NUTRITION SURVEY REPORT

SETTLEMENTS OF INTERNALLY DISPLACED PERSONS (IDP)

HAJJA GOVERNORATE, YEMEN

5 to 10 May 2012

unicef

EUROPEAN COMMISSION

Humanitarian Aid and Civil Protection

Ministry of Public Health and Population (MoPHP)
United Nations Children's Fund (UNICEF)

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The UNICEF Yemen Country Office provided technical support, employing SMART methodology. A survey manager and supervisors were provided by the Taiz Governorate Health and Population Office, Ministry of Public Health and Population and WHO. The survey enumerators and team leaders came from Hajja Governorate. The data entry team from the Office of Hajja Governorate Public Health and Population performed the data entry to enable daily data quality verification.

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EXECUTIVE SUMMARY

Between 5 and 10 May 2012, MoPHP and Hajja Governorate Public Health and Population Office supported by UNICEF conducted a nutrition and mortality survey in internally displaced person (IDP) settlements in Hajja Governorate using the Standardized Monitoring and Assessment for Relief and Transition (SMART) methodology mainly to assess the levels of acute malnutrition among children aged 6-59 months, to assess levels of stunting and underweight, to identify some of the factors associated with malnutrition, estimate the under-five and crude death rates, and inform on the appropriate responses.

Using a two-stage Probability Proportionate to Population Size (PPS) sampling methodology, 30 clusters were randomly selected for both anthropometric and mortality assessments. A minimum of 20 households per cluster were randomly selected and assessed. A total of 623 households were surveyed, covering a total of 850 children aged 6-59 months, respectively.

Results indicate that the nutrition situation is above the WHO 'critical' threshold (GAM 15 per cent) with 15.7 per cent global acute malnutrition, 48.5 per cent stunting and 44.5 per cent underweight as shown in table (1) below. The severe acute malnutrition (SAM) rate recorded was 3 per cent, and pockets of high vulnerability were identified in the survey area.

Although GAM looks lower by almost half of that found in July-2011, this cannot be considered as an improvement in nutritional status since there were no significant differences seen in either underweight or stunting. The two surveys were however undertaken at different time period hence not perfectly comparable. Even though there is no doubt about the improvement occurred in the services provided as well as the reduction in morbidity rates between July 2011 and May 2012.

The main source of drinking water in the IDP area is UNICEF tanks/net that covers ¾ of the survey households. Over 90 per cent of the IDP households seek health services from a public health facility when sick. There is high prevalence of common disease, as recorded two weeks prior to the survey (diarrhea, Acute Respiratory Infection (ARI) and fever prevalence). Vitamin A coverage is lower than the Sphere Standard's recommendation of 95 per cent coverage (78.3 per cent). About half the children aged 6-24 months do not receive the recommended four meals a day.

There is no statistically significant relationship between acute malnutrition and feeding patterns or with vitamin A supplementation, but some breastfeeding, diarrhoea, and caretaker hand-washing were found to have a relationship with stunting and underweight.

The crude death rate found is 0.13 per 10000 per day, while the under-five (U5) death rate is 0.33 per 10000 per day and both are within the acceptable levels of less than 1/10,000/day.

Specific recommendations include:

Immediate Interventions

- Develop detailed integrated multi-sectoral micro-plan to address the high levels of acute and chronic malnutrition among U5 children.

- Expand the current nutrition services to reach more children with special emphasis on the community component (MUAC screening and referral).
- Expand the MAM supplementary feeding programme to all fixed and outreach health service delivery sites providing management of SAM.
- Accelerate the integration of appropriate infant and young child feeding (IYCF) counseling into all CMAM services delivered by both fixed and mobile clinics.
- Raising awareness campaigns on promotion of IYCF practices (early initiation of breastfeeding, exclusive breast-feeding for first six months of life, timely introduction of complementary food and continued breastfeeding up to two years) and food preparation, dietary diversity, appropriate childcare, and promotion of safe sanitation and hygienic practices including hand washing with soap.
- Malnutrition prevention efforts should target the younger age group 6-24 months in both IDP camps and host communities with special focus on timely introduction of complementary feeding, safe disposal of children's excreta, diarrhoea prevention measures and appropriate management of ARI among young children
- Undertaking wide coverage community campaigns to all IDP settlements to deliver minimum package of routine vaccination, vit. A and micronutrient supplementation and deworming.
- Intensive social mobilization campaigns on improving maternal nutrition, child feeding and caring practices through behaviour change / communication interventions

Medium Term Interventions

- Establishing robust nutrition information monitoring system in the mentioned districts and incorporating key health and food security indicators to closely monitor the situation and deliver timely response.
- Capacitating government system to manage the nutrition information system.
- Follow up SMART nutrition surveys next year at the same time to document progress of the response plan and lessons learnt.
- Develop and introduce food-for-work interventions to support infrastructure development and provide alternative income generating activities during the lean periods, including social protection mechanisms like cash transfers and livelihoods and food/ crop diversification projects.

Other Recommendations

- Further investigation is needed to understand the causality tree behind high level of acute malnutrition among boys compared to girls this and earlier surveys conducted in Hodeidah and Taiz Governorates.
- Undertaking a full scale national nutrition and mortality survey.

Table 1. Summary of Nutrition Survey in IDP Settlements in Hajja Governorate, May 2012			
Indicator	**N**	**%**	**95% CI**
Child Malnutrition			
Total number of households assessed for children	623	100	
Mean household size	7.45		
Total number of children assessed	834/843	98.9	
Child sex: Males (boys)	388	46.5	
Females (girls)	446	53.5	
Global Acute Malnutrition (WHZ<-2 z-score or oedema)	130	15.7	13.3 – 18.4
Severe Acute Malnutrition (WHZ<-3 z score or oedema)	25	3.0	2.0 – 4.5
Oedema	0	0.0	
Chronic Malnutrition (H/A<-2 z score)	391	48.5	45.0 – 52.0
Severe Chronic Malnutrition (H/A<-3 Z score)	157	19.5	16.8 – 22.4
Underweight prevalence (W/A<-2 Z score)	370	44.5	41.1 – 48.0
Severe Underweight (W/A<-3 z score)	122	14.7	12.4 – 17.3
Child Morbidity			
Children reported with suspected measles within one month prior to assessment	25	3.0	2.0 – 4.4
Children reported with diarrhoea in 2 weeks prior to assessment	273	32.6	29.4 – 35.9
Children reported with ARI within two weeks prior to assessment	301	35.9	32.6 – 39.2
Children reported with febrile illness in 2 weeks prior to assessment	395	47.0	43.6 – 50.4
Immunization and Supplementation Status			
Children aged 9 – 59 months immunised against measles	646	85.2	82.5 – 87.6
Children who have received 3 doses of polio vaccine	394	47.2	43.8 – 50.7
Children reported to have received vitamin A supplementation in last 6 months	653	78.3	75.3 – 81.0
Child Feeding			
Children (6-24 months) reported to be breastfeeding	170	73.9	67.7 – 79.5
Children (6-24 months) fed 4 times and above	53	26.0	20.1 – 32.6
Mortality			
0-5 Death Rate (U5DR) as deaths/10,000/ day	**0.33**		0.11 – 1.02
Crude Death Rate (CDR) as deaths/10,000/ day	**0.13**		0.06 – 0.26

1.0 INTRODUCTION / BACKGROUND

Historical Context

Conflict in the North of Yemen between government forces and members of the Houthi group led to the displacement of 320,000 people from Sa'ada and neighbouring governorates in August 2009 in the sixth round of fighting. In February 2010 a ceasefire was agreed. However, two years after the initial displacement in the North, and one year after the ceasefire, the majority of IDPs have still not returned home.

In 2012, the displacement map changed due to the conflict between Houthies and tribes living in areas of Kushar and Mustaba that led to new internal displacement.

Figure (1): Map of settlements of IDP in Hajja Governorate

Climate: The climate in the area is hot and humid in summer and mild in winter.

Nutritional situation: Since the Arab spring related events in early 2011, the capacity of already partially functioning public health/nutrition services has been reduced, and is likely to be further exacerbated by the fuel crisis, meaning difficulties in the provision of safe water, and worsening hygiene and sanitation practices. Following concerns of nutritional deterioration in Hajja Governorate, MoPHP with support of UNICEF has conducted standard nutrition assessment on June 2011 to further understand the scale and severity of the nutrition situation and verify the need for an immediate response. The survey targeted both IDPs and host community. A total of 1,231 household were surveyed. According to this survey, Global Acute Malnutrition rates of 31.4 per cent and severe acute malnutrition of 9.1 per cent was recorded respectively. This Global Acute Malnutrition rate was twice the emergency threshold of 15 per cent, thus confirming existence of a critical emergency nutrition situation in Hajja Governorate, according to WHO categorization. Furthermore, the survey found underweight prevalence of 48.3 per cent and stunting of 43.6 per cent. According to the same survey, only one in five children was exclusively breastfed (with higher prevalence of wasting among non-exclusive breastfed). Importantly the percentages of malnutrition of pregnant and lactating women, which are among the main causes of Low Birth Weight and later on child malnutrition (life cycle and malnutrition) are reported to be as high as 23 per cent. This shows the urgency of providing supplementary rations and micronutrient supplements to prevent malnutrition having major effects on pregnancy and lactation.

In response to the staggering level of acute malnutrition, the emergency nutrition intervention continues, prioritizing the IDP population. An integrated Nutrition, Health and WASH project was also established to save lives. In addition, in response to the widespread conflict-driven displacement and a slow-onset crisis in food security, malnutrition and outbreaks of communicable diseases, a comprehensive Humanitarian Response Plan[1] has been developed by the UN and humanitarian partners articulating

[1]Yemen Humanitarian Response Plan: 2012

the needs and response strategies for addressing the on-going humanitarian crisis and curbing the high prevalence of acute malnutrition. The strategic nutrition response is planned for 12 months (Jan-Dec 2012).

In parallel to the humanitarian response, updating the nutrition situation was also embarked on for improved vulnerability analysis, response planning and for future programme impact analysis. Since July 2011, 709 households in Harad and 330 in Mustaba have been registered as new IDPs. For this reason, it's imperative to assess the nutrition situation as well as to monitor and gauge the achievements of the ongoing interventions. The present survey therefore aims to understand the nature and scale of the nutrition situation in the IDP camps in Hajja Governorate and obtains an unbiased opportunity to assess critical changes in the nutrition situation of the communities living within IDP camps as well as the subsequent planning of future programmes. In the absence of appropriate baseline survey data for direct comparison, the July 2011 survey result was used as guidance.

The main income sources for IDPs became similar to that for population living in Hajja Lowland except for a minority who still relay on donations they receive from concerned organizations. However, beyond the income sources, the majority of IDPs still living in camps of Al-Mazraq have either left their property at their original places, or they found better livelihoods in camps other than their original places. Some have other reasons that hindered them from returning back to their homes such as landmines and UXOs, or revenge.

2.0 ASSESSMENT OBJECTIVES

The overall objective of the survey was to establish the nutrition situation in IDPs settlements in Hajja Governorate, determine some of the factors influencing malnutrition, and identify some of the public health services accessible to the population.

Specific objectives were:

1. To estimate the level of acute malnutrition (wasting), stunting and underweight among children aged 6-59 months.
2. To identify factors influencing nutrition status of the children including disease prevalence and access to essential services.
3. To estimate the prevalence of some common diseases (measles, diarrhoea, fever and ARI).
4. To estimate the measles and polio vaccination and Vitamin A supplementation coverage among children.
5. To estimate the crude and under-five mortality/death rates.

3.0 METHODOLOGY

3.1: Sampling Design and Sample Size Determination

A cross-sectional survey was conducted between 5 and 10 May 2012 in the settlements of IDPs in Hajja Governorate. Using a two-stage PPS sampling methodology, 30 clusters were randomly selected for the survey. The cluster sampling methodology was selected in view of lack of an exhaustive updated list of household details. The total estimated population was 38,471 (Ref: Annex 8: Sampling Frame: Source: Data sheet provided by UNICEF Harad Field Office and Al-Khair Association, May 2012).

A sample size of 590 households was calculated using ENA for SMART software based on the estimated parameters shown in Table 2. The calculated sample size for mortality was about 487 households, hence the sample calculated for anthropometry was considered for mortality as well.

