Somalia Nutrition Analysis

Post Gu 2016

Technical Series Report No. VII 70

December 21, 2016

FSNAU

Food Security and Nutrition Analysis Unit - Somalia

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ACKNOWLEDGEMENTS

This report summarizes the results of the 2016 Post Gu nutrition assessments by the Food Security and Nutrition Analysis Unit (FSNAU) across most regions and livelihood zones of Somalia. The nutrition assessments and analysis including the preparation of this report was made possible through the financial contribution of the donors whose logos appear on the front cover of this report. Our special appreciation goes to:

- Ministries of Health and their staff in Mogadishu, Garowe and Hargeisa without which the nutrition assessments wouldn't have been possible.
- Somalia Nutrition Cluster Assessment Information Management Working Group (AIMWG) for their technical support in the planning of surveys and vetting of the results
- FSNAU technical partners working in Somalia for their significant contribution, including - UNICEF for providing survey equipment, WHO for vital information on immunization data and WFP for other secondary data important for interpretation of the assessment results.
- The survey team, for their endurance, dedication and team spirit while collecting the required data under challenging circumstances
- All the community members for their cooperation and time, without which the assessment would have not been possible
- FSNAU nutrition technical staff based in Somalia and Nairobi for their hard work and dedication throughout the assessment planning, implementation, analysis and report preparation process.

FSNAU TEAM

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LIST OF ACRONYMS USED

AIMWG	Assessment Information Management Working Group
AWD	Acute Watery Diarrhea
CDC	United States Center For Disease Control and Prevention
CDR/ CMR	Crude Death Rate / Crude Mortality Rate
CISP	Comitato Internazionale per lo Sviluppo dei Popoli
ENA	Emergency Nutrition Assessments
EPI	Expanded Program of Immunization
FAO	Food and Agriculture Organisation of the United Nations
FSNAU	Food Security and Nutrition Analysis Unit for Somalia
GAM	Global Acute Malnutrition
HADMA	Humanitarian Affairs and Disaster Management Agency
HAZ	Height for Age Z Scores
HIS	Health Information System
IDPs	Internally Displaced Persons
IPC	Integrated Food Security Phase Classification
IYCN	Infant and Young Child Nutrition
JRC	Joint Research Centre
LZ	Livelihood Zones
MAM	Moderate Acute Malnutrition
MOH	Ministry of Health
MUAC	Mid Upper Arm Circumference
NCA	Nutrition Causal Analysis
NE	North East
NW	North West
Oxfam	Oxford Committee for Famine Relief:
PESS	Population Estimation Sample Survey
PLW	Pregnant and Lactating Women
QRCS	Qatar Red Crescent Society
SAM	Severe Acute Malnutrition
SC	South Central
SMART	Standardised Monitoring and Assessment of Relief and Transition
SNS	Strengthening Nutrition in Somalia
U5DR	Under-5 Death Rate
UN	United Nations
UNDP	United Nation Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WASH	Water Sanitation and Hygiene
WAZ	Weight for Age Z Scores
WFP	World Food Programme
WHO	World Health Organisation
WHZ	Weight for Height Z Scores
WRA	Women of Reproductive Age Group

FOREWARD

This Post *Gu 2016* Nutrition Technical Series Report is the latest edition of bi-annual nutrition assessment report launched by the Food Security and Nutrition Analysis Unit (FSNAU). The publication complements the FSNAU bi-annual seasonal food security and nutrition technical series reports and provides specific focus on current nutrition information (July 2016) and outlook for the period from August– October, 2016. The report includes a detailed analysis of the 28 comprehensive integrated food security and nutrition assessments i.e. 15 Livelihood zones and 13 major IDP settlements in Somalia.

We at FSNAU trust that you will find the report informative and useful.

Please contact FSNAU@fao.org with any questions, comments and feedback on this report.

EXECUTIVE SUMMARY

The 2016 *Gu* FSNAU biannual Food security and Nutrition assessment surveyed nutritional status of children under the age of five in the 13 main IDP settlements and 15 rural livelihood zones of Somalia (28 in total). The assessments were conducted in collaboration with Government institutions (Ministries of Health) and partners across the country. A total of 16 405 children (6-59 months) were from 10 436 households were assesed. Assessments were conducted using Standardized Monitoring and Assessment of Relief and Transitions (SMART) methodology, which incorporates standard sampling guidelines, questionnaires, and a software package to assess data quality.

Results from the 28 nutrition surveys indicate that weighted national Global acute Malnutrition and Severe Acute Malnutrition (GAM) - (SAM) prevalence during Gu 2016 were 14.3 percent and 2.9 percent respectively. The nutrition situation in 7 out of the 15 rural livelihood zones (6 in south central and 1 in northwest) were classified at Critical (GAM >15%) and eight of rural livelihood zones (4 in northwest, 2 in northeast and 2 in south central zones) were classified at Serious (GAM 10.0-14.9%). The *Gu* 2016 IDPs settlement has also identified 7 out of 13 major IDP settlements in the country had Critical levels of malnutrition (3 IDPs in the northeast and 3 in south central and 1 IDP settlement in northwest zone). Serious level of malnutrition was reported in five of the IDP settlements (3 in south central, 1 in northeast and 1 in northwest zones).

The Critical malnutrition situation reported in the Northwest zones (Guban Pastoral) and in the South Central (Beletweyene District, Bakool Pastoral is likely to be fueled by combination of food insecurity factors and poor public health indicators (low EPI coverage and supplementation of Vitamin A). However, the Critical level of malnutrition noted in the Northeast is aggravated by the non-food factors rather than food insecurity indicators. The trend is also somewhat similar to IDPs located at the three zones. Critical levels of malnutrition for IDP settlements located in the Northeast (Bosasso IDPs, Garowe IDPs, Qardho IDPs, Galkayo IDPs and Dhusamareb IDPs) exasperated by non-food factors rather than food security factors. Even tough measles immunization and Vitamin A coverage is relatively better compared to other IDPs in different zone, illness burden is so high pointing to other potential public health factors such as access to potable drinking water and IYCN practice. On the contrary, in most of IDPs located in the Northwest and South Central except Dolow IDP, current wasting prevalence is fueled by combination of both food and non-food factors. The prevalence of Severe Acute Malnutrition (SAM) ranged between 1.0 percent in Coastal Deeh in Northeast zone to 5.0 percent in Bakool Pastoral in South Central zone. About 30percent (8) out of the (28) surveyed population, reported SAM levels were avove the Crtical threshold (4-5.6%). 20 percent of surveyed population, SAM prevalence was rated as Serious (2.5-4%) and only Burao IDP settlement had an Acceptable SAM prevalence (<1%).

The national overall stunting prevalence in Somalia is 10.0 percent and is considered Low (<20%). However, there are major differences between different parts and population groups of the country: 15.7 percent in south and central Somalia; 8.1 percent in the northeast; 3.6 percent in the northwest. Stunting, is not therefore, a public health problem in Somalia as most population groups reported Low (<20%) to Medium (20-30%) stunting prevalence with the exception of two IDP's i.e. Baidoa and Kismayo IDPs and Bay Agro Pastoral rural livelihood zone in Southern Somalia that reported High (>30-39%) prevalence.

The national underweight prevalence in Somalia is 13.8 percent which is considered as Medium (10-19.9%) with substantial variation across the three zones: 16.6 percent in South and Central Somalia; 10.2 percent in the Northeast; 6.9 percent in the Northwest. The current national underweight prevalence of 13.6 percent which is an average indicator or composite of wasting and stunting prevalence highlights poor nutritional outcome and the following areas are of great concern in terms of passing the threshold of 20-29%High and >=30very high. Bay Agro-pastoral, Baidoa IDPs and Dolow IDPs and Kismayo IDPs respectively.

With exception Hawd livelihood zone in Northwest, Guban Pastoral, Bay Agro Pastoral from rural livelihood zones and Dobhley IDP settlement, crude mortality rates were normal in all the remaining 17 surveyed population. However, under-five mortality rates exceeded Sphere emergency thresholds in Kismayo IDP settlement in the South central zone. For remaining 27 surveyed population, under-five mortality was normal. The prevalence of morbidity among under- five children was between 4.7 percent in North Gedo Pastoral in South Central zone and

50.7 percent in Qardho IDP settlement located in the Northeast zone. The most common perceived morbidities reported two weeks prior to the respective survey periods included: diarrhoea, respiratory tract infection/ cough, fever and measles in their order of arrangement. Measles cases were reported in Hargeissa IDP, Hawd Pastoral, Dollow IDP, Shabelle Agro-Pastoral, Bakool Pastoral and Bay Agro-Pastoral. Control measures were undertaken by the Somali Health cluster with some other partners and respective State Government to address the outbreak of AWD and measles particularly in the South Central zone. Measles vaccination coverage (by recall) was below Sphere standards of 90 percent in the 28 surveyed population (rural livelihood zones and IDP settlements). Furthermore, the vitamin supplementation coverage was below the recommended Sphere Standards coverage in all of the surveyed population. Summary results of the key indicators for all the 28 assessment are summarized in Annex 6.8.

Based on GAM prevalence estimates from the 2016 Gu nutrition assessments, an estimated 322 350 children under the age of five across Somalia were suffering from acute malnutrition. Out of this total, 57 140 were severely malnourished. Approximately, 67 percent of the acutely malnourished children are found in Southern and Central Somalia, with Lower Shabelle, Banadir and Bay regions accounting for one third of the total. Although GAM prevalence in Mogadishu IDP settlements are relatively lower (10-14.9% GAM or Serious), they deserve particular attention as they account for 54 percent of the total number of acutely malnourished IDP children under-five.

Rural livelihood zones and IDPs where the Global Acute Malnutrition (GAM) prevalence for children under five is 15 percent or higher and that ≥23.4% women of reproductive age groups (WRA) 15-49 years Mid-Upper Arm Circumference (MUAC) measurement is below the 23.0 centimeter threshold are identified and considered as hot spots for immediate lifesaving intervention. The following Rural livelihood zones and IDPs have Critical levels of acute malnutrition are priorities (hotspots) for emergency health and nutrition assistance:

- Guban Pastoral and Berbera IDPs (Awdal and West Galbeed Regions)
- Bosaaso IDPs (Bari Region)
- Garowe IDPs (Nugaal Region)
- Galkayo IDPs (Mudug Region)
- Beletweyne Riverine (Hiran Region)
- Bay agro-pastoral and Baidoa IDPs (Bay Region)
- Bakool pastoral (Bakool Region)
- North Gedo Pastoral, North Gedo Riverine and Dolow IDPs (Gedo Region)
- Dhobley IDPs (Lower Juba Region)
- Dhusamareb IDPs(Galgadud Region)

Urgent nutrition and health support for the acutely malnourished children and is needed now till end of October. However, this is not enough for populations experiencing persistently high levels of acute malnutrition. Program quality and coverage of treatment for the management of acute malnutrition programs needs to be scaled up and at scale and this is backed up with additional multifaceted interventions such as the Scaling Up Nutrition (SUN) movement aimed at addressing the underlying causes and contributing factors, investment in social safety net programs will help prevent irreversible growth and development challenges in children that will ultimately affect economic development of the country.

1: BACKGROUND

Over the past 20 years Somalia has suffered conflict, political instability, natural and economic shocks that have resulted in acute hunger and malnutrition. The country experienced periods of severe hunger in 1991-1992, 2006, and 2008 and most recently famine in 2011, resulting in acute food and nutrition crises that led to the death of over 250 000 people[1]. Results of the 10 years nutritional data meta-analysis and eight seasons trend analysis has shown variation of malnutrition level among the three zones. South central Somalia continued to register critical levels of malnutrition consistently followed by Northeast and Northwest Somalia.

The malnutrition status of south and central Somalia is also more complex compared to northern regions. It is influenced by conflict, continued displacements, restrictions of movements and trade due to clan and insurgency, and low availability and poor quality of health services. From 2009 onward, a nutrition crisis has spread to nearly all regions of southern and central Somalia. In almost all of the past eight seasonal assessments, Critical GAM (≥15%) level were reported for the following population groups such as Dollow IDPs, Beletweyned District, Galkayo IDPs, North Gedo Pastoral, Bay Agro-pastoral, Garowe IDPs and North Gedo Riverine.

The intensification of the conflict and the increased frequency of dry spells in farming regions of southern Somalia between 2008 and 2012 have led to unprecedented[2] levels of displacement towards Mogadishu and major urban centres in central and northern Somalia. Growing numbers of displaced families have gathered mainly around urban centres in search of assistance or livelihood opportunities, increasing stress on urban food and labour markets.

Somalia now has one of the world's highest concentrations of IDPs. Settlements are often poorly planned and living conditions are extremely precarious. Frequently, IDPs also suffer from stigmatisation by host communities, which limits their access to the labour market and to basic services exposed to shocks of food insecurity and rampant malnutrition level. This was further documented by the recent World Bank report which indicated that 69 percent of the population[3] of Somalia live in poverty (below $1.9 per day in 2011 PPP terms) ranking as one of world's poorest countries and that poverty is higher among IDPs. The 2015 FSNAU *Deyr* assessment identified acutely malnourished children across Somalia.

In cognizant for the need for regular monitoring of nutrition and food security status for these vulnerable population groups i.e. internally Displaced Populations (IDPs) and providing timely nutrition and food security situation for the country, FSNAU covered 13 IDPs settlements and 15 rural livelihood zones as part of *Gu* 2016 season integrated food security and nutrition assessments plan. The *Gu* 2016 assessment was conducted between May and July 2016.

1 FSNAU: Somalia_Mortality_Estimates_Final_Report_8May2013
2 *Ibid*
3 Global Poverty and Equity Practice. The World Bank. July 21, 2016

2: METHODOLOGY

FSNAU and partners working in Somalia conducted 28 integrated food security and nutrition assessments covering most of the regions and livelihood zones (Map 1) from May-July, 2016 (*Gu* assessment). These were cross-sectional assessments employing both weight for height and MUAC for measuring anthropometry of children under-fives and Women of reproductive age groups (WRA) to determine current nutritional status. The survey covered 16 405 children aged 6-59 months, 5 133 women of reproductive age groups from 10 437 households.

The principal assessment methodology was the Standardized Monitoring and Assessment in Relief and Transition (SMART) methodology having an integrated food security and nutrition data collection tool. The tools were tailor made to the different population settlement pattern, livelihoods and relative ease of undertaking the questionnaires in the face of insecurity concerns. In the northwest and northeast zones, where majority of the population are pastoralists and the presence of relative stability, a long version of data collection was designed and adopted. Whereas in the south central Somalia, majority of the population are agro-pastoralists and due to security threat, a short version of data collection tool was designed and adopted. Data on both anthropometric and mortality were collected during the assessment as well as contextual data on household food security/ livelihoods and WATSAN

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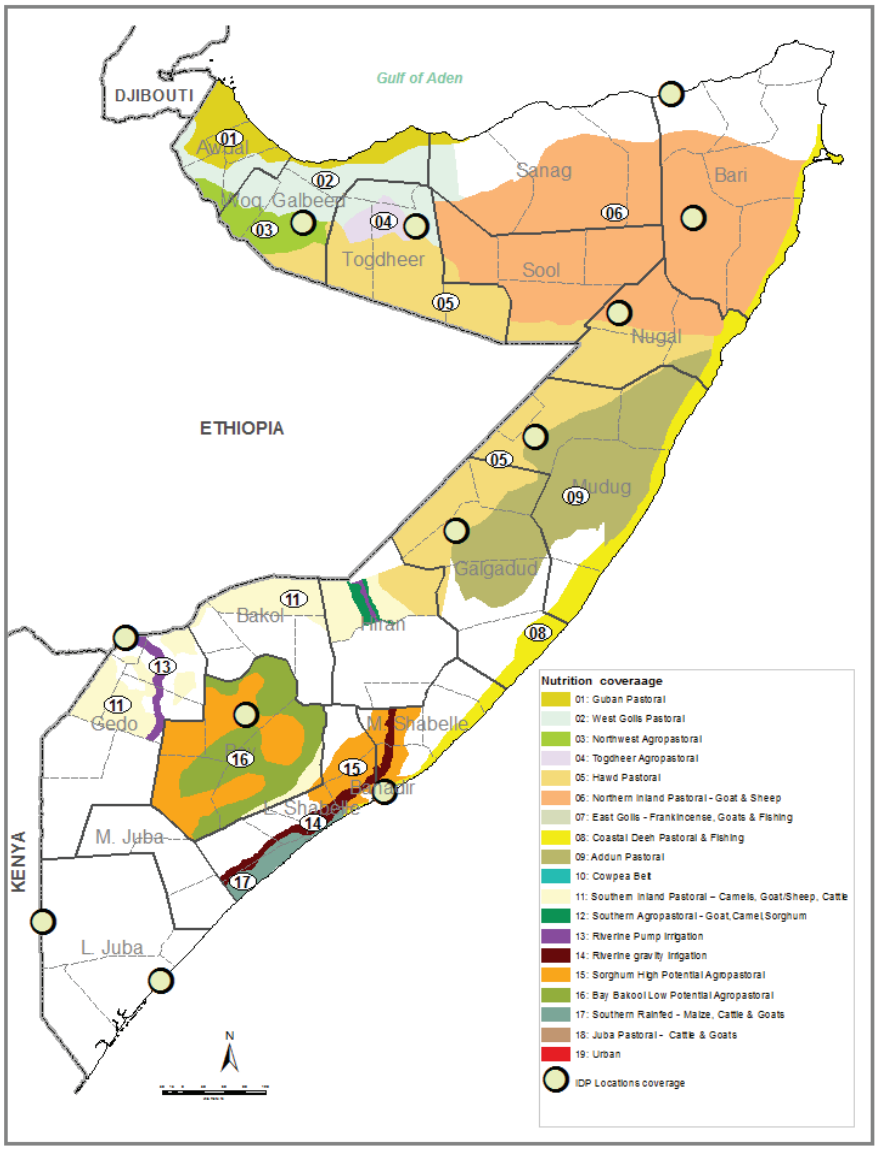
Map 1: Integrated Food security and Nutrition Assessment Coverage - *Gu* 2016



Livelihoods zoning is a kind of economic geography, dividing a country's population into relatively homogenous areas defined by common characteristics of the economy of households. Using this approach, Somalia was divided into 18 rural livelihood zones by the Food Security and Nutrition Analysis Unit (FSNAU). The *Gu* 2016 integrated food security and nutrition assessment covered 15 of the 18 rural livelihoods plus the 13 major IDP settlements in the country. Four of the remaining livelihoods were not covered due to insecurity concerns. These are Juba Pastoral, East Golis, Cowpea Belt and Southern Agro-Pastoral.

The anthropometric and mortality sample sizes were calculated using ENA for SMART Software (July 2015 version) after considering the necessary decisions such as the minimum precision around the estimate of malnutrition or death rate and likely design effect.

A two stage cluster sampling with probability proportional to size (PPS) design was employed which generated a total of 785 clusters selected from around 3 000 population settlements using SMART software (ENA, July 9th 2015) (1st stage sampling).

Depending on the geography, settlement pattern and survey team experience and knowledge, survey team were assigned to interview between 12 to 18 households for both anthropometric and mortality interview. For most of rural livelihoods and IDP settlements, a modified EPI or simple random sampling methodology (SRS) were employed during the second stage cluster sampling.

Other contextual data such as household food security were also collected by skipping pattern out of the total households allocated at the second stage cluster sampling. The information on death rate of adults and children under 5 years old was collected using 160 days retrospective recall. Local events calendar were used to estimate age of the children under-five.

TRAINING AND DATA COLLECTION

Before the commencement of data collection, a five days SMART survey methodology training was organized in Hargeisa, Burao, Garowe, Galkayo, Belteweyne, Dolow, Mogadishu and Baidoa. The training sessions were facilitated by both Nairobi based and Field based FSNAU Nutrition Analysts. Each training sessions were tailored based on previous survey experience and using adult learning principles supported by practical and theoretical sessions.

Standardization exercises were conducted to evaluate performance of each surveyor regarding the precision and accuracy of anthropometric measurements. Each survey team member measured twice at least ten healthy children (6-59 months). During the last day of the training, pre-testing of the questionnaire and equipment's were carried out in non-selected clusters. The teams went through all the steps in conducting the survey, under supervision, in that village. After the field exercise, views were exchanged to address the difficulties identified, appropriateness of the questions, review of questionnaires and appropriate changes were made.

For the rurak survey a total of 131 survey teams composed of either three or four individuals (team leader, two anthropometrist and an interviewer) after the training were tasked to complete 468 clusters from July 1st to 21st of July 2016. Each team were also accompanied by a local village guide in each selected clusters to assist the survey teams from locating selected households to assisting in anthropometrical measurements. Around, 128 children who were severely malnourished and not in treatment programs were given referral slip based on their MUAC measurement provided that the child qualified for admission criteria to SAM management centers. Positive response rate at household level for the *Gu* Rural livelihood assessment was found to be 81.4 percent and for IDP settlements 70 percent and this confirms the field execution as successful.

DATA ENTRY, CLEANING AND ANALYSIS

Survey data entry was made using the EPi info (version 3.3.5) data entry template and the data was subsequently transferred to Excel and ENA Software (July, 2015) for anthropometry and mortality data cleaning and analysis. Before doing the definitive analysis, any errors in the data was identified and corrected. This was done partly during data entry. Data cleaning was also done using plausibility check. The computer automatically examines the data to see if there are values outside the usual or expected range and lists them in Microsoft Word. These values were then reviewed and checked against the original questionnaires. Any error in data entry was corrected immediately.

To understand also statistical significance between *Gu* 2015 season and the current *Gu* 2016 prevalence of malnutrition estimate, a CDC calculator for two-surveys and threshold calculators were used.

QUALITY ASSURANCE

As part of FSNAU's internal quality assurance procedure, several steps which improved data collection procedure and actual collection of data were followed up both at Nairobi and field level. These include:

a. Comprehensive training (5days) of supervisors and enumerators based on SMART methodology
b. Supervision of field work by FSNAU Field Nutrition Analysts/coordination team
c. Cross checking of filled questionnaires on daily basis and recording of observations and confirmation of measles, severe malnutrition, oedema and death reports by supervisors
d. Undertaking daily review meetings with the teams to address any difficulties encountered
e. Monitoring accuracy of equipment (weighing scales) by regularly measuring objects of known weights
f. Stringent supervision during data collection and data entry both at the field and Nairobi level
g. Data Quality validation by running frequencies
h. Defining boundaries for exclusion
    - If Sex is missing the observation is excluded from analysis
    - If Weight is missing, no WHZ and WAZ are calculated, and the programme derives only HAZ
    - If Height is missing, no WHZ and HAZ are calculated, and the programme derives only WAZ
    - For any child records with missing age (age in months) only WHZ will be calculated
    - If a child has oedema only his/her HAZ is calculated
i. Continuous reinforcement of good practices. All measurements were loudly shouted by both the enumerators reading and recording them to reduce errors during recording

Every day, FSNAU survey team coordinators/Field Nutrition analysts will run data quality plausibility report and provide feedback for their respective team before the teams set out for the next cluster assessment. The plausibility checks generated by ENA for SMART surveys tests the following statistical parameters:

- Missing/Flagged data
- Age distribution
- Overall sex ratio
- Digit Preference :Weight, Height and MUAC distribution
- Standard Deviations WFH
- Skewness WFH
- Kurtosis WFH
- Poisson distribution

Survey tools, summary of *Gu* 2016 planning sheet, plausibility report for each survey are shown in annexes 6.1, 6.4, 6.5 and 6.7.

Sharing of the raw data and preliminary findings for both IDP settlements and rural livelihood zones with the Assessment Information Management Working Group (AIMWG), technical arm of the Somali Nutrition Cluster, also helped to get various technical input as part of external technical validation and quality assurance measurement during preliminary result presentation for both *Gu* 2016 IDP and rural livelihood zones assessment findings.

DATA ANALYSIS AND INTERPRETATION

Except mortality data, anthropometry measurement data were first entered into Epi info, exported to and analyzed in ENA software (July, 2015) version. Epi info (version 3.3.5) was also used to run cross tabulation of some selected anthropometric data with that of non-anthropometric data, cross tabulation of wasting prevalence by gender and age across the 15 rural livelihood zones and 13 IDP settlements. Interpretation of findings on child growth indicators are based on internationally recognized thresholds, mainly the WHO-UNICEF/Sphere[1] .

Low weight-for-height identifies wasted children. Acute malnutrition rates are estimated from the weight for height (WFH) Z-scores as well as presence of bilateral oedema using WHO (2006) standards. Global Acute Malnutrition (GAM) is defined as <-2 z-scores and/or presence of bilateral pitting oedema, and Severe Acute Malnutrition is defined as <-3 z-scores and/or presence of bilateral pitting oedema

Height-for-age z-scores were calculated to give the prevalence of chronic malnutrition or stunting. Stunting is assessed by comparing a child's height with the height of a healthy child of the same age. Stunting is an index of long-term nutritional deprivation where growth is being compromised to conserve nutrients and energy for the maintenance of the body. Stunting is defined as <-2 z-scores, whereas severe stunting is defined as <-3 z-scores.

Weight-for-age z-scores were calculated to give the prevalence of underweight malnutrition. Underweight is assessed by comparing a child's weight with a healthy child of the same age. Underweight is composite index between long term and short term malnutrition. Underweight is defined as <-2 z-scores, whereas severe underweight is defined as <-3 z-scores.

Table 1: Guidelines for Classification of Malnutrition based on MUAC[2]

MUAC reading	Categories of Malnutrition
MUAC < 11.5cm	Severe malnutrition and high risk of mortality
MUAC ≥ 11.5cm and <12.5cm	Moderate malnutrition and moderate risk of mortality
MUAC ≥ 12.5 cm <13.5 cm	At risk of malnutrition
MUAC ≥ 13.5 cm	Adequate nutritional status

Household access to a variety of food was estimated through different food security indicators such as dietary diversity, food consumption score and household hunger scale, all using qualitative measure of food consumption[3] .

The primary data collected through the SMART surveys was triangulated with secondary data such as admission trends, screening result and other sources such as Somalia Health and Nutrition clusters. Data was interpreted taking into consideration many factors such as:

- Trends and changes
- Seasonality
- Aggravating factors
- Mortality levels (analysis at individual level)
- Statistical significance and wasting emergency threshold measure (using CDC calculator)
- Cross tabulation and correlations (odd ratio) to measure degree of association. e.g. wasting and immunization coverage, wasting and morbidity, morbidity and immunization (vitamin A and/or measles, etc.
- Disaggregated anthropometric data by age and gender

Context analysis also forms the basis for data interpretation:

- ❑ Reference Indicators- overall nutrition situation- GAM, SAM, CMR, U5MR, MUAC, HIS trends, Admissions in feeding centers
- ❑ Immediate Causes-Household Food consumption score, morbidity, disease outbreak
- ❑ Driving Factors-: Vitamin A supplementation coverage, Measles immunization coverage, access to safe water and sanitation

The many different nutrition related indicators and their respective thresholds were categorized into five different phases based on international and FSNAU supported standards: Acceptable, Alert, Serious, Critical and Very Critical[4]

1 The WHO Child Growth Standard available at : http://www.who.int/childgrowth/standards/en/
2 WHO and UNICEF. (2009) WHO Child Growth Standards and the identification of severe acute malnutrition in infants and children. A joint statement by the WHO and UNICEF.
3 Guidelines for measuring household and individual dietary diversity. FAO 2011
4 Integrated Food Security Phase Classification. Technical Manual. Version 2 The Food and Agriculture Organization of the United Nations. Rome. 2012

and are presented in Annex 6.3. The outcome of the integrated food security and nutrition situation analysis process, the estimated nutrition situation was based on convergence of evidence of the findings from multiple source of data. A minimum of two anthropometric indicators (for example global and severe acute malnutrition prevalence) were used to make an analysis and classification of the situation into one of the 5 different phases. Triangulation of all indicators was also undertaken: GAM prevalence with HIS trends and admission data from therapeutic feeding centres or FSNAU trigger and dashboard were consolidated into the expected malnutrition situation map.

ANALYTICAL PROCESS

To make a statement on the

- Nutrition situation: a minimum of two core indicators were used
- Expected malnutrition situation: a minimum of two risk factors (immediate or underlying) were used

ESTIMATION OF ABSOLUTE NUMBER OF CHILDREN WITH ACUTE MALNUTRITION

Estimation of absolute number of children who are acutely malnourished based on the current acute malnutrition prevalence based on WFH indicators and obtained from each surveyed population (IDPs and rural livelihood zones).

As a result of continuous demand from partners for estimates of number of malnourished children disaggregated by Regions when in fact the current FSNAU food security and nutrition assessments are conducted at livelihood level. FSNAU had to use a combination of real estimate value and proxy prevalence techniques to provide nationwide absolute number of acutely malnourished children. Where prevalence of acute malnutrition is not available, the prevalence observed in similar livelihoods and an average median GAM prevalence is taken if a region is cross cut by more than one livelihood zone. Accordingly, the current *Gu* 2016 estimate of total of acutely malnourished children across Somalia is approximately 322 000[5] of acutely malnourished children under five, out of which 57 000 had a severe form of malnutrition.

5 Absolute number of malnutrition burden estimation is calculated for the whole of Somalia which includes areas that have not been surveyed.

3: OVERALL NUTRITION ASSESSMENT FINDINGS

Rural Survey sample characteristics

The results in Table 2 and Figure 1 show the number of rural children surveyed disaggregated by sex and age. Nationally, the demographic sex ratio comprised of equal proportion of males and females with the overall ratio of 1:1 female to male which indicates that there was no significant sex bias in the survey. The overall age ratio between 6-29 to 30-59 is 0.80 (age ratio should be about 0.85), which confirms that both age bands (lower and upper) are equally represented in the survey sample and that there are no bias in terms of sampling younger children from the older age groups. The number of children assessed from the five different age groups was almost the same indicating no systematic bias for particular age group and sex. Among these children, 4 437 (51.4%) were boys while 4 190 (48.6%) were girls.

Table 2: Distribution of age and sex in the 6-59 month 15 Rural livelihood zones sample (N=8,627)

	Boys		Girls		Total		Ratio
AGE (mo)	no.	%	no.	%	no.	%	Boy: Girl
6-17	1082	51.3	1 026	48.7	2 108	24.4	1.1
18-29	1079	50.7	1 049	49.3	2 128	24.7	1.0
30-41	923	49.4	944	50.6	1 867	21.6	1.0
42-53	843	52.9	750	47.1	1 593	18.5	1.1
54-59	510	54.8	421	45.2	931	10.8	1.2
Total	4 437	51.4	4 190	48.6	8 627	100.0	1.1

Out of the total 38 239 population assessed from the *Gu* 2016 Rural livelihood zones assessment, 50.3 percent (n=19 219) were males while 49.7 percent (n=19 020) were females. As per the Figure 2, almost all age bands of the study population had a comperable representation expect in age band (40-59) where more males than females were recorded.

Global Acute malnutrition (GAM) prevalence

Results from the 2016 *Gu* assessment revealed that 14.3 percent of all children under the age of five in Somalia were acutely malnourished, with 2.9 percent being severely malnourished. There figures represent weighted average prevalence estimates based on results from the 28 nutrition surveys. It was observed that in 7 out of the 15 rural livelihood zones assessed the prevalence of acute malnutrition exceeds the UN trigger for emergency action (GAM ≥ 15% or Critical prevalence). Highest prevalence of acute malnutrition (based on Weight for Height Z-Scores) was recorded among rural livelihood zone in Bakool Patstoral (19.1%) and among IDP settlement in Dolow (21.8%)

Figure 1: Age distribution of children under five popualtion from across the 15 rural livlihood zones

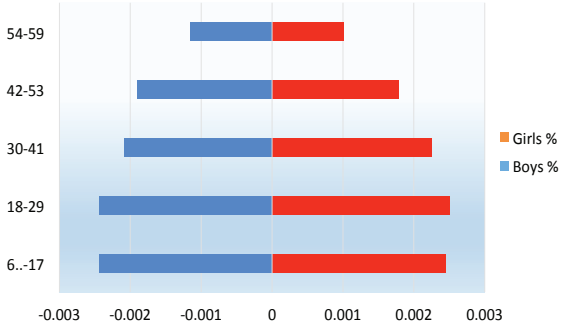
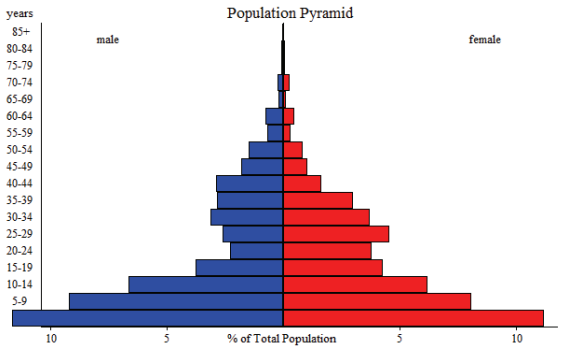


Figure 2: Age distruction of population from across rural livelihood zones and IDP settlements (28 Surveys)



In 7 out of the 13 IDP settlements assessed, Critical prevalence of acute malnutrition (GAM) are recorded. These are Dollow IDPs, (Gedo), Garowe (Nugaal), Bosaaso (Bari), Galkayo (Mudug), Berbera (Northwest), Baidoa (Bay region) and Dhobley IDPs (Lower Juba Region). It is of concern that acute malnutrition levels in three of these IDP settlements (Dollow, Garowe and Galkayo) are sustained at Critical levels over the past seven to eight seasons. Serious GAM levels (≥10 and <15%) were recorded among IDPs in Mogadishu, Kismayo and Dhusamareb in South Central zone, Qardho in Northeast zone and Hargeisa IDPs in Northwest (Figure 3).

Table 3: Overall Nutrition Situation Gu 2016

Livelihood Zone/Population assessed	GAM	SAM	CDR
NORTH EAST AND CENTRAL			
Hawd Northeast	16.3	3.7	0.32
Addun Pastoral	10.4	1.6	0.11
Coastal Deeh	13.0	1.0	0.15
Bosasso IDPs	19.8	4.3	0.21
Garowe IDPs	20.0	3.2	0.40
Galkayo IDPs	16.9	3.1	0.08
QardhoIDPs	12.6	1.9	0.35
Dhusamareb IDPs	10.1	1.9	0.08
NORTH WEST			
NIP	10.5	2.0	0.15
NW Agropastoral	10.8	1.5	0.30
Hawd NW	10.0	1.5	0.55
Guban Pastoral	16.5	1.4	0.81
West Golis	10.3	1.6	0.21
Hargeisa IDPs	11.9	1.9	0.25
Burao IDPs	7.0	0.4	0.05
Berbera IDPs	19.5	3.6	0.47
Livelihood Zone/Population assessed	**GAM**	**SAM**	**CDR**
SOUTH			
Bay Agropastoral	18.1	4.1	0.62
Bakool Pastoral	19.1	5.0	0.00
N Gedo pastoral	17.2	3.2	0.26
N Gedo Riverine	16.5	2.5	0.21
Beletweyne District	15.6	4.5	0.18
Shabelle Riverine	12.5	2.2	0.34
Shabelle Agropastoral	14.5	2.4	0.32
Mogadishu IDPs	14.7	3.5	0.33
Baidoa IDPs	18.0	4.3	0.25
Dolow IDPs	21.8	4.9	0.42
Kismayu IDPs	14.5	4.4	0.49
Dobley IDPs	17.7	3.6	0.60
Total Median	15.2	**2.8**	**0.28**

Map 2: Somalia Estimated Malnutrition Situation (GAM) July 2016

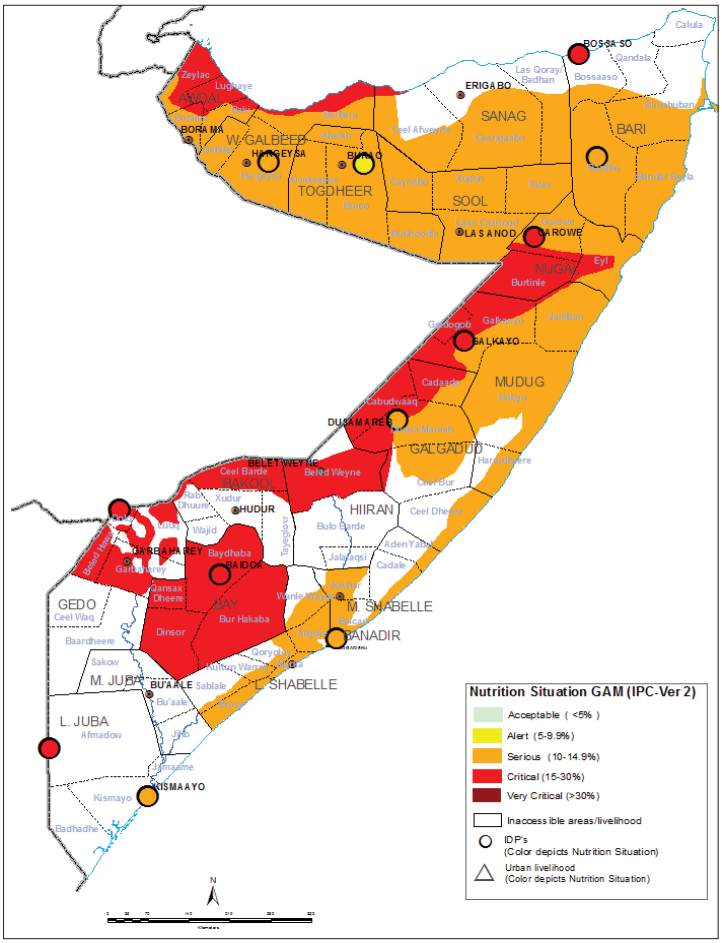
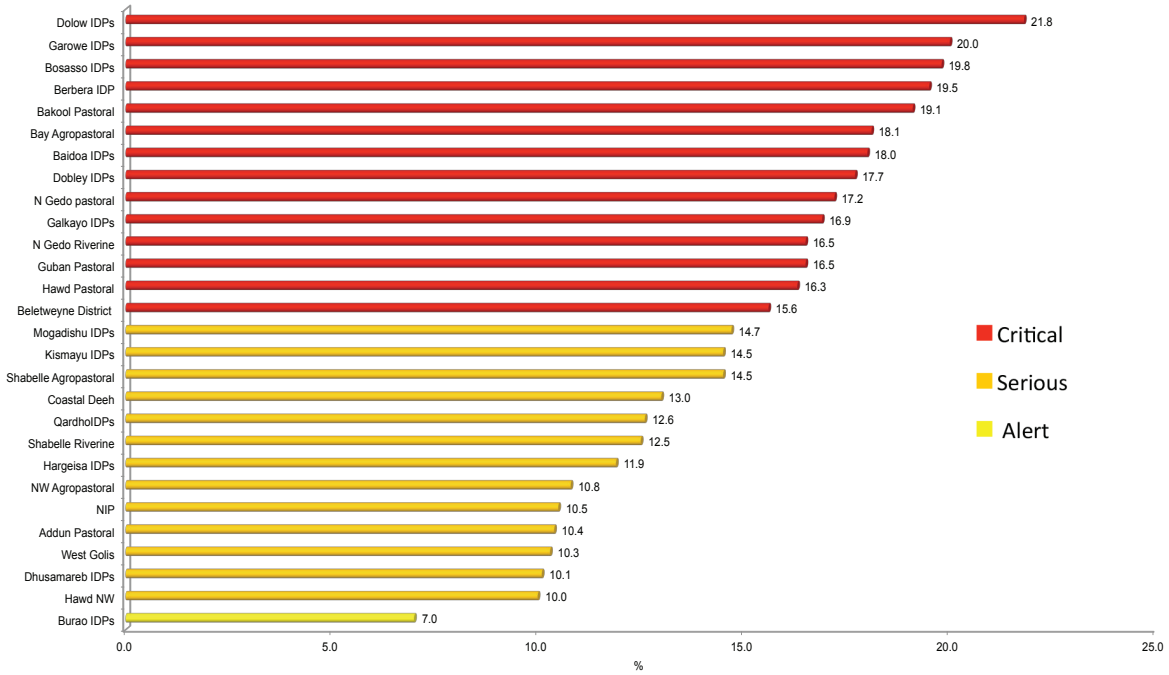


Figure 3: GAM prevalence among IDPs and rural livelihood zones - Gu 2016



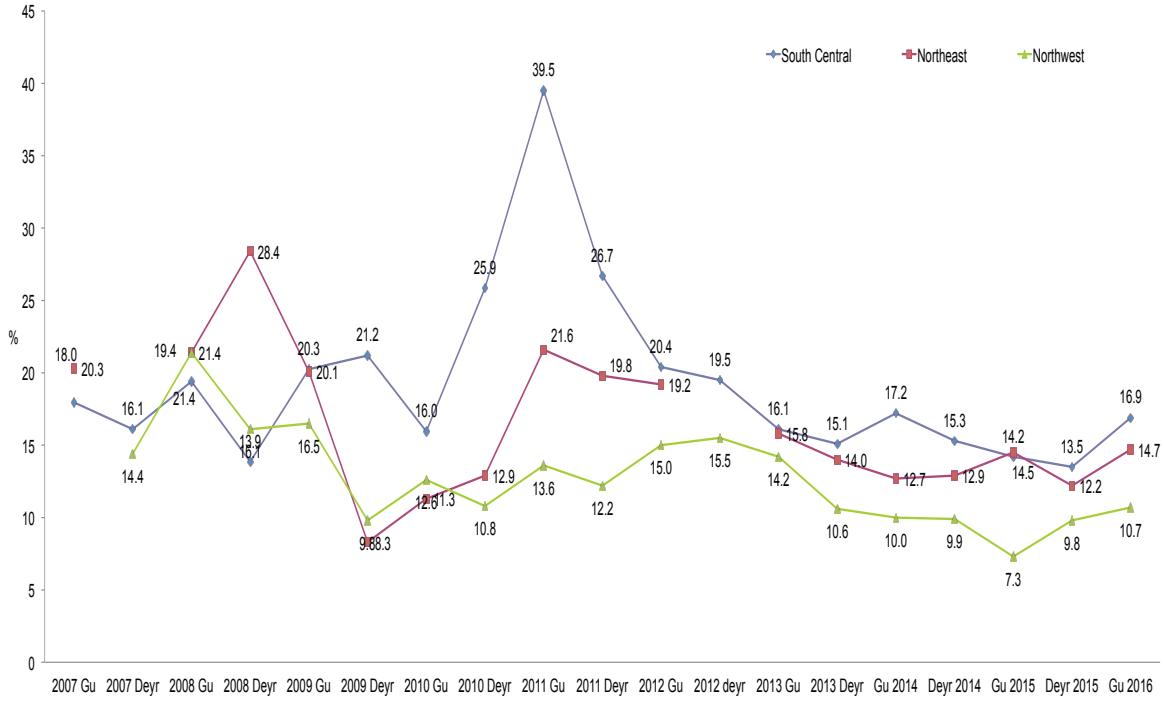
During the last one year, Critical levels of acute malnutrition has increased from 9 to 14 of the 28 surveyed population groups as shown in Table 3.

Table 4: Seasonal comparison of GAM for the surveyed population

Livelihood Zone/Population Assessed	GAM (%)		
	Gu 2015	Deyr 2015	Gu 2016
Northwest Agropastoral	5.6	6.4	10.8
Hawd Northwest	N/A	9.6	10.0
Guban Pastoral	N/A	22.3	16.5
West Golis	12.8	13.7	10.3
Hargeisa IDPs	10.5	12.1	11.9
Burao IDPs	7.1	6.4	7.0
Berbera IDPs	7.3	9.9	19.5
Hawd Northeast	14.3	12.0	16.3
Addun Pastoral	12.5	9.5	10.4
Coastal Deeh Northeast	13.0	11.2	13.0
Bosasso IDPs	12.5	16.8	19.8
Garowe IDPs	15.7	19.5	20.0
Galkayo IDPs	20.2	16.5	16.9
Qardho IDPs	14.0	10.4	12.6
Dhusamareb IDPs	10.5	10.9	10.1
Northern Inland Pastoral (NIP)	N/A	8.0	10.5
Bay Agropastoral	14.0	17.3	18.1
Bakool Pastoral	9.8	11.2	19.1
North Gedo Pastoral	20.3	21.3	17.2
North Gedo Riverine	18.8	19.5	16.5
Beletweyne District	16.8	19.0	15.6
Shabelle Riverine	10.0	11.4	12.5
Shabelle Agropastoral	13.6	14.3	14.5
Mogadishu IDPs	14.9	11.4	14.7
Baidoa IDPs	15.3	14.5	18.0
Dolow IDPs	26.4	25.0	21.8
Kismayu IDPs	12.5	12.9	14.5
Dobley IDPs	20.7	14.0	17.7
# of population groups with Critical (≥15%) GAM	**8/25**	**9/28**	**14/28**

Figure 4 shows trend analysis of Median GAM calculated for both IDPs settlements and rural livelihood zones from 2007 to 2016 for the three zones i.e. South Central, Northeast and Northwest zones. After the unfortunate 2011 famine, the GAM prevalence in the South Central has sustained either as Critical or as in Serious level for most of the seasons. The situation in the Northeast shows a relative improvement from Critical level to Serious level but can be referred in general as sustained Serious levels of acute malnutrition. However, nutrition situation in the Northwest showed an improvement from Critical levels of malnutrition to now either Alert or Serious level or fluctuating between the two.

Figure 4: GAM trend across the three zones of Somalia



Severe Acute malnutrition (SAM)

Serious SAM (2.5-4%) and Critical SAM prevalence (>4%) were recorded among 27 out of 28 (98%) surveyed population groups (Figure 6).

Over the last one year (since post *Gu* 2015), there has been a notable increment of sever acute malnutrition prevalence in both IDPs settlements and rural livelihood zones.

Figure 5 shows trend analysis of Median SAM calculated for both IDPs settlements and rural livelihood zones from 2007 to 2016 for the three zones i.e. South Central, Northeast and Northwest zones. In the Northeast, the Median for SAM after the catastrophic 2011 famine where a Median SAM as high as 17.2 was recorded, the trend over the last three to four seasons has now stabilized and a relative improvement either in Alert or Serious level was noted. Trend in SAM prevalence in the Northeast however, shows no signs of improvement and often labeled as sustained Serious. However, SAM trend in the Northwest by comparison shows relative improvement and is constantly under Alert level since the 2011 famine period.

The median SAM prevalence in south central region was 3.4 percent, which is higher compared to levels observed in northeast (2.7%) and nearly two times higher compared to prevalence recorded in northwest (1.6%) (Annex 6.8).

Figure 5: SAM trend across the three zones of Somalia

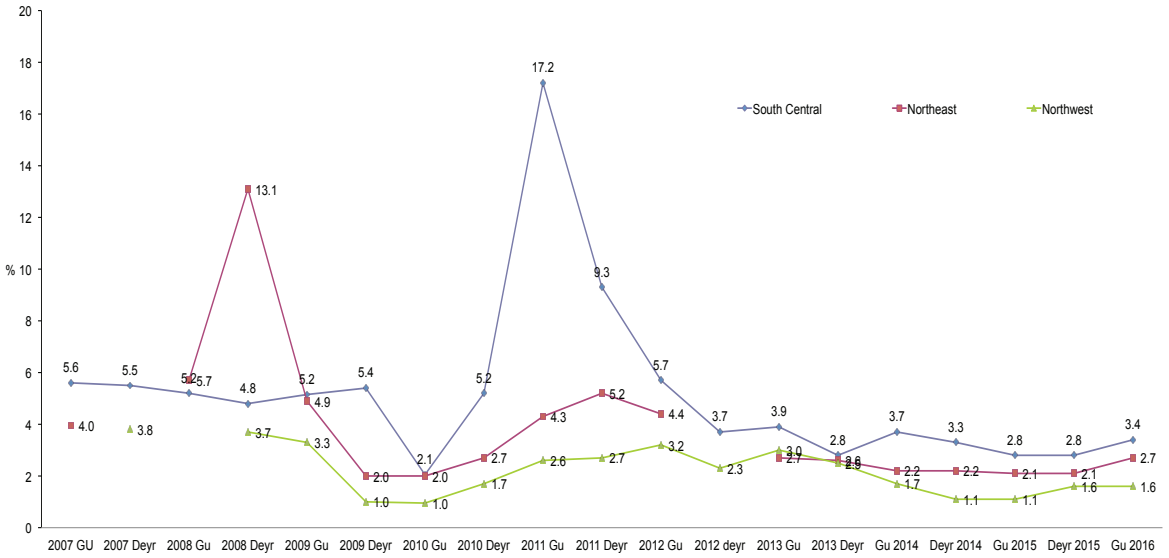
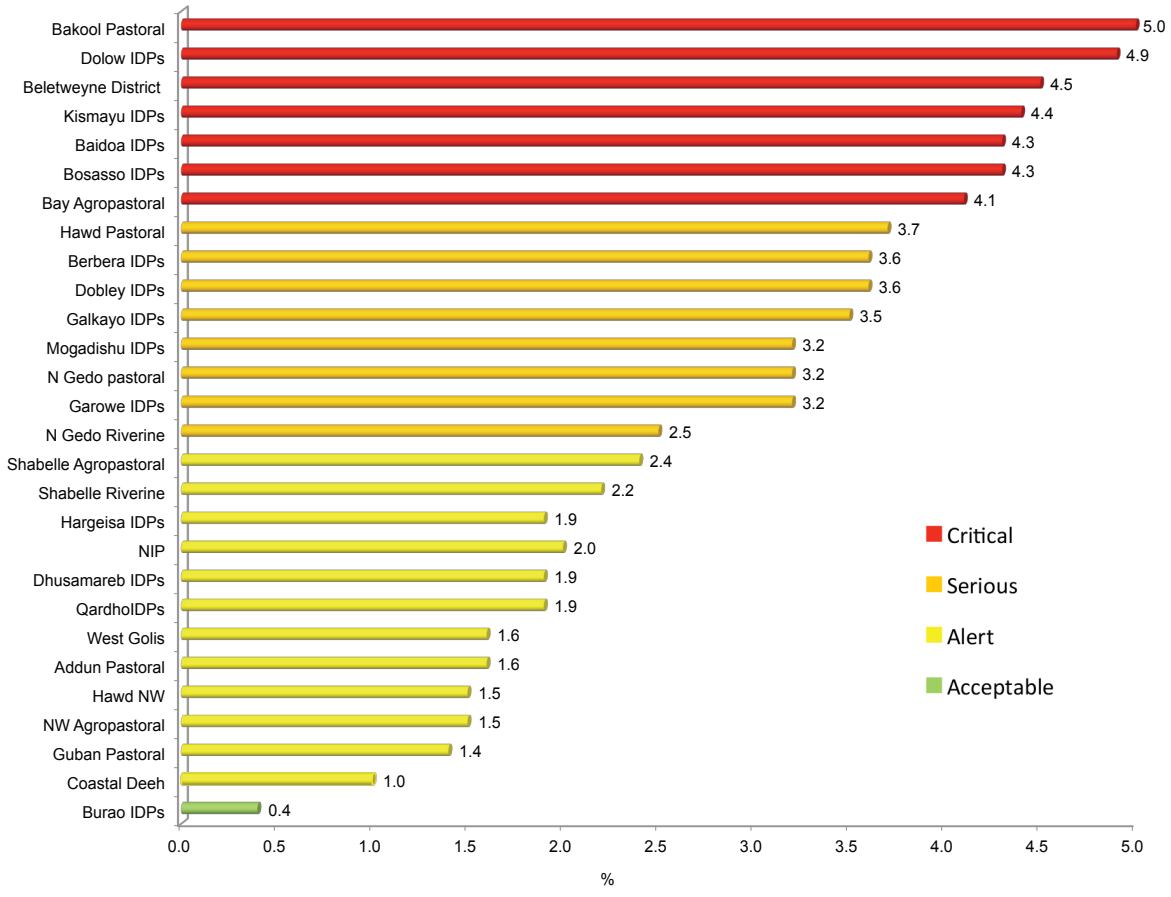


Figure 6: Rural livelihood zones and IDPs with Serious (2.5-4) to Critical (4-5.6) SAM prevalence Mid Upper Arm Circumference (MUAC)



GAM-MUAC (<12.5 cms) measurement for children under five shows Critical levels of acute malnutrition in six out of 28 surveyed population (10.8-13.7 %) and Serious levels (7.9-10.4) in only 3 surveyed population (Figure 7). Prevalence of SAM-MUAC (<11.5 cms) was Critical among 4 of the surveyed population and only 2 of surveyed populations had Serious level of SAM (Figure 8).

