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Post Deyr 2014/15

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FSNAU TEAM

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LIST OF ACRONYMS USED

ABBRAVIATIONS	DEFINITIONS
AWD	Acute Watery Diarrhea
CDR	Crude Death Rate
CMR	Crude Mortality Rate
ENA	Energy Networks Associations
FAO	Food and Agriculture Organisation of the United Nations
FSNAU	Food Security and Nutrition Analysis Unit for Somalia
GAM	Global Acute Malnutrition
HAZ	Height for Age Z Scores
HIS	Health Information System
IDPs	Internally Displaced Persons
IPC	Integrated Phase Classification
IYCF	Infant and Young Child Feeding
LZ	Livelihood Zones
MUAC	Mid Upper Arm Circumference
NCA	Nutrition Causal Analysis
NE	North East
NW	North West
PLW	Pregnant Lactating Women
SAM	Severe Acute Malnutrition
SC	South Central
SMART	Standardised Monitoring and Assessment of Relief and Transition
U5DR	Under -5 Mortality Rate
UN	United Nations
UNDP	United Nation Development Programme
UNICEF	United Nations Children's Fund
WAZ	Weight for Age Z Scores
WHZ	Weight for Height Z Scores
WFP	World Food Programme
WHO	World Health Organisation

FOREWARD

This Post *Deyr* 2014/15 Technical Series Report is the Tenth Edition of bi-annual nutrition situation technical series launched by the Food Security and Nutrition Analysis Unit (FSNAU) Somalia, in February 2009. The publication complements the FSNAU bi-annual seasonal food security and nutrition technical series reports and provides specific focus on current nutrition information and outlook for Feb-April 2015. The report includes a detailed analysis of the 36 comprehensive nutrition assessments and 5 MUAC assessments conducted across Somalia.

We at FSNAU trust that you will find the report informative and useful. Please contact info@fsnau.org with any questions, comments and feedback on this report.

EXECUTIVE SUMMARY

The prevalence of acute malnutrition among children under five years is a sensitive and objective crisis indicator, reflecting the wider situation of emergency affected populations, including their food security, livelihoods, public health and social environment. The Food Security and Nutrition Analysis Unit (FSNAU) conducted 41 anthropometric and retrospective mortality surveys from October to December 2014 (post-*Deyr* 2014/15) covering 28 996 children (6-59 months) from 17 790 households across most regions and livelihood zones of Somalia. The main objectives of this survey were to assess the nutritional status of children (6-59 months of age) and women of reproductive age and to estimate both the crude and under-five mortality rates. The assessments were conducted in collaboration with government institutions (Ministries of Health) and partners. Surveys were conducted using standardized monitoring and assessment of relief and transitions (SMART) methodology. Weight for Height was measured for 36 surveys while Mid Upper Arm Circumference (MUAC) was used as an indicator of wasting in the remaining five.

Results from these surveys indicate that 12 percent of all children under the age of five in Somalia are acutely malnourished, with 1.9 percent being severely malnourished. It was observed that in 13 out of the 36 livelihoods assessed the prevalence of acute malnutrition exceeds the UN trigger for emergency action Global Acute Malnutrition (GAM) ≥ 15% or **Critical** prevalence). In five out of the 13 Internally Displaced Persons (IDP) settlements assessed, **Critical** prevalence of acute malnutrition (GAM) are recorded. Highest prevalence of acute malnutrition was recorded among livelihoods of North Gedo Pastoral (25.2%) and North Gedo Agro pastoral (24.7%). Critical levels of GAM-MUAC were noted among all livelihoods of South Gedo where access is an issue for humanitarian support (Pastoral, Agro pastoral and Riverine).

It was noted that **Critical** levels of GAM prevalence are prevalent only among rural livelihoods of South-Central region and among IDPs in South-Central and Northeast region. None of the livelihoods/ IDPs in Northwest region shows prevalence of **Critical** levels of GAM and Severe Acute Malnutrition (SAM). The median GAM (15.3%) and median SAM (3.3%) rates in South Central region of Somalia are higher when compared to 12.9 percent median GAM and 2.2 percent median SAM in the Northeast region or 9.9 percent median GAM and 1.1 percent median SAM in the North West region though these differences are not statistically significant. *Deyr* 2014/15 assessment also shows 22 cases of bilateral oedema (Kwashiorkor) in nine of the 41 livelihoods surveyed.

Since post-*Gu* 2014 (July 2014), deterioration in GAM is noted among Hargeisa IDPs and East Golis in Northwest, Bossaso IDPs and Nugal Valley in Northeast and among Baidoa IDPs and North Gedo Pastorals in South-Central region of Somalia. Sustained **Critical** situation was observed among livelihoods of Bay Agro pastorals, Beletweyne District, Mataban District and in all livelihoods of North and South Gedo region (Pastorals, Agro pastorals and Riverine). Significant improvement in nutrition situation in *Deyr* 2014 compared to Gu 2014 was noted among Bakool pastorals and in Mogadishu and Kismayo IDPs. Seasonal fluctuations may have some role in generating peaks of wasting prevalence recoded among East Golis, Nugal Valley and Hargeisa IDPs. It was observed that the prevalence of GAM and SAM is higher in boys (6-23 months and 24-59 months) compared to girls in all livelihoods.

Critical levels of SAM prevalence (> 4%[1]) was recorded only among livelihoods in South-Central Somalia namely: Bay Agropastorals, North Gedo Agro Pastorals Beletweyne district, and Dolow and Dhusamareb IDPs. Significant association between prevalence of GAM and SAM was noted ($r=0.85$; $p<0.01$).

GAM-MUAC (<12.5 cms) shows **Critical** levels of acute malnutrition in 8 out of 41 livelihoods (10.7-16.7 %) and **Serious** levels in another 9 livelihoods. Significant association between GAM (Weight for Height) and GAM-MUAC ($r=0.38$, $p<0.05$) was noted.

Prevalence of SAM-MUAC (<11.5 cms) was **Critical** among 5 livelihoods (Shabelle Riverine and Agropastorals, Bay Agropastoral, Kismayo IDP and Mogadishu IDP) while **very Critical** levels of severe acute malnutrition were noted among livelihood of Coastal Deeh.

The overall prevalence of Stunting in Somalia is **Low** (10.8%) which suggests that it is not a problem of public health significance. However **high** prevalence of stunting (30-39%) was noted among IDPs in Baidoa, Kismayo, Dusamareb and Bossaso. These pockets of **high** stunting also exhibit high prevalence of GAM. This is also reflected in the significant association observed between GAM and Stunting ($r=0.38$; $p<0.05$) and SAM and Stunting (r-0.51; $p<0.01$).

Deyr 2014/15 results show **Medium** prevalence of Underweight across Somalia (11.6 %)). However, there are several population groups with **High** (20-29%) Underweight prevalence (Bay Agropastoral, North Gedo Pastoral, North Gedo

1 FSNAU threshold

Riverine, Beletweyne District, Baidoa IDPs, Kismayo IDPs, Dhusamareb IDPs, Bossaso IDPs and Garowe IDPs). **Very High** underweight prevalence (32.0%) was observed among Dolow IDPs. Significant association between prevalence of underweight and GAM (r=0.75; p<0.01) and SAM (r=0.80, p<0.01) is noted among all livelihoods. Prevalence of Stunting and Underweight was more in boys compared to girls irrespective of age group (6-23 and 24-59 months).

Out of 41 population groups surveyed, 35 show **Acceptable** levels of Under-Five Death Rate (U5DR <1/10 000/day). In the remaining 6, **Serious** to **Critical** levels of U5DR (>1/10 000/day) are recorded out of which 4 were IDPs settlements. The doubling of U5DR noted among Kismayo IDPs is of public health significance despite the significant improvement in GAM prevalence in this settlement. The increase in U5DR is closely associated with infection and illness as Kismayo IDPs recorded the highest prevalence of Morbidity (62.3%) which is significantly higher than levels reported in *Gu* 2014 (41.2%). Diarrhoea was reported as the main cause of death in 11 out of 13 children in this IDP settlement.

U5DR shows a significant association (P<0.01) with both GAM-MUAC (r=0.46) and SAM-MUAC (r=0.44) but not with Weight for Height which suggests that MUAC is a better indicator of mortality risk associated with malnutrition and helps to identify and screen children most in need of treatment.

Immunization is an important public health intervention which protects children from illness. According to the *Deyr* 2014/15 results, all regions in Somalia reported low measles vaccination (below the Sphere standards of >95%). Similarly, coverage for vitamin A supplementation was below the Sphere standards recommendation (> 95%), exception being Burao IDPs where 96.6 percent coverage with vitamin A supplementation was reported. It is of concern that <10 percent of children in livelihoods of Bay Agro pastorals, Shabelle Agro pastorals and Shabelle Riverine received Vitamin A supplementation

It has been well documented that the nutrition status and well-being of a mother consequently has an impact on her own children's nutrition well-being. **Critical** levels of Maternal malnutrition among Dobley IDPs (23.8%), North Gedo Agro pastoral (25.4%) and Addun Central (26.6%) and **Very Critical** levels among livelihoods of Hawd central (34.4%), Dhusamareb IDPs (35.8%), Coastal Deeh (36.3%) and Cowpea belt (37.2%) were observed. This suggest that unless it is addressed immediately the Intergenerational cycle of poverty and growth failure will persist in Somalia.

Contrary to popular belief, acute malnutrition in Somalia does not occur only in food insecure populations, implying that it is not an issue of food access alone, but it is largely influenced by caring practices, access to safe water/sanitation and disease. This is highlighted by the paradox of Bay Agropastoral which is reportedly the food basket of Somalia but shows sustained **Critical** GAM and **Very Critical** SAM prevalence.

Improved Nutrition situation in Mogadishu and Kismayo IDPs where humanitarian emergency situation was observed during *Gu* 2014 demonstrate the impact of targeted nutrition interventions by UN/NGOs.

An estimated 202 600 children under the age of five are acutely malnourished, including 38 200 who are severely malnourished and face a high risk of morbidity and death. The numbers of acutely and severely malnourished children have declined by 7 and 13 percent, respectively, since July 2014. Regional distribution of caseload shows that South and Central Somalia account for 74 percent of the GAM caseload (2 out of every 3) and 85 percent of the SAM caseload. Although mortality in these areas is still low, the persistent high GAM rates suggest the critical need for sustaining and scaling up of multi-sectoral efforts to address the underlying causes of malnutrition, supported by continued humanitarian action.

With **Critical**[2] rates of acute malnutrition, the following livelihood zones and population groups are considered as priorities for nutrition programming: Pastoral, Agro pastoral and Riverine livelihoods in North and South Gedo Regions; Agropastoral livelihoods and Baidoa IDPs in Bay Region; Beletweyne and Mataban Districts in Hiran Region; Hawd in Central and North East, Bossaso IDPs in Bari Region; Garowe IDPs in Nugal Region; and Galkayo IDPs in Mudug region. Current efforts underway to treat malnutrition must be intensified, but bringing sustainable reductions in child malnutrition requires an integrated package of measures that tackle both the causes and effects of malnutrition, backed up by **strong political and institutional support**. Longer term flexible humanitarian funding for Somalia will help ensure continuity and linkage to early recovery and transition.

Although current efforts underway to treat malnutrition must be intensified, bringing sustainable reductions in child malnutrition requires an integrated package of measures that tackle both the causes and effects of malnutrition, backed up by **strong political and institutional support**. Longer term flexible humanitarian funding for Somalia will help ensure continuity and linkage to early recovery and transition.

2 Nutrition Situation is considered as Critical if Global Acute Malnutrition (GAM) prevalence is 15% or higher or if 10.7% or more of children have Mid-Upper Arm Circumference (MUAC) below the 125 millimeters (mm) threshold.

1: BACKGROUND

The Somali people currently have some of the lowest development and humanitarian indicators in the world, and inequalities across different social groups, a major driver of conflict, have been widening. It is reported that 81.8 percent of the population in Somalia are multidimensionally poor[1].The net result is poor health and poverty representing a spiral of suffering where lack of food and income cause malnutrition and illness. Malnutrition in young children has significant societal implications, including decreases in educational attainment and productivity and increases in healthcare spending. Undernourished children who survive to adulthood are estimated to earn almost 20 percent less than those not affected.

Nutritional status of children is a proxy indicator for assessing the entire population health status and one of the major predictors of child survival. FSNAU provides a snapshot of the current nutrition situation in Somalia by conducting biannual assessments. Between October 2014-December 2014 (Post*Deyr*), FSNAU conducted 41 nutrition surveys across Somalia covering 28 996 children (6-59 months) from 17 790 households across all regions and livelihood zones. These assessments were planned in conjunction with the government authorities and partner agencies. Surveys were conducted using standardized monitoring and assessment of relief and transitions (SMART)[2] methodology, which incorporates standard guidelines, questionnaires, and a software package to assess data quality. In 36 of the surveys WHZ was measured while Mid Upper Arm Circumference (MUAC) was used as an indicator of wasting in 5 surveys. The primary objectives of the Post *Deyr* assessment among 13 IDPs, 24 rural livelihoods and 4 urban areas in Somalia was to :

- Assess the prevalence of acute malnutrition amongst children aged 6 – 59 months
- Determine retrospective crude mortality rate (CMR) and under five mortality rate (U5MR)

The secondary objectives were to:

- Determine Morbidity rate in children aged 6 – 59 months
- Estimate overage with measles vaccination and Vitamin A supplementation
- Assess water, hygiene and sanitation factors that may contribute to malnutrition in children.
- Assess the nutrition situation of the mothers (pregnant, lactating)

Two type of assessments were done:

1. Assessment using SMART[3] Methodology – Integrated Nutrition & Food Security Surveys in IDPs Urban livelihoods and Rural livelihoods (n=36)
2. Representative MUAC based nutrition assessment — areas with insecurity (n=5)

The assessment among displaced and urban population were integrated food security and nutrition survey .Details of survey tools and time plan (when and where) were shared with MOH and all nutrition stakeholders in 3 regions of Somalia (Northwest, Northeast and South Central) as well as in Nairobi for coordination and participation by interested partners.