Table 2: Parameters used in the Sample Size Determination	
Parameters	
Estimated Acute Malnutrition Prevalence (%)[2]	31.4
Desired Precision (%)	5
Design Effect[3]	2
Average Household Size[4]	7
Under 5 year old (%)[5]	20
Non response household (%)[6]	3
Sample Size (N)	**590**

A minimum of 20 households per cluster were recommended for assessing the anthropometry and mortality. A total of 623 households were surveyed, reaching a total number of 850 children aged 6-59 months, respectively.

3.2: Sampling Procedure

The ENA for SMART software was used in the random selection of the 30 clusters from the sampling frame, including identification of the reserve clusters. The sampling frame consisted of an exhaustive list of settlements and the estimated population size for each. In this case, all settlements were accessible and were included in the sampling frame, thus giving them an equal chance of being selected.

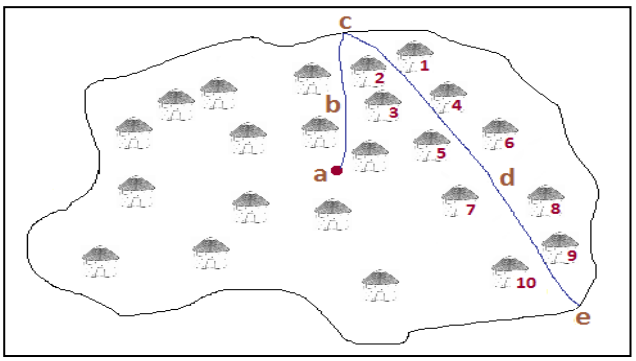
All the 30 clusters randomly selected were accessible and assessed, hence the reserve clusters were not assessed in the survey. Upon reaching the cluster, the survey teams, with the help of an elder or the guide, requested the residents' permission to assess the areas. The purpose of the survey was explained and the process of random selection of a representative sample from the cluster was also elaborated.

Once granted permission to continue with the survey, the survey team used the

[2] MoPHP and UNICEF. Nutrition Survey among U5 Children and Women of Childbearing Age in Three Districts in Hajjah Governorate, Yemen. July, 2011
[3] Minor heterogeneity within clusters in the study population explored based on presence of "marginalized groups"/ non-integrated groups, differences in infrastructural network hence access to services and information, etc)
[4] Calculated on basis of Central Statistics office data of population versus households
[5] Estimated on basis of MoH reports and immunization statistics
[6] Non-response rate of 3% was estimated in case the teams encounter refusal, security-related inaccessibility or absence.

Modified EPI methodology to randomly pick the household to be interviewed. This involved identifying the centre of the cluster, where they had to spin a pen to randomly select the direction to take to the edge of the settlement. The team walked to the edge of the cluster. From the edge, the team had to spin the pen again aiming to randomly get a direction to follow to the other extreme edge of the settlement. In case the pen pointed towards outside of the settlement, the teams were to spin the pen multiple times till the pen pointed to any of the directions towards the settlement. Once a new direction was obtained, the team counted all the households along the randomly selected direction, gave each household a number, and then randomly selected the first household to be interviewed from the numbered households (for example, household number 7 in the households numbered 1 to 10, in the figure (2)).

Figure (2): The modified EPI method used for selection of households



The same direction was followed to select the subsequent household for interview, going for the next nearest household on the right side and following the selected direction, until the required minimum number of households and children had been assessed (Ref: Figure (2) indicating the household selection process- Figure adopted from the SMART Methodology Guidelines). Anthropometric data alongside other child data was collected from all children aged 6-59 months found in the randomly selected household.

In case the team assessed all households to the edge of the cluster and did not reach the required number of households, the team would repeat the process again i.e. start from the cluster/ settlement centre to randomly select another direction, then walk to the edge, then spin the pen again and count the households to the edge of the cluster. Then randomly pick the first household for interview, and then go the next nearest household, to the right hand side until the required number of households were interviewed.

In case of absence of the children during the interview time or absence of the members of the randomly selected households, an appointment was made by the survey team to return back before leaving the cluster.

3.3: Study Population and Data Collection Process

As defined in the sampling frame, the study population was the entire population of IDP in Hajja Governorate as found form different resources.

The activities undertaken in the entire survey period are summarized in Table 3, below. Data collection preparation commenced with a four-day training of enumerators, team leaders and supervisors (Ref: Annex 3: Hajja Nutrition Survey Team). The training conducted covered interview techniques, sampling procedures, field procedures (random household selection, introduction and systematic data collection), inclusion and exclusion criteria, sources and reduction of errors, taking of measurements (height, weight and MUAC) focusing on achieving high precision and accuracy, data collection standardization procedures to ensure data quality, diagnosis of oedema, measles, ARI, diarrhoea and collection of household details necessary to establish household members

movement and/or death in order to compute mortality rates, handling of equipment and the general courtesy during the assessment. Six survey teams were involved in the data collection process.

Quantitative data were collected by means of a household questionnaire for nutrition survey and a mortality survey question, adopted from the SMART Methodology guidelines (Ref: Annex 1: Hajja Nutrition Survey Questionnaire and Annex 2: Hajja Mortality Survey Questionnaire). Only children aged 6-59 months or with length/ height of 65 - 109.9 cm were included in the anthropometric assessment. The age estimation was based on birth or immunization card details and/or supported with events calendar and date conversion tables based on the Islamic Calendar (Ref: Annexes 5 and 6: Age Conversion Tables and Events Calendar).

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.

Table 3: Chronology of Activities in the survey

Action	Period
Preparation: Contacting local authority, survey team identification, training material preparation	21 – 26 Apr
Training of survey teams and pre-testing of questionnaire	28 Apr – 3 May
Data collection and data entry	5 – 10 May
Data cleaning and analysis	11 – 20 May
Report drafting and releasing	21 – 26 May
Circulation of final report	31 May

3.4: Measurement Standardization and Quality Control

Seven survey teams (one team as a reserve) underwent rigorous standardization test procedures using 10 children aged 6 - 59 months. This exercise was conducted at the training place in Harad City and it aimed at assessing the accuracy and precision of the survey teams for purposes of enhancing the survey data quality. The weak team members were identified and the common mistakes made were identified and addressed (Ref: Annex 4: Hajja Nutrition Survey Standardization Test Report, showing team performance and how errors were rectified/ addressed). Further field testing of survey tools and exercise on data collection, including household selection and interview steps and familiarization of questions was conducted, and field level challenges and common mistakes identified and discussed. The field testing was conducted in Al-Sharifia village in Harad District. This village was not one of the randomly selected clusters.

Beside training, which also included role playing and field testing, data quality was also ensured through (i) Monitoring of fieldwork by coordination team; (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, continuous data cleaning and plausibility checks, plus ensuring each team was given feedback on the quality of previous day's data before the start of a new day; (v)

Equipment calibration/ monitoring accuracy of equipment (weighing scales) by regularly measuring objects of known weights to check for any differences, (vi) Additional check was done at the data entry level to enable entry only of relevant possible responses and measurements; (vii) Continuous reinforcement of good practices. During the field data collection, all measurements were loudly called by both the enumerators reading and recording them, to reduce errors during recording.

Clear job descriptions were provided to the teams as part of the training, to ensure appropriate guidance in delivering the assigned tasks (Annex 9: Survey Team Job Description). The supervisor had to review the questionnaire and verify the accuracy of the details before the teams leave a household, thus minimizing the possibility of incomplete data (missing variables) and outliers.

3.5: Data Entry and Analysis

The anthropometric data was entered and analysed using ENA for SMART software, while the remaining household variables and child-related variables (feeding practices and morbidity) were entered and analysed using Epi EPI info ENA version 3.5.3. Running and tabulation of all variable frequencies was carried out as part of data cleaning. The nutrition 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).

The classification used for wasting levels was a follows:

W/H < -3 Z-Scores or oedema = Severe acute malnutrition

W/H ≥ -3 Z-Scores < -2 Z-Scores = Moderate acute malnutrition

W/H < -2 Z-score or oedema = Global/total acute malnutrition

W/H ≥ -2Z-Scores = Normal

The classification used for Stunting levels was a follows:

H/A < -3 Z-Scores = Severe stunting

H/A ≥ -3 Z-Scores < -2 Z-Scores = Moderate stunting

H/A < -2 Z-score = Stunting Prevalence rates

H/A ≥ -2Z-Scores = Normal

The classification used for Underweight levels was a follows:

W/A < -3 Z-Scores = Severe Underweight

W/A ≥ -3 Z-Scores < -2 Z-Scores = Moderate underweight

W/A < -2 Z-score = Underweight Prevalence Rates

W/A ≥ -2Z-Scores = Normal

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.

Mortality data was entered and analysed using the ENA for SMART software.

3.6: Data Entry Verification and Cleaning

Four team members shared the work of data entry, and then each member would review the work done by another colleague before merging the data on a daily basis.

About 10 per cent of the entered questionnaires were randomly drawn using the Random Number Table of ENA software. These drawn questionnaires were revised for accuracy of entry in the electronic database. The quality of data entry was accepted if accuracy was not less than 95 per cent.

The uniqueness of IDs of both household questionnaire and mortality sheet was also reviewed for any repeating during data entry.

For anthropometry data, all flagged records were also reviewed by means of revisiting original questionnaires.

4.0 ASSESSMENT RESULTS

4.1: Household Characteristics of Study Population

As shown in Table 4 below, the gender of household head is largely male (94.1 per cent). Almost 85 per cent of household heads are married and living with partner. 70 per cent of household caretakers in the survey area are illiterate while the proportion of household caretakers with basic, secondary and higher education is collectively 7.4 per cent.

The three main income sources for households are the *Qat* cultivation and trade, temporary work (casual labour)[7], and donations from organizations with total percentage of about 60 per cent as shown in Table 4.

Regarding drinking water, the main sources for 75.6 per cent of households is UNICEF tanks which do not need treatment. Only 60 households treat drinking water, mainly by chlorination and filtration. About 67 per cent of the households store drinking water in clean containers (algae growth is not seen).

As shown in Table 4, about 33 per cent of the households use open pit latrines while only 17.7 per cent use flush or pour flush latrine systems in their human waste disposal.

Table 4: Household Characteristics

	N	*%*
Total Households	623	100
Household size (Mean):	7.45	
Mean No of Under-fives	1.53	
Mean No of 6 – 59 months	1.36	
Sex of Household Head:		
Male	586	94.1
Female	37	5.9
Marital status of household head		
1. Married and living with spouse	530	85.1
2. Married but living far from spouse for ≥ 6 months	36	5.8
3. Widowed	35	5.6
4. Single	19	3.0
5. Recalcitrant	2	0.3
6. Divorced	1	0.2
Education level of household caretaker		
1. Illiterate	436	70.0
2. Read and write	141	22.6
3. Basic education	21	3.4
4. Secondary education	17	2.7
5. Higher education	8	1.3
Main Source of Income:		
1. *Qat* cultivation and trade	179	28.8
2. Temporary work/ Casual labour	98	15.8
3. Donations from organizations	93	15.0
4. Animals and animal products	48	7.7
5. Smuggling	31	5.0
6. Donations from friends and relatives	29	4.7
7. Crops other than *Qat*	24	3.9
8. craftsmanship	22	3.5
9. Trade	19	3.1
10. Fixed monthly waged work	12	1.9
11. Remittance (from immigrants)	10	1.6

[7] Temporary work is daily wage based work such as work in construction, on others' farms, etc.

Table 4: Household Characteristics		
	N	*%*
12. Social assurance (governmental)	9	1.4
13. Other	48	7.8
Main water source for drinking		
1. UNICEF tanks	471	75.6
2. House-connected yard piped water	67	10.8
3. Water from protected open well	46	7.4
4. Water from unprotected open well	26	4.2
5. Other	13	2.1
Household latrine type		
1. Flush/pour flush latrine	110	17.7
2. Open pit latrine	203	32.6
3. Simple covered pit latrine	89	14.3
4. Defecation in open (in fields, etc.)	206	33.1
5. Other	14	2.3

4.2: Morbidity, Immunization Status and Health Seeking Behaviour

A high prevalence of common diseases was recorded as reflected in Table 5 below. During the two weeks prior to the survey, the recorded prevalence of diarrhoea among children was 32.6 per cent, the prevalence of ARI as described by coughing or breathing difficulty was 35.95 and the prevalence of fever two weeks prior to the survey was 47 per cent. Suspected measles[8] during the last month was 3 per cent.