Figure 7: Livelihood zones and IDPs with Serious (7.5-10.6 %) to Critical (10.7-16.7%) MUAC <12.5 cm

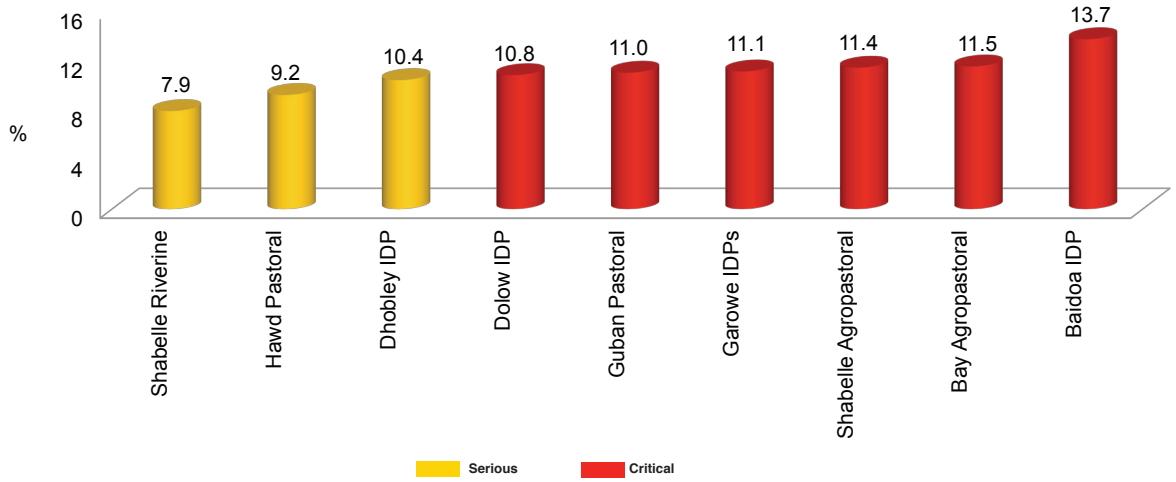
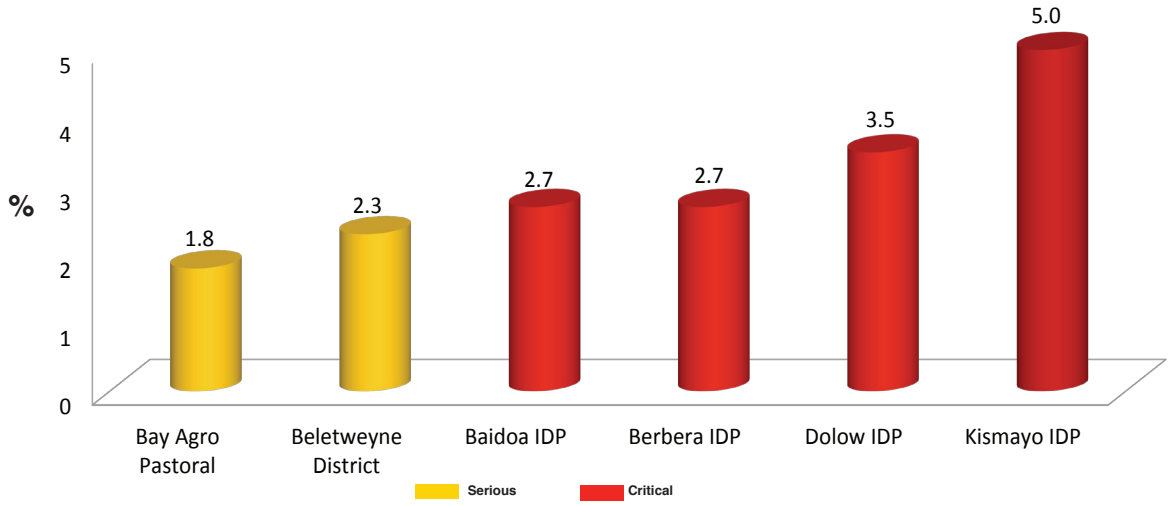


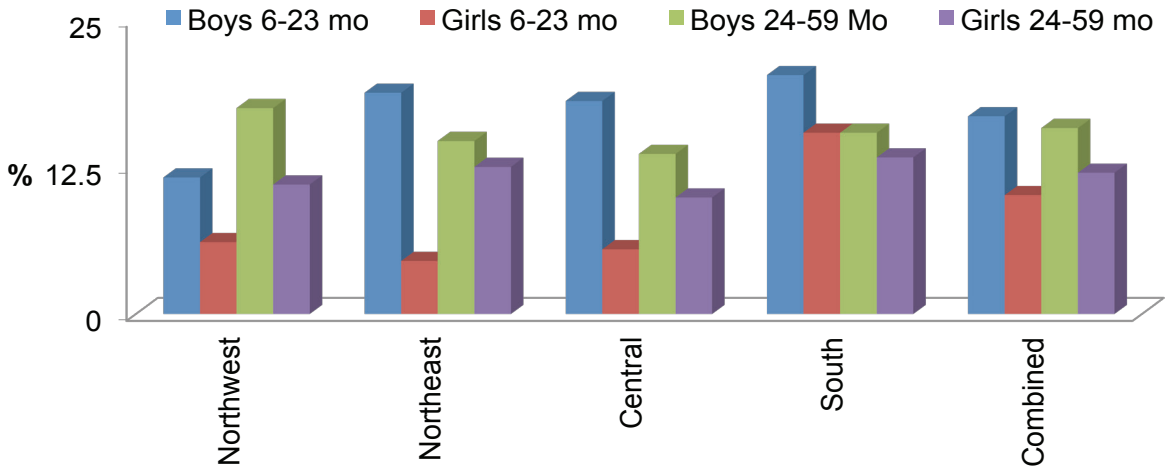
Figure 8: Livelihood zones and IDPs with Serious (1.7-2.4 %) to Critical (2.5-4 %) MUAC <11.5 cm



Gender and Age Differences in prevalence of acute malnutrition (Rural Livelihood zones)

The prevalence of GAM was observed higher in boys compared to girls in both younger and older children at all surveyed rural livelihood zones (Northwest, Northeast, Central and South) [Figure 9]. The difference was statistically significant among younger children (6 to 23 months) at Central, Northeast and Northwest. Among older children, results were statistically significant only in Northwest. The likelihood of boys continuing to exhibit higher GAM compared to girls is at (1.4257) [this is per the risk reduction ratio percentage].

Figure 9: Prevalence of GAM by sex and age



By comparison of age group, the first and lowest age band (youngest and oldest) children in the survey sample were more malnourished than the rest of their companions in the remaining age band. This was also the same for moderate acute malnutrition prevalence where the former age bands i.e. 6-17 month and 54-59 months are disproportionately higher than the rest of age bands (Table 4).

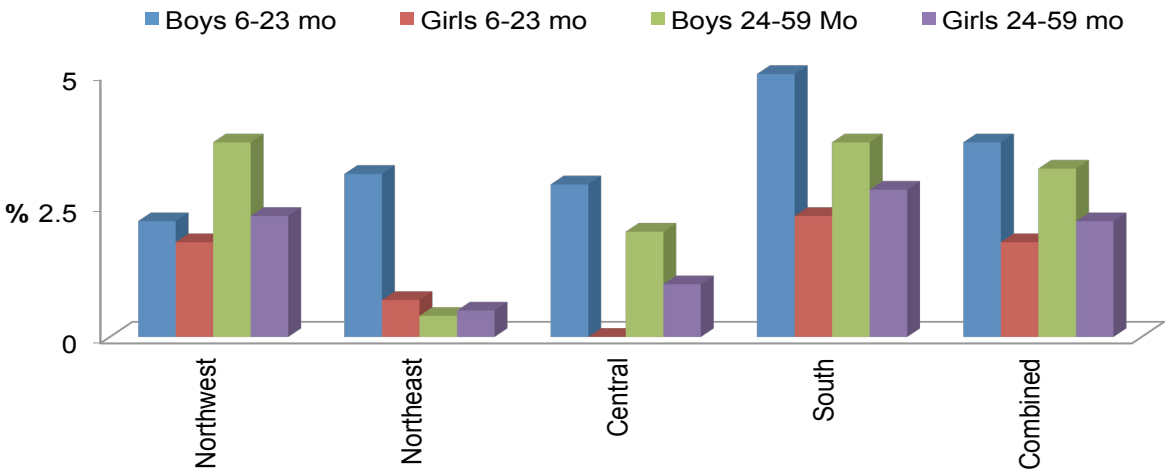
Table 5: Prevalence of acute malnutrition by age, based on weight-for-height z-scores and/or oedema

		Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
Age (mo)	Total no.	No.	%	No.	%	No.	%	No.	%
6-17	2030	50	2.5	264	13.0	1711	84.3	5	0.2
18-29	2082	45	2.2	165	7.9	1867	89.7	5	0.2
30-41	1837	39	2.1	163	8.9	1632	88.8	3	0.2
42-53	1581	30	1.9	169	10.7	1381	87.3	1	0.1
54-59	922	30	3.3	216	23.4	675	73.2	1	0.1
Total	8452	194	2.3	977	11.6	7266	86.0	15	0.2

Severe Acute Malnutrition (SAM)

Similarly, among children aged (6-23 and 24- 59 months) boys exhibited higher SAM prevalence compared to girls in all Surveyed rural livelihood zones (Figure 10). The result was statistically significant only at Northwest among older children. Compared to GAM, the likelihood of boys continuing to exhibit higher SAM is much higher (1.6456) [his is per the risk reduction ratio percentage].

Figure 10: Prevalence of SAM by sex and age



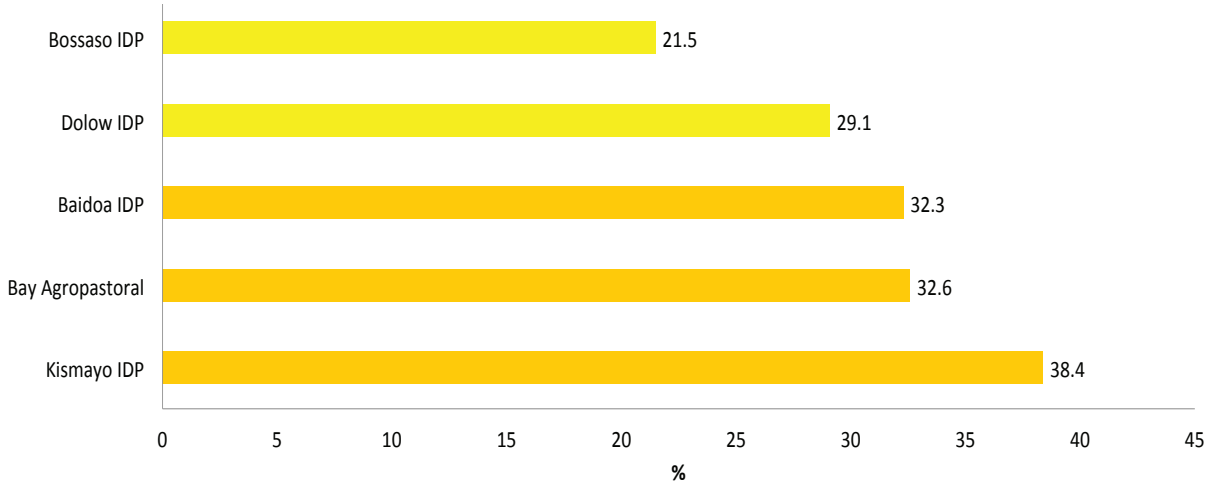
Livelihood zone analysis showed higher prevalence of SAM in boys compared to girls across all less than five years of age children. The difference was statistically significant in all areas surveyed. The likelihood of boys to continue showing high SAM compared to girls is still high at 1.3348(this is per the risk reduction ratio percentage). The trend (post *Gu* 2015 and Post *Deyr* 2014) present similar results, something to show a continued higher SAM prevalence among boys compared to girls.

Stunting prevalence

The national chronic malnutrition in Somalia is 10 percent and is considered low (<20%) with severe stunning prevalence of 2.8 percent. However, calculated Median prevalence for the three zones and between IDPs settlements and rural livelihood zones showed some difference: 12.4 percent in South and Central; 14.7 percent in Northeast; 3.2 percent in Northwest; and 12.4 percent among IDPs. Stunting is not therefore, a public health problem in Somalia as majority of areas reported <10 % low prevalence or 10-19.9 % of medium with the exception of Kismayo and Baidoa IDPs and Bay Agro-Pastoral from the rural livelihood zones reported Very high prevalence.

The prevalence of stunting in some of the surveyed population, however, (IDP's settlements and rural livelihood zones), such as Bossaso, Dolow, Baidoa IDP's and Bay Agro Pastoral continued to register from High to Very High prevalence (Figure 11). Over the last eight FSNAU season assessment and the 2009 national micronutrient and anthropometric nutrition survey, the chronic malnutrition prevalence in the most part of South and Central zones (IDP settlements and rural livelihood) has remained above the international threshold which warrants as critical and this points to a more in depth analysis of underlying factors and in particular micronutrient deficiencies and their current public health significance.

Figure 11: Rural Livelihood zones and IDPs with Medium (20.0-30.0% and High (30.0-40.0%) stunting prevalence



Stunting prevalence was observed more in boys compared to girls in all rural livelihoods except at Northwest amongst younger children (6 to 23 months) [Figure 12]. The result was statistically significant for both age groups (6-23 months, 24-59 months) in the South zone only.

Figure 12: Prevalence of Stunting by sex and age

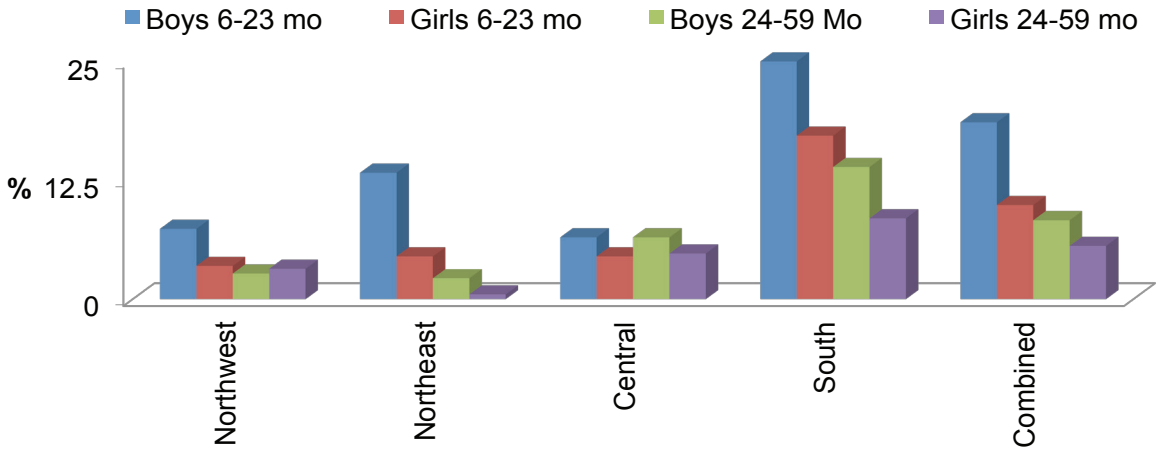


Table 6: Prevalence of Stunting by age based on height-for-age z-scores

Age (mo)	Total no.	Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
		No.	%	No.	%	No.	%
6-17	2057	49	2.4	189	9.2	1819	88.4
18-29	2080	59	2.8	213	10.2	1808	86.9
30-41	1841	21	1.1	104	5.6	1716	93.2
42-53	1583	9	0.6	60	3.8	1514	95.6
54-59	930	1	0.1	7	0.8	922	99.1
Total	8491	139	1.6	573	6.7	7779	91.6

By comparison of age group, the first two age bands i.e. 6-17 months and 18-29 months of children in the survey sample were stunted than the children in the remaining age groups (Table 5). And this is of particular concern as the current chronic level of malnutrition and its consequence will impair both nutritional and cognitive development of children under-fives and in the long run derails economic productivity of a country. Malnutrition early in life can cause irreversible damage to children's brain development and their physical growth, leading to a diminished capacity to learn, poorer performance in school, greater susceptibility to infection and disease and a lifetime of lost earning potential. It can even put them at increased risk of developing illnesses like heart disease, diabetes and certain types of cancers later in life.

The impact of poor nutrition early in life has lasting effects that can transcend generations. This is seen throughout the world as malnourished women given birth to malnourished daughters who grow up to become malnourished mothers themselves, thereby perpetuating the cycle.

The damage done by malnutrition during the first years of a child's life translates into a huge economic burden for countries, costing billions of dollars in lost productivity and avoidable health care costs. But by focusing on improving nutrition during the critical first 1 000 days, much of the serious and irreparable damage caused by hunger and malnutrition can be prevented.

Underweight prevalence

Weighted national Underweight prevalence in Somalia is 13.8 percent and is considered Medium (10-10.9%). However, there are major differences between different rural livelihood zones and IDP settlements: 14.7 percent in south and central; 16.4 percent in rural northeast; 6.9 percent in rural northwest; and 30.7 percent among IDPs. Medium underweight prevalence can be considered of public health significance in this particular season in Somalia as majority of areas reported from Medium to Very High prevalence of underweight (Figure 13).

Figure 13: Rural livelihood zones with High (20-29%) and Very High (>=30%) prevalence of Underweight

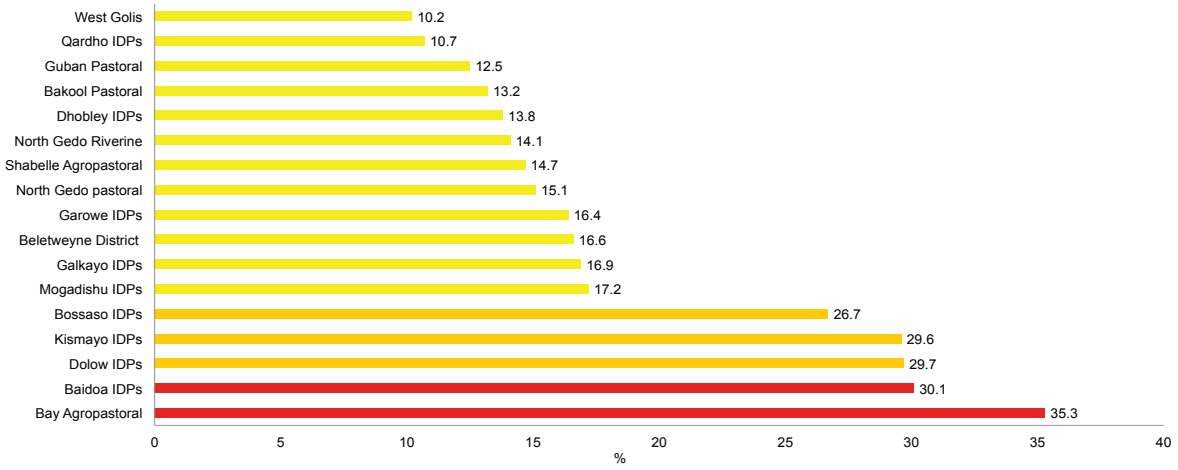
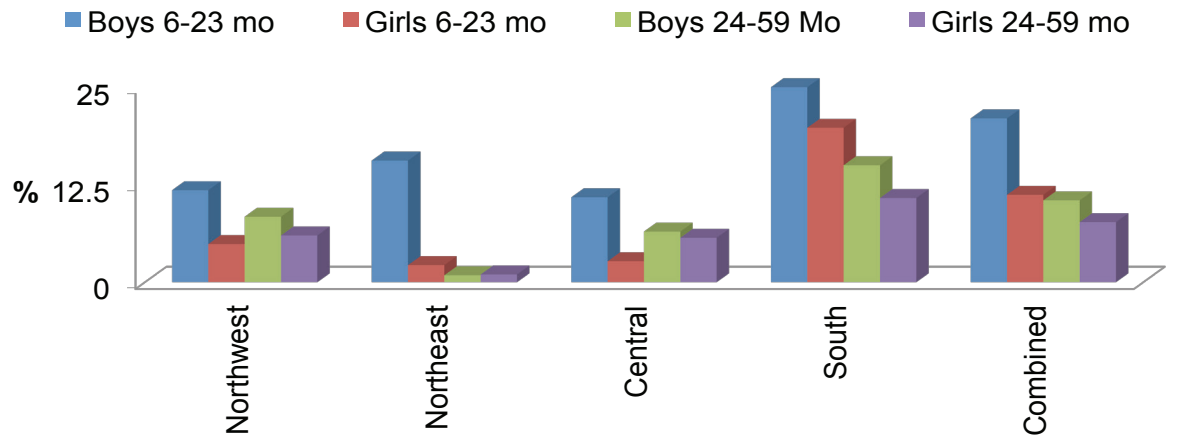
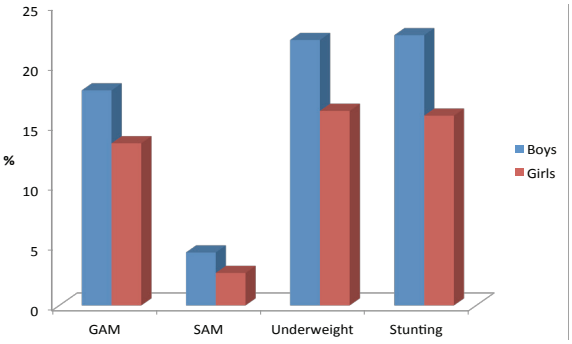


Figure 14: Prevalence of Underweight by gender and age



As can be seen from figure 14, underweight malnutrition affects boys than girls as the other two forms of malnutrition i.e. wasting and stunting.

Figure 15: Forms of malnutrition dissaggregated by sex among 13 IDP settlements



Gender and Age Differences in prevalence of malnutrition (IDP settlements)

The three forms of malnutrition (wasting, stunting and underwieght) quantified from the major 13 IDP settlements and dissagrgated by sex shows that boys are more affecated compared to girls by the three forms of malnutritiuon than girls (Figure 15).

While wasting prevalence affects almost equally both the lowest and highest age band in all of the IDP settlements, however, the level of stuntedness is higher on the lowest age band than the highest age band as referenced from table 6 and 7 respectively.

Table 7: Prevalence of acute malnutrition in IDPs by age, based on weight-for-height z-scores and/or oedema

		Severe wasting (<-3 z-score)		Moderate wasting (>= -3 and <-2 z-score)		Normal (> = -2 z score)		Oedema	
Age (mo)	Total no.	No.	%	No.	%	No.	%	No.	%
6-17	1898	76	4.0	301	15.9	1517	79.9	4	0.2
18-29	1987	54	2.7	214	10.8	1709	86.0	10	0.5
30-41	1750	37	2.1	164	9.4	1544	88.2	5	0.3
42-53	1450	34	2.3	158	10.9	1252	86.3	6	0.4
54-59	805	32	4.0	167	20.7	603	74.9	3	0.4
Total	7890	233	3.0	1004	12.7	6625	84.0	28	0.4

Table 8: Prevalence of stunting in IDPs by age based on height-for-age z-scores

		Severe stunting (<-3 z-score)		Moderate stunting (>= -3 and <-2 z-score)		Normal (> = -2 z score)	
Age (mo)	Total no.	No.	%	No.	%	No.	%
6-17	1865	86	4.6	231	12.4	1548	83.0
18-29	1908	157	8.2	347	18.2	1404	73.6
30-41	1709	81	4.7	184	10.8	1444	84.5
42-53	1433	41	2.9	143	10.0	1249	87.2
54-59	811	4	0.5	28	3.5	779	96.1
Total	7726	369	4.8	933	12.1	6424	83.1

Mortality

The *Gu* 2016 rural assessment covered 38 239 population for retrospective mortality assessment. A 160 days recall period covering from 4th of February 2016 to 13th of July 2016 was used to capture probable drought and flood trigged death encounters in Somalia. A total of 156 deaths were reported retrospectively from all mortality assessments. The highest was in Southern zone with 71 deaths, followed by 70 deaths in Northwest zone and 15 deaths in the Northeast and central zone

In May/June 2016 IDP settlement retrospective mortality assessment covered 29 644 population. 88 deaths were reported out of which 44 were children under five. Highest number of deaths were reported IDP settlements in Mogadishu, Kismayo, Qardho and Bossaso.

The *Gu* 2016 retrospective assessment found a national CMR of 0.44 deaths per 10 000 population per day and U5MR 0.40 deaths for 10 000 population in a day. When the current U5MR is converted to under five mortality per 1 000 live births it equates to 112 livebirth which is almost comparable to the current under-five mortality of 137 per 1 000 live births[1] which is reported by the Somalia Health cluster. Somalia is the second African country having the highest under-five mortality and this calls for a concerted effort to improve both on the curative and treatment component of existing health service in the country.

1 The State of World children(UNICEF, Fast fact 2016)

Out of the 28 population groups assessed (13 IDP settlements and 15 rural livelihood zones), 24 showed Acceptable levels of Crude Mortality Rate (CMR) However, Guban Pastoral, Bay Agro-Patroral, Dhobley IDP and Hawd Northwest had serious (0.5<1.0) had Crude Mortality Rate (Figure 16).

Figure 16: Rural Livelihood zones/IDPs with Alert (<0.5) and Serious (0.5-<1) Crude Mortality Rates

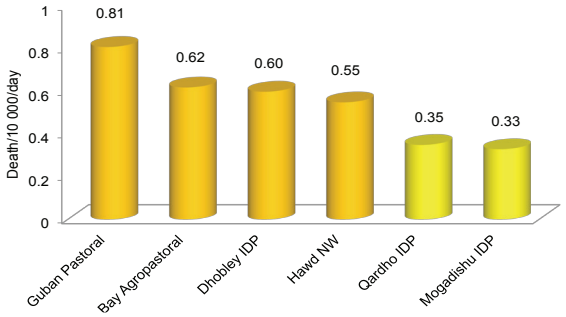
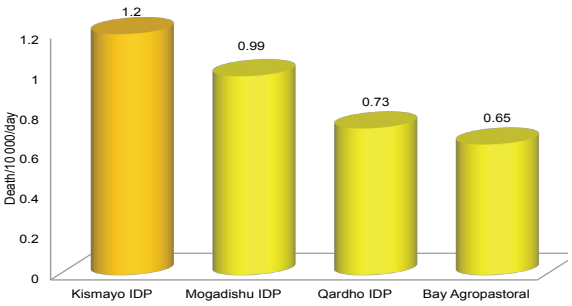


Figure 17: Rural Livelihood zones/IDPs with Alert (<1) and Serious (1-1.9) Under Five Mortality Rates



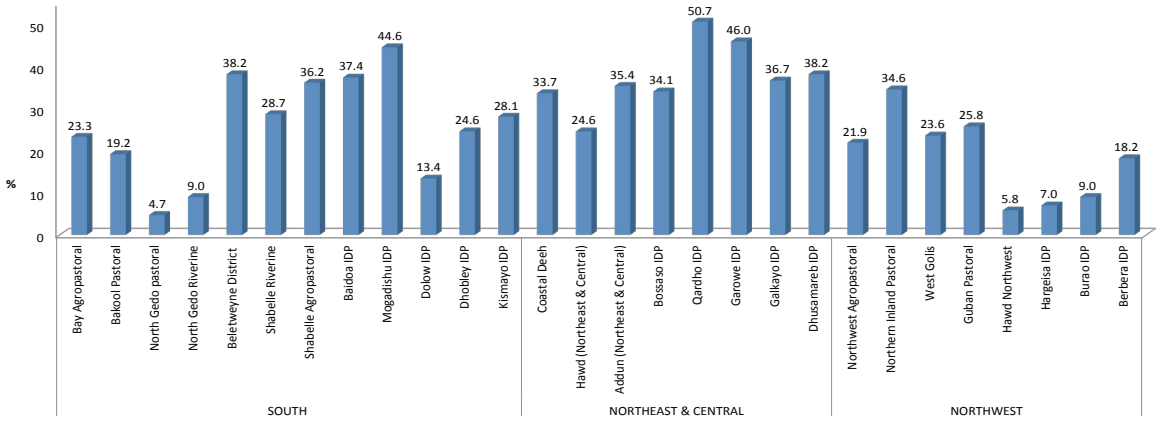
Among the 28 surveyed population, only Kismayo IDP had Under-Five Death Rate (U5DR) exceeding 1/10 000/ day which is considered as in a Serious situation (Figure 17).

Morbidity

Morbidity incidence in the two weeks before the survey was high for most of the population groups surveyed. Twenty out of 28 population groups surveyed had at least one in five children sick in the two weeks prior to the survey (Figure 18). High morbidity pattern is noticed as one move from northeast to central and southern zones of Somalia. It's also worth to note that IDP settlements in the northeast and south central have significant morbidity incidence than IDP settlements located in the northwest zone. The rural livelihood assessment also identified those livelihood zones in the south central such as Beletweyne District and Shabelle Agro-pastoral having higher morbidity rate than other livelihood zones located in the northeast and northwest zones. Morbidity rate are generally lower among population groups in northwest parts of the country where GAM prevalence are also lower relative to other parts of Somalia.

Somalia is also one of the Acute Watery Diarrhoea/Cholera-endemic countries in the World. During the period when the *Gu* 2016 assessment was carried out, an outbreak of Acute Watery Diarrhoea (AWD), cholera and measles affected most part of southern Somalia[2]. The June report hghlighths that 465 cases and 3 deaths were reported in Belethawa district. 249 of the cases were children below 5 years. In the same reporting month, there was an increase in AWD cases in Beletwyene and Bulaburde districts. As of 30 June, 491 cases and 22 deaths were reported from both districts. 49 percent of all the cases were children under five years. Beletweyne district accounted for 79 percent of the cases.

Figure 18: Morbidity prevalence in the two weeks prior to Gu 2016 assessment



2 Health Cluster Update, June 2016

Immunization coverage

Immunization is an important public health intervention which protects children from illness. According to the Gu 2016 results, the national immunization coverage for measles is 40.6 percent while Vitamin A supplementation 6 months prior to the assessment was only 32.5 percent. All rural livelihood zones and IDP settlements in Somalia reported low measles vaccination below therecommended Sphere standards of 90 percent. Similarly, coverage for vitamin A supplementation was below the Sphere standards recommendation (> 95%), in all of surveyed livelihoods (Figure 19 and 20). The health sector in Somalia is still in a critical situation with one of the worst health indicators in the world. With a total population of 12.3 million people, of whom 1.1 million are internally displaced. Only 42 percent of children below five years receive Pentavalent vaccination while 46 percent receive Measles vaccination.

It is worrying to note that that rural livelihood zones in south central Somalia had a coverage of both vitamin A supplementation and measles vaccination as low as < 20 percent. FSNAU historical data show in most of the rural livelihood zones and IDP settlements located in the south central zones of Somalia, the coverage of both measles vaccination (mothers recall) and vitamin A supplementation are very depressed and have not shown any coverage improvement to date.

As per SPHRE recommendation, a mop up measles campaign should be initiated in an area if routine measles immunization coverage do not show a coverage of ≥90 per cent for the preceding five years and/or if a measles vaccination campaign conducted in the preceding 12 months has not reached ≥90 per cent of children aged 9 months to 5 years.

Figure 19: Measles Vaccination in Gu 2016

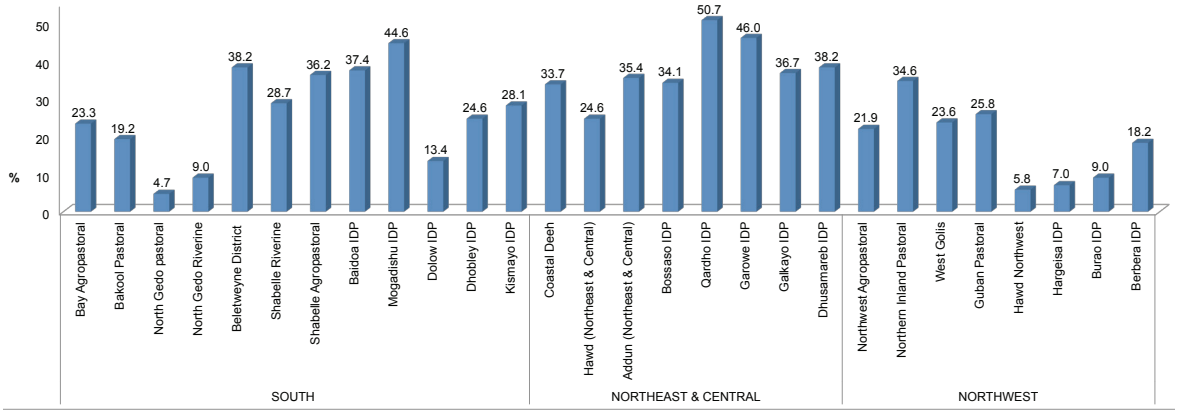
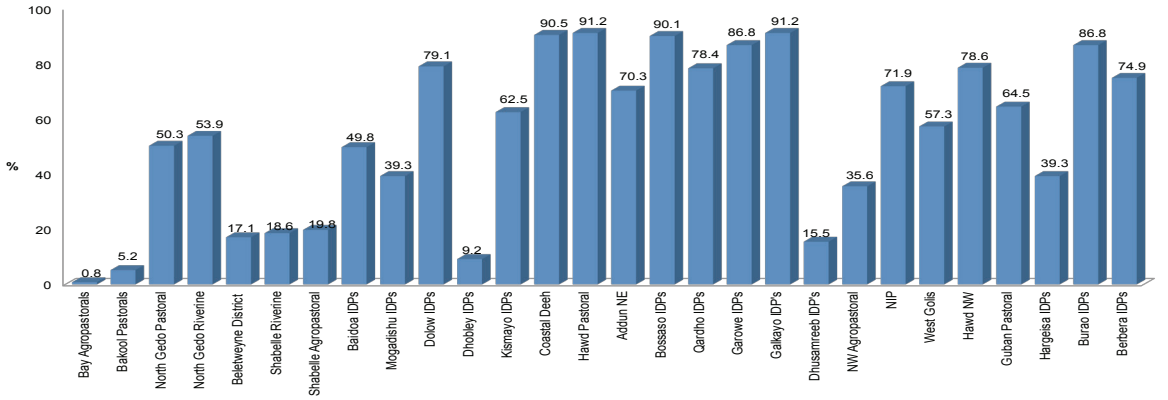


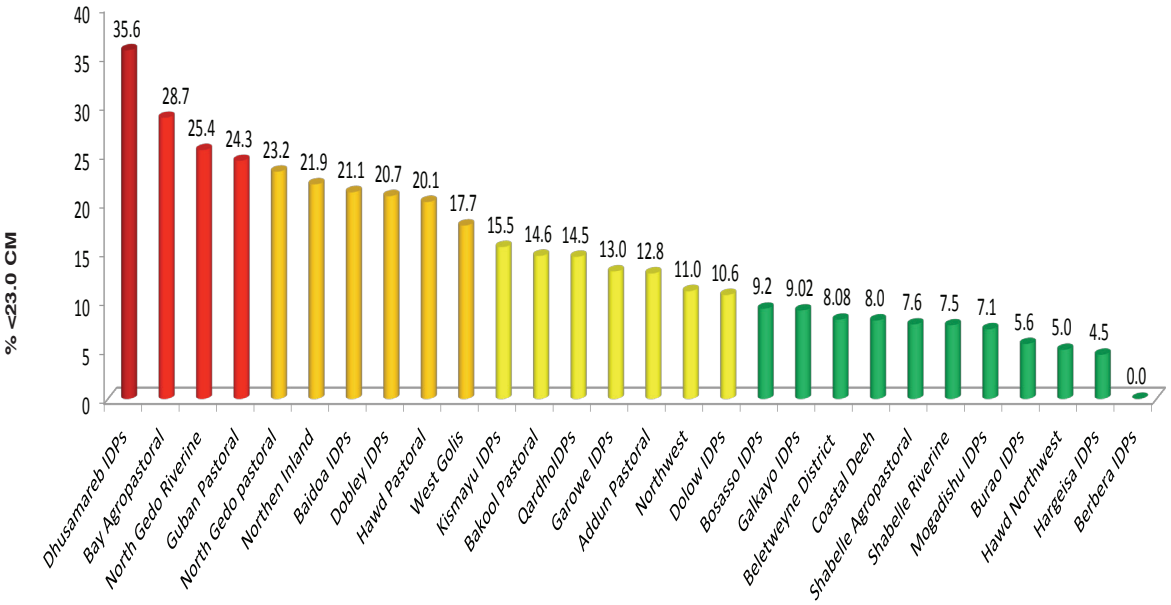
Figure 20: Vitamin A supplimentation in Gu 2016



Nutritional status of women of reproductive age groups (15-49 years)

It has been well documented that the nutrition status and well-being of a mother consequently has an impact on child nutritional well-being. The *Gu* 2016 identified 16.4 percent of total population of women of reproductive age groups in Somalia as acutely malnourished (MUAC<23.0cm) and as per FSNAU Nutrition classification threshold, the current prevalence is considered as Alert. Critical (23.4-31.4) to Very Critical levels (>31.5 %)

Figure 21: Livelihoods with Alert/Serious/Critical prevalence of maternal malnutrition - Gu 2016



of acute malnutrition among women of reproductive age group are found in Dhusamareb (35.6%), Bay Agro-pastoral (28.6%), North Gedo Riverine (25.4%), Guban Pastoral (24.3%) as shown in Figure 21. The result suggests that unless the current maternal malnutrition is addressed immediately the Intergenerational cycle of malnutrition and growth failure will continue in Somalia.

Estimated malnutrition population disaggregated by Region

Based on the nutrition surveys conducted by FSNAU in June and July 2016, the estimated total number of acutely malnourished children under five in these areas is 193 200 with 36 900 severely malnourished. To support operational and plannig decision, FSNAU has also estimated the total number of acutely malnourished children covering both surveyed and nonsurveyed areas. The estimates for nonsurveyed populations were generated based on the median prevalence of adjacent population groups surveyed in Gu 2016. Current absolute malnutrition population disaggregated by Regions put the number of under-five children at risk of acute malnutrition as 322 250 including 57 140 cases of severe acute malnutrition (Table 8). FSNAU uses a combination of real estimate value and proxy prevalence techniques to provide nationwide absolute number of children. Where a prevalence of acute malnutrition is not available the prevalence observed in similar livelihoods and an average median GAM prevalence is adopted if a Region is cross cut by more than one livelihood GAM estimate. Regional distribution of total number of malnourished population shows that south and Central of Somalia accounts for 67 percent of the GAM caseload (2 out of every 3).

Table 9: Regional distribution of acute malnourished children in Somalia (Based on Gu 2016 prevalence)

ALL REGIONS	GAM	SAM
Lower Shabelle	29 500	5 000
Banadir	34 500	5 500
Bay	27 250	6 000
Galgadud	12 000	2 500
Mudug	17 000	2 000
M Shabelle	12 500	2 000
W Galbeed	24 500	3 500
L Juba (Hoose)	15 500	3 000
Gedo	14 500	2 500
Hiran	14 500	4 500
Bakool	13 000	3 000
Bari	16 000	2 000
Togdheer	14 500	2 000
M Juba(Dheexe)	11 500	2 000
Awdal	18 000	2 000
Sanaag	11 500	2 000
Sool	7 000	2 000
Nugal	10 000	1 500
Mogadishu IDPs	10 850	2 500
Bossas IDPs	1 950	450
Qardho IDPs	250	50
Garowe IDPs	400	60
Galkayo IDPs	1 550	300
Hargeisa IDPs	1 050	200
Burao IDPs	350	20
Berbera IDPs	50	10
Baidoa IDPs	750	150
Dhobley IDPs	450	100
Kismayo IDPs	300	100
Dhusamareeb IDPs	700	150
Dolow IDPs	350	50
Total	**322 250**	**57 140**

Food and Non-food factors contributing to Acute Malnutrition

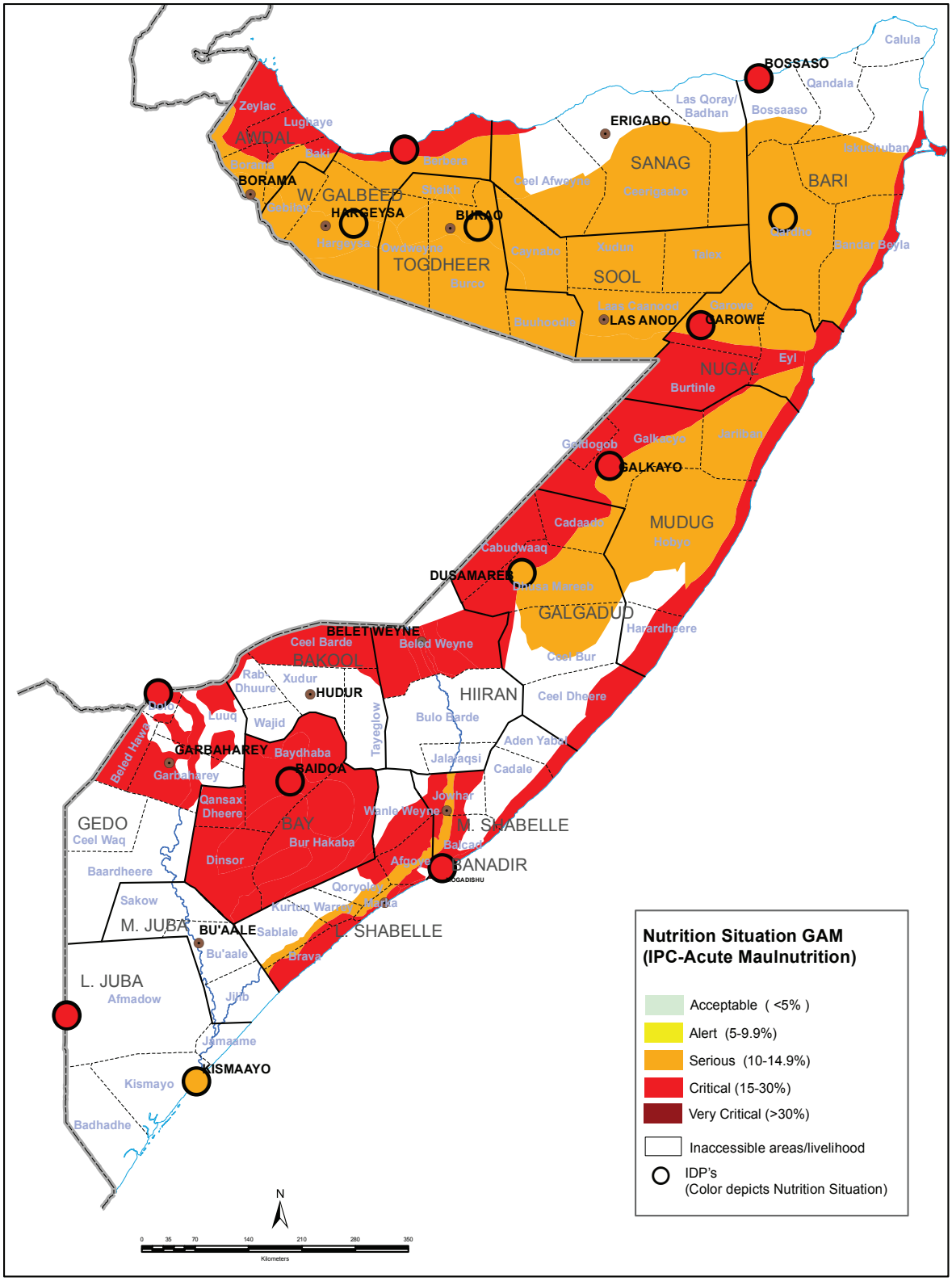
In an effort to understand potential role of food security related indicators and public health indicators to the current wasting prevalence in the country, the *Gu* 2016 summarizes key findings from both the nutrition and food security assessments from both rural livelihood zones and IDP settlements and sought for convergence of evidence without the use of statistical analysis.

As per table 9, malnutrition prevalence in the Northwest seems to be aggravated by both food insecurity and poor public health indicators whereas in the Northeast zone of the country food insecurity seems to have limited role in aggravating current prevalence. Even though, current immunization coverage for measles and vitamin A supplementation looked reasonable okay, other indicators such as limited access to potable water, sanitation coverage could have some contribution. This is partly consistent with the high morbidity incidence in most of surveyed population. In the south central zone, the situation seems to be aggravated by combination of both i.e food and non-food factors. It is worth to note that in Gedo region (riverine and pastoral livelihoods and Dolow IDP settlement), household food insecurity seemed to have more weight for sustained Critical levels of acute malnutrition in the region.

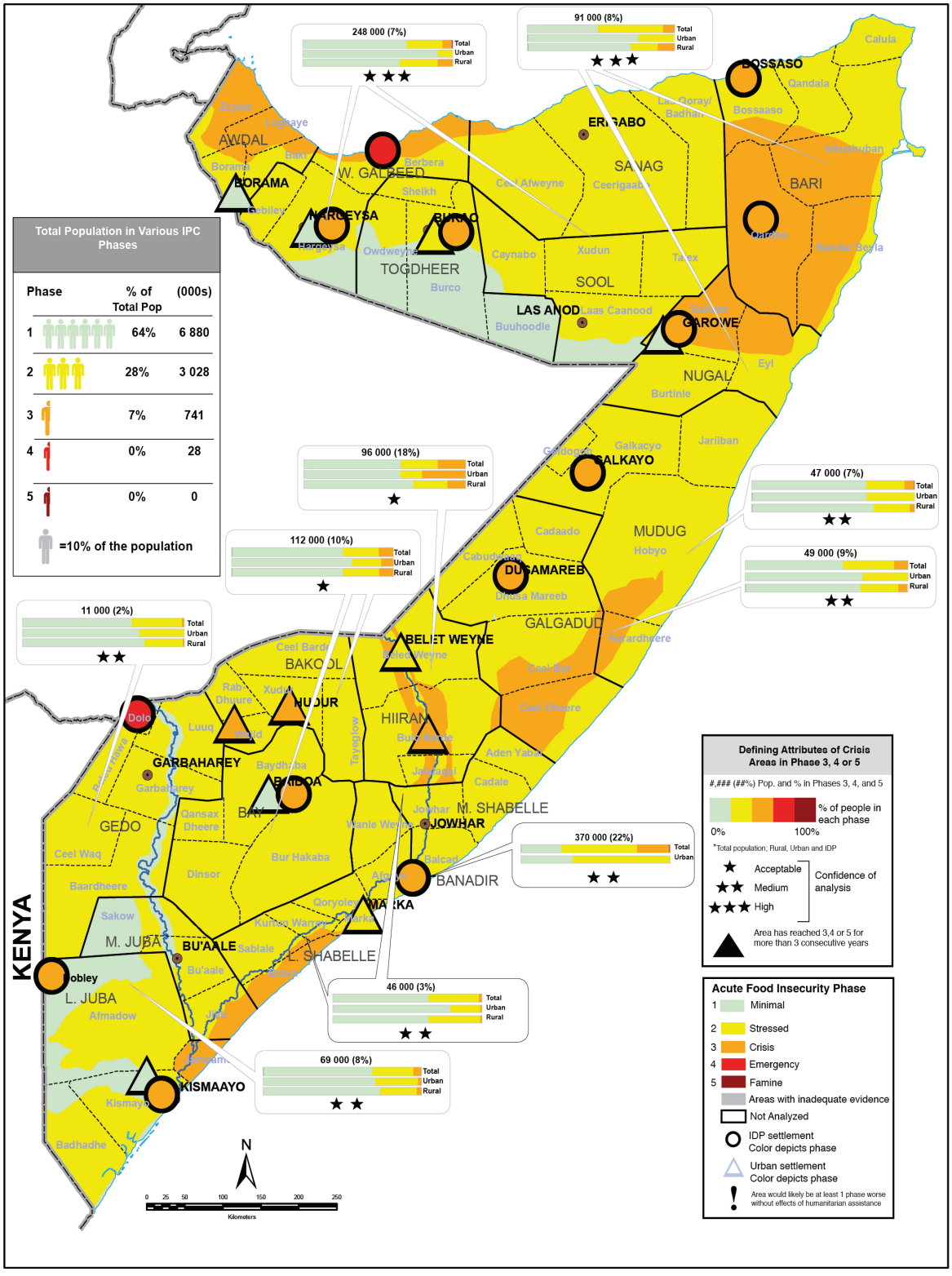
Table 10: Association between malnutirtion and contributing factors

Livelihood Zone/ Population assessed	Global Acute Malnutrition (GAM) Prevalence							Summary	
		Childhood Illness (Morbidity) =/≥20%	VIT A Supplementation <50%	Measles vaccination <50%	Poor/ Borderline FCS in =/≥20% of HHs	=/≥20% of HHs using Moderate to Severe Coping Strategies	=/≥15% of HHs experienced Moderate to Severe Hunger	Morbidity and vaccination related factors are important	Food Inecurity related factors are important
NW Agropastoral	10.8	21.9	35.6	29.9	36	3	8	**Yes**	Yes
Hawd NW	10.0	5.8	78.6	80.1	21	0	7		Yes
Guban Pastoral	16.5	25.8	64.5	54.4	62	20	54	Yes	**Yes**
West Golis	10.3	23.6	57.3	61.1	45	21	25	Yes	**Yes**
Hargeisa IDPs	11.9	7.0	39.3	40.3	22	1	Not assessed	**Yes**	Yes
Burao IDPs	7.0	9.0	86.8	88.3	2	0		Yes	
Berbera IDPs	19.5	18.2	74.9	74.9	50	0			Yes
Northern Inland Pastoral	10.5	34.6	71.9	71.3	51	2	5	Yes	Yes
Hawd NE	16.3	24.6	91.2	85.7	8	3	11	Yes	
Addun Pastoral	10.4	35.4	70.3	69.7	7	0	7	Yes	
Coastal Deeh	13.0	33.7	90.5	86.3	10	1	3	Yes	
Bosasso IDPs	19.8	34.1	90.1	84.7	4	2	Not assessed	Yes	
Garowe IDPs	20.0	46.0	86.8	82.2	4	0		Yes	
QardhoIDPs	12.6	50.7	78.4	79.9	8	1		Yes	
Galkayo IDPs	16.9	36.7	91.2	91.6	6	0		Yes	
Dhusamareb IDPs	10.1	38.2	15.5	20	7	0		**Yes**	
Beletweyne District	15.6	38.2	17.2	28.1	12	7	17	**Yes**	Yes
Bakool Pastoral	19.1	19.2	5.2	5.1	34	0	20	Yes	**Yes**
Bay Agropastoral	18.1	23.3	0.8	16.5	5	0	2	**Yes**	
Baidoa IDPs	18.0	37.4	49.8	47.5	35	15		**Yes**	Yes
N Gedo pastoral	17.2	4.7	50.3	64.2	20	2	14		Yes
N Gedo Riverine	16.5	9.0	53.9	63.7	28	1	13		Yes
Dolow IDPs	21.8	13.4	79.1	76.9	49	5			Yes
Shabelle Riverine	12.5	28.7	18.6	9.9	1	10	1	**Yes**	
Shabelle Agropastoral	14.5	36.2	19.8	6.3	3	11	14	**Yes**	
Mogadishu IDPs	14.7	44.6	39.3	27.8	18	29	Not assessed	**Yes**	Yes
Kismayu IDPs	14.5	28.1	62.5	52.2	9	1		**Yes**	
Dobley IDPs	17.7	24.6	9.2	76.9	16	21		**Yes**	Yes

Map 3. Somalia Estimated Malnutrition Situation Most Likely Scenario August-October 2016



Map 4. Somalia Food Security Situation, Most Likely Scenario August - December 2016



Nutrition and food security projection

Considering presence of two or more aggravating factors, the current malnutrition prevalence among the 28 surveyed population is likely to sustain either in Serious or in Critical level until end of October. In other words, unless those potential aggravating factors change, there will not be any significant nutritional improvement among the assessed population (Map 4). The food security analysis highlights a below to near average rainfall is expected to prevail in most parts of Somalia during the forthcoming 2016 *Deyr* (October-December) season due to forecasted negative sea surface temperatures and negative Indian Ocean Dipole (IOD), with continued adverse impact on Deyr season crop production and livestock production and reproduction during the *Deyr* season. This is expected to further exacerbate the adverse food security impacts of the poor 2016 Gu rainfall in many parts of the country (Map 5).

