير محمية		
	8.	مياه معالجة (معدني أو كوثر)		H010 ←
	9.	مياه سطحية جدول/ غيل/ قنوات ري		
	10.	تجميع مياه الأمطار محمية		
	11.	تجميع مياه الأمطار غير محمية (صهاريج مياه / بركة/ ماجل)		
	12.	وايتات أو عربات نقل المياه		
	13.	أخرى: تذكر		

H009a	هل تقومون بمعالجة الماء قبل الشرب؟			انتقل إلى
	1.	نعم		
	2.	لا		H010 ←
	3.	لا أعرف		H010 ←

H009b	ماهي طريقة المعالجة الرئيسية المستخدمة لمياه الشرب (خيار واحد فقط)			
	.1	غلي الماء قبل الشرب		
	.2	استخدام الكلور		
	.3	الترشيح عبر قماش نظيف		
	.4	استخدام مرشح سيراميك أو رمل أو ما شابه (فلتر أو قطارة)		
	.5	ترك الماء ساكنا قبل الشرب لترسيب الشوائب.		
	.6	استخدام الشب (شب الفؤاد)		
	.7	أخرى: تذكر		

H010	للملاحظة: تحقق من توفر نقاط تخزين المياه لغرض الشرب: هل الوعاء الحاوي لمياه الشرب نظيف؟			
	.1	نعم. (عدم وجود طحالب)		
	.2	لا. (وجود طحالب)		

H011	اين تتم عملية قضاء الحاجة (التبرز)؟ (اختر فقرة من التالي)- تحقق من توفر المرافق والممارسات			
	.1	مرحاض - يتوفر فيه صب الماء للتنظيف الذاتي (سيفون أو دلو) إلى مجاري عمومية.		
	.2	مرحاض - يتوفر فيه صب الماء للتنظيف الذاتي (سيفون أو دلو) إلى بيارة.		
	.3	مرحاض - يتوفر فيه صب الماء للتنظيف الذاتي (سيفون أو دلو) إلى حفرة مرحاض.		
	.4	مرحاض - يتوفر فيه صب الماء للتنظيف الذاتي (سيفون أو دلو) إلى العراء.		
	.5	مرحاض - يتوفر فيه صب الماء للتنظيف الذاتي (سيفون أو دلو) إلى مكان غير معروف.		
	.6	حفرة مرحاض محسنة مهواه		
	.7	حفرة مرحاض بلوح		
	.8	حفرة مرحاض بدون لوح/ غير مغطاة		
	.9	مرحاض سماد		
	.1Ø	دلو		
	.11	مرحاض معلق		
	.12	قضاء الحاجة في العراء (في الحقول مثلا، الخ.)		
	.13	أخرى: تذكر		

H012	متى تقومين بغسل اليدين (سجل فقط في حالة ذكر احدى الحالتين أو كلتيهما)؟		1. ذكرت 2. لم تذكر	في حالة عدم ذكر اي من الحالتين يتم الانتقال إلى H014
	a.	بعد قضاء الحاجة.		
	b.	قبل الأكل.		

H013	بم تغسلين يديك ؟		1. نعم 2. لا	
	a.	الماء فقط		
	b.	الماء مع الصابون (قطعة/ مسحوق/ سائل/ عجينة) .		
	c.	الماء مع الرماد/ التراب/ القضاض/ أوراق الشجر.		

س 014 – س 016: الاستهلاك الغذائي وأليات التكيف

		هل تناولت الأسرة أي من الأغذية أو المجموعات الغذائية أدناه. في العمود الأول تكون الإجابة بنعم أو لا (1 أو2) في العمود الثاني تكون الإجابة عدد الايام خلال السبعة ايام الماضية. (سجل صفر في حالة عدم التناول)	H014a هل تناولت الاسرة خلال الـ 7 أيام الماضية 1. نعم 2. لا إذا لا إنتقل للخيار التالي	H014b إذا الإجابة نعم في السؤال السابق كم عدد الأيام التي تناولتها الأسرة خلال الـ 7 أيام الماضية؟ (الإجابة هي من 1 إلى 7)
H014	a.	بر، خبز، عصيد، فتة، حبوب أخرى (ذرة، ذرة رفيعة، دخن، شعير)، معجنات، او اي منتجات مصنعة من الحبوب		
	b.	أرز أو مكرونة		
	c.	بطاط		
	d.	خضراوات (الخضراوات الورقية، الطماطم، الفلفل، جزر، دبا..... الخ)		
	e.	فواكه (مانجو، موز , عنب، ..... الخ)		
	f.	لحم (بقري، غنمي)، كبدة، كلاوي ، دواجن		
	g.	الدواجن		
	h.	بيض		
	i.	أسماك (طازجة ومجففة ومعلبة)		
	j.	بقوليات (فاصوليا، عدس، بازيليا، فول، .....)		
	k.	مشتقات الحليب (لبن، جبن، زبادي، حقين، .....)		
	l.	زيوت/ دهون (سمن، زبدة، زيت نباتي، ....)		
	m.	سكر , حلويات ، عسل، فواكه مجففة (تمر، زبيب)		
	n.	بهارات، شاي، بن		

		خلال الـ7 ايام الماضية هل صادف أن الأسرة لم تكن تمتلك غذاءاً كافيا أو مالاً كافياً لشراء الغذاء اللازم لها؟	أنتقل إلى
H015a	1.	نعم.	
	2.	لا.	H016 ←

		كم عدد الأيام خلال الـ7 ايام الماضية التي لجأت فيها الأسرة إلى أيا من الإجراءات أدناه بسبب أنها لم تكن تمتلك غذاءاً كافيا أو مالاً كافياً لشراء الغذاء اللازم لها؟	عدد الأيام (الإجابة هي من Ø إلى 7)
H015b	a.	الاعتماد على طعام رديء أو أقل كلفة.	
	b.	اقتراض الطعام أو الاعتماد على مساعدات الأهل والأصدقاء.	
	c.	خفض كمية الطعام المقدم في الوجبات الرئيسية.	
	d.	تقليص وجبات البالغين في الأسرة من أجل توفير الطعام للأطفال	

	e.	خفض عدد الوجبات اليومية		
	f.	شراء الطعام بالدين أو الرهن		
	g.	جمع أطعمة من الأحراش أو حصاد مزروعات غير جاهزة للحصاد		
	h.	استهلاك بذور زراعة الموسم القادم		
	i.	إرسال أفراد الأسرة لتناول الطعام في مكان آخر		
	j.	إرسال أفراد الأسرة للتسول		
	k.	قضاء يوم كامل بدون طعام		