As shown in Table 5, the coverage for polio vaccination is low with a proportion of 47.2 per cent, while it is 85.2 per cent for measles immunization coverage. During the previous six months, 78.3 per cent of the children had received vitamin A supplements. The above immunization coverage and vitamin A supplementation coverage are lower than the Sphere Standards recommended 95 per cent coverage.

Almost half of the surveyed children (48.6 per cent) slept under a mosquito net the night before the survey.

Table 5: Health Seeking Behaviour		
	N	*%*
Where health service is sought		
Public health facility	576	92.6
Private clinic	27	4.3
Pharmacy	8	1.3
Personal medication	2	0.3
Do not seek medical assistance	9	1.4
Morbidity		
Proportion of children with diarrhoea within 2 weeks prior to assessment	273	32.6
Proportion of children with ARI within two weeks prior to assessment	301	35.9
Proportion of children with fever within two weeks prior to assessment	395	47.0
Suspected measles within one month prior to assessment	25	3.0
Immunization		
Children (9-59 months) immunised against measles	646	85.2
Children who have ever received routine polio 3 vaccine	394	47.2
Supplementation		
Children who received vitamin A supplementation in last 6 months	653	78.3
Sleeping under mosquito net		
Children slept under mosquito net last night	408	48.6

[8] The suspected measles is defined as having rash and fever in addition to at least one of: cough, sore throat, or conjunctivitis.

As shown in Table 5, more than 90 per cent of households seek health services from public health facilities. However, about 99 per cent of children have been found not registered in any feeding programme.

4.3: Feeding Practices

Table 6: Feeding practices

	N	*%*
Still breastfeeding	170	73.9
Number of feeds (other than breastfeeds)		
No feed	9	4.4
One feed	17	8.3
Two feeds	31	15.2
Three feeds	94	46.1
Feeding 4 times and above	53	26.0
Number of milk feeds (other than breast milk)		
No milk feed	57	34.8
One milk feed	12	7.3
More than one milk feed	95	57.9

As shown in Table 6, only 73.9 per cent of children aged 6 to 24 months are continuing breastfeeding. Additionally, only 26 per cent of this category of children had four and above feeds other than breastfeeding in the previous day. Inappropriate infant and young child feeding practice of giving milk (other than breast milk) to children over 6 months of age was recorded as common in IDP settlements with percentages of 65.2 per cent of children in the previous day to the survey.

4.4: Characteristics of the children assessed

Table 7: Distribution of Age and Sex of the sample

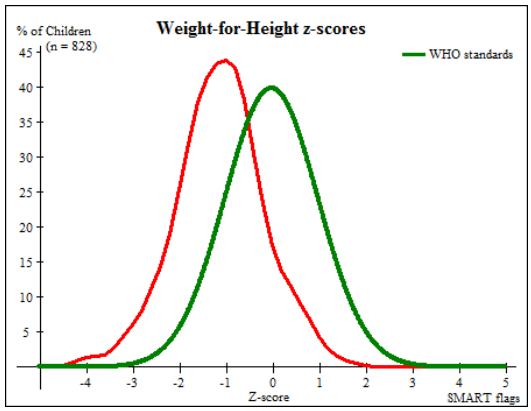
	Boys		*Girls*		*Total*		*Ratio*
AGE (mo)	*no.*	*%*	*no.*	*%*	*no.*	*%*	*Boy:girl*
6-17	85	55.2	69	44.8	154	18.3	1.2
18-29	98	51.0	94	49.0	192	22.8	1.0
30-41	113	51.6	106	48.4	219	26.0	1.1
42-53	112	55.2	91	44.8	203	24.1	1.2
54-59	41	54.7	34	45.3	75	8.9	1.2
Total	449	53.3	394	46.7	843	100.0	1.1

Generally there were more boys than girls assessed in this survey, as shown in table 7, however, the difference is not statically high (p=0.063) as found by the plausibility check of the survey date (Annex 11: Assessment Quality Check). Further on the overall, the ratio of boys to girls was close to1.1: 1, implying sample representativeness of the study population.

4.5: Nutrition Status

Below is a summary of the anthropometric results of the nutrition survey. Data quality was validated using the Plausibility check function of the SMART for ENA software. The overall scoring of the plausibility check of the survey data is 11 which is categorized as acceptable (Ref: Annex 11 for the Assessment Quality Check), meaning quality and representative data was collected for the Hajja IDPs.

4.5.1: Acute Malnutrition Rates



There is an overall shift to the left of the study population when compared with the reference population, as per the graphs shown (implying presence of malnutrition). The interpretation was made based on the 2006 WHO Growth Standards.

The level of wasting with oedema – also known as global acute malnutrition (GAM) – found is **15.7 per cent,** which classified as 'critical' as per the WHO categorization of the severity; details are shown in Tables 8 (including the confidence intervals). Pockets of high nutritional vulnerability were noted and reported (P=0.004) among some marginalized groups living in Camp 3 and those still living in so-called camp 2 where no services are provided. Levels of SAM at 3 per cent and MAM at 12.7 per cent are much lower than those found for IDPs in July 2011[9] of 10.8 per cent and 20.6 per cent respectively. There was no oedema case identified by the survey. The proportion of the malnourished boys (17.9 per cent) was higher than that of the girls (13.2 per cent).

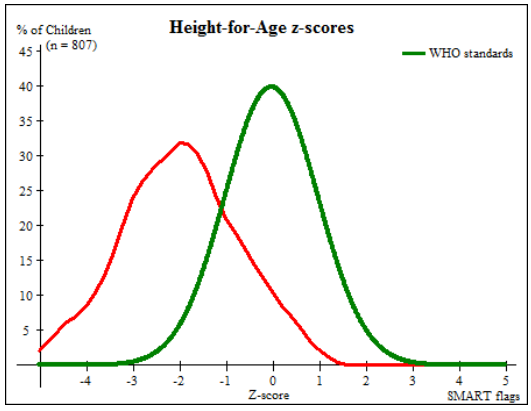
Table 8 : Acute Malnutrition (Wasting) Rate

	All *n = 828*	*Boys* *n = 442*	*Girls* *n = 386*
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(130) 15.7 % (95% CI: 13.3 - 18.4)	(79) 17.9 % (95% CI: 14.5 - 21.8)	(51) 13.2 % (95% CI: 10.1 - 17.1)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score	(105) 12.7 % (95% CI: 10.5 - 15.2)	(59) 13.3 % (95% CI: 10.4 - 17.0)	(46) 11.9 % (95% CI: 8.9 - 15.7)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(25) 3.0 % (95% CI: 2.0 - 4.5)	(20) 4.5 % (95% CI: 2.9 - 7.0)	(5) 1.3 % (95% CI: 0.5 - 3.2)
Oedema	0	0	0

The prevalence of oedema is 0.0 %

The prevalence of acute malnutrition based on the NCHS reference is reflected the summary of Table 11, below.

4.5.2: Chronic Malnutrition Rates



Stunting prevalence as shown in Table 9 is 48.5 per cent. There is also an overall shift to the left of the study population deviating from the reference population. The prevalence of severe stunting is 19.5 per cent. The statistical details of the stunting rates are as shown in table 9 below.

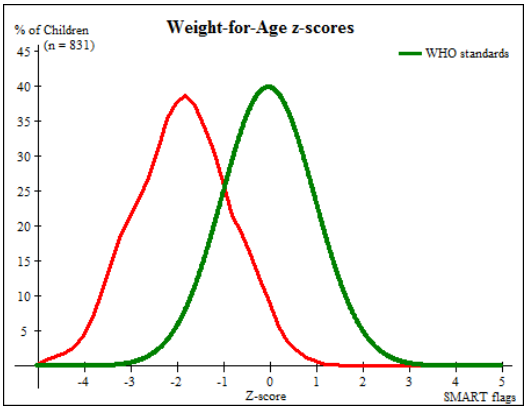
This stunting level exceeds the 40 per cent threshold for critical levels according to WHO (2000), hence the situation is of great concern. The rate above is slightly but not significantly higher than that found for IDPs in the survey of July 2011 which was 45.5 per cent.

[9] MoPHP and UNICEF. Nutrition Survey among U5 Children and Women of Childbearing Age in Three Districts in Hajjah Governorate, Yemen. July, 2011

Table 9: Chronic Malnutrition (Stunting) Rate			
	All *n = 807*	*Boys* *n = 428*	*Girls* *n = 379*
Prevalence of stunting (H/A<-2 z-score)	(391) 48.5 % (95% CI: 45.0 - 52.0)	(219) 51.2 % (95% CI: 46.3 - 56.0)	(172) 45.4 % (95% CI: 40.3 - 50.6)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(234) 29.0 % (95% CI: 25.9 - 32.3)	(129) 30.1 % (95% CI: 25.9 - 34.8)	(105) 27.7 % (95% CI: 23.3 - 32.6)
Prevalence of severe stunting (H/A<-3 z-score)	(157) 19.5 % (95% CI: 16.8 - 22.4)	(90) 21.0 % (95% CI: 17.3 - 25.3)	(67) 17.7 % (95% CI: 14.0 - 22.0)

4.5.3: Underweight Rates

Underweight prevalence as per child gender is shown in Tables 10. The rate is 44.5 per cent with severe underweight of 14.7 per cent. An overall shift of the study population is shown in the graphs, reflecting the overall deviation of the study population from the reference population, implying presence of widespread malnutrition. The statistical details of the underweight prevalence are shown in the tables 10 below.



The above underweight rate exceeds the WHO (2000) critical levels of 30 per cent and above, but it is slightly lower than that found by the July 2011 survey which was 48.9 per cent. It is worth noting that underweight is a composite variable for Global Acute Malnutrition and Chronic Malnutrition levels in a population.

Table 10: Underweight Rate			
	All *n = 831*	*Boys* *n = 444*	*Girls* *n = 387*
Prevalence of underweight (<-2 z-score)	(370) 44.5 % (95% CI: 41.1 - 48.0)	(209) 47.1 % (95% CI: 42.4 - 51.8)	(161) 41.6 % (95% CI: 36.7 - 46.7)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(248) 29.8 % (95% CI: 26.8 - 33.1)	(145) 32.7 % (95% CI: 28.4 - 37.3)	(103) 26.6 % (95% CI: 22.3 - 31.4)
Prevalence of severe underweight (<-3 z-score)	(122) 14.7 % (95% CI: 12.4 - 17.3)	(64) 14.4 % (95% CI: 11.4 - 18.1)	(58) 15.0 % (95% CI: 11.7 - 19.0)

Table 11: Summary of Malnutrition Rates

	Mountainous		
	N	***%***	***95% CI***
Global Acute Malnutrition (WHZ<-2 or oedema)	130	15.7	13.3 – 18.4
Severe Acute Malnutrition (WHZ<-3 or oedema)	25	3.0	2.0 – 4.5
Oedema	0	0	-
Global Acute Malnutrition (WHM<80% or oedema)*	83	10.0	8.0 – 12.2
Severe Acute Malnutrition (WHM<70% or oedema)*	3	0.4	0.1 – 1.1
Stunting rate (HAZ<-2 z score)	391	48.5	45.0 – 52.0
Severe stunting rate (HAZ <3 z score)	157	19.5	16.8 – 22.4
Underweight Rates (WAZ<-2 z score)	370	44.5	41.1 – 48.0
Underweight rate (WAZ_-3 z score)	122	14.7	12.4 – 17.3

* NCHS reference is used.