***Gu* 2016 Hotspot Intervention areas in Somalia**

A nutrition situation is considered Critical when Global Acute Malnutrition (GAM) prevalence among children under five is 15 percent or higher and when 23.4 percent or more women of reproductive age groups 15-49 years in a given population have a Mid-Upper Arm Circumference (MUAC) measurement below the 23.0 centimeter threshold. The following Rural livelihood zones and IDPs have Critical levels of acute malnutrition and are priorities (hotspots) for emergency health and nutrition assistance:

- Guban Pastoral and Berbera IDPs (Awdal and West Galbeed Regions)
- Bosaaso IDPs (Bari Region)
- Garowe IDPs (Nugaal Region)
- Galkayo IDPs (Mudug Region)
- Beletweyne Riverine (Hiran Region)
- Bay agro-pastoral and Baidoa IDPs (Bay Region)
- Bakool pastoral (Bakool Region)
- North Gedo Pastoral, North Gedo Riverine and Dolow IDPs (Gedo Region)
- Dhobley IDPs (Lower Juba Region)
- Dhusamareb IDPs(Galgadud Region)

Conclusion and recommendation

Somalia is witnessing triple forms of undernutrition (wasting, underweight and stunting) affecting the most vulnerable groups of its population i.e. children under-fives and women of reproductive age groups. The trend and persistence of malnutrition and its consequence varies by geography and livelihoods zones (urban, rural both agro-pastoral and pastoralist and IDPs). IDPs settlements and rural livelihoods in the South Central zone continued to register high levels of malnutrition, and morbidity long after the end of the 2011 famine. Addressing malnutrition and micronutrient deficiencies to prevent irreversible growth and development challenges in children that will ultimately affect economic development of the country, is crucial.

The causes of poverty, food insecurity and acute malnutrition are interlinked. A 2015 Nutrition Casual Analysis (NCA)[3] in the south central Somalia confirmed that limited access to income significantly impacted the ability of households to meet their basic needs placing greater demand on women to focus on seeking income , which coupled with their domestic responsibilities limited the amount of time available for child care, including accessing health and nutrition services.

Therefore, the focus on reducing malnutrition clearly needs to move away from short term response focusing on treatment and food only approach to an integrated response addressing access to protected water, promoting hygiene, and sanitation practices and facilities, improving access to basic health services, improving feeding and care practices and addressing food insecurity. Until the fundamental factors surrounding safe water, sanitation

3 Nutritional Causal Analysis Study - South and Central Somalia, November 2015, Concern WorldWide, DFID, World Food Programme, Action Contre le Faim, Oxfam, Save the Children.

and health care are addressed it is unlikely that there will be a significant change in the persistent nutrition crisis faced by the population in Somalia. Efforts by response agencies to implement integrated programmes remain a challenge in a context characterized by civil conflict, yet these services are essential to ensure proper growth and development of the population. Addressing food and nutrition insecurity, therefore requires an understanding of the root causes, and a multi-sectoral approach.

Recommendations

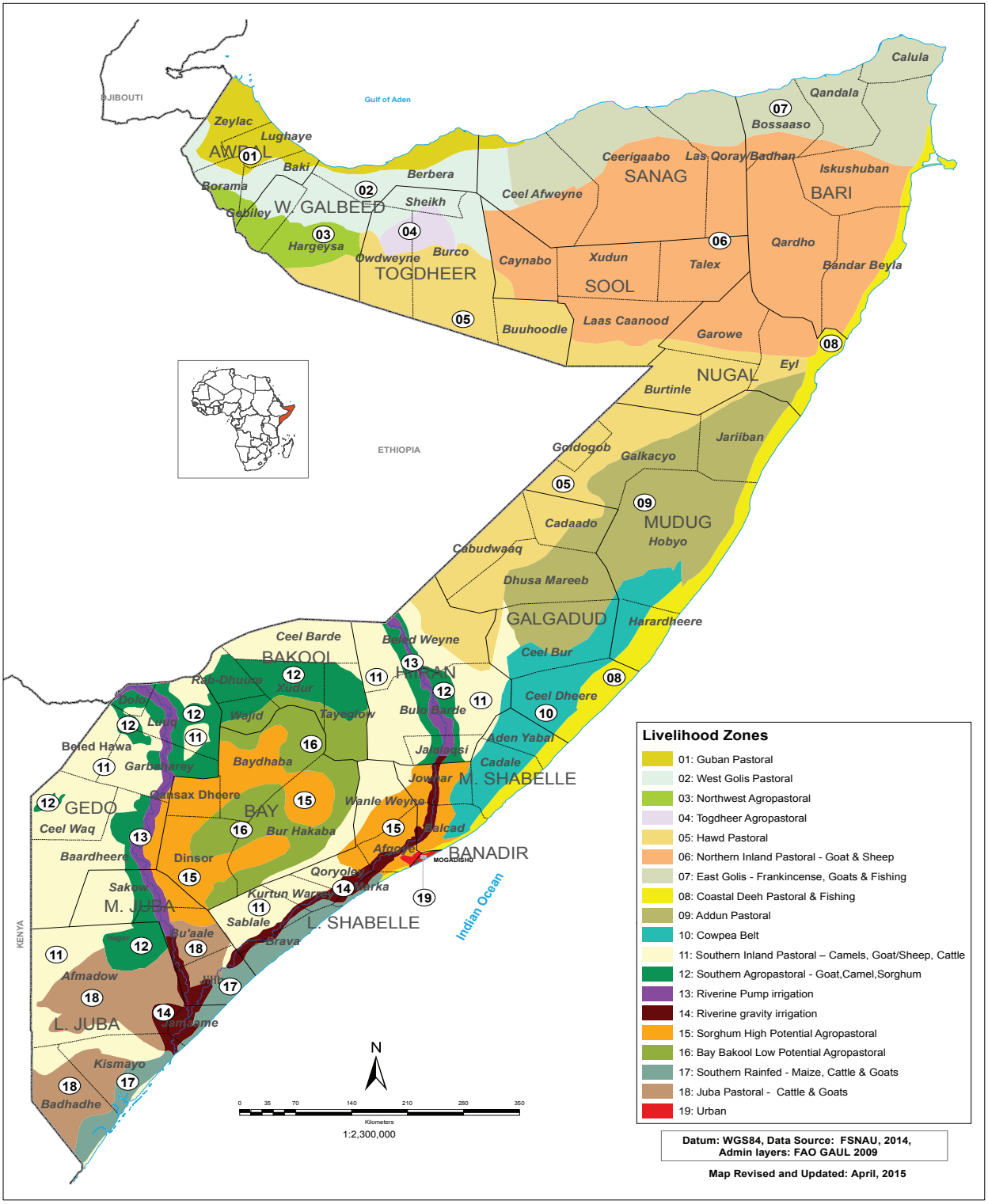
In light of the Gu 2016 food security and nutrition assessment findings, FSNAU puts forward the following immediate and long term recommendations aimed at addressing the poor health and nutrition ailment of malnourished children under-fives and women of reproductive age groups.

- High prevalence of wasting in Gu 2016 and an increasing trend from Gu 2015 and Deyr 2015 warrants an immediate scaleing up of treatment and feeding programms , with priority given to 323 000 acutely malnourished children need urgent treatment and nutrition support, including close to 58 000 who are severely malnourished identified from 2016 hotspots
- It is evident that from the Gu 2016 assessment and previous seasons, boys are continually prone to severe acute malnutrition than girls and when this is disaggregated by age the lower age band (6-17 and 18- 29 months) are more affected than the older age groups. Conducting an in-depth research such as nutrition causal analysis, formative research, IYCN study using ProPAN approach would help unearth the underlying causes and contributing factors.
- Morbidity is high in most of the population groups surveyed. There is a need for scaling up vaccination programs and campaigns to include population groups with high morbidity and/or low vaccination coverage and in population groups with immunization coverage significantly below SPHERE standards Mop-up campaigns should be conducted to raise the coverage to reach the targets Immunization specific assessments are also needed to determine the true coverage rates following immunization campaigns, and to identify the reasons for low coverage.
- There is a need to continue targeting other vulnerable group such as women of reproductive age groups (15-49 years) to curb intergenerational malnutrition through lifecycle approach.
- Establish/expand and strengthen safety net programmes and other social protection programs through integrated multi-sectoral (WASH, Health and food security) intervention approach, including Scaling Up Nutrition (SUN) to address protracted high levels of acute malnutrition in parts of south central Somalia and north east Somalia.
- Critical levels of acute malnutrition tend to persist in a number of population groups and this calls for both for an in-depth research to identify underlying causes as well as critically review the effectiveness of current intervention modalities in addressing such causes.

4: REGIONAL NUTRITION ASSESSMENT FINDINGS

The *Gu* 2016 seasonal food security and nutrition assessment covered 28 surveyed populations i.e. 15 rural livelihood zones (Map 6) and 13 major IDP settlements across Somalia. The assessments were conducted in collaboration with Government institutions (Ministries of Health) and partners. A total of 16 405 children (6-59 months) from 10 436 households were drawn from the 28 surveys (12 in the south, 8 in northeast and central and 8 in northwest parts of the country). The samples for all nutritional and retrospective mortality assessments were on the basis of *Deyr* 2015 nutrition survey results, and statistical parameters determined.

Map 5: Somalia Livelihood Zones



4.1: NORTHWEST REGIONS

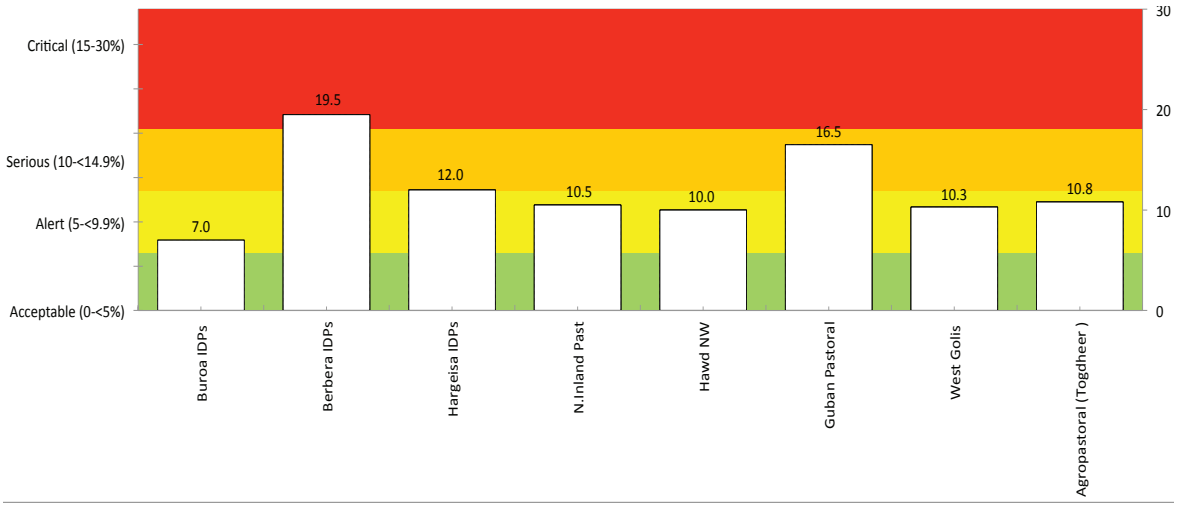
The *Gu* 2016 seasonal assessment, FSNAU together with its partners operating in North West zone has conducted eight integrated food security and nutrition assessments in North West zone (3 IDPs and 5 rural livelihood zone). A total of 3 806 children (6-59 months) and 929 pregnant and lactating women from 2 424 household were surveyed.

A summary of the *Gu* 2016 results are provided in the Tables 10, 11 and 12 but key highlights are described below:

Acute Malnutrition Prevalence

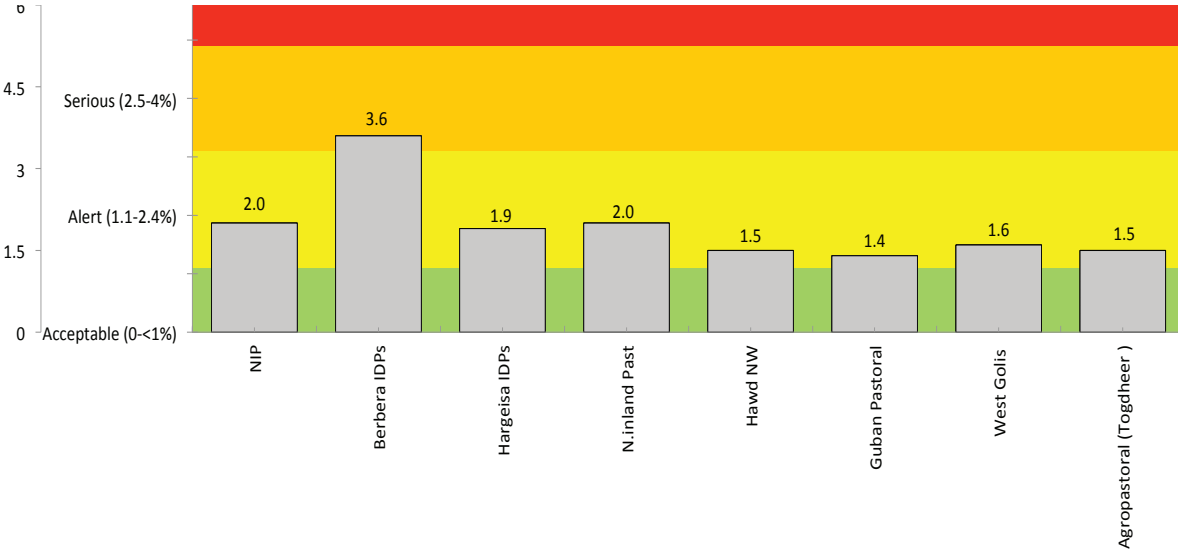
The summaries of GAM and SAM prevalence are shown in Figure 22 and 23. Out of eight surveyed populations, only two registered Critical levels of GAM. These were Guban pastoral: 16.5 percent and Berbera IDPs: 19.5 percent, 6 livelihoods had Serious nutrition situation (Hargeisa IDPs: 12 percent; Northern Inland pastoral (NIP): 10.5 %; Hawd pastoral: 10%; West Golis: 10.3 % and Agro-pastorals including Togdheer: 10.8 %) and Alert levels were only recorded in Burao IDPs (7.0%).

Figure 22: Prevalence of GAM in North West Zone



Severe acute malnutrition levels (SAM) reported from the eight surveyed populations was labelled as Alert with the exception of Berbera IDP settlement which recorded Serious SAM levels as per FSNAU adjusted SAM threshold. Severe acutely malnourished children are at increased the risk of morbidity and mortality and therefore require immediate rehabilitation.

Figure 23: Prevalence of SAM in North West zone



Key highlights

Guban Pastoral recorded a GAM prevalence of 16.5 percent and SAM prevalence of 1.4 percent indicating a Critical nutrition situation which reflects sustained Critical levels when compared to GAM prevalence of 22.3 percent and SAM prevalence of 5.9 percent recorded in *Deyr* 2016 *(*A .4 percent (P=0.0049). The sustained critical nutrition status was mainly attributed to precarious food insecurity situation including poor food consumption (FSC): (62%) having borderline to Poor food consumption score (FCS) 25% had a Moderate to Severe FCS, declined livestock prices; hence reduced income and high morbidity rates. Milk availability and consumption at the household level is also limited due to lack of water and pasture for livestock following the drought conditions.

West Golis livelihood recorded a GAM prevalence of 10.3 percent and SAM prevalence of 1.6 Percent indicating sustained Serious nutrition situation compared to GAM prevalence of 13.7 percent and SAM prevalence of 2.7 percent recorded in *Deyr* 2015/16 and GAM prevalence of 12.8 percent and SAM prevalence of 2.5 percent reported in *Gu* 2015. Major factors that sustained the nutrition status may include improved average milk access, favourable terms of trade between local quality goat and imported cereal (rice).

North West Agro-pastoral (including Togdheer) livelihood recorded a GAM prevalence of 10.8 percent and SAM prevalence of 1.5 percent indicating Serious nutrition situation which is a significant deterioration; (P= 0.0168); when compared with Alert levels in *Gu* 2015 (GAM prevalence of 5.6 percent and SAM of 0.2 percent). However, no statistical significance detected between the *Gu* 2015 and *Deyr* 2015 (GAM prevalence of 6.4 percent and SAM prevalence of 0.5 percent). The deterioration in nutrition situation is mainly linked to acute food insecurity resulting from the consecutive drought-like situation reported in this region due to failed *Gu* 2015 and *Deyr* 2015 rains. High morbidity rates ,reduced milk access (increased milk prices),declined ToT goat/ Rice, poor food consumption (Borderline/ Poor(36%)and Lack of cereal stocks across wealth groups were the main factors that attributed to the poor nutrition situation affecting the agro-pastoral livelihood in the area during the Post *Gu* 2016.

The nutrition assessments among the population in Hawd pastoral livelihood recorded GAM prevalence of 10.0 percent and SAM prevalence of 1.6 Percent showing Serious nutrition situation. This indicates an slight deterioration compared with sustained Alert levels of GAM prevalence of 9.6 percent and SAM prevalence of 2.6 percent recorded in *Deyr* 2015 and GAM prevalence of 8.9 percent and SAM of 1.2 percent in *Gu* 2015, leading to a phase change. The slight deterioration noted, is however, not statistically significant (p>0.05) in both *Deyr* 2015 and *Gu* 2015.

A nutrition assessment among the Northern Inland pastoral livelihood (NIP) population reported a GAM prevalence of 10.6 percent and SAM prevalence of 2.0 percent showing a Serious nutrition situation leading to a phase change and slight deterioration from Alert nutrition situation observed in Deyr'15. The change was however not statistically significant (p>0.05).The livelihood has also been affected by the poor pasture and water conditions reported in parts of the area, this has led to abnormal in migration of animals from north east , emaciated animal body conditions resulting in decreased household access to food and milk,(FSC (52%) Borderline/Poor etc. A close monitoring of nutritional status in these livelihoods should be put in place lest the projected nutrition situation do not release to further deterioration. Summary findings for Hargeisa, Berbera and Burao IDPs results are summarized in Table 11.

Acute Malnutrition Prevalence

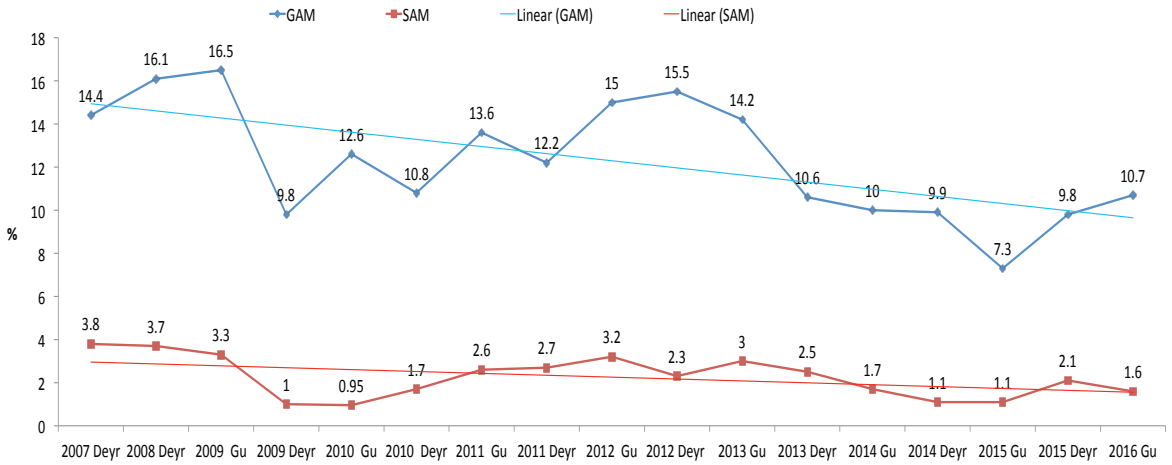
The IDP settlements in Burao shows an Alert nutrition situation with GAM prevalence of 7.0 percent and SAM prevalence of 0.4 percent, this is typical to the levels since Deyr'14,but better improvement when compared with the *Serious* levels in *Gu* 2014 (Serious GAM of 12.4%). Humanitarian interventions in the form of targeted interventions including rehabilitation and referrals of malnourished children and access to labor opportunities from host communities in urban may have assisted to mitigate the poor nutrition situation among the IDPs.

A Serious nutrition situation is observed in *Gu* 2016 among Hargeisa IDP with a GAM prevalence of 12.0 percent and SAM prevalence of 1.9 percent indicating a sustained Serious nutrition situation since last *Deyr* 2014 (Serious GAM of 11.1%). The improvement is mainly associated with stable morbidity trends and as well as continued of humanitarian support in these settlements. However, a GAM prevalence of 19.5 percent and SAM prevalence of 3.6 percent recorded among Berbera IDPs indicate a Critical nutrition situation which is a deterioration from stable *Alert* situation recorded in *Deyr* 2015, *Gu* 2015 and *Deyr* 2014.This can be attributed to poor to border line food consumption among 51% of HHs; Very high vulnerability to food insecurity (>75% expenditures on food) and asset poverty in Berbera IDPs. High temperatures combined with increased morbidity particularly AWD further aggravated nutrition situation.

Trends in Acute Malnutrition

The overall nutrition situation in the Northwest has been steadily improving since Gu'13 as depicted in Figure 3. In the last 4 seasons, GAM prevalence has been fluctuating between Serious (10.0-14.9%) and Alert (5.0-9.9%) levels and increase in median GAM prevalence has been observed. During the same period, decline in the median SAM prevalence from Serious levels (2.5-4 %) to Alert levels (1.1-2.4 %) was also recorded.

Figure 24: Trends in Acute Malnutrition



Seasonal trends of acute malnutrition as illustrated in Figure 24 suggest deterioration and increasing trends compared to the previous *Gu* 2015 seasons. In the last 8 seasons, the prevalence of acute malnutrition reported in *Gu* 2016 (10.7%) ranks as the lowest median estimate since *Gu*'2009, but slightly higher median estimate recorded in *Gu* 2014 and *Gu* 2015. This is an evidence of the deterioration nutrition situation in Northwest zone. However, the changes observed in the last twelve months indicate a significant deterioration. This trend is mainly attributed to the impact of below normal rains that affected some areas; mainly the Guban, Northwest Agro-pastoral and Northern In land Pastoral (NIP) livelihoods. As a result, milk availability declined and thus affected nutrition of the predominantly pastoral population who are highly dependent on milk. On the other hand, nutrition situation among the Berbera IDPs have shown deterioration from Alert levels to Critical phase recorded in *Gu* 2016.

Stunting and Underweight Prevalence

The Northwest zone as it is home to predominant pastoral population, prevalence of stunting, is significantly low and therefore not a public health concern. Low prevalence of stunting and underweight was observed in all the 8 surveyed populations in Northwest zone including its IDP settlements, ith the exception of West Golis and Guban pastoral reported medium prevalence of (10.2%) and (12.5 %) respectively. The sustained levels of low prevalence for both stunting and underweight in the last 12 month suggest a stable nutrition situation (Annex 6.13 & 6.14).

Mortality

The Crude and under-five death rates in IDPs, and Rural livelihood zone are all within Acceptable WHO levels of <0.5 and <1/10 000/day. Only Guban and Hawd pastoral populations had CDR rate at a serious level of 0.81 and 0.55 respectively. This reflects stable mortality levels in all three seasons Gu 2016 to *Gu* 2015 (Annex 6.12). These stable trends have been reported in 8 consecutive mortality assessments conducted across Northwest zone.

Immunization

Overall measles immunization coverage and vitamin A supplementation in the assessed livelihoods have always been below minimum SPHERE standard≥ 90 percent and >=95 percent (see tablexx). The highest Vitamin A supplementation and Measles vaccination coverage status were recorded in Burao IDPs and Hawd pastoral with prevalence of 86.8, 88.3 percent and 78.6 and 80.1 percent respectively. However, Hargeisa IDPs and

Northwest agro-pastoral reported the lowest and decreasing trends of vitamin A and measles vaccination status. Hargeisa IDPs recorded a Vitamin A prevalence of 39.3 percent and Measles vaccination at 40.33 Percent indicating decreasing trend compared to vitamin A (59.4%) and measles vaccination (59.3%) recorded in *Deyr* 2015 and vitamin A (61.9 %) and measles vaccination (66.8%) reported in *Gu* 2015. While the North West Agro-pastoral registered Vitamin A prevalence of 35.6 percent and Measles vaccination at 29.9 Percent in *Gu* 2016, indicating decreasing trend compared to vitamin A levels at (49.0%) and measles vaccination levels at (44.8%) recorded in *Deyr* 2015 and vitamin A at (48.0 %) and measles vaccination at (45.6%) reported in *Gu* 2015. All other livelihoods (West Golis, Guban, Hawd, NIP and Berbera IDPs) reported improvement coverage status of Vitamin A supplementation and Measles vaccination when compared with the coverage in *Gu* 2015, and this can be attributed to Stronger EPI program in these rural livelihood zones and IDP settlements.

Vitamin A supplementation and measles vaccination are high impact interventions which protect the child against infections and boosting good nutritional growth. Low coverage rates are worrying especially among Hargeisa IDPs and North West Agro-pastoral settlements where children under the age of five can easily be accessed. Given that there has been a scale up of the humanitarian intervention targeting IDP settlements, we expect the coverage rates to meet the SPHERE standards.

According to the *Gu* 2016 findings, other than polio vaccination, the coverage of the other health programmes including Vitamin A supplementation and Measles vaccination in the assessed livelihoods were below the recommended minimum SPHERE standard≥ 95 percent. Although in majority of the assessed livelihoods, the findings are indicating improving coverage for Vitamin A supplementation and measles vaccination, the need to enhance and expand coverage for health packages still remains of high importance.

Morbidity

Overall prevalence of morbidity in the assessed livelihoods of Northwest regions reported an incidence with a median prevalence of 20.05 percent; this shows that 2 in 10 of the children assessed reported some form of illness in the 2 week period prior to the assessments. The situation shows deteriorated levels from the previous *Gu* season (12.7%) and also from *Deyr* 2015 (13.4%). The highest morbidity burden (>20%) was reported in NIP (34.6%), followed by Guban Pastoral (25.8%), West Golis (23.6%) and Northwest Agropastoral (21.9%). Meanwhile, areas in Northwest zone that reported low prevalence of morbidities (<10%) include: Hargeisa IDP (7.0%), Burao IDP (9.0%) and Hawd Northwest (5.8%). Of the assessed common childhood illnesses, fever (24.2%) and diarrhoea (17.1%) reported highest rate among the livelihoods with the highest overall morbidities of NIP and Guban Pastoral respectively. Pneumonia and suspected measles reported the least prevalence in childhood illnesses with 1.6 and 0.2 per cent respectively. There was no disease outbreaks reported among the surveyed population.

Access of safe water and sanitation facilities are limited and a key concern in most of the rural areas in the Northwest region. Only 7.6 percent of Hawd pastoral; 7.9 percent of North West Agro-pastoral including Toghdheer Agro-pastoralists; 27.6 percent of Northern Inland Pastoral households were reportedly accessing safe water. However, West Golis and Guban pastoral population 64.5 percent and 66.7 percent respectively had poor access to potable drinking water. Main unprotected sources of drinking and other domestic uses across for these livelihoods were Berkads, Dam/pond (Balley or open shallow wells. On a positive note, access to safe water supply among IDPs of Hargeisa , Berbera and Buroa was reported good and mainly from protected sources by (>95 %). Access to sanitation facilities is still a challenge with only (<55%) among all the rural livelihoods, while among IDPs >90 % households reportedly accessing proper sanitation facilities. In addition to the concerning food security indicators, these factors will further exacerbate the poor nutrition situation in the area.

Nutritional Status of Women of Reproductive Age Groups (15-49 Years) by MUAC

Nutritional status of WRA were assessed in both the IDP settlements and rural livelihood zones using Middle Upper Arm Circumference (MUAC). Low prevalence of maternal malnutrition in NW region is illustrated by a 8.3 per cent median prevalence for pregnant and lactating mothers with MUAC < 23 cm. Highest prevalence was reported in Guban Pastoral (24.3%) showing Critical phase, followed by NIP (21.9%) and West Golis (17.7%) in Serious phase. The overall nutritional status of the WRA in the North West zone has seen nutritional deterioration since *Gu* 2015 (3.3%).

Current Food Security Situation (Gu 2016)

FSNAU Post *Gu* 2016 integrated food security analysis indicates a Stressed (IPC Phase 2) food security situation in NIP, East Golis, West Golis and Togdheer Agro-pastoral livelihood zones were sustained as Stressed (IPC Phase 2), while Northwest Agro-pastoral and Guban Pastoral were identified as Crisis (IPC Phase 3). The Hawd and West Golis Pastoral remain as Minimal (IPC Phase 1), similarly, the Guban pastoral and Northwest Agro pastoral remain in Crisis (IPC Phase 3); increased humanitarian interventions targeting the drought affected areas in Guban IDP led to an increase in food AID and slight improvement in the nutrition situation.

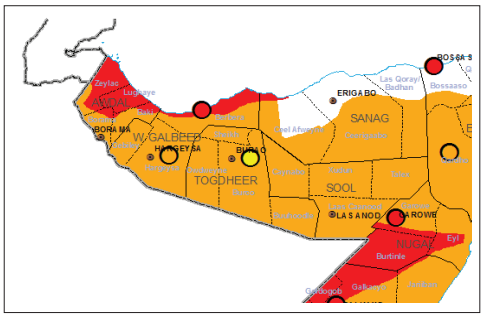
Nutrition Outlook

The map below shows the current nutrition situation for *Gu* 2016. The nutrition situation among the IDP settlements in Northwest zone for the last twelve months (since *Gu* 2015) has sustained as Serious among Hargeisa IDPs and Alert among Burao IDP and while Berbera IDPs deteriorated from sustained Alert levels recorded *in Deyr* 2015/16 and *Gu* 2015 to Critical in *Gu* 2016. Northwest Hawd, NIP and Northwest Agro-pastoral (Togdheer) changed from Alert to Serious while sustained Serious nutrition phase was reported in West Golis. Nutrition assessments in the Guban pastoral livelihood reported Critical nutrition situation. The nutrition situation has largely been influenced by food insecurity factors and increased morbidity.

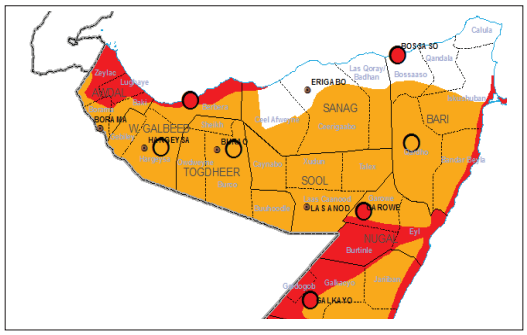
The nutrition situation in Northeast zone is largely expected to remain stable in the coming three months. Although a deterioration of pasture condition until next rainy season (Dec 2016-Jan 2017) forecasted below average, impacting livestock production and reproduction and this is likely to continue in parts of North West Agro pastoral, Guban and NIP pastoral. The drought situation is characterized by limited water availability for livestock which has a direct impact on milk access at household level. Sustained serious nutrition situation is expected in all IDP settlements. The maps below show current and projected Serious nutrition situation across livelihoods in Somaliland with the exception of Guban to remain Critical (Figure 25).

Figure 25: Current Nutrition Situation and Outlook in Northwest regions

Current Nutrition Situation - Jul 2016



Projected Nutrition Situation (Aug-Oct 2016)



Hot Spot Intervention Areas in Northwest Region

Guban pastoral with a GAM prevalence of 16.5 percent and Berbera IDPs with GAM prevalence of 19.5 percent are the only hotspot for acute malnutrition in Northwest Somaliland that requires immediate comprehensive integrated lifesaving interventions (health and nutrition) both to treat the acutely malnourished children and increased safety net programs to mitigate and reverse the deteriorating food security situation.

Conclusion

A deteriorating nutrition situation is witnessed in *Gu* 2016 in parts of rural livelihood zones in Northwest regions such as in the NIP, NW Hawd and North West Agro Pastoral. Parts of these regions have experienced consecutive drought-like situation due to failed *Gu* 2015 and *Deyr* 2015 rains.

The sustained critical and serious nutrition situation noted in Guban pastoral and those mentioned above is associated with the negative impacts of drought conditions resulted high vulnerability to food consumption (FSC), reduced milk access and income and high morbidity rates reported NIP and Guban; Poor measles vaccination and Vitamin A supplementation coverage. Access of safe water and sanitation facilities is also limited and a key

concern in most of the rural areas. In addition to the concerning food security indicators, these factors further exacerbate the poor nutrition situation in the area. Poor nutrition outcome in Guban pastoral livelihood zone indicates humanitarian support may not have been adequate despite the relatively high investment.

In view of the deteriorating nutrition situation in the Guban pastoral, NIP and NW agro-pastoral livelihoods, intervention efforts need to be strengthened and broadened to address both immediate lifesaving needs in addition to developing longer term strategies to enhance the provision of basic services, sustainable strategies for livelihood support and social protection mechanisms. Improving coverage for health programmes, especially for measles vaccination and vitamin A supplementation is paramount. Vigorous campaigns are required in rural areas especially among the pastoral community. Moreover, intervention programs to improve access to safe water and sanitation, including water tracking and subsidies cannot be overemphasized

To prevent intergenerational effects of malnutrition, programs aimed at supporting pregnant and lactating mothers should be strengthened and program at scale.

Table 11: Summary of Key Nutrition Findings: Northwest IDPs Livelihoods – Gu 2016

	Hargeisa IDPs		**Berbera IDPs**		**Burao IDPs**	
	Clusters: 31 (n=534; Boys=255; Girls=279)		**Clusters :31 (n=251: Boys=122; Girls=129)**		**Clusters: 30 (n=:729 474 Boys=219; Girls=255**	
Indicator	% (CI)	Change from *Deyr* 15	% (CI)	Change from *Deyr* 15	% (CI)	Change from *Deyr* 15
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema)	**12.0** (7.8-17.9)	Sustained	19.5 (13.4-27.5)	Deteriorated	7.0 (4.4-10.7)	Sustained
Boys	11.9 (8.1-17.2)		22.1 (13.9-33.4)		7.3 (4.1-12.6)	
Girls	11.8 (6.9-19.6)		17.1(10.2-27.1)		6.7 (3.7-11.6)	
Severe Acute Malnutrition (WHZ<-3 or oedema)	1.9 (0.9- 3.7)	Sustained	3.6 (1.5-8.2)	Deteriorated	0.4 (0.1- 3.1)	Sustained
Boys	2.7 (1.2- 6.0l)		2.5 (0.5-10.6)		0 (0.0- 0.0)	
Girls	1.1 (0.3- 3.5)		4.7 (2.3-9.2)		0.8 (0.1- 5.6	
Mean of Weight for Height Z Scores	-0.70±1.04		-0.96±1.14		-0.49±0.87	
Oedema	0.6		0.4		0.0	
Proportion with MUAC<12.5 cm or oedema)	4.7 (2.8- 7.7)	Sustained	5.4 (2.4-11.9)	Deteriorated	0.8 (0.2- 2.8)	Sustained
Boys	2.6 (1.3- 5.1)		5.6 (2.0-15.2)		0.0 (0.0- 0.0)	
Girls	6.6 (3.8-11.2)		5.2 (2.2-11.9)		1.6 (0.4- 5.2)	
Proportion with MUAC<11.5 cm or oedema	1.1 (0.4- 2.6)	Sustained	2.7 (0.9-7.7)	Deteriorated	0.2 (0.0- 1.6)	Sustained
Boys	1.1 (0.4- 3.4)		2.4 (0.5-10.7)		0.0 (0.0- 0.0)	
Girls	1.0 (0.3- 3.2)		3.0 (0.9-9.1)		0.4 (0.1- 2.9)	
Stunting (HAZ<-2)	4.9 (3.0- 8.0)	Sustained	2.7 (1.2-6.0)	Sustained	0.4 (0.1- 1.7	Sustained
Boys	4.7 (2.3- 9.5)		3.1(1.2-8.2)		0.5 (0.1- 3.3)	
Girls	5.1 (2.8- 9.1)		2.2(0.7-6.8)		0.4 (0.1- 3.0)	
Severe Stunting (HAZ<-3)	0.6 (0.2- 1.8)	Sustained	1.1 (0.2-5.1)	Sustained	0.0 (0.0- 0.0)	Sustained
Boys	0.4 (0.1- 3.0)		1.6(0.4-6.4)		0.0 (0.0- 0.0)	
Girls	0.7 (0.2- 2.9)		0.7(0.1-5.7)		0.0 (0.0- 0.0)	
Underweight (WAZ<-2)	9.5 (6.5-13.6)	Sustained	6.9 (3.6-12.9)	Sustained	1.9 (0.9- 4.1)	Sustained
Boys	10.5 (6.9-15.7)		7.2 (3.0-16.3)		3.6 (1.8- 7.0)	
Girls	8.5 (5.4-13.1)		6.7 (3.2-13.5)		0.4 (0.0- 3.0)	
Death Rates						

	Hargeisa IDPs		Berbera IDPs		Burao IDPs	
	Clusters: 31 (n=534; Boys=255; Girls=279)		Clusters :31 (n=251: Boys=122; Girls=129)		Clusters: 30 (n=:729 474 Boys=219; Girls=255	
Indicator	% (CI)	Change from *Deyr* 15	% (CI)	Change from *Deyr* 15	% (CI)	Change from *Deyr* 15
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.14 (0.04-0.44)	Sustained	0.47 (0.21-1.07)	Sustained	0.05 (0.01-0.36)	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.47 (0.12-1.87)	Sustained	0.0 (0.0-0.0)	Improved	0.22 (0.03 -1.68)	Sustained
Morbidity Rates						
Morbidity	7 (3.4 – 10.5)		18.2 (11.6-24.8)		9.0 (3.3-14.6)	
Boys	5.6(2.5-8.7)	Sustained	15.7 (7.9-23.6)	Deteriorated	10.8 (4.2-17.4)	Deteriorated
Girls	8.0 (2.4-13.6)		20.6 (12.5-28.7)		7.4 (2.0-12.7)	
Diarrhoea	4.3 (1.5- 7.1)		8.1 (4.1-12.1)		3.1 (0.0-6.4)	
Boys	3.0 (0.6-5.3)	Sustained	8.6 (3.8-13.4)	Deteriorated	3.2 (0.0-6.8)	Sustained
Girls	5.2 (0.2-10.2)		7.6 (2.6-12.7)		3.1 (0.0-6.8)	
Pneumonia	1.6 (0.2 3)		9.3(3.9-14.6)		1.7 (0.0-3.6)	
Boys	1.8 (0.0-3.8)	Sustained	7.0(0.0-14.3)	Deteriorated	2.7 (0.0-5.8)	Sustained
Girls	1.4 (0.0-3.1)		11.5(4.4-18.5)		0.8 (0.0-1.9)	
Fever	4.5 (2.-6.8)		8.5(3.4-13.5)		6.7 (2.6-10.8)	
Boys	4.1 (1.7- 6.5)	Sustained	7.8(0.8-14.9)	Deteriorated	8.6 (3.4-13.7)	Deteriorated
Girls	4.5 (1.0-8.1)		9.2(2.9-15.4)		5.1 (1.2-8.9)	
Measles	0.7 (0- 1.6)		0.0 (0.0-0.0)		0.4 (0.0-1.0)	
Boys	0 (0.0-0.0)	Sustained	0.0 (0.0-0.0)	Sustained	0.9 (0.0-2.2)	Sustained
Girls	1.4 (0.0-3.1)		0.0 (0.0-0.0)		0.0 (0.0-0.0)	
Vitamin A Supplementation	39.3 (26.8-52.0)		74.9 (64.6-85.2)		86.8 (80.9-92.7)	
Boys	37 (22.5-51.4)	Sustained	70.3 (57.9-82.8)	Improved	86.9 (79.4-94.4)	Improved
Girls	41.6 (29.1-54.1)		79.4 (67.9-90.9)		86.8 (79.9-93.7)	
Measles Vaccination	40.3 (28.6-52.1)		74.9 (65.1-84.7)		88.3 (84.1-92.5)	
Boys	37 (23.6-50.3)	Deteriorated	71.1 (59.6-82.6)	Improved	87.8 (82.2-93.5)	Improved
Girls	42 (39.0-54.0)		78.6 (67.7-89.6)		88.7 (84.0-93.4)	
Polio Immunization	91.3 (86.9-95.5)		93.4 (87.7-99.1)		98.7 (97.6-99.9)	
Boys	91 (86.1-95.7)	Sustained	92.9 (84.9-100)	Sustained	98.2 (96.0-100.4)	Improved
Girls	91.2 (86.2-96.2)		93.9 (89.5-98.3)		99.2 (98.1-100.3)	
Women Nutrition and Immunization Status						
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	1.1 (0-3.4)	Sustained	0.0 (0.0-0.0)	Sustained	0.0 (0.0-0.0)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	4.5 (0- 10)	Improved	0.0 (0.0-0.0)	Sustained	5.6 (0.8-10.3)	Deteriorated

	Hargeisa IDPs		Berbera IDPs		Burao IDPs	
	Clusters: 31 (n=534; Boys=255; Girls=279)		**Clusters :31 (n=251: Boys=122; Girls=129)**		**Clusters: 30 (n=:729 474 Boys=219; Girls=255**	
Indicator	% (CI)	Change from *Deyr* 15	% (CI)	Change from *Deyr* 15	% (CI)	Change from *Deyr* 15
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	9.4 (5.7-13.2) 3.4 (1.3-5.5) 34 (26.0-42.1) 53 (45-61.0)	Improved	11.5 (6.4-16.6) 6.4 (2.7-10.1) 23.6 (13.7-33.4) 58.6 (47.4-69.8)	Improved	13.4 (5.0-21.8) 11.0 (4.5-17.4) 45.1 (35.6-54.7) 30.5 (22.7-38.2)	Improved
Household with access to sanitation facilities	95 (94.6.-100.4)	Improved	98.9 (97.5-100.0)	Sustained	89.1 (81.7-96.5)	Improved
Household with access to safe water	100	Sustained	100.	Sustained	96.4 (92.6-100.2)	Improved
Proportion who reported to have consumed <4 food groups	4.0 (2.7-10.7)	Sustained	5.0 (0.9-9.1)	Sustained	0.0	----
Household's Main Food Source-Purchase	98 (91.3.5-100.0)	Sustained	95.1	Sustained	98.7 (97.2-100.2)	Sustained
Mean CSI	21	Improved	25	Improved	18.6 (16.9-20.4)	Improved
OVERALL NUTRITION SITUATION	**Serious**		**Critical**		**Alert**	

Table 12: Summary of Key Nutrition Findings: Northwest Rural Livelihoods Gu 2016

	NW Agro-Pastoral LZ		West Golis Pastoral LZ		Guban Pastoral Lz	
	Clusters=30: (n=517; Boys=261 Girls=256)		**Clusters :27 (n=485:Boys=244; Girls=241)**		**Clusters: 28 (n=417 Boys=212; Girls=205)**	
Indicator	% (CI)	Change from *Deyr* 15	(% (CI)	Change from *Deyr* 15	% (CI)	Change from *Deyr* 15
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	10.8 (7.6-15.1) 15.3 (11.1-20.9) 6.3 (3.7-10.4)	Deteriorated	10.3 (7.6-13.9 12.3 (8.5-17.4 8.3 (5.2-13.0)	Sustained	16.5 (11.7-22.9) 19.8 (14.1-27.1) 13.2(7.6-21.9)	Sustained
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	1.5 (0.6-3.8) 2.7(1.2-5.9) 0.4(0.0-3.1)	Deteriorated	1.6 (0.8- 3.4) 1.6 (0.5- 5.4) 1.7 (0.6- 4.3)	Sustained	1.4 (0.6- 3.6) 2.4 (0.8- 6.6) 0.5 (0.1- 3.7)	Improved
Mean of Weight for Height Z Scores	-0.71±1.03		-0.73±1.04		-0.90±1.03	
Oedema	0.2		0.2		0.0	
Proportion with MUAC<12.5 cm or oedema) Boys Girls	2.7 (1.2-5.6) 2.6 (0.8-8.4) 2.7 (1.3-5.5)	Deteriorated	3.2 (1.6- 6.3) 1.6 (0.6- 4.1) 4.9 (2.4- 9.4)	Deteriorated	11.0 (7.5-15.9) 8.8 (5.1-14.8) 13.3 (8.4-20.3)	Deteriorated

	NW Agro-Pastoral LZ Clusters=30: (n=517; Boys=261 Girls=256)		West Golis Pastoral LZ Clusters :27 (n=485:Boys=244; Girls=241)		Guban Pastoral Lz Clusters: 28 (n=417 Boys=212; Girls=205)	
Indicator	% (CI)	Change from *Deyr* 15	(% (CI)	Change from *Deyr* 15	% (CI)	Change from *Deyr* 15
Proportion with MUAC<11.5 cm or oedema	0.4 (0.1-2.7)	Sustained	0.4 (0.1- 1.7)	Sustained	0.9 (0.4- 2.4)	Improved
Boys	0.8 (0.1-5.4)		0.0 (0.0- 0.0)		0.5 (0.1- 3.6)	
Girls	0.0 (0.0-0.0)		0.8 (0.2- 3.2)		1.4 (0.4- 4.4)	
Stunting (HAZ<-2)	1.7 (0.8-3.5)	Sustained	6.2 (3.6-10.3)	Sustained	5.7 (3.0-10.6)	Sustained
Boys	2.3 (0.9-5.3)		7.4 (3.9-13.6)		5.6 (2.8-10.9)	
Girls	1.2 (0.4-3.8)		4.9 (2.4- 9.6)		5.8 (2.9-11.2)	
Severe Stunting (HAZ<-3)	0.0 (0.0-0.0)	Sustained	1.0 (0.5- 2.3)	Sustained	1.0 (0.4- 2.5)	Sustained
Boys	0.0 (0.0-0.0)		2.1 (0.9- 4.6)		1.4 (0.4- 4.3)	
Girls	0.0 (0.0-0.0)		0.0 (0.0- 0.0)		0.5 (0.1- 3.5)	
Underweight (WAZ<-2)	6.9 (3.9-12.0)	Sustained	10.2 (7.0-14.6)	Sustained	12.5 (8.1-18.9)	Improved
Boys	9.2(5.6-14.5)		14.0 (9.4-20.4)		14.9 (10.0-21.6)	
Girls	4.7(1.8-11.5)		6.2 (2.9-12.7		10.0 (4.9-19.6	
Death Rates						
Crude deaths, per 10,000 per day (retrospective for 160 days)	0.30 (0.16-0.58)	Deteriorated	0.12 (0.05-0.28)	Improved	0.81 (0.48-1.35)	Sustained
Under five deaths, per 10,000 per day (retrospective for 160 days)	0.22 (0.05-0.93)	Sustained	0.00 (0.00-0.00)	Sustained	0.39 (0.10.-1.46)	Improved
Morbidity Rates						
Morbidity	21.9(15.8-28.0)	Deteriorated	23.6 (17.3-29.9)	Improved	25.8 (16.2-35.3)	Sustained
Boys	22.3(14.1-30.5)		24.6 (16.3-32.9)		27.3 (16.4-38.2)	
Girls	21.5(15.4-27.6)		22.7 (16.5-28.8)		24.2 (14.4-33.9)	
Diarrhoea	13.5 (8.2-18.9)	Deteriorated	12.8 (7.8-17.9)	Improved	17.1 (9.7-24.5)	Improved
Boys	15.5 (8.8-22.1)		13.5 (6.8-20.2)		19.3 (9.7-28.8)	
Girls	11.5 (6.0-17.1)		12.1(7.4-16.9)		14.9 (7.9-22.1)	
Pneumonia	4.8 (2.2-7.3)	Sustained	7.6 (3.9-11.3)	Improved	11.3 (5.2-17.5)	Deteriorated
Boys	4.9 (1.4-8.4)		7.1(3.7-10.6)		12.4 (4.7-20.1)	
Girls	4.6(1.8-7.4)		8.1 (3.3-11.3)		10.3 (4.3-16.3)	
Fever	12.6 (8.7-16.5)	Sustained	15.6 (11.1-20.1)	Improved	16.7 (9.1-24.2)	Deteriorated
Boys	10.2(4.4-15.9)		16.3 (10.3-22.2)		16.5 (8.7-24.4)	
Girls	15(9.7-20.3)		14.9 (10.2-19.7)		16.8(8.4-25.3)	
Measles	0.0(0.0-0.0)	Improved	1.6 (0.4-2.8)	Sustained	0.2 (0.0-0.7)	Improved
Boys	0.0(0.0-0.0)		1.6 (0.03-3.1)		0.0	
Girls	0.0(0.0-0.0)		1.7 (0.1-3.1)		0.5 (0.0-1.4)	
Vitamin A Supplementation	35.6 (21.8-49.4)	Deteriorated	57.3 (43.2-71.4)	Improved	64.5 (53.1-75.9)	Improved
Boys	32.5 (17.7-47.2)		59.1 (44.6-73.7)		62.9 (50.2-75.7)	
Girls	38.8 (24.3-53.3)		55.;5(40.6-70.3)		66.0(54.7-77.4)	
Measles Vaccination	29.9 (17.9-41.9)	Deteriorated	61.1 (47.9-74.3)	Improved	54.4 (41.3-67.7)	Improved
Boys	29.4 (16.2-42.7)		65.1 (52.2-77.9)		55.1(41.3-68.9)	
Girls	30.3 (18.3-42.5)		57.1 (42.4-71.8)		53.8 (39.6-67.9)	

	NW Agro-Pastoral LZ		West Golis Pastoral LZ		Guban Pastoral Lz	
	Clusters=30: (n=517; Boys=261 Girls=256)		Clusters :27 (n=485:Boys=244; Girls=241)		Clusters: 28 (n=417 Boys=212; Girls=205)	
Indicator	% (CI)	Change from *Deyr* 15	(% (CI)	Change from *Deyr* 15	% (CI)	Change from *Deyr* 15
Polio Immunization Boys Girls	88.0 (81.6-94.4) 86.8(78.4-95.1) 89.2(83.1-95.4)	Sustained	92.8 (89.3-96.3) 92.1(87.4-96.7) 93.5 (88.8-98.2)	Sustained	83.4(71.9-94.8) 82.4(69.94.9) 84.4 (73.6-95.1)	Sustained
Women Nutrition and Immunization Status n=261					***306***	
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	2.4 (0.0-5.1)	Improved	1.6 (0.0-4.9)	Sustained	9.5 (3.7-15.3)	Deteriorated
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	11.0 (4.4-17.7)	Sustained	17.7 (8.6-26.8)	Deteriorated	24.3(15.7-32.9)	Deteriorated
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	20.9(13.2-28.6) 21.3 (16.0-26.6) 31.6 (22.8-40.3) 26.2 (19.0-33.5)	Sustained	18.9 (12.7-25.2) 23.2(17.5-28.8) 33.3 (26.2-40.5) 24.5 (16.5-32.6)	Sustained	14.9 (8.1-21.6) 9.1 (4.7-13.6) 30.2 (19.7-40.5) 45.8(33.9-57.7)	Sustained
	N=288		n=297			n=255
Household with access to sanitation facilities	38.2(24.0-52.4)	Sustained	43.4 (28.8-58.1)	Deteriorated	45.5 (30.6-60.4)	Improved
Household with access to safe water	7.9(0.0-17.4)	Sustained	64.5 (47.8-81.2)	Sustained	66.7 (49.6-83.7)	Improved
Proportion who reported to have consumed <4 food groups	1.7(0.2-3.3)	Improved	6.7 (1.6-11.8)	Deteriorated	11.0 (3.4-17.0)	Deteriorated
Household's Main Food Source- Purchase	59.8(45.9-73.7)	Improved	70.6 (55.9-85.4)	Improved	85 (64.3.9-95.6)	Sustained
Mean CSI	10.6(9.6-11.6)	Sustained	22.3	Deteriorated	62	Deteriorated
OVERALL NUTRITION SITUATION	**Serious**		**Serious**		**Critical**	