SURVEY LIMITATIONS

- Insecurity limits access to the population of concern and lack of qualified partners in some areas: Juba and parts of Hiran, Bay, Bakool and Lower Shabelle.
- FSNAU surveys are cross sectional surveys which limit our ability to draw conclusion on causality. However, wherever significant association exists between variables these are reported.
- The causes of malnutrition highlighted in FSNAU report are probable causes of malnutrition as no causal analysis/studies were undertaken.
- Use of Official Population figures (UNDP, 2005) results in potential under estimation of the magnitude of the malnutrition in Somalia.
- Precise age estimation is a challenge due to recall bias and lack of support documentations indicating birth dates this may led to inaccuracy when analyzing chronic malnutrition.

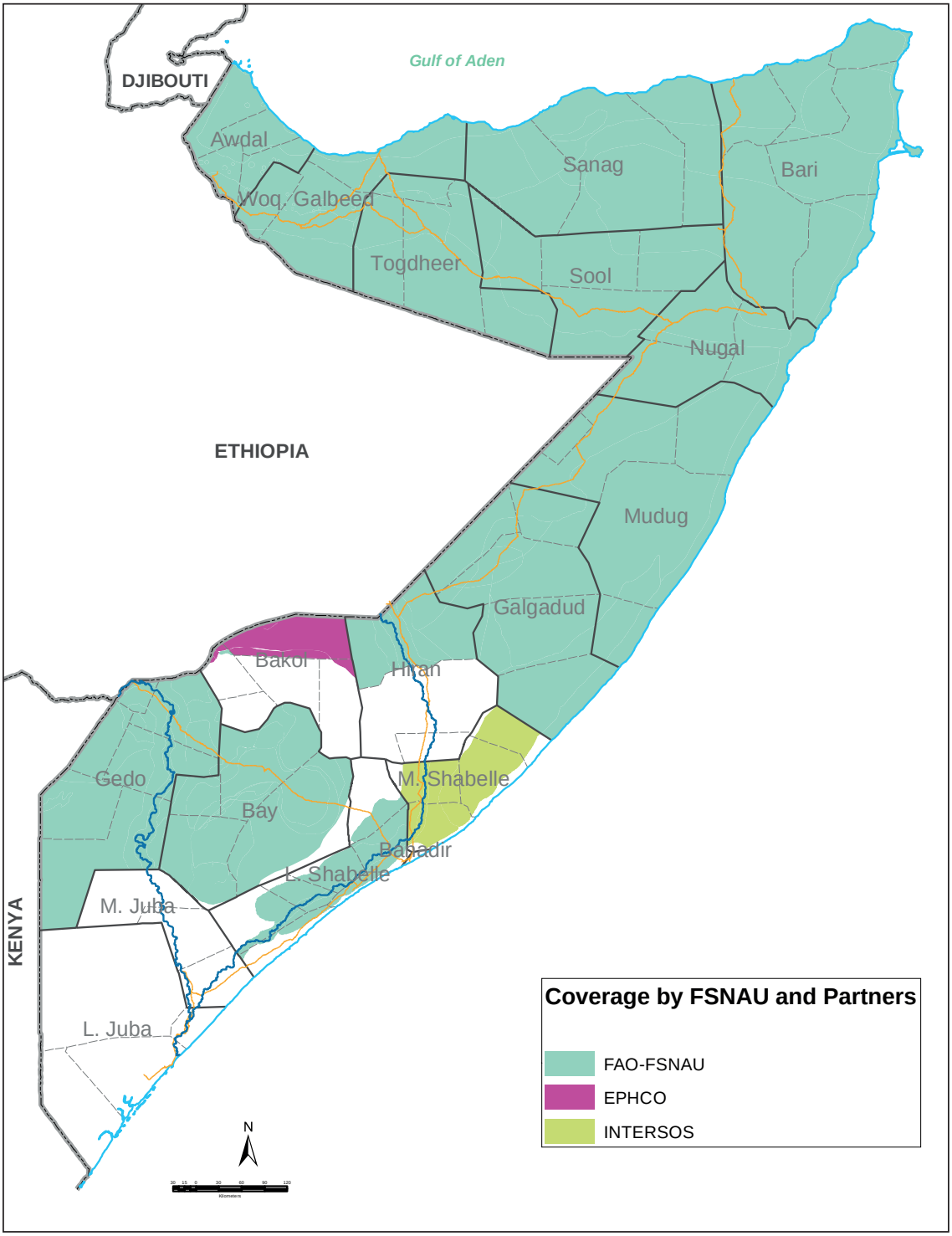
1 Human Development Report 2014
2 Standardized Monitoring and Assessment of Relief and Transitions

3 Grantham-McGregor S et al. (2007) 'Development potential in the first 5 years for children in developing countries' *The Lancet* 369(9555), 60-70.

2: METHODOLOGY

FSNAU and partners conducted 41 nutrition surveys across Somalia covering all regions and livelihood zones (Map 1) between October 2014 - December 2014 (post-*Deyr*). These were cross-sectional surveys, 36 of which were based on comprehensive SMART methodology and 5 were surveys that used Mid Upper Arm Circumference (MUAC) as an indicator of wasting. The survey covered **28 996** children aged 6-59 months from **17 790** households. 59 percent of the total nutrition assessments were carried out in South Central Somalia, 22 percent in North West and 19 percent in North East.

Map 1: *DEYR* 2014 Assessed Areas



* Three additional nutrition surveys conducted in Middle and Lower Juba were discarded due to problems with the quality of the survey data.

The anthropometric and mortality sample sizes was calculated using ENA for SMART Software (Sept 2013 version) after considering the necessary decisions such as the minimum precision around the estimate of malnutrition or death rate likely design effect. A two stage cluster sampling method was used due to lack of accurate population figures. First sampling stage involved the random selection of the clusters from an exhaustive updated list of locations of the areas to be surveyed. The clusters were assigned randomly using probability proportionate to size (PPS). In PPS, larger settlements have a higher chance of being selected as clusters compared to smaller settlements because the probability of selection is proportional to population size of the settlement. The second sampling stage entailed the selection of the households which was done on random selection of households within clusters: households were chosen randomly within each cluster using simple random sampling or Modified EPI methods. In some contexts, segmentation was done before being able to apply one of the HH selections methods above. Local events calendar was used to estimate age of the children.

Both qualitative and quantitative data collection techniques were used. Quantitative data was collected through a standard household questionnaire for nutrition assessments in Somalia. Retrospective mortality data for 90 days prior to the assessments was also collected among the study households using the mortality questionnaires. The 90 days recall period was calculated based from mid of data collection days.

Tools used include :

- Structure standard comprehensive nutrition questionnaire
- Mortality questionnaire,
- Compréhensive nutrition short nutrition questionnaires

TRAINING AND SUPERVISION

Prior to data collection, FSNAU conducted 3-5 days training of enumerators and supervisors (depending on the type of survey). The training covered interview techniques, sampling procedure, inclusion and exclusion criteria, sources and reduction of errors, taking of accurate measurements (height, weight and MUAC), diagnosis of oedema and measles, verification of deaths within households, handling of equipment, and the general courtesy during the assessment. During the training, a standardization test was 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 were carried out in non-selected clusters. The teams go 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 questionnaire and appropriate changes were made.

DATA ENTRY, CLEANING AND ANALYSIS

The data was entered into the computer using the data entry template and then transferred to Excel; ENA Software or EPi info for 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 then reviewed and checked against the original written data collection sheets. Any error in data entry was corrected immediately.

QUALITY ASSURANCE

This was done by using automated plausibility checks function in ENA for SMART surveys which tests the following 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

The Plausibility Check for Post *Deyr* 2014/15 assessments (Table 1) highlights the excellent quality of the anthropometric data, both in terms of sample representativeness and quality of anthropometric measurements.

Table 1: Plausibility Checks - *Deyr* 2014

	Missing/ Flagged data	Overall sex ratio	Overall age distribution	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
LOCATION	**North East**										
Bosasso IDPs	0 (2.1 %)	0 (p=0.633)	10 (p=0.000)	0 (5)	0 (6)	0 (5)	0 (1.03)	0 (-0.08)	0 (-0.14)	0 (p=0.993)	10
Garowe IDPs	0 (2.5 %)	0 (p=0.203)	2 (p=0.054)	0 (3)	0 (5)	0 (3)	2 (1.13)	0 (0.00)	3 (-0.42)	0 (p=0.065)	7
Galkayo IDPs	0 (0.8 %)	0 (p=0.632)	4 (p=0.003)	0 (2)	0 (7)	0 (7)	0 (1.04)	0 (0.04)	0 (-0.06)	0 (p=0.071)	4
Qardho IDPs	0 (1.8 %)	0 (p=0.790)	10 (p=0.000)	0 (5)	0 (3)	0 (2)	0 (0.98)	0 (-0.09)	0 (-0.06)	N/A	10
East Golis-NE	0 (1.8 %)	0 (p=0.293)	4 (p=0.004)	0 (4)	0 (6)	0 (6)	0 (1.03)	0 (-0.10)	1 (-0.20)	0 (p=0.070)	5
Bari Urban	5 (5.0 %)	0 (p=0.107)	0 (p=0.188)	0 (4)	2 (10)	2 (9)	2 (1.12)	0 (0.06)	1 (-0.36)	0 (p=0.183)	12
Coastal Deeh(N.E)	0 (1.0 %)	0 (p=0.621)	4 (p=0.009)	0 (3)	0 (3)	0 (2)	0 (1.09)	0 (0.08)	0 (-0.18)	3 (p=0.003)	7
	North West										
Hargeisa IDPs	0(1.9 %)	0 (p=0.837)	4 (p=0.024)	0 (3)	0 (4)	0 (5)	0 (1.03)	1 (-0.26)	0 (0.07)	0 (p=0.081)	5
Burao IDPs	0 (0.0%)	0 (p=0.580)	4 (p=0.002)	0 (5)	2 (10)	2 (8)	2 (1.13)	0 (-0.08)	3 (-0.43)	0 (p=0.862)	13
Berbera IDPs	0 (0.0%)	0 (p=0.319)	4 (p=0.049)	0 (6)	0 (2)	0 (6)	0 (1.02)	1 (-0.24)	0 (-0.14)	3 (p=0.010)	8
West Golis	0 (1.8%)	0 (p=0.521)	0 (p=0.105)	0 (5)	0 (7)	2 (12)	0 (1.09)	0 (0.10)	1 (-0.22)	3 (p=0.007)	6
Northwest Agropastoral	0(1.3%)	0 (p=0.780)	0 (p=0.121)	0 (4)	4 (13)	4 (18)	2 (0.90)	0 (0.02)	3 (-0.45)	0(p=0.071)	13
East Golis	0 (1.8 %)	0 (p=0.422)	4(p=0.017)	0 (5)	2 (9)	0 (6)	0 (1.08)	0 (-0.03)	1 (-0.22)	0 (p=0.075)	7
Hawd-NW	0(2.2%)	0 (p=0.425)	10 (p=0.000)	0 (4)	2 (9)	0 (4)	6 (1.16)	0 (-0.05)	3 (-0.45)	**0** (p=0.169)	21
Sool plateau	0 (1.5%)	0 (p=0.268)	4 (p=0.003)	0 (3)	0 (5)	0 (2)	0 (1.02)	0 (0.11)	0 (0.12)	1 (p=0.033)	5
Nugal Valley	0 (1.6%)	0 (p=0.504)	4 (p=0.001)	0 (5)	0 (3)	0 (5)	0 (1.09)	0 (0.00)	1 (-0.32)	1(p=0.027)	6
Sool Urban	5(5.0%)	0 (p=0.569)	4 (p=0.001)	0(7)	2(10)	0 (6)	6(1.18)	0 (0.00)	1 (-0.34)	1(p=0.021)	19
	Central										
Addun	5 (3.1%)	0 (p=0.156)	0 (p=0.702)	0 (3)	0(4)	0(6)	0 (1.06)	0 (0.19)	0 (0.09)	3 (p=0.001)	8
Hawd/NE	0 (2.4 %)	0 (p=0.308)	2 (p=0.085)	0 (4)	0 (5)	0 (5)	0 (1.09)	0 (0.01)	0 (-0.12)	3 (p=0.001)	5
Dhusamareb IDPs	5 (4.7 %)	0 (p=0.814)	0 (p=0.276)	0 (6)	0 (7)	0 (6)	6 (1.17)	0 (-0.17)	0 (-0.11)	0 (p=)	11
	South										
Mogadishu Urban	0(0.2)	0 (p=0.199)	10 (p=0.000)	0 (6)	0 (6)	0 (7)	0 (1.05)	1 (-0.22)	0(-0.14)	1(p=0.030)	12
Mogadishu IDP	0 (0.3%)	0 (p=0.450)	10 (p=0.000)	0 (3)	0 (4)	0 (3)	2 (1.11)	1 (-0.20)	0(-0.17)	5(p=0.000)	18
Shabelle Agropastoral	0 (0.2%)	0 (p=0.779)	2 (p=0.081)	0 (3)	0 (4)	0 (6)	2 (1.10)	0 (-0.17)	0(-0.19)	5(p=0.000)	9
Shabelle Riverine	0 (0.3%)	0 (p=0.166)	0 (p=0.150)	0 (4)	0 (4)	0 (5)	0 (1.03)	1 (-0.27)	0 (0.03)	0 (p=0.170)	1
Mataban	0 (2.2%)	0 (p=0.403)	4 (p=0.001)	0 (2)	0 (6)	0 (7)	0 (1.04)	0 (-0.01)	0 (-0.08)	3 (p=0.002)	7
Beledweyne	0 (2.4)	0 (p=0.609)	10 (p=0.000)	0 (3)	0 (7)	0 (7)	0 (1.07)	0 (-0.07)	0 (-0.12)	3 (p=0.001)	13
Bakool Pastoral	0 (0.0)	0 (p=0.810)	10 (P=0.000)	2(11)	4(13)	2 (10)	2(0.85)	0 (-0.09)	0 (-0.07)	0 (p=)	20
Bay Agropastoral	0 (2.2%)	0 (p=0.336)	10 (P=0.000)	0 (7)	2 (10)	0 (7)	0 (1.06)	1 (-0.31)	0 (0.04)	5(p=0.000)	18
Baidoa IDPs	0 (2.1%)	0 (p=0.242)	4 (p=0.001)	0 (6)	0 (6)	0 (4)	2 (1.10)	1 (-0.20)	0 (-0.18)	1 (p=0.039)	8
Kismayu IDPs	0 (1.4%)	0 (p=0.477)	10 (p=0.000)	0 (4)	2 (10)	0 (7)	0 (1.09)	0 (-0.12)	1 (-0.37)	0 (p=0.281)	13
Dobley IDPs	0 (2.4)	0 (p=0.285)	0 (p=0.435)	0 (3)	0 (7)	2 (8)	0 (1.03)	0 (0.07)	0 (-0.09)	0 (p=)	2
Dolow IDPs	0(1.8)	0 (p=0.703)	10 (p=0.000)	0 (3)	2(8)	0(6)	0 (1.04)	0 (0.02)	0(-0.09)	0(p=0001)	12
Kismayo town	0 (2.3%)	0 (p=0.394)	4 (p=0.006)	0 (4)	4 (16)	0 (7)	0 (1.09)	0 (-0.11)	0 (-0.13)	0 (p=0.463)	8
North Gedo pastoral	0(1.0)	0 (p=0.130)	10 (p=0.000)	0 (5)	2(8)	0(6)	0 (1.00)	0 (0.12)	0(-0.14)	1(p=0.012)	13
North Gedo Riverine	0 (1%)	4 (p=0.013)	10 (p=0.000)	0 (2)	2 (11)	0(7)	0 (1.00)	0 (0.04)	0(-0.12)	3(p=0.01)	19
North Gedo Agro-pastoral	0 (1.5%)	0 (p=0.743)	4 (p=0.033)	0 (3)	2 (8)	0(4)	0 (0.99)	0 (0.08)	0 (-0.03)	5 (p=0.000)	11