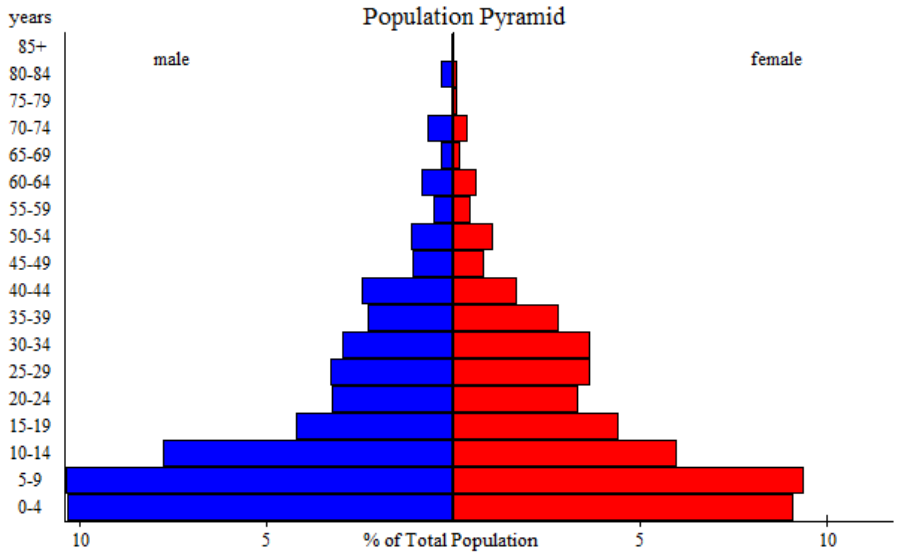
4.6: Mortality

Table 12: Mortality data		
	U5	*Total*
Total HHs surveyed	615	615
Total Population assessed in HHs	1007	5175
Number who joined the HHs	56	408
Number who left the HHs	77	601
Number of births	10	10
Number of deaths	3	6
Mortality rate (per 10,000 per day)		
Under-five	**0.33**	
Crude	**0.13**	

The crude death rate is 0.13 per 10,000 per day. The rate is higher among males than females (0.16 and 0.09 respectively). The under-five death rate is 0.33 per 10,000 per day, respectively. These rates are low and within acceptable levels according to WHO categorization, hence not raising concern. No death was found to be caused by violence.

4.6.1: Population Pyramid

Information about household members during the previous 90 days was collected. The resulting population pyramid for each zone is shown here. The population distribution by age shows almost equal number of the men and women throughout the age groups, but there is a sudden shrink in population after 44 years and a further shrink after 54 years, implying a low life expectancy of the Yemen population. Few people live beyond 54 years.


Population Pyramid
years
85+
80-84
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
male
female
10
5
% of Total Population
5
10

5.0 DISCUSSION AND VARIABLE ASSOCIATION

5.1 Levels of Malnutrition

It is well recognized that malnutrition is a public health problem in Hajja Governorate. The nutrition survey in the two ecological zones of Hajja has shown that the malnutrition situation is at a critical level. According to the findings of the July 2011 Nutrition Survey, the prevalence of wasting was found to be high in the both IDPs and host population (31.4 per cent), more than twice the WHO emergency threshold of 15 per cent, while the prevalence of severe acute malnutrition was 10 per cent.

Levels of acute malnutrition in IDP settlements were found to be different from those found in the survey done in July 2011, which was designed to cover two strata; the IDPs and the host communities. The results continue to record a persisting nutrition crisis with GAM results exceeding the emergency threshold of 15 per cent, according to WHO. GAM in IDPs was found lower than that of 2011 (15.7 per cent compared to 31.4 per cent) which is statistically significant. SAM was also found lower (3 per cent compared to 10.8 per cent) which is also a significant difference. This may be attributed to the substantial human development efforts and successful public health interventions undertaken by the government and humanitarian organizations. Before July 2011, there were only three operational Outpatient Therapeutic Programmes (OTPs) in three health facilities (one in each district). Over the past 10 months of the emergency response in view of the serious levels of acute malnutrition, emergency nutrition interventions led by UNICEF were expanded to 12OTPs[10] to treat the severely malnourished children as well as six Supplementary Feeding Programmes (SFP) to rehabilitate children and mothers with moderate acute malnutrition. Two mobile clinics were deployed to provide OTP and primary health care services as well as health and hygiene promotion. Two IYCF corners established in Harad hospital and in the IDP camp providing IYCF counselling to the mothers. An Integrated Nutrition, Health and WASH project in Bakil Al-Meer and Mustaba Districts was also launched, targeting 1,700 children with SAM, 3,000 pregnant or lactating women for antenatal care and 5,000 families for nutrition and hygiene education.

As part of the efforts to tackle the staggering levels of acute malnutrition, capacity building for the service providers took place. Accordingly, 146 health workers from different districts in Hajja were trained upon management of SAM. Twenty health workers from Al-Jomhory hospital and Harad hospital were trained on the inpatient treatment of SAM with complications (the TFC setting). Thirty-five health workers from Harad health facilities and INGOs were trained on IYCF practices. An awareness raising workshop for the community leaders for all 31 districts (three from each district) was also conducted. 357 community nutrition volunteers from eight districts were trained on malnutrition screening, referral and active case finding, and integrating in the community. Additionally, fourty community health volunteers from Harad District received training on IYCF practices.

The IDPs in Al-Mazraq were supported on water supply, sanitation interventions and hygiene activities. The intervention included daily water supply by Al-Mazraq water scheme for the IDP families settled in camp 1, camp 3 and settlement 2, provision of daily water supply by tracking for IDPs settled outside camps with the hosting

[10] Six additional OTPs in Harad and three OTPs in each of Mustaba and Bakil Almeer Districts. However currently two OTPs in Mustaba District are closed but the other 10 OTPs are operational. WFP now have only four SFPs in Harad as two were closed (YRC health centre & Almazrag HU)

community in Al-Mazraq, Khairan Al-Moharraq District (Al-Khamisain area) with 20 litres per person per day, and support on water quality process through providing daily chorine tests for water by a specialist engineer from GARWAP. The IDPs settled inside camps and outside camps with the host community are also supported for adequate sanitation by Al-Khair NGO. The activities included: construction and rehabilitation of IDP latrines, hygiene promotion awareness campaigns, and solid waste management system and latrines emptying. However, it's worth mentioning that despite the improvements over the past 10 months, access to safe drinking water and sanitation facilities still remains a critical issue in the IDP camps. Therefore, the unfavourable health environment caused by inadequate water and sanitation can increase the probability of infectious diseases and indirectly cause certain types of malnutrition

All these efforts suggested some explanation for how improvements in acute malnutrition occur in the IDP camps. Despite the improvements in the prevalence of wasting in the past 10 months in Hajja Governorate, the magnitude in the present study (15.7 per cent) indicate that acute malnutrition is a still a major problem of public health significance which needs urgent attention to over-come and improve. The problem of wasting in the areas is paralleled by high levels stunting and underweight which remained persistently high with no sign of improvement. The high morbidity, lack of adequate potable water and sub-optimal immunization coverage are also areas of concern that could aggravate the situation. This reduction is an indicator for improvement in services delivered, while the nutrition status is still not improved as revealed by high levels of stunting and underweight that are found close to that found by the 2011 survey.

Significant differences are found in GAM and SAM prevalence of boys and girls. GAM is found 17.9 per cent in boys and 13.2 per cent in girls (X^2: 3.4, $P<0.05$, df 1) and SAM is found 4.5 per cent in boys and 1.3 per cent in girls (X^2: 7.3, $P<0.01$, df 1). This pattern of differences was also found in the survey of 2011. There were no significant differences seen between boys and girls in stunting and underweight.

Levels of wasting, stunting and underweight found in this survey are above the WHO 'critical' levels thresholds of 15 per cent, 40 per cent and 30 per cent respectively. The results indicate an emergency nutrition situation in IDP settlements based on the acute malnutrition levels with some highly vulnerable pockets of the population. The critical wasting levels call for accelerated emergency nutrition response (lifesaving) while the stunting rate calls for integrated response to reduce the prevalence and the resultant longer-term effect of stunting (children not reaching their full potential in productivity; population might record excess mortality).

5.2: Child Feeding, Vitamin A Supplementation and Malnutrition Levels

Among children aged 6 to 24 months, there is statistically significant difference in stunting (X^2: 3.5, $P<0.05$, df 1) and severe stunting (X^2: 5.4, $P<0.05$, df 1) between those still breastfed and those who have ceased breastfeeding. Stunting was found to be lower among those still breastfeeding than those who ceased breastfeeding. Stunting as a result of poor infant feeding might manifest later in life, since it is a chronic condition. There was no significant difference recorded for underweight between those still breastfed and those who had ceased to breastfeed, but in the case of GAM, higher rates were found among those who had ceased breastfeeding than those still breastfeed (X^2: 5.1, $P<0.05$, df 1).

The number of feeds (other than breastfeeds) shows no effect on levels of stunting, underweight and wasting while the number of milk feeds (other than breast milk) was found to have an effect on GAM that was higher among those who have no or one milk feed per day than those who have more than one milk feed per day. This effect was not expected since giving milk feed (other than breast milk) is not a good practice as milk is considered to be a watery and non-caloric dense food during this age period. This is may suggest other reasons in addition to ceasing of breastfeeding for high GAM rates in this population.

It is notable that the vitamin A coverage (supplementation six months prior to the survey) was lower than the recommended 95 per cent coverage (Sphere Standards, 2011). There was no relationship identified between vitamin A supplementation and the levels of either stunting, underweight or wasting.

5.3: Morbidity and Malnutrition Levels

The disease prevalence was recorded as being high in IDP settlements but it is much lower than that found by the July 2011 survey as shown in table 13.

Table 12: Differences in morbidity proportions in IDPs between July 2011 and May 2012

Survey	Diarrhoea	ARI	Fever	Expected measles
May 2012	32.6%	35.9%	47%	3%*
July 2011	52.6%	44.3%	55.7%	3.6%**

* One month prior to the survey
** Three months prior to the survey

Unlike the pattern seen in the July 2011 survey and in the Hodiedah survey 2011 where acute malnutrition and diarrhoea are highly prevalent, no statistically significant association was observed for diarrhoea two weeks prior to the survey on the prevalence of acute malnutrition. However, there was a relationship noted between diarrhoea and stunting (X^2: 5.0, P<0.05, df 1) and underweight (X^2: 4.4, P<0.05, df 1). This identified relationship between illness and malnutrition calls for appropriate and adequate health service provision as well as hygiene promotion efforts in order to address the malnutrition.

5.4: WASH and Nutrition Situation

There was no link found between the cleanliness of water storage and stunting, underweight, and wasting. Similarly, there was no effect seen for latrine type. However, in view of the hygiene and sanitation situation, the risk of water borne diseases is high, which is potentially likely to further aggravate the already compromised nutritional status of children, and pregnant and lactating women, as well as increasing morbidity and mortality.

The household caretaker hand-washing with water and soap practice showed some correlation with malnutrition levels. A low proportion of stunting and underweight were noted among children in households where caretakers reported practicing hand-washing after using the latrine (X^2: 7.5, P<0.01, df 1) and (X^2: 9.7, P<0.01, df 1) respectively,

with no effect on GAM. Although there was no effect found on malnutrition for hand-washing by household caretakers before meals, after meals and before cooking. The above analysis indicates that hygiene promotion is a key intervention that contributes to better health and eventually better nutrition and well-being of the population.

6.0 RECOMMENDATIONS

The prevalence of acute malnutrition is found above the 'critical' threshold as per the WHO 2000 categorization. Although mortality is still low, the critical levels of stunting, underweight and the critical GAM levels require further strengthening and expanding implementation of comprehensive integrated interventions to address the nutritional situation of U5 children. It is also important to note that there are pockets of vulnerability that are still comparable to the 2011 IDP settlements nutrition survey.

The existence of multi-sectoral aggravating factors like poor feeding practices, high prevalence of communicable diseases, insufficient coverage of essential health services like immunization and micronutrient supplementation in addition to high levels of illiteracy among the majority of caretakers. The need to deliver an integrated package of services to mothers and their children is very important not only to address the high wasting levels but also to address the high level of stunting and other development indicators.

Below are the main immediate and medium-term recommended interventions:

Immediate Interventions

- Develop detailed integrated multi-sectoral micro-plan to address the high levels of acute and chronic malnutrition among U5 children.
- Expand the current nutrition services to reach more children with special emphasis on the community component (MUAC screening and referral).
- Expand the MAM supplementary feeding programme to all fixed and outreach health service delivery sites providing management of SAM.
- Accelerate the integration of IYCF counselling into all CMAM services delivered by both fixed and mobile clinics.
- Raising awareness campaigns on promotion of appropriate infant and young child feeding practices (early initiation of breastfeeding, exclusive breast-feeding for first six months of life, timely introduction of complementary food and continue breastfeeding up to two years) and food preparation, dietary diversity, appropriate child care, and promotion of safe sanitation and hygienic practices including hand washing with soap.
- Malnutrition prevention efforts should target the younger age group 6-24 months in both IDP camps and host communities with special focus on timely introduction of complementary feeding, safe disposal of children's excreta, diarrhoea prevention measures and appropriate management of ARI among young children
- Undertaking wide coverage community campaigns to all IDP settlements to deliver a minimum package of routine vaccinations, vit. A and micronutrient supplementation, and deworming.
- Intensive social mobilization campaigns on improving maternal nutrition, child feeding and caring practices through behaviour change / communication interventions

Medium Term Interventions

- Establishing robust nutrition information monitoring system in the mentioned districts and incorporating key health and food security indicators to closely monitor

the situation and deliver a timely response.