Table 13: Summary of Key Nutrition Findings: Hawd and Northern Inland Pastoral – Gu 2016

	Hawd Pastoral		Northern Inland Pastoral	
	Clusters: 28 (n=528; Boys=252; Girls=276)		Clusters :35 (n=600:Boys=320; Girls=280)	
Indicator	% (CI)	Change from *Deyr* 15	% (CI)	Change from *Deyr* 15
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	10.0 (7.0-14.2) 12.3 (7.7-19.1) 8.0 (5.3-11.9)	Deteriorated	10.5 (7.4-14.7) 12.8 (9.0-17.9) 7.9 (4.8-12.6)	Deteriorated
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	1.5 (0.8- 2.9) 1.2 (0.4- 3.7 1.8 (0.7- 4.7	Improved	2.0 (1.0- 3.9) 1.6 (0.5- 4.4) 2.5 (1.2- 5.3)	Improved
Mean of Weight for Height Z Scores	-0.55 ± 1.08		-0.66±1.10	
Oedema	0.2		0.0%	

	Hawd Pastoral Clusters: 28 (n=528; Boys=252; Girls=276)		Northern Inland Pastoral Clusters :35 (n=600:Boys=320; Girls=280)	
Indicator	% (CI)	Change from *Deyr* 15	% (CI)	Change from *Deyr* 15
Proportion with MUAC<12.5 cm or oedema)	0.9 (0.3- 3.1)		6.0 (4.0- 9.0)	
Boys	0.4 (0.0- 3.1)	Improved	5.8 (3.5- 9.3)	Deteriorated
Girls	1.4 (0.4- 4.9)		6.3 (3.7-10.4)	
Proportion with MUAC<11.5 cm or oedema	0.2 (0.0- 1.4)		1.6 (0.9- 2.9)	
Boys	0.0 (0.0- 0.0)	Improved	1.2 (0.5- 3.1)	Deteriorated
Girls	0.4 (0.0- 2.7)		2.1 (1.0- 4.3)	
Stunting (HAZ<-2)	0.6 (0.2- 1.7)	Sustained	3.6 (2.1- 6.1)	Sustained
Boys	0.4 (0.0- 3.0)		4.9 (2.7- 8.7)	
Girls	0.7 (0.2- 2.8)		2.1 (0.7- 6.0	
Severe Stunting (HAZ<-3)	0.0 (0.0- 0.0)	Sustained	0.7 (0.2- 1.8)	Sustained
Boys	0.0 (0.0- 0.0)		0.9 (0.3- 2.8	
Girls	0.0 (0.0- 0.0)		0.4 (0.0- 2.7)	
Underweight (WAZ<-2)	1.1 (0.4- 2.8)		6.9 (4.8- 9.8)	
Boys	2.0 (0.8- 4.7)	Improved	8.0 (5.2-12.1)	Deteriorated
Girls	0.4 (0.0- 2.8)		5.6 (3.5- 8.9)	
Crude deaths, per 10,000 per day (retrospective for 160 days)	0.55 (0.26-1.17)	Sustained	0.09 (0.03-0.22)	Improved
Under five deaths, per 10,000 per day (retrospective for 160 days)	0.34 (0.11-1.06	Improved	0.00 (0.00-0.00)	Improved
Morbidity	5.8 (3.0-8.6)		34.6 (27.7-41.5)	
Boys	3.9 (1.6-6.2)	Improved	35.3 (27.0-43.5)	Deteriorated
Girls	7.5 (2.7-12.3)		33.9 926.2-41.5)	
Diarrhoea	3.4 (1.4-5.3)		16.5 (12.6-20.5)	
Boys	2.3 (0.6-4.1)	Improved	16.3 (11.3-21.3)	Deteriorated
Girls	4.3 (1.0-7.6)		16.8 (11.6-21.9)	
Pneumonia	1.5 (0.3-2.7)		7.9 (3.6-12.3)	
Boys	0.8 (0.0-1.9)	Improved	8.2 (2.9-13.4)	Deteriorated
Girls	2.2 (0.0-4.3)		7.6 (3.0-12.3)	
Fever	1.9 (0.6-3.2)		24.2 (18.1-30.1)	
Boys	2.0 (0.3-0.9)	Improved	24.5 (17.2-31.7)	Deteriorated
Girls	1.8 (0.2-3.3)		23.8 (17.6-29.9)	
Measles	0.6 (0.0-1.4)		0.9 (0.2-1.7)	
Boys	0.4 (0.0-1.2)	Improved	1.2 (0.0-2.4)	Sustained
Girls	0.7 (0.0-1.7)		0.7 (0.0-1.7)	
Vitamin A Supplementation	78.6 (71.1-86.1)		71.9 (62.3-81.6)	
Boys	81.3 (72.8-89.8)	Improved	71.9 (61.87-82.1)	Deteriorated
Girls	76.1 (68.1-84.1)		72.0 (61.9-82.2)	
Measles Vaccination	80.1 (74.3-85.8)		71.3 (62.5-80.1)	
Boys	79.0 (71.1-86.8)	Improved	73.4 (64.3-82.5)	Deteriorated
Girls	81.1 (75.6-86.5)		68.8 (58.9-78.9)	
Polio Immunization	95.9 (92.8-99.0)		92.4 (88.7-95.9)	
Boys	95.3 (91.5-99.2)	Improved	93.6 (89.8-97.4)	Sustained
Girls	96.4 (93.5-99.4)		90.9 (86.4-95.4)	
	N= 141			

	Hawd Pastoral Clusters: 28 (n=528; Boys=252; Girls=276)		Northern Inland Pastoral Clusters :35 (n=600:Boys=320; Girls=280)	
Indicator	% (CI)	Change from *Deyr* 15	% (CI)	Change from *Deyr* 15
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	2.1 (0.0-4.5)	Sustained	6.3 (1.8-10.7)	Deteriorated
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	5.0 (0.1-.9)	Sustained	21.9 (14.3-29.4)	Deteriorated
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	19.0 (10.0-28.1) 33.0 (22.8-43.3) 34.5 (23.0-46.0) 13.4 (8.5-18.3)	Sustained	17.8 (10.7-24.9) 15.4 (11.1-19.7) 21.8 (16.3-27.3) 44.9 (33.9=55.9)	Sustained
	N =315		n=340	
Household with access to sanitation facilities	45.6 (37.4-59.8)	Sustained	54.6 (40.3-68.9)	Sustained
Household with access to safe water	7.6 (0.9-14.3)	Deteriorated	27.6 (14.8-40.5)	Sustained
Proportion who reported to have consumed <4 food groups	1.6 (0.0-3.7)	Improved	1.4 (0.0-2.9)	Improved
Household's Main Food Source- Purchase	95.5 (90.6-100.4)	Sustained	87 (79.3.7-94.2)	Sustained
Mean CSI	4.7 (3.8-5.6)	Improved	5.7	Sustained
OVERALL NUTRITION SITUATION	**Serious**		**Serious**	

4.2 NORTHEAST REGIONS

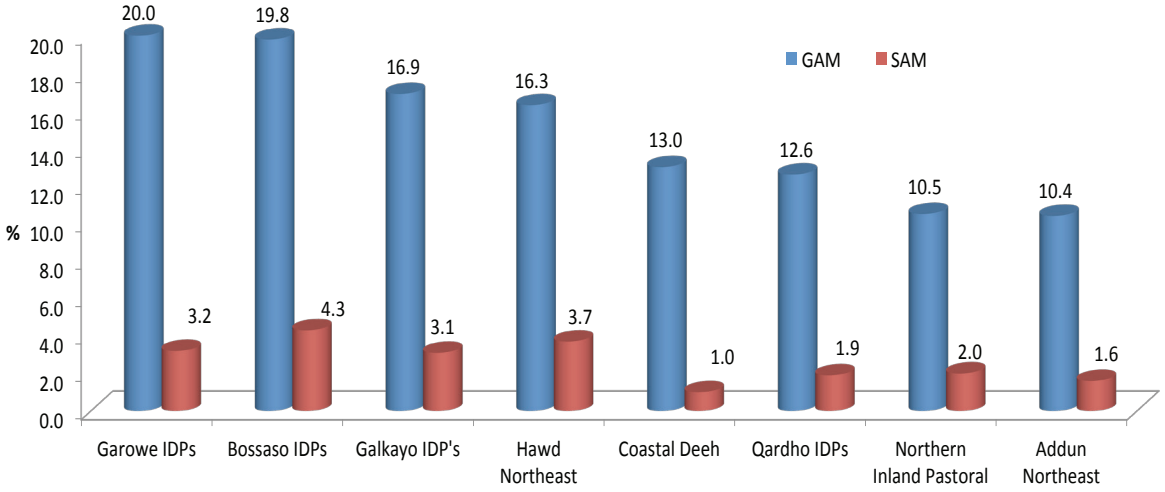
FSNAU in collaboration with partner operational in Northeast region have conducted eight integrated food security and nutrition assessments (4 IDPs, and 4 rural livelihood zones) in Northeast region of Somalia. A total of 5 612 children aged 6-59 months old (2 834 boys and 2 778 girls indicating a ratio of 1 indicating no selection biasness) from 3 489 households. The assessments employed full-fledged SMART methodology.

The results of nutritional assessments conducted in Northeast region are summarized in Tables 14, 15 and 16 but key highlights are described below:

Acute Malnutrition Prevalence

Gu 2016 had Median GAM of 14.7 percent and SAM prevalence of 2.5 percent in Northeast region, which is higher when compared to GAM (12.2%) and SAM (2.1%) observed in *Deyr* 2015.

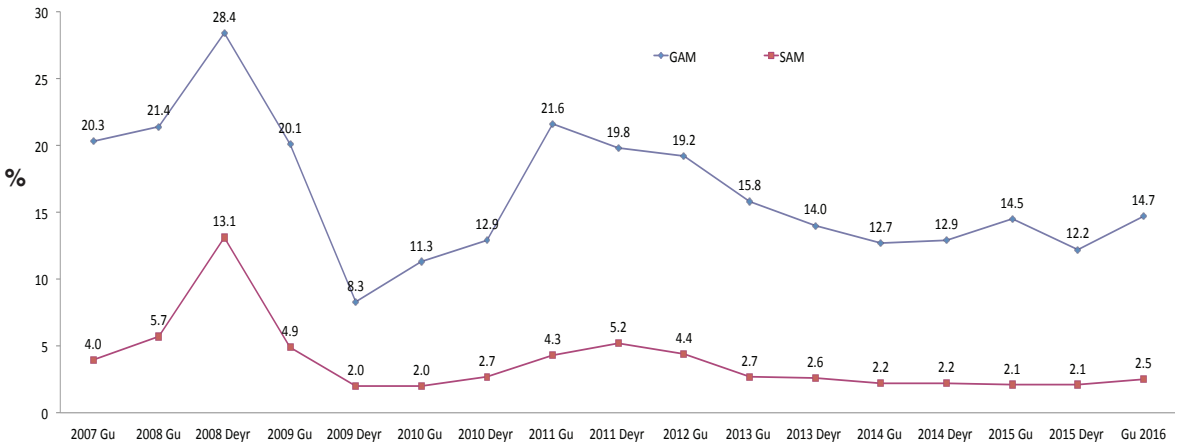
Figure 26: Prevalence of Acute Malnutrition in different livelihoods of Northeast - Gu 2016



Levels of acute malnutrition in assessed population groups (4 IDPs, and 4 rural livelihoods) show Serious level of malnutrition in four livelihoods (Addun, Qardho IDP, Coastal Deeh, and NIP). However, Hawd livelihood showed deterioration from Serious to Critical levels, while sustained Critical levels of acute malnutrition were observed in Garowe Galkayo IDPs and, Bossaso IDPs (Figure 26).

Trends in prevalence of acute malnutrition (GAM & SAM) in the Northeast zone (Figure 27) show a decline over time and a sustained Serious nutrition situation since *Gu* 2013.

Figure 27: Trends in Acute Malnutrition in different livelihoods of North Eastern Somalia



The change in prevalence of acute malnutrition situation in *Gu* 2016/ (Annex 6.10) is compared to the situation in *Deyr* 2015 as well as *Gu* 2015 is and discussed as below:

- **Bosaso IDP** settlements record a GAM prevalence of 19.8 percent and SAM prevalence of 4.3 percent indicating a Critical nutrition situation and sustained when compared with the Critical GAM prevalence of 16.8 percent recorded in *Deyr* 2015 but a significant lower to 12.5 percent GAM recorded in *Gu* 2015.

- **Qardho IDPs** settlements record a GAM prevalence of 12.6 percent and SAM prevalence of 1.9 percent indicating sustained Serious nutrition situation since *Gu* 2014 (12.2%). The highest GAM (14.0 percent) was recorded in *Gu* 2015.

- **Garowe IDPs** settlement shows GAM prevalence of 20.0 percent and SAM prevalence 3.2 percent which indicating **Critical** situation and sustained compared to Critical GAM prevalence of 19.5 percent is noted *Deyr* 2015. Sustained in SAM prevalence 3.2 when compared with *Deyr* 2015 Serious levels (3.8%) in current assessment.

- **Galkayo IDPs** settlement record sustained Critical GAM prevalence of 16.9 percent and SAM prevalence 3.1 percent in *Gu* 2016 and 16.5 percent in *Deyr* 2015. This was accompanied by an increase in SAM prevalence to Serious levels (3.2%) from Alert levels (1.7%) in *Deyr* 2015.

- **Addun** livelihood has shown deterioration from Alert GAM of 9.5 percent in *Deyr* 2015 to Serious in *Gu* 2016 (10.4%) with sustained Alert SAM of 1.6 percent observed in both *Gu* 2015 (1.9%) and *Deyr* 2015 (1.9%).

- **Coastal Deeh** pastoral livelihood recorded a GAM prevalence of 13 percent and SAM prevalence of 1 percent indicating a Serious nutrition situation which reflects a stable nutrition situation when compared with the GAM prevalence of 13.1 percent and SAM prevalence of 1.9 percent recorded in *Gu* 2015 and the GAM rate of 11.2 percent in *Deyr* 2015.

- **Hawd** pastoral livelihood recorded a GAM rate of 16.3 percent and SAM of 3.7 percent which suggests a Critical nutrition situation, and has deteriorated when compared to Serious level of 14.3 percent observed in *Gu* 2015 or with a GAM prevalence of 12.0 percent recorded in *Deyr* 2015.

Mortality

In *Gu* 2016, 160 days for retrospective mortality assessment was used for rural livelihood zones while 90 days for IDP settlements mortality assessment. Crude and under five mortality rates in the assessed areas were within the Acceptable levels of <0.5 and <1/10 000/day.

Morbidity

Most of the IDPs settlements and rural livelihood, in Northeast zone have noted high morbidity levels. Among the IDP settlements of (Garowe, Qardho, Galkayo and Bossaso) as well as Coastal Deeh, and Addun livelihood has been seen high morbidity level (>30%), except, low morbidity levels seen in Hawd pastoral livelihood (24.6%). The highest morbidity level was noted among Qardo (50%) and Garowe IDPs (46% whereby over 40 percent of the children were reported to be sick two weeks prior to the assessment. During this reporting period, measles outbreaks have been reported in Hawd of Northeast during the recent months (Annex 6.16).

Stunting and Underweight Prevalence

Even though Bosaso IDPs seen medium prevalence of stunting (20 – 29.9%), Low prevalence levels of stunting (<20%) was recorded in all assessed rural livelihood zone of Hawd, Addun, Northern Inland Pastoral and Coastal, and IDPs populations.

Low prevalence of underweight level (<10%) was recorded in all assessed livelihoods, while most IDPs shows Medium prevalence of underweight (10–19.9%).

It was observed that the prevalence of underweight was higher among IDPs as compared to the other livelihoods. Medium levels of underweight prevalence were noted among Qardho IDPs, Galkacyo and Garowe IDPs while Bosaso IDPs show high prevalence of underweight (20 – 30%) (Table 13).

Table 14: Stunting and Underweight prevalence among different livelihoods in Northeast region

	Stunted	Underweight
Hawd NE	7.9	9.7
Addun NE	4.5	5.5
Coastal Deeh	4.1	3.9
NIP	3.6	6.9
Bossaso IDPs	21.5	26.7
Qardho IDPs	8.3	10.7
Garowe IDPs	14.7	16.4
Galkayo IDP's	15.6	16.7

Immunization

The reported Vitamin A supplementation, measles vaccination and Polio immunization by recall among Bossaso, Galkacyo, Garowe IDPs settlements, coastal, and Hawd rural livelihood zones was 82 to 99.1 percent, but Qardho IDPs and of Addun pastoral have reported 80 percent of measles vaccination, and polio immunization of 94.5 percent which were recorded as recommended by SPHERE standard.

Nutrition Status of Women of Reproductive Age Groups (MUAC <23.0cm)

Serious levels of maternal malnutrition (20.1%) were recorded among the pregnant and lactating women in Hawd pastoral livelihood while acceptable and alert levels were also noted in Coastal deeh (8%) and Addun (12.8%) livelihoods. Northeast IDPs, acceptable and Serious levels were recorded among Bosasso (9.2%), Galkacyo (9%) and Qardho (14.5%) and Garowe IDPs (13%). Improvement in maternal nutrition status from Critical to Serious (20.1%) and Serious to Acceptable were noted in Hawd pastoral and Galkacyo IDPs while a sustained Serious situation was in Addun livelihood (12.8%).

Current Food Security Situation- Post Gu 2016

The proportion of households consumed less than four groups in Garowe, Bosasso, Galkacyo and Qardho IDPs settlements for Northeast zone was recorded from a range of 0 to 1. This suggests that most of the households were consumed more than four groups. Most of the households (99%) in Northeast zone IDPs settlements use purchase as their main source of food, except Qardho IDPs which use 68 percent, this suggests that their income they use food purchase. In rural livelihood zone of Northeast zone most of households consume more than four groups, as well use purchase as their main source of food.

Hot Spot Intervention Area In Northeast region

Critical levels of GAM prevalence among Bossaso, Garowe and Galkayo IDPs, as well as Hawd Postoral livelihood in Northeast zone are identified as hot spots, requiring immediate interventions to both treat the acutely malnourished children and prevent further deterioration of the nutrition situation.

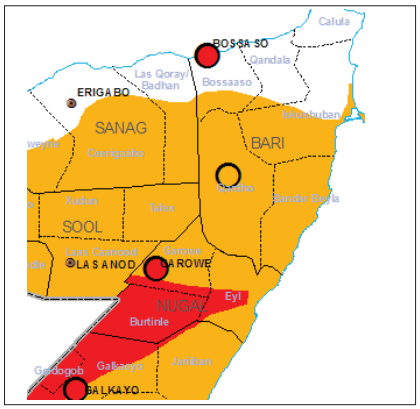
Nutrition Outlook

The current nutrition situation among the IDPs and Rural livelihood zones in Northeast zone range from **Serious** to Critical levels for the last twelve months (*Gu* 2016 to *Gu* 2015). Access to milk among the predominant pastoral communities and morbidity patterns appears to be the underlying factors influencing the nutrition situation. Most of the livelihoods and IDPs either sustained (Pastoral livelihoods of Coastal Deeh and IDPs of Bosaso, Qardho, Garowe and Galkayo) or deteriorated (Addun, Hawd and Northern Inland Pastoral) since *Gu* 2015.

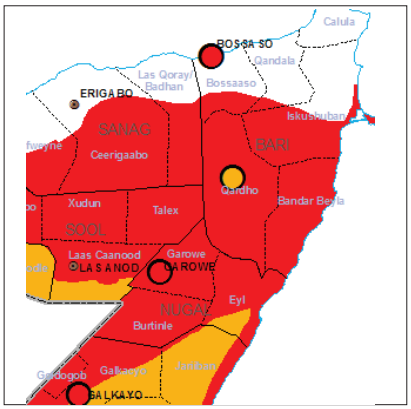
All livelihoods in Northeast are expected deterioration of Critical nutrition situation in the coming three months, except Addun livelihood in which will remain Serious. The maps below show the current and projected nutrition situation across livelihoods in Northeast zone.

Figure 28: Nutrition Situation and Outlook in Northeast regions

Current Nutrition Situation - Jul 2016



Projected Nutrition Situation (Aug-Oct 2016)



Conclusion and recommendation

Morbidity levels (>30%) were noted in IDPs settlements of Garowe, Qardho, Galkayo and Bossaso, as well as the rural livelihood of Coastal Deeh, and Addun in Northeast zone. Low vitamin A supplementation, measles vaccination and Polio immunization by recall among IDPs settlements in Bossaso, Galkacyo, Garowe settlements and coastal and Hawd rural livelihood. Serious levels of maternal malnutrition were recorded among the pregnant and lactating women in rural livelihoods and IDP settlements. Therefore, Critical levels of GAM prevalence were noted among Bossaso, Garowe and Galkayo IDPs, as well as Hawd Pastoral livelihood.

Consequently, the malnourished children of rural livelihood and IDPs settlements require nutrition specific programs as well as nutrition sensitive interventions which integrate food, health, and hygiene, sanitation and care practices to prevent further deterioration of the nutrition situation.

Table 15: Summary of Key Nutrition Findings in Northeast IDPs – Gu 2016

	Name of livelihood: Garowe IDPs		**Name of livelihood: Bossasso IDPs**		**Name of livelihood: Galkayo IDPs**	
	Clusters: 27 (N=570 :Boys=291 ;Girls=279)		**Clusters : 28 (N=738: Boys=374; Girls=364)**		**Clusters : 28 (N=707: Boys=363; Girls=344)**	
Indicator	**% ()**	**Changes**	**% ()**	**Changes**	**% ()**	**Changes**
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema)	20.0 (17.0-23.5)	Sustained	19.8(16.5-23.5)	Sustained	16.9(14.3-19.8)	Sustained
Boys	21.0 (16.7-26.0)		22.4(17.8-27.8)		19.9(16.1-24.4)	
Girls	19.1 (14.9-24.1)		17.1(13.3-21.7)		13.7(10.4-17.7)	
Severe Acute Malnutrition (WHZ<-3 or oedema)	3.2 (2.0-4.9)	Sustained	4.3(3.0-6.1)	Sustained	3.1(2.1-4.7)	Sustained
Boys	3.4 (1.9-6.2)		6.6(4.1-10.2)		4.2(2.5-6.7)	
Girls	2.5% (1.5-5.6)		2.0(0.9-4.3)		2.0 (1.0-4.1)	
Mean of Weight for Height Z Scores	-0.93±1.15		-1.06±1.12		-0.90±1.10	
Oedema	0.2	Deteriorated	0.0	Sustained	0.3	Deteriorated
Proportion with MUAC<12.5 cm or oedema)	11.1 (8.8-14.0)	Sustained	6.0(4.3-8.3)	Improved	6.0(4.5-7.9)	Sustained
Boys	8.6 (5.9-12.4)		4.0(2.4-6.6)		6.2(4.2-9.2)	
Girls	13.7 (10.2-18.3)		8.0(5.4-11.6)		5.7 (3.7-8.7)	

Proportion with MUAC<11.5 cm or oedema	1.1(0.5- 2.3)	Sustained	1.2(0.6-2.5)	Sustained	0.6 (0.2- 1.4)	Sustained
Boys	0.3 (0.1- 1.9)		1.1(0.4-2.7)		0.5 (0.1-1.9)	
Girls	1.8 (0.8- 4.2)		1.4(0.6-3.2)		0.6 (0.2-2.1)	
Stunting (HAZ<-2)	14.7 (12.0-17.9)	Improved	21.5(15.6-29.0)	Sustained	15.6 (13.1-18.4)	Sustained
Boys	17.5(13.5-22.3)		22.7(15.9-31.2)		20.2 (16.4-24.6)	
Girls	11.8 (8.5-16.2)		20.4(13.9-28.9)		10.6 (7.7-14.3)	
Severe Stunting (HAZ<-3)	3.6 (2.3- 5.5)	Improved	5.7(3.8-8.4)	Sustained	3.3(2.2-4.8)	Improved
Boys	5.2 (3.2- 8.5)		6.3(4.0-9.8)		5.2 (3.3- 8.0)	
Girls	1.8 (0.8- 4.2)		5.0(3.0-8.4)		1.2 (0.5- 3.0)	
Underweight (WAZ<-2)	16.4 (13.6-19.7)	Improved	26.7(21.4-32.7)	Deteriorated	16.9 (14.3-19.8)	Sustained
Boys	19.7 (15.5-24.6)		29.1(23.5-35.5)		20.5 (16.7-24.9)	
Girls	13.0 (9.5-17.5)		24.2(18.2-31.5)		13.0 (9.9-17.0)	
Death Rates						
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.40 (0.20 – 0.80)	Sustained	0.21(0.07-0.56)	Sustained	0.08 (0.03-0.27)	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.49 (0.16 -1.52	Sustained	0.42(0.09-1.88)	Sustained	0.0	Sustained
Morbidity	46.0 (40.3 – 51.6)	Sustained	34.1(25.8-42.5)	Sustained	36.7(33.2-40.32)	Deteriorated
Boys	47.4 (41.1 – 53.7)		34.5(24.0-44.9)		36.2(30.98-41.4)	
Girls	44.4 (36.2 – 52.7)		33.8(25.8-41.7)		37.3(32.13-42.48)	
Diarrhoea	11.2 (7.4 – 15.0)	Deteriorated	9.1(5.8-12.3)	Sustained	8.26(6.14-10.38))	Sustained
Boys	10.4 (5.6 – 15.6)		10.4(5.6-15.1)		51.72(38.8-64.64)	
Girls	12.0 (8.0 – 16.0)		7.7(4.6-10.7)		48.27(35.36-61.19)	
Pneumonia	11.6 (7.1 – 16.0)	Sustained	15.8(6.7-25.0)	Sustained	13.6(10.9-16.2)	Deteriorated
Boys	10.7 (6.5 – 14.8)		15.7(5.1-26.4)		14.4(10.69-18.11)	
Girls	12.4 (7.2 – 17.6		15.9(7.2-24.6)		13.3(9.50167)	
Fever	37.2 (32.2 – 42.2)	Sustained	26.5(19.1-33.9)	Sustained	30.2(27.1-33.4)	Deteriorated
Boys	38.7 (32.8 – 44.6)		26.7(17.3-36.1)		30.6(45.3-58.9)	
Girls	35.6 (28.5 – 42.8)		26.3(19.2-33.4)		29.9(41-54.5)	
Measles	7.0 (3.6 – 10.2)	Deteriorated	0.8(0.2-1.4)	Sustained	1.85(0.65-3.06)	Sustained
Boys	8.6 (3.6 – 13.7)		1.1(0.0-2.2)		1.09(0.03-2.2)	
Girls	5.1 (2.6 – 7.7)		0.5(0.0-1.3)		2.7(0.45-4.9)	
Vitamin A Supplementation	86.8 (81.8 -91.8)	Sustained	90.1(82.8-97.5)	Sustained	91.2(88.2-94.1)	Sustained
Boys	85.5 (79.7 – 91.3)		90.9(84.1-97.7)		91.7(88.0 -95.3)	
Girls	88.7 (82.6 – 93.8)		89.3(81.1-97.6)		90.7(87-94.5)	
Measles Vacnation	82.2 (75.4– 90.2)	Sustained	84.7(76.8-92.7)	Sustained	91.6(88.0-94.48)	Sustained
Boys	79.4 (70.1 – 88.7)		85.3(77.7-92.9)		92.20(88.9-95.5)	
Girls	86.4 (79.6 – 93.2)		84.1(75.2-93.0)		91.0(87.5-94.6)	
Polio Immunization	99.1(98.1– 100.1)	Sustained	98.8(97.5-100)	Sustained	97.9(96.5-99.3)	Sustained
Boys	99.0 (97.8–100.1)		98.7(97.1-100)		97.6 (95.9-99.3)	
Girls	99.3(98.3 –100.2)		98.9(97.6-100)		98.3(96.7-99.9)	
Women Nutrition and Immunization Status	N = 274		N=163		N =421	
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	4.4 (3.6-5.6))	Deteriorated	4.3(0.9-7.7)	Sustained	2.1(0.75-3.525)	Improved

Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	13.0 (8.4 – 17.6)	Sustained	9.2(4.1-14.3)	Sustained	9.02(6.29-11.76)	Sustained
Proportion of Women who received Tetanus immunization	85.2(78.8-91.6)	Sustained	92.8(88.8-96.9)	Sustained	87.3(80.2-94.4)	Sustained
No dose	14.8(8.4 – 21.2)		7.2(3.1-11.2)		12.7(9.6-15.9)	
One dose	11.4 (7.3 – 15.6)		4.4(1.6-7.3)		10.4(7.45-13.3)	
Two doses	29.0 (21.7 – 36.3)		11.1(7.9-14.4)		36.6(31.9-41.2)	
Three doses	44.7 (35.1 – 54.4)		77.3(69.8-84.8)		40.3(35.6-45.8)	
Public Health Indicators	N=201		N=202		N=236	
Household with access to sanitation falities	99.0(97.6-100.0)	Improved	100(100.0-100.0)	Sustained	100(100.0-100.0)	Sustained
Household with access to safe water	88.6(80.0-97.2)	Deteriorated	28.2(12.9-43.6)	Sustained	99.6(98.7-100.0)	Sustained
Proportion who reported to have consumed <4 food groups	0.5(0.0-1.5)	Sustained	1.0(0.0-2.5)	Sustained	0.0(0.0-0.0)	Sustained
Household's Main Food Source-Purchase	99.5(98.5-100.0)	Sustained	99.5(98.4-100)	Sustained	99.6(98.7-100)	Sustained
Mean CSI	13.3(11.6-15.0)		27.7(24.5-31.0)	Sustained	29.6(27.7-31.5)	Sustained
Overall nutrition situation	**Critical**					

Table 16: Summary of Key Nutrition Findings: Qardho IDPs – Gu 2016

	Qardho IDPs	
	Clusters : Exhaustive	
	(N=546: Boys=252; Girls=294)	
Indicator	n	% ()
Child Nutrition Status		
Global Acute Malnutrition (WHZ<-2 or oedema)	12.6	
Boys	15.0	Sustained
Girls	10.7	
Severe Acute Malnutrition (WHZ<-3 or oedema)	1.9	
Boys	1.6	Sustained
Girls	2.1	
Mean of Weight for Height Z Scores	-0.95±0.97	Sustained
Oedema	0	0
Proportion with MUAC<12.5 cm or oedema)	6.5	
Boys	4.8	Sustained
Girls	7.9	
Proportion with MUAC<11.5 cm or oedema	0.2	
Boys	0	Sustained
Girls	0.3	
Stunting (HAZ<-2)	8.3	
Boys	11.6	Sustained
Girls	5.5	
Severe Stunting (HAZ<-3)	2.0	
Boys	3.2	Sustained
Girls	1.0	
Underweight (WAZ<-2)	10.7	
Boys	12.0	Sustained
Girls	9.5	

Death Rates		
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.35	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.73	Sustained
Morbidity Boys Girls	50.7 52.4 49.3	Sustained
Diarrhoea Boys Girls	12.2 10.3 13.9	Sustained
Pneumonia Boys Girls	31.1 35.3 27.5	Sustained
Fever Boys Girls	45.5 47.6 43.7	Sustained
Measles Boys Girls	10.4 11.9 9.2	Sustained
Vitamin A Supplementation Boys Girls	78.4 73.0 83.0	Sustained
Measles vac. Boys Girls	79.9 79.8 80.0	Sustained
Polio Immunization Boys Girls	94.3 94.0 94.6	Sustained
Women Nutrition and Immunization Status	N=262	
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	2.8	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	14.5	Sustained
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	84.4 15.3 18.3 29.4 37.0	Sustained
Public Health Indicators (HH)	N=186	
Household with access to sanitation facilities	100	Sustained
Household with access to safe water	98.9	Sustained
Proportion who reported to have consumed <4 food groups	0.0	Sustained
Household's Main Food Source- Purchase	68.0	Sustained
Mean CSI	23.5	Sustained
Overall nutrition situation	**Serious**	

Table 17: Summary of Key Nutrition Findings in Northeast Rural – Gu 2016

	Hawd Pastoral		Addun Pastoral		Coastal Deeh	
	Clusters: 28 (N=596: Boys=299; Girls=297)		Clusters: 28 (n=623; Boys=336; Girls=287)		Clusters: 27 (N=684: Boys=354; Girls=330)	
Indicator	% ()		% ()	Change from Gu15	% ()	Change from Gu15
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema)	16.3 (13.1-20.1)		10.4 (7.5-14.4 95)		13.0 (9.9-17.0)	
Boys	18.4 (13.0-25.3)	Deteriorated	12.5 (8.6-17.8 95)	Improved	16.4 (11.9-22.2)	Improved
Girls	14.1 (11.1-17.9)		8.0 (4.8-13.2 95)		9.4 (6.5-13.4)	
Severe Acute Malnutrition (WHZ<-3 or oedema)	3.7 (2.2- 6.2)		1.6 (0.7- 3.9 95)		1.0 (0.4- 2.7)	
Boys	4.0 (2.0- 7.9)	Sustained	2.1 (0.9- 4.6 95)	Sustained	1.4 (0.5- 3.9)	Improved
Girls	3.4 (1.9- 5.9)		1.0 (0.2- 4.7 95)		0.6 (0.1- 2.4)	
Mean of Weight for Height Z Scores	-0.86±1.15	Deteriorated	-0.72±1.06	Improved	-0.65±1.13	Improved
Oedema	0.0	Sustained	0.0	Sustained	0.0	Sustained
Proportion with MUAC<12.5 cm or oedema)	9.2 (5.4-11.7)		5.7 (3.5- 8.9 95)		1.4 (0.7- 2.9)	
Boys	7.0 (4.7-10.3)	Deteriorated	6.7 (4.0-11.1 95)	Improved	1.1 (0.4- 2.9)	Improved
Girls	11.4 (6.7-18.5)		4.5 (2.4- 8.2 95)		1.8 (0.8- 3.7)	
Proportion with MUAC<11.5 cm or oedema	1.3 (0.6- 2.4)		0.3 (0.0- 2.4 95)		0.1 (0.0- 1.1)	
Boys	1.3 (0.5- 3.4)	Deteriorated	0.6 (0.1- 4.3 95)	Improved	0.3 (0.0- 2.2)	Improved
Girls	1.3 (0.4- 4.3)		0.0 (0.0- 0.0 95)		0.0 (0.0- 0.0)	
Stunting (HAZ<-2)	7.9 (5.5-11.1)		4.5 (2.5- 7.8 95)		4.1 (2.4- 6.9)	
Boys	10.4 (7.2-14.8)	sustained	5.0 (2.5-10.0 95)	Improved	6.1 (3.4-10.7)	Improved
Girls	5.4 (3.2- 8.9)		3.8 (2.0- 7.2 95)		1.8 (0.7- 4.4)	
Severe Stunting (HAZ<-3)	1.7 (0.8- 3.3)		0.6 (0.2- 2.2 95)		0.6 (0.2- 2.0)	
Boys	2.0 (1.0- 4.2)	sustained	0.6 (0.1- 2.5 95)	Improved	1.1 (0.3- 3.8)	Improved
Girls	1.3 (0.5- 3.5)		0.7 (0.2- 2.8 95)		0.0 (0.0- 0.0)	
Underweight (WAZ<-2)	9.7 (7.1-13.0)		5.5 (3.1- 9.8 95)		3.9 (2.3- 6.5)	
Boys	11.0 (7.1-16.5)		7.3 (3.9-13.3 95)	Improved	6.1 (3.8- 9.6)	Improved
Girls	8.3 (5.9-11.6)		3.4 (1.7- 6.9 95)		1.5 (0.4- 5.4)	
Death Rates						
Crude deaths, per 10,000 per day (retrospective for 160 days)	0.32 (0.13-0.80)	Sustained	0.11(0.04-0.29)	Improved	0.15 (0.05-0.48)	Improved
Under five deaths, per 10,000 per day (retrospective for 160 days)	0.52 (0.16-1.64)	sustained	0.09(0.01-0.42)	Improved	0.45 (0.14-1.43)	Improved
Morbidity	24.6 (16.5-32.7)		35.4(27.4-43.)		33.7 (24.5-43.0)	
Boys	26.2 (16.1-36.4)	sustained	34.4(25.4-43.5)	Deteriorated	32.6 (22.3-42.9)	Improved
Girls	23.0 (15.1-30.9)		36.6(27.5-45.7)		34.9 (25.4-44.5)	
Diarrhoea	6.5 (2.7-10.4)		6.4 (3.8-9.1)		3.8 (1.0-5.1)	
Boys	8.6 (2.7-14.5)	sustained	5.8(2.3-9.3)	Deteriorated	4.5 (2.0-6.9)	Improved
Girls	4.3 (1.6-7.1)		7.1(3.8-10.5)		3.0 (0.9-5.1)	
Pneumonia	6.3 (2.6-10.0)		8 (4.3-11.9)		9.7 (1.5-17.)	
Boys	7.3 (3.0-11.6)	sustained	9.5(4.7-14.3)	Improved	9.5 (1.6-17.3)	Improved
Girls	5.3 (1.0 – 4.0)		6.1(1.5-10.7)		9.9 (1.1-18.7)	
Fever	20.1 (13.1-27.13)		31.1 (24.2-38.5)		27.8 (20.6-35.1)	
Boys	20.6 (12.4-28.8)	sustained	30.4(22.4-38.4)	Deteriorated	27.3 (18.6-36.0)	Improved
Girls	19.7 (12.3-27.1)		32.5(24.3-40.6)		28.4 20.7-36.2)	

Measles	2.2 (0.1-4.4)		1.7 (0.5-2.9)		1.6 (0.3-2.9)	
Boys	2.3 (0.1-5.2)	sustained	1.7(0.1-3.3)	Improved	0.8 (0.1-1.8)	Improved
Girls	2.0 (0.1-4.0)		1.7(0.0-3.4)		2.4 (0.4-1.4)	
Vitamin A Supplementation	91.2 (87.2-95.2)		70.3 (54.7-85.9)		90.5 (82.5-98.4)	
Boys	91.7 (87.5-95.9)	sustained	73.3(57.8-88.8)	Improved	89.7 (81.2-88.2)	Improved
Girls	90.7 (85.9-95.5)		66.7 (49.8-83.6)		91.3 (83.6-99.0)	
Measles Vacnation	85.7 (79.7-91.7)		69.7 (54.4-84.9)		86.3 (78.4-94.2)	
Boys	84.7 (77.6-91.8)	sustained	73.0(57.4-88.5)	Improved	86.6 (78.3-94.9)	Improved
Girls	86.7 (81.0-92.4)		65.7(49.5-81.9)		85.9 (77.6-94.2)	
Polio Immunization	97.7 (95.8-99.5)		90.4 (84.6-96.2)		97.7 (95.6-99.8)	
Boys	98.0 (95.9-100.2)		91.0 (84.4-97.5)	Improved	97.8 (95.8-99.7)	Improved
Girls	97.3 (95.1-99.6)		89.7(84.1-95.2)		97.6 (95.1-100.1)	
Women Nutrition and Immunization Status	N =353		N =164		N=399	
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	0.9 (0.1-1.8)	sustained	3 (1-7)	Deteriorated	3.3 (0.3-6.2)	Improved
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	20.1 (13.5-26.7)	Deteriorated	12.8 (1-18.9)	Deteriorated	8.0 (2.4-13.6)	Improved
Proportion of Women who received Tetanus immunization						
No dose	18.9 (12.2-25.7)	sustained	27.3 (22.8-32.4)	Sustained	10.8 (5.04-16.5)	Deteriorated
One dose	17.5 (11.6-23.4)		15.8 (12.2-20.2)		26.8 (21.2-32.4)	
Two doses	24.0 (19.4-28.6)		32.2 (27.4-37.4)		30.3 (22.2-38.4)	
Three doses	39.5 (30.3-48.8)		24.7 (20.3 29.7)		32.8 (22.5-41.7)	
Public Health Indicators	N =181		N =204		N=225	
Household with access to sanitation facilities	59.6 (41.7-77.5)	sustained	65.4 (52.3- 78.6)	Improved	65 (50.1-79.1)	Deteriorated
Household with access to safe water	55.8 (35.9-75.6)	Sustained	62.5 (45.2- 79.8)	Deteriorated	39	Improved
Proportion who reported to have consumed <4 food groups	1.7 (0.0-4.2)	sustained	0.6 (0.0—5.3)	Sustained	0	Deteriorated
Household's Main Food Source- Purchase	100	sustained	96.1 (92.4-99.7)	Deteriorated	97	Improved
Mean CSI	1.3	sustained	1 (1.3-1.9)	Deteriorated	5.02	Deteriorated
Overall nutrition situation	**Critical**		**Serious**		**Serious**	

4.3: CENTRAL REGION

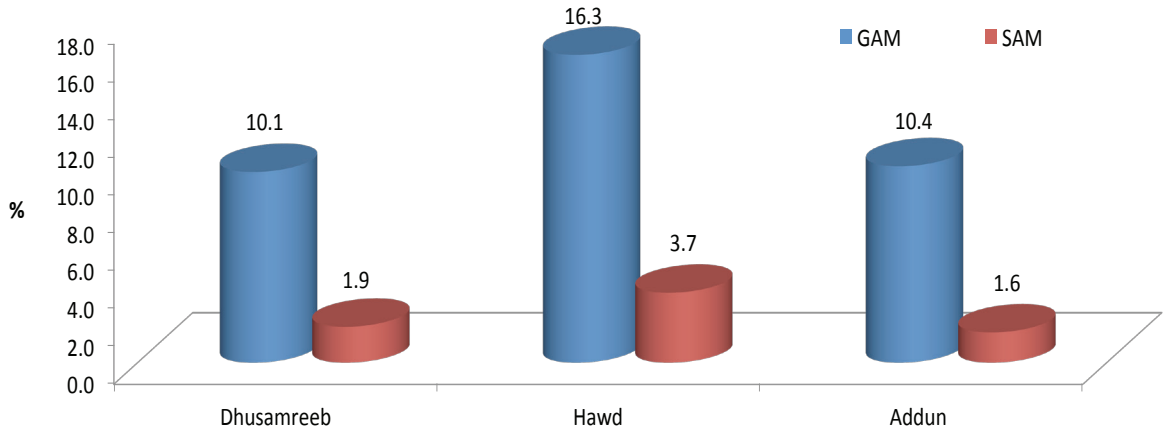
In *Gu* 2016 assessment, FSNAU in collaboration with with local and international partners conducted three integrated food security and nutrition assessments (1 IDP and 2 rural livelihoods) in central region of Somalia. Nutrition status of 1 601 children aged 6-59 months (816 boys and 785 girls) from 1 024 households were assessed.

The results of *Gu* 2016 nutrition assessments in Central region are summarized in Table 18 but key highlights are described below.

Acute Malnutrition Prevalence

The nutrition situation in Central regions shows Deterioration among livelihoods of Hawd (from Serious to Critical**)** and Addun (from Alert to Serious). However, the nutrition situation in Dhusamareb IDP settlement is sustained as Serious**.**

Figure 29: Prevalence of Acute Malnutrition in Central regions - Gu 2016



There were no significant gender differences noted among boys and girls with a ratio of one. Similarly the difference in prevalence of acute malnutrition between the younger children (6-23 months) and older children (24-59 months) were not statistically significant (Annex 21).

Hawd: *Gu* 2016 assessment results show Critical levels of GAM (16.3%) prevalence and SAM (3.7%) among Hawd Central livelihood which is showing a deteriorated situation when compared with Serious GAM in *Deyr* 2015 (12.0%).

Addun: Addun livelihood recorded Serious of GAM prevalence of 10.4 percent and SAM prevalence of 1.6 percent which shows deterioration from Alert (9.5% GAM)**.**

Dhusamareb IDP: Dhusamareb IDPs show Serious levels of GAM (10.1%) and SAM (1.9%) which are sustained Serious since *Gu* 2015 (10.5%). Current prevalence of GAM is an improvement when compared with the Serious GAM of 14.4 percent observed in *Deyr* 2014.

Stunting and Underweight Prevalence

Sustained **Low** level of stunting prevalence (<20%) were seen during *Deyr* 2015 among different livelihoods of Central regions (Hawd, Addun and Dhusamareb IDPs) among Dhusamareb IDPs significant deterioration when compared to *Gu* 2015 which has doubled.

Table 18: Stunting and Underweight prevalence for Central region (2015-2016)

	Stunting			Underweight		
	Gu 2016	Deyr 2015	Gu 2015	Gu2016	Deyr 2015	Gu 2015
Dhusamareb IDP	2.1	14.1	6.8	4.5	11.7	8.9
Hawd Central	7.9	6.6	8.1	9.7	11.8	12.5
Addun Central	4.5	6.6	7.6	5.5	9.3	12.7

Sustained Medium prevalence of underweight (10-19.9%) was also noted among Dhusamareb IDPs and Hawd pastoral while an improvement was observed in Addun from Medium to Low.

Mortality

All Central livelihoods report Acceptable levels of crude and under five death rates <0.5-and <1/10 000/day during the last 90 days recall period for the IDPs assessment and 160 days recall period for rural livelihood zones.

Morbidity

High morbidity levels were recorded among Hawd (24.6%), Addun livelihood (35.4%) and Dhusamareb IDPs (38.2).

Immunization

High coverage (> 80%) with Vitamin A supplementation was observed in Hawd and Addun pastoral, while Dhusamareb reported the least with 15.5 percent. Measles vaccination was (< 80%) among the livelihoods of Addun and Dhusomareb IDPs, while Hawd livelihood is indicating an improvement (85.7%).

Nutrition Status of Women of Reproductive Age Groups (MUAC<23.0cm)

Very Critical levels of maternal malnutrition levels was recorded Coastal Deeh (>31.5%), while Dhusamareb IDPs show Critical level of maternal malnutrition (23.4–31.4%). Addun is the only livelihood with Alert prevalence of maternal malnutrition level (12.7%).

Current Food Security Situation- Post *Gu* 2016

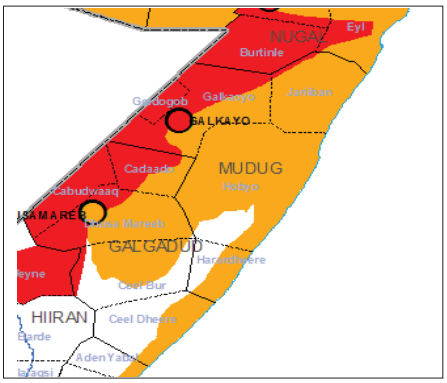
In pastoral livelihoods in Central regions acquire a significant proportion (60-70%) of their food through market purchases, while in agropastoral livelihoods poor households purchase 30 to 35 percent of their food. In the pastoral livelihoods, 66 percent of income is derived from livestock sales; 24 percent form livestock product sales and 10 percent from loan and gifts. In agropastoral areas, main income sources are derived from livestock/ livestock products sales (50%) followed by self-employment (30%) such as charcoal burning and collection bush products. There are minor income sources, which include crop sales and labour, which contribute 10 percent to the overall income as well as gifts (10%)

Nutrition Outlook

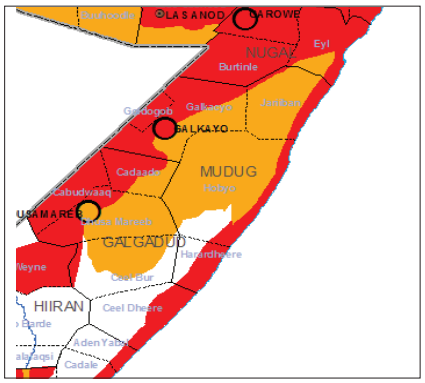
During the last six months (*Deyr* 2015 to *Gu* 2015) nutrition situation among Dhusamareb IDPs was sustained as Serious while Hawd and Addun have deteriorated from Alert to Serious respectively. The current nutrition situation among most Central livelihoods is expected to be sustained in same phase (as current) with the exception of Coastal Deeh where deterioration is expected over the next three months from Serious to Critical.

Figure 30: Nutrition Situation and Outlook in Central region

Current Nutrition Situation - Jul 2016



Projected Nutrition Situation (Aug-Oct 2016)



Hot Spot Intervention Area in the Central region

Hawd livelihood is the current hotspot in Central Somalia with Critical prevalence of acute malnutrition (16.3%). In Hawd rural livelihood the key aggravating factors are mainly related to public health indicators. The most significant public health indicator contributing for the current prevalence in Hawad livelihood was incidence of morbidity, this was confirmed by high of malaria (20.1%) and measles outbreak (2.2%). Programs aimed at strengthening public health service, such as EPI program and treatment service will likely contain or reverse the high prevalence of malnutrition in Hawd livelihood zone.