Quality of data was also ensured through:

a. Supervision of field work by FSNAU coordination team

b. Cross checking of filled questionnaires on daily basis and recording of observations and confirmation of measles, severe malnutrition and death cases by supervisors. Who ensure that all households sampled were visited and details recorded including empty ones

c. Undertaking daily review with the teams to address any difficulties encountered,

d. Progress evaluation was carried out according to the time schedule. Progress reports were shared with partners on regular basis,

e. Monitoring accuracy of equipment (weighing scales) by regularly measuring objects of known weights

f. Quality assurance during data collection and entry

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 (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.

DATA ANALYSIS AND INTERPRETATION:

FSNAU survey results were analyzed in ENA software for anthropometric and mortality data, and Epi info for cross tabulations and analysis of non-anthropometric data. Interpretation of findings on child growth indicators are based on internationally recognized thresholds, mainly the WHO-UNICEF/Sphere[1] . Global Acute Malnutrition was calculated with the Median (%M) defined as all children falling under 80 percent of the median in the index of weight-for-height median, and/or having Oedema, as compared to the median weight of children of the same height in the reference population. Severe Acute Malnutrition as calculated with the Median (%M) is defined as all children falling under 70% of the median in the index of weight-for-height median, and/or having Oedema, as compared to the median weight of children of the same height in the reference population.

Severe Chronic Malnutrition as calculated with the Median (%M) is defined as all children falling under 70 percent of the median in the index of weight-for-height median, and/or having Oedema, as compared to the median weight of children of the same height in the reference population.

Severe Underweight as calculated with the Median (%M) is defined as all children falling under 70 percent of the median in the index of weight-for-height median, and/or having Oedema, as compared to the median weight of children of the same height in the reference population.

Household access to a variety of food was estimated through dietary diversity, a qualitative measure of food consumption[2]. The Primary data collected through the SMART surveys was triangulated with secondary data– Morbidity trends and admissions trends of malnourished children into feeding programs. Data was interpreted taking into consideration many factors among such as:

- Trends and changes
- Seasonality

1 The WHO Child Growth Standard available at : http://www.who.int/childgrowth/standards/en/
2 Guidelines for measuring household and individual dietary diversity. FAO 2011

- Aggravating factors
- Mortality levels.
- CDC calculator was also used to further analysis and comparison of previous surveys to determine if there is a significant or not.
- Cross tabulation was also done for measure of association. e.g. GAM Vs. Mortality
- Data was disaggregated for age and gender

The contextually relevant analysis forms the basis for data interpretation:

- Reference Indicators- overall nutrition situation- GAM/SAM/CMR/U5MR/MUAC Children & Adults/HIS trends/ Admissions in feeding centers
- Immediate Causes-Household Dietary Diversity, Morbidity/Disease outbreak
- Driving Factors-: Infant young child feeding, Vitamin A supplementation coverage, Measles immunization coverage, access to safe water and sanitation

Reference indicators were categorized into five different phases based on the recognized thresholds: Acceptable, Alert, Serious, Critical and Very Critical[3]. (Annex 3). The outcome of the integrated nutrition situation analysis process, the estimated nutrition situation was based on convergence of evidence of the findings from the multiple indicators. A minimum of 2 anthropometric indicators (for example global and severe acute malnutrition rates) were used to make an analysis and classification of the situation into one of the 5 different phases. The overall analysis was consolidated into the Estimated Nutrition Situation Map. In the cartographical presentation, reliability of data source was illustrated through solid colour (for survey data which is quite reliable, R=3), or through slash marks (when statistically representative data is not available, in which case data reliability is lower and R=1).

ANALYTICAL PROCESS

To make a statement on the

- Nutrition situation: A minimum of **two Core indicators** were used
- Projected trend: A minimum of two **risk factors (immediate or underlying)** were used

The overall classification of the nutrition situation for a given area was done taking into account historical nutrition and contextual data. Triangulation of all indicators was also undertaken. An attempt is made is to look at the bigger picture in terms of where the indicators are currently, where they have come from and where they are likely to go to make the overall statement of the situation.

ESTIMATION OF NUMBER OF CHILDREN WITH ACUTE MALNUTRITION

Caseload numbers is the approximation of the number of children who are acutely malnourished based on the current acute malnutrition prevalence rates obtained through from biannual nutrition assessments conducted in Somalia[4]. The prevalence rates are normally based on WFH and MUAC indicators. Where prevalence rates of acute malnutrition is not available the rates observed in similar livelihoods is applied considering the food security situation and seasonal trends for the region. The population figures currently used by FSNAU are the UNDP 2005 estimates of 7.5 million people. Given the global demographic patterns, children under the age of 5 years are estimated to account for 20 percent of the population. Because of the occurrence of new cases, an Incidence rate is factored in the computation which is the addition of new cases that would occur over time. Currently for Somalia, an incidence factor of 1.6 is applied for estimating incidence over 6 months period. The prevalence and incidence caseload estimates are presented in form of map and graphs by regions.

Formula for Caseload computation: Caseload = N x P x K

N is the size of the population. *This is the population aged* 6 and 59 months which is commonly estimated as 20% of the total population and 5% for P&L mothers.

- ***P is estimated prevalence of GAM/SAM/MUAC prevalence.*** This is usually estimated using a nutritional anthropometry survey (e.g. a SMART survey).
- ***K is a correction factor to account for new (incident cases) over a given time period (1.6).***
  - WFH in admitting case-definitions= lower levels of coverage
  - MUAC in admitting case-definitions= higher levels

N= At FSNAU the denominator is UNDP 2005 census figures.....
P- This obtained from seasonal survey results conducted in Somalia (*Deyr and Gu Surveys*)

Case definitions

- GAM<-2 WHZ or SAM<-3 WHZ
- MUAC< 12.5cm or MUAC <11.5cm

3 Integrated Food Security Phase Classification. Technical Manual.Version 2 The Food and Agriculture Organization of the United Nations. Rome. 2012
4 The caseload estimation is done for the whole of Somalia which includes areas that have not been surveyed.

3: FINDINGS OF THE NUTRITION ASSESSMENT - POST DEYR 2014/15

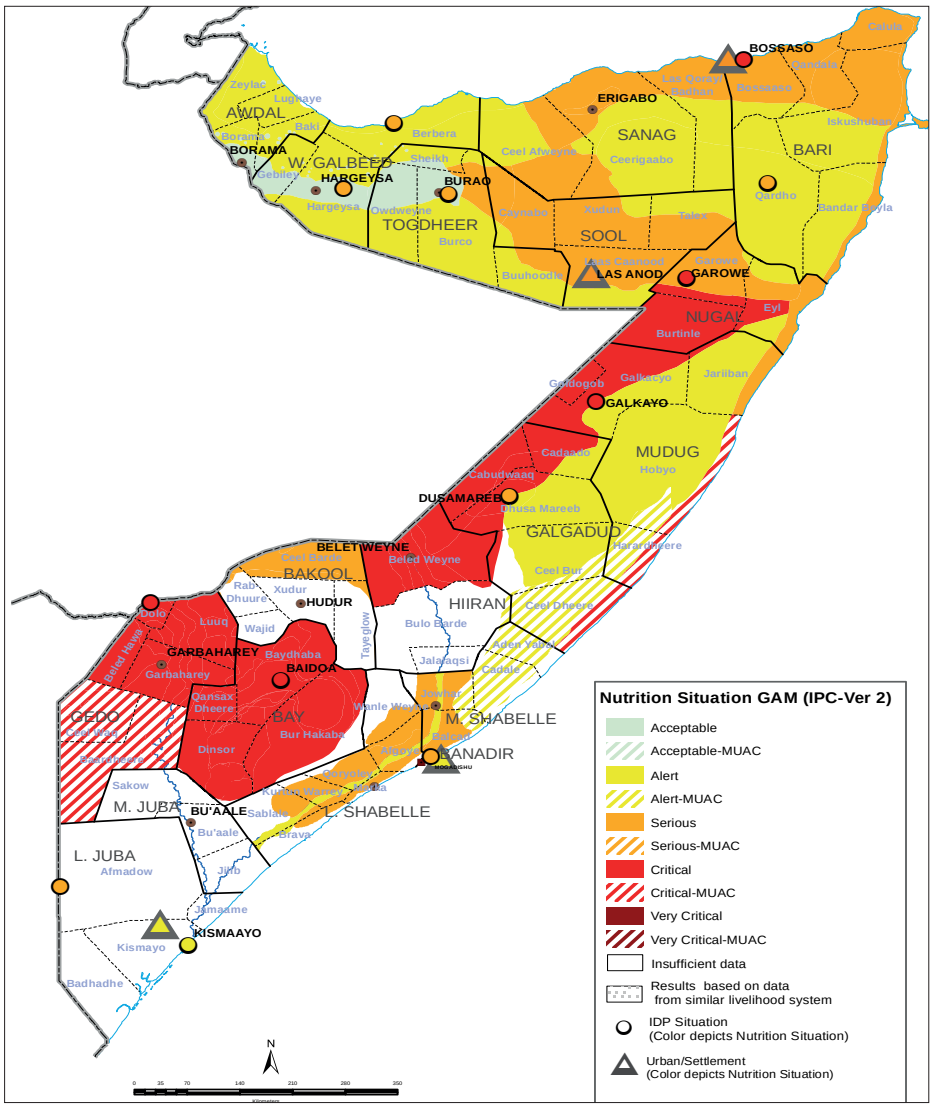
Critical GAM rates in South Central Somalia are a persistent phenomenon, and what was once considered a temporary acute crisis has now become a protracted crisis in the livelihoods of Bay Agropastoral, Gedo Region and Dolow IDPs.

CURRENT NUTRITION SITUATION

In an emergency situation, the weight and height of children between 6 and 59 months of age are measured and the results are used as a proxy indicator of the general health of the entire population. Results of the nutrition assessment by FSNAU (*Deyr* 2014/15) indicate that 12.0 percent of all children under the age of five in Somalia are acutely malnourished, with 1.9 percent being severely malnourished. The current nutrition situation in terms of prevalence of acute malnutrition in Somalia (Deyr 2014/15) (wasting and /or oedema) is shown in Map 2. **Critical** levels of GAM prevalence were recorded only among rural livelihoods of South-Central region and among IDPs in the South-Central and Northeast regions. None of the livelihoods/ IDPs in Northwest region shows prevalence of **Critical** levels of GAM/SAM.

Since *Gu* 2014, deterioration in GAM has been noted among Hargeisa IDPs and East Golis in the Northwest, Bossaso IDPs and Nugal Valley in the Northeast and among Baidoa IDPs and North Gedo Pastorals in the South-Central region of Somalia. Sustained **Critical** situation was observed among livelihoods of Bay Agropastoral, Beletweyne District, Mataban District and in all livelihoods (Pastorals, Agro pastorals and Riverine) of North and South Gedo region. Significant improvement in the nutrition situation in *Deyr* 2014 compared to *Gu* 2014 was noted among Bakool Pastorals and in Mogadishu and Kismayo IDPs.