- Capacity building for the government to manage the nutrition information system.
- Follow up SMART nutrition surveys next year at the same time to document progress of the response plan and lessons learnt.
- Develop and introduce food-for-work interventions to support infrastructure development and provide alternative income generating activities during the lean periods, including social protection mechanisms like cash transfers and livelihoods and food/ crop diversification projects.

Other Recommendations

- Further investigation is needed to understand the causality tree behind the high level of acute malnutrition among boys compared to girls shown through this and earlier surveys conducted in Hodeidah and Taiz Governorates.
- Undertaking a full scale national nutrition and mortality survey.

Annexes

Annex 1: Hajja Nutrition Survey Questionnaire

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

مسح الحالة التغذوية والوفيات في محافظة حجة – مايو 2012

استبيان الأسرة (نموذج 1)

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

الموافقة	.1 نعم		
	.2 لا		انتقل إلى النهاية

تاريخ المقابلة	يوم		شهر		سنـــــة			
			5	Ø	2	1	Ø	2

المديرية	العزلة	القرية أو الحي
الاسم	الاسم	الاسم

اسم رب الأسرة:	

فريق المسح رقم		الاسم	التوقيع
	الاسرة والأنثروبومتري		
	الوفيات		
	رئيس الفريق		

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)

غياب الأسرة حتى بعد الزيارة الثانية (1 نعم ، 2 لا)	
الموافقة (1 نعم ، 2 لا)	

رقم الفريق		

رقم استبيان الأسرة				

تاريخ المقابلة	ي	ي	ش	ش	س	س	س	س	س
			5	Ø	2	1	Ø	2	

هل المنطقة حضرية (1) أم ريفية (2)	

رمز القرية أو الحي			رمز العزلة		
رمز المديرية			رمز المحافظة	7	1
رقم طبقة المسح			رقم العنقود		

العمل المكتبي

	الاسم	اليوم		الشهر		السنة				التوقيع
إدخال البيانات										
المراجعة										
ترميز أخرى										

الملاحظات

.....

.....

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استبيان رقم: .....

س 001: بيانات عن الأسرة (الأحياء فقط والذين يعيشون بشكل دائم معا)

H001a	عدد أفراد الأسرة (الأحياء فقط الذين يعيشون مع الأسرة تاريخ المسح)	**العدد**	
H001b	عدد الأطفال أقل من 5 سنوات (الأحياء فقط الذين يعيشون مع الأسرة تاريخ المسح)	**العدد**	
H001c	عدد الأطفال أقل من 6 أشهر (الأحياء فقط الذين يعيشون مع الأسرة تاريخ المسح)	**العدد**	

س 002 – س 003: بيانات رب الأسرة

H002	مانوع رب الأسرة		
	.1	ذكر	
	.2	أنثى	
H003	الحالة الاجتماعية لرب الأسرة		
	.1	متزوج ويعيش مع شريكه.	
	.2	متزوج لكنه لا يعيش مع الشريك منذ ستة أشهر أو أكثر.	
	.3	أرمل.	
	.4	مطلق.	
	.5	حانق	
	.6	عازب.	

س 004: بيانات راعي الأسرة

H004	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 005: مصدر دخل الأسرة

H005	ماهو مصدر الدخل **الرئيسي** للأسرة؟		
	.1	بيع منتجات زراعية غير القات.	
	.2	بيع حيوانات والمنتجات الحيوانية.	
	.3	بيع اسماك.	
	.4	التجارة.	
	.5	عمل مؤقت.	
	.6	وظيفة دائمة براتب شهري.	
	.7	حوالات (من المغتربين).	
	.8	أعمال حرفية.	
	.9	زراعة/ بيع/ نقل القات.	
	.10	هبات (من الأهل أو الأصدقاء).	
	.11	تهريب.	
	.12	ضمان إجتماعي	
	.13	أخرى: تذكر	

س 006 – س 012: بيانات عن الماء والإصحاح البيئي والنظافة

H006	ماهو المصدر الرئيسي **لمياه الشرب** في منزلكم؟ (خيار واحد فقط)		
	.1	أنابيب مياه موصلة إلى البيت.	
	.2	أنابيب مياه موصلة إلى فناء البيت.	
	.3	بئر مفتوحة غير محمية.	
	.4	بئر مفتوحة محمية.	
	.5	خزان مغطى لحصاد مياه الأمطار.	
	.6	خزان مفتوح لحصاد مياه الأمطار.	
	.7	سيارة نقل المياه (وايت ماء)	
	.8	مياه صحية معبأة (حدة، شملان، كوثر الخ)	
	.9	مياه سطحية غير محمية (وادي، عين ماء جاري، الخ)	
	.10	عين ماء محمية	
	.11	خزانات اليونيسف	
	.12	أخرى: تذكر	

إنتقل إلى			
	H007a	هل تقومون بمعالجة الماء قبل **الشرب**؟	
	.1	نعم	
H008 ←	.2	لا	
H008 ←	.3	لا أعرف	

استبيان رقم: .....

H007b	ماهي طريقة المعالجة **الرئيسية** المستخدمة **لمياه الشرب** (خيار واحد فقط)			
	.1	غلي الماء قبل الشرب		
	.2	استخدام الكلور أو الكلوركس		
	.3	الترشيح عبر قماش نظيف		
	.4	استخدام مرشح سيراميك أو رمل أو ماشابه (فلتر أو قطارة)		
	.5	ترقيد الماء قبل الشرب		
	.6	استخدام الشب (شب الفؤاد)		
	.7	أخرى		
H008	**للملاحظة**: **تحقق** من توفر نقاط تخزين المياه **لغرض الشرب**: هل الوعاء الحاوي لمياه الشرب نظيف؟ (عدم وجود طحالب)			
	.1	نعم.		
	.2	لا.		
H009	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).		
	.2	مرحاض - حفرة دون غطاء.		
	.3	مرحاض - حفرة مغطاة بطريقة بسيطة (الجاف).		
	.4	قضاء الحاجة في العراء (في الحقول مثلا، الخ.)		
	.5	أخرى: تذكر		

استبيان رقم: .....

H010	متى تقومين بغسل اليدين باستخدام الصابون أو الرماد أو التراب أو أوراق الشجر أو ي مادة اخرى؟ (ضع علامة أمام أكثر من فقرة إذا قام الشخص بذكرها. لا تعطي الشخص الخيارات قبل الإجابة				
	a. بعد قضاء الحاجة	1. نعم			
		2. لا			
	b. قبل الأكل	1. نعم			
		2. لا			
	c. بعد الأكل	1. نعم			
		2. لا			
	d. قبل الطبخ	1. نعم			
		2. لا			
	e. قبل إطعام الطفل	1. نعم			
		2. لا			
	f. بعد التخلص من براز الطفل	1. نعم			
		2. لا			
	g. بعد التنظيف لمكان المواشي والدواجن	1. نعم			
		2. لا			
	h. اية إجابات أخرى: تذكر:				

H011	**للملاحظة**: في نقطة غسل اليدين، تحقق من وجود التالي			
	a. الماء	1. نعم		
		2. لا		
	b. الصابون	1. نعم		
		2. لا		
	c. الرماد/ التراب/ القضاض/ أوراق الشجر.	1. نعم		
		2. لا		

H012a	أين تحصلون على الرعاية الصحية عندما يمرض أحد أفراد الأسرة؟		**إنتقل إلى**
	1.	لا أطلب مساعدة طبية	
	2.	أدوية شخصية	
	3.	معالج تقليدي	
	4.	شيخ	
	5.	صيدلية	
	6.	عيادة خاصة	C013 ←
	7.	مرفق صحي عام	C013 ←

استبيان رقم: .....

H012b	لماذا لاتسعون للحصول على الخدمة الصحية في مرفق صحي أو عيادة عند المرض؟		
	.1	الكلفة عالية	
	.2	المرفق بعيد ولا تتوفر مواصلات	
	.3	لايوجد وقت كافي	
	.4	لا نثق في خدمات المرافق القريبة	
	.5	أخرى: تذكر	

س 013 – س 019: حالة الإطعام والتحصين للأطفال في سن 6-59 شهراً في الأسرة

رقم الطفل	الاسم الأول للطفل	C013 نوع الطفل 1= ذكر 2 = أنثى	C014a تاريخ الميلاد (إذا دونت تاريخ الميلاد فعليك تجاوز السؤال C014b)	C014b عمر الطفل (بالأشهر) (إذا كان الطفل أكبر من 24 شهر انتقل إلى السؤال C017)	C015 للطفل الذي عمره 24 شهر أو أقل. هل مازال الطفل يرضع (رضع خلال الـ 12 ساعة الماضية)؟ 1= نعم 2 = لا	C016a للطفل الذي عمره 24 شهر أو أقل. كم مرة قمتي بإطعام الطفل خلال 24 ساعة الماضية؟ (يرجى عدم حساب مرات الرضاعة الطبيعية)
.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			

	رقم الطفل (كما سبق أعلاه)	نوع الطفل 1= ذكر 2 = أنثى	عمر الطفل (بالأشهر)	C016b للطفل الذي عمره 24 شهر أو أقل. كم مرة قمتي بإعطاء الطفل حليب خلال 24 ساعة الماضية؟ (يرجى عدم حساب مرات الرضاعة الطبيعية)	C017 هل تم إعطاء الطفل فيتامين أ خلال الستة أشهر الماضية؟ (إظهار عينة) 1 = نعم 2 = لا 3= لا أعرف	C018 هل أخذ الطفل جرعة لقاح الخماسي3/ الشلل3؟ 1 = نعم 2 = لا	C019 للأطفال بعمر تسعة أشهر فأكبر. هل تم تطعيم الطفل ضد الحصبة. (حقنة في اليد اليسرى)؟ 1 = نعم من البطاقة. 2 = نعم بالتذكر. 3 = لا أعرف 4 = لم يطعم
.1							
.2							
.3							
.4							
.5							
.6							
.7							

س 020 – س 029: القياسات الجسمانية ومراضة الأطفال بين سن 6-59 شهر في الأسرة

	رقم الطفل (كما سبق أعلاه)	نوع الطفل 1=ذكر 2 = أنثى	عمر الطفل (بالأشهر)	C020 الوزن (كيلو جرام) 88.8 = رافض 99.9 = غائب	C021 الطول (سم) 888.8 = رافض 999.9 = غائب	C022 التورم (أوديما) في كلا القدمين. 1 = نعم 2 = لا 8 = رافض 9 = غائب	C023 قياس محيط الذراع (سم) (الميوالك) 88.8 = رافض 99.9 = غائب
.1				.	.		.
.2				.	.		.
.3				.	.		.
.4				.	.		.
.5				.	.		.
.6				.	.		.
.7				.	.		.

	رقم الطفل (كما سبق أعلاه)	نوع الطفل 1= ذكر 2 = أنثى	عمر الطفل (بالأشهر)	C024 الإسهال خلال الأسبوعين الماضيين 1 = نعم 2 = لا	C025 سعال أو صعوبة في التنفس خلال الأسبوعين الماضيين 1 = نعم 2 = لا	C026 الحمى خلال الأسبوعين الماضيين 1 = نعم 2 = لا	C027 الاشتباه بالحصبة خلال الشهر الماضي (طفح جلدي + حمى + (سعال أو إلتهاب حلق أو إلتهاب الملتحمة) 1 = نعم 2 = لا	C028 هل نام الطفل تحت شبك الناموس الليلة الماضية؟ 1 = نعم 2 = لا	C029 هل الطفل مسجل حالياً في أي مركز تغذية SFP =1 TFC/SC =2 OTP =3 4= أخرى 5 = غير مسجل
.1									
.2									
.3									
.4									
.5									
.6									
.7									

Questionnaire Number: .....

Republic of Yemen
Ministry of Public Health and Population
Office of Public Health and Population, Hajja Governorate

Nutritional Status and Mortality Survey – Hajja Governorate – May 2012

Household Questionnaire (Form 1)

First: Explain to the residents of the household (adults) about the survey and inform them of the agency conducting the survey and survey staff (team members). Then request their verbal agreement to participate in the survey.