Table 19: Summary of Key Nutrition Findings in Central livelihoods and IDPs- Gu 2016

	Hawd Pastoral		**Addun Pastoral**		**Dhusamareb IDPs**	
	Clusters : 28 (N=596: Boys=299; Girls=297)		**Clusters: 28 (n=623; Boys=336; Girls=287)**		**Clusters : Exhaustive (N=382: Boys=181; Girls=201)**	
Indicator	% (CI)	Outcome	% (CI)	Outcome	%	Outcome
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	16.3 (13.1-20.1) 18.4 (13.0-25.3) 14.1 (11.1-17.9)	Deteriorated	10.4 (7.5-14.4 95) 12.5 (8.6-17.8 95) 8.0 (4.8-13.2 95)	Improved	10.1 11.8 8.6	Sustained
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	3.7 (2.2- 6.2) 4.0 (2.0- 7.9) 3.4 (1.9- 5.9)	Sustained	1.6 (0.7- 3.9 95) 2.1 (0.9- 4.6 95) 1.0 (0.2- 4.7 95)	Sustained	1.9 1.1 2.5	Sustained
Mean of Weight for Height Z Scores	-0.86±1.15	Deteriorated	-0.72±1.06	Improved	-0.47±1.05	Sustained
Oedema	0.0	Sustained	0.0	Sustained	0.0	Sustained
Proportion with MUAC<12.5 cm or oedema) Boys Girls	9.2 (5.4-11.7) 7.0 (4.7-10.3) 11.4 (6.7-18.5)	Deteriorated	5.7 (3.5- 8.9 95) 6.7 (4.0-11.1 95) 4.5 (2.4- 8.2 95)	Improved	7.3 5.6 9.0	Sustained
Proportion with MUAC<11.5 cm or oedema Boys Girls	1.3 (0.6- 2.4) 1.3 (0.5- 3.4) 1.3 (0.4- 4.3)	Deteriorated	0.3 (0.0- 2.4 95) 0.6 (0.1- 4.3 95) 0.0 (0.0- 0.0 95)	Improved	0.5 0.0 1.0	Sustained
Stunting (HAZ<-2) Boys Girls	7.9 (5.5-11.1) 10.4 (7.2-14.8) 5.4 (3.2- 8.9)	sustained	4.5 (2.5- 7.8 95) 5.0 (2.5-10.0 95) 3.8 (2.0- 7.2 95)	Improved	2.1 2.8 1.5	Sustained
Severe Stunting (HAZ<-3) Boys Girls	1.7 (0.8- 3.3) 2.0 (1.0- 4.2) 1.3 (0.5- 3.5)	sustained	0.6 (0.2- 2.2 95) 0.6 (0.1- 2.5 95) 0.7 (0.2- 2.8 95)	Improved	0.3 0.0 0.5	Sustained
Underweight (WAZ<-2) Boys Girls	9.7 (7.1-13.0) 11.0 (7.1-16.5) 8.3 (5.9-11.6)		5.5 (3.1- 9.8 95) 7.3 (3.9-13.3 95) 3.4 (1.7- 6.9 95)	Improved	4.5 6.2 3.0	Sustained
Death Rates						
Crude deaths, per 10,000 per day (retrospective for 160 days)	0.32 (0.13-0.80)	Sustained	0.11(0.04-0.29)	Improved	0.08	Sustained
Under five deaths, per 10,000 per day (retrospective for 160 days)	0.52 (0.16-1.64)	sustained	0.09(0.01-0.42)	Improved	0.27	Sustained
Morbidity Boys Girls	24.6 (16.5-32.7) 26.2 (16.1-36.4) 23.0 (15.1-30.9)	sustained	35.4(27.4-43.) 34.4(25.4-43.5) 36.6(27.5-45.7)	Deteriorated	38.2 40.3 36.3	Sustained
Diarrhoea Boys Girls	6.5 (2.7-10.4) 8.6 (2.7-14.5) 4.3 (1.6-7.1)	sustained	6.4 (3.8-9.1) 5.8(2.3-9.3) 7.1(3.8-10.5)	Deteriorated	4.5 5.1 4.0	Sustained
Pneumonia Boys Girls	6.3 (2.6-10.0) 7.3 (3.0-11.6) 5.3 (1.0 – 4.0)	sustained	8 (4.3-11.9) 9.5(4.7-14.3) 6.1(1.5-10.7)	Improved	14.0 14.0 14.0	Sustained
Fever Boys Girls	20.1 (13.1-27.13) 20.6 (12.4-28.8) 19.7 (12.3-27.1)	sustained	31.1 (24.2-38.5) 30.4(22.4-38.4) 32.5(24.3-40.6)	Deteriorated	36.3 38.5 34.3	Sustained
Measles Boys Girls	2.2 (0.1-4.4) 2.3 (0.1-5.2) 2.0 (0.1-4.0)	sustained	1.7 (0.5-2.9) 1.7(0.1-3.3) 1.7(0.0-3.4)	Improved	0.5 1.1 0.0	Sustained

Vitamin A Supplementation Boys Girls	91.2 (87.2-95.2) 91.7 (87.5-95.9) 90.7 (85.9-95.5)	sustained	70.3 (54.7-85.9) 73.3(57.8-88.8) 66.7 (49.8-83.6)	Improved	15.5 13.4 17.4	Sustained
Measles Vaccination Boys Girls	85.7 (79.7-91.7) 84.7 (77.6-91.8) 86.7 (81.0-92.4)	sustained	69.7 (54.4-84.9) 73.0(57.4-88.5) 65.7(49.5-81.9)	Improved	20.0 19.0 20.9	Sustained
Polio Immunization Boys Girls	97.7 (95.8-99.5) 98.0 (95.9-100.2) 97.3 (95.1-99.6)		90.4 (84.6-96.2) 91.0 (84.4-97.5) 89.7(84.1-95.2)	Improved	84.0 81.2 86.6	Sustained
Women Nutrition and Immunization Status	N =353		N =164		N=180	
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	0.9 (0.1-1.8)	sustained	3 (1-7)	Deteriorated	10.0	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	20.1 (13.5-26.7)	Deteriorated	12.8 (1-18.9)	Deteriorated	35.6	Sustained
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	18.9 (12.2-25.7) 17.5 (11.6-23.4) 24.0 (19.4-28.6) 39.5 (30.3-48.8)	sustained	27.3 (22.8-32.4) 15.8 (12.2-20.2) 32.2 (27.4-37.4) 24.7 (20.3 29.7)	Sustained	81.7 18.3 6.1 28.3 47.2	Sustained
Public Health Indicators	N =181		N =204		N=111	
Household with access to sanitation facilities	59.6 (41.7-77.5)	sustained	65.4 (52.3- 78.6)	Improved	99.1	Sustained
Household with access to safe water	55.8 (35.9-75.6)	Sustained	62.5 (45.2- 79.8)	Deteriorated	100	Sustained
Proportion who reported to have consumed <4 food groups	1.7	sustained	0.6	Sustained	0.9	Sustained
Household's Main Food Source- Purchase	100	sustained	96.1 (92.4-99.7)	Deteriorated	98.2	Sustained
Mean CSI	1.3	sustained	1 (1.3-1.9)	Deteriorated	23.7	Sustained
Overall nutrition situation	**Critical**		**Serious**		**Serious**	

4.4 SOUTH REGIONS

During the *Gu* 2016 assessments, FSNAU conducted twelve Integrated Food Security and Nutrition assessments n Southern Somalia using SMART (rural livelihood zones and 5 IDPs).These surveys covered 7 747 Children aged 6-59 months, from 4 949 households.

4.4.1 GEDO REGION

In *Gu* 2016 three integrated food security and nutrition surveys were conducted using the SMART methodology (two rural and one IDPs). A total of 1 719 children aged 6-59 months from 1 146 households were assessed.

The *Gu* 2016 assessment findings are shown in Tables 19 and 20 but key highlights are described below:

Key findings:

Acute Malnutrition Prevalence

North Gedo region: Both North Gedo Pastoral (17.2%) and Riverine (16.5%) recorded Critical GAM prevalence in the *Gu* 2016 assessments. This Critical phase has been sustained since *Gu*' 2014 with major contributing factors including poor health seeking behavior, poor hygiene and sanitation, low immunization coverage both vitamin A and measles vaccinations, high maternal malnutrition and poor child care (Figure 31).

Reduction in SAM levels was noted from Critical levels in *Deyr* 2015 (4.1%) and *Gu* 2015 (4.2%) among North Gedo pastoral and as well as Critical levels recorded in *Deyr* 2015 (4%) and *Gu* 2015 (3.3%) among North Gedo riverine to current SAM prevalence of *Gu* 2016 in North Gedo Pastoral (3.2%) and North Gedo Riverine (2.5%). In comparison to *Gu* 2015, the situation has sustained Serious phase in North Gedo Riverine while improved in North Gedo Pastoral from Critical to Serious phase (Figure 32). The situation still remains critical and close monitoring of the nutritional status of malnourished children is imperative.

Figure 31: GAM trends among Pastoral and Riverine livelihoods in North Gedo regions

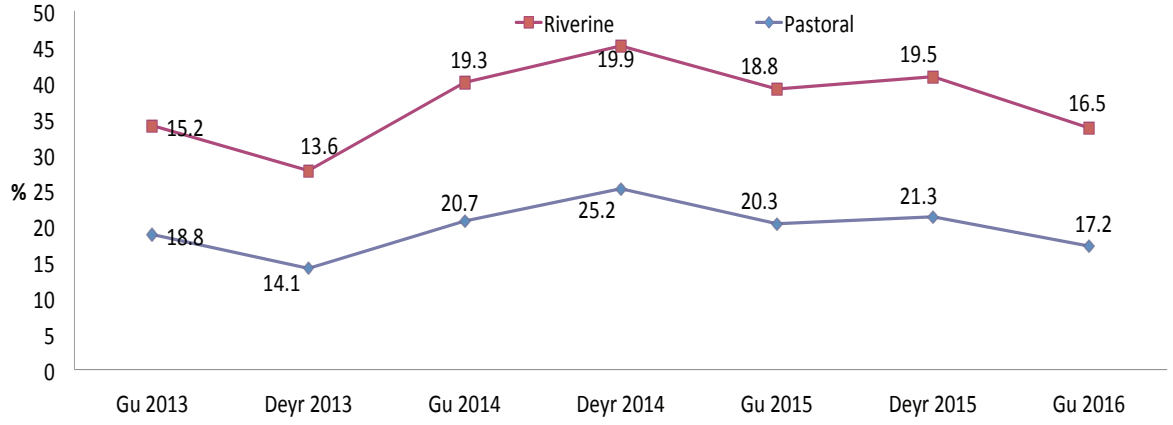
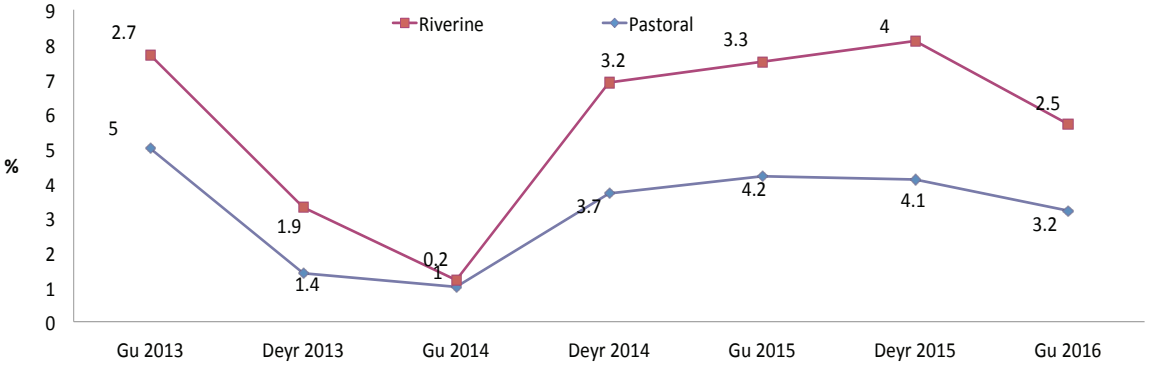
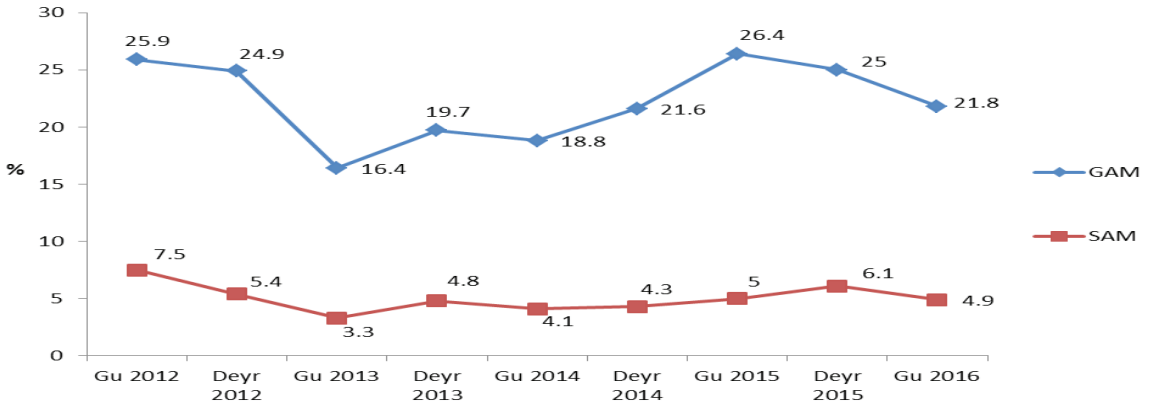


Figure 32: SAM trends among Pastoral and Riverine livelihoods in North Gedo regions



Dollow IDP settlement showed sustained Critical prevalence of GAM (21.8%). This Critical GAM prevalence has been observed to be consistent since *Gu* 2012. SAM prevalence (4.9%) shows an improvement from a Critical phase in *Deyr* 2015 (6.1%) to Serious phase in *Gu* 2016. With improved morbidity cases and immunization coverage in the IDP settlements, manifestation of malnutrition still seems to be crucial with food security indicators recording a sustained Emergency phase since *Gu* 2015 (Figure 33).

Figure 33: Trends in GAM and SAM prevalence among Dolow IDPs



Stunting And Underweight Prevalence

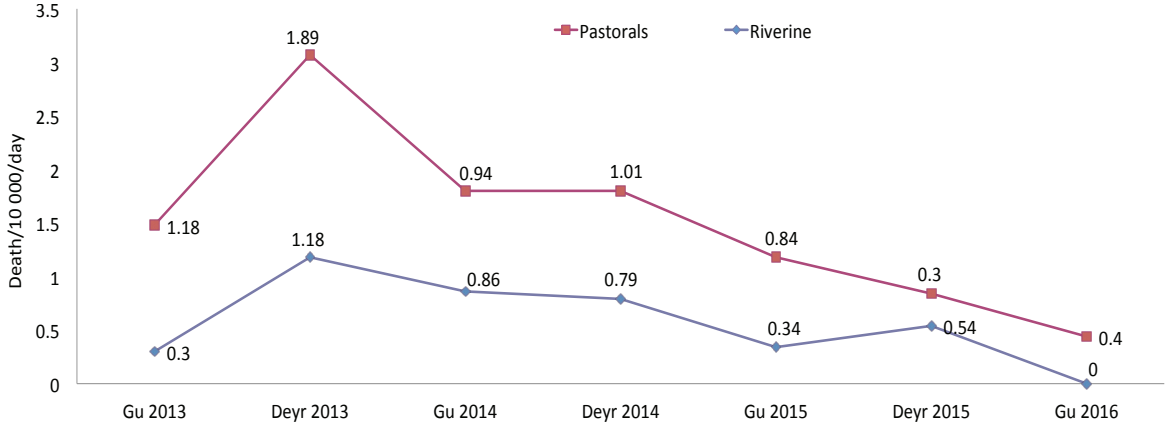
Gu 2016 results showed sustained low levels of stunting prevalence among North Gedo Pastoral (2.5%) and North Gedo Riverine (3.4%). Dollow IDPs sustained medium levels of stunting prevalence (29.1%), but the trend in stunting for Dollow IDPs had been increasing since *Gu* 2015 season.

Medium prevalence of underweight has been observed in the *Gu* 2016 assessments among North Gedo Pastoral (15.1%) and North Gedo Riverine (14.1%).Underweight prevalence has remained stable since *Gu* 2015 for both North Gedo Pastoral and North Gedo Riverine. Dollow IDPs have sustained high underweight prevalence (29.7%).

Mortality

Both North Gedo Pastoral and Riverine have sustained Acceptable levels of Mortality rates (<0.5 CMR and ≤1/10 000/day U5MR) in the *Gu* 2016 assessments. Acceptable levels of mortality rates have been reported since *Gu* 2015 for both population groups. Dollow IDPs recorded improved levels of Mortality rates from Serious during *Gu* 2015 to Acceptable levels in *Gu* 2016 (Figure 34).

Figure 34: Trends of U5 Mortality Rates in North Gedo Pastoral and Riverine livelihood zones



Morbidity

The prevalence of the overall morbidity recorded two weeks prior to the assessments in *Gu* 2016 among children less than Five years of age was 4.7 percent in North Gedo Pastoral and 9 percent in North Gedo Riverine. Morbidity incidence in North Gedo Pastoral has been improving since *Gu* 2015 and *Deyr* 2015 while no significant improvement noted in North Gedo Riverine.

Dollow IDPs recorded a morbidity prevalence of 13.4 percent which shows improved prevalence when compared to *Gu* 2015 but shows no significant improvement after the findings in *Deyr*' 2015. This situation among Dollow IDP remain sustained due to several factors including low health service seeking behavior.

Immunization Coverage

Poor immunization coverage for both measles vaccination and Vitamin A supplementation; with vitamin A supplementation at 50.3 percent and 53.9 percent for North Gedo Pastoral and North Gedo Riverine respectively. Measles vaccination coverage in the *Gu* 2016 assessments were 64.2 percent and 63.7 percent in North Gedo Pastoral and North Gedo Riverine respectively. The immunization coverage is way below the SPHERE standards of 90 percent and the situation shows deterioration in coverage when compared to *Gu* 2015 and *Deyr* 2015. Dollow IDPs recorded improved coverage for both Vitamin A supplementation (79.1%) and Measles vaccination (76.9%); Polio immunization (93.7%) has not changed since *Deyr* 2015.

Nutritional Status Of Women Of Reproductive Age Groups (MUAC<23.0cm)

Critical levels of maternal malnutrition (<23.0cm) were recorded among the North Gedo Pastoral (23.2%) and North Gedo Riverine (25.4%) women of reproductive age in *Gu* 2016 which shows a deterioration of their situation from Alert phase in *Gu* 2015. Dollow IDPs have recorded improved WRA nutrition status of 10.6 percent (Alert phase) in *Gu* 2016 from Serious phase (18.1%) in *Deyr* 2015 and Alert phase (15.0%) in *Gu*' 2015.

Current Food Security Situation

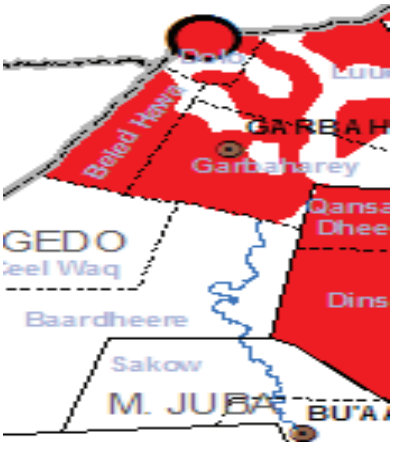
The food security situation in Gedo region remained stable in the *Gu* 2016 season when compared to post-*Deyr* 2015 (February-June) which is due to lower production (crop, milk and meat). In July 2016, the Riverine Pump Irrigation (North Gedo Riverine) and SIP (North Gedo Pastoral) were both classified as Minimal (IPC Phase 1) acute food insecurity. Dollow IDPs was classified as Emergency (IPC Phase 4) in the *Gu* 2016 assessments with over 20 percent of its population in this Emergency phase and more than 40 percent of the IDPS with Poor/Borderline food consumption scores. This Emergency phase has not changed since *Deyr* 2014 (for four seasons in a raw). There has been severe vulnerability to food insecurity noted in the *Gu* 2016 assessments (> 75% of expenditures on food) and asset poverty).

Nutrition Outlook

The nutrition situation in Gedo regions has been sustained and mostly influenced by poor infrastructure, insecurity, low access to humanitarian health and nutrition assistance. And the current nutrition situation in the Gedo region (North Gedo Pastoral, North Gedo Riverine and Dollow IDPs) are likely sustain Critical phase in the coming three months. Key factors for the sustained Critical phase in the coming months are limited access to humanitarian interventions, decreased milk availability in Xagaa season due to outmigration, tense security and poor immunization coverage for both Vitamin A supplementation and measles vaccination. Cereal prices are likely to increase during August to December 2016 period due to poor Gu 2016 harvest.

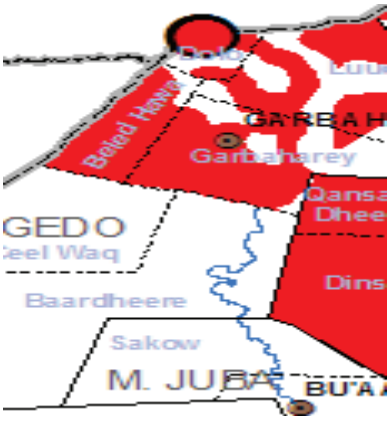
Figure 35: Nutrition situation and Outlook in Gedo region

Current Nutrition Situation - Jul 2016



Hot Spots

Projected Nutrition Situation (Aug – Oct 2016)



Hotspot

Hotspot Intervention Areas in Gedo Region

Critical levels of GAM prevalence are seen in North Gedo Pastoral (17.2%), North Gedo Riverine (16.5%) and Dollow IDPs (21.8%); thus making them the current hot spots for acute malnutrition. Immediate and comprehensive integrated interventions are required to treat the acutely malnourished children and to also reverse the deteriorating food security situation.

Table 20: Summary of Key Nutrition Findings among North Gedo livelihood zones - Gu 2016

	North Gedo Pastoral		North Gedo Riverine	
	Clusters: 28 (N=563: Boys=294; Girls=269)		Clusters : 29 (N=528: Boys=289; Girls=239)	
Indicator	% (CI)	Changes from *Deyr* 2015	% (CI)	Changes from *Deyr* 2015
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	17.2 (13.3-22.1) 18.4 (14.3-23.3) 16.0 (11.2-22.3)	Sustained	16.5 (13.1-20.6) 18.7 (14.9-23.2) 13.8 (9.3-20.1)	Sustained
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	3.2 (2.0-5.2) 4.1 (2.4-6.8) 2.2 (1.0-4.7)	Improved	2.5 (1.2-4.9) 2.8 (1.5-5.1) 2.1 (0.6-7.4)	Improved
Mean of Weight for Height Z Scores	-0.98±1.07		-0.93±1.04	
Oedema	0.0		0.0%	
Proportion with MUAC<12.5 cm or oedema) Boys Girls	3.0 (1.7-5.2) 2.0 (0.8-4.9) 4.1 (2.2-7.3)	Sustained	3.8 (2.2-6.3) 3.8 (2.1-6.8) 3.7 (1.3-10.1)	Sustained
Proportion with MUAC<11.5 cm or oedema Boys Girls	0.4 (0.1-1.4) 0.7 (0.2-2.7) 0.0 (0.0-0.0)	Sustained	0.4 (0.1-1.5) 0.3 (0.0-2.5) 0.4 (0.1-3.1)	Sustained
Stunting (HAZ<-2) Boys Girls	16.2 (11.9-21.7) 16.8 (10.8-25.2) 15.6 (11.3-21.2)	Deteriorated	13.6 (10.0-18.3) 17.1 (12.6-22.9) 9.5 (5.6-15.6)	Sustained
Severe Stunting (HAZ<-3) Boys Girls	2.5 (1.3-4.8) 3.1 (1.5-6.1) 1.9 (0.8-4.3)	Sustained	3.4 (2.1-5.6) 4.5 (2.4-8.5) 2.1 (0.9-4.9)	Deteriorated
Underweight (WAZ<-2) Boys Girls	15.1 (11.8-19.1) 15.7 (11.4-21.2) 14.4 (10.8-19.1)	Sustained	14.1 (11.2-17.6) 16.6 (12.8-21.2) 11.1 (7.2-16.8)	Sustained
Crude deaths, per 10,000 per day (retrospective for 160 days)	0.26 (0.14-0.49)	Sustained	0.21 (0.07-0.57)	Sustained
Under five deaths, per 10,000 per day (retrospective for 160 days)	0.44 (0.13-1.47)	Sustained	0.0 (0.0-0.0)	Improved
Morbidity Boys Girls	4.7 (2.0-7.6) 4.4 (1.7-7.2) 5.2 (1.2-9.1)	Improved	9.0 (4.6-13.4) 7.9 (3.4-12.5) 10.3 (4.7-15.8)	Sustained
Diarrhoea Boys Girls	2.3 (0.7-3.9) 2.7 (0.9-4.5) 1.8 (0.0-3.8)	Sustained	3.2 (0.8-5.6) 2.8 (0.1-5.4) 3.7 (1.0-6.4)	Sustained
Pneumonia Boys Girls	0.4 (0.0-0.9) 0.3 (0.0-1.1) 0.4 (0.0-1.1)	Improved	1.5 (0.6-2.4) 1.7 (0.3-3.2) 1.2 (0.0-2.6)	Improved
Fever Boys Girls	2.3 (0.8-3.8) 1.4 (0.1-2.6) 3.3 (0.3-6.4)	Sustained	4.9 (1.5-8.2) 3.8 (0.8-6.8) 6.2 (1.5-10.8)	Sustained
Measles Boys Girls	0.0 (0.0-0.0) 0.0 (0.0-0.0) 0.0 (0.0-0.0)	Sustained	0.3 (0.0-0.9) 0.3 (0.0-0.1) 0.4 (0.0-1.3)	Sustained
Vitamin A Supplementation Boys Girls	50.3 (30.7-69.9) 51.7 (31.6-71.8) 48.7 (28.7-68.7)	Deteriorated	53.9 (36.9-71.0) 51.9 (34.5-69.3) 56.4 (38.6-74.2)	Deteriorated
Measles Vaccination Boys Girls	64.2 (46.6-81.9) 63.9 (46.4-81.5) 64.6 (45.6-83.5)	Deteriorated	63.7 (47.8-77.6) 62.3 (48.0-76.5) 65.4 (50.7-80.1)	Deteriorated

	North Gedo Pastoral		North Gedo Riverine	
	Clusters: 28 (N=563: Boys=294; Girls=269)		Clusters : 29 (N=528: Boys=289; Girls=239)	
Indicator	% (CI)	Changes from *Deyr* 2015	% (CI)	Changes from *Deyr* 2015
Polio Immunization Boys Girls	95.6 (91.0-100.0) 94.9 (88.7-100.0) 96.3 (92.4-100.0)	Sustained	93.8 (90.3-97.3) 93.4 (89.3-97.6) 94.2 (90.3-98.2)	Sustained
Women Nutrition and Immunization Status				
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	3.5 (1.1-6.0)	Sustained	5.7 (2.5-8.9)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	23.2 (14.5-32.0)	Sustained	25.4 (14.2-36.5)	Sustained
Food Security Indicators				
Proportion who reported to have consumed <4 food groups	0.9 (0.0-2.2)		2.9 (0.0-6.0)	
Mean CSI	8.8 (7.3-10.3)		8.1 (6.7-9.6)	
OVERALL NUTRITION SITUATION	**Critical**		**Critical**	

Table 21: Summary of Key Nutrition Finding among Dollow IDPs - Gu 2016

	Dollow IDPs	
	Clusters : 34 (N=628: Boys=326; Girls=302)	
Indicator	% (CI)	Change
Child Nutrition Status		
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	**21.8** (17.8-26.5) 25.2 (20.3-30.7) 18.2 (13.2-24.5)	Sustained
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	**4.9** (3.6- 6.7) 4.9 (3.4- 7.0) 5.0 (2.9- 8.4)	Sustained
Mean of Weight for Height Z Scores	-1.15±1.11	
Oedema	0.0	Sustained
Proportion with MUAC<12.5 cm or oedema) Boys Girls	**10.8** (8.4-14.0) 10.1 (6.9-14.5) 11.7 (8.6-15.6)	Sustained
Proportion with MUAC<11.5 cm or oedema Boys Girls	3.5 (2.2- 5.5) 3.1 (1.5- 6.0) 3.9 (2.0- 7.6)	Sustained
Stunting (HAZ<-2) Boys Girls	29.1 (24.5-34.2) 29.6 (23.8-36.2) 28.5 (22.7-35.2)	Sustained
Severe Stunting (HAZ<-3) Boys Girls	8.9 (6.6-12.0) 8.5 (5.2-13.5) 9.4 (6.3-13.7)	Sustained
Underweight (WAZ<-2) Boys Girls	29.7 (25.2-34.7) 34.5 (28.0-41.5) 24.7 (19.3-30.9	Sustained
Mortality Rates		
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.42 (0.23-0.76)	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.45(0.15-1.37)	Sustained
Morbidity Boys Girls	13.4 (8.7-18.0) 13.5 (7.7-19.1) 13.3 (8.5-18.1)	Sustained
Diarrhoea Boys Girls	3.8 (1.2-6.3) 3.9 (0.2-7.7) 3.6 (1.5-5.6)	Sustained
Pneumonia Boys Girls	4.7 (1.2-8.2) 5.2 (0.8-9.6) 4.2 (1.3-7.2)	Sustained
Fever Boys Girls	8.0 (4.3-11.6) 7.9 (3.9-12.0) 8.1(3.7-124)	Sustained

Measles Boys Girls	0.6 (0.0-1.4) 0.0 1.3 (0.0-2.9)	Sustained
Vitamin A Supplementation Boys Girls	79.1 (67.4-90.8) 78.3 (66.9-89.7) 79.9 (67.1-92.7)	Sustained
Measles Vaccination Boys Girls	76.9 (64.7-89.1) 75.8 (63.9-87.7) 77.9 (63.9-92.1)	Sustained
Polio Immunization Boys Girls	93.7 (90.1-96.4) 93.4 (89.4-97.1) 94.2 (91.2-91.2-97.1)	Sustained
Women Nutrition and Immunization Status		
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	1.4 (0.0-2.9)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	10.6 (7.1-14.2)	Improved
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	 12.0 (7.0-17.1) 18.6 (12.2-25.0) 31.7 (22.5-48.9) 37.7 (25.3-50.1)	Improved
Public Health Indicators (HH)		
Household with access to sanitation facilities	90.5 (78.9-102.1)	Sustained
Household with access to safe water	100 (100.0-100.0)	Sustained
Proportion who reported to have consumed <4 food groups	5.7 (2.0-9.5)	Improved
Household's Main Food Source- Purchase	50.4 (34.3-66.5)	Deteriorated
Mean CSI	28.5 (25.8-31.2)	Improved
Overall Nutrition Situation	**Critical**	

4.4.2: MIDDLE AND LOWER JUBA REGIONS

FSNAU in collaboration with partners from Middle and Lower Juba regions conducted two integrated food security and nutrition assessments in Kismayo and Dhobley IDP settlements located in Juba region. The assessment targeted 856 households with 1 647 children aged 6-59 months (821 boys and 826 girls).

The *Gu* 2016 assessment findings are shown in Table 21 but key highlights are described below:

Key highlights

Acute Malnutrition Prevalence

According to post *Gu* 2016, Serious and Critical levels of GAM were observed in Kismayo (14.5%) and Dhobely IDPs (17.7%) respectively. The reported prevalence from Dhobley assessments were above the WHO critical thresholds for GAM (>15%).

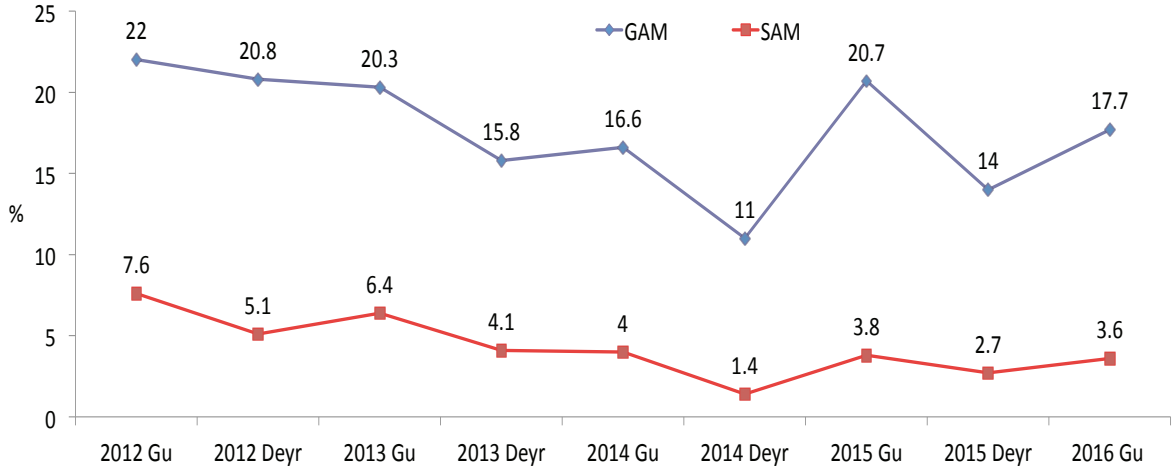
Dhobley IDPs: In *Gu* 2016 the integrated food security and nutrition assessment conducted in Dhobley IDPs recorded a GAM of 17.7 percent indicating Critical levels. This shows deterioration since *Gu* 2015, with GAM prevalence of (14%). However the SAM prevalence recorded were Serious with 3.6 percent which is sustained Serious since *Gu* 2015 (2.7%) or *Deyr* 2015 (3.8%).

Kismayo IDPs: In May 2016, the integrated food security and nutrition assessment conducted in Kismayo IDPs showed a GAM and SAM prevalence of 14.5 percent and 4.4 percent respectively. This shows sustained Serious levels when compared to *Gu* 2015 (12.5%) or *Deyr* 2015 (12.9%). But there is no statistically significant difference between *Gu* 2015 (12.5% GAM) and *Deyr* 2015 (12.9% GAM)

Trends in Acute Malnutrition

Dhobley IDPs: The seasonal trend in acute malnutrition in Dhobley IDPs is illustrated in Figure 36. All seasons suggest Critical levels of nutrition situation with the exception of *Deyr* 2014 (11%) and 2015 (14%) season which shows Alert and Serious levels respectively.

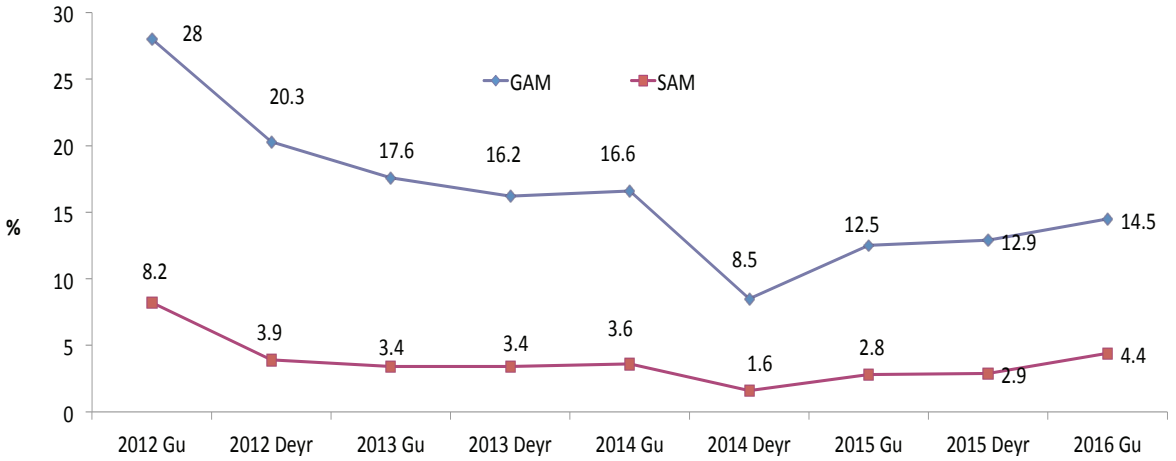
Figure 36: GAM and SAM trends among Dhobley IDPs



Trends in Acute Malnutrition

KISMAYO IDPs: Season to season trend analysis for Kismayo IDPs as illustrated in Figure 37 suggest sustained Critical levels of nutrition situation from *Gu* 2012 up to *Gu* 2014. However in *Deyr* 2014 an Alert nutrition situation was noted. For the last three season, the nutrition situation in Dhobley IDPs, has remained Serious since *Gu* 2015 (12.5%) levels when compared to *Deyr* 2015 (12.9%) or *Gu* 2016 (14.5%).

Figure 37: GAM and SAM trends among Kismayo IDPs



Mortality

In *Gu* 2016, Kismayo IDPs had Acceptable CDR (0.49/10 000/day) and Serious U5DR (1.2/10 000/day). Sustained Serious in CDR as well as in U5DR were noted since *Gu* 2015. In *Gu* 2016, Dhobley IDPs were recorded Serious CDR (0.60/10 000/day) and Critical U5DR (0.51/10 000/day). However, an improvement was seen since *Gu* 2015 from Critical levels CDR (1.18/10 000/day) and Serious levels of U5MR (1.15/10 000/day).

Morbidity

In *Gu* 2016, the overall morbidity covering two weeks prior to the assessment in Dhobley IDPs was (24.6%). This shows sustained morbidity prevalence since *Gu* 2015 (42.9%) and *Deyr* 2015 (39.2%). While in Kismayo IDPs consistent high levels of morbidity (28.1%) were noted since *Gu* 2015 (33.1%) and *Deyr* 2015 (27.6%). This can be linked to limited access of health services, low immunization, and potable water and sanitation facilities.

Stunting and Underweight Prevalence

In May 2016, the nutrition assessment conducted in Dhobley IDPs shows Acceptable stunting levels (11.9%). This has persisted since *Gu* 2015 (12.1%) and *Deyr* 2015 (9.3%). While Serious stunting levels (38.4%) were seen in Kismayo IDPs. The level has sustained since *Gu* 2015 (43.8%) and *Deyr* 2015 (33.5%) [Annex 6.13 and 6.14].

The nutrition assessment conducted in Dhobley IDPs shows Medium levels of underweight prevalence (13.8%), which has sustained since *Gu* 2015 (14.2%) but an improvement compared to *Deyr* 2015 (9.9%), with acceptable levels. (Annex 6.14). In *Gu* 2016, Kismayo IDPs were reported Serious levels of underweight (29.6%). This is a sustained in *Gu* 2015 (24.8%) but a deterioration compared to the Critical level reported in *Deyr* 2015/16 (30.1%) with Critical level (30.1%).

Immunization

Low Vitamin A supplementation, measles vaccination and Polio immunization was recorded among Kismayo and Dhobley IDPs settlements. In *Gu* 2016, food and nutrition assessment conducted in Kismayo and Dhobley IDP recorded sustained low Vitamin A supplementation with 62.5 percent and 9.2 percent respectively. Low measles vaccination was also seen with 52.2 percent in Kismayo and 30.6 percent in Dhobley IDPs. Even though Polio immunization is high (82.4 percent in Kismayo IDPs and 70.4 percent in Dhobley) it is below the recommended SPHERE standard.

Nutritional Status of Women of Reproductive Age Groups (MUAC <23.0cm)

In Dhobley IDPs, Serious levels of maternal malnutrition (20.7%) were recorded among the pregnant and lactating mothers, which is an improvement from Critical since *Gu* 2015 (26.9%), but a deterioration from the Alert level reported in *Deyr* 2015/16 (14.2%) (Annex 6.15). However in Kismayo IDPs had Alert levels of maternal malnutrition (15.5%) in u 2016 which represents a slight improvement since *Deyr* 2015 (17.5%) and *Gu* 2015 (15.8 %)

Current Food Security Situation Post Gu 2016

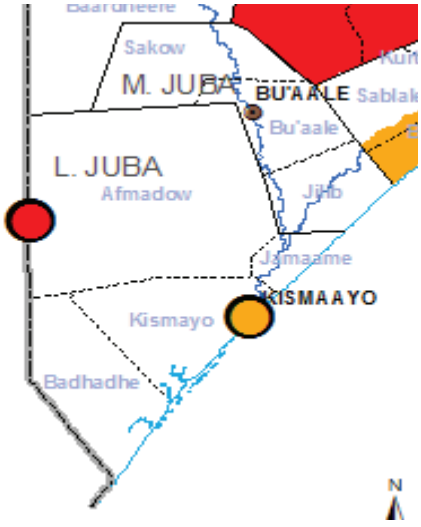
In July 2016, the food security situation in IDP settlements in Dhobley and Kismayo IDPs has slightly deteriorated since post- *Deyr* 2015/16. Dhobley has been classified in Crisis (IPC Phase 3).

Nutritional Outlook

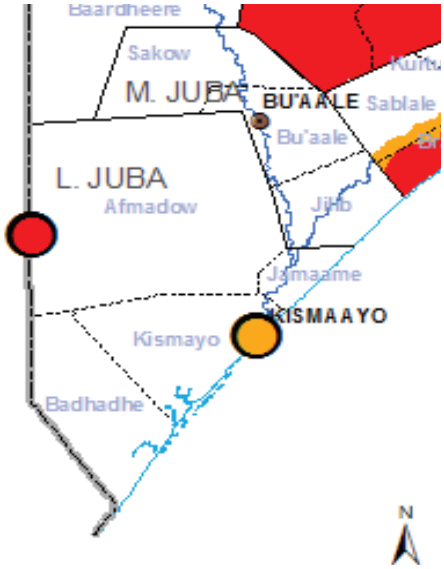
The nutrition situation in Dhobley and Kismayo IDPs is largely expected to remain stable in the coming three months. Figure 38 shows current and projected nutrition situation in Juba IDPs. In Dhobley and Kismayo IDPs, it is projected that the nutrition situation will remain Critical and Serious, respectively as a result of the presence of aggravating factors such as limited access of health services, low humanitarian assistance, and high morbidity incidence.

Figure 38: Nutrition Situation and Outlook in Middle and Lower Juba regions

Nutrition Situation -Jul 2016



Nutrition Situation Projection (Aug-Oct 2016)



Hot Spot Intervention Area in Middle and Lower Juba regions

In Juba region, a Critical levels of GAM prevalence among Dhobley IDPs is identified as hot spot, which require immediate interventions for both treatment of the acutely malnourished children and for prevention of further deterioration of the situation .

Table 22: Summary of Key Nutrition Finding among Kismayo and Dhobley IDPs - Gu 2016

Kismayo and Dhobley IDPs	Kismayo IDPs (N=867: Boys=427; Girls=440)		Dhobley IDPs (N=780; Boys=394 Girls=386)	
Indicator	Results	Outcome	Results	Outcome
Child Nutrition Status				
Global Acute Malnutrition (WHZ<-2 or oedema)	14.5 (11.6-18.0)	Sustained	17.7 (15.1-20.6)	Deteriorated
Boys	17.3 (13.4-22.2)		19.8 (16.5-23.5)	
Girls	11.8 (8.5-16.3)		15.5 (12.0-19.8)	
Severe Acute Malnutrition (WHZ<-3 or oedema)	4.4 (3.4- 5.6)	Deteriorated	3.6(2.3- 5.5)	Sustained
Boys	5.2 (3.4- 7.8)		4.6 (2.7- 7.6)	
Girls	3.6 (2.3- 5.6)		2.6 (1.3- 5.2)	
Mean of Weight for Height Z Scores	-0.71±1.17	Sustained	-0.98±1.11	Sustained
Oedema	1.0		0.3	
Proportion with MUAC<12.5 cm or oedema)	14.6 (11.6-18.1)	Sustained	10.4 (7.9-13.7)	Sustained
Boys	12.3 (9.2-16.4)		11.2 (8.4-14.8)	
Girls	16.7 (12.8-21.5)		9.6 (6.2-14.7)	
Proportion with MUAC<11.5 cm or oedema	5.0 (3.4- 7.1)	Sustained	0.9 (0.4- 1.8)	Sustained
Boys	5.3 (3.3- 8.3)		1.2 (0.5- 3.0)	
Girls	4.7 (2.9- 7.4)		0.5 (0.1- 2.1)	
Stunting (HAZ<-2)	38.4 (32.2-44.9)	Sustained	11.9 (9.0-15.7)	Sustained
Boys	43.2 (36.9-49.7)		12.4 (9.5-16.1)	
Girls	33.7 (26.1-42.2)		11.4 (6.9-18.3)	
Severe Stunting (HAZ<-3)	17.9 (13.8-22.9)	Sustained	1.6 (0.8- 3.1)	Sustained
Boys	21.5 (17.2-26.5)		1.9 (0.7- 4.7)	
Girls	14.4 (9.7-21.0)		1.4 (0.6- 3.2)	
Underweight (WAZ<-2)	29.6 (25.2-34.4)	Sustained	13.8 (11.0-17.1)	Sustained
Boys	32.5 (27.5-37.9)		15.2 (11.7-19.6)	
Girls	26.8 (21.1-33.4)		12.3 (8.4-17.7)	
Child Morbidity & Immunization				
Morbidity	28.1 (19.2-36.9)	Sustained	24.6 (115.6-33.6)	Sustained
Boys	27.6 (19.2- 36.0)		24.4 (15.7-33.2)	
Girls	28.5 (18.5-38.6)		24.8 (14.4-35.3)	
Diarrhoea	12.4 (6.7-18.1)	Sustained	6.7 (2.6-10.7)	Sustained
Boys	11.8 (5.6-18.0)		5.7 (1.5-9.8)	
Girls	12.9 (7.6-18.2)		7.8 (3.2- 12.3)	
Pneumonia	12.6 (7.7-17.5)	Sustained	16.7 (9.7-23.6)	Sustained
Boys	13.0 (8.3-17.6)		17.1 (10.6-23.5)	
Girls	12.2 (5.9-18.5)		16.3 (7.9-24.6)	
Fever	15.8 (10.8-20.7)	Sustained	24 (15- 33)	Sustained
Boys	15.9 (10.1-21.8)		23.2 (14.5-32.0)	
Girls	15.6 (10.0-21.2)		24.8 (14.4-35.3)	
Measles	2.4 (0.62-4.3)	Sustained	0.8 (0.1-1.5)	Sustained
Boys	2.2 (0.7-3.8)		0.4 (0.0-1.1)	
Girls	2.6 (0.2-5.1)		1.2 (0.0-2.4)	
Vitamin A Supplementation	62.5 (55.3-69.6)	Sustained	9.2 (4.6-13.8)	Sustained
Boys	60.5 (50.4-70.5)		9.9(4.5-15.3)	
Girls	64.555.9-73.1 ()		8.5 (3.8-13.2)	

Measles Vaccination Boys Girls	52.2 (42-62.4) 50.2 (38.1-62.3) 54.2 (42.4-65.9)	Sustained	30.6 (18.8-42.4) 33.2 (19.4-47.0) 28.0 (17.3-38.7)	Sustained
Polio Immunization Boys Girls	82.4 (76.9- 87.8) 80.1 (73.3-86.9) 84.5 (78.9-90.2)	Sustained	70.4 (61.1-79.7) 71.7(61.9-81.5) 69.2 (59.4-79.1)	Sustained
Death Rates				
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.49 (0.30-0.81)	Sustained	0.60 (0.37-0.97)	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	1.2 (0.68-2.11)	Sustained	0.51 (0.22-1.18)	Sustained
Women Nutrition and Immunization Status				
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	2.4 (1.0-4.9)	Sustained	5.2 (3.3-8.1)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	15.5(11.5-20.2)	Sustained	20.7 (16.8-25.1)	Sustained
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	 26.9 (21.9-32.4) 14.8 (10.9-19.4) 26.9 (21.9-32.4) 91 (26.1-37.1)	Sustained	 41.9 (37.6-46.2) 21.3 (18-25.2) 31 (27.12-35.2) 5.7 (4-8.2)	Sustained
Public Health Indicators (HH)				
Household with access to sanitation facilities	82	Sustained	81	Sustained
Household with access to safe water	94	Sustained	100	Sustained
Proportion who reported to have consumed <4 food groups	6	Sustained	3	Sustained
Household's Main Food Source-Purchase	80	Sustained	90	Sustained
Mean CSI	31	Sustained	28	Sustained
Overall nutrition situation	**Serious**		**Critical**	

4.4.3: MIDDLE AND LOWER SHABELLE REGIONS

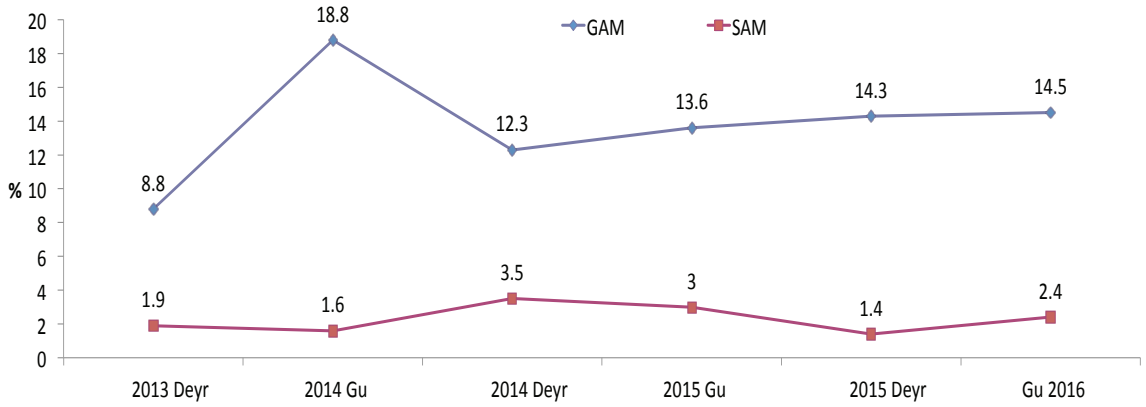
FSNAU conducted three integrated food security and nutrition assessments in Shabelle and Banadir regions (Shabelle Riverine, Shabelle Agro Pastoral and Mogadishu IDPs). A total number of 1 868 children of 6-59 months were assessed from 1 314 households.

The *Gu* 2016 assessment findings are shown in Table 22 and 23 but key highlights are described below:

Key Findings:
Acute Malnutrition Prevalence

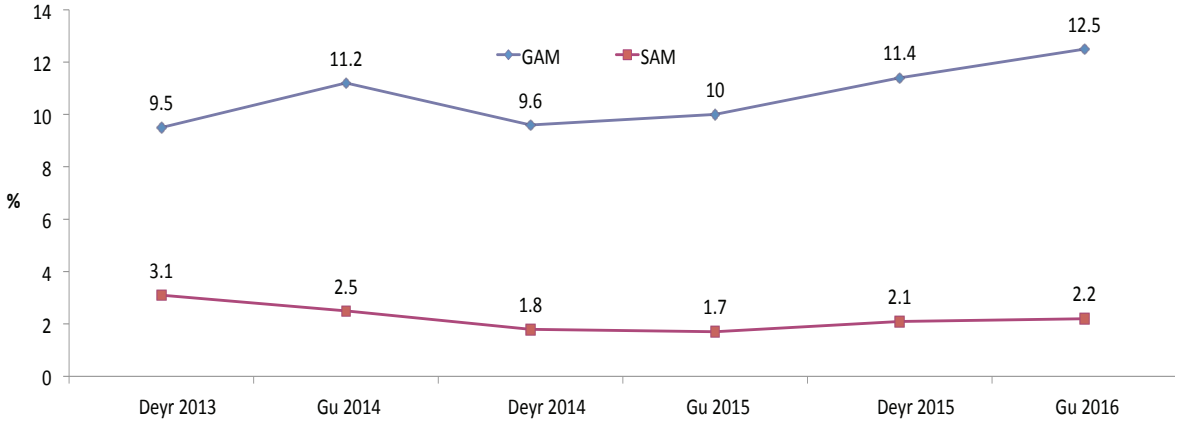
Shabelle Agro Pastoral livelihood recorded a GAM prevalence of 14.5 percent and a SAM prevalence of 2.4 percent in *Gu* 2016 assessments indicating a sustained Serious GAM phase since *Gu* 2015 but shows improvement from Serious to Alert phase in SAM prevalence (Figure 39).

Figure 39: GAM and SAM trends in Shabelle Agropastoral



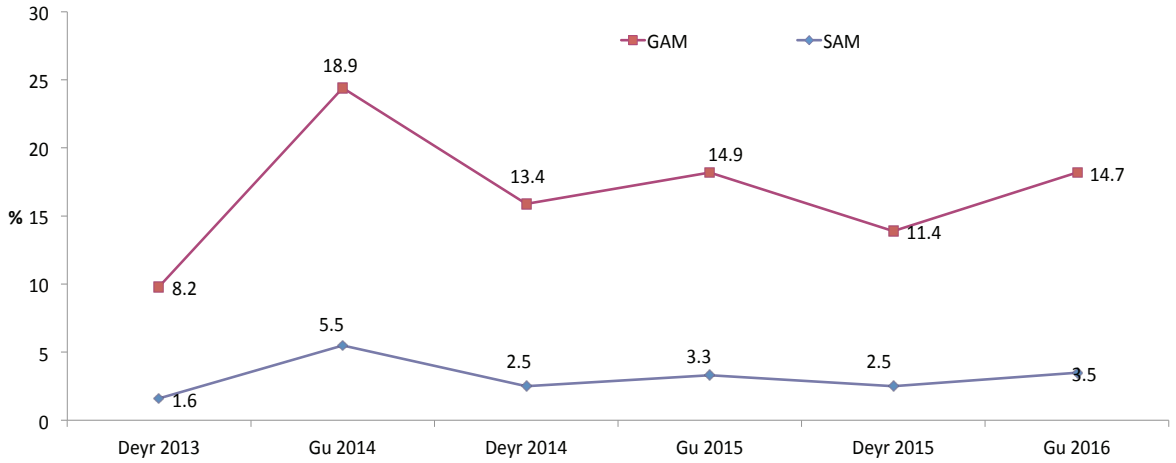
Shabelle Riverine livelihood also recorded a Serious phase of GAM prevalence of 12.5 percent and SAM prevalence of 2.2 percent in the *Gu* 2016 assessments. This malnutrition level has been sustained since *Gu* 2015 due to water scarcity, low crop production, reduced milk availability, limited access to health care and insecurity. The figure below shows the trends of GAM and SAM among the Shabelle Agro Pastoral livelihood (Figure 40).