H016		هل قام أيا من أفراد الأسرة بالإجراءات التالية لمواجهة شحة الغذاء خلال الـ 30 يوم الماضية ؟. يرجى تعبئة كل الخانات كالتالي:- (0) مطلقا (1) نادراً (مرة أو مرتين خلال الـ 30 يوم الماضية). (2) أحيانا (من 3 – 10 مرات خلال الـ 30 يوم الماضية). (3) دائما (كثر من 10 مرات خلال الـ 30 يوم الماضية).	Ø . مطلقاً 1. نادراً 2. أحياناً 3. دائماً	
	a.	بيع أصول/ مقتنيات الأسرة (الأثاث والمجوهرات والملابس ..الخ).		
	b.	شراء الطعام بالدين أو الرهن نظراً لعدم امتلاك المال وقت الشراء.		
	c.	إنفاق المدخرات.		
	d.	اقتراض المال.		
	e.	بيع الأصول الإنتاجية أو وسائل النقل (ماكينة الخياطة أو السيارة أو الدراجة ... الخ).		
	f.	استهلاك مخزون البذور المحفوظ للموسم القادم)		
	g.	سحب الأطفال من المدارس.		
	h.	بيع المنزل أو الأرض.		
	i.	التسول.		
	j.	بيع آخر إناث الماشية التي لديها		
	k.	التقليل من الإنفاق على التعليم والصحة (بما في ذلك الأدوية)		

رقم إستبيان الأسرة: .....

س 017 – س 021 : محيط الذراع للنساء في سن الإنجاب عمر (15 – 49 عاما)

		W017	W018	W019	W020	W021
رقم المرأة	الاسم الأول للمرأة	عمر المرأة (بالسنوات)	الحالة الاجتماعية:- 1 = متزوجة 2= أرمل 3= مطلق 4= حانق 5 = عازبة إذا كانت الإجابة (5 = عازبة) إنتقل إلى W021	وضع المرأة الآن:- 1 = حامل 2 = مرضع 3= لا حامل ولا مرضع	قياس محيط الذراع (سم) (الميواك) 88.8 = رافض 99.9 = غائب	كم الوقت الذي قضته المرأة خارج المنزل يوم أمس ؟ دقيقة . ساعة
.1					.	
.2					.	
.3					.	
.4					.	
.5					.	
.6					.	
.7					.	
.8					.	
.9					.	
.10					.	

رقم إستبيان الأسرة: .....

س 022 – س 024: سن الأطفال (يجب تدوين كل الأطفال من عمر 0 إلى أقل من 5 سنوات في الجدول أدناه ابتداء بالأكبر سنا)

رقم الطفل	الاسم الأول للطفل	C022 نوع الطفل 1= ذكر 2 = أنثى	C023 رقم المرأة (أم أو راعية الطفل يؤخذ من صفحة المرأة)	C024a تاريخ الميلاد (بالهجري أو الميلادي) للأطفال من سن (0 إلى 59) شهر	C024b عمر الطفل (بالأشهر)	ماذا قالت الأم عن سن الطفل ؟
.1				يوم شهر سنـــة		
.2				يوم شهر سنـــة		
.3				يوم شهر سنـــة		
.4				يوم شهر سنـــة		
.5				يوم شهر سنـــة		
.6				يوم شهر سنـــة		
.7				يوم شهر سنـــة		
.8				يوم شهر سنـــة		

رقم إستبيان الأسرة: .....

س 025 – س 027: القياسات الجسمانية للأطفال بين سن 6-59 شهر في الأسرة (يترك فارغاً للأطفال أقل من 6 أشهر)

			C025	C026	C027
رقم الطفل (ينقل من الصفحة السابقة)	الاسم الأول للطفل (من الصفحة السابقة)	عمر الطفل (بالأشهر) (من الصفحة السابقة)	الوزن (كجم.جم) 88.8 = رافض 99.9 = غائب	الطول (سم.مم) 888.8 = رافض 999.9 = غائب	قياس محيط الذراع (سم.مم) (الميواك) 88.8 = رافض 99.9 = غائب
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رقم إستبيان الأسرة: .....

س 028 – س 034: التوذم والتحصين والمراضة الأطفال بين سن 0-59 شهر في الأسرة (كل الأطفال تحت سن 5 سنوات)

			لجميع الأطفال من عمر 0 – 59 شهر				للأطفال بعمر 6 أشهر فأكثر	بعمر 9 أشهر فأكثر	
رقم الطفل (ينقل من الصفحة السابقة)	الاسم الأول للطفل (من الصفحة السابقة)	عمر الطفل (بالأشهر) (من الصفحة السابقة)	C028 التوذم (أوديما) في كلا القدمين 1 = نعم 2 = لا 8 = رافض 9 = غائب	C029 الإسهال * خلال الأسبوعين الماضيين 1 = نعم 2 = لا	C030 سعال أو صعوبة في التنفس خلال الأسبوعين الماضيين 1 = نعم 2 = لا	C031 الحمى خلال الأسبوعين الماضيين 1 = نعم 2 = لا	C032 هل تم إعطاء فيتامين (ا) خلال الستة أشهر الماضية؟ (إظهار عينة) 1 = نعم 2 = لا 3 = لا أعرف	C033 هل أخذ الطفل جرعة لقاح الخماسي3 (حقنة في الفخذ)؟ 1 = نعم من البطاقة 2 = نعم بالتذكر 3 = لا أعرف 4 = لم يطعم	C034 للأطفال بعمر 9 أشهر فأكثر، هل تم تطعيم الطفل ضد الحصبة (حقنة في اليد اليسرى)؟ 1 = نعم من البطاقة 2 = نعم بالتذكر 3 = لا أعرف 4 = لم يطعم

* الإسهال :- هو زيادة في عدد مرات الإسهال المائي عن الصورة المعتادة.

رقم إستبيان الأسرة: .....