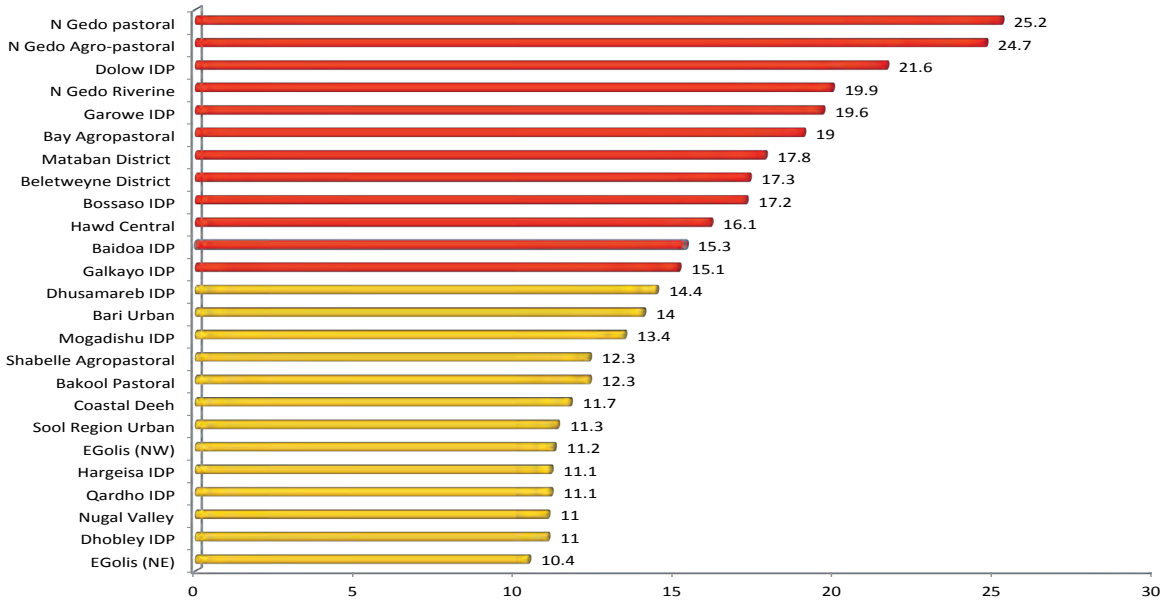
Map 2: Somalia Estimated Nutrition Situation (GAM) Jan 2015



Seasonal fluctuations, however, may have had a role to play in generating peaks in wasting prevalence among East Golis, Nugal Valley and Hargeisa IDP livelihoods.

Figure 1 shows that 25 out of 36 livelihoods (69%) show **Serious** (10-14.9%) or **Critical** (≥15%) prevalence of acute malnutrition in under-fives. The highest prevalence of acute malnutrition was recorded among livelihoods of North Gedo Pastoral (25.2%) and North Gedo Agropastoral (24.7%). **Critical** levels of GAM-MUAC were noted among all livelihoods of South Gedo (Pastoral, Agro pastoral and Riverine) where access for humanitarian support is an issue. It was observed that the prevalence of GAM and SAM is higher in boys (6-23 months and 24-59 months) compared to girls in all livelihoods (Annex 19).

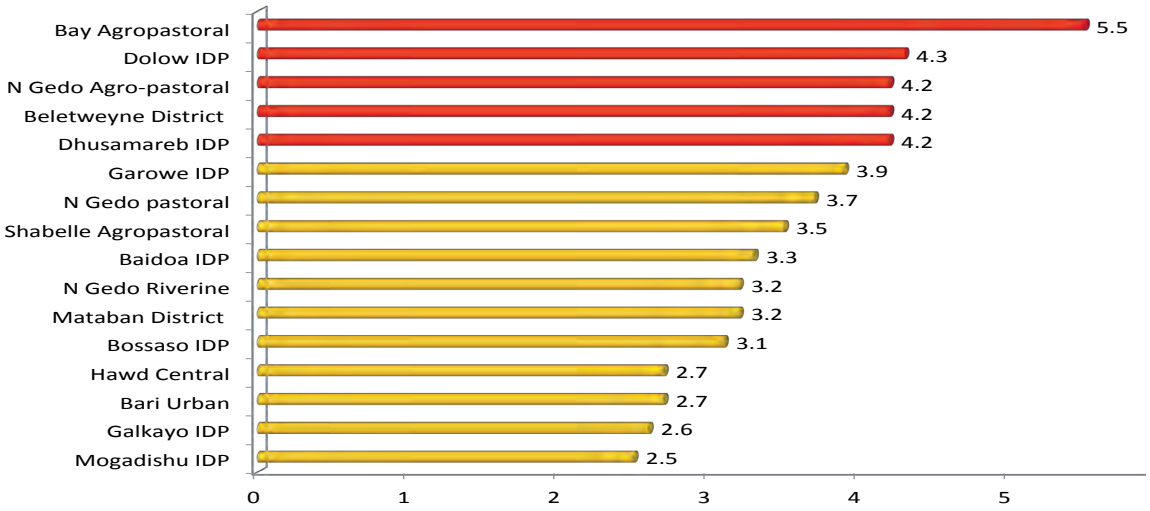
Figure 1: Livelihoods with Serious (10-<15% GAM) to Critical (15-<30%) GAM Prevalence - *Deyr* 2014



SEVERE ACUTE MALNUTRITION (SAM)

Significant association between prevalence of GAM and SAM (r=0.85; p<0.01) was observed. **Serious** (2.5-4%) and **Critical** SAM prevalence (> 4%) was recorded among 16 out of 36 (44%) livelihoods (Figure 2). UNICEF[1] uses 2 percent SAM prevalence as a crisis thresholds and all of these 16 livelihoods with **Serious-Critical** SAM prevalence will be classified as in crisis if UNICEF threshold is adopted by FSNAU.

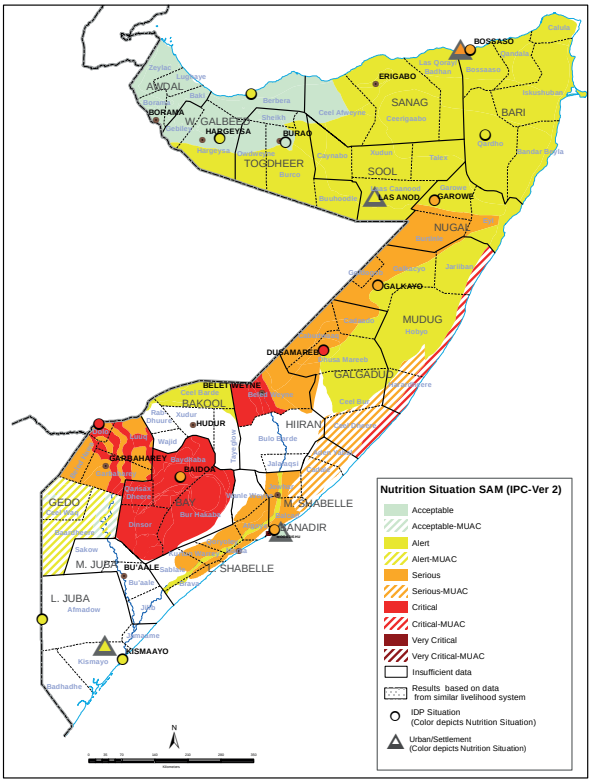
Figure 2: Livelihoods with Critical and Very Critical SAM Prevalence in Somalia - *Deyr* 2014



1 UNICEF uses 2% SAM prevalence as a crisis thresholds and > 1 % but < 2% is considered critical if there is high prevalence of aggravating factors: Diarrhoea, respiratory infections.

It was observed that **Critical** levels of SAM (> 4%[2]) were recorded only among livelihoods in South-Central Somalia namely: Bay Agro pastorals, North Gedo Agro pastorals Beletweyne district, and Dolow and Dhusamareb IDPs (Map 3). Since *Gu* 2014, significant increase in SAM prevalence has been noted among populations in North Gedo Agropastoral and North Gedo Pastoral. Significant decrease in prevalence of SAM was observed among Bakool pastorals, Northwest Agro pastorals, West Golis/Guban, Kismayo urban as well as among IDPs in Mogadishu, Dobley and Kismayo.

Map 3: Somalia Nutrition Situation (SAM) - January 2015



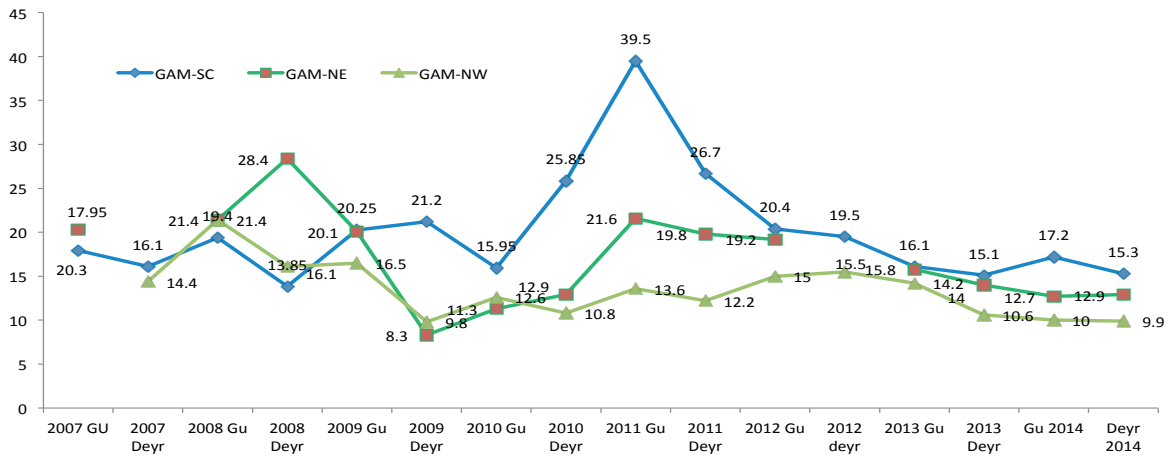
The median SAM prevalence in South-Central region was 3.3 percent, which is twice as high as levels observed in Northeast (2.2%) and thrice as high compared to prevalence recorded in Northwest (1.1%) [Annex 7].

TRENDS IN GAM PREVALENCE

Nutrition trend data allows comparisons to be made over time and when used in combination with other indicators can help to predict crises. Trend analysis for different regions of Somalia is possible because annual surveys have been conducted since 2007 at the same time period of the year and using the same methodology. Figure 3 shows that the prevalence of GAM has always been lower in the Northwest Region compared to Northeast and South-Central although differences may not be statistically significant.

Serious levels of GAM prevalence (13.8%) in South-Central region were recorded only in *Deyr* 2008. Since *Deyr* 2008, sustained prevalence of **Critical** GAM levels (≥15-30%) has been recorded in South-Central region (with exception of the famine period of *Gu* 2011 when prevalence was **Very critical**). Decline in GAM prevalence after the famine period (*Gu* 2011) has been observed in all the regions. Current trends, however, suggest that there is sustained **Critical** GAM (≥15%) prevalence in South-Central region, sustained **Serious** GAM (≥10-<15%) in Northeast region and **Alert** levels of GAM prevalence (<10%) in Northwest region of Somalia.

Figure 3: GAM Trends in Different Regions in Somalia - *Deyr* 2014



2 FSNAU threshold

ODEDMA/KWASHIORKOR PREVALENCE

The prevalence of oedematous malnutrition (Kwashiorkor) is being reported separately as all GAM cases recorded in Somalia cannot be attributed to wasting (WFH <-2 Z). Kwashiorkor is a condition related to an inadequate diet. It is most common among children who live in deprived circumstances and are exposed to infections and eat a monotonous diet consisting of a single staple food (maize, cassava), which are deficient in protein, vitamins and minerals. *Deyr* 2014/15 assessment shows 22 cases of bilateral oedema in nine of the 41 livelihoods surveyed. The highest rates of Kwashiorkor were recorded among Bari urban livelihood (5 cases).

Table 2: Kwashiorkor Prevalence in Somalia - *Deyr* 2014

Region	Livelihood	Number	%
North West	Sool palteau	1	0.1
	Hargeisa IDP	1	0.2
North East	Bari Urban	5	0.7
South	Beletweyne	4	0.5
	Mataban	1	0.1
	Kismayo IDP	3	0.3
	Kismayo Urban	3	0.4
	Baidoa IDP	1	0.2
	Bay Agro pastoral	3	0.3
Total		22	

MID-UPPER ARM CIRCUMFERENCE (MUAC)

MUAC is a very effective rapid assessment tool for screening young children as it requires little in the way of human and financial resources. MUAC measurements of less than 12.5 cm indicate that a child is suffering from moderate acute malnutrition (GAM -MUAC). If the MUAC measurement is under 11.5 cm, the under-five child's life may be in danger as he or she is suffering from severe acute malnutrition (SAM-MUAC). FSNAU uses MUAC to assess nutrition status of children in all its assessments. MUAC is particularly useful in the inaccessible/ insecure areas of Somalia where weight/height of young children cannot be measured.