Figure 40: GAM and SAM trends in Shabelle Riverine



Mogadishu IDPs recorded a GAM prevalence of 14.7 percent and SAM prevalence of 3.5 percent indicating a Serious level that has been sustained since *Gu* 2015. Although there has been a slight deterioration in GAM (11.4%) and SAM (2.5%) from *Deyr* 2015 the difference is not statistically significant (p>0.05). The sustained Serious level is due to increased outbreaks of AWD and measles and decline in humanitarian assistance among other factors. Figure 41 shows the trends of GAM and SAM among the Mogadishu IDPs.

Figure 41: GAM and SAM trends among Mogadishu IDPs



Stunting and Underweight Prevalence

During the *Gu* 2016 assessments, all the Shabelle and Banadir regions recorded low stunting prevalence (<20%) with Shabelle Agro Pastoral recording 7.5 percent Shabelle Riverine (5.3%) and Mogadishu IDPs (12.5%). Low stunting prevalence has remained stable for all surveyed populations since *Gu* 2015.

Medium or moderate levels of underweight have been recorded among Shabelle Agro Pastoral livelihoods (14.7%) while Shabelle Riverine recorded low levels of underweight prevalence (9.7%). Shabelle Riverine shows improvement in underweight from Medium to low levels when compared with *Gu* 2015 but this change is not statistically significant (p>0.05). Mogadishu IDPs recorded Medium levels of underweight prevalence (17.2%) which has been sustained since *Gu* 2015.

Mortality

The crude mortality rates (CMR) and the under-five mortality rates (U5MR) of Shabelle Agro Pastoral and Shabelle Riverine were both at Acceptable levels with < 0.5 and < 1/10,000/day. Mogadishu IDPs on the other hand showed Alert levels of both CMR (0.33) and U5MR (0.99).

Morbidity

Both Shabelle regions recorded slight increase in morbidity levels with Shabelle Agro Pastoral recording 36.2 percent and Shabelle Riverine recording 28.7 percent compared to *Gu* 2015 but the deterioration of the situation is not statistically significant (p>0.05). Mogadishu IDPs show statistically significant (p<0.05) deterioration of morbidity levels of 44.6 percent from 29.7 percent in *Deyr* 2015. This is due to increased cases of AWD and measles outbreaks.

Immunization Coverage

The immunization coverage for Vitamin A, measles and Polio vaccination was very low during the *Gu* 2016 assessments conducted in Shabelle. Shabelle Agro Pastoral and Riverine had < 20% coverage for both Vitamin A supplementation and measles vaccination coverage which has remain unchanged since *Gu* 2015. Mogadishu IDPs have recorded immunization coverage of <40% for Vitamin A supplementation, measles coverage and Polio vaccination. These values are way below the SPHERE standards of 95% for Vitamin A supplementation and polio vaccination; and 90% for measles vaccination coverage.

Nutritional Status of Wmen of Reproductive Age Groups (Muac<23.0cm)

Acceptable levels of malnutrition among the pregnant and lactating women (MUAC<23.0 cm) were recorded during the *Gu* 2016 assessments with Shabelle Agro Pastoral (7.6%) and Shabelle Riverine (7.5%), in which these Acceptable levels have been sustained since *Deyr* 2015. Mogadishu IDPs also recorded Acceptable levels (7.1%) of malnutrition among pregnant and lactating women (MUAC<23.0cm). This shows a slight improvement from the Alert phase recorded in *Deyr* 2015 but the change between the two surveys is not statistically significant (p>0.05).

Current Food Security Situation

In *Gu* 2016, the acute food insecurity situation in rural livelihoods of Shabelle regions (Lower and Middle) has worsened since post-*Deyr* 2015. In July 2016, Shabelle Riverine was classified as Stressed (IPC Phase 2) and this situation is seen to deteriorate since *Deyr* 2015/16. Shabelle Agro Pastoral was also categorized as Stressed (IPC Phase 2) acute food insecurity phases. The situation in these areas remain Stressed due to below average rainfall performance (-10% to -25%) in this livelihood, decreased maize price and no stocks for poor households.

Mogadishu IDPs have been classified as Crisis (IPC Phase 3) acute food insecurity with about 370 000 people in need. Crisis phase has been sustained since *Deyr* 2013/14. Contributing factors to this sustained Crisis phase include; most of the settlers have only one income source where most of their expenditure goes to food and about 30 percent are either using medium or moderate coping strategies.

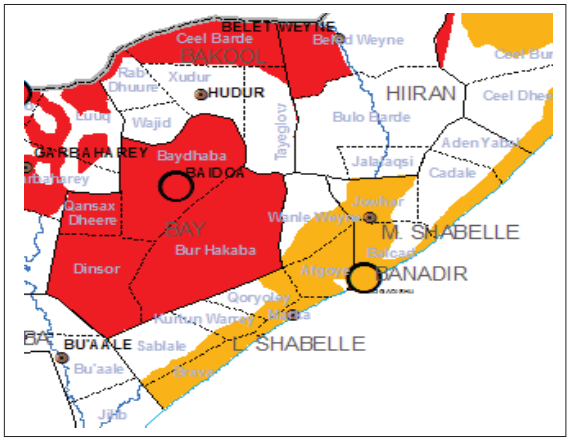
Nutrition Outlook

The current nutrition situation during the *Gu* 2016 assessments reveal sustained Serious levels of GAM prevalence among the Shabelle Agro Pastoral (14.5%), Shabelle Riverine (12.5%) and Mogadishu IDPs (14.7%). The SAM prevalence of Shabelle Agro Pastoral (2.4%) and Shabelle Riverine (2.2%) sustained an Alert phase and this has been the case since *Deyr* 2015. Mogadishu IDPs recorded a 3.5 percent SAM prevalence which indicates Serious phase and this phase has been sustained since Deyr 2015. These sustained phases in all the livelihoods could due to high morbidity outbreaks of AWD and measles, poor public health facilities, poor food security conditions in the area and possible displacements and evictions. Current reports on AWD/Cholera outbreaks by the WHO have also linked these outbreaks to contamination of water sources as a result of flooding of the river banks of Shabelle.

For the coming three months (August-October 2016), the nutrition situation in Shabelle Riverine is likely to remain Serious while both Shabelle Agro Pastoral and Mogadishu IDPs are likely to deteriorate from Serious to Critical. The situation among these livelihoods is in dire need of health and humanitarian assistance in order to help reduce morbidity among other factors that could help alleviate the situation (Figure 42).

Figure 42: Nutrition situation and Outlook in Middle and Lower Shabelle regions

Current Nutrition Situation - Jul 2016



Projected Nutrition Situation (Aug-Oct 2016)

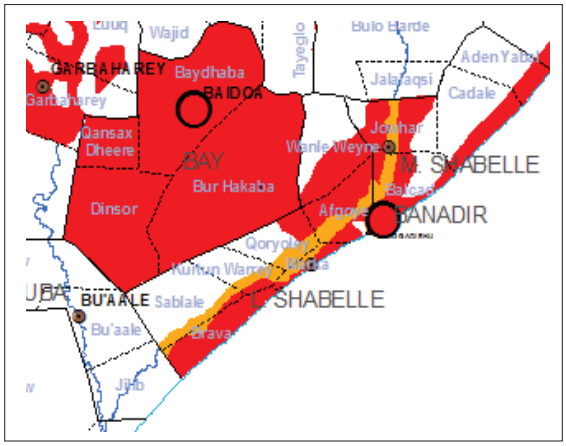


Table 23: Key nutrition finding among the Shabelle livelihoods - Gu 2016

	Shabelle AgroPastoral		Shabelle Riverine	
	Clusters : 30 (N=578: Boys=302; Girls=276)		Clusters : 30 (N=601: Boys=300; Girls=301)	
Indicator	% (CI)	Changes from Deyr 2015	% (CI)	Changes from Deyr 2015
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	14.5 (11.0-19.0) 15.6 (10.7-22.1) 13.4 (9.4-18.7)	Sustained	12.5 (8.6-17.7) 15.3 (10.5-21.8) 9.6 (5.8-15.5)	Sustained
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	2.4 (1.2-4.9) 3.3 (1.3-8.3) 1.4 (0.5-3.8)	Sustained	2.2 (1.3-3.7) 3.3 (1.8-6.1) 1.0 (0.2-4.3)	Sustained
Mean of Weight for Height Z Scores	-0.73±1.13		-0.64±1.11	
Oedema	n=1	0.2%	0.0%	
Proportion with MUAC<12.5 cm or oedema) Boys Girls	11.4 (8.3-15.5) 11.9 (8.2-16.9) 10.9 (7.4-15.7)	Sustained	7.9 (5.0-12.3) 7.5 (4.7-11.7) 8.3 (4.4-15.0)	Sustained
Proportion with MUAC<11.5 cm or oedema Boys Girls	0.9 (0.3-2.3) 0.6 (0.2-2.6) 1.1 (0.4-3.3)	Sustained	1.3 (0.7-2.4) 1.3 (0.5-3.4) 1.3 (0.5-3.5)	Sustained
Stunting (HAZ<-2) Boys Girls	7.5 (5.1-11.0) 12.3 (8.3-17.7) 2.2 (1.0-4.7)	Sustained	5.3(3.2-8.6) 9.4(5.4-15.9) 1.0(0.3-3.1)	Sustained
Severe Stunting (HAZ<-3) Boys Girls	1.0 (0.2-4.1) 1.9 (0.5-7.7) 0.0 (0.0-0.0)	Sustained	0.3 (0.0-2.5) 0.7 (0.1-4.9) 0.0 (0.0-0.0)	Sustained
Underweight (WAZ<-2) Boys Girls	14.7 (10.9-19.6) 19.7 (14.1-26.7) 9.1 (5.4-14.9)	Sustained	9.7 (6.9-13.4) 13.4 (9.9-17.8) 6.0 (3.4-10.4)	Sustained
Crude deaths, per 10,000 per day (retrospective for 160 days)	0.32 (0.18-0.58)	Sustained	0.34 (0.20-0.57)	Sustained
Under five deaths, per 10,000 per day (retrospective for 160 days)	0.56 (0.24-1.30)	Sustained	0.44 (0.17-1.16)	Sustained
Morbidity Boys Girls	36.2 (27.2-45.3) 34.7 (25.9-43.6) 38.0 (27.4-48.7)	Sustained	28.7 (19.8-37.7) 28.0 (19.1-36.9) 29.4 (18.5-40.4)	Sustained
Diarrhoea Boys Girls	9.7 (6.4-13.0) 9.6 (5.7-13.5) 9.8 (5.8-13.7)	Sustained	7.1 (3.8-10.4) 8.8 (3.2-14.4) 5.3 (2.7-7.9)	Sustained
Pneumonia Boys Girls	6.1 (3.3-9.0) 6.4 (2.8-10.1) 5.8 (2.7-8.9)	Sustained	3.1 (1.0-5.2) 2.0 (0.0-4.2) 4.3 (1.2-7.4)	Sustained
Fever Boys Girls	21.1 (14.1-28.1) 19.0 (12.6-25.3) 23.6 (14.8-32.3)	Deteriorated	19.0 (10.0-28.1) 16.9 (8.9-25.0) 21.2 (10.2-32.2)	Sustained
Measles Boys Girls	0.5 (0.0-1.1) 0.6 (0.0-1.6) 0.3 (0.0-1.1)	Sustained	0.2 (0.0-0.5) 0.3 (0.0-1.0) 0.0 (0.0-0.0)	Sustained
Vitamin A Supplementation Boys Girls	19.8 (8.2-31.3) 17.4 (6.3-28.4) 22.5 (8.5-36.4)	Sustained	18.6 (7.2-29.9) 18.2 (7.0-29.5) 18.9 (6.7-31.1)	Sustained
Measles Vaccination Boys Girls	6.3 (0.0-13.4) 4.8 (0.0-10.4) 8.0 (0.0-17.3)	Deteriorated	9.9 (1.2-18.5) 10.4 (1.9-19.0) 9.3 (0.0-18.7)	Deteriorated
Polio Immunization Boys Girls	41.5 (26.6-56.5) 37.3 (22.3-52.3) 46.4 (30.4-62.3)	Sustained	61.4 (47.9-74.9) 60.0 (45.1-74.7) 62.9 (49.9-75.9)	Sustained
Women Nutrition and Immunization Status				
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	2.7 (0.0-8.1)	Sustained	1.1 (0.0-2.8)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	7.6 (0.0-15.4)	Sustained	7.5 (3.8-11.1)	Sustained
Food Security Indicators				
Proportion who reported to have consumed <4 food groups	0.0 (0.0-0.0)		0.0 (0.0-0.0)	
Mean CSI	19.0 (16.6-21.4)		12.1 (10.7-13.5)	
OVERALL NUTRITION SITUATION	**Serious**		**Serious**	

Table 24: Key nutrition findings among the Mogadishu IDPs - Gu 2016

	Mogadishu IDPs Clusters : 40 (N=689: Boys=349; Girls=340)	
Indicator	% (CI)	Change from Deyr 2015
Child Nutrition Status		
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	14.7 (11.6-18.4) 19.2 (14.8-24.5) 10.0 (6.7-14.7)	Sustained
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	3.5 (2.4- 5.0) 5.4 (3.5- 8.4) 1.5% (0.5- 4.1)	Sustained
Mean of Weight for Height Z Scores	-0.87±1.08	
Oedema	0.0	Improved
Proportion with MUAC<12.5 cm or oedema) Boys Girls	6.2 (3.9- 9.8) 6.8 (4.1-11.0) 5.6 (3.1- 9.7)	Sustained
Proportion with MUAC<11.5 cm or oedema Boys Girls	1.4 (0.7- 3.0) 2.0 (1.0- 3.9) 0.9 (0.3- 2.7)	Sustained
Stunting (HAZ<-2) Boys Girls	12.4 (8.4-17.8) 19.1 (13.6-26.2) 5.6 (2.8-11.0)	Sustained
Severe Stunting (HAZ<-3) Boys Girls	2.6 (1.2- 5.7) 3.8 (1.6- 8.8) 1.5 (0.6- 3.4)	Sustained
Underweight (WAZ<-2) Boys Girls	17.2 (12.8-22.8) 25.7 (19.2-33.5) 8.5 (5.7-12.6	Sustained
Death Rates		
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.33 (0.16-0.70)	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.99 (0.37-2.65)	Sustained
Morbidity Boys Girls	44.6 (38.1-51.1) 46.0 (37.3-54.8) 43.1 (36.8-49.4)	Deteriorated
Diarrhoea Boys Girls	10.5(6.5-14.5) 10.7(6.4-15.1) 10.3(6.0-14.5)	Sustained
Pneumonia Boys Girls	11.2 (7.4-15.1) 12.1(7.3-17.0) 10.3(6.0-14.5)	Sustained
Fever Boys Girls	35.5(28.3-42.7) 37.3(28.5-46.1) 33.7(26.8-40.6)	Deteriorated
Measles Boys Girls	3.0(1.0-5.1) 3.4(0.6-6.2) 2.7(0.6-4.6)	Sustained
Vitamin A Supplementation Boys Girls	39.3(29.1-49.4) 41.5(30.3-52.7) 36.9(26.4-47.5)	Sustained
Measles Vaccination Boys Girls	27.8(20.2-35.3) 29.1(20.2-38.0) 26.4(18.3-34.4)	Sustained
Polio Immunization Boys Girls	34.8(25.6-44.1) 32.2(22.9-41.5) 37.5(27.0-48.1)	Deteriorated
Women Nutrition and Immunization Status		
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	1.64 (0.0-4.1)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	7.1(2.6-11.7)	Sustained
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	 16.7 (11.3-22.2) 18.6 (12.6-24.6) 24.9 (18.9-30.9) 39.8 (32.2-47.3)	Sustained
Public Health Indicators (HH)		
Household with access to sanitation facilities	82.5 (75.2-89.9)	Sustained
Household with access to safe water	77.3 (70.3-84.3)	Deteriorated
Proportion who reported to have consumed <4 food groups	1.4 (0.0-2.4)	Sustained
Household's Main Food Source- Purchase	98.5 (96.7-100.0)	Sustained
Mean CSI	66.3 (61.8-70.8)	Deteriorated
Overall Nutrition Situation	**Serious**	

Figure 39: Trends of Stunting and Underweight in Beledweyne

4.4.4: HIRAN REGION

Prevalence of Acute Malnutrition in Beledweyne District

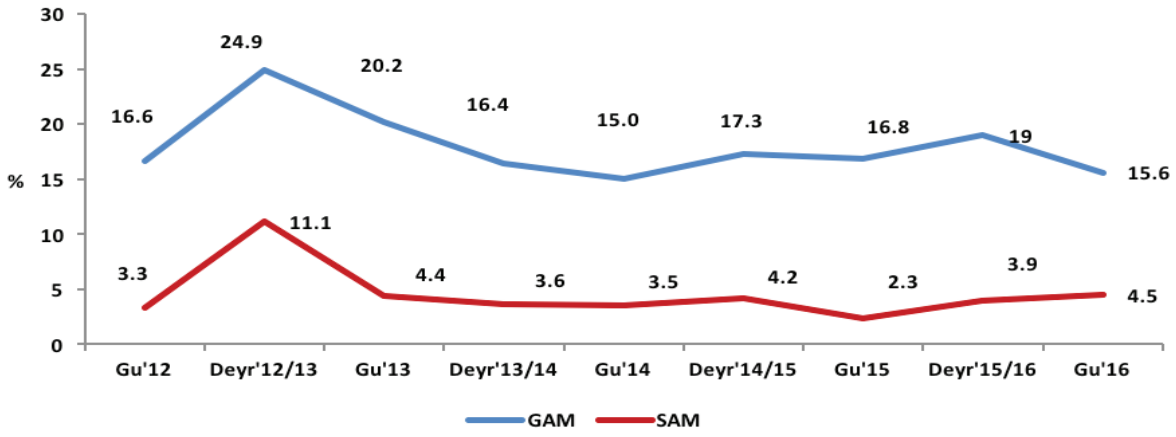
In *Gu* 2016 assessment the nutrition assessment conducted in Beletweyne District which showed a GAM prevalence of 15.6 percent and a SAM prevalence of 4.5 percent, indicating Critical levels.

The *Gu* 2016 assessment findings are shown in Table 24 but key highlights are described below:

Trends in Acute Malnutrition

Beledweyne District: For the past four years, from *Gu* 2012 to *Gu* 2016, the prevalence of acute malnutrition in Beletweyne district has sustained at Critical levels (Figure 43). The *Gu* 2016 survey reported deterioration in the prevalence of SAM from Serious levels (3.9%) in *Deyr* 2015/16 to Critical levels (4.5) in current *Gu* 2016. The sustained Critical nutrition situation can be attributed to the complex emergency situation of the region impacted by the ongoing conflicts between Somali National Army supported by AMISOM and insurgents, recurrent clan based conflicts and population displacement, recurrent droughts and floods that led to destruction of farm land, food and cash crops, destruction and blockage of roads, and high morbidity levels in the area.

Figure 43. Trends in Acute Malnutrition in Beletweyne



Stunting and underweight prevalence

The prevalence of stunting has improved from moderate prevalence level (22.3%) in last Deyr 2015 to low prevalence level (15.7%) in Gu 2016 and the prevalence level deterioration observed in *Gu* 2015 (30.8%) The underweight prevalence for Beletweyne District was (16.6%) representing an improvement from high level (23.6%) to moderate prevalence rate seen in *Deyr* 2015.

Mortality

Acceptable CMR 0.18/10 000/day and Serious U5MR 0.56/10 000/day were observed among Beletweyne District. CMR was stable when compared to *Gu* 2015 (0.4/10 000/day) and *Deyr* 2015 (0.30/10 000/day) with Acceptable levels. The U5MR also shows improvement when compared to Serious levels in Gu' 2015 (1.24/10 000/day) and sustained Alert in Deyr 2015 (0.82/10 000/day).

Morbidity

Children who were sick with either one or more diseasesin the two weeks prior to the assessment showed an increase (38.2%) when compared to *Deyr* 2015 (35.5%) and *Gu* 2015 (25.9%).

Immunization

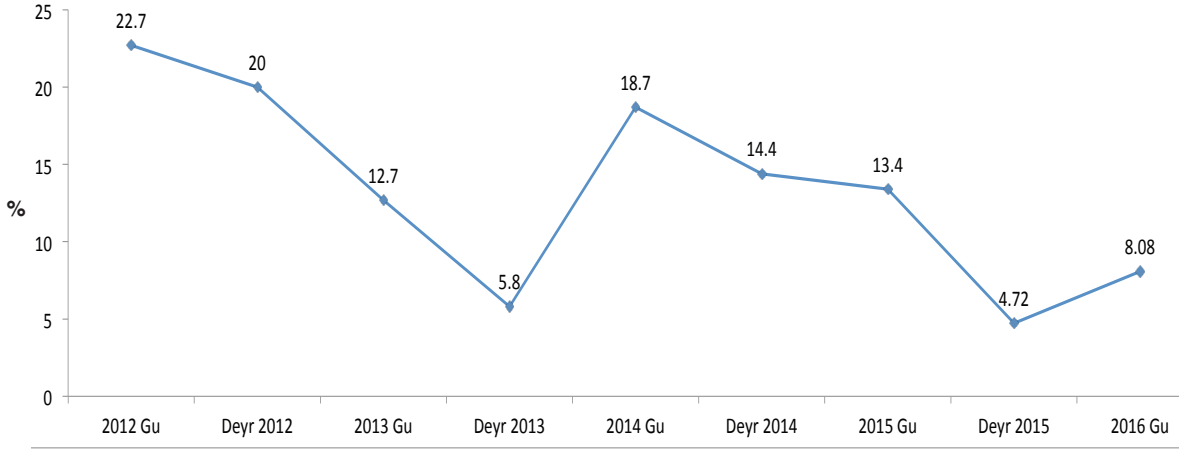
The health service provision in Beletweyne district access to program is either lacking or very limited with low coverage in essential preventive efforts such as EPI. The measles immunization coverage was only 28.1 percent, Vitamin A supplementation coverage was 17.1 percent whereas the polio coverage was 51.5 percent in the surveyed area during *Gu* 2016 assessments.

These rates are far below the recommended standards (SPHERE) and are a clear indication of the gaps in health service provision in the area, which is a contributing factor to the high morbidity rates observed in the area.

NUTRITION STATUS OF WOMEN OF REPRODUCTIVE AGE GROUPS (MUAC <23.0cm)

The prevalence of acute malnutrition among women of reproductive age in Beledweyne was sustained at Acceptable level (8.1) since *Deyr* 2015 (4.7) after it improved from the Alert level observed in *Gu* 2015 (13.4) and the Serious level in *Gu* 2014 survey (18.7) [Figure 44].

Figure 44: Trends in Nutrition status of women of reproductive age in Beletweyne District



Current Food Security Situation

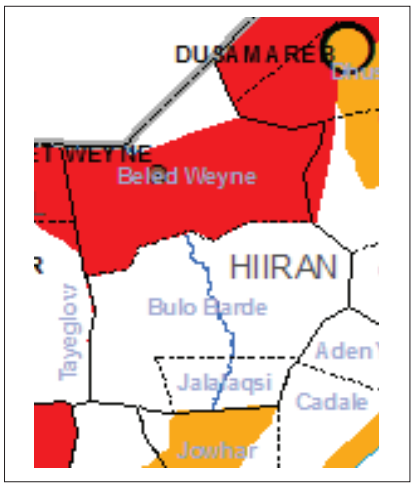
Main food sources for the riverine communities in Hiran region include own production (65% of their consumption), followed by market purchase (35%). Pastoralists rely mainly on market purchase (57%) and own production (43%) as food sources. For agro pastoralists, the main food source includes purchase (60%) and own production (40%). Poor riverine and Agro-pastoral communities earn income from crop and fodder sales, agricultural employment and self-employment, while poor pastoralists derive their income mainly from livestock and livestock product sales. The food security condition is classified as Stressed (IPC2).

Nutrition Outlook

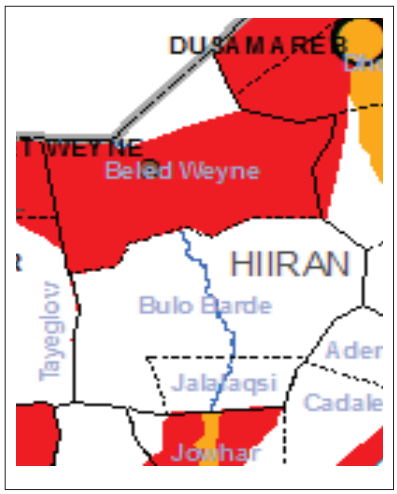
Considering the current nutrition assessment findings and food security and nutrition aggravating factors recorded and the nutrition outlook for the last couple of years, the situation is projected to remain Critical for the coming three months (August to October 2016) [Figure 45].

Figure 45: Nutrition Situation and Outlook in Hiran region

Current Nutrition Situation - Jul 2016



Projected Nutrition Situation (Aug-Oct 2016)



Hotspots intervention area in Hiran region

Beletweyne district has remained hot spots for acute malnutrition since *Gu* 2012. Sustained Critical GAM prevalence, high morbidity and extremely low or lack of preventive, promotive and curative health service provision have been recorded. In Beletweyne District the key aggravating factors are mainly public health indicators. The most important contributing factors are mainly high incidence of morbidity, high incidence of acute watery diarrhea (29.3%). Public health programs such as water and sanitation, EPI program, and treatment service will likely contain or reverse the high prevalence of acute malnutrition.

Table 25. Summary of Key Nutrition finding in Beledweyne district, Hiran Region, Gu 2016

Season	**Post Gu' 2016**	
Indicators	**Beletweyne: plausibility = 4**	
	Clusters : 27 (N= 512; Boys=238; Girls=274)	
Indicator	N	()
Child Nutrition Status		
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	15.6 (12.4-19.5) 16.4 (11.4-22.9) 15.0 (11.2-19.7)	Sustained
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	4.5 (2.7- 7.4) 6.7 (3.7-12.0) 2.6 (1.2- 5.4)	Sustained
Mean of Weight for Height Z Scores	-0.98±1.03	
Oedema Boys Girls	1.77 (0.23-3.32) 1.97 (-0.27-4.22) 1.61 (-0.84-4.07)	Sustained
CDR	0.18 (0.07-0.44)	Sustained
U5DR	0.56 (0.11-2.85)	Sustained
Stunting Boys Girls	15.7 (10.9-22.2) 19.7 (12.8-28.9) 12.3 (7.5-19.6)	Sustained
Severe stunting Boys Girls	2.7 (1.3- 5.5) 4.2 (1.7- 9.8) 1.4 (0.4- 4.8)	Sustained
Underweight Boys Girls	16.6 (12.1-22.3) 19.5 (14.5-25.7) 14.1 (8.6-22.3)	Sustained
Severe underweight Boys Girls	3.5 (2.1- 5.9) 3.8 (2.0- 7.2) 3.2 (1.5- 6.7)	Sustained
MUAC<125mm Boys Girls	6.7 (4.5- 9.9 95) 6.2 (4.0- 9.6 95) 7.1 (3.9-12.6 95)	Sustained
MUAC<115mm Boys Girls	2.3 (1.3- 4.1) 2.5 (1.0- 6.0) 2.1 (1.0- 4.4)	Sustained
Morbidity Boys Girls	38.27 (34.44-42.12) 36.84 (28.37-45.31) 39.46 (33.45-45.47)	

Diarrhoea Boys Girls	23.08 (19.24-26.92) 22.37 (13.81-30.93) 23.67 (16.10-31.22)	Sustained
Pneumonia Boys Girls	13.31 (11.14-15.49) 13.16 (8.45-17.87) 13.44 (9.89-16.99)	Sustained
Fever Boys Girls	29.3 (25.93-32.65) 30.26 (22.99-37.54) 28.50 (22.38-34.61)	Sustained
Measles Boys Girls	0.29 (-0.33-0.92) 0.65 (-0.71-2.03) 0.00 (00.00-00.00)	Sustained
Polio Vaccination Boys Girls	51.48 (47.06-55.89) 48.03 (39.67-56.39) 54.30 (46.19-62.41)	Sustained
Vitamin A Vaccination Boys Girls	17.16 (13.69-20.63) 16.45 (9.90-23.00) 17.74 (13.10-22.38)	Sustained
Measles Vaccination Boys Girls	28.11 (24.54-31.68) 26.32 (22.04-30.59) 29.57 (21.85-37.28)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	1.01 (-0.46-2.49)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	11.2 (5.76-16.57)	Sustained
HHDDs <4 fd gps	1.0	Sustained
FCS	11 (Poor and borderline)	Sustained
CSI	14.9	Sustained
Overall Nutrition Situation	**Critical**	

4.4.5: BAY AND BAKOOL REGIONS

FSNAU in collaboration with partners operating in Bay and Bakool pastoral have conducted three integrated food security and nutrition assessments. The assessments covered rural livelihood zones of Bay Agro-pastoral and Bakool pastoral and Baidoa IDP settlement. A total of 1 999 Children aged 6-59 months old (1 034 boys and 965 girls) were assessed from 1 233 households.

The *Gu* 2016 assessment findings are shown in Table 25 and 26 but key indicators are summarized below.

Prevalence of Acute Malnutrition

According to post *Gu* 2016, findings all of the three surveyed populations recorded Critical levels of GAM: Bay agro-pastoral (18.1%), Bakool pastoral (19.1%) and Baidoa IDPs (18.0%).

Key highlights

- **Bay agro-pastoral:** In *Gu* 2016 assessment the nutrition assessment conducted in Bay Agro-pastoral shows a GAM and SAM prevalence of 18.1% and 4.1% respectively, indicating Critical levels. Critical level of GAM has sustained since *Deyr* 2015, however, just one year ago the nutrition situation in the area was labeled as Serious (14.0%).

- Compared to *Gu* 2015 (14.0%) GAM there has been a deterioration in nutrition situation in Bay agropastoral, but when compared to *Deyr* 2015, it shows a sustained nutrition situation. The SAM prevalence in *Gu* 2016 (4.1%) is Critical level when compared to Serious levels noted in *Gu* 2015 (2.8%). This suggests a deterioration in the nutrition situation. The sustained Critical levels of nutritional situation in Bay Agro Pastoral are mainly attributed to limited humanitarian intervention; poor health services facilities, poor water and sanitation facilities and recurrent acute watery diarrhea (AWD) and measles outbreaks.

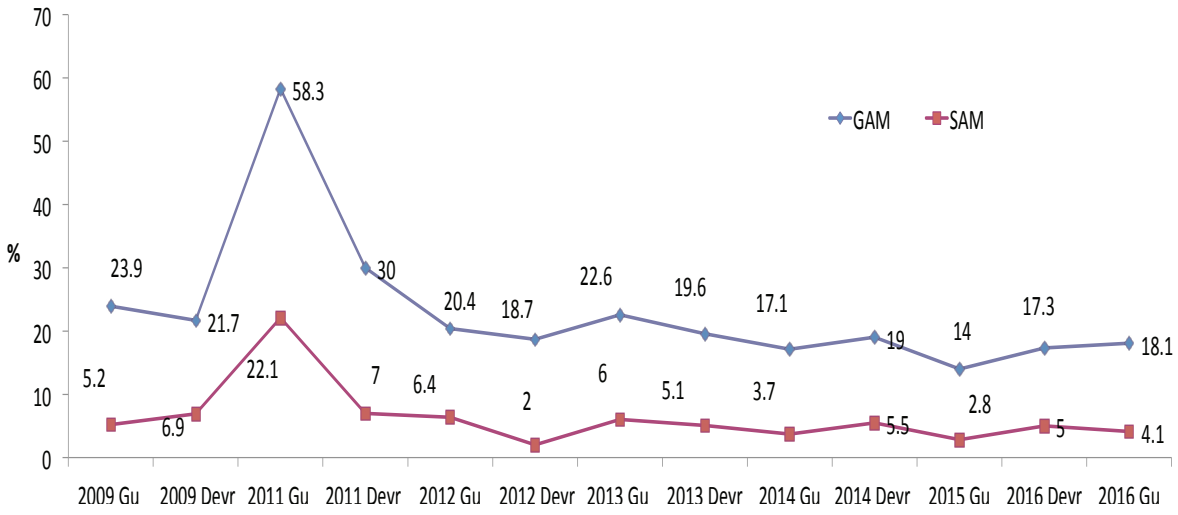
- **Bakool pastoral:** during Post *Gu* 2016 assessment, Bakool pastoral livelihood recorded Critical levels of GAM and SAM prevalence (19.1% and 5.0% percent respectively). Compared to *Gu* 2015 this represents a statistically significant ($p<0.05$) deterioration and phase change when compared to Alert GAM prevalence reported in *Gu* 2015.

- **Baidoa IDPs:** in *Gu* 2016, Baidoa IDPs recorded Critical nutrition situation for both GAM (18.0%) and SAM (4.3%). The sustained critical levels have been observed since *Gu* 2015. This deterioration is mainly linked to limited humanitarian intervention, poor health services facilities, poor water and sanitation facilities and recurrent Acute Watery Diarrohea (AWD) and measles outbreaks.

Trends in Acute Malnutrition

Bay Agro-pastoral: The *Gu* 2016 nutrition assessments conducted in July recorded high acute malnutrition prevalence of 18.1 percent, which indicates Critical level, sustained as over the last two *Gu* seasons. The Critical level noted in *Gu* 2014 (17.1%) and *Gu* 2013 (22.6%), but with the exception of *Gu* 2015 (14%) which was labeled as Serious nutrition situation. A Similar Critical level of severe acute malnourished trend pattern was also seen in Bay agro-pastoral, the SAM prevalence also indicates that there is a sustained Critical (4.1%) nutrition situation when compared to *Deyr* 2015 (5%). [Figure 46].

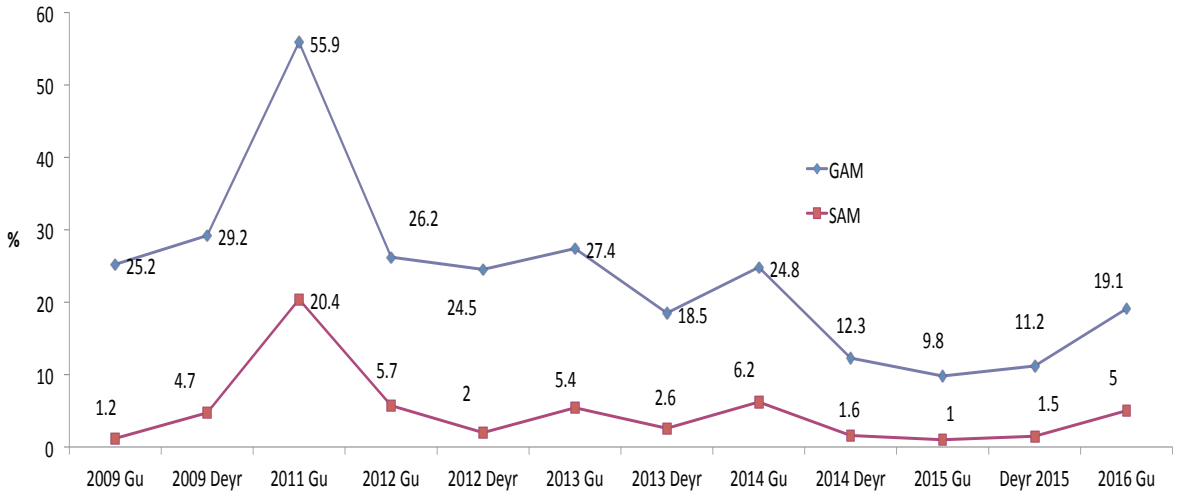
Figure 46: GAM and SAM Trends in Bay Agro-pastoral Livelihood



Trends in Acute Malnutrition-Bakool Pastoral:

Serious to Critical levels of acute malnutrition were observed with the exception of *Gu* 2015 (9.8%). The deterioration of the nutrition situation in Bakool pastoral is mainly linked to low immunization status such as Vitamin A (5.2 %) and measles (5.1%), seasonal morbidity (19.2 %).

Figure 47: Trends in Acute Malnutrition in Bakool Pastoral Livelihood



Stunting and Underweight Prevalence

An increase in stunting prevalence has been noted among Bay agro-pastoral livelihood (32.6%) when compared to low prevalence in *Gu* 2015 (17%) and *Deyr* 2015 (13.6%) (Annex 6.13). A deterioration to Very High underweight prevalence (35.3%) was recorded in Bay Agro-pastoral livelihoods when compared to high underweight prevalence observed in *Gu* 2015 (20.4%) and *Deyr* 2015 (20.4%) (Annex 6.14). This suggests a deterioration of both stunting and underweight prevalence which is attributed to recurrent Acute Watery diarrhoea, measles outbreak and seasonal morbidity. Low stunting (2.8%) and medium underweight (13.2%) levels were observed in Bakool pastoral livelihood. Baidoa IDPs had sustained high levels (32.3 %) of stunting and very high levels of underweight (35.3%).

Mortality

Serious CMR 0.62/10 000/day and Alert U5MR 0.65/10 000/day were observed among Bay Agro-pastoral population livelihoods. Deterioration was noted in CMR when compared to Acceptable levels during *Gu* 2015 (0.04/10 000/day) and *Deyr* 2015 (0.45/10 000/day). The U5MR also shows deterioration when compared to Acceptable levels in *Gu* 2015 (0.32/10 000/day) and *Deyr* 2015 (0.40/10 000/day). Sustained Acceptable levels of CMR (0.00/10 000/day) and U5MR (0.00/10 000/day) were noted in Bakool pastoral when compared to Gu' 2015 with CMR (0.19/10 000/day) and U5MR (0.15/10 000/day). Sustained acceptable levels were also seen in Baidoa IDPs with CMR (0.25/10 000/day) and U5MR (0.37/10 000/day).

Morbidity

Children who were sick with either one or more diseases are two weeks prior to the assessment showed an increase in morbidity (23.3%) when compared to *Gu* 2015 (29.1%) and *Deyr* 2015 (20.4%). In Bakool pastoral 19.2 percent of morbidity was noted while in Baidoa IDPs, sustained high morbidity rate (37.4%) when compared to *Gu* 2015 (46.8%).

Immunization coverage

The nutrition assessments conducted in post *Gu* 2016 for Bay agro-pastoral livelihood observed low Vitamin A supplementation coverage (0.8%), with similar coverage *Gu* 2015 (3.6%) and *Deyr* 2015 (7.4%). While measles vaccination among Bay Agro-pastoral recorded (16.5%) in *Gu* 2016, this shows a slight improvement from coverage reported in *Gu* 2015 (2.9%) and Deyr' 2016 (2.5%). Sustained low measles vaccination and Vitamin A supplementation has become a typical feature among Bakool pastoral livelihoods and Baidoa IDPs, with Vitamin A supplementation coverage (5.2%) and (49.8%) respectively. While measles vaccination in Bakool pastoral was 5.1 percent and Baidoa IDPs was 47.5 percent.

Nutrition Status of Women of Reproductive Age Groups (MUAC <23.0cm)

Sustained Alert levels of women of reproductive age were observed among Bay agro-pastoral (14.6%), when compared to *Gu* 2015 (13.7%) and deterioration in *Deyr* 2015 (25.6%). Bakool pastoral and Baidoa IDPs sustained an Alert and serious levels of maternal malnutrition with 14.6 and 21.3 percent respectively.

Current Food Security Situation - *Gu* 2016

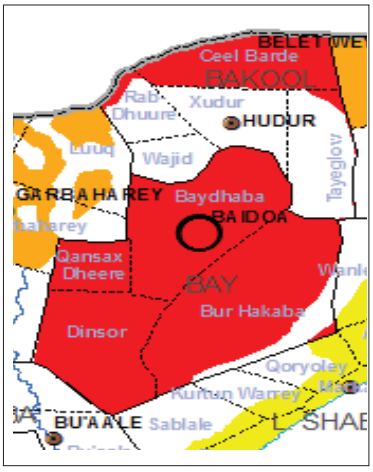
In July 2016, the current snapshot of acute food insecurity in agro pastoral and pastoral livelihoods in Bay and Bakool regions were both classified as in Stressed (IPC Phase 2) - reflecting that most of households in the area were minimally able to meet basic food needs (2100 kcal/ person per day), with insurance coping strategies. Therefore, these rural livelihoods in Bay and Bakool regions have deteriorated in food security conditions when compared to previous *Deyr* 2015/16 or *Gu* 2015. However, Sorghum high potential agro pastoral and southern inland pastoral in Bay region has been categorized as minimal (IPC Phase 1).

Nutrition Outlook

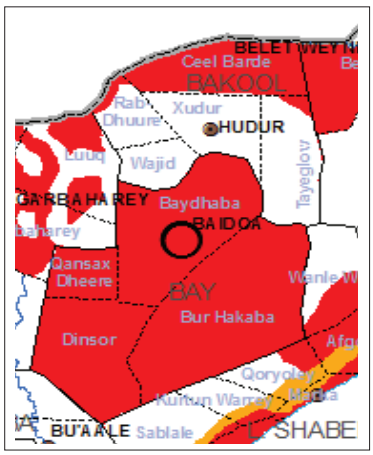
Critical levels of acute malnutrition are noted among Bakool pastoral (19.1%), Baidoa IDPs are (18%) and Bay Agro-pastoral (18.1%) due to limited humanitarian assistance, low immunization status and high levels of morbidity.The nutrition situation is projected to sustain as Critical in Bakool pastoral Bay Agro-pastoral and Baidoa IDPs between August to October 2016 due to civil insecurity, limited humanitarian interventions, increase morbidity due to reduced access to safe water.

Figure 48: Nutrition Situation and Outlook in Bay and Bakool regions

Current Nutrition Situation - Jul 2016



Projected Nutrition Situation (Aug-Oct 2016)



Hot Spot Intervention Area in Bay and Bakool Region

In the *Gu* 2016 assessments, the Bay agro-pastoral and Bakool pastoral livelihoods and Baidoa IDPs recorded Critical levels of GAM and SAM. Therefore, they are current hotspots for acute malnutrition. In addition, high prevalence of stunting (32.6%) and underweight (35.3%) as well as the very critical level of maternal malnutrition (28.7%) in Bay agropastoral requires urgent attention. Consequently, the vulnerable children of Bay agro-pastoral livelihood and Baidoa IDPs, require nutrition specific programs as well as nutrition sensitive interventions which integrate food, health, hygiene, sanitation and care practices to prevent further deterioration of the nutrition situation.

Table 26: Summary of Key Nutrition Finding Bakool Pastoral and Bay Agro-pastoral - Gu 2016

	Bakool pastoral		**Bay Agro-pastoral**	
	Clusters: 35 (n= 561; Boys= (284 ; Girls=277)		**Clusters: 30 (n=680; Boys=364; Girls=316)**	
Indicator	% (CI)		% (CI)	
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	19.1 (14.3-24.9) 22.9 (16.3-31.2) 15.2 (10.7-21.0)	Deteriorated	18.1 (14.1-22.9) 18.1 (13.3-24.3) 18.0 (13.8-23.2)	Sustained
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	5.0 (3.1- 8.0) 5.3 (2.7-10.0) 4.7 (2.7- 8.1)	Deteriorated	4.1 (2.6- 6.5) 4.1 (2.4- 7.1) 4.1 (2.1- 8.0)	Sustained
Mean of Weight for Height Z Scores	-1.17±1.02		-1.10±1.00	
Oedema	0.4		0.4	
Proportion with MUAC<12.5 cm or oedema) Boys Girls	7.1 (5.5- 9.1) 7.7 (5.2-11.4) 6.4 (4.0-10.1)	Sustained	11.5 (8.3-15.7) 10.7 (7.0-16.1) 12.5 (8.5-18.0)	Sustained
Proportion with MUAC<11.5 cm or oedema Boys Girls	1.2 (0.5- 2.7) 1.0 (0.3- 3.2) 1.4 (0.4- 4.7)	Sustained	1.8 (0.8- 4.3) 1.6 (0.8- 3.4) 2.1 (0.6- 7.5)	Sustained
Stunting (HAZ<-2) Boys Girls	2.8 (1.4- 5.4) 2.7 (1.4- 5.2) 2.9 (1.1- 7.4)	Sustained	32.6 (26.4-39.4) 38.4 (30.5-47.0) 25.9 (18.8-34.6)	Deteriorated
Severe Stunting (HAZ<-3) Boys Girls	0.2 (0.0- 1.3) 0.3 (0.0- 2.5) 0.0 (0.0- 0.0)	Sustained	13.2 (9.4-18.1) 16.0 (10.7-23.4) 10.0 (6.5-15.2)	Deteriorated
Underweight (WAZ<-2) Boys Girls	13.2 (9.5-18.1) 18.2 (12.7-25.4) 7.9 (4.7-13.0)	Sustained	35.3 (29.2-41.8) 40.0 (32.2-48.3) 29.8 (22.9-37.8)	Sustained

	Bakool pastoral		Bay Agro-pastoral	
	Clusters: 35 (n= 561; Boys= (284 ; Girls=277)		Clusters: 30 (n=680; Boys=364; Girls=316)	
Indicator	% (CI)		% (CI)	
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.0	Sustained	0.35(0.19-0.64)	sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.0	Sustained	0.37 (0.14-0.96)	Sustained
Morbidity Boys Girls	19.2 (13.3-25.1) 18.4 (12.9-23.9) 20.0 (12.3-27.6)	Sustained	23.3 (18.6-28.1) 22.7 (17.3-28.1) 24 (16.787-31.2)	Sustained
Diarrhoea Boys Girls	12.1 (7.8- 16.3) 12.1 (7.3-16.8) 12.1 (7.0-17.2)	Sustained	5.2(2.9-7.5) 4.2(1.7-6.7) 6.3(3.2-9.6)	Sustained
Pneumonia Boys Girls	7.7 (4.6- 10.9) 6.7(3.2-10.1) 8.9 (4.8-12.9)	Sustained	5.5 (2.9-8.1) 5.6 (2.6-8.5) 5.4(1.7-9.2)	Sustained
Fever Boys Girls	6.0 (2.8- 9.2) 7.3 (3.7-11.0) 4.6 (1.3-8.0)	Sustained	11.9 (9.3-14.5) 11.7(8.3-15.1) 12.1 (7.9-16.4)	Sustained
Measles Boys Girls	0.2 (0.0- 0.8) 0.3 (0.0-1.0) 0.3 (0.0-1.1)	Sustained	0.5(0.0-1.2) 0.1 (0-2.3) 0	Sustained
Vitamin A Supplementation Boys Girls	5,2 (1.4- 8.9) 4.3 (0.6-8.0) 6.1 (1.2-10.9)	Sustained	0.8 (0.0-2.1) 1.3 (0.0-3.5) 0.3 (0.0-0.9)	Sustained
Measles Vaccination Boys Girls	5.1 (1.4-8.9) 4.3 (0.6-8.0) 6.0 (1.2-11)	Sustained	16.5 (8.0-24.9) 15.5 (7.3-23.6) 17.6(8.3-26.9)	Sustained
Polio Immunization Boys Girls	7.1 (2.9 – 11.2) 6.3 (2.2-10.4) 7.8 (22.3-13.3)	Sustained	12.1 (3.7-20.3) 8.5 (1.8-15.3) 16.1(5.5-26.8)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	2.5 (0.2-4.8)	Sustained	4.5 (2-8.8)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	14.6 (9.5-19.7)	Sustained	28.7 (22.1- 35.9)	Sustained
Proportion who reported to have consumed <4 food groups	1	Sustained	4	Sustained
Mean CSI	0.2	Sustained	10.3	**Sustained**
OVERALL NUTRITION SITUATION	**Critical**		**Critical**	

Table 27: Summary of Key Nutrition Finding Baidoa IDPs - Gu 2016

	Baidoa IDPs	
	Clusters : 30, (N=760: Boys=385; Girls=375)	Outcome
Indicator	% (CI)	
Child Nutrition Status		
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	18 (15.2-21.1) 21 (17.2-25.4) 14.9 (11.6-18.9	Sustained
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	4.3 (2.9- 6.4) 7 (4.3-11.1) 1.6 (0.8- 3.3l)	
Mean of Weight for Height Z Scores	-1.00±1.07	
Oedema	1.2	
Proportion with MUAC<12.5 cm or oedema) Boys Girls	13.7 (11.3-16.6) 13.8 (10.4-18.1 13.6 (10.6-17.4)	Sustained
Proportion with MUAC<11.5 cm or oedema Boys Girls	2.7 (1.6- 4.5) 3.1 (1.7- 5.4) 2.4 (1.2- 4.6)	Sustained
Stunting (HAZ<-2) Boys Girls	32.3 (27.0-38.2) 35.7 (30.0-42.0) 28.8 (21.9-37.0)	Sustained
Severe Stunting (HAZ<-3) Boys Girls	10.8 (8.3-14.0) 12.3 (9.3-16.1) 9.3 (6.4-13.4)	Sustained

Underweight (WAZ<-2) Boys Girls	30.1 (25.9-34.6) 34.7 (30.4-39.4) 25.3 (19.8-31.7)	Sustained
Death Rates		
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.25 (0.11-0.57)	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.37 (0.12-1.15)	Sustained
Morbidity Boys Girls	37.4 (30.5-44.6) 48.9 (29-43.6) 38.8 (31.1-46.6)	Sustained
Diarrhoea Boys Girls	13.9 (10.3-17.5) 13.8(9.4-18.2) 14.2 (10.2-18)	Sustained
Pneumonia Boys Girls	7.1 (4.4-9.8) 6.4 (3.1-9.7) 7.6 (4.1-11.1)	Sustained
Fever Boys Girls	24.2(18.1-30.3) 22.0 (15.9-28.1) 26.3 (19.2-33.3)	Sustained
Measles Boys Girls	5.5 (1.7-9.3) 5.8 (1.3-10.4) 5.2 (1.7-8.7)	Sustained
Vitamin A Supplementation Boys Girls	49.8 (40.2-59.4) 48.4(37.7-59.1) 51.5 (42.1-61.0)	Sustained
Measles Vaccination Boys Girls	47.5 (36.9-58.1) 47.9(37.3-58.5) 47.1 (35.5-58.6)	Sustained
Polio Immunization Boys Girls	83.1 (72.4- 98.2) 80.5 (71.6-89.3) 85.5 (79.4-91.50	Sustained
Women Nutrition and Immunization Status		Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	4.3 (2.7-6.7)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	21.3 (17.7-25.5)	Sustained
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	 18.2 ()14.8-22.1 20.2 (16.6-24.3) 12.6 (9.7-16.1) 49.1 (44.4-53.8)	Sustained
Public Health Indicators (HH)		Sustained
Household with access to sanitation facilities	98	Sustained
Household with access to safe water	64	Sustained
Proportion who reported to have consumed <4 food groups	5	Sustained
Household's Main Food Source- Purchase	90	Sustained
Mean CSI	48	Sustained
OVERALL NUTRITION SITUATION	**Critical**	

QNO:

2016 Post-Gu FSNAU Rural Livelihoods Nutrition and Food Security Assessment Questionnaire

(Long Version)

Household Number _____ Date_____ Team Number _____ Cluster Number _____

Cluster Name _____ City/ Town _____ District: _____ Region _____

A. HOUSEHOLD DEMOGRPHIC CHARACTERISTICS

Q1. How many members of your household permanently lived with you in the last 30 days?

To the Interviewer*: Please indicate the number of household members in the specified age category.*
Please explain to the respondents the definition of the household: "*a group of individuals, with family or other social relations among themselves, eating from the same pot and sharing common resources*"

	Adults of 15 years and above	Children between 5-14 years old	Under 5 children (0 – 59 month)	
			Less than 6 month	6-59 month
Male				
Female				

Q2. In your household, who is the main provider of food or income to buy food? 1. Men ☐ 2. Women ☐ 3. Both men and women ☐

Q3. Between the men and women in your household, who makes key decisions for and on behalf of the household members on health matters?