س 035 – س 036: دون ممارسة الرضاعة للأطفال بين سن 0 إلى 24 شهر خلال الـ 24 ساعة الماضية (يترك فارغا للأطفال بعمر أكبر من 24 شهرا)

رقم الطفل (ينقل من الصفحة السابقة)	الاسم الأول للطفل (من الصفحة السابقة)	عمر الطفل (بالأشهر) (من الصفحة السابقة)	C035	C036				
				سجل عدد المرات التي تناول فيها الطفل أمس (سجل 0 إذا لم يتناول الطفل)				
			هل رضع الطفل من ثدي أمه (رضاعة / إعتصار) خلال الـ 24 ساعة الماضية؟ 1 = نعم 2 = لا إذا الإجابة لا إنتقل إلى السؤال C035b	C036a إذا كانت الإجابة نعم في السؤال السابق كم عدد المرات التي رضع فيها الطفل و عدد المرات التي أعطى فيها الطفل لبن الأم خلال الـ 24 ساعة الماضية؟	C036b كم عدد المرات التي تناول فيها الطفل حليب رضع خلال الـ 24 ساعة الماضية؟	C036c كم عدد المرات التي تناول فيها الطفل أي حليب آخر أو بودرة أو معلب أو حليب مواشي طازج خلال الـ 24 ساعة الماضية؟	C036d كم عدد المرات التي تناول فيها الطفل الزبادي أو الحقين أو الثريب (الثرابة) خلال الـ 24 ساعة الماضية؟	C036e كم عدد المرات التي تناول فيها الطفل الأغذية الأخرى بشرط ان تكون صلبة أو نصف صلبة أو لينة (كقوام الموز)

رقم إستبيان الأسرة: .....

س 037: دون ممارسة إطعام الأطفال بين سن 0 إلى 24 شهر خلال الـ 24 ساعة الماضية (يترك فارغا للأطفال بعمر أكبر من 24 شهرا)

رقم الطفل (ينقل من الصفحة السابقة)	لاسم الأول للطفل (من الصفحة السابقة)	عمر الطفل (بالأشهر) (من الصفحة السابقة)	C037							
			هل تناول الطفل أمس أيا من المجموعات الغذائية أدناه. (إبدائي بسؤال اليوم من الوقت الذي استيقظ فيه الطفل صباح أمس وحتى نومه في المساء). إتركي الأم تتذكر وعندما تنتهي قومي بذكر المواد أدناه 1 = نعم 2 = لا 3 = الأم لا تعرف							
			C037a	C037b	C037c	C037d	C037e	C037f	C037g	C037h	C037i
			ماء مع أو بدون سكر	**حبوب:** عصيدة أو شبيسة أو خبز أو أرز أو مكرونة أو اي غذاء مصنوع من الحبوب. **درنات:** بطاطا بيضاء أو أية أغذية درنية أخرى.	**بقوليات :** أي أغذية مصنوعة من الفول أو الفاصوليا أو البازيليا أو العدس أو الفول السوداني أو أي بقوليات أخرى.	الجبن أو الأيسكريم	**اللحوم :** كبد أو كلى أو قلب أو أحشاء أخرى. أي لحوم بقر أو غنم أو ماعز أو دواجن. اسماك طازجة أو مجففة أو معلبة.	بيض	**خضروات وفواكه:** دبا أو جزر أو بطاطا حلوة جوفها أصفر أو برتقالي. أي خضراوات ورقية داكنة الخضرة. مانجو أو باباي ناضجة.	أي فواكه أو خضراوات أخرى لم تذكر في الخانة السابقة.	أية مشروبات أو أغذية أخرى (عدا حليب الأطفال، وأي حليب اخر، والحقين والزبادي)

رقم إستبيان الأسرة: .....

تقييم الحالة التغذوية والوفيات في محافظة .....، شهر 2017م

استمارة رصد أفراد الأسرة خلال 90 يوم من تاريخ يوم الزيارة (نموذج 2)

مديرية التقييم: _____ **الحي/ القرية:** _____ **التاريخ:** _____ **رقم العنقود:** _____

رقم الفريق: _____ **رقم استبيان الأسرة:** _____ **طبقة التقييم:** _____

م	الاسم	الجنس (ذكر أو أنثى)	العمر بالسنوات	التحق خلال فترة 90 يوم من تاريخ يوم الزيارة	غادر خلال فترة 90 يوم من تاريخ يوم الزيارة	ولد خلال فترة 90 يوم من تاريخ يوم الزيارة	توفي خلال فترة 90 يوم من تاريخ يوم الزيارة	سبب الوفاة	موقع الوفاة
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

هام: يتم تسجيل كل الأفراد الموجودين حاليا و كل من التحق بالأسرة أو غادرها أو توفى أو ولد خلال فترة 90 يوم من تاريخ التقييم

رموز أسباب الوفاة	
1 = الاسهال	5 = سوء التغذية
2 = الحمى	6= العنف / بسبب الصراعات
3= الحصبة	7= أخرى (حدد)
4 = مشاكل في التنفس	
رموز مواقع الوفاة	
1 = في الموقع الحالي	
2= أثناء الهجرة	
3= في آخر مكان سكن فيه	
4 = أخرى (حدد)	

Annex 2: Shabwa January 2017 Nutrition August Survey Team

Team No	Name	Title
1	Hussain Ali Ahmed Sultan	Team Heads
2	Abdulrahman Salim M. Ba Jammal	
3	Yaser Abdullah Mohsen Al Deeb	
4	Mohammed Salim Ahmed Ba Dokhn	
5	Qasim Mohammed Awadh	
Reserve	Nabeel Ali Naser Mohammed	
1	Eshraq Mohammed Mubarak	Enumerators
	Ebtisam Saleh Qaied	
	Afrah Hasan Abdullah	
2	Aida Omar Mohammed Saleh	
	Sara Sa'eed Al-A'risi Ali	
	Bodor Ali Salah	
3	Arwa Khalid Za'bal	
	E'timad Abdulrahman Farhan	
	Fathia Moqbel Ahmed	
4	Abeer Mahdi Naser Salmeen	
	Khawla Adel Mohammed Al Nakhlani	
	Katiba Mansour Al Ashari	
5	Najwa Ali Abdulla Ali Ba Hormoz	
	Mona Salim Dahman A'wadh	
	Angela Haidara Sa'eed	
Reserve	Sina Ali Lahman	
	Sa'dia Ali Abdulla	
	E'tiraf Mohammed Ali	
		Title
Dr. Adel Abdulmahmood Al Absi		Field supervisors
Mohammed Taha Mohammed Al Saqqaf		
Taha ali Abdulrahman Al Sourori		
Sami Nasser Ali Ahmed		
Hadhrami Hadi Al Hadhrami		Data entry
Awadh Mohmmmed Ali Mohammed		
Wadhah Hasan Mohammed		
Abdulla Salim Al Soaider		
Ali Salim Saleh		
Nagib Abdulbaqi A. Ali		Data Analysis and Report Writing
Mubarak Mohammed Ali Mohammed		Survey Logistic Manager
Abdulraheem Ali Ba Jammal		Field Coordination
Dr. Galal Hussain Al Zawa'ari		Survey Technical Manager