Figure 4: Prevalence of GAM-MUAC among Under-fives across different Livelihoods in Somalia - *Deyr* 2014

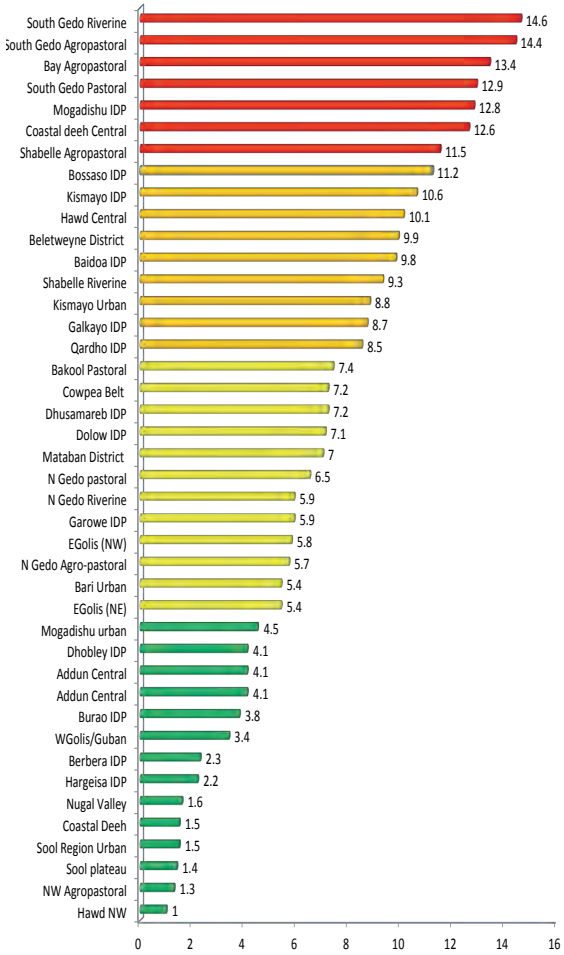
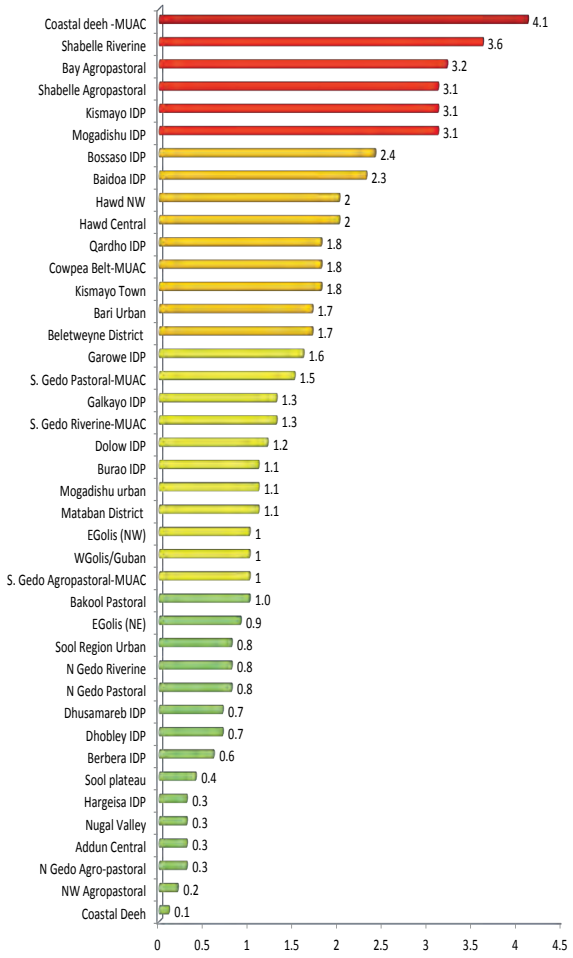


Figure 5: Prevalence of SAM-MUAC among Under-fives across different Livelihoods in Somalia - *Deyr* 2014



GAM- MUAC (MUAC < 12.5 cm)

GAM-MUAC levels were recorded for all livelihoods during *Deyr* 2014/15 assessment. Figure 4 shows prevalence of **Critical** levels of acute malnutrition in 8/41 livelihoods (10.7-16.7 %) and **Serious** levels in another 9 livelihoods. MUAC assessment shows **Acceptable** levels of acute malnutrition among 14 livelihoods in contrast to W/H assessment which showed **Acceptable** levels of GAM prevalence in only one livelihood (Northwest Agropastoral). Significant association between GAM (Weight for height) and GAM-MUAC ($r=0.38$, $p<0.05$) was noted.

SAM-MUAC (MUAC < 11.5 cm)

The World Health Organisation (WHO) and UNICEF proposed the use of MUAC less than 11.5cm as an independent criterion for diagnosing non-oedematous severe acute malnutrition (SAM) in children aged 6–60 months. Figure 5 shows **Acceptable** levels of SAM-MUAC (< 11.5 cm) in 14 livelihoods (<1%) and **Critical** levels among 5 livelihoods while **Very Critical** levels of severe acute malnutrition were noted among the livelihood of Coastal Deeh – Central .

U5DR shows a significant association ($p<0.01$) with both GAM-MUAC ($r=0.46$) and SAM-MUAC ($r=0.44$) This suggests that MUAC is a better indicator of mortality risk associated with malnutrition than Weight-for-Height and therefore a better predictor of death and better measure to identify children most in need of treatment. The use of MUAC will capture younger acutely malnourished children at high mortality risk and those who are affected by frequent illness. Importantly it will enable much better coverage because it is easy to use and removes barriers to access which are currently a significant obstacle to program uptake.

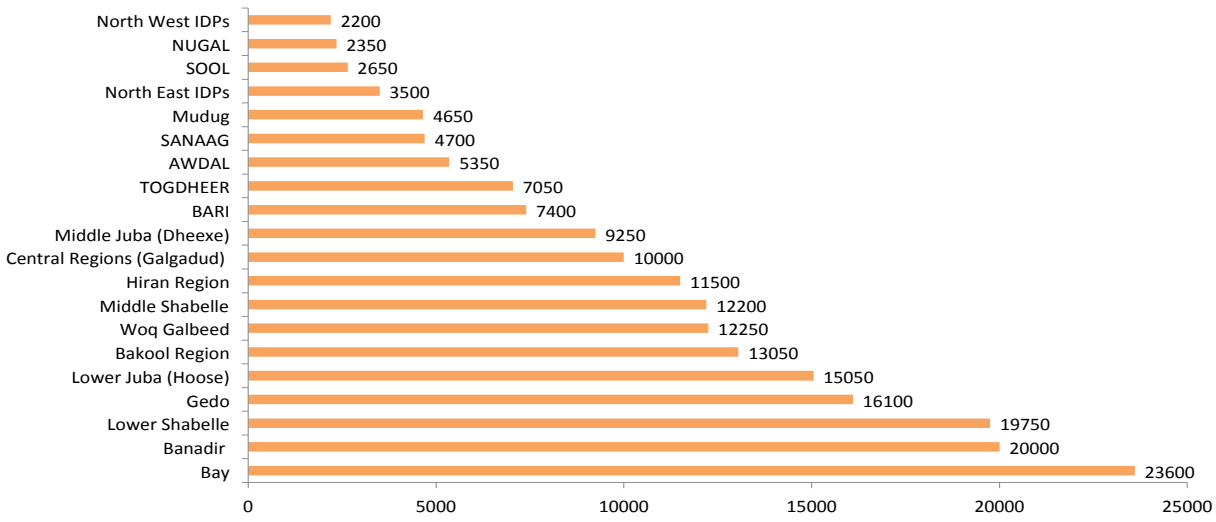
CASES OF ACUTELY MALNOURISHED CHILDREN IN SOMALIA

FSNAU in collaboration with partners conducted a total of 36 representative nutrition surveys and five SMART rapid MUAC assessments throughout Somalia between October and December 2014. With the support of nutrition cluster, the distribution of cases of the acutely malnourished children in Somalia has been illustrated in order to draw attention of response agencies and donors to the specific needs in different parts of the country. In this way, the impact of the population density in determining response needs is manifested.

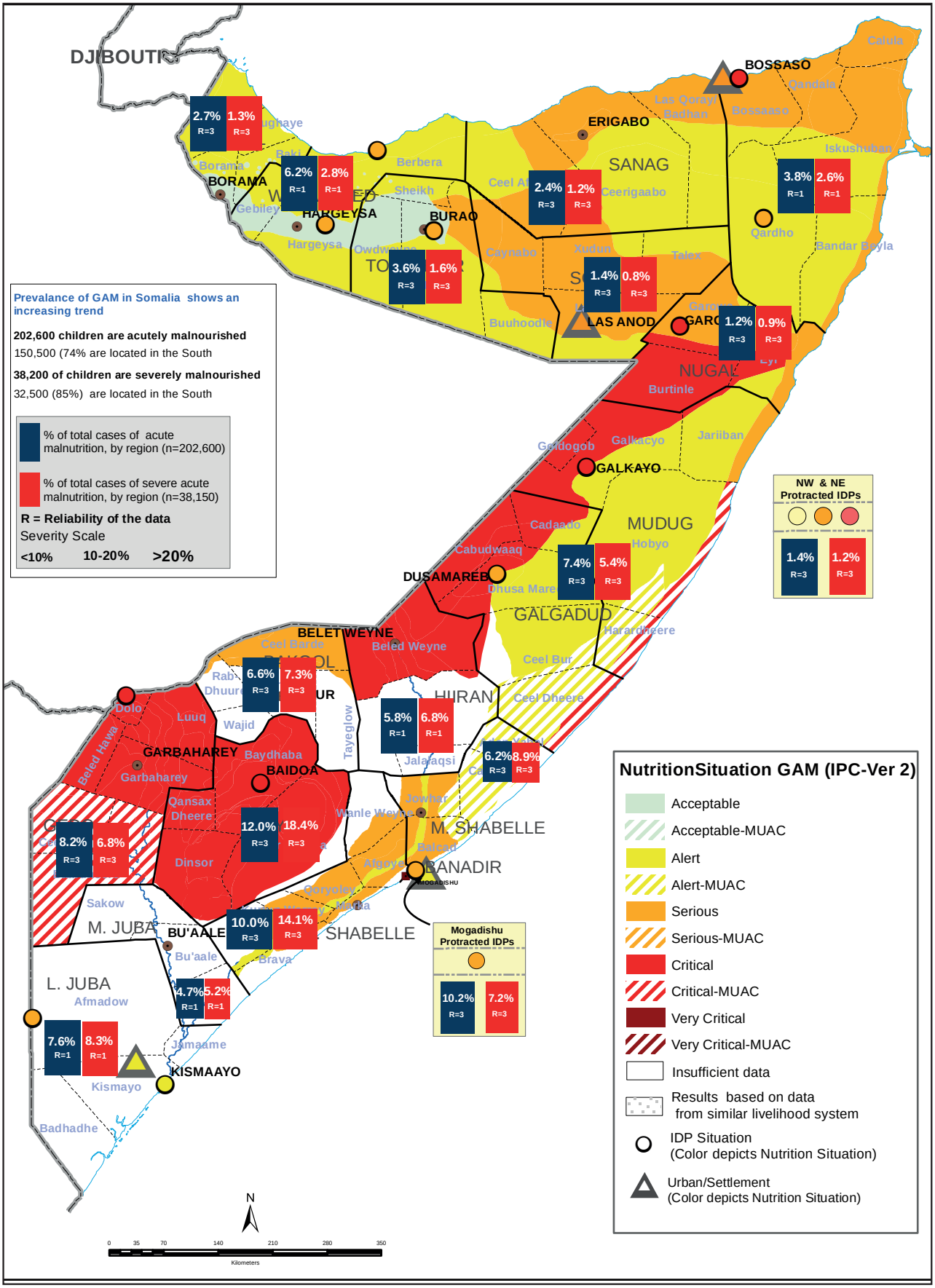
For the *Deyr* 2014/15 survey cases of acutely malnourished children based on Weight-for-height Z scores (WHZ) findings were estimated by extrapolating the prevalence rates of acute malnutrition in each assessed population group from the total under five population. For population groups where representative nutrition survey data for the whole population formed the main reference, reliability of data were high, ranking at 3, the highest reliability score according to IPC Version 2.0. For the Juba regions where it was not possible to collect nutrition survey data, the median prevalence rates for the surveys conducted in the *Deyr* 2013 were applied and where information was unavailable from the previous season, data was extrapolated from similar livelihoods systems. Population figures from UNDP 2005 settlement survey were used as the standard reference for Somalia.

The current caseload for acute malnutrition based on prevalence is shown in Maps 4 while figure 6 shows the number of children with acute malnutrition across different livelihoods.

Figure 6: Number of Acutely Malnourished Children across Somalia (based on GAM) - *Deyr* 2014



Map 4: Distribution of Propotion of Acutely Malnourished Children (<5 Years) in Somalia by Region Based on GAM and SAM Prevalence (January 2015)



Current estimates (based on W/H) put the number of under-five children at risk of acute malnutrition at **202 600**, including **38 200** children at risk of severe acute malnutrition (Table 3). Since these caseloads are calculated as per 'prevalence', the resulting figures fail to account for those children who develop acute malnutrition at another point in the year, when the survey is not being carried out. Therefore an 'incidence' factor of 1.6 is used resulting in an incidence-based caseload of **324 160** acutely malnourished children, with **61 120** severely malnourished children who will require treatment over the next 6 months (Table 4).

Table 3: Regional Distribution of Acute Malnourished children in Somalia (Based on Prevalence) - *Deyr* 2014

Region	GAM WHZ<-2	% of Total WHZ<-2	SAM WHZ<-3	% of Total WHZ<-3	GAM-MUAC <12.5 cms	% of Total	SAM-MUAC <12.5 cms	% of Total
SOUTH CENTRAL	150 500	74.3%	32 500	85.1%	92 250	88.5%	21 000	87.3%
NORTH WEST	32 000	15.8%	2 850	7.5%	5 700	5.5%	2 100	8.7%
NORTH EAST	14 400	7.1%	1 900	5.0%	4 600	4.4%	650	2.7%
IDPs	5 700	2.8%	950	2.5%	1 650	1.6%	300	1.2%
Total PREVALENCE	**202 600**		**38 200**		**104 200**		**24 050**	

Table 4: Regional Distribution of Acute Malnourished children in Somalia (Based on Incidence) - *Deyr* 2014

Region	GAM WHZ<-2	% of Total WHZ<-2	SAM WHZ<-3	% of Total WHZ<-3	GAM-MUAC <12.5 cms	% of Total	SAM-MUAC <12.5 cms	% of Total
SOUTH CENTRAL	240 800	74.3%	52 000	85.1%	147 600	88.5%	33 600	87.3%
NORTH WEST	51 200	15.8%	4 560	7.5%	9 120	5.5%	3 360	8.7%
NORTH EAST	23 040	7.1%	3 040	5.0%	7 360	4.4%	1 040	2.7%
IDPs	9 120	2.8%	1 520	2.5%	2 640	1.6%	480	1.2%
Total INCIDENCE	**324 160**		**61 120**		**166 720**		**38 480**	

MUAC measurements are used worldwide for identification, referral and admission of severely malnourished children aged 6-59 months to nutrition programmes. FSNAU data shows large differences between prevalence of acute malnutrition measured by weight-for-height (Weight for height) versus MUAC. Caseload based on GAM-MUAC is **104 200** which is 94 percent lower than that based on W/H, while SAM caseload of **24 050** is 59 percent lower. Regions which reported an increase in GAM caseloads compared to *Gu* 2014 include Bay, Gedo, Hiran, Bakool, Middle Juba and IDPs of Northwest and Northeast.