Consent	1.	Yes.		
	2.	No.		Go to the end.

Date of interview	day		month		year			
			Ø	5	2	Ø	1	2

District	Ozla (Sub-district)	Village or neighborhood
name	Name	name

Name of head of household	

Survey team number		Name	Signature
	Household and anthropometric data		
	Mortality data		
	Team leader		

Indicate which situation applies:		
1.	Absence of household upon first visit which necessitated a second visit	
2.	Absence of child upon first visit which necessitated a second visit *	

* If the child is not present, all data should be filled in except anthropometric measurements and edema which should be completed only if the child is present.

Note: The data inside the cover is for field and administrative use by the team members.

Questionnaire Number: .....

To be filled by the Team Leader (for data input purposes)

Repeated absence of the household even after the second visit (1=yes, 2=no)	
Consent (1=yes, 2=no)	

Team Number		

Household Questionnaire Number				

Date of Interview	day		Month			year			
			Ø	2		2	Ø	1	2

Is the region urban (1) or rural (2)?	

Village or neighborhood code number			Sub-district code number		
District code			Governorate code number	1	7
Survey zone (stratum) number			Cluster number		

.....

Desk work

	Name	day		month		Year				Signature
Data entry										
Review										
Other encoding										

Remarks:

.....

.....

.....

.....

.....

.....

Questionnaire Number: .....

Q001: Household data (only those who are alive and living together continuously)

H001a	Number of household members (only those who are alive and living with the household on the date of the survey)	Quantity	

H001b	Number of children under five (only those who are alive and living with the household on the date of the survey)	Quantity	

H001c	Number of children under six months (only those who are alive and living with the household on the date of the survey)	Quantity	

Q002 – Q003: Head of household data

H002	Gender of the head of household			
	1.	Male		
	2.	Female		

H003	Social status of the head of household			
	1.	Married and living with partner		
	2.	Married and not living with partner for at least six months or more.		
	3.	Widow/widower		
	4.	Divorced		
	5.	Angered and separated		
	6.	Single		

Q004: Household caretaker data

H004	Education level of household caretaker			
	1.	Illiterate.		
	2.	Can read and write (literate).		
	3.	Basic education.		
	4.	Secondary education.		
	5.	Tertiary education (university, college, or institute).		

Questionnaire Number: .....

Q005: Household income source

H005	What is the **primary** source of income for the household?		
	1.	Sale of non-qat agricultural products	
	2.	Sale of livestock and livestock products	
	3.	Sale of seafood	
	4.	Trading	
	5.	Temporary work (Causal work)	
	6.	Monthly salary	
	7.	Remittance (from emigrants)	
	8.	Craftsmanship	
	9.	Farming/sale/transport of qat	
	1Ø.	Donation (from friends and relatives)	
	11.	Smuggling	
	12.	Social insurance	
	13.	Other: specify -	

Q006 – Q012: Water, environmental sanitation, and hygiene data

H006	What is the main source of **drinking water** in your home? (choose one only)		
	1.	Piped water connected to home.	
	2.	Piped water connected to yard.	
	3.	Open, unprotected well.	
	4.	Open, protected well.	
	5.	Covered rainwater collection tank.	
	6.	Open rainwater collection tank.	
	7.	Water delivery truck.	
	8.	Bottled water (Hadda, Shamlan, Kawthar, etc.)	
	9.	Unprotected surface water (valley, running spring, etc.)	
	1Ø.	Protected spring water.	
	11.	UNICEF tanks	
	12.	Other: specify -	

H007a	Do you treat the water before drinking?			Go to
	1.	Yes		
	2.	No		→H008
	3.	Don't know.		→H008

Questionnaire Number: .....

H007b	What is the **main** method used to treat **drinking water**? Choose only one.			
	1.	Boil water before drinking.		
	2.	Use chlorine or Clorox.		
	3.	Filter through clean cloth.		
	4.	Use ceramic or sand filter or similar filter method.		
	5.	Let water settle before drinking.		
	6.	Use of alum crystal to disinfect.		
	7.	Other.		

H008	**Note**: **Investigate** availability of storage for **drinking water**. Is the water container clean (no algae seen)?			
	1.	Yes.		
	2.	No.		

H009	What is used for defecation? Choose one of the following. **Verify** existence of facilities and practices.			
	1.	Toilet – equipped with flush mechanism to wash water down.		
	2.	Toilet – uncovered pit.		
	3.	Toilet – simple dry covered pit.		
	4.	Outdoors in the open air (in fields, for example).		
	5.	Other: specify -		

Questionnaire Number: .....

H010	When do you clean your hands with soap, ashes, dust, tree leaves, or any other material? Place a check mark in more than one answer if the respondent mentions them. Do not give the person any choices before the answer.					
	a.	After using the toilet.	1.	Yes		
			2.	No		
	b.	Before eating.	1.	Yes		
			2.	No		
	c.	After eating.	1.	Yes		
			2.	No		
	d.	Before cooking.	1.	Yes		
			2.	No		
	e.	Before feeding the child.	1.	Yes		
			2.	No		
	f.	After disposing of child's waste.	1.	Yes		
			2.	No		
	g.	After cleaning the livestock or poultry areas.	1.	Yes		
			2.	No		
	h.	Any other answers: Specify -				

H011	Note: With regard to hand-washing, confirm the use of the following:					
	a.	Water.	1.	Yes		
			2.	No		
	b.	Soap.	1.	Yes		
			2.	No		
	c.	Ashes, dust, limestone powder, tree leaves.	1.	Yes		
			2.	No		

H012a	Where do you obtain health care if someone in the household gets sick?			Go to
	1.	No medical help is sought.		
	2.	Personal medicines.		
	3.	Traditional healer.		
	4.	Shaykh.		
	5.	Pharmacy.		
	6.	Private clinic.		→ C013
	7.	Public health facility.		→ C013

Questionnaire Number: .....

H012b	Why don't you seek health services at a health facility or clinic when someone gets sick?			
	1.	High cost.		
	2.	Facility is distant and transportation is not available.		
	3.	Not enough time.		
	4.	We do not have confidence in the nearby services.		
	5.	Other: specify -		

Questionnaire Number: .....

Q013 – Q019: Nutritional and Immunization Status of Children ages 6-59 months within the household

		C013	C014a	C014b	C015	C016a
Child no.	Child's first name	Child's gender 1 = male 2 = female	Date of birth. If the date is recorded, skip C014b) day / mo. / Year	Age of child in months. If the child is older than 24 months, go to question C017.	For children 24 months or less. Is the child still breastfeeding? 1 = yes 2 = no	For children 24 months or less. How many times have you fed the child in the past 24 hours? Do not include number of times breastfed.
1.			day / mo. / Year			
2.			day / mo. / Year			
3.			day / mo. / Year			
4.			day / mo. / Year			
5.			day / mo. / year			
6.			day / mo. / year			
7.			day / mo. / year			

Questionnaire Number: .....

			C016b	**C017**	**C018**	**C019**
Child no. (as above)	Child's gender 1 = male 2 = female	Child's age (in months)	For children 24 months or less. How many times have you fed the child milk in the last 24 hours? Do not include number of times breastfed.	Has the child been given Vitamin A in the past six months? (Show sample.) 1 = yes 2 = no 3 = don't know	Has the child been given vaccinations for Pentavalent 3 and Polio 3? 1 = yes 2 = no	For children nine months and older. Has the child been immunized against measles (shot in left arm)? 1 = yes, shown on card 2 = yes, from memory 3 = don't know 4 = has not been immunized
1.						
2.						
3.						
4.						
5.						
6.						
7.						

Questionnaire Number: .....

Q020 – Q029: Anthropometric measurements and childhood diseases of children aged 6 – 59 years in the household

			C020	C021	C022	C023
Child no. (as above)	Child's gender 1 = male 2 = female	Child's age (in months)	Weight (kg) 88.8 = refused 99.9 = not present	Height (cm) 888.8 = refused 999.9 = not present	Bilateral edema (in both legs). 1 = yes 2 = no 8 = refused 9 = not present	Middle upper arm circumference (cm) 88.8 = refused 99.9 = not present
1.						
2.						
3.						
4.						
5.						
6.						
7.						

Questionnaire Number: .....

Child no. (as above)	Child's gender 1 = male 2 = female	Child's age (in months)	C024 Diarrhea within the past two weeks 1 = yes 2 = no	C025 Cough or difficulty breathing in the past two weeks 1 = yes 2 = no	C026 Fever in the past two weeks 1 = yes 2 = no	C027 Symptoms similar to measles in past month (skin rash + fever + cough or throat infection or conjunctivitis) 1 = yes 2 = no	C028 Did the child sleep under mosquito net last night? 1 = yes 2 = no	C029 Is the child currently registered at a nutrition center? 1 = SFP 2 = TFC/SC 3 = OTP 4 = other 5 = not registered
1.								
2.								
3.								
4.								
5.								
6.								
7.								

Annex 2: Hajja Mortality Survey Questionnaire

رقم إستبيان الأسرة: .....

مسح الحالة التغذوية والوفيات في محافظة حجة، أبريل – مايو 2012

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

مديرية المسح: _____ القرية/ الحي: _____ التاريخ: _____ رقم العنقود: _____

رقم الفريق: _____ رقم إستبيان الأسرة: _____ طبقة المسح: _____

م	الاسم (اختياري)	الجنس (ذكر أو أنثى)	العمر بالسنوات أو تاريخ الميلاد	التحق أثناء فترة 90 يوم	غادر أثناء فترة 90 يوم	ولد أثناء فترة 90 يوم	توفي أثناء فترة 90 يوم	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 90 يوم من تاريخ المسح

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 الحال	
2= أثناء الهجرة	
3= في آخر مكان سكن فيه	
4 = أخرى (حدد)	

Family Reference Number: .....

Nutritional Status and Mortality – Hajja Governorate, May 2012

Individual household members monitoring form for the 90 days following survey commencement date (Form 2)

District surveyed: _____ Village/neighborhood: _____ Date: _____ Cluster number: _____

Team number: _____ Household questionnaire number: _____ Survey zone (stratum): _____

No.	Name (optional)	Sex (M, F)	Age in years or date of birth	Joined within the 90 day period	Left within the 90 day period	Born within the 90 day period	Died within the 90 day period	Cause of death	Place of death
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Important: All individuals present in the household should be recorded, whether joining or leaving the household, and whether born or died within the 90 day period from commencement of the survey.

Symbols for causes of death	
1 = diarrheal disease	5 = malnutrition
2 = fever	6 = violence / impacts of conflicts
3 = measles	7 = other (specify)
4 = respiration disorders	

Symbols for places of death
1 = at the current location
2 = during emigration
3 = at a different residence
4 = other (specify)

Annex 3: IDP Settlements Nutrition Survey Team, 5 – 10 May 2012

Team No	Survey Team	Position	Duty Station
1	Dr. Nashwan Yehia Al-Zuhairi **(Team Leader)**	Physician	Hajja City
	Hana Naser Otaifa	Midwifery Supervisor	Hajja City
	Amat Al-Malek Mohsen Al-Jalal	Midwife	Hajja City
	Nora Ali Abu Nokhra	Midwife	Mabyan
2	Ahmed Ali Safi Addein **(Team Leader)**	Medical Assistant	Kohlan Al-Sharaf
	Afrah Naser Otaifa	Registered Midwife	Hajja City
	Ibtisam Abdo Al-Marwani	Medical Assistant	Medical Assistant
	Khadija Mohamme Shaie`	Midwife	Abs
3	Yehia Yehia Meqdam **(Team Leader)**	Medical Assistant	Al-Meftah
	Huda Abdullah Al-Bahri	Registered Midwife	Hajja City
	Haifa Ali Al-Husaini	Midwife	Mabyan
	Amat Allah Abdullah Jahhaf	Midwife	Mabyan
4	Mohammed Ahmed Basheq **(Team Leader)**	Medical Assistant	Abs
	Zainab Ahmed Al-Rajehi	Medical Assistant	Abs
	Hanan Mohammed Shoie`	Medical Assistant	Abs
	Yosra Ahmed Al-Bormi	Midwife	Khayran Al-Moharraq
5	Mohammed Mohsen Al-Farras **(Team Leader)**	Medical Assistant	Mabyan
	Dhekra Sa`d Ja'dal	PHC Worker	Hajja City
	Mariam Ahmed Al-Husam	Community Midwife	Hajja City
	Basheera Hasan Salah	Midwife	Mabyan
6	Taihan Naser Hudaish **(Team Leader)**	Nurse	Hajja Rural
	Kawkab Ata Yae'esh	Medical Assistant	Hajja City
	Ishraq Saleh Al-Weshali	Midwife	Mabyan
	Amat Allateif Ahmed Fattoma	PHC Worker	Al-Shahel
	Data Entry team		
	Hadhrami Hadi Al-Hadhrami	GHO	Hajja City
	Yousef Saleh Al-Ghuzzi	GHO	Hajja City
	Mohammed Ali Sa'sa'h	GHO	Hajja City
	Ameen Yehia Saleh Al-Baqa'	GHO	Hajja City
	Logistics		
	Dr. Waleed Shamsan	GHO	Hajja City
	Survey Technical Supervisors		
	Faisal Ali Qamhan	Nutrition Dept	MoPHP – Sana'a
	Waleed Abdulmalek Al-Madhaji	CH Dept	MoPHP – Sana'a
	Aref Mohammed Awfan	Nutrition Officer	GHO - Taiz