Annex 3: Calendar of events

Event	Event Date
Handover the power to Abdrabbo Mansour Hadi	25 Feb 2012
Bombing of the military barade in AlSabeen Square	21 May 2012
the commencement of the National Dialogue Conference	18 Mar 2013
The attack on Al Urdi Medial Complex	5 Dec 2013
Bombing of Police Academy applicants	7 Jan 2015
The move of Abdrabbo Mansour Hadi to Aden	21 Feb 2015
The commencement of the Decisive Storm operation (Arab Coalition airstrikes)	26 Mar 2015
Houthis invasion of the Ataq City	9 Apr 2015
Bombing of the house of Shaikh Bin Oshaim by Houthis	7 May 2015
The martyrdom of Shabwa Governor, Ahmed Ba Haj	22 May 2015
Houthis withdraw from Ataq City	15 Aug 2015
Chapala cyclone and flooding in the coast	5 Feb 2015
Anniversary of Isra and Me'raj	27 Rajab
Eid Al-Fitr	1 Shawwāl
Beginning of Hijri Year (Hijra anniversary)	1 Muharram
A'ashora Day	10 Muharram
Eid Al-Adha	10 Dhū al-Ḥijjah
Unity anniversary	22 May
September Revolution anniversary	22 Sep
October Revolution anniversary	14 Oct
Independence Day	30 Nov

Local names of some *Hijri* months	
Arabic (formal) name	**Local name**
Muḥarram	A'ashoor
Rabīʿ al-awwal	Alawal min Alarba'a
Rabīʿ ath-thānī	Althani min Alarba'a
Jumādá al-ūlá	Althalith min Alarba'a
Jumādá al-ākhirah	Alrabie' of Alarba'a
Shaʿbān	Alqaseer
Shawwāl	Fitr Awal
Dhū al-Qaʿdah	Fitr Thani
Dhū al-Ḥijjah	A'rafa

Annex 4: Age determination job aid

جدول مساعد للباحثات يحدد أعمار الأطفال أقل من خمس سنوات بالأشهر الميلادية وما يقابلها بالأشهر الهجرية التقريبية

السنوات الهجرية						السنوات الميلادية						العمر بالسنة والشهر		العمر بالشهر
1433	1434	1435	1436	1437	1438	2012	2013	2014	2015	2016	2017	سنة	شهر	
					4						1			0
					3					12			1	1
					2					11			2	2
					1					10			3	3
				12						9			4	4
				11						8			5	5
				10						7			6	6
				9						6			7	7
				8						5			8	8
				7						4			9	9
				6						3			10	10
				5						2			11	11
				4						1		1		12
				3					12			1	1	13
				2					11			1	2	14
				1					10			1	3	15
			11+12						9			1	4	16
			10						8			1	5	17
			9						7			1	6	18
			8						6			1	7	19
			7						5			1	8	20
			6						4			1	9	21
			5						3			1	10	22
			4						2			1	11	23
			3						1			2		24
			2					12				2	1	25
			1					11				2	2	26
		12						10				2	3	27
		11						9				2	4	28
		10						8				2	5	29
		9						7				2	6	30
		8						6				2	7	31
		7						5				2	8	32
		6						4				2	9	33
		5						3				2	10	34
		4						2				2	11	35
		3						1				3		36
		2					12					3	1	37
		1					11					3	2	38
	12						10					3	3	39
	11						9					3	4	40
	10						8					3	5	41
	9						7					3	6	42
	8						6					3	7	43
	7						5					3	8	44
	6						4					3	9	45
	5						3					3	10	46
	4						2					3	11	47
	3		هجري	الشهر			1		ميلادي	الشهر		4		48
	1+2		محرم	1		12			يناير	1		4	1	49
12			صفر	2		11			فبراير	2		4	2	50
11			ربيع الاول	3		10			مارس	3		4	3	51
10			ربيع الثاني	4		9			أبريل	4		4	4	52
9			جمادى الاولى	5		8			مايو	5		4	5	53
8			جمادى الثانية	6		7			يونيو	6		4	6	54
7			رجب	7		6			يوليو	7		4	7	55
6			شعبان	8		5			أغسطس	8		4	8	56
5			رمضان	9		4			سبتمبر	9		4	9	57
4			شوال	10		3			أكتوبر	10		4	10	58
3			ذو القعدة	11		2			نوفمبر	11		4	11	59
2			ذو الحجة	12		1			ديسمبر	12		5		60

تاريخ الإسناد - يوم السبت - 14/ 1/ 2017م الموافق 16/ 4/ 1438هـ

Annex 5: Shabwa January 2017 Survey Plausibility Check

Plausibility check for: Shabwa Plateau Jan 2017.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** (0.2 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	**0** (p=0.649)
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=0.574)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**0** (4)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**0** (7)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**0** (6)
Standard Dev WHZ	Excl	SD	<1.1 and	<1.15 and	<1.20 and	>=1.20 or	
-	Excl	SD	>0.9 0	>0.85 5	>0.80 10	<=0.80 20	**0** (0.91)
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	**0** (0.08)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	**1** (0.29)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	**0** (p=0.239)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**1** %

The overall score of this survey is 1 %, this is excellent.

Plausibility check for: Shabwa Coastal Jan 2017.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** (0.3 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	**0** (p=0.535)
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=0.289)
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	**0** (4)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**0** (5)
Standard Dev WHZ	Excl	SD	<1.1 and	<1.15 and	<1.20 and	>=1.20 or	
-	Excl	SD	>0.9 0	>0.85 5	>0.80 10	<=0.80 20	**0** (0.96)
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	**0** (0.04)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	**0** (0.00)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	**5** (p=0.000)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**5** %

The overall score of this survey is 5 %, this is excellent.