1=Male ☐ 2=Female ☐

B. HOUSEHOLD FOOD CONSUMPTION, COPING STRATEGIES AND HOUSEHOLD HUNGER SCALE

Q4. Household Food Consumption & Dietary Diversity: *Please describe the foods (meals and snacks) that members of your household ate or drank during the day and night at home over the past seven days[1]. Start with the first food or drink of the morning. Include wild foods e.g. game meat, honey, fruits, vegetables, leaves.*

Write down all foods and drink mentioned. When composite dishes are mentioned, ask for the list of ingredients.

Breakfast	Snack	Lunch	Snack	Dinner	Snack

When the respondent[3]'s recall is complete, fill in the food groups based on the information recorded above. For any food groups not mentioned, ask the respondent if a food item from this group was consumed	Consumed by any household member[2]	
	In the last 24 hours *0=No 1= Yes*	In the last 7 days *Number of days Consumed (Minimum=0; Maximum=7)*
1. Cereals and cereal products (*maize, ground maize, wheat, white wheat, whole meal wheat, millet, rice, white grain sorghum, red sorghum , spaghetti, bread, chapatti , macaroni, canjera)*	|____|	|____|
2. Milk and milk products *(Fresh/fermented/powdered sheep, goat, cow or camel milk, Cheese (sour milk), condensed milk, yoghurt)*	|____|	|____|
3. Vitamin A rich vegetables and tubers *(yellow fleshed pumpkins, carrots, orange sweet potatoes, yellow cassava)*	|____|	|____|
4. Dark green leafy vegetables *(amaranth, kale, spinach, , onion leaf, pumpkin leaves, cassava leaves, dark green lettuce)*	|____|	|____|
5. Other vegetables *(tomato, onion, squash, bell pepper, cabbage ,light green lettuce, white radish)*	|____|	|____|
6. Vitamin A rich fruits *(ripe mangoes, pawpaw, wild fruits such as goh, hoboh, berde, isbandlays, kabla, coasta, red cactus fruit,)*	|____|	|____|
7. Other fruit *(banana, orange, apple, coconut, custard apple, dates, unripe mangoes, grapes, guava, wild fruits and 100% fruit juices)*	|____|	|____|
8. Organ meat *(liver, kidney, heart or other organ meat)*	|____|	|____|
9. Meat and Poultry *(beef, lamb, goat, camel, wild game, such as Dik Dik, chicken, other birds such as guinea fowl and francolin)*	|____|	|____|
10. Eggs *(eggs of chicken, or eggs of fowl)*	|____|	|____|
11. Fish *(fresh or dried) and other seafood (shellfish)*	|____|	|____|
12. Legumes, nuts and seeds *(cowpeas, beans, lentils , peanut, pumpkin seed, lentil seed, sunflower seed, wild nuts)*	|____|	|____|
13. White roots and tubers (*white potatoes, cassava, arrowroot, white sweet potatoes, or foods made from roots)*	|____|	|____|
14. Oils and Fats *(cooking fat or oil, ghee, butter, sesame oil, margarine)*	|____|	|____|
15. Sweets (*sugar, honey, sweetened soda and fruit drinks, chocolate biscuit, cakes,, candies, cookies, Sugar cane and sweet sorghum)*	|____|	|____|
16. Coffee, tea and Spices (*coffee, tea, spices such as black pepper, cinnamon, ginger, cloves, salt. Condiments e.g. ketchup, soy sauce, chilli sauce)*	|____|	|____|

[1] Include foods prepared inside the home but consumed outside the home

[3] Respondent refers to the person responsible for food preparation on the recall day. For the child, refer to the mother or caregiver

Q5. In the last three months, what is the main source of foods consumed by your household?

1= Own production 2= Purchasing with cash 3=Community Gifts/Donations 4= Food aid 5= Bartering 6= Borrowing 7= Gathering 8 Other (specify) _____

Q6a. How many times did you receive cereal food aid or vouchers for food from humanitarian agencies in the last 6 months?

0=never ☐ 1= once ☐ 2= twice ☐ 3= three times ☐ 4= four times ☐ 5= five times ☐ 6= six times or more ☐

Q6b. How many times did you receive cash assistance from humanitarian agencies in the last 6 months?

0=never ☐ 1= once ☐ 2= twice ☐ 3= three times ☐ 4= four times ☐ 5= five times ☐ 6= six times or more ☐

Q7a. In the past 30 days, have there been times when people did not have enough food or money to buy food? Yes ☐ No ☐

To the Interviewer: If the answer is 'No' please move to **Q8**, *otherwise continue with the coping strategy question* **Q7b** *in the table below.*

Q4b. COPING STRATEGIES	Frequency Codes: 0 = Never (zero times/week); 1 = Hardly at all (<1 times/ week); 2 = Once in a while (1-2 times/ week); 3 = Pretty often (3-6 times/week); 4=All the time (Every day)
a) Shift to less preferred (low quality, less expensive) foods?	|___|
b) Limit the portion/quantity consumed in a meal (Beekhaamis)?	|___|
c) Take fewer numbers of meals in a day?	|___|
d) Borrow food on credit from the shop/market (Deyn)?	|___|
e) Borrow food on credit from another household (Amaah)?	|___|
f) Restrict consumption of adults in order for small children to eat?	|___|
g) Rely on food donations from relatives (Qaraabo)?	|___|
h) Rely on food donations from the clan/community (Kaalmo)?	|___|
i) Seek or rely on food aid from humanitarian agencies?	|___|
j) Send household members to eat elsewhere?	|___|
k) Beg for food (Tuugsi/dawarsi)?	|___|
l) Skip entire days without eating (Qadoodi)?	|___|
m) Consume spoilt or left-over foods	|___|

	Question (Su'aal)	Frequency (Inta jeer)	Frequency Code (Tirsiga inta-jeer)
Q5.	In the past [4 weeks/30 days] was there ever no food to eat of any kind in your house because of lack of resources to get food (Afartii toddobaad ama soddonkii maalmood ee la soo dhaafay Gurigaaga ma ka weydey raashiin la cuno, adoo waayey hanti aad ku iibsato/gadato awgeed)?	0=Never (Marna ma dhicin) 1 = Rarely/Sometimes or 1-10 times (Mar dhif ah/ mar- mar) 2 = Often or more than 10 times (inta badan)	|___|
Q6.	In the past [4 weeks/30 days] did you or any household member go to sleep at night hungry because there was not enough food (Afartii toddobaad ama soddonkii maalmood ee lasoo dhaafay adiga ama qof ka mid ah Qoyskaaga habeen Gaajo ma ku seexday, rashiinka oon idinku filleyn aw-geed)?	0=Never (Marna ma dhicin) 1 = Rarely/Sometimes or 1-10 times (Mar dhif ah/ mar- mar) 2 = Often or more than 10 times (inta badan)	|___|
Q7.	In the past [4 weeks/30 days] did you or any household member go a whole day and night without eating anything at all because there was not enough food (Afartii toddobaad ama soddonkii maalmood ee lasoo dhaafay adiga ama qof ka mid ah Qoyskaaga Gaajo ma ku joogay maalin iyo habeenkeed oo dhan adinkoon waxba cunin, cuntada oon idinku filneyn aw-geed)?	0=Never (Marna ma dhicin) 1 = Rarely/Sometimes or 1-10 times (Mar dhif ah/ mar- mar) 2 = Often or more than 10 times	|___|

C: PUBLIC HEALTH: ACCESS TO DRINKING WATER AND SANITATION FACILITIES

Q11. What is the household's main source of drinking water? *(Note for interviewer: Circle only one option which represents the main source)*

1 = Household connection
2 = Standpipe (Kiosk/Public tap/Taps connected to a storage tank)
3 = Protected Shallow well (covered with hand pump/motorized pump)
4 = Tanker
5 = Spring
6 = Bottled water
7 = Rooftop rainwater
8 = *Berkads*
9 = River/stream
10 = Dam/Pond *(Balley)*
11 = Open Shallow well

Q12. What type of toilet is used by most members of the household? *(Note for interviewer: Circle only one option which represents the main source)*

0 = No toilet is available (an open pit/open ground is used)
1 = Household latrine
2 = Communal/Public latrine
3 = Flush toilet

Date: ……..……Cluster No. …….. Team No. …….. HH No……. QNo……..

D: CHILD NUTRITION AND HEALTH

Q13-19 Feeding and immunization status of children aged 6 – 59 months in the household.

First Name	Q 13 Date of Birth -- /-- /----	Q 14 Child Age (months)	Q 15 Has child been provided with Vitamin A in the last 6 months? *(show sample)* *0= No* *1=Yes* *9=Don't know*	Q 16 Has child been immunized against measles[4] in the last 6 months? *0= No* *1=Yes* *9=Don't know*	Q 17 No of doses of polio vaccine given to the child orally? 0=none 1=one 2=two 3=three or more *9=Don't know*	Q18 Does child have immunization card? *0= No* *1=Yes*
1						
2						
3						

Q19-28 Anthropometry and morbidity for children aged 6 – 59 months in the household

First Name (same order as above)	Q19a Sex *1=Male* *2=Female*	Q19b Age (month)	Q20 Weight (kg) *To the nearest tenth of a kg*	Q21 Height (cm) *To the nearest tenth of a cm*	Q22 Oedema *0= No* *1=yes*	Q23 MUAC (cm) *To the nearest tenth of a cm* *(≥6 mo)*	Q24a Diarrhea[5] in last two weeks *0= No* *1=yes*	Q24b If yes in Q21a, for how many days did the child have diarrhea?	Q25 Pneumonia (*oof wareen/ wareento*)[6] in the last two weeks *0= No* *1=yes*	Q26 Fever[7] in the last two weeks *0= No* *1=yes*	Q27 Suspected Measles[8] in last one month *0= No* *1=yes* *9=Don't know*	Q28 Is the child currently registered in any feeding centres? *0= None* *1= SFP* *2= TFC/SC* *3= OTP* *4= Other*
1												
2												
3												

[4] Measles immunization is a shot in the upper arm given to children after 6 months of age at health clinics or by mobile health teams
[5] Diarrhea is defined for a child having three or more loose or watery stools per day
[6] ARI asked as oof wareen or wareento. The three signs asked for are chest in-drawing, cough, rapid breathing/nasal flaring and fever
[7] Fever – The three signs to be looked for are periodic chills/shivering, fever, sweating and convulsions
[8] Measles (Jadeeco): a child with more than three of these signs– fever and, skin rash, runny nose or red eyes, and/or mouth infection, or chest infection

E: MATERNAL NUTRITION AND HEALTH

Q29-35. Anthropometry (MUAC) for adult women of childbearing age (15-49 years) present at the household

S/No	First Name of mothers/adult women of child bearing age (15-49) present	Q29 Age (years)	Q30 No of doses of Tetanus vaccine received *0= None* *1= One* *2= Two* *3=Three*	Q31 MUAC (cm)	Q32 Physiological status *1= Pregnant* *2= Lactating (infant <6months)* *3= None of the above*	Q33 Did the woman sleep under the mosquito net last night *0= No* *1=yes*	Q34 Is women currently registered in 0=None 1=SFP (food) 2=MCHN (Food and Vitamins) 3=MCH - vitamins 4=Other, (specify)	Q35 Illness in last 14 days? 0= None 1= ARI 2=Diarrheal 3=Fever/Febrile 4=Joint 5=Urinary tract infection (UTI) 6=Pain in the chest 7= Pain in lower abdomen/pelvis 8=Anemia 9= Reproductive 10=Other (specify)
1								
2								
3								

Checked by Supervisor (Sign) _____

QNO:

2016 Post-Gu FSNAU Rural Livelihoods Nutrition and Food Security Assessment Questionnaire

(Short Version)

Household Number _____ **Date**_____ **Team Number** _____ **Cluster Number** _____

Cluster Name _____ **City/ Town** _____ **District:** _____ **Region** _____

A. HOUSEHOLD DEMOGRPHIC CHARACTERISTICS

Q1. How many members of your household permanently lived with you in the last 30 days?

To the Interviewer*: Please indicate the number of household members in the specified age category.*
Please explain to the respondents the definition of the household: "*a group of individuals, with family or other social relations among themselves, eating from the same pot and sharing common resources*"

	Adults of 15 years and above	Children between 5-14 years old	Under 5 children (0 – 59 month)	
			Less than 6 month	6-59 month
Male				
Female				

Q2. In your household, who is the main provider of food or income to buy food? 1. Men ☐ 2. Women ☐ 3. Both men and women ☐

Q3. Between the men and women in your household, who makes key decisions for and on behalf of the household members on health and childcare matters?

1=Male ☐ 2=Female ☐

B. HOUSEHOLD FOOD CONSUMPTION, COPING STRATEGIES AND HOUSEHOLD HUNGER SCALE

Q3. Household Food Consumption & Dietary Diversity: *Please describe the foods (meals and snacks) that members of your household ate or drank during the day and night at home over the past seven days*[1]. *Start with the first food or drink of the morning. Include wild foods e.g. game meat, honey, fruits, vegetables, leaves.*

Write down all foods and drink mentioned. When composite dishes are mentioned, ask for the list of ingredients.

Breakfast	Snack	Lunch	Snack	Dinner	Snack

When the respondent[3]*'s recall is complete, fill in the food groups based on the information recorded above. For any food groups not mentioned, ask the respondent if a food item from this group was consumed*	Consumed by any household member[2]	
	In the last 24 hours *0=No 1= Yes*	In the last 7 days *Number of days Consumed (Minimum=0; Maximum=7)*
1. Cereals and cereal products (*maize, ground maize, wheat, white wheat, whole meal wheat, millet, rice, white grain sorghum, red sorghum , spaghetti, bread, chapatti , macaroni, canjera)*	|____|	|____|
2. Milk and milk products *(Fresh/fermented/powdered sheep, goat, cow or camel milk, Cheese (sour milk), condensed milk, yoghurt)*	|____|	|____|
3. Vitamin A rich vegetables and tubers *(yellow fleshed pumpkins, carrots, orange sweet potatoes, yellow cassava)*	|____|	|____|
4. Dark green leafy vegetables *(amaranth, kale, spinach, , onion leaf, pumpkin leaves, cassava leaves, dark green lettuce)*	|____|	|____|
5. Other vegetables *(tomato, onion, squash, bell pepper, cabbage ,light green lettuce, white radish)*	|____|	|____|
6. Vitamin A rich fruits *(ripe mangoes, pawpaw, wild fruits such as gob, hobob, berde, isbandlays, kabla, coasta, red cactus fruit,)*	|____|	|____|
7. Other fruit *(banana, orange, apple, coconut, custard apple, dates, unripe mangoes, grapes, guava, wild fruits and 100% fruit juices)*	|____|	|____|
8. Organ meat *(liver, kidney, heart or other organ meat)*	|____|	|____|
9. Meat and Poultry *(beef, lamb, goat, camel, wild game, such as Dik Dik, chicken, other birds such as guinea fowl and francolin)*	|____|	|____|
10. Eggs *(eggs of chicken, or eggs of fowl)*	|____|	|____|
11. Fish *(fresh or dried) and other seafood (shellfish)*	|____|	|____|
12. Legumes, nuts and seeds *(cowpeas, beans, lentils , peanut, pumpkin seed, lentil seed, sunflower seed, wild nuts)*	|____|	|____|
13. White roots and tubers (*white potatoes, cassava, arrowroot, white sweet potatoes, or foods made from roots)*	|____|	|____|
14. Oils and Fats *(cooking fat or oil, ghee, butter, sesame oil, margarine)*	|____|	|____|
15. Sweets (*sugar, honey, sweetened soda and fruit drinks, chocolate biscuit, cakes,, candies, cookies, Sugar cane and sweet sorghum)*	|____|	|____|
16. Coffee, tea and Spices (*coffee, tea, spices such as black pepper, cinnamon, ginger, cloves, salt. Condiments e.g. ketchup, soy sauce, chilli sauce)*	|____|	|____|

[1] Include foods prepared inside the home but consumed outside the home

[3] Respondent refers to the person responsible for food preparation on the recall day. For the child, refer to the mother or caregiver

Q4a. In the past 30 days, have there been times when people did not have enough food or money to buy food? Yes ☐ No ☐

To the Interviewer: If the answer is 'No' please move to **Q5**, *otherwise continue with the coping strategy question* **Q4b** *in the table below.*

Q4b. COPING STRATEGIES	Frequency Codes: 0 = Never (zero times/week); 1 = Hardly at all (<1 times/ week); 2 = Once in a while (1-2 times/ week); 3 = Pretty often (3-6 times/week); 4=All the time (Every day)
a) Shift to less preferred (low quality, less expensive) foods?	|___|
b) Limit the portion/quantity consumed in a meal (Beekhaamis)?	|___|
c) Take fewer numbers of meals in a day?	|___|
d) Borrow food on credit from the shop/market (Deyn)?	|___|
e) Borrow food on credit from another household (Amaah)?	|___|
f) Restrict consumption of adults in order for small children to eat?	|___|
g) Rely on food donations from relatives (Qaraabo)?	|___|
h) Rely on food donations from the clan/community (Kaalmo)?	|___|
i) Seek or rely on food aid from humanitarian agencies?	|___|
j) Send household members to eat elsewhere?	|___|
k) Beg for food (Tuugsi/dawarsi)?	|___|
l) Skip entire days without eating (Qadoodi)?	|___|
m) Consume spoilt or left-over foods	|___|

	Question (Su'aal)	Frequency (Inta jeer)	Frequency Code (Tirsiga inta-jeer)
Q5.	In the past [4 weeks/30 days] was there ever no food to eat of any kind in your house because of lack of resources to get food (Afartii toddobaad ama soddonkii maalmood ee la soo dhaafay Gurigaaga ma ka weydey raashiin la cuno, adoo waayey hanti aad ku iibsato/gadato awgeed)?	0=Never (Marna ma dhicin) 1 = Rarely/Sometimes or 1-10 times (Mar dhif ah/ mar- mar) 2 = Often or more than 10 times (inta badan)	|___|
Q6.	In the past [4 weeks/30 days] did you or any household member go to sleep at night hungry because there was not enough food (Afartii toddobaad ama soddonkii maalmood ee lasoo dhaafay adiga ama qof ka mid ah Qoyskaaga habeen Gaajo ma ku seexday, rashiinka oon idinku filleyn aw-geed)?	0=Never (Marna ma dhicin) 1 = Rarely/Sometimes or 1-10 times (Mar dhif ah/ mar- mar) 2 = Often or more than 10 times (inta badan)	|___|
Q7.	In the past [4 weeks/30 days] did you or any household member go a whole day and night without eating anything at all because there was not enough food (Afartii toddobaad ama soddonkii maalmood ee lasoo dhaafay adiga ama qof ka mid ah Qoyskaaga Gaajo ma ku joogay maalin iyo habeenkeed oo dhan adinkoon waxba cunin, cuntada oon idinku filneyn aw-geed)?	0=Never (Marna ma dhicin) 1 = Rarely/Sometimes or 1-10 times (Mar dhif ah/ mar- mar) 2 = Often or more than 10 times	|___|

2016 Post-Gu FSNAU Rural Livelihoods Nutrition and Food Security Assessment Questionnaire (Short Version)

C: CHILD NUTRITION AND HEALTH

Q8-15 Anthropometry and morbidity for children aged 6 – 59 months in the household

First Name (same order as above)	Q8 Sex *1=Male 2=Female*	Q9 Age (month)	Q10 Weight (kg) *To the nearest tenth of a kg*	Q11 Height (cm) *To the nearest tenth of a cm*	Q12 Oedema *0= No 1=yes*	Q13 MUAC (cm) *To the nearest tenth of a cm (≥6 mo)*	Q14 Illness in past 14 days? No = 0 If Yes, specify (indicate ALL that apply)[4] *1=Diarrhoea 2=Pneumonia 3=Fever 4= Measles*	Q15 Vaccination in the last 6 months No = 0 If Yes, specify (indicate ALL that apply) *1=Polio 2=Vitamin A supp 3=Measles*[5]
1								
2								
3								

D: MATERNAL NUTRITION AND HEALTH

Q16-18 Anthropometry (MUAC) for adult women of childbearing age (15-49 years) present at the household

S/No	First Name of mothers/adult women of child bearing age (15-49) in the household	Q16 Age (years)	Q17 MUAC (cm)	Q18 Physiological status *1= Pregnant 2= Lactating (infant <6months) 3= None of the above*
1				
2				
3				

Checked by Supervisor (Sign) _____

[4] *Diarrhea* is defined for a child having three or more loose or watery stools per day; *Pneumonia* asked as oof wareen or wareento. The three signs asked for are chest in-drawing, cough, rapid breathing/nasal flaring and fever; *Fever* – The three signs to be looked for are periodic chills/shivering, fever, sweating and convulsions; *Measles* (Jadeeco): a child with more than three of these signs– fever and, skin rash, runny nose or red eyes, and/or mouth infection, or chest infection

[5] *Measles immunization* is a shot in the upper arm given to children after 6 months of age at health clinics or by mobile health teams

6. 2. Areas Accessed in the *Gu* 2016 Survey

Details of Gu 2016 Nutrition Assessments (N=28)		
Rural Livelihoods	**IDPs**	**Total**
South		
Bakool Pastoral	Mogadishu IDPs	**12**
Bay Agropastoral	Kismayo IDPs	
North Gedo Pastoral	Dhobley IDPs	
North Gedo Riverine	Baidoa IDPs	
Beletweyne District	Dolow IDPs	
Shabelle Agro Pastoral		
Shabelle Riverine		
North East And Central		
Hawd Pastoral	Dhusamareb IDPs	**9**
Addun Pastoral	Bossaso IDPs	
Coastal Deeh	Qardho IDPs	
Northern Inland Pastoral–Cross Cutting	Garowe IDPs	
	Galkayo IDPs	
North West		
West Golis	Hargeysa IDPs	**8**
Nw Agro-Pastoral	Burao IDPs	
Northern Inland Pastoral–Cross Cutting	Berbera IDPs	
Hawd Northwest		
Guban Pastoral		
15 SMART Surveys	**13 SMART Surveys**	**28 SMART Surveys**

6. 3. Nutrition Indicators Used

Nutrition Related Indicators	Acceptable	Alert	Serious	Critical	Very Critical
Global Acute Malnutrition (GAM) *(R) =3 IPC 2*	<5%	5- <10 %	10 to<15% or >usual and increasing	15-30% Or >usual and increasing	>30%
Mean **Weight-for-Height** Z (WHZ) scores *(R=3)*	>-0.40	-0.40 to -0.69; Stable/Usual	-0.70 to -0.99; >usual/increasing	<-1.00; >usual/increasing	
Severe Acute Malnutrition (SAM) (WHZ and edema) *(R=3)*	<1	1.1-2.4	2.5-4	4-5.6	>5.6
Crude death rate (CDR)/ 10,000/day *(R=1)*	<0.5	<0.5	0.5 to <1	1 to <2	>2
Under five death rate (U5DR)/10,000/day *(R=1)*	≤1	≤1	1 to 1.9	2 to 3.9	>4
Mid Upper Arm Circumference (MUAC) Children: (% <12.5cm): *Ref: (R=3)—FSNAU*	<5 %	5--7.4 % with increase from seasonal trends	7.5- 10.6	10.7-16.7 % or significant increase from seasonal trends	>16.7%
MUAC<11.5cm *(R=1)-FSNAU*	< 1 %	1-1.6 %	1.7-2.4 %	2.5-4 %	>4%
Morbidity Patterns: Proportion of children reported ill in 2wks prior to survey *(R=2)* Health facility morbidity trends (R=1) /WHO surveillance (R=1) FSNAU	Very low proportion reportedly sick	Low & stable proportion of reportedly sick based on seasonal trends	Low proportion reportedly sick, from previous months but increasing in >2 months based on seasonal trends	High levels and stable numbers in >2 months based on seasonal trends	High with significant Increase in numbers of sick children, based on seasonal trends
Disease Outbreaks: (seasonally adjusted). Frequency of reported outbreaks of AWD &, malaria & measles- FSNAU	Normal levels, & seasonal trends, Review data in relevant context	-AWD 1 case -Measles 1 case -Malaria–doubling of cases in 2 weeks in hyper endemic areas– using RDT	Outbreak not contained and/or in non-endemic area – limited access to treatment: CFR for AWD >2% rural CFR for AWD >1% urban AWD – duration exceed >6 wks.		
Measles immunization/ **Vitamin A Supplementation** Coverage:1 dose in last 6 months	>95% >95%	80-94.9% 80-94.9%	<80% <80%		
Adult MUAC - Pregnant and Lactating (%<23.0cm- FSNAU	<10.4	10.6-16.7	16.8-23.3	23.4-31.4	≥ 31.5
HH Dietary Diversity (% consuming<4fdgps) FSNAU	<5%	5 – 9.9%	10-24.9%	25 – 49.9%	≥50%
Breastfeeding (BF) Practices *I. Exclusive BF for 6mths ii).Continued BF at 1 yr. iii)Continued BF at 2yr*	≥90% ≥90% ≥90%	50-89% 50-89% 50-89%	12-49% 12-49% 12-49%	0-11% 0-11% 0-11%	
Complementary feeding -Introduction of complementary food at 6 months of age: % introduced -Meeting minimum recommended feeding frequency Dietary Diversity score	≥95% ≥95% ≥95%	80-94% 80-94% 80-94%	60-79% 80-94% 80-94%	0-59% 0-59% 0-59%	

Nutrition Indicators Used (Continued)

Access to Water	usually adequate (> 15 litres/ person/ day), stable-100%	borderline adequate (15 litres/person/ day); unstable	7.5-15 litres/ person/ day, accessed via asset stripping	< 7.5 litres/ person/ day (human usage only)	< 4 litres/ person/day (human usage only)
Affected pop with **access to health services** - formal/ informal	Should not be necessary	Access to humanitarian interventions for most vulnerable	Reduced access to humanitarian support for most vulnerable	Limited access to humanitarian support for majority	Negligible or no access
Selective **Feeding Programs** Available: Coverage of TFP /SFP & referral systems(Sphere 04); -Admissions trends *(R=3)*	Should not be necessary	Access for most vulnerable	None available		
Food Security Situation- current IPC status	Generally Food Secure	Stressed	Crisis	Emergency	Famine Humanitarian Catastrophe
Civil Insecurity	Prevailing structural peace	Unstable disrupted tension	Limited spread, low intensity	Widespread, high intensity	widespread, high intensity conflict
Livelihood Assets	generally sustainable utilization	stressed and unsustainable utilization	accelerated and critical depletion or loss of access	near complete & irreversible depletion or loss of access	effectively complete loss; collapse
Coping		insurance strategies"	crisis strategies"; CSI > than reference; increasing	"distress strategies"; CSI significantly > than reference	
3 MONTH NUTRITION SITUATION OUTLOOK	*Convergence of evidence on immediate Causes/Driving factors vis-à-vis Projected trend in 3 months' time* *No change: Stable / Uncertain: Potential to deteriorate: Potential to improve:*				

CLASSIFICATION	Low Prevalence	Medium Prevalence	High Prevalence	Very High Prevalence
STUNTING	<20%	20-30%	30-40%	>40%
UNDERWEIGHT	<10%	10- 19.9%	20- 29.9%	>30%
BMI <18.5	<10%	10-20%	20-40%	>40%

6. 4. Sampling Details for Nutrition Surveys Conducted during Gu 2016

Regions	Population (WHO/NID 2004)	Estimated U5 population	GAM	Desired Precision	Design Effect	%of U5 children	HH size	% of non respondent	# hoseholds to be included	# clusters to be included	# children to be included
West Golis	95,200	19,040	13.7	3.8	1.5	20%	6	3%	490	27	514
Guban Pastoral	90,135	18,027	22.3	5	1.5	20%	6	3%	415	28	435
NW Agro pastoral	51,791	10,358	6.4	3.2	1.5	20%	6	3%	350	27	514
Hargeisa IDPs	65,640	13,128	12.1	3.5	1.5	20%	6	3%	520	31	545
Burao IDPs	8,670	1,734	6.4	3	1.5	20%	6	3%	399	31	418
Berbera IDPs	3,410	682	9.9	3.1	1.5	20%	6	3%	312	31	327
Hawd Pastoral	57,836	11,567	9.6	3.3	1.5	20%	6	3%	477	28	500
NIP (Cross cutting-NE)	271,033	54,207	8.0	3.2	1.5	20%	6	3%	430	11	451
TOTAL FOR NW	643,715	128,743							3,393	214	3,704
Bossaso IDP	99,249	19,850	16.8	4.2	1.5	20%	6	3%	474	28	497
Qardho IDP	Exhaustive										
Garowe IDP	10,838	2,168	19.5	5.9	1.5	20%	6	3%	432	27	283
Galkayo IDP	59,778	11,956	16.5	4.2	1.5	20%	6	3%	468	28	490
Coastal Deeh	27,110	5,422	11.2	3.6	1.5	20%	6	3%	460	29	481
Hawd Pastoral	137,827	27,565	12.0	3.7	1.5	20%	6	3%	462	29	484
Addun Pastoral	173,934	34,787	9.5	3.5	1.5	20%	6	3%	420	28	440
NIP (Cross cutting-NW)			8.0	3.2	1.5	20%	6	3%		24	
TOTAL FOR NE & CENTRAL	409,487	34,787							2,716	193	2,675
Bakool Pastoral	38,445	7,689	11.2	3.5	1.5	20%	6	3%	486	35	509
Bay Agropastoral	545,910	109,182	17.3	5.0	1.5	20%	6	3%	343	29	359
N Gedo Pastoral	47,922	9,584	21.3	5.0	1.5	20%	6	3%	402	27	421
N Gedo Riverine	94,344	18,869	19.5	5.0	1.5	20%	6	3%	376	27	394
Beletweyne district	94,912	18,982	19	4.8	1.5	20%	6	3%	400	27	419
Shabelle Agro pastoral	125,262	25,052	14.3	3.8	1.5	20%	6	3%	508		532
Shabelle Riverine	85,487	17,097	11.4	3.5	1.5	20%	6	3%	494	29	517
Mogadishu IDPs	341581	68,316	11.4	3.5	1.7	20%	6	3%	560	40	586
Kismayo IDPs	16,558	3,312	12.9	3.5	1.5	20%	6	3%	549	30	575
Dhobley IDPs	5,600	1,120	14.0	3.5	1.5	20%	6	3%	560	35	586
Baidoa IDPs	15,024	3,005	12.9	3.5	1.5	20%	6	3%	549	31	575
Dhusamareb IDPs	Exhaustive										
Dolow IDPs	7,776		25.0	4.7	1.5	20%	6	3%	508	34	532
TOTAL FOR SOUTH	1,418,821	282,209							5,735	344	6,005

6.5. Actual Sample Size Covered in *Gu* 2016

Livelihood Zone/ Population assessed	# Clusters	# HH	# Children	# Boys	# Girls	# PLW	Plausibility
NORTH EAST AND CENTRAL							
Hawd Pastoral	28	453	596	299	297	353	9%
Addun Pastoral	28	357	623	336	287	164	10%
Coastal Deeh	27	418	684	354	330	399	7%
Bosasso IDPs	28	463	738	374	364	163	16%
Garowe IDPs	27	401	570	291	279	121	10%
Galkayo IDPs	28	446	707	363	344	189	8%
QardhoIDPs	Exhaustive	312	546	252	294	150	7%
Dhusamareb IDPs	Exhaustive	214	382	181	201	90	11%
TOTAL	**166**	**3064**	**4846**	**2450**	**2396**	**1629**	
NORTH WEST							
NIP	35	427	600	320	280	192	11%
NW Agropastoral	30	293	517	261	256	127	3%
Hawd NW	28	376	528	252	276	141	10%
Guban Pastoral	28	255	417	212	205	115	16%
West Golis	27	291	485	244	241	124	9%
Hargeisa IDPs	30	303	540	260	280	88	20%
Burao IDPs	31	211	474	219	255	90	12%
Berbera IDPs	31	268	251	122	129	53	22%
TOTAL	**240**	**2424**	**3812**	**1890**	**1922**	**930**	
SOUTH							
Bay Agropastoral	30	426	680	364	316	178	16%
Bakool Pastoral	35	331	561	284	277	239	13%
N Gedo pastoral	28	373	563	294	269	198	5%
N Gedo Riverine	29	373	528	289	239	209	6%
Beletweyne District	27	400	512	238	274	197	4%
Shabelle Riverine	30	439	601	300	301	174	11%
Shabelle Agropastoral	30	437	578	302	276	184	6%
Mogadishu IDPs	40	438	689	349	340	182	4%
Baidoa IDPs	30	476	760	385	375	178	15%
Dolow IDPs	34	400	628	326	302	216	17%
Kismayu IDPs	30	352	867	427	440	290	16%
Dobley IDPs	36	504	780	394	386	382	12%
TOTAL	**379**	**4949**	**7747**	**3952**	**3795**	**2627**	
OVERALL TOTAL	**785**	**10437**	**16405**	**8292**	**8113**	**5186**	

6.6: List of institutions which participated in the Gu 2016 Nutrition Vetting

Meeting in Hargeisa	Meeting in Nairobi
1. WFP	1. NUTRITION CLUSTER
2. MOH SOUTH CENTRAL	2. GEWDO
3. WASDA	3. SNS CONSORTIUM
	4. WFP
	5. SCI
	6. WVI
	7. CISP
	8. FEWSNET
	9. UNICEF
	10. CONCERN WW
	11. MOH/FGS

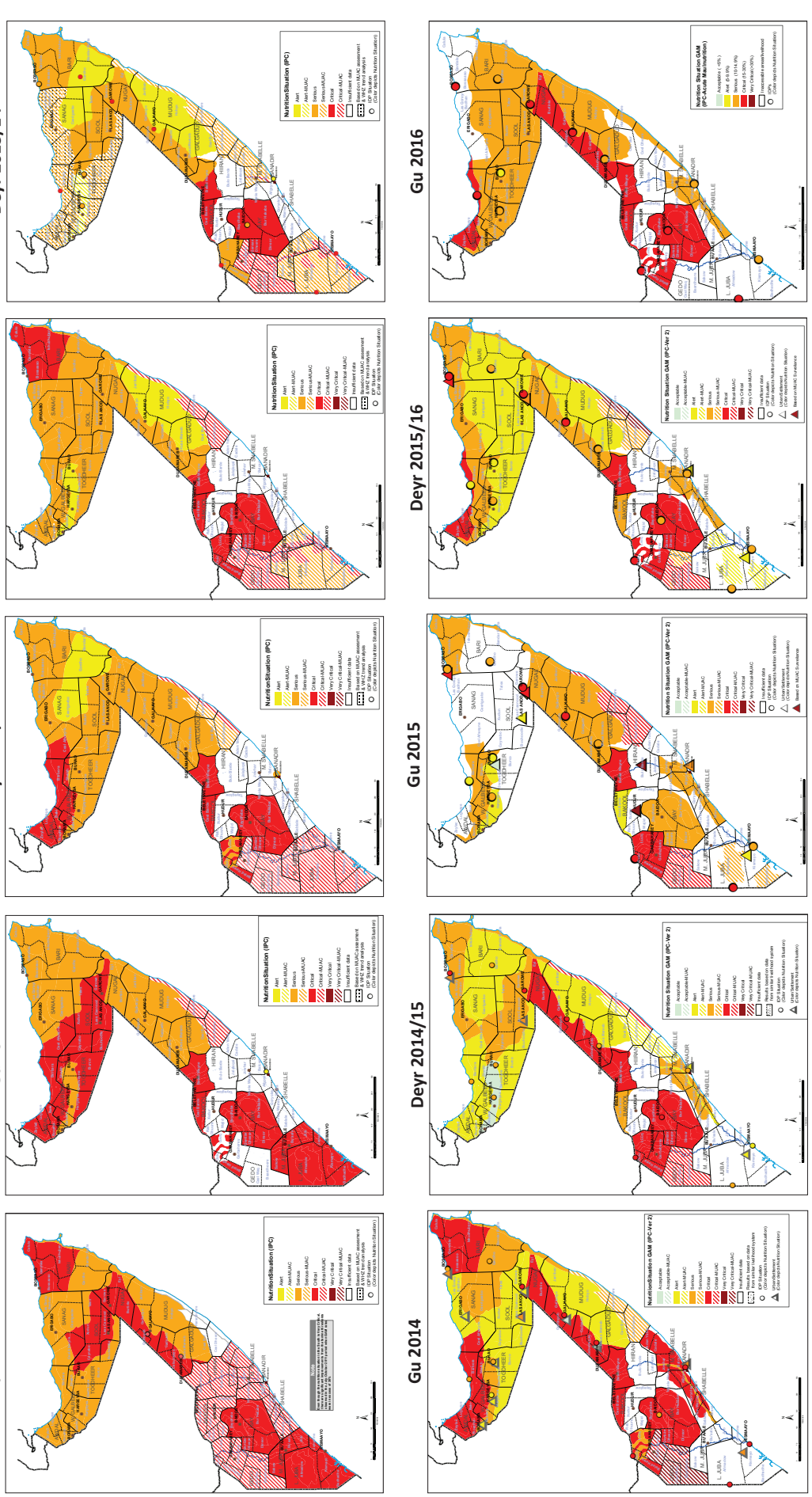
6. 7. Plasibility Check for Nutrition Surveys Conducted during *Gu* 2016

	Missing/ Flagged data	Overall sex ratio	Age Ratio (6-29 vs 30-59)	Digit Preference score-weight	Digit Preference score-Height	Digit Preference score-MUAC	SD WHZ	Skewness WHZ	Kurtosis WHZ	Poisson Distribution	Overall Score
RATING											
Excellent	0-2.5(0)	>0.1(0)	>0.1(0)	0-7(0)	0-7(0)	0-7(0)	<1.1 (0)	<±0.2(0)	<±0.2(0)	>0.05(0)	0-9
Good	>2.5-5.0 (5)	>0.05(2)	>0.05(2)	8--12(2)	8--12(2)	8--12(2)	<1.15(2)	<±0.4(1)	<±0.4(1)	>0.01 (1)	10--14
Acceptable	>5.0-7.5(10)	>0.001 (4)	>0.001 (4)	13-20(4)	13-20(4)	13-20(4)	<1.20 (6)	<±0.6(3)	<±0.6(3)	>0.001(3)	15-24
Problematic	>7.5 (20)	<=0.001(10)	<=0.001(10)	> 20 (10)	> 20 (10)	> 20 (10)	>=1.20(20) &<= 0.8 (20)	>=±0.6 (5)	>=±0.6 (5)	<=0.001(5)	>25
NORTH EAST AND CENTRAL											
Hawd Pastoral	0(1.0%)	0(p=0.967)	4(p=0.005)	0(4)	2(9)	0(7)	2(1.15)	0(-0.07)	1(-0.39)	0(p=0.473)	9%
Addun Pastoral	0(2.0%)	4(p=0.039)	4(p=0.04)	0(5)	2(9)	0(7)	0(1.06)	0(0.14)	0(0.17)	0(p=0.079)	10%
Coastal Deeh	0(1.3%)	0(p=0.342)	2(p=0.051)	2(8)	0(5)	0(5)	2(1.13)	0(0.11)	1(-0.33)	0(p=)	7%
Bosasso IDPs	0 (0.2%)	0 (p=0.731)	10 (p=0.000)	0 (2)	0 (6)	0 (5)	5 (1.12)	0 (0.04)	1 (-0.24)	0 (p=0.070)	16%
Garowe IDPs	0 (0.0%)	0 (p=0.586)	0 (p=0.396)	0 (5)	0 (7)	0 (7)	5 (1.15)	0 (0.02)	5 (-0.66)	0 (p=)	10%
Galkayo IDPs	0 (2.4%)	0 (p=0.413)	0 (p=0.640)	0(7)	2 (8)	0 (7)	5 (1.10)	0 (0.00)	1 (-0.27)	0 (p=)	8%
QardhoIDPs	0 (1.5%)	2 (P=0.072)	4 (P=0.003)	0 (4)	0 (3)	0 (3)	0 (0.97)	0 (-0.09)	1 (0.34)	0 (P=)	7%
Dhusamareb IDPs	0 (1.3%)	0 (p=0.282)	0 (p=0.762)	2(10)	2 (10)	2 (9)	0 (1.05)	5 (-0.63)	0 (0.07)	0 (p=)	11%
NORTH WEST											
NIP	0(2.4%)	2(p=0.083)	0(p=0.243)	0(4)	0(7)	0(4)	5(1.10)	0(0.01)	1(-0.22)	3(p=0.001)	11%
NW Agropastoral	0(1.5%)	0(p=0.827)	0(p=0.119)	0(5)	0(6)	0(7)	0(1.03)	0(-0.18)	0(-0.11)	3(p=0.005)	3%
Hawd NW	0(0.9%0	0(p=0.341)	4(p=0.010)	0(5)	0(4)	0(6)	0(1.08)	0(-0.15)	1(-0.34)	5(p=0.000)	10%
Guban Pastoral	0(2.3%)	0(p=0.809)	10(p=0.000)	0(5)	2(8)	0(7)	0(1.03)	0(0.07)	3(-0.40)	1(p=0.013)	16%
West Golis	5(2.8%)	0(p=0.823)	4(p=0.002)	0(3)	0(6)	0(7)	0(1.04)	0(0.01)	0(0.01)	0(p=0.276)	9%
Hargeisa IDPs	0 (2.4%)	0 (p=0.371)	10 (p=0.000)	0 (5)	2 (9)	2 (8)	0 (1.04)	0 (-0.10)	1 (-0.27)	5 (p=0.000)	20%
Burao IDPs	0 (0.1%)	0 (p=0.110)	0 (p=0.236)	0 (4)	0 (5)	0 (5)	5 (0.87)	1 (-0.36)	3 (0.53)	3 (p=0.004)	12%
SOUTH											
Bay Agropastoral	5(3.1%)	2(p=0.090)	4(p=0.003)	0(5)	2(10)	0(6)	0(1.00)	0(-0.07)	0(0.15)	3(p=0.004)	16%
Bakool Pastoral	5(3.1%)	0(p=0.480)	0(p=0.791)	0(5)	2(12)	0(6)	0(1.02)	0(-0.16)	3(0.49)	3(p=0.001)	13%
N Gedo pastoral	0(0.4%)	0(p=0.333)	0(p=0.478)	0(5)	2(8)	0(5)	0(1.07)	0(0.02)	0(-0.15)	3(p=0.005)	5%
N Gedo Riverine	0(0.9%)	4(p=0.042)	0(p=0.189)	0(4)	2(9)	0(6)	0(1.04)	0(0.08)	0(-0.07)	0(p=0.275)	6%
Beletweyne District	0(1.9%)	2(p=0.080)	0(p=0.473)	0(4)	2(9)	0(5)	0(1.03)	0(-0.05)	0(0.06)	0(p=0.154)	4%
Shabelle Riverine	0(1.3%)	0(p=0.839)	0(p=0.162)	0(3)	0(4)	0(3)	5(1.11)	0(-0.16)	1(-0.27)	5(p=0.000)	11%
Shabelle Agropastoral	0(1.5%)	0(p=0.149)	0(p=0.271)	0(2)	0(3)	0(2)	5(1.13)	0(-0.08)	1(-0.23)	0(p=0.80)	6%
Mogadishu IDPs	0 (0.9%)	0 (p=0.622)	4 (p=0.024)	0 (2)	0 (4)	0 (4)	0 (1.08)	0 (-0.11)	0 (-0.16)	0 (p=0.090)	4%
Baidoa IDPs	0 (1.2%)	0 (p=0.719)	10 (p=0.000)	0 (4)	0 (7)	0 (5)	0 (1.07)	0 (0.00)	0 (-0.01)	5 (p=0.000)	15%
Dolow IDPs	0 (1.3%)	0 (p=0.475)	2 (p=0.83)	0 (4)	2 (9)	2 (9)	5 (1.11)	0 (0.16)	1 (-0.33)	5 (p=0.000)	17%
Kismayu IDPs	0 (2.2%)	0 (p=0.737)	4 (p=0.005)	0 (6)	2 (11)	0 (5)	6 (1.17)	0 (-0.01)	1 (-0.30)	3 (p=0.001)	16%
Dobley IDPs	0 (2.0%)	0 (p=0.832)	10 (p=0.000)	0 (3)	0 (6)	0 (6)	2 (1.11)	0 (0.19)	0 (-0.14)	0 (p=0.119)	12%

6. 8. Overall Nutrition Situation Gu 2016

Livelihood Zone/ Population assessed	GAM	SAM	CDR	U5DR	Stunting	Underweight	Morbidity	VIT A	Measles	MUAC <12.5	MUAC <11.5	PLW MUAC <23.0
NORTH EAST AND CENTRAL												
Hawd Northeast	16.3	3.7	0.32	0.52	7.9	9.7	24.6	91.2	85.7	9.2	1.3	20.1
Addun Pastoral	10.4	1.6	0.11	0.09	4.5	5.5	35.4	70.3	69.7	5.7	0.3	12.8
Coastal Deeh	13.0	1.0	0.15	0.45	4.1	3.9	33.7	90.5	86.3	1.4	0.1	8.0
Bosasso IDPs	19.8	4.3	0.21	0.42	21.5	26.7	34.1	90.1	84.7	6.0	1.2	9.2
Garowe IDPs	20.0	3.2	0.40	0.49	14.7	16.4	46.0	86.8	82.2	11.1	1.1	13.0
Galkayo IDPs	16.9	3.1	0.08	0.0	15.6	16.9	36.7	91.2	91.6	6.0	0.6	9.02
QardholDPs	12.6	1.9	0.35	0.73	8.3	10.7	50.7	78.4	79.9	6.5	0.2	14.5
Dhusamareb IDPs	10.1	1.9	0.08	0.27	2.1	4.5	38.2	15.5	20.0	7.3	0.5	35.6
NORTH WEST												
NIP	10.5	2.0	0.15	0.0	3.6	6.9	34.6	71.9	71.3	6.0	1.6	21.9
NW Agropastoral	10.8	1.5	0.30	0.22	1.7	6.9	21.9	35.6	29.9	2.7	0.4	11.0
Hawd NW	10.0	1.5	0.55	0.34	0.6	1.1	5.8	78.6	80.1	0.9	0.2	5.0
Guban Pastoral	16.5	1.4	0.81	0.39	5.7	12.5	25.8	64.5	54.4	11.0	0.9	24.3
West Golis	10.3	1.6	0.21	0.00	6.2	10.2	23.6	57.3	61.1	3.2	0.4	17.7
Hargeisa IDPs	11.9	1.9	0.25	0.20	5.4	9.3	7.0	39.3	40.3	4.7	1.1	4.5
Burao IDPs	7.0	0.4	0.05	0.22	0.4	1.9	9.0	86.8	88.3	0.8	0.2	5.6
Berbera IDPs	19.5	3.6	0.47	0.00	2.7	6.9	18.2	74.9	74.9	5.4	2.7	0.0
SOUTH												
Bay Agropastoral	18.1	4.1	0.62	0.65	32.6	35.3	23.3	0.8	16.5	11.5	1.8	28.7
Bakool Pastoral	19.1	5.0	0.00	0.00	2.8	13.2	19.2	5.2	5.1	7.1	1.2	14.6
N Gedo pastoral	17.2	3.2	0.26	0.44	16.2	15.1	4.7	50.3	64.2	3.0	0.4	23.2
N Gedo Riverine	16.5	2.5	0.21	0.0	13.6	14.1	9.0	53.9	63.7	3.8	0.4	25.4
Beletweyne District	15.6	4.5	0.18	0.56	15.7	16.6	38.2	17.1	28.1	6.7	2.3	8.08
Shabelle Riverine	12.5	2.2	0.34	0.44	5.3	9.7	28.7	18.6	9.9	7.9	1.3	7.5
Shabelle Agropastoral	14.5	2.4	0.32	0.56	7.5	14.7	36.2	19.8	6.3	11.4	0.9	7.6
Mogadishu IDPs	14.7	3.5	0.33	0.99	12.4	17.2	44.6	39.3	27.8	6.2	1.4	7.1
Baidoa IDPs	18.0	4.3	0.25	0.37	32.3	30.1	37.4	49.8	47.5	13.7	2.7	21.1
Dolow IDPs	21.8	4.9	0.42	0.45	29.1	29.7	13.4	79.1	76.9	10.8	3.5	10.6
Kismayu IDPs	14.5	4.4	0.49	1.2	38.4	29.6	28.1	62.5	52.2	14.6	5.0	15.5
Dobley IDPs	17.7	3.6	0.60	0.51	11.9	13.8	24.6	9.2	76.9	10.4	0.9	20.7
Total Median	**15.2**	**2.8**	**0.28**	**0.405**	**7.7**	**12.85**	**26.95**	**59.9**	**63.95**	**6.4**	**1.0**	**12.9**

6. 9. Progression of Estimated Nutrition Situation



6.10. Trends in Under-Five GAM and SAM (%)

	GAM					SAM				
Livelihood Zone/Population assessed	Gu 2016	Deyr 15/2016	Gu 2015	Deyr 14/2015	Gu 2014	Gu 2016	Deyr 15/2016	Gu 2015	Deyr 14/2015	Gu 2014
Hawd Pastoral	16.3	12.0	14.3	16.1	17.3	3.7	2.8	2.8	2.7	4.6
Addun Pastoral	10.4	9.5	12.5	9.7	9.7	1.6	1.9	1.9	1.2	2.4
Coastal Deeh	13.0	11.2	13.0	11.7	12.7	1.0	1.4	1.9	1.4	2.1
Bosasso IDPs	19.8	16.8	12.5	17.2	13.2	4.3	2.9	1.5	3.1	2.9
Garowe IDPs	20.0	19.5	15.7	19.6	21.0	3.2	3.8	1.9	3.9	4.4
Galkayo IDPs	16.9	16.5	20.2	15.1	16.5	3.1	1.7	4.7	2.6	2.5
QardhoIDPs	12.6	10.4	14.0	11.1	12.2	1.9	1.1	2.2	1.8	1.7
Dhusamareb IDPs	10.1	10.9	10.5	14.4	18.0	1.9	1.6	2.6	4.2	4.6
NIP	10.5	8.0	~	~	~	2.0	0.7	~	~	~
NW Agropastoral	10.8	~	5.6	4.8	10.4	1.5	~	0.2	0.2	2.6
Hawd NW	10.0	9.6	~	6.0	7.6	1.5	2.0	~	1.2	0.0
Guban Pastoral	16.5	22.3	~	~	~	1.4	5.9	~	~	~
West Golis	10.3	13.7	12.8	8.0	~	1.6	1.7	2.5	0.8	~
Hargeisa IDPs	11.9	12.1	10.5	11.1	8.1	1.9	2.0	2.1	1.6	0.3
Burao IDPs	7.0	6.4	7.1	9.7	12.4	3.6	0.4	0.5	0.6	1.8
Berbera IDPs	19.5	9.9	7.3	9.9	10.0	0.4	1.4	1.1	1.9	1.7
Bay Agropastoral	18.1	17.3	14.0	19.0	17.1	4.1	5.0	2.8	5.5	3.7
Bakool Pastoral	19.1	11.2	9.8	12.3	24.8	5.0	1.5	1.0	1.5	6.3
N Gedo pastoral	17.2	21.3	20.3	25.2	20.7	3.2	4.1	4.2	3.7	1.0
N Gedo Riverine	16.5	19.5	18.8	19.9	19.3	2.5	4.0	3.3	3.2	3.1
Beletweyne District	15.6	19.0	16.8	17.3	15.0	4.5	3.9	2.3	4.2	3.5
Shabelle Riverine	12.5	11.4	10.0	9.6	11.2	2.2	2.1	1.7	1.8	2.5
Shabelle Agropastoral	14.5	14.3	13.6	12.3	18.8	2.4	1.4	3.0	3.5	1.6
Mogadishu IDPs	14.7	11.4	14.9	13.4	18.9	3.5	2.5	3.3	2.5	5.5
Baidoa IDPs	18.0	14.5	15.3	15.3	12.9	4.3	4.4	4.1	3.3	2.4
Dolow IDPs	21.8	25.0	26.4	21.6	18.8	4.9	6.1	5.0	4.3	4.1
Kismayu IDPs	14.5	12.9	12.5	8.5	16.6	4.4	2.9	2.8	1.6	3.6
Dobley IDPs	17.7	14.0	20.7	11.0	16.5	3.6	2.7	3.8	1.4	4.0