	Nassar Hamood Al-Ashwal	Nutrition Dept	MoPHP – Sana'a
	Dr. Mohammed Ahmed Al-Emad	Medical Officer	WHO – Sana'a
	Survey Manager		
	Dr. Abdulbaset Mahyoub Al-Dobaee`	PHC Manager	GHO - Taiz
	Data Analysis and Report Writing		
	Nagib Abdulbaqi Ali	Nutrition Specialist	UNICEF – Sana'a

Annex 4: Hajja Nutrition Survey Standardization Test Report for Evaluation of Enumerators

Weight:

	Precision: Sum of Square [W2-W1]	Accuracy: Sum of Square [Superv.(W1+W2)-Enum.(W1+W2]	No. +/- Precision	No. +/- Accuracy
Supervisor	0.00		0/0	
Enumerator 1	0.13 POOR	0.17 POOR	3/4	5/2
Enumerator 2	0.47 POOR	0.27 POOR	2/5	4/5
Enumerator 3[11]	3969.41 POOR	3969.13 POOR	0/8	3/3
Enumerator 4	0.29 POOR	0.77 POOR	4/3	3/5
Enumerator 5[12]	40.24 POOR	44.48 POOR	4/5	1/8
Enumerator 6	0.21 POOR	0.21 POOR	4/5	4/6
Enumerator 7	0.14 POOR	0.18 POOR	4/4	3/5

Height:

	Precision: Sum of Square [H2-H1]	Accuracy: Sum of Square [Superv.(H1+H2)-Enum.(H1+H2]	No. +/- Precision	No. +/- Accuracy
Supervisor	0.00		0/0	
Enumerator 1[13]	9982.62 POOR	10602.10 POOR	2/3	4/6
Enumerator 2[14]	10024.50 POOR	9696.72 POOR	2/8	2/8
Enumerator 3	6.46 POOR	25.26 POOR	0/3	3/7
Enumerator 4	13.68 POOR	33.76 POOR	0/6	5/5
Enumerator 5	16.16 POOR	25.36 POOR	5/4	4/6
Enumerator 6	3.52 POOR	22.44 POOR	3/3	4/6
Enumerator 7[15]	1998.59 POOR	1938.15 POOR	2/4	6/4

MUAC[16]:

	Precision: Sum of Square [MUAC2-MUAC1]	Accuracy: Sum of Square [Superv.(MUAC1+MUAC2)-Enum.(MUAC1+MUAC2]	No. +/- Precision	No. +/- Accuracy
Supervisor	0.00		0/0	
Enumerator 1	873.00 POOR	797.00 POOR	4/5	7/3
Enumerator 2	219.00 POOR	463.00 POOR	4/4	1/9
Enumerator 3	125.00 POOR	369.00 POOR	2/4	4/4
Enumerator 4	145.00 POOR	217.00 POOR	7/1	5/5
Enumerator 5	96.00 POOR	496.00 POOR	4/5	2/7
Enumerator 6	877.00 POOR	1477.00 POOR	5/3	4/6
Enumerator 7	1668.00 POOR	1972.00 POOR	2/4	8/1

[11] The second reading of the child # 1 weight was wrongly written 70.7 instead of 7.7.
[12] The first reading of the child # 2 weight was wrongly written 17.2 instead of 13.2, and the first reading of the child # 4 weight was wrongly written 14.1 instead of 19.1.
[13] The second reading of the child # 9 height was wrongly written 183.3 instead of 83.3.
[14] The first reading of the child # 6 height was wrongly written 15.5 instead of 115.5.
[15] The second reading of the child # 10 height was wrongly written 172.7 instead of 127.7.
[16] Enumerators were found having a problem in the technique of measuring MUAC, so that they were retrained on the wright way to do measurements

For evaluating the enumerators the precision and the accuracy of their measurements is calculated.
For precision the sum of the square of the differences for the double measurements is calculated. This value should be less than two times the precision value of the supervisor.
For the accuracy the sum of the square of the differences between the enumerator values (weight1+weight2) and the supervisor values (weight1+weight2) is calculated. This value should be less than three times the precision value of the supervisor.
To check for systematic errors of the enumerators the number of positive and negative deviations can be used.

Annex 5: Reference Table for Age Estimation

Nutrition Survey - Hajja Governoarte May 2012

الطريقة التقريبية لحساب العمر بالاشهر مبني على اليوم الأول من المسح

يجب حساب يوم إضافية عن كل يوم من المسح بدء من اليوم الثاني

مواليد العام 2007

العمر بالاشهر	حتى تاريخ			من تاريخ		
	سنة	شهر	يوم	سنة	شهر	يوم
59	2007	6	4	2007	5	5
58	2007	7	4	2007	6	5
57	2007	8	4	2007	7	5
56	2007	9	4	2007	8	5
55	2007	10	4	2007	9	5
54	2007	11	4	2007	10	5
53	2007	12	4	2007	11	5
52	2008	1	4	2007	12	5

مواليد العام 2008

العمر بالاشهر	حتى تاريخ			من تاريخ		
	سنة	شهر	يوم	سنة	شهر	يوم
51	2008	2	4	2008	1	5
50	2008	3	4	2008	2	5
49	2008	4	4	2008	3	5
48	2008	5	4	2008	4	5
47	2008	6	4	2008	5	5
46	2008	7	4	2008	6	5
45	2008	8	4	2008	7	5
44	2008	9	4	2008	8	5
43	2008	10	4	2008	9	5
42	2008	11	4	2008	10	5
41	2008	12	4	2008	11	5

مواليد العام 2009

العمر بالاشهر	حتى تاريخ			من تاريخ		
	سنة	شهر	يوم	سنة	شهر	يوم
40	2009	1	4	2008	12	5
39	2009	2	4	2009	1	5
38	2009	3	4	2009	2	5
37	2009	4	4	2009	3	5
36	2009	5	4	2009	4	5
35	2009	6	4	2009	5	5
34	2009	7	4	2009	6	5
33	2009	8	4	2009	7	5
32	2009	9	4	2009	8	5
31	2009	10	4	2009	9	5
30	2009	11	4	2009	10	5
29	2009	12	4	2009	11	5
28	2010	1	4	2009	12	5

مواليد العام 2010

العمر بالاشهر	حتى تاريخ			من تاريخ		
	سنة	شهر	يوم	سنة	شهر	يوم
27	2010	2	4	2010	1	5
26	2010	3	4	2010	2	5
25	2010	4	4	2010	3	5
24	2010	5	4	2010	4	5
23	2010	6	4	2010	5	5
22	2010	7	4	2010	6	5
21	2010	8	4	2010	7	5
20	2010	9	4	2010	8	5
19	2010	10	4	2010	9	5
18	2010	11	4	2010	10	5
17	2010	12	4	2010	11	5
16	2011	1	4	2010	12	5

مواليد العام 2011

العمر بالاشهر	حتى تاريخ			من تاريخ		
	سنة	شهر	يوم	سنة	شهر	يوم
15	2011	2	4	2011	1	5
14	2011	3	4	2011	2	5
13	2011	4	4	2011	3	5
12	2011	5	4	2011	4	5
11	2011	6	4	2011	5	5
10	2011	7	4	2011	6	5
9	2011	8	4	2011	7	5
8	2011	9	4	2011	8	5
7	2011	10	4	2011	9	5
6	2011	11	4	2011	10	5
5	2011	12	4	2011	11	5

مواليد العام 2012

العمر بالاشهر	حتى تاريخ			من تاريخ		
	سنة	شهر	يوم	سنة	شهر	يوم
4	2012	1	4	2011	12	5
3	2012	2	4	2012	1	5
2	2012	3	4	2012	2	5
1	2012	4	4	2012	3	5
اقل من شهر	2012	5	4	2012	4	5

Annex 6: Calendar of Events for Hajja for Reference in Age Estimation

تواريخ المناسبات والأحداث

المناسبة	تاريخ المناسبة
ثورة فبراير	11 فبراير 2011
حادثة تفجير مسجد دار الرئاسة	3 يونيو 2011
ذكرى الوحدة	22 مايو من كل عام
ذكرى الثورة ضد الإمامة	26 سبتمبر من كل عام
ذكرى الثورة ضد الاستعمار البريطاني	14 أكتوبر من كل عام
ذكرى جلاء المستعمر البريطاني	30 نوفمبر من كل عام
رأس السنة الهجرية	1 محرم
عاشوراء	9 و 10 محرم
مولد النبي (ص)	12 ربيع أول
الإسراء والمعراج	27 رجب
شهر الصوم	شهر رمضان
عيد الفطر المبارك	1 شوال
العشر	العشر الأوائل من ذي الحجة
وقفة عرفة	9 ذي الحجة
عيد الأضحى المبارك	10 ذي الحجة

ملاحظة: في حالة التواريخ الهجرية يرجى العودة إلى جدويل التحويل إلى الميلادي

Dates of events

Event	Event date
February revoluation	11 Feb 2011
The presidential house mosque bombing	3 June 2011
Unity anniversary	22 May every year
Anniversary of revolution against Imam	26 Sep every year
Anniversary of revolution against British colonialism	14 Oct every year
Anniversary of independence	30 Nov every year
Beginning of Hijrij Year	1 Muharram
A'ashora	9 and 19 Muharram
Anniversary of the birth of the Prophet (PUH)	12 Rabie Awal
Anniversary of Isra and Me'raj	27 Rajab
Fasting month	Ramadan
Eid Al-Fitr	1 Shawal
Al-Ashr (The ten days)	The first 10 days of Dhul-Hijjah
Day of Arafat	9 Dhul-Hijjah
Eid Al-Adha	10 Dhul-Hijjah

Note: in case of Hijri dates, please refer to the forms given to you to convert to gregorian

Annex 7: Cluster Sampling for IDP Settlements in Hajja Governorate

Village/ City	Ozla	District	Cluster No
Camp 1 A	Alfajj	Harad	1
Camp 1 B	Alfajj	Harad	2
Camp 1 D	Alfajj	Harad	3
Camp 1 7H	Alfajj	Harad	4
Camp 1 Z	Alfajj	Harad	5
Camp 1 Y	Alfajj	Harad	6
Camp 3 East	Alfajj	Harad	7
Camp 3 East	Alfajj	Harad	8
Camp 3 West	Alfajj	Harad	9
Alkhudhairia	Khamees Mustaba	Mustaba	10
Bani Khamaj	Aldair	Harad	11
Alhedhreba	Alfaj	Harad	12
Alhedhreba	Alfaj	Harad	13
Um Alturab	Alfaj	Harad	14
Ammar School	Alkhameesain	Khairan Almoharraq	15
Ammar School	Alkhameesain	Khairan Almoharraq	16
Alqae'm	Alfaj	Harad	17
Alqufl South	Alfaj	Harad	18
Alqufl South	Alfaj	Harad	19
Alqufl North	Alfaj	Harad	20
Alqufl North	Alfaj	Harad	21
Almaddab South	Alfaj	Harad	22
Almaddab South	Alfaj	Harad	23
Almaddab North	Alfaj	Harad	24
Shamal Ale'marat	Alfaj	Harad	25
Qaim Alsaif	Alfaj	Harad	26
Alradha	Alfaj	Harad	27
Camp 2 B	Alfaj	Harad	28
Camp 2 C	Alfaj	Harad	29
Camp 2 D	Alfaj	Harad	30
Camp 1 H	Alfaj	Harad	31
AlKharsha	Alfaj	Harad	32
Um Alhasam	Alfaj	Harad	33
Um Alhasam	Alfaj	Harad	34