Annex 6: Shabwa Nutrition Survey Standardization Test Report for Evaluation of Teams

						Precision			Accuracy		OUTCOME		
Weight		subjects	mean	SD	max	Technical error	TEM/mean	Coef of reliability	Bias from superv	Bias from median	result		
		#	kg	kg	kg	TEM (kg)	TEM (%)	R (%)	Bias (kg)	Bias (kg)			
	Supervisor	9	13.8	1.7	0.2	0.06	0.4	99.9	-	0.12	TEM acceptable	R value good	Bias poor
	Team 1	9	14	1.8	2	0.5	3.6	92.3	0.16	0.28	TEM reject	R value poor	Bias reject
	Team 2	9	12.6	3.2	10.4	3.41	27	-15.3	-1.18	-1.06	TEM reject	R value reject	Bias good
	Team 3	9	13.9	1.7	0.6	0.19	1.3	98.8	0.08	0.2	TEM poor	R value acceptable	Bias poor
	Team 4	9	13.9	1.7	1	0.24	1.7	98.1	0.05	0.17	TEM reject	R value acceptable	Bias poor
	Team 5	9	13.9	1.9	1.4	0.39	2.8	95.8	0.1	0.22	TEM reject	R value acceptable	Bias reject
	Team 6	9	13.9	1.7	0.4	0.1	0.7	99.7	0.03	0.15	TEM acceptable	R value good	Bias poor
	Team inter 1st	6x9	13.5	2.3	-	2.01	14.9	26.6	-	-	TEM reject	R value reject	
	Team inter 2nd	6x9	13.9	1.8	-	0.26	1.8	97.9	-	-	TEM reject	R value acceptable	
	inter team + sup	7x9	13.7	2	-	1.05	7.7	67.8	-	-	TEM reject	R value reject	
	TOTAL intra+inter	6x9	-	-	-	2.02	14.7	5.6	-0.13	0.01	TEM reject	R value reject	Bias good
	TOTAL+ sup	7x9	-	-	-	1.87	13.6	15.1	-	-	TEM reject	R value reject	
Height		subjects	mean	SD	max	Technical error	TEM/mean	Coef of reliability	Bias from superv	Bias from median	result		
		#	cm	cm	cm	TEM (cm)	TEM (%)	R (%)	Bias (cm)	Bias (cm)			
	Supervisor	9	95.9	5.7	1.3	0.37	0.4	99.6	-	-0.23	TEM good	R value good	
	Team 1	9	112.4	70.9	300	70.71	62.9	0.4	16.49	16.26	TEM reject	R value reject	Bias reject
	Team 2	9	95.9	5.7	0.5	0.2	0.2	99.9	0.07	-0.16	TEM good	R value good	Bias good
	Team 3	9	95.8	5.7	1.1	0.31	0.3	99.7	-0.07	-0.29	TEM good	R value good	Bias good
	Team 4	9	95.9	5.8	1	0.32	0.3	99.7	0.03	-0.2	TEM good	R value good	Bias good
	Team 5	9	95	6.1	10.8	2.81	3	79	-0.92	-1.15	TEM reject	R value reject	Bias good
	Team 6	9	96	5.6	1	0.33	0.3	99.6	0.08	-0.14	TEM good	R value good	Bias good
	Team inter 1st	6x9	95.5	5.7	-	1.47	1.5	93.2	-	-	TEM poor	R value poor	
	Team inter 2nd	6x9	101.5	41.1	-	40.84	40.2	1.4	-	-	TEM reject	R value reject	
	inter team + sup	7x9	98.1	27.3	-	19.59	19.3	54.8	-	-	TEM reject	R value reject	
	TOTAL intra+inter	6x9	-	-	-	40.86	41.5	-93.5	2.61	2.01	TEM reject	R value reject	Bias reject
	TOTAL+ sup	7x9	-	-	-	37.83	38.6	-92.4	-	-	TEM reject	R value reject	
MUAC		subjects	mean	SD	max	Technical error	TEM/mean	Coef of reliability	Bias from superv	Bias from median	result		
		#	mm	mm	mm	TEM (mm)	TEM (%)	R (%)	Bias (mm)	Bias (mm)			
	Supervisor	9	160.2	12.9	9	2.42	1.5	96.5	-	0.17	TEM acceptable	R value acceptable	Bias good
	Team 1	9	159.9	12	12	3.4	2.1	91.9	-0.28	-0.11	TEM reject	R value poor	Bias good
	Team 2	9	157.7	13.1	9	2.66	1.7	95.9	-2.44	-2.28	TEM acceptable	R value acceptable	Bias good
	Team 3	9	160.6	12.7	9	2.44	1.5	96.3	0.44	0.61	TEM acceptable	R value acceptable	Bias good
	Team 4	9	157.6	12.6	5	2.12	1.3	97.2	-2.56	-2.39	TEM acceptable	R value acceptable	Bias good
	Team 5	9	161.9	12	8	3.25	2	92.7	1.72	1.89	TEM poor	R value poor	Bias acceptable
	Team 6	9	162.2	12.5	9	3.53	2.2	92	2.06	2.22	TEM reject	R value poor	Bias poor
	Team inter 1st	6x9	160.3	12.7	-	3.36	2.1	93	-	-	TEM reject	R value poor	
	Team inter 2nd	6x9	159.7	12.1	-	3.65	2.3	90.8	-	-	TEM reject	R value poor	
	inter team + sup	7x9	160	12.4	-	3.27	2	93	-	-	TEM poor	R value poor	
	TOTAL intra+inter	6x9	-	-	-	4.58	2.9	86.2	-0.18	0.02	TEM reject	R value reject	Bias good
	TOTAL+ sup	7x9	-	-	-	4.36	2.7	87.5	-	-	TEM reject	R value reject	

Suggested cut-off points for acceptability of measurements				
Parameter		MUAC mm	Weight Kg	Height cm
individual	good	<2.0	<0.04	<0.4
TEM	acceptable	<2.7	<0.10	<0.6
(intra)	poor	<3.3	<0.21	<1.0
	reject	>3.3	>0.21	>1.0
Team TEM	good	<2.0	<0.10	<0.5
(intra+inter)	acceptable	<2.7	<0.21	<1.0
and Total	poor	<3.3	<0.24	<1.5
	reject	>3.3	>0.24	>1.5
R value	good	>99	>99	>99
	acceptable	>95	>95	>95
	poor	>90	>90	>90
	reject	<90	<90	<90
Bias	good	<1	<0.04	<0.4
From sup if good	acceptable	<2	<0.10	<0.6
outcome, otherwise	poor	<3	<0.21	<1.4
from median	reject	>3	>0.21	>1.4