Deyr 2014/15 results show that caseloads for Acute Malnutrition (GAM) are decreasing: 8 percent less than last *Gu* 2014, and similar to figures reported in *Deyr* 2013 (Figure 7). When current results are compared with *Gu* 2014, SAM caseloads are 13 percent lower and when compared with *Deyr* 2013 SAM caseloads are 31 percent lower (Figure 8). Regions which reported a decrease in SAM caseloads were Banadir, Galgadud/ Mudug, W.Galbeed and Bari, which appears to be as a result of intensified programming particularly in Banadir (Annex 18).

Figure 7: Trends in GAM Caseload

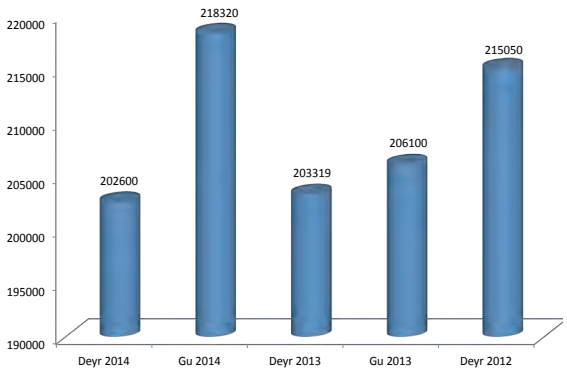
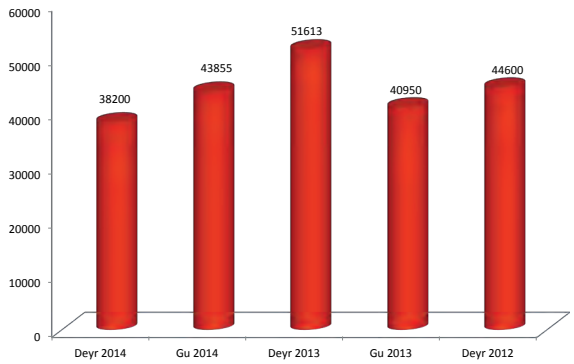


Figure 8: Trends in SAM Caseload



Regional distribution of caseload shows that South and Central Somalia account for 74 percent of the GAM caseload (2 out of every 3) and 85 percent of the SAM caseload. Although mortality is in these areas is still low, the sustained high GAM caseload suggest the critical need for sustaining and scaling up of multi-sectoral efforts to address the underlying causes of malnutrition, supported by continued humanitarian action.

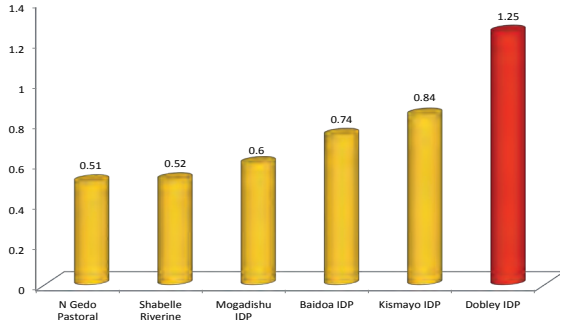
MORTALITY

A nutrition emergency exists when there is the risk of or an actual rise in mortality due to acute malnutrition. Elevated crude mortality and under-five mortality rates are benchmarks for and definitions of a nutrition emergency[3].

CRUDE DEATH RATE (CDR)

CDR, which estimates the rate at which members of a population have died over a defined period of time, is the most important public health indicator to monitor in crisis situations. CDR is applicable to an entire population, and includes both sexes and all age groups. The fact that the CDR rates are **Acceptable** in 35/41 livelihoods surveyed might imply that populations in the surveyed localities have developed coping measures or that some interventions have already been implemented, thereby minimizing loss of life. Dhobley IDPs was the only livelihood with **Critical** CDR rate (1.25/10 000/day). Diarrhoea was reported as the major cause of death, accounting for 10 out of 37 deaths reported in Dhobley IDPs (Table 23).

Figure 9: Livelihoods with Serious (>0.5/10 000/day) and Critical (>1/10 000/day) CDR - *Deyr* 2014

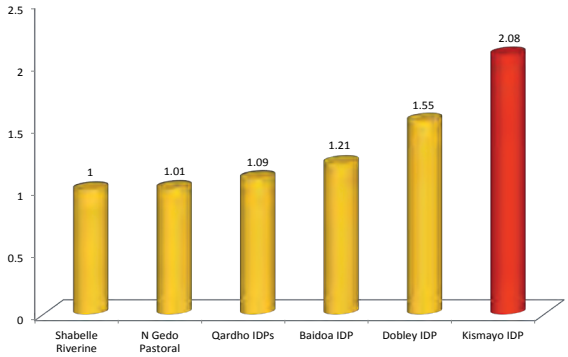


Prevalence of high malnutrition and/or high prevalence of morbidity appears to be responsible for **Serious** rates of CDR noted among North Gedo Pastoral (25.2% GAM), Shabelle Riverine (34.6% morbidity) and IDPs in Mogadishu (39.2 % morbidity), Baidoa (45.2% morbidity) and Kismayo (62.3% morbidity) [Figure 9].

UNDER-5 DEATH RATE (U5DR)

U5DR is a primary indicator used to monitor the health status of children in complex emergencies. It estimates the rate at which children below the age of 5 have died over a defined period of time. *Deyr* 2014/15 assessment results shows **Acceptable** levels of U5DR in 35/41 livelihood (Annex 11). **Serious-Critical** levels of U5DR (>1/10 000/day) were reported only for six livelihoods (Figure 10), 4 of which were IDPs.

Figure 10: Livelihoods with Serious (>1/10 000/day) and Critical (>2/10 000/day) U5DR - *Deyr* 2014



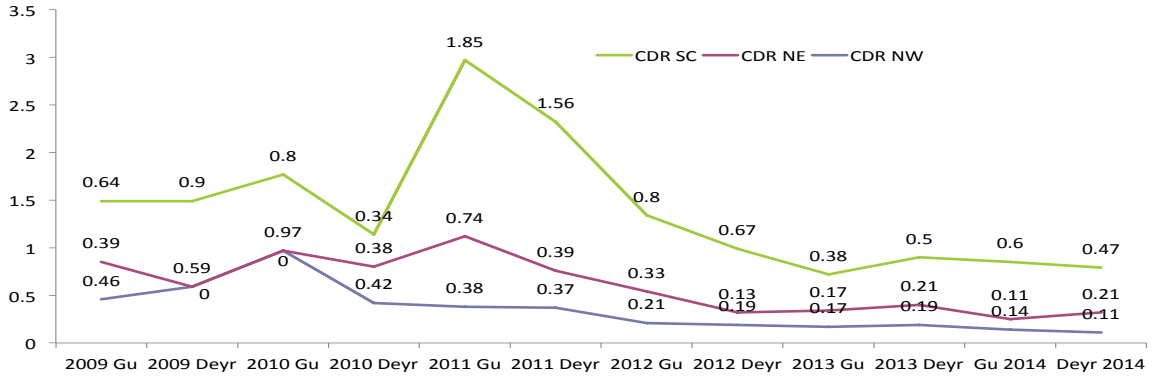
The doubling of U5DR noted among Kismayo IDPs is of importance as significant improvement in GAM prevalence was noted in the livelihood. The increase in U5DR is closely associated with infection and illness as Kismayo IDPs recorded the highest prevalence of morbidity (62.3%) which is 21.1 percent higher than levels previously reported in *Gu* 2014 (41.2%). Transmission of illnesses such as diarrhoea, measles and pneumonia are exacerbated in IDPs and lead to increased childhood mortality. Measles is especially common in emergencies and can trigger acute malnutrition and aggravate vitamin A deficiency to dangerous levels. Diarrhoea was reported as the underlying cause of U5DR in 11 out of 13 children among Kismayo IDPs
(Table 24).

3 In a nutrition emergency where the prevalence of acute malnutrition among young children might be 10% to 15% and of severe malnutrition, 2% to 3%, mortality rates can be very high

MORTALITY TRENDS IN SOMALIA

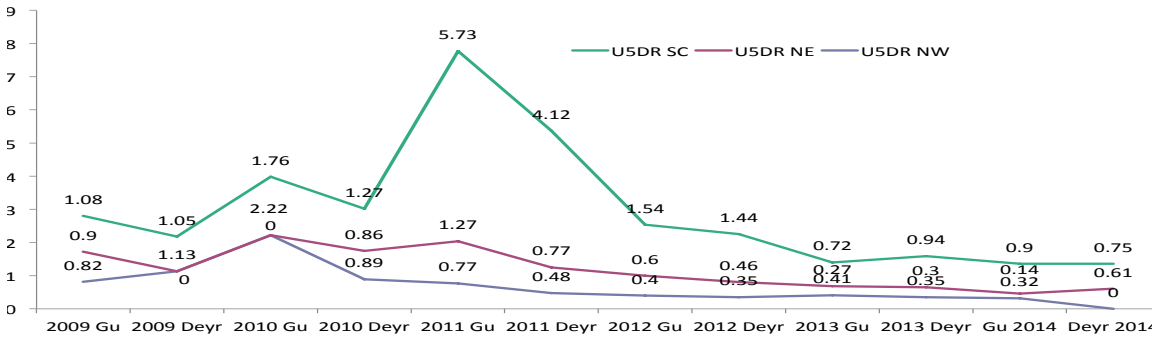
Figure 11 and 12 show decline in both CDR and U5DR in all regions of Somalia. The overall median CDR rate in Northwest is sustained as **Acceptable** even during the famine period while Northeast region shows **Acceptable** levels for CDR only since *Deyr* 2011. In the South-Central region, low CDR (**Acceptable**) has been recorded since *Gu* 2013 although pockets of **Serious-Critical** rates have been seen in some livelihoods in South-Central region during different seasonal assessments.

Figure 11: CDR trends in different Regions in Somalia



Acceptable U5DR rates have been sustained in Northwest region of Somalia (Figure 12) and in Northeast region since *Deyr* 2011 (after famine). Even though median U5DR in South-Central Somalia (0.47) is 4 times as high as Northwest (0.11) in *Deyr* 2014, it is noted that **Acceptable** U5DR has been sustained in South-Central Somalia since *Gu* 2013, with exceptions are noted during every season. Kismayo IDPs are an exception during *Deyr* 2014 with **Critical** U5DR (2.08/10 000/day).

Figure 12: U5DR trends in different Regions of Somalia



MORBIDITY

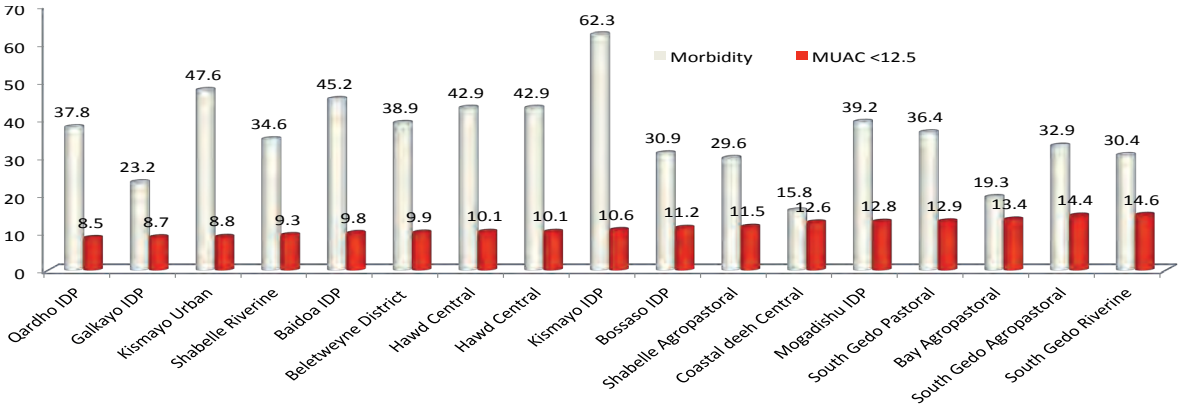
Unsafe water, inadequate sanitation and poor hygiene increase the risk of diarrhoea and other illnesses that deplete children of vital nutrients and can lead to chronic under nutrition and increase the risk of death. Malnutrition contributes to high rates of childhood morbidity, which has been observed in Somalia (Table 5). Frequent illness (diarrhoea and acute respiratory infections) are reported among 30 percent of children under five years of age, with this trend of high morbidity being sustained over time. It was noted that morbidity prevalence is twice as high in South Central region (33.5%) as in Northwest (15.9%). The highest morbidity prevalence is recorded among IDPs (34.1%) owing to an increase in communicable and infectious diseases resulting from over-crowded shelter conditions.