Annex 8: Sampling Frame of IDP Settlements

Place	Population	Place	Population
Camp 1 A	1031	أم العظام	27
Camp 1 B	865	أم العطيب	46
Camp 1 C	963	أم الضبر	35
Camp 1 D	791	أم الظهي	67
Camp 1 H	1114	شرق المخيم	396
Camp 1 7H	943	شمال الامارات	204
Camp 1 Z	781	غرب المخيم	312
Camp 1 T	667	قائم السيف	1265
Camp 1 Y	812	قضبة	260
Camp 3 شرقية	2644	الجرد	268
Camp 3 غربية	1480	الخرشة	424
الخضيرية	86	الردحة	806
المخافي	212	الملحة	92
مروة	98	مخيم 2A	1032
الحقوف	232	مخيم 2B	1145
بني خمج	820	مخيم 2C	621
عقاوة	141	مخيم 2D	550
العوجاء	224	مخيم 2H	304
العنابة	213	الغرزة	58
السوادي	86		
الهذربة	1472		
قبر العبد	48		
وادي عبدالله	53		
شعب العروج	28		
شعب اللبن	720		
أم التراب	605		
الشارع العام	208		
نازحين الخميسين في عمار	1702		
الزغلول	155		
القائم ج	433		
القائم ش	484		
القائم	915		
القفل ج	1773		
القفل ش	2153		
المخدة	583		
المدب ج	1429		
المدب ش	1345		
الملحة	523		
أم الحصم	2181		

Annex 9: Job Descriptions for Survey Teams (Extracted from SMART Training Materials

Each survey team should be composed of at least 3 people. Including women in survey teams is highly recommended since they are usually more comfortable interacting with children. Generally, two surveyors are involved in anthropometric measurements while another one, the team leader, records the data on the forms. However, it is strongly suggested that each team member knows how to accomplish the tasks of his teammates, because unexpected events can happen and a change in the staff may be required.

All team members must have the following qualifications:

- They should be able to write and read English or French (depending on the country where the survey takes place) and speak the local languages of the areas where the survey will be conducted.
- They should have sufficient level of education, as they will need to read and write fluently and count accurately.
- They should be physically fit to walk long distances and carry the measuring equipment.
- They do not (necessarily) have to be health professionals. In fact, anyone from the community can be selected and trained as long as he meets the above criteria.

1. Survey Manager (or supervisor)
The manager guarantees the respect of the survey methodology; he has the responsibility for:

1- Gathering available information on the context and survey planning,

2- Selecting team members,

3- Training team members,

4- Supervision of the survey: Taking necessary actions to enhance the accuracy of data collected:

4.1 Visiting teams in the field and making sure that before leaving the field, each team leader reviews and signs all forms to ensure that no pieces of data have been left out; making sure that the team returns to visit the absent people in the household at least once before leaving the area.

4.2 It is particularly important to check cases of oedema, as there are often no cases of oedema seen during the training and some team members may therefore be prone to mistaking a fat child for one with oedema (particularly with younger children). The supervisor should note teams that report a lot of oedema, confirm measles and death cases, and visit some of these children to verify their status.

4.3 Ensuring that households are selected properly and, that the equipment is checked and calibrated each morning during the survey, and that measurements are taken and recorded accurately.

4.4 Deciding on how to overcome the problems encountered during the survey. Each problem encountered and decision made must be promptly recorded and included in the final report, if this has caused a change in the planned methodology.

4.5 Organizing data entry into ENA and checking any suspect data every evening, by using the appropriate sections of the plausibility report.

4.6 Organizing an evening "wrap up" session with all the teams together to discuss any problems that have arisen during the day[17].

4.7 Ensuring that the teams have enough time to take appropriate rest periods and has refreshments with them. It is very important not to overwork survey teams since there is a lot of walking involved in carrying out a survey, and when people are tired, they may make mistakes or fail to include more distant houses selected for the survey.

5- Analyse and write the report.

2. Team Leader

Skills and required abilities:

To be able to read, write and count; know the area to survey; be reliable and friendly.

Tasks:

1. Ensures all forms and questionnaires are ready at start of day;
2. Ensures all equipment is ready at start of day;
3. Calibrates measurement instruments on daily basis;
4. Ensures all food/refreshments are ready at start of day;
5. Organises briefing meeting with his team before departure in morning;
6. Speaks with chief of village to explain the survey and its objectives,
7. Draws a map of the area to survey and use a random table;
8. Manages the households selection procedure;
9. Uses a local events calendar to estimate the age;
10. Calculates the Weight-for-Height ratio after taking anthropometric measurements;
11. Checks if the child is malnourished (checks for the presence of oedema);
12. Fills the anthropometric form;
13. Fills survey questionnaires when needed;

[17] This may not be possible if the survey area is large since the teams might be widely separated and remain in the field for several days. In that case, communication with teams in the field might often be very difficult; hence, each team leader must be sufficiently trained to be able to take decisions independently.

14. Fills the referral form if necessary;
15. Ensures that houses with missing data are revisited before leaving the field the same day;
16. Checks that all forms are properly filled out before leaving the field.
17. Ensures that all the equipment is maintained in a good state;
18. Manages time allocated to measurements, breaks and lunch,
19. Ensures security of team members,
20. Note and report the problems encountered.

3. Measurers

Skills and required abilities:

To be able to read, write and count; know the area to survey; be reliable and friendly.

Tasks:

1. Measures the height, weight and arm circumference (if included in the survey);
2. Assesses the presence of edema;
3. Uses a local events calendar to estimate the age;
4. Respects the time required for measurements, breaks and meals;
5. Takes care of the equipment;
6. Follows security measures.

The measurers must acquire some special skills and knowledge although they don't have the primary responsibility for tasks that are related:

1. Know how to calculate the weight-for-height ratio;
2. Know how to select households for the survey;
3. Know how to check if a child is malnourished;
4. Learn how to make a reference for a malnourished child.

Annex 10: Referral Form for the Malnourished Children

مسح الحالة التغذوية للأطفال تحت سن الخامسة في محافظة حجة، ابريل – مايو 2012

استمارة إحالة طفل مصاب بسوء تغذية حاد وخيم

الأخوة/ المرفق الصحي : .....

نود إحاطتكم أن الطفل/ الطفلة : ..... كان/ كانت ضمن عينة المسح المشار إليه أعلاه ووجد أنه مصاب بسوء تغذية حاد من خلال القياسات التالية:

	سنتيمتر .	محيط ذراع الطفل بالسنتيمتر (ØØ. Ø)

	سنتيمتر .	طول / ارتفاع الطفل بالسنتيمتر (ØØØ. Ø)

وجود التوذم: (نعم / لا)

تاريخ القياس	يوم	شهر	سنـــــة
			2 Ø 1 1

يرجى تعاونكم معه/ معها

وتقبلوا تحيات فريق المسح

اسم المشرف الميداني .....

توقيعه

Annex 11: Hajja IDP Assessment Quality Checks

Plausibility check for: IDPs.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
Missing/Flagged data (% of in-range subjects)	Incl	%	0-2.5 0	>2.5-5.0 5	>5.0-10 10	>10 20	0 (0.7 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<0.000 10	2 (p=0.063)
Overall Age distrib (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<0.000 10	4 (p=0.001)
Dig pref score - weight	Incl	#	0-5 0	5-10 2	10-20 4	> 20 10	0 (2)
Dig pref score - height	Incl	#	0-5 0	5-10 2	10-20 4	> 20 10	2 (8)
Standard Dev WHZ	Excl	SD	<1.1 0	<1.15 2	<1.20 6	>1.20 20	0 (0.95)
Skewness WHZ	Excl	#	<±1.0 0	<±2.0 1	<±3.0 3	>±3.0 5	0 (-0.09)
Kurtosis WHZ	Excl	#	<±1.0 0	<±2.0 1	<±3.0 3	>±3.0 5	0 (0.37)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<0.000 5	3 (p=0.004)
Timing	Excl	Not determined yet 0		1	3	5	
OVERALL SCORE WHZ =			0-5	5-10	10-15	>15	11 %

At the moment the overall score of this survey is 11 %, this is acceptable.

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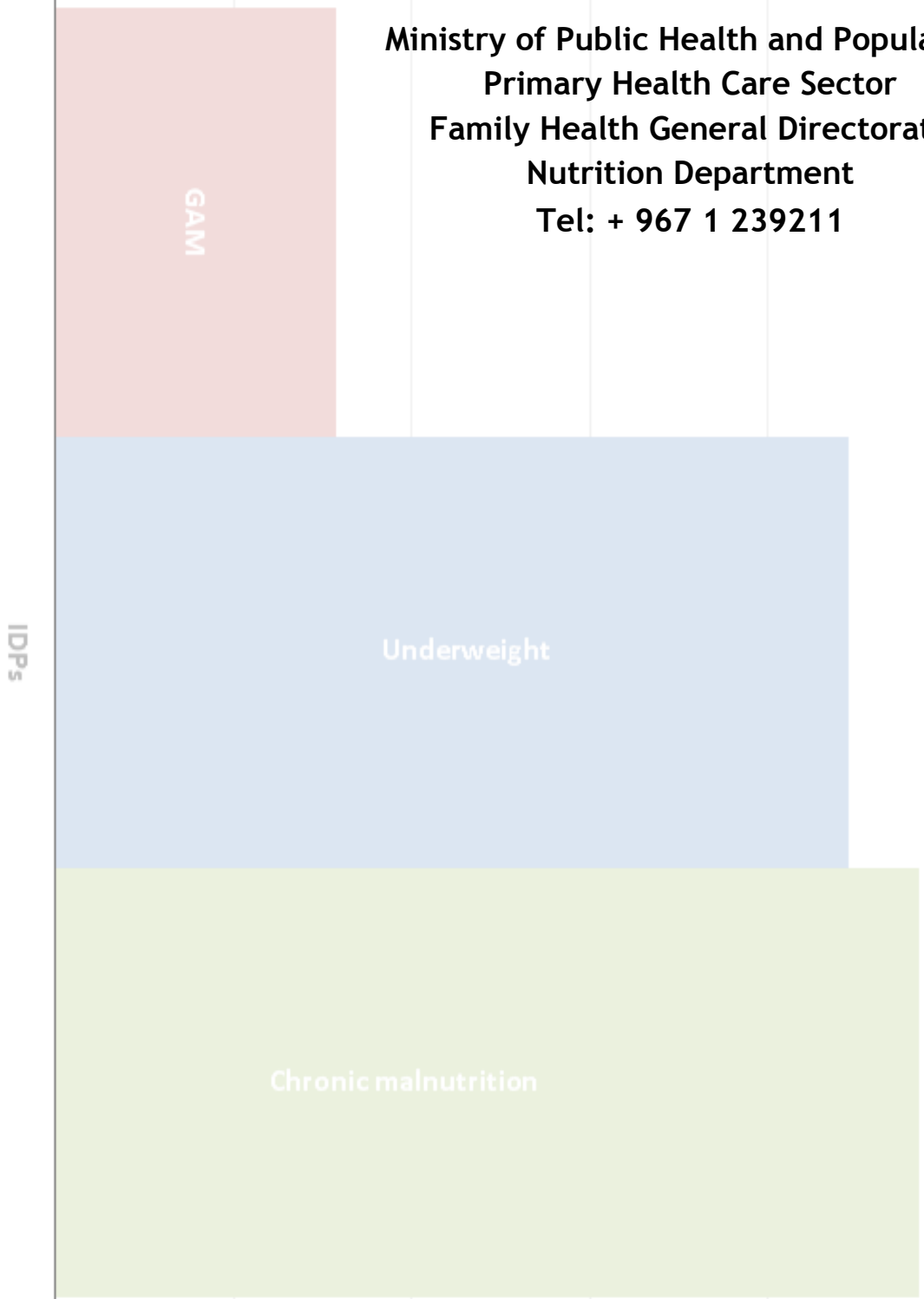
Ministry of Public Health and Population
Primary Health Care Sector
Family Health General Directorate
Nutrition Department
Tel: + 967 1 239211