Annex 7: Clusters for Shabwa January 2017 Nutrition Survey

Clusters of Plateau Zone

Cluster	Site (village or zone)	Ozla	District
1	Al-khashaouh	Daher	Daher
2	Mabr Al-Blad	Al-Talh	Al-Talh
3	Jadabh Al-Shag	Jardan	Jardan
4	Al-Jodyfrh	Jardan	Jardan
5	Al-Rokn	Arma	Arma
6	Al-Haydh - Al-Garen	Al-Haydh	Mrkhh Al-Olya
7	Masha	Al-Salmyn	Mrkhh Al-Olya
8	Nafa Al-Mafary - Aal-Zober	Al-Aaqr	Mrkhh Al-Olya
9	Balaon	Mrkhh Al-Sofla	Mrkhh Al-Sofla
10	Al-Koum	Mrkhh Al-Sofla	Mrkhh Al-Sofla
11	Al-Wadeh	Mrkhh Al-Sofla	Mrkhh Al-Sofla
12	Nsab - Al-Koreh	Nsab	Nsab
13	Amslm Lala	Nsab	Nsab
14	Amdhwahay	Nsab	Nsab
15	Al-Hank	Nsab	Nsab
16	Tajama Bado Al-Watah	Nsab	Nsab
17	Korab	HoTeeb	HoTeeb
18	Al-Fara	Al-Sayd	Al-Sayd
19	Johayz	Al-Sayd	Al-Sayd
20	Lesylab	Al-Sayd	Al-Sayd
21	Atq Hay Atag Al-Gadheem	Atq	Atq
22	Atq Al-Hay Al-Hakomee	Atq	Atq
23	Basouydan	Atq	Atq
24	Haban	Haban	Haban
25	Shab Al-Jaadeh	Haban	Haban
26	Joul Bagnm	Haban	Haban
27	Habourh	Haban	Haban
28	Qarn Bamhrez	Al-Rawdah	Al-Rawdah
29	Ser	Al-Rawdah	Al-Rawdah
30	Malahah	Al-Rawdah	Al-Rawdah
Reserve clusters			
1	Al-Hajer	Mrkhh Al-Sofla	Mrkhh Al-Sofla
2	Al-Thejah	Mrkhh Al-Sofla	Mrkhh Al-Sofla
3	Al-Salabeh	Al-Sayd	Al-Sayd
4	Noukhan	Atq	Atq

Clusters of Lowland & Coastal Zone

Cluster	Site (village or zone)	Ozla	District
1	Myfah (Joul Al-Rydh)	Myfah	Myfah
2	Myfah (Joul Al-Rydh)	Myfah	Myfah
3	Myfah (Joul Al-Rydh)	Myfah	Myfah
4	Tafr	Myfah	Myfah
5	Azan	Myfah	Myfah
6	Azan	Myfah	Myfah
7	Al-Korah	Myfah	Myfah
8	Korat Atel	Myfah	Myfah
9	AlSayd	Myfah	Myfah
10	Al-Regah	Myfah	Myfah
11	Korat A'al- Hamd	Myfah	Myfah

Cluster	Site (village or zone)	Ozla	District
12	Joul Al-Shykh	Myfah	Myfah
13	Al-Khsfeh	Myfah	Myfah
14	Al-Jthouh	Myfah	Myfah
15	Al-Hotah - Yankhb	Myfah	Myfah
16	Al-Hotah - Souq Al-Hotah	Myfah	Myfah
17	Al-Hotah - Shab Al-Msjd	Myfah	Myfah
18	Al-Hotah - Bamrsah	Myfah	Myfah
19	Basfa'a	Myfah	Myfah
20	Mtrah Ben Ghrabh	Myfah	Myfah
21	Rodhom	Rodhom	Rodhom
22	Beer Ali	Rodhom	Rodhom
23	Al-Joyri Al-Gyr	Rodhom	Rodhom
24	Basfaq	Rodhom	Rodhom
25	Alrgmah	Rodhom	Rodhom
26	Al-Ghadeer Al-Asfel	Rodhom	Rodhom
27	Al-Mehraqah	Rodhom	Rodhom
28	AlLlja'a	Rodhom	Rodhom
29	Al-Garn	Rodhom	Rodhom
30	Orgah	Rodhom	Rodhom
Reserve clusters			
1	Azan - Hafseh	Myfah	Myfah
2	Al-Hadhan	Myfah	Myfah
3	Al-Wajeedah	Rodhom	Rodhom
4	Rodhom	Rodhom	Rodhom

Annex 8: Tables of Weighted Levels of Nutritional Status

Tables below shows levels of malnutrition in Shabwa considering the sample weights in each survey zones.

1: Stunting among children distributed per zone, residency place, gender, and age category

Stunting		N	%	95% Conf Limits	
				Lower	Upper
Plateau (n = 991)	Moderate	184	18.6%	16.2%	21.2%
	Severe	76	7.6%	6.1%	9.5%
	Moderate and Severe	260	26.2%	23.5%	29.1%
Lowland & Coastal (n = 476)	Moderate	107	22.4%	18.8%	26.5%
	Severe	29	6.0%	4.1%	8.7%
	Moderate and Severe	135	28.4%	24.5%	32.8%
Rural (n = 1225)	Moderate	254	20.8%	18.5%	23.2%
	Severe	93	7.6%	6.2%	9.3%
	Moderate and Severe	348	28.4%	25.9%	31.0%
Urban (n = 241)	Moderate	36	15.0%	10.7%	20.1%
	Severe	11	4.6%	2.3%	8.0%
	Moderate and Severe	47	19.6%	14.7%	25.1%
Girls (n = 740)	Moderate	141	19.1%	16.3%	22.1%
	Severe	42	5.7%	4.2%	7.7%
	Moderate and Severe	184	24.8%	21.8%	28.1%
Boys (n = 726)	Moderate	149	20.6%	17.7%	23.7%
	Severe	62	8.6%	6.7%	10.9%
	Moderate and Severe	211	29.1%	25.9%	32.6%
6 - 11 months (n = 167)	Moderate	24	14.3%	9.4%	20.6%
	Severe	4	2.5%	0.7%	6.0%
	Moderate and Severe	28	16.8%	11.4%	23.3%
12 - 23 months (n = 331)	Moderate	61	18.3%	14.4%	23.0%
	Severe	26	7.7%	5.2%	11.3%
	Moderate and Severe	86	26.0%	21.5%	31.2%
24 - 35 months (n = 321)	Moderate	63	19.6%	15.5%	24.5%
	Severe	26	8.0%	5.3%	11.6%
	Moderate and Severe	89	27.6%	22.9%	32.9%
36 - 47 months (n = 331)	Moderate	81	24.5%	20.1%	29.6%
	Severe	31	9.5%	6.6%	13.3%
	Moderate and Severe	113	34.0%	29.0%	39.4%
48 - 59 months (n = 316)	Moderate	62	19.6%	15.4%	24.5%
	Severe	18	5.6%	3.4%	8.9%
	Moderate and Severe	80	25.2%	20.5%	30.4%
Shabwa (n = 1466)	Moderate	291	19.8%	17.8%	22.0%
	Severe	104	7.1%	5.9%	8.6%
	Moderate and Severe	395	26.9%	24.7%	22.0%