Table 5: Median Morbidity in under 5 children among different populations - *Deyr* 2014

Population surveyed	Deyr 2014	Gu 2014	Deyr 2013	Gu 2013
Rural	27.1	26.8	30.4	23.9
IDP	34.1	30.1	37.3	39.3
Urban	7.7	18.1	0	21.8
South Central	33.5	32.3	35.9	27
North East	30.9	21.2	40.5	37.2
North West	15.9	13.6	26.95	15.9
Overall	29.6	26.4	34.2	27.0

Deyr 2014/15 results suggest a significant (p<0.05) positive association between prevalence of morbidity and GAM-MUAC (r=0.44). This is also shown in figure 13 which shows the morbidity recorded in livelihoods where **Serious- Critical** levels of acute malnutrition were recorded using MUAC as an indicator.

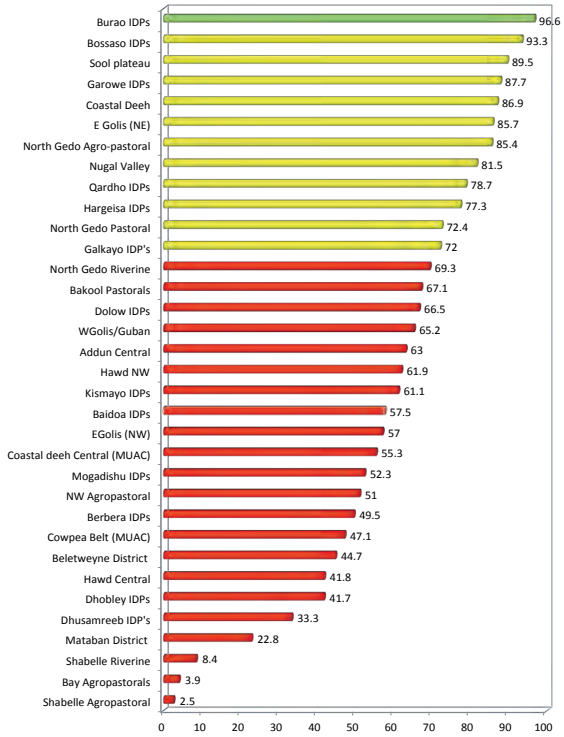
Figure 13: Morbidity in Livelihoods with Serious-Critical GAM-MUAC - *Deyr* 2014



VITAMIN A SUPPLEMENTATION

Vitamin A supplementation is recommended in infants and children 6–59 months of age as a public health intervention to reduce child morbidity and mortality. Vitamin A supplementation coverage of the population should be at least 70 percent and > 95 percent coverage (as per Sphere standards)[4]. According to the *Deyr* 2014/15 assessment, the proportion of all children aged 6-59 months who had received vitamin A (based solely on recall) in the last 6 months was 52.3 percent in South-Central, 86.3 percent in Northeast and 65.2 percent in Northwest (Annex 16). Burao IDPs was the only livelihoods surveyed which reported >95 percent coverage (Figure 14). Of great concern, however, is the fact that < 10 percent of children in livelihoods of Bay Agropastorals, Shabelle Agropastorals and Shabelle Riverine received Vitamin A supplementation (Figure 14).

Figure 14: Vitamin A Supplementation Coverage among Different Livelihoods in Somalia - *Deyr* 2014



STUNTING/CHRONIC MALNUTRITION

Whether a child has experienced chronic nutritional deficiencies and frequent bouts of illness in early life is best indicated by the infant's linear growth or the child's growth in height. Day-to-day nutritional deficiencies over a period of time lead to diminished or stunted growth. The longer time-scale during which stunting is manifested makes it a better indicator for protracted nutritional deficiency (the hidden face of poverty) therefore the measurement of stunting is more useful for long-term planning than for emergencies. The median stunting rate of 10.8 percent (Annex 12) suggests that it is not a public health problem in Somalia. However many wasted children often suffer from stunting as well and this is suggested by the significant positive association of stunting with GAM prevalence (r=0.39, p <0.05) and SAM prevalence (r=0.51, p<0.01). Similar association between acute malnutrition and stunting was also noted with MUAC< 12.5 (r=0.66, p, 0.01) and MUAC <11.5 (r=0.54, p<0.01). This shows that acute malnutrition is often superimposed with chronic malnutrition which can further aggravate malnutrition levels in the community.

4 The Sphere Project. Minimum Standards in Food Security, Nutrition and Food Aid. In: Humanitarian Charter and Minimum Standards in Disaster Response.2004

Deyr 2014/15 assessment shows that only 4/36 livelihoods all of which are IDPs (Kismayo, Bossaso, Dhusamareb and Baidoa) show a level of chronic malnutrition considered **High** - exceeding the 30 percent WHO threshold (Figure 15). This reflects the existence of long term under nutrition and highlights the need to prioritize stunting prevention interventions in these IDPs.

UNDERWEIGHT

Underweight in children is a non-specific indicator of under nutrition, since it includes children with **Low** weight-for-height (wasting) or **Low** height-for-age (stunting). The prevalence of underweight, can be considered **High** by WHO cut-offs for level of public health significance (>20%). The overall median rate of 11.6 percent suggests a **Medium** prevalence of underweight in Somalia (Annex 13). However 10/36 livelihoods show **High/Very High** prevalence of underweight (Figure 16). It was noted that very high levels of underweight (>30%) were seen only among Dolow IDPs.

It was observed that the prevalence of underweight was higher in livelihoods where prevalence of acute malnutrition is high. This is reflected by the significant association of underweight with GAM prevalence (r=0.75, p<0.01) and SAM prevalence (r=0.80, p<0.01). Furthermore, a similar association was also noted with MUAC< 12.5 (r=0.68, p, 0.01) and MUAC <11.5 (r=0.64, p<0.01).

Figure 17 shows a declining trend in prevalence of stunting in Somalia. **Medium** prevalence of stunting was recorded in 2009 (>20%) while the 10.3 percent prevalence rate in 2014 suggests **Low** prevalence of stunting. A similar decline was noted in prevalence of underweight (Figure 18), with 23.5 percent underweight prevalence in 2009 indicating **High** prevalence of public health significance while 13.5 percent prevalence in 2014 indicates medium level of underweight.

REGIONAL DIFFERENCES IN PREVALENCE OF MALNUTRITION

There is a difference in the prevalence of both acute and chronic malnutrition between the different regions of Somalia. Prevalence of all types of malnutrition -wasting/stunting/underweight - is lowest in Northwest region compared to North East /South Central (Table 6). **Low** rates of stunting and underweight are were also observed in the North West region with **Alert** levels of acute malnutrition. The prevalence of acute

Figure 15: Livelihoods with medium (> 20%) or High (> 30%) Stunting prevalence - *Deyr* 2014

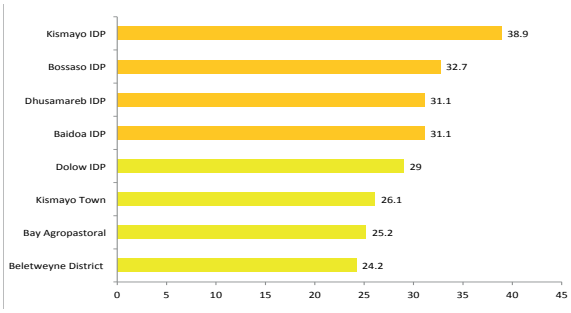


Figure 16: Livelihoods with High Prevalence of Underweight (>20%) - *Deyr* 2014

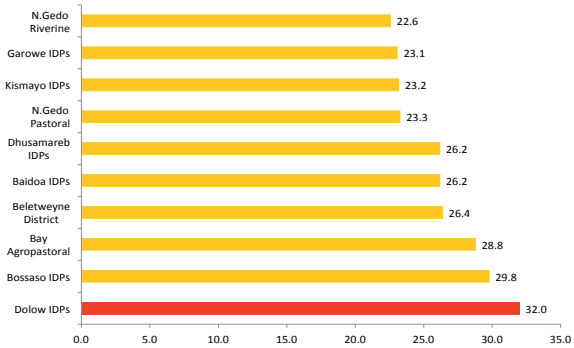


Figure 17: Trends in Stunting Prevalence in Somalia

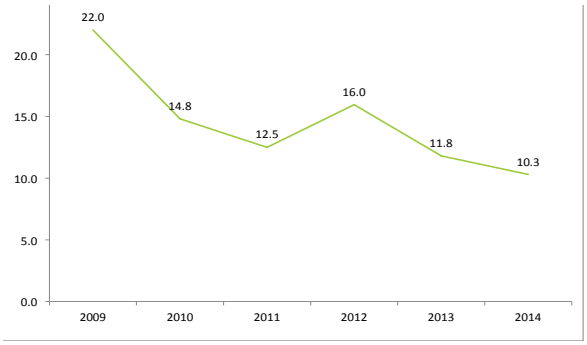


Figure 18: Trends in Underweight Prevalence in Somalia

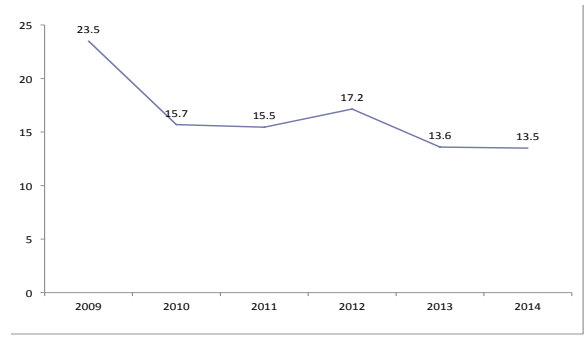


Table 6: Malnutrition Prevalence in different regions - *Deyr* 2014

Region	Wasting	Stunting	Underweight
South-Central	15.3	11.6	14.7
Northeast	12.9	15.7	16.4
Northwest	9.9	2.6	4.6
Overall	12.0	10.8	11.6

malnutrition where insecurity and access is an important factor shows highest levels of wasting (15.3%) compared to other regions. However it is observed that prevalence of stunting (15.7%) and underweight (16.4%) in North East region is higher than the levels recorded in South Central Somalia. Regional differences in prevalence of malnutrition are however not statistically significant.

LIVELIHOOD DIFFERENCES IN PREVALENCE OF MALNUTRITION

Comparison of the nutrition situation in different livelihoods is summarized in Table 7. The highest prevalence of acute malnutrition was noted among Agropastorals (**Critical** GAM and **Serious** SAM as well as **Serious** levels of GAM and SAM - MUAC). **Acceptable** level of maternal malnutrition was seen among Agropastorals (7.2%). It is a paradox that the lowest prevalence of morbidity was recorded among Agropastorals (20.5%) compared to Pastorals with 33.3 percent morbidity who had lowest prevalence of both GAM (11.1%) and SAM (1.5%).

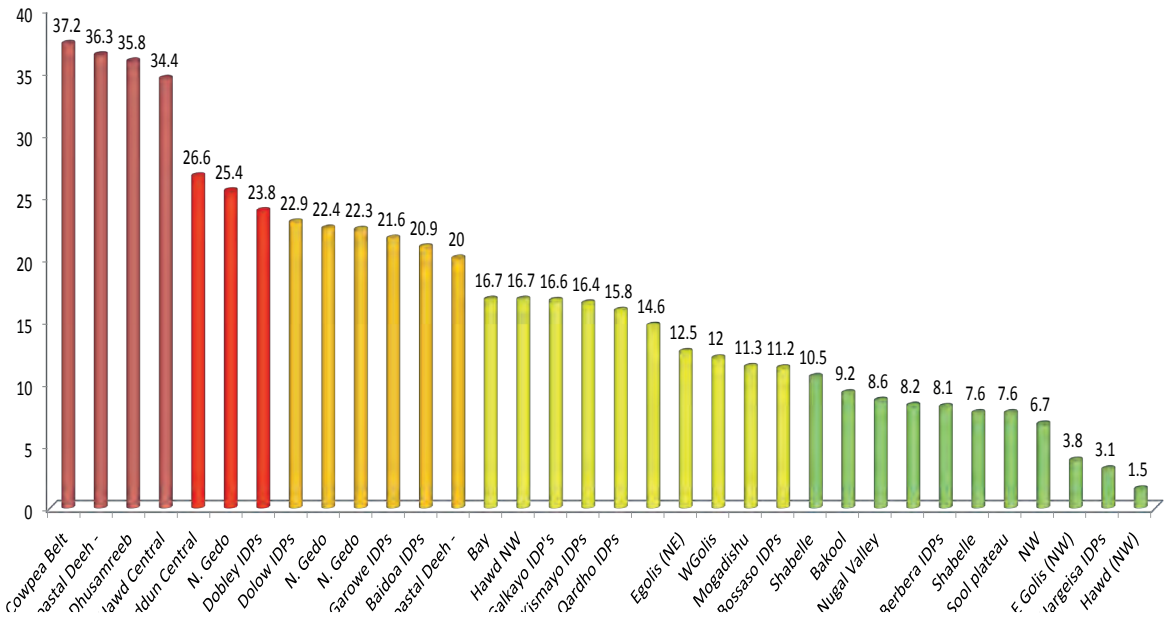
Table 7: Nutrition Situation in different livelihoods (% Median) - *Deyr* 2014

Livelihood	GAM	SAM	MUAC <12.5cm	MUAC <11.5cm	CDR	U5DR	Morbidity	Stunting	Underweight	Maternal Malnutrition
IDPs (n= 13)	13.4	2.5	7.2	1.3	0.36	0.61	34.1	15.4	15.9	16.4
Agro pastoral (n= 4)	15.9	3.9	8.6	1.7	0.31	0.40	20.5	10.5	15.3	7.2
Riverine (n= 2)	14.8	2.5	7.6	2.2	0.47	0.91	27.8	13.6	16.4	5.3
Pastoral (n= 14)	11.1	1.5	5.6	1.0	0.16	0.08	33.3	8.4	9.1	12.0

MATERNAL MALNUTRITION

A child's future nutrition status is affected before conception and is greatly dependent on the mother's nutrition status prior to and during pregnancy. A chronically undernourished woman will give birth to a baby who is likely to be undernourished as a child, causing the cycle of under nutrition to be repeated over generations. **Critical** levels of maternal malnutrition among Dhobley IDPs, North Gedo Agro pastoral and Addun Central and **Very Critical** levels recorded among livelihoods of Hawd central, Dhusamareb IDPs, Coastal Deeh and Cowpea belt (Figure 19) suggest that unless it is addressed immediately the intergenerational cycle of poverty and growth failure will continue in Somalia. Marked reductions in child under nutrition can be achieved through improvements in women's nutrition before and during pregnancy.