6. 11. Trends in Under-Five MUAC (%)

	MUAC <12.5 (GAM-MUAC)					MUAC <11.5 (SAM-MUAC)				
	GU 2016	DEYR 2015/16	GU 2015	DEYR 2014/15	GU 2014	GU 2016	DEYR 2015/16	GU 2015	DEYR 2014/15	GU 2014
Livelihoods Assessed	**SOUTH CENTRAL**									
Bay Agropastoral	11.5	13.2	11.3	13.4	15.4	1.8	2.5	3.2	3.2	3.0
Bakool Pastoral	7.1	7.4	8.3	7.4	9.9	1.2	0.7	0.7	1.0	2.3
N Gedo Pastoral	3.0	5.4	7.5	6.5	21.1	0.4	0.7	0.6	0.8	3.6
N Gedo Riverine	3.8	4.6	4.3	5.9	9.7	0.4	0.6	0.3	0.8	2.3
N Gedo Agro-pastoral	~	~	~	5.7	20.3	~	~	~	0.3	2.3
Beletweyne District	6.7	12.5	9.0	9.9	9.4	2.3	2.6	2.0	1.7	1.4
Mataban District	~	6.7	6.4	7	7.7	~	1.5	1.4	1.1	1.8
Shabelle Riverine	7.9	8.9	3.4	9.3	7	1.3	1.9	0.2	3.6	1.3
Shabelle Agropastoral	11.4	8.4	7.2	11.5	7.7	0.9	0.9	3.0	3.1	1.6
Baidoa IDP	13.7	11.3	14.6	9.8	16.9	2.7	4.7	3.4	2.3	3.5
Mogadishu IDP	6.2	7.6	9.9	12.8	14	1.4	2.0	3.0	3.1	3.3
Dolow IDP	10.8	9.8	8.9	7.1	10.9	3.5	2.4	2.4	1.2	2.1
Dhobley IDP	10.4	7.2	9.8	4.1	11.3	0.9	2.8	3.6	0.7	3.3
Kismayo IDP	14.6	11.9	10.9	10.6	20.1	5.0	3.6	2.7	3.1	5.1
Mogadishu urban	~	4.1	6.2	4.5	9.5	~	0.5	2.0	1.1	2.1
Dhusamareb IDP	7.3	11.7	8.3	7.2	6.3	0.5	3.6	3.2	0.7	2.7
Hawd Pastoral	9.2	8.2	6.5	10.1	12.8	1.3	2.0	1.2	2.0	2.5
Addun Pastoral	5.7	3.5	6.9	4.1	4.1	0.3	0.1	0.3	0.3	0.5
Kismayo Town	~	8.5	9.2	8.8	8.9	~	1.7	1.7	1.8	1.5
S. Gedo Pastoral-MUAC	~	11.6	13.5	12.9	16.9	~	1.0	2.6	1.5	1.9
S. Gedo Agropastoral-MUAC	~	10.6	11.4	14.4	15.6	~	0.4	1.1	1.0	2.2
S. Gedo Riverine-MUAC	~	10.5	10.9	14.6	17.7	~	0.4	1.4	1.3	3.4
Coastal deeh -MUAC	~	18.0	12.1	12.6	9.7	~	6.4	4.8	4.1	2.5
Cowpea Belt-MUAC	~	10.2	10.9	7.2	10	~	4.2	2.5	1.8	4.9
Juba Cattle Pastoral	~	5.5	7.9	~	~	~	1.2	2.4	~	~
MEDIAN	**7.9**	**8.5**	**8.9**	**8.8**	**10.0**	**1.3**	**1.7**	**2.0**	**1.3**	**2.3**
	NORTH EAST									
EGolis (NE)	~	4.6	2.4	5.4	5.4	~	0.7	0.9	0.9	0.8
Sool plateau	~	~	~	1.4	1.5	~	~	~	0.4	0.3
Coastal Deeh	1.4	1.0	2.2	1.5	3.2	0.1	0	0.1	0.1	0.6
Bari Urban	~	5.2	4.3	5.4	4.9	~	1.4	0.9	1.7	1.2
Nugaal Urban	~	2.3	4.6	~	~	~	0.5	1.0	~	~
Bossaso IDP	6.0	10.1	6.5	11.2	6.6	1.2	1.6	0.5	2.4	1.0
Qardho IDP	6.5	8.2	5.8	8.5	5.7	0.2	1.1	1.0	1.8	0.7
Garowe IDP	11.1	10.7	9.6	5.9	8.3	1.1	2.9	1.8	1.6	1.5
Galkayo IDP	6.0	8.1	8.6	8.7	2.1	0.6	0.7	1.5	1.3	0.2
MEDIAN	**6.0**	**6.7**	**5.2**	**5.7**	**5.2**	**0.6**	**0.9**	**1.0**	**1.5**	**0.8**
	NORTH WEST									
NW Agropastoral	2.7	1.3	1.9	1.3	2.0	0.4	0.0	0.6	0.2	0.2
West Golis Pastoral	3.2	5.2	3.3	3.4	3.5	0.4	0.4	0.6	1.0	0.7
N. Inland Pastoral	6.0	2.3	~	~	~	1.6	0.1	~	~	~
Nugal Valley	~	~	~	1.6	2.0	~	~	~	0.3	0.5
EGolis (NW)	~	4.6	~	5.8	3.7	~	0.7	~	1.0	0.6
Guban Pastoral	11.0	8.5	~	~	~	0.9	1.4	~	~	~
Hawd NW	0.9	2.2	~	1.0	0.7	0.2	0.6	~	2	0.2
Sool Urban	~	~	2.0	1.5	2.9	~	~	0.6	0.8	0.2
Togdheer Urban	~	~	2.0	~	~	~	~	0.6	~	~
Hargeisa IDP	4.7	3.4	6.9	2.2	4.8	1.1	0.8	1.5	0.3	1.0
Burao IDP	0.8	0.9	1.9	3.8	1.6	0.2	0.0	0.7	1.1	0.3
Berbera IDP	5.4	1.9	1.3	2.3	1.4	2.7	0.0	0.4	0.6	0.3
MEDIAN	**4.0**	**2.3**	**2.0**	**2.2**	**2.0**	**0.65**	**0.4**	**0.6**	**0.8**	**0.3**
OVERALL MEDIAN	**6.2**	**7.5**	**7.05**	**6.8**	**7.7**	**0.9**	**0.95**	**1.3**	**1.1**	**1.5**

6.12. Trends In CDR and U5DR (Rate/10 00/day)

Livelihood Zone/ Population assessed	CDR					U5DR				
	Gu 2016	Deyr 2015/16	Gu 2015	Deyr 2014/15	Gu 2014	Gu 2016	Deyr 2015/16	Gu 2015	Deyr 2014/15	Gu 2014
	SOUTH CENTRAL					SOUTH CENTRAL				
Bay Agropastoral	0.62	0.45	0.04	0.26	0.50	0.65	0.40	0.32	0.27	1.00
Bakool Pastoral	0.00	0.14	0.19	0.21	0.40	0.00	0.16	0.15	0.52	0.80
N Gedo pastoral	0.26	0.16	0.31	0.51	0.50	0.44	0.30	0.85	1.01	0.90
N Gedo Riverine	0.21	0.40	0.21	0.41	0.70	0.00	0.54	0.34	0.82	0.90
N Gedo Agro-pastoral	~	~	~	0.48	0.80	~	~	~	0.53	1.20
Beletweyne District	0.18	0.30	0.40	0.29	0.30	0.56	0.82	1.24	0.41	0.10
Mataban District	~	0.35	0.27	0.47	0.70	~	0.70	0.28	~	0.20
Shabelle Riverine	0.34	0.28	0.17	0.52	0.50	0.44	0.42	0.24	1.00	1.10
Shabelle Agropastoral	0.32	0.32	0.56	0.35	0.70	0.56	0.64	1.21	0.52	0.80
Baidoa IDP	0.25	0.28	0.27	0.74	0.70	0.37	0.10	1.37	1.21	0.80
Mogadishu IDP	0.33	0.40	0.63	0.60	1.40	0.99	1.50	1.36	0.87	3.40
Dolow IDP	0.42	0.27	0.90	0.46	0.70	0.45	0.40	1.20	0.89	1.24
Dhobley IDP	0.60	0.52	1.47	1.25	0.46	0.51	0.98	1.27	1.55	0.95
Kismayo IDP	0.49	0.47	0.34	0.84	1.28	1.2	0.69	0.96	2.08	1.42
Mogadishu urban	~	0.28	0.54	0.48	~	~	0.23	0.64	0.75	~
Dhusamareb IDP	0.08	0.08	0.64	0.07	0.15	0.27	0.27	0.50	~	0.32
Hawd Central	0.32	0.26	0.35	0.33	~	0.52	0.13	0.25	0.89	~
Addun Central	0.11	0.04	0.13	0.13	~	0.09	0.00	0.45	0.15	~
Kismayo Town	~	0.50	0.35	0.55	~	~	0.99	0.99	0.62	~
MEDIAN	**0.32**	**0.29**	**0.35**	**0.47**	**0.70**	**0.45**	**0.41**	**0.75**	**0.82**	**0.90**
	NORTHEAST					NORTHEAST				
EGolis (NE)	~	0.38	0.00	0.11	0.24	~	0.09	0.00	~	0.14
Sool plateau	~	~	~	0.10	0.06	~	~	~	~	~
Coastal Deeh	0.15	0.12	0.15	0.21	~	0.45	0.13	0.30	0.75	~
Bari Urban	~	~	~	0.41	~	~	~	~	0.65	~
Bossaso IDP	0.21	0.26	0.25	0.36	0.32	0.42	0.27	0.22	0.61	0.40
Qardho IDP	0.35	0.10	0.34	0.36	0.28	0.73	0.16	0.83	1.09	0.69
Garowe IDP	0.40	0.24	0.14	0.20	0.10	0.49	0.49	0.24	0.59	0.12
Galkayo IDP	0.08	0.08	0.03	0.05	0.09	0.00	0.00	0.10	~	0.36
MEDIAN	**0.21**	**0.18**	**0.15**	**0.21**	**0.17**	**0.45**	**0.15**	**0.23**	**0.65**	**0.36**
	NORTHWEST					NORTHWEST				
NW Agropastoral	0.30	0.31	0.46	0.17	0.14	0.22	0.41	0.69	~	0.42
N.Inland Pastoral	0.15	0.58	~	~	~	0.00	0.74	~	~	~
West Golis	0.21	0.48	0.32	0.19	0.14	0.00	0.00	0.19	~	~
Nugal Valley	~	~	~	0.00	0.15	~	~	~	~	~
Hawd NW	0.55	0.54	~	0.08	0.14	0.34	0.51	~	~	~
Guban Pastoral	0.81	0.63	~	~	~	0.39	1.32	~	~	~
Sool Region Urban	~	~	~	0.10	~	~	~	~	~	~
Hargeisa IDP	0.25	0.14	0.37	0.11	0.14	0.20	0.47	0.84	0.18	0.68
Burao IDP	0.05	0.15	0.49	0.04	0.12	0.22	0.23	0.00	0.34	0.32
Berbera IDP	0.47	0.40	0.14	0.14	0.18	0.00	0.46	0.00	~	0.32
MEDIAN	**0.28**	**0.44**	**0.37**	**0.11**	**0.14**	**0.21**	**0.47**	**0.19**	**0.26**	**0.37**
	MUAC					MUAC				
Coastal deeh Central	~	0.42	0.97	~	~	~	0.66	2.24	~	~
Cowpea Belt	~	0.23	0.07	~	~	~	0.48	0.29	~	~
MEDIAN	~	**0.33**	**0.52**	~	~	~	**0.57**	**1.27**	~	~
OVERALL MEDIAN	**0.28**	**0.29**	**0.32**	**0.29**	**0.31**	**0.41**	**0.42**	**0.45**	**0.70**	**0.75**

6.13. Trends In Stunting %

	Livelihood Zone/ Population assessed	Gu 2016	Deyr 2015/16	Gu 2015	Deyr 2014/15	Gu 2014	Deyr 2013/14	Gu 2013	Deyr 2012/13
SOUTH CENTRAL	Bay Agropastoral	32.6	13.6	17.0	25.2	38.1	8.3	46.9	48.7
	Bakool Pastoral	2.8	7.4	2.8	2.7	3	35.2	8.9	11.3
	N Gedo pastoral	16.2	9.9	15.8	15.3	4.2	13	16.3	13.6
	N Gedo Riverine	13.6	9.0	12.7	16.8	21.4	17.5	11.8	7.4
	N Gedo Agro-pastoral	~	~	~	11.2	19.8	15.5	18.1	19.6
	Beletweyne District	15.7	22.3	30.8	24.2	23.5	35.1	7.5	28
	Mataban District	~	12.6	16.2	11.6	9.9	10.4	8.2	13.7
	Shabelle Riverine	5.3	9.5	16.0	10.4	19.5	~	~	~
	Shabelle Agropastoral	7.5	8.7	12.0	9.7	10.3	~	~	~
	Baidoa IDP	32.3	26.8	29.7	31.1	41.5	33	36	43.5
	Mogadishu IDP	12.4	14.9	15.7	12.1	16	20	22.1	47.4
	Dolow IDP	29.1	26.7	23.8	29	26.9	27.1	33.6	33.6
	Dhobley IDP	11.9	9.3	12.1	9.4	10.3	14.9	14.2	13.9
	Kismayo IDP	38.4	43.8	33.5	38.9	39.8	30.7	40.1	41.5
	Mogadishu urban	~	12.5	14.3	7.9	8.3	~	10.6	5.2
	Dhusamareb IDP	2.1	14.1	6.8	7.7	12.2	8.4	11.6	15.7
	Hawd Central	7.9	6.6	8.1	11.1	11.6	10.5	9.5	13.7
	Addun Central	4.5	6.6	7.6	8.4	7.2	12.1	9.3	6.1
	Kismayo Town	~	27.0	9.1	26.1	19.9	~	39.2	~
	MEDIAN	**12.4**	**12.6**	**15.0**	**11.6**	**16**	**15.5**	**14.2**	**14.8**
NORTH EAST	EGolis (NE)	~	5.6	5.3	6.4	9.1	9.3	9.7	8.4
	Sool plateau	~	~	~	6	3.6	2	5	6.7
	Coastal Deeh	4.1	6.1	6.4	6.5	6.5	12.9	14.7	13.9
	Bari Urban	~	5.6	7.0	15.9	7.5	~	6.6	14.3
	Nugaal Urban	~	8.8	6.5	~	~	~	~	~
	Bossaso IDP	21.5	16.3	25.9	32.7	22.8	29.5	30	21.1
	Qardho IDP	8.3	10.6	13.4	16.7	16.5	30.9	22.9	19
	Garowe IDP	14.7	27.5	22.8	18.4	22.3	21.4	14.1	31.1
	Galkayo IDP	15.6	20.6	15.6	15.4	15.3	19.6	27.7	20.5
	MEDIAN	**14.7**	**9.7**	**10.2**	**15.7**	**12.2**	**19.6**	**14.4**	**16.7**
NORTH WEST	NW Agropastoral	1.7	2.5	7.1	2.4	2.8	~	1.8	5.3
	West Golis	6.2	5.5	5.3	12.2	7.1	~	6.4	9.7
	Guban Pastoral	5.7	~	~	~	~	~	~	~
	N Inland Pastoral	3.6	~	~	~	~	~	~	~
	Nugal Valley	~	~	~	3.7	3.1	1.6	2	3.1
	EGolis (NW)	~	5.6	~	2.6	1.6	~	5.2	0.3
	Hawd NW	0.6	0.4	~	0.8	2.1	~	2.5	4.7
	Sool Urban	~	~	0.8	0.4	2.1	~	1.2	~
	Togdheer Urban	~	~	1.5	~	~	~	~	~
	Hargeisa IDP	5.4	5.0	5.2	3.3	4.1	7.1	8.2	8.8
	Burao IDP	0.4	1.8	0.2	9.7	2.1	2.8	2.6	3.1
	Berbera IDP	2.7	2.3	4.1	1.5	2.2	6.1	2.4	9.4
	MEDIAN	**3.15**	**2.5**	**4.1**	**2.6**	**2.2**	**4.5**	**2.5**	**5**
	OVERALL MEDIAN	**7.7**	**9.3**	**12.0**	**10.8**	**10.1**	**14.0**	**10.2**	**13.7**

6.14. Trends in Under-Five Underweight (%)

	Livelihood Zone/ Population assessed	Gu 2016	Deyr 2015/16	Gu 2015	Deyr 2014/15	Gu 2014	Deyr 2013/14	Gu 2013	Deyr 2012/13
South Central	Bay Agropastoral	35.3	20.4	20.4	28.8	32.4	31.4	44.9	39.3
	Bakool Pastoral	13.2	14.3	7.1	7.7	14.7	15.1	13.6	15.3
	N Gedo pastoral	15.1	16.2	20.3	23.3	10.2	8.3	18.2	15.5
	N Gedo Riverine	14.1	15.3	16.4	22.6	21.4	11.4	15.8	6.4
	N Gedo Agro-pastoral	~	~	~	19.4	13.5	10.4	16.4	15.8
	Beletweyne District	16.6	6.7	24.9	26.4	24.8	30.9	19.1	33.3
	Mataban District	~	2.6	20.2	16.8	16.7	10.2	10.9	19.8
	Shabelle Riverine	9.7	12.6	12.0	10.1	15.6	~	~	~
	Shabelle Agropastoral	14.7	11.3	13.4	11.1	19.9	~	~	~
	Baidoa IDP	30.1	23.6	27.3	26.2	31.6	25.3	24.3	30.7
	Mogadishu IDP	17.2	15.6	18.9	14.3	23	16.6	19	30
	Dolow IDP	29.7	29.7	27.8	32.0	26.4	28.5	30.4	29.2
	Dhobley IDP	13.8	9.9	14.2	8.1	12.3	14.5	15.9	16.2
	Kismayo IDP	29.6	30.1	24.8	23.2	32.8	30.1	41.7	46.4
	Mogadishu urban	~	9.1	16.2	9.8	8.9	~	10.1	10
	Dhusamareb IDP	4.5	11.7	8.9	12.0	17.9	12	17.4	20.4
	Hawd Central	9.7	11.8	12.5	14.7	16.6	10.7	12.1	13.5
	Addun Central	5.5	9.3	12.7	9.5	8.9	9.9	9.1	10.4
	Kismayo Town	~	18.4	16.9	14.7	17.2	~	40.4	~
	MEDIAN	**14.7**	**13.5**	**16.7**	**14.7**	**17.2**	**14.5**	**17.4**	**18**
North East	EGolis (NE)	~	6.5	7.6	8.3	13.2	9.2	15.1	12.3
	Sool plateau	~	~	~	6.0	6.3	2.9	6.2	6.4
	Coastal Deeh	3.9	4.9	9.3	8.9	8.5	10.4	18.7	10.8
	Bari Urban	~	10.9	15.6	16.9	13.5	~	15.1	~
	Nugaal Urban	~	8.9	11.0	~	~	~	~	~
	Bossaso IDP	26.7	18.9	23.5	29.8	22.6	26.2	29.9	35.9
	Qardho IDP	10.7	9.5	17.4	15.9	18.7	27	21.8	31.4
	Garowe IDP	16.4	24.0	18.8	23.1	25.1	23.1	19.7	25.9
	Galkayo IDP	16.9	21.4	21.6	19.0	17.8	20.6	28.1	22.5
	MEDIAN	**16.4**	**10.2**	**16.5**	**16.4**	**15.7**	**20.6**	**19.2**	**22.5**
North West	NW Agropastoral	6.9	4.0	5.8	2.6	5.8	~	4.9	8.2
	West Golis	10.2	10.7	8.4	8.6	9.4	~	15.6	13.5
	Nugal Valley	~	~	~	4.6	3.9	2.6	~	7.5
	Guban Pastoral	12.5	15.6	~	~	~	~	~	~
	N Inland Pastoral	6.9	~	~	~	~	~	~	~
	EGolis (NW)	~	6.5	~	7.0	4.3	~	6.7	3.6
	Hawd NW	1.1	2.4	~	2.2	1.2	~	5.7	11.3
	Sool Urban	~	~	2.6	5.5	5	~	3	~
	Togdheer Urban	~	~	0.9	~	~	~	~	~
	Hargeisa IDP	9.3	9.0	0.9	6.7	7.4	8.6	12.3	8.6
	Burao IDP	1.9	2.7	2.2	3.0	2.7	3.7	5.4	8.1
	Berbera IDP	6.9	7.5	5.6	4.1	5.6	12	6.1	17.2
	MEDIAN	**6.9**	**7.0**	**2.6**	**4.6**	**5.0**	**6.15**	**5.9**	**8.4**
	OVERALL MEDIAN	**12.85**	**11.1**	**14.2**	**11.6**	**14.1**	**12.0**	**15.8**	**15.5**

6.15 Trends in Maternal Malnutrition (%)

	MATERNAL MUAC<23						
	Livelihood Zone	Gu 2016	Deyr 2015/16	Gu 2015	Deyr 2014/15	Gu 2014	Deyr 2013/14
SOUTH CENTRAL	Bay Agropastoral	28.7	25.6	13.7	16.7	22.9	17.1
	Bakool Pastoral	14.6	37.1	17.9	9.2	24.9	10.4
	N Gedo pastoral	23.2	22.7	7.6	22.4	30	15.1
	N Gedo Riverine	25.4	27.1	10.5	22.3	51.8	22.7
	N Gedo Agro-pastoral	~	~	~	25.4	38.6	21.1
	Beletweyne District	8.08	4.7	~	14.6	18.7	5.8
	Mataban District	~	7.9	~	8.2	6.2	15.7
	Shabelle Riverine	7.5	13.2	13.7	10.5	26.6	~
	Shabelle Agropastoral	7.6	5.1	10.9	7.6	16.1	~
	Baidoa IDP	21.1	16.4	18.1	20.9	23.4	7.7
	Mogadishu IDP	7.1	12.6	2.2	11.3	20	1.0
	Dolow IDP	10.6	18.1	15	22.9	18.6	25.3
	Dhobley IDP	20.7	14.2	26.9	23.8	21.3	24.1
	Kismayo IDP	15.5	17.5	15.8	16.4	22.8	23.6
	Dhusamareb IDP	35.6	28.9	37.7	35.8	54.8	38.2
	Hawd Central	20.1	45.3	23.4	34.4	32.0	26.8
	Addun Central	12.8	12.7	8.0	26.6	25.3	10.3
	MEDIAN	**15.5**	**17.0**	**14.4**	**20.9**	**23.4**	**17.1**
NORTH EAST	EGolis (NE)	~	16.0	6.1	12.5	28.4	31.5
	Sool plateau	~	~	~	7.6	10.5	11.2
	Coastal Deeh	8.0	4.4	6.3	20	11.8	7.1
	Bossaso IDP	9.2	12.2	8.6	11.2	16.7	19.9
	Qardho IDP	14.5	25.2	24.9	15.8	27.1	31.7
	Garowe IDP	13.0	7.9	14.3	21.6	15.5	10.9
	Galkayo IDP	9.02	15.6	17.6	16.6	20.6	24.9
	MEDIAN	**9.2**	**13.9**	**11.5**	**15.8**	**16.7**	**19.9**
NORTH WEST	NW Agropastoral	11.0	6.6	4.8	6.7	2.4	~
	N.Inland Pastoral	21.9	5.3	~	~	~	~
	West Golis	17.7	3.0	7.4	12	15.6	~
	Guban Pastoral	24.3	~	~	~	~	~
	Nugal Valley	~	~	~	8.6	12.2	13.8
	EGolis (NW)	~	16.0	~	3.8	9.09	~
	Hawd NW	5.0	3.4	~	1.5	1.0	~
	Hargeisa IDP	4.5	3.2	3.2	3.1	4.0	8.0
	Burao IDP	5.6	3.3	3.3	~	6.0	5.7
	Berbera IDP	0.0	0.9	0.9	8.1	0.9	1.1
	MEDIAN	**8.3**	**3.35**	**3.3**	**6.7**	**5.0**	**6.9**
	OVERALL MEDIAN	**12.9**	**13.0**	**10.9**	**14.6**	**19.4**	**15.4**

6.16. Trends In Under-Five Morbidity (%)

	MORBIDITY TRENDS						
	Livelihood zone	**Gu 2016**	**Deyr 2015/16**	**Gu 2015**	**Deyr 2014/15**	**Gu 2014**	**Deyr 2013/14**
SOUTH CENTRAL	Bay Agropastoral	23.3	20.4	29.1	19.3	25.9	25.6
	Bakool Pastoral	19.2	10.5	25.9	31.7	25.0	30.4
	N Gedo pastoral	4.7	17.4	18.5	27.1	39.8	21.8
	N Gedo Riverine	9.0	14.1	19.4	20.9	32.1	28.3
	N Gedo Agro-pastoral	~	~	~	21.6	40.1	34.0
	Beletweyne District	38.2	35.5	25.9	38.9	50.9	58.8
	Mataban District	~	26.5	34.2	50.3	57.4	54.6
	Shabelle Riverine	28.7	26.3	20.0	34.6	31.5	~
	Shabelle Agropastoral	36.2	24.6	23.4	29.6	37.0	~
	Baidoa IDP	37.4	24.2	46.8	45.2	32.3	44.4
	Mogadishu IDP	44.6	29.7	39.3	39.2	43.2	37.3
	Dolow IDP	13.4	24.3	29.0	36.9	43.3	55.2
	Dhobley IDP	24.6	39.6	42.9	34.1	24.4	23.2
	Kismayo IDP	28.1	27.6	33.1	62.3	41.4	36.4
	Dhusamareb IDP	38.2	28.5	45.6	28.6	30.1	46.5
	Hawd Central	24.6	40.0	10.8	42.9	33.5	16.9
	Addun Central	35.4	42.2	34.1	38.3	31.0	35.9
	Mogadishu urban	~	17.2	10.6	15.3	18.0	~
	Kismayo Town	~	9.7	~	47.6	33.3	~
	MEDIAN	**28.1**	**25.5**	**29.0**	**34.6**	**33.3**	**35.9**
NORTH EAST	EGolis (NE)	~	38.4	32.7	34.8	19.0	35.7
	Sool plateau	~	~	~	20.3	19.6	31.0
	Coastal Deeh	33.7	24.7	37.4	27.4	19.4	40.7
	Bari Urban	~	26.4	9.2	~	18.2	~
	Nugaal Urban	~	3.0	14.9	~	~	~
	Bossaso IDP	34.1	32.0	18.2	30.9	22.8	40.6
	Qardho IDP	50.7	46.1	41.6	37.8	52.4	46.4
	Garowe IDP	46.0	41.3	46.8	45.2	32.8	40.5
	Galkayo IDP	36.7	24.6	35.9	23.2	29.8	33.4
	MEDIAN	**36.7**	**29.2**	**34.3**	**30.9**	**21.2**	**40.5**
NORTH WEST	NW Agropastoral	21.9	13.4	11.1	11.5	6.4	24.4
	N.Inland Pastoral	34.6	23.6	~	~	~	~
	West Golis	23.6	38.3	16.0	14.5	20.7	34.4
	Guban Pastoral	25.8	21.5	~	~	~	~
	Nugal Valley	~	~	~	21.7	18.3	39.0
	EGolis (NW)	~	38.4	~	17.3	13.6	29.5
	Hawd NW	5.8	13.8	~	19.1	26.8	29.6
	Sool Region Urban	~	~	~	~	11.8	~
	Hargeisa IDP	7.0	10.8	12.8	9.7	12.0	19.9
	Burao IDP	9.0	2.9	15.1	17.8	15.6	13.6
	Berbera IDP	18.2	6.5	6.4	5.0	5.8	9.80
	MEDIAN	**20.1**	**13.8**	**12.8**	**15.9**	**13.6**	**26.95**
MUAC	Coastal deeh Central	~	9.8	9.8	15.8	14.7	~
	Cowpea Belt	~	13.6	14.9	13.9	15.9	~
	South Gedo Pastoral	~	18.6	20.1	36.4	~	~
	South Gedo Agropastoral	~	28.3	17.5	32.9	~	~
	South Gedo Riverine	~	20.3	7.8	30.4	~	~
	Juba Cattle Pastoral	~	24.0	~	~	~	~
	MEDIAN	**~**	**19.5**	**14.9**	**30.4**	**15.3**	**~**
	Overall Median	**27.0**	**24.3**	**20.1**	**29.6**	**26.4**	**34.2**

6.17. Coverage with Vitamin A Supplementation for Children Under-Five (%)

	LIVELIHOOD ZONE	Gu 2016	Deyr 2015/16	Gu 2015	Deyr 2014/15	Gu 2014	Deyr 2013/14
SOUTH CENTRAL	Bay Agropastorals	0.8	3.6	7.4	3.9	8.6	13.9
	Bakool Pastorals	5.2	46.5	26.1	67.1	35.7	59.5
	North Gedo Pastoral	50.3	84.3	80.2	72.4	52.1	84.6
	North Gedo Riverine	53.9	74.5	70.7	69.3	61.0	81.5
	North Gedo Agro-pastoral	~	~	~	85.4	35.8	83.8
	Beletweyne District	17.2	28.6	68.2	44.7	38.2	18.0
	Mataban District	~	52.7	45.5	22.8	41.6	17.6
	Shabelle Riverine	18.6	30.4	3.2	8.4	3.4	~
	Shabelle Agropastoral	19.8	18.1	5.8	2.5	12.0	~
	Baidoa IDPs	49.8	48.3	78.1	57.5	51.9	36.9
	Mogadishu IDPs	39.3	44.1	51.3	52.3	61.2	41.8
	Dolow IDPs	79.1	64.7	75.2	66.5	56.4	~
	Dhobley IDPs	9.2	22.3	38.1	41.7	~	~
	Kismayo IDPs	62.5	62.9	72.4	61.1	61.8	~
	Dhusamreeb IDP's	15.5	17.5	21.9	33.3	38.2	29.2
	Addun Central	70.3	81.5	75.7	63.0	64.7	73.0
	Hawd Central	91.2	80.5	73.2	41.8	65.7	64.6
	MEDIAN	**39.3**	**47.4**	**59.75**	**52.3**	**46.75**	**50.65**
NORTH EAST	E Golis (NE)	~	73.9	66.5	85.7	75.3	63.8
	Coastal Deeh	90.5	69.8	57.9	86.9	90.2	79.4
	Hawd NE	91.2	81.5	75.7	63.0	64.7	73.0
	Addun NE	70.3	80.5	73.2	41.8	65.7	64.6
	Bossaso IDPs	90.1	82.2	91.5	93.3	86.0	79.1
	Qardho IDPs	78.4	25.4	72.8	78.7	56.2	85.9
	Garowe IDPs	86.8	89.0	93.0	87.7	92.7	62.9
	Galkayo IDP's	91.2	82.0	85.5	72.0	83.4	91.6
	MEDIAN	**90.1**	**81**	**74.45**	**82.2**	**79.35**	**76.05**
NORTH WEST	NW Agropastoral	35.6	49.5	48.0	51	77.3	~
	N Inland Pastoral	71.9	~	~	~	~	~
	West Golis	57.3	35.6	42.4	65.2	65.3	~
	Hawd NW	78.6	65.2	~	61.9	65.7	~
	Guban Pastoral	64.5	42.6	~	~	~	~
	EGolis (NW)	~	~	~	57.0	80.8	~
	Sool plateau	~	~	~	89.5	84.6	76.5
	Nugal Valley	~	~	~	81.5	85.0	85.0
	Hargeisa IDPs	39.3	59.4	61.9	77.3	66.6	58.3
	Burao IDPs	86.8	70.3	90.6	96.6	92.4	86.6
	Berbera IDPs	74.9	28.6	60.0	49.5	71.8	63.8
SOUTH CENTRAL - MUAC	**MEDIAN**	**68.2**	**49.5**	**60.0**	**65.2**	**77.3**	**76.5**
	Coastal deeh Central (MUAC)	~	34.2	7.1	55.3	39.2	~
	Cowpea Belt (MUAC)	~	18.3	27.6	47.1	40.7	~
	MEDIAN	~	**26.3**	**17.4**	**51.2**	**40.0**	**~**
	OVERALL MEDIAN	**63.5**	**52.7**	**66.5**	**62.5**	**64.7**	**64.6**

6.18. Trends in Measles Vaccination Coverage for Children Under-Five (%)

	LIVELIHOOD ZONE	Gu 2016	Deyr 2015/16	Gu 2015	Deyr 2014/15	Gu 2014	Deyr 2013/14
SOUTH CENTRAL	Bay Agropastorals	16.5	2.5	2.9	0.7	5.7	7.2
	Bakool Pastorals	5.1	48.6	13.1	59.5	26.5	23.5
	North Gedo pastoral	64.2	91.5	28.6	~	51.9	81.2
	North Gedo Riverine	63.7	81.7	46.2	~	60.6	78.8
	North Gedo Agro-pastoral	~	~	~	43.4	42	81.2
	Beletweyne District	28.1	28.5	9.9	6.5	10.9	27.9
	Mataban District	~	29	16.6	16.3	34.7	16.3
	Shabelle Riverine	9.9	29	0.7	10.7	1.1	~
	Shabelle Agropastoral	6.3	38.6	10.1	3.9	2.6	~
	Baidoa IDPs	47.5	41.6	70.1	44.8	40.4	41.5
	Mogadishu IDPs	27.8	39.5	43.9	47.4	70.8	48.5
	Dolow IDPs	76.9	61.4	64.2	61.8	71.7	~
	Dhobley IDPs	30.6	25.1	39.4	76.9	~	~
	Kismayo IDPs	52.2	49.6	51.1	66.1	51.7	~
	Dhusamareeb IDP's	20.0	36.5	29.5	33.8	37.8	33.3
	Addun Central	85.7	83.8	58.6	57.3	64	70.8
	Hawd Central	69.7	78.7	71.9	53.5	62	66.3
	MEDIAN	**30.6**	**40.6**	**34.5**	**44.8**	**41.2**	**45.0**
NORTH EAST	E Golis (NE)	~	73.1	67.0	85.1	74.9	53
	Coastal Deeh	86.3	81.1	58.9	85	89	71.6
	Hawd NE	85.7	83.8	58.6	57.3	64	70.8
	Addun NE	69.7	78.7	71.9	53.5	62	66.3
	Bossaso IDPs	84.7	78.9	85.5	88.7	79.2	79.9
	Qardho IDPs	79.9	42.7	65.2	76.6	58.9	85.9
	Garowe IDPs	82.2	87.5	91.5	93.8	89.6	57.8
	Galkayo IDP's	91.6	82.5	81.0	87.1	89.9	89.7
	MEDIAN	**84.7**	**80.0**	**69.5**	**85.1**	**77.1**	**71.2**
NORTH WEST	NW Agropastoral	29.9	44.8	45.6	44.0	72.8	~
	WGolis/Guban	61.1	35.4	37.4	56.9	56.2	~
	Hawd NW	80.1	75.1	~	62.4	62	~
	Guban Pastoral	61.1	47.0	~	~	~	~
	N Inland Pastoral	71.3	~	~	~	~	~
	EGolis (NW)	~	~	~	56.4	79.8	~
	Sool plateau	~	~	~	89.8	82.8	71.1
	Nugal Valley	~	~	~	79.2	83	75.5
	Hargeisa IDPs	40.3	59.4	66.8	67.2	64.8	52.6
	Burao IDPs	88.3	75.4	88.9	94.5	91.2	75.4
	Berbera IDPs	74.9	36	56.3	49.7	68.6	54.4
SOUTH CENTRAL - MUAC	**MEDIAN**	**66.2**	**47.0**	**56.3**	**62.4**	**72.8**	**71.1**
	Coastal deeh Central (MUAC)	~	28.4	1.6	36.4	12.9	~
	Cowpea Belt (MUAC)	~	12.1	3.7	4.2	18.1	~
	MEDIAN	**~**	**20.3**	**2.7**	**20.3**	**15.5**	**~**
	OVERALL MEDIAN	**64.0**	**48.6**	**51.1**	**57.1**	**62**	**66.3**

6.19. Trends in the Number of Acutely Malnourished Children Under-Five (Prevalence)

Regions	GAM Caseloads					SAM Caseloads				
	Gu 2016	Deyr 2015/16	Gu 2015	Deyr 2014/15	Gu 2014	Gu 2016	Deyr 2015/16	Gu 2015	Deyr 2014/15	Gu 2014
Lower Shabelle	29,500	28,400	25,950	24,900	34,150	5,000	3,950	5,300	6,600	9,800
Banadir	34,500	22,550	26,850	34,750	39,850	5,500	4,100	5,650	4,150	7,650
Bay	27,250	26,050	21,100	30,150	27,100	6,000	7,500	4,250	8,700	5,900
Galgadud	12,000	9,700	12,050	13,200	14,150	2,500	2,150	2,150	1,850	3,650
Mudug	17,000	14,500	16,750	16,600	17,850	2,000	2,450	2,500	2,350	4,600
M Shabelle	12,500	12,000	10,950	15,350	21,100	2,000	1,700	2,200	4,150	6,000
W Galbeed	24,500	23,000	22,000	26,550	34,000	3,500	4,100	3,400	2,450	5,900
L Juba (Hoose)	15,500	18,700	18,000	18,400	15,700	3,000	3,800	3,480	2,550	1,500
Gedo	14,500	17,600	16,850	24,900	19,650	2,500	3,550	3,300	3,900	1,100
Hiran	14,500	17,500	16,600	18,100	17,200	4,500	3,950	2,800	4,150	4,000
Bakool	13,000	9,800	8,150	15,200	13,250	3,000	2,200	1,300	3,350	2,900
Bari	16,000	15,000	19,600	15,050	18,750	2,000	1,900	2,300	2,050	3,650
Toghdeer	14,500	11,100	13,800	15,300	19,550	2,000	2,200	3,350	1,350	3,400
M Juba -(Dheexe)	11,500	13,700	13,150	11,400	9,700	2,000	2,750	2,550	1,600	950
Awdal	18,000	24,000	17,050	11,650	14,850	2,000	5,100	3,350	1,000	2,550
Sanaag	11,500	10,950	13,500	10,250	13,150	2,000	1,350	1,650	900	2,250
Sool	7,000	5,700	6,600	5,650	7,300	2,000	1,100	850	500	1,250
Nugal	10,000	7,950	9,950	4,850	6,050	1,500	1,250	1,450	650	1,150
North West IDPs	2,750	2,100	1,750	2,200	2,050	470	350	250	350	250
North East IDPs	3,950	3,600	3,500	3,550	3,300	820	500	650	600	650
South Central IDPs	13,400	10,800	13,600	~	~	3,050	2,350	3,050	~	~
Total	**323,350**	**304,700**	**307,750**	**318,000**	**348,700**	**57,340**	**58,300**	**55,780**	**53,200**	**69,100**

6.20 Trends in Food Security Outcomes (IPC Phases) - Area Classification

Regions	Gu 2016	Deyr 2015/16	Gu 2015	Deyr 2014/15	Gu 2014	Deyr 2013/14
SOUTH						
Bay Agro-pastoral	Minimal	Minimal	Minimal	Stressed	Stressed/ crisis	Stressed
Bakool Pastoral	Stressed	Minimal	Stressed	Stressed	Stressed	Stressed
Baidoa IDPs	Crisis	Crisis	Crisis	Crisis	Crisis	Stressed
Dhobley IDPs	Crisis	Crisis	Crisis	Crisis	Emergency	Emergency
Kismayo IDPs	Crisis	Crisis	Crisis	Crisis	Emergency	Emergency
Beletweyne	Stressed	Stressed	Stressed	Stressed	Stressed	Stressed
N Gedo Pastoral	Minimal	Minimal	Stressed	Stressed	Stressed	Stressed
North Gedo Riverine	Minimal	Minimal	Stressed	Stressed	Stressed	Stressed
Dolow IDPs	Emergency	Emergency	Emergency	Emergency	Crisis	Stressed
Shabelle Agro pastoral	Stressed	Minimal	Stressed	Stressed	Stressed	Stressed
Shabelle Riverine	Stressed	Stressed	Stressed	Stressed	Stressed	Stressed
Mogadishu IDPs	Crisis	Crisis	Crisis	Crisis	Crisis	Crisis
NORTH EAST AND CENTRAL						
Dhusamareeb IDPs	Crisis	Crisis	Crisis	Crisis	Crisis	Emergency
Hawd Pastoral of NE	Minimal	Minimal	Stressed	Stressed	Stressed	Stressed
Addun Pastoral	Minimal	Minimal	Stressed	Stressed	Stressed	Stressed
Bossaso IDPs	Crisis	Crisis	Crisis	Crisis	Crisis	Crisis
Galkayo IDPs	Crisis	Crisis	Crisis	Crisis	Crisis	Crisis
Qardho IDPs	Crisis	Crisis	Crisis	Crisis	Crisis	Stressed
Garowe IDPs	Crisis	Crisis	Crisis	Crisis	Crisis	Stressed
NORTH WEST						
NW Agro-Pastoral	Crisis	Crisis	Stressed	Stressed	Stressed	Stressed
Northern Inland Pastoral	Stressed	Stressed	~	~	~	~
West Golis	Minimal	Minimal	Minimal	Stressed	Stressed	Stressed
Guban	Crisis	Crisis	Crisis	Stressed	Stressed	Stressed
HAWD Pastoral of NW	Minimal	Minimal	Minimal	Stressed	Stressed	Stressed
Hargeisa IDP	Crisis	Crisis	Crisis	Stressed	Crisis	Crisis
Burao IDP	Crisis	Crisis	Crisis	Stressed	Crisis	Crisis
Berbera IDP	Emergency	Crisis	Crisis	Stressed	Crisis	Crisis

6.21. Nutrition Indicators by Gender and Age - *Gu* 2016

Indicator	Age(Months)	Central		NE		NW		South		Overall for Somalia	
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
GAM	6-23 months	18.1	5.5	18.8	4.5	11.6	6.1	20.3	15.4	16.8	10.1
	24-59 Months	13.6	9.9	14.7	12.5	17.5	11	15.4	13.3	15.8	12
	Overall	14.9	8.7	16.1	9.3	15.2	9.1	17.1	14.1	16.1	11.3
SAM	6-23 months	2.9	0	3.1	0.7	2.2	1.8	5.2	2.3	3.7	1.8
	24-59 Months	2	1	0.4	0.5	3.7	2.3	3.7	2.8	3.2	2.2
	Overall	2.2	0.7	1.4	0.6	3.1	2.1	4.2	2.6	3.3	2
GAM-MUAC	6-23 months	18.8	12.7	2.3	3	7.8	10	16.6	17.4	12.4	12.9
	24-59 Months	0.3	1.6	0.9	1	1.2	2.1	1.4	2	1.1	1.9
	Overall	5.5	4.5	1.4	1.8	3.7	5.2	6.8	7.6	5.1	5.9
SAM-MUAC	6-23 months	0.7	0	0.8	0	0.8	1.4	2.2	2.1	1.4	1.5
	24-59 Months	0.3	0.3	0.4	0	0.2	0.5	0	0.2	0.2	0.3
	Overall	0.4	0.2	0.6	0	0.5	0.9	0.8	0.9	0.6	0.7
UNDERWEIGHT	6-23 months	10.5	2.7	15.6	2.2	11.8	4.9	31.6	19.8	21	11.2
	24-59 Months	6.5	5.7	0.9	1	8.4	6	15	10.8	10.5	7.7
	Overall	7.8	5	6.1	1.5	9.7	5.5	20.9	14.1	14.2	9
STUNTING	6-23 months	6.5	4.5	13.3	4.5	7.4	3.5	31	17.2	18.6	9.9
	24-59 Months	6.5	4.8	2.2	0.5	2.7	3.2	13.9	8.5	8.3	5.6
	Overall	6.5	4.7	6.1	2.1	4.5	3.4	20	11.7	11.9	7.2
	*** Chi- square test(with 95% confidence interval) showed statistical significant difference (P<0.05)**										

6.22. Glossary of Terms

Anthropometry The technique that deals with the measurements of the size, height, weight, and proportions of the human body.

Baseline data Baseline data represent the situation before or at the beginning of a program or intervention. Survey data may be compared to baseline data if defined criteria for comparison are met (e.g., similar methods and coverage)

Bias Anything other than sampling error which causes the survey result to differ from the actual population prevalence or rate.

Chronic Malnutrition Chronic malnutrition is an indicator of nutritional status over time. Chronically malnourished children are shorter (stunted) than their comparable age group.

Cluster Sampling Cluster sampling requires the division of the population into smaller geographical units, e.g. villages or neighbourhoods. In a first step, survey organizers select a defined number of units among all geographical units. In a second and sometimes third step, households are selected within the units using simple random sampling, systematic random sampling, or the modified EPI method.

Confidence interval When sampling is used, any figure derived from the data is an estimate of the actual value and is subject to sampling errors, i.e., there is a risk that the result obtained is not exactly equal to the actual value. The estimated prevalence coming out of a sample is therefore accompanied by a confidence interval, a range of values within which the actual value of the entire population is likely to be included. This value is generally 95 percent in nutrition and mortality surveys. This means that we can be 95 percent confident that the true prevalence lies within the given range.

Crude mortality rate (CMR) Mortality rate from all causes of death for a population (Number of deaths during a specified period /number of persons at risk of dying during that period) X time period.

Cut-off points The point on a nutritional index used to classify or screen individuals' anthropometric status.

Design Effect (DE) Cluster sampling results in greater statistical variance (see definition below) than simple random sampling because health outcomes tend to be more similar within than between geographical units (see cluster sampling). To compensate for the resulting loss in precision, the sample size calculated for simple random sampling must be multiplied by a factor called "design effect"; A measure of how evenly or unevenly the outcome (for example wasting, stunting, or mortality) is distributed in the population being sampled.

Global Acute Malnutrition (GAM) GAM includes all children suffering from moderate and severe acute malnutrition; percent of children under 5 who have low weight-for-height measured by -2 z-scores and with or without oedema.

Growth Monitoring Observation of a child growth over time by periodic assessment of his/her weight-for-height or weight-for-age.

Household A group of persons who live together and eat from the same pot (i.e. the HEA definition)
Kwashiorkor Sign of severe malnutrition characterized by bilateral oedema.

Malnutrition State in which the physical function of an individual is impaired to the point where he or she can no longer maintain adequate bodily performance process such as growth, pregnancy, lactation, physical work, and resisting and recovering from disease.

Morbidity A condition related to a disease or illness.

Oedema An accumulation of excessive extra cellular fluid in the body; a distinguishing characteristic of kwashiorkor when bilateral. All children with nutritional oedema are classified as severely malnourished.

Outcome Wasting and mortality are examples of outcomes measured in surveys.

Prevalence Proportion of a population with a disease or condition of interest at a designated time.

P-value If you want to know whether there is a significant difference between two survey estimates, frequently a statistical test is applied and a P value calculated. The P value is the probability that the two estimates differ by chance or sampling error.

Recall period A defined period in the past used to calculate estimated mortality and/or morbidity rates.

Reference Population The NCHS (1977) and WHO (2006) reference values are based on two large surveys of healthy children, whose measurements represent an international reference for deriving an individual's anthropometric status.

Sample A subset of the total population that should be selected at random to Guarantee a representation of the total population.

Sample size The size of the sample calculated based on objectives of the survey and statistical considerations.

Sampling error Sampling error is the degree to which a sample might differ from the whole target population, e.g., how well it represents a target population or total population. Sampling error can be quantified (e.g., in a confidence interval).

Sampling frame The list of all the ultimate sampling units from which the sample is selected.

Sampling interval The sampling interval is the total number of sampling units in the population divided by the desired sample size.

Sampling unit The unit that is selected during the process of sampling; depending on the sampling process the sampling unit can be a person, household, cluster, district, etc.

Severe Acute Malnutrition (SAM) SAM includes all children suffering from severe malnutrition; percent of children under 5 who have low weight-for-height measured by -3 z-scores and with or without oedema.

Simple Random Sampling The process in which each sampling unit is selected at random one at a time from a list of all the sampling units in the population.

Stunting (chronic malnutrition) Growth failure in a child that occurs over a slow cumulative process as a result of inadequate nutrition and/or repeated infections; stunted children are short for their age and may look younger than their actual age; it is not possible to reverse stunting; measured by the height-for-age index.

Systematic Random Sampling (SRS) A methodology which selects a sampling unit at random, then selects every n^{th} household thereafter, where 'n' equals the sampling interval.

Underweight Percentage of children under the age of five with weight-for-age below -2SD from median weight-for-age of reference population.

Urban town/center (based on UNDP definition/Pre-War definition): The regional capital and all the district capitals. *These urban areas had most of the social amenities such as schools, mosques, district hospitals, markets, etc. Moreover, there was a greater prospect of the visible presence of some sort of local government or administrative structures in the regional and district capitals.*

Wasting (1) Growth failure as a result of recent rapid weight loss or failure to gain weight; wasted children are extremely thin; readily reversible once condition improve; wasting is measured by the weight-for-height index.

Wasting (2) Percentage of children under the age of five suffering from moderate or severe wasting (below minus two standard deviations from median weight-for-height of reference population). Wasting differs from acute malnutrition because it does not take into consideration the presence/absence of oedema.

Z-score Score expressed as a deviation from the mean value in terms of standard deviation units; the term is used in analyzing continuous variables such as heights and weights of a sample.

The Information Management Process

Gathering & processing

- FSNAU has a unique network of 32 specialists all over Somalia, who assess the nutrition and food security situation regularly and 120 enumerators throughout the country, who provide a rich source of information to ensure a good coverage of data.
- Nutrition data is processed and analyzed using the Statistical Package for Social Sciences (SPSS), EPInfo/ENA and STATA software for meta-analysis.
- FSNAU developed the Integrated Phase Classification (IPC), a set of protocols for consolidating and summarizing situational analysis. The mapping tool provides a common classification system for food security that draws from the strengths of existing classification systems and integrates them with supporting tools for analysis and communication of food insecurity.
- Food security information is gathered through rapid assessments as well as monthly monitoring of market prices, climate, crop and livestock situations.
- Baseline livelihood analysis is conducted using an expanded Household Economy Approach (HEA).
- The Integrated Database System (IDS), an online repository on FSNAU's official website www.fsnau.org, provides a web-based user interface for data query, data import and export facilities from and into MS Excel, graphing, spreadsheet management and edit functions.

Validation of Analysis

- Quality control of nutrition data is done using the automated plausibility checks function in ENA software. The parameters tested include; missing/flagged data, age distribution, kurtosis, digit preference, skewness and overall sex ratio.
- Quality control of food security data is done through exploratory and trend analysis of the different variables including checks for completeness/missing data, market price consistency, seasonal and pattern trends, ground truthing and triangulation of data with staff and other partner agencies, and secondary data such as satelitte imagery, international market prices, FSNAU baseline data, etc.
- Before the launch of the biannual seasonal assessment results (Gu and *Deyr*), two separate day-long vetting meetings are held comprising of major technical organizations and agencies in Somalia's Food Security and Nutrition clusters. The team critically reviews the analysis presented by FSNAU and challenges the overall analysis where necessary. This is an opportunity to share the detailed analysis, which is often not possible during shorter presentations or in the briefs.

Products and Dissemination

- A broad range of FSNAU information products include, monthly, quarterly and biannual reports on food and livelihood insecurity, markets, climate and nutrition, which are distributed both in print and digital formats including PowerPoint presentations and downloadable file available on the FSNAU site.
- Feedback meetings with key audiences enable us to evaluate the effectiveness of our information products. We constantly refine our information to make sure it is easily understandable to our different audiences.
- FSNAU has also developed a three year integrated communication strategy to ensure that its information products are made available in ways appropriate to different audiences including, donors, aid and development agencies, the media, Somalia authorities and the general public.

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