2: Underweight among children distributed per zone, residency place, gender, and age category

Underweight		N	%	95% Confidence Limits	
				Lower	Upper
Plateau (n = 999)	Moderate	179	17.9%	15.6%	20.5%
	Severe	22	2.2%	1.4%	3.4%
	Moderate and Severe	201	20.1%	17.7%	22.8%
Lowland & Coastal (n = 476)	Moderate	93	19.6%	16.2%	23.5%

Underweight		N	%	95% Confidence Limits	
				Lower	Upper
	Severe	16	3.3%	1.9%	5.4%
	Moderate and Severe	109	22.9%	19.2%	27.0%
Rural (n = 1232)	Moderate	239	19.4%	17.2%	21.7%
	Severe	35	2.9%	2.0%	4.0%
	Moderate and Severe	274	22.2%	20.0%	24.7%
Urban (n = 243)	Moderate	34	13.8%	9.9%	18.9%
	Severe	3	1.0%	0.3%	3.6%
	Moderate and Severe	36	14.9%	10.6%	19.9%
Girls (n = 743)	Moderate	119	16.0%	13.5%	18.9%
	Severe	18	2.4%	1.5%	3.8%
	Moderate and Severe	137	18.4%	15.7%	21.4%
Boys (n = 733)	Moderate	153	20.9%	18.1%	24.1%
	Severe	20	2.8%	1.7%	4.3%
	Moderate and Severe	173	23.7%	20.7%	27.0%
6 - 11 months (n = 170)	Moderate	23	13.4%	8.8%	19.6%
	Severe	3	1.5%	0.4%	5.1%
	Moderate and Severe	25	14.9%	9.8%	21.0%
12 - 23 months (n = 332)	Moderate	35	10.5%	7.5%	14.4%
	Severe	2	0.5%	0.1%	2.2%
	Moderate and Severe	36	10.9%	7.9%	14.9%
24 - 35 months (n = 324)	Moderate	53	16.4%	12.7%	21.0%
	Severe	14	4.2%	2.4%	7.1%
	Moderate and Severe	67	20.6%	16.4%	25.5%
36 - 47 months (n = 333)	Moderate	72	21.6%	17.4%	26.5%
	Severe	13	3.8%	2.1%	6.6%
	Moderate and Severe	84	25.4%	20.9%	30.5%
48 - 59 months (n = 316)	Moderate	90	28.4%	23.5%	33.7%
	Severe	8	2.4%	1.1%	5.0%
	Moderate and Severe	97	30.8%	25.8%	36.2%
Shabwa (n = 1476)	Moderate	272	18.5%	16.5%	20.6%
	Severe	38	2.6%	1.8%	3.5%
	Moderate and Severe	310	21.0%	19.0%	20.6%

3: Acute malnutrition (by WHZ) among children distributed per zone, residency place, gender, and age category

Acute malnutrition (by WHZ)		N	%	95% Confidence Limits	
				Lower	Upper
Plateau (n = 998)	Moderate	55	5.5%	4.2%	7.2%
	Severe	7	0.7%	0.3%	1.5%
	Moderate and Severe	62	6.2%	4.8%	7.9%
Lowland & Coastal (n = 475)	Moderate	37	7.8%	5.6%	10.7%
	Severe	3	0.7%	0.2%	2.1%
	Moderate and Severe	40	8.5%	6.2%	11.4%
Rural (n = 1229)	Moderate	80	6.5%	5.2%	8.1%
	Severe	9	0.8%	0.4%	1.5%
	Moderate and Severe	90	7.3%	5.9%	8.9%
Urban (n = 243)	Moderate	12	4.8%	2.6%	8.4%
	Severe	1	0.3%	0.0%	2.3%
	Moderate and Severe	13	5.2%	2.9%	8.9%
Girls (n = 742)	Moderate	33	4.4%	3.1%	6.3%
	Severe	7	0.9%	0.4%	2.0%

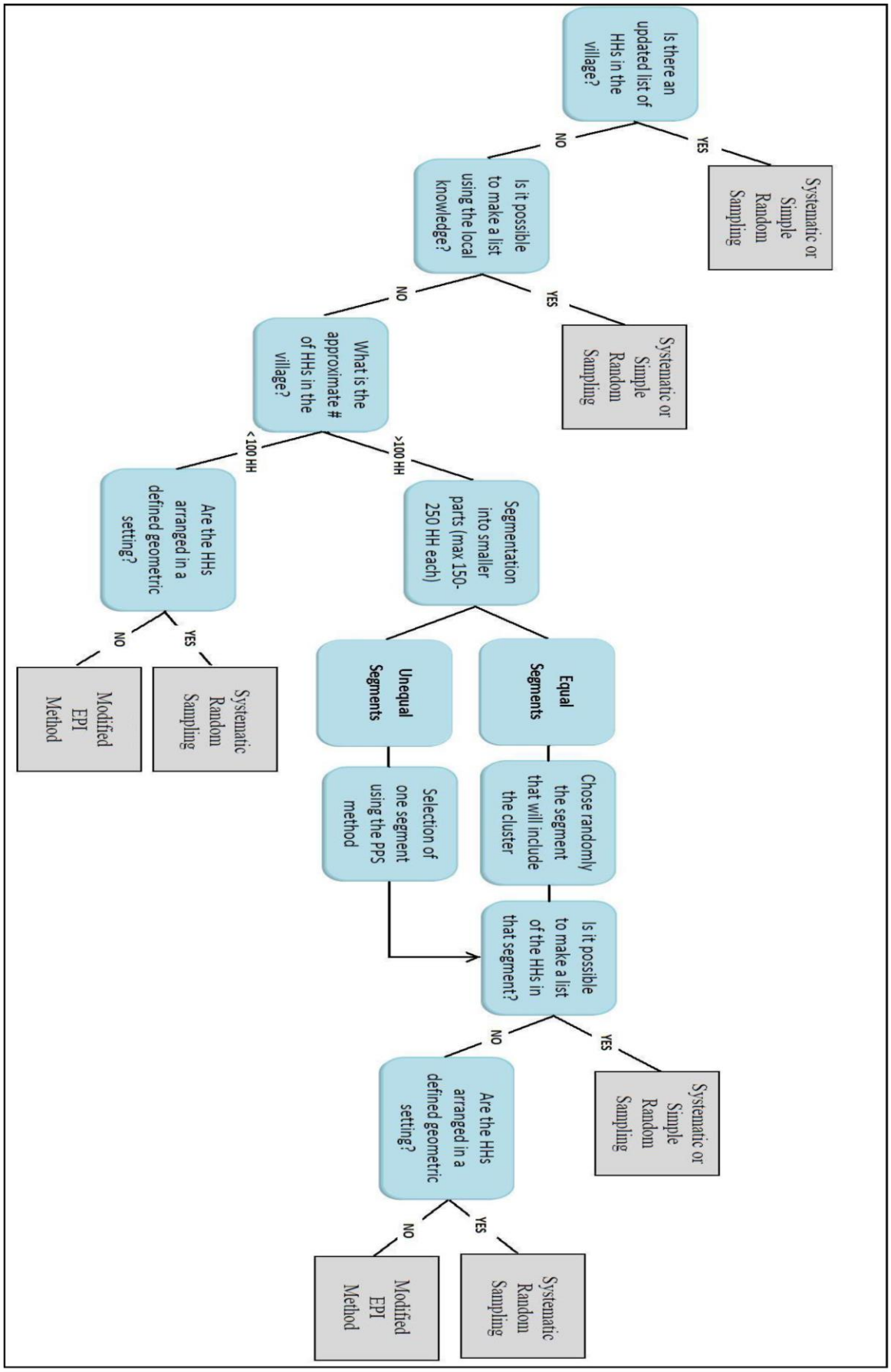
Acute malnutrition (by WHZ)		N	%	95% Confidence Limits	
				Lower	Upper
	Moderate and Severe	40	5.4%	3.9%	7.3%
Boys (n = 730)	Moderate	59	8.1%	6.2%	10.3%
	Severe	3	0.5%	0.1%	1.4%
	Moderate and Severe	62	8.5%	6.7%	10.9%
6 - 11 months (n = 170)	Moderate	10	6.0%	2.9%	10.6%
	Severe	1	0.5%	0.0%	3.2%
	Moderate and Severe	11	6.5%	3.3%	11.3%
12 - 23 months (n = 332)	Moderate	7	2.0%	0.9%	4.3%
	Severe	1	0.2%	0.0%	1.8%
	Moderate and Severe	7	2.2%	1.0%	4.7%
24 - 35 months (n = 323)	Moderate	30	9.2%	6.4%	13.0%
	Severe	2	0.5%	0.1%	2.3%
	Moderate and Severe	31	9.7%	6.8%	13.6%
36 - 47 months (n = 333)	Moderate	8	2.3%	1.0%	4.7%
	Severe	4	1.3%	0.4%	3.4%
	Moderate and Severe	12	3.5%	1.9%	6.3%
48 - 59 months (n = 315)	Moderate	38	12.0%	8.8%	16.3%
	Severe	3	0.8%	0.2%	2.8%
	Moderate and Severe	40	12.8%	9.4%	17.2%
Shabwa (n = 1472)	Moderate	92	6.2%	5.1%	7.6%
	Severe	10	0.7%	0.4%	1.3%
	Moderate and Severe	102	6.9%	5.7%	7.6%

4: Acute malnutrition (by MUAC) among children distributed per zone, residency place, gender, and age category

Acute malnutrition (by MUAC)		N	%	95% Confidence Limits	
				Lower	Upper
Plateau (n = 998)	Moderate	14	1.4%	0.8%	2.4%
	Severe	7	0.7%	0.3%	1.5%
	Moderate and Severe	21	2.1%	1.3%	3.2%
Lowland & Coastal (n = 476)	Moderate	9	1.9%	0.9%	3.7%
	Severe	3	0.7%	0.2%	2.1%
	Moderate and Severe	12	2.6%	1.4%	4.6%
Rural (n = 1231)	Moderate	17	1.4%	0.8%	2.2%
	Severe	10	0.8%	0.4%	1.6%
	Moderate and Severe	27	2.2%	1.5%	3.2%
Urban (n = 243)	Moderate	6	2.5%	0.9%	5.3%
	Severe	0	0.0%	0.0%	1.5%
	Moderate and Severe	6	2.5%	0.9%	5.3%
Girls (n = 741)	Moderate	12	1.6%	0.9%	2.8%
	Severe	7	0.9%	0.4%	2.0%
	Moderate and Severe	18	2.5%	1.5%	4.0%
Boys (n = 733)	Moderate	11	1.5%	0.8%	2.8%
	Severe	3	0.5%	0.1%	1.4%
	Moderate and Severe	15	2.0%	1.1%	3.3%
6 - 11 months (n = 170)	Moderate	12	7.0%	3.7%	12.0%
	Severe	7	4.0%	1.7%	8.3%
	Moderate and Severe	19	11.0%	6.9%	16.9%
12 - 23 months (n = 334)	Moderate	8	2.3%	1.0%	4.7%
	Severe	0	0.0%	0.0%	1.4%
	Moderate and Severe	8	2.3%	1.0%	4.7%

Acute malnutrition (by MUAC)		N	%	95% Confidence Limits	
				Lower	Upper
24 - 35 months (n = 323)	Moderate	1	0.3%	0.0%	1.9%
	Severe	3	1.1%	0.3%	3.1%
	Moderate and Severe	4	1.3%	0.4%	3.5%
36 - 47 months (n = 331)	Moderate	3	0.8%	0.2%	2.6%
	Severe	0	0.0%	0.0%	1.4%
	Moderate and Severe	3	0.8%	0.2%	2.6%
48 - 59 months (n = 316)	Moderate	0	0.0%	0.0%	1.5%
	Severe	0	0.0%	0.0%	1.5%
	Moderate and Severe	0	0.0%	0.0%	1.5%
Shabwa (n = 1474)	Moderate	23	1.5%	1.0%	2.4%
	Severe	10	0.7%	0.4%	1.3%
	Moderate and Severe	33	2.2%	1.6%	2.4%

Annex 9: Decision Tree for Household Selection (SMART Sampling Guideline, June 2012)



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