Figure 19: Prevalence of Maternal Malnutrition in different Livelihoods in Somalia - *Deyr* 2014



HOTSPOTS FOR ACUTE MALNUTRITION IN SOMALIA

With **Critical** rates of acute malnutrition (GAM ≥15 % or SAM ≥4% or GAM- MUAC ≥10.6%), the following livelihood zones and population groups are considered as the **"malnutrition hotspots"** or priorities for nutrition programming: Pastoral, Agropastoral and Riverine livelihoods in North and South Gedo Regions; Agro pastoral livelihoods and Baidoa IDPs in Bay Region; Hawd livelihood in Central and North East region; Beletweyne and Mataban Districts in Hiran Region; Bossasso IDPs in Bari Region; Garowe IDPs in Nugal Region; and Galkayo IDPs in Mudug region (Table 8). Resources invested in these hot spots will have a maximum impact on improving the nutrition situation.

Table 8: Current Hotspots for Acute Malnutrition in Somalia - *Deyr* 2014

Population Group	SOUTH	CENTRAL	NORTH EAST	NORTH WEST
Rural	Bay Agro pastoral North Gedo Pastoral North Gedo Riverine North Gedo Agro pastoral South Gedo Riverine South Gedo Pastoral South Gedo Agropastoral Beletweyne District Mataban District	Hawd Central Coastal Deeh Central	None	None
IDP	Dolow Baidoa	Dhusamareb	Bossasso Garowe Galkayo	None

FOOD SECURITY

An estimated 731 000 people (of which IDPs represent 76 % of the total) will be in **Crisis** and **Emergency** (IPC Phases 3 and 4) from February to June 2015, according to the latest findings from the 2014 *Deyr* season (October-December) assessment led by the Food Security and Nutrition Analysis Unit (FSNAU) of FAO Somalia, FEWS NET and other partners. This figure represents a 29 percent decrease from the estimates for July to December 2014 when 1 025 000 people were in **Crisis** and **Emergency**; and a 15 percent decline from the estimates for February to June 2014 of 857 000 people in **Crisis** and **Emergency**. Nearly 2.3 million additional people are classified as **Stressed** (IPC Phase 2) through June 2015 and require interventions to protect their livelihoods and build their resilience against future shocks. This group of households remains highly vulnerable and could slide to **Crisis** or **Emergency** (IPC Phases 3 or 4) if they are subjected to shocks.

Areas and Populations of Concern

- The food insecurity situation among IDPs in Dolow is classified as **Emergency** (IPC Phase 4). Populations in the remaining 12 IDP settlements are classified as **Crisis** (IPC Phases 3).
- Urban population in the South (Hudur, Wajid and Bulu Burto) affected by trade disruptions face acute food security **Crisis** (IPC 3) despite a modest improvement of the situation since July 2014.
- Southern Agropastoral populations in Juba and destitute pastoralists in coastal areas of Northeastern, Central and South Somalia face acute food security **Crisis** (IPC 3).
- In Riverine areas of Middle and Lower Juba affected by floods during the *Deyr* season, food security will continue to deteriorate until the late (off-season) harvest becomes available in March. Similarly, in parts of Pastoral and Agropastoral livelihood zones that received below-average *Deyr* rains, household food security will continue to deteriorate until the start of *Gu* rains in April.

PROJECTED NUTRITION OUTLOOK: FEBRUARY TO APRIL 2015

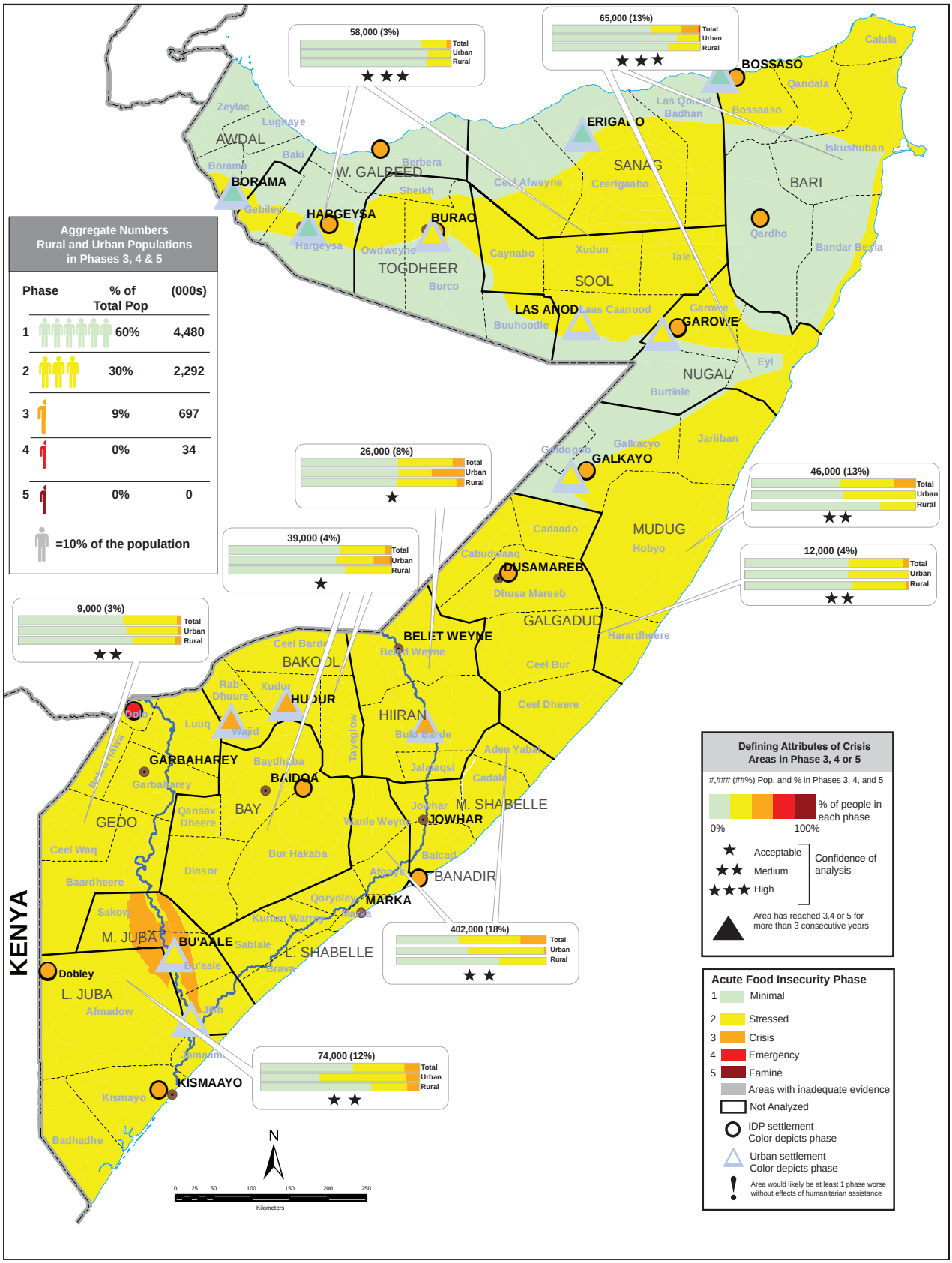
The nutrition situation outlook for February to April 2015 (Map 6) is inferred from the current nutrition situation estimates, historical seasonal trends, historical disease patterns, and projected food security trends for February to June 2015 (Map 5). In general, the current nutrition situation is likely to remain stable across the country through April 2015 with exception of the following:

- Deterioration in the nutrition situation among Northwest Agropastoral to Alert and of Hawd, West Golis, Sool Plateau, Burao and Berbera IDP to Serious is expected through April which is mostly characterized by dry spells hence limited water availability for both livestock and human consumption. This situation is likely to contribute to out-migration of livestock and reduced milk availability at household level. Deterioration is also expected for Burao IDP and Berbera IDP due to limited humanitarian interventions in these settlements and the seasonal trends observed based on historical data.
- In the South, the nutrition situation observed during *Deyr* 2014 is expected to be sustained except among Shabelle Agropastoral where an outbreak of measles has recently been reported.

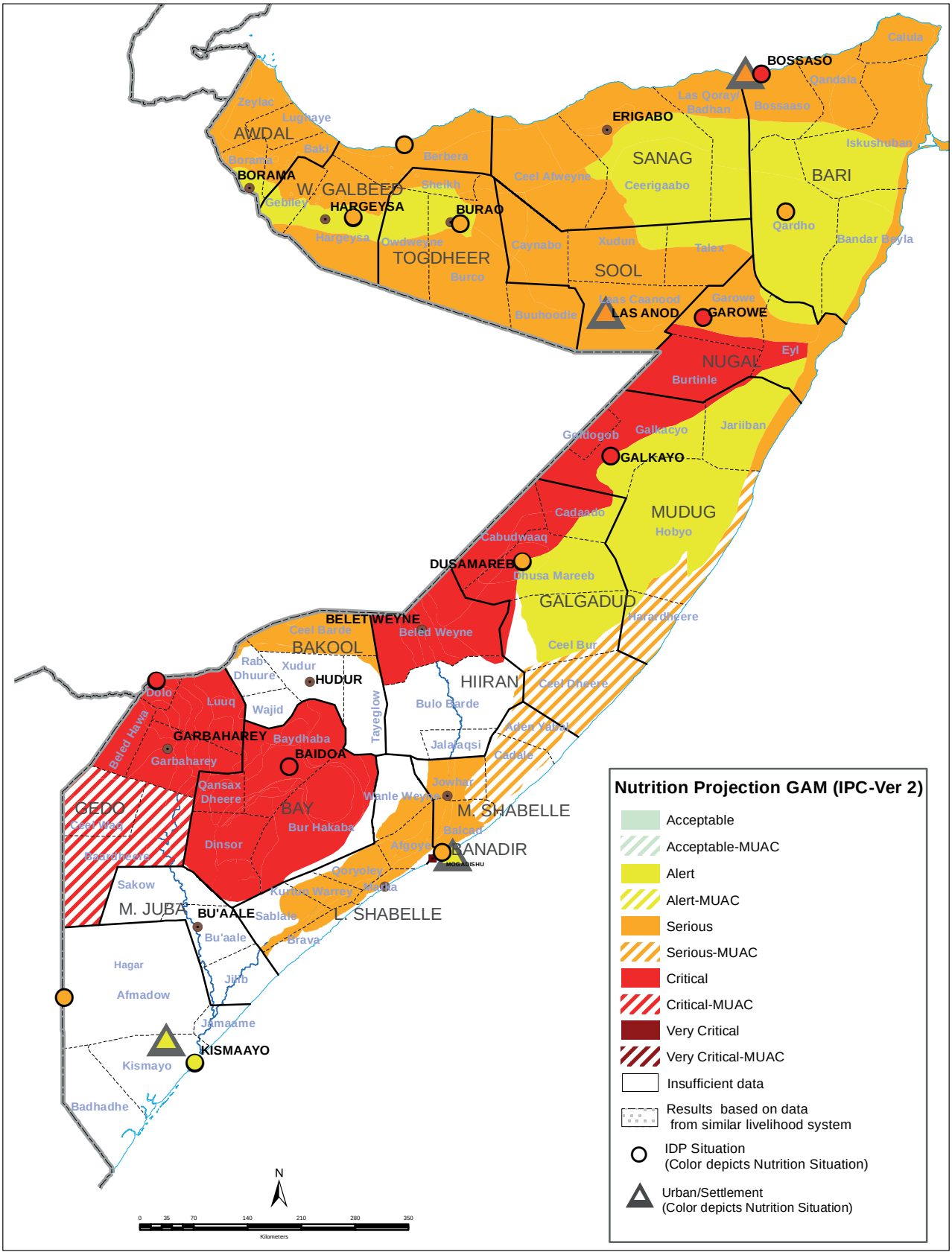
CONCLUSION AND RECOMMENDATIONS

- Nutrition situation in Somalia is improving but the current median rate for acute malnutrition in the South Central region is still "**Critical**" (≥ 15% GAM). The number of acutely malnourished children across Somalia (prevalence) is estimated at **202 600**. This represents a 6 percent decline from post *Gu* 2014 (6 months ago), while the proportion of SAM is decreasing by 13 percent since *Gu* 2014 and 31 percent since *Deyr* 2013.
- The median GAM prevalence in South Central region is 15.3 percent which is higher than the 13.4 percent GAM recorded among IDPs or 9.9 percent GAM in Northwest region of Somalia.
- **Critical** prevalence of acute malnutrition is recorded only among livelihoods in South-Central Somalia or among IDPs in South-Central and Northeast. No livelihood in the Northwest shows prevalence of **Critical** levels of acute malnutrition.
- **Serious-Critical** GAM levels are recorded in 10/13 IDPS surveyed which indicates a need to **scale up and sustain ongoing interventions**. Compared to Post *Gu* 2014 (July), nutrition situation has deteriorated among IDPs in Bossaso, Baidoa and Dolow IDPs but improved among IDPs in Mogadishu, Kismayo and Dobley. Improved nutrition situation in Mogadishu and Kismayo IDPs where humanitarian emergency situation was observed during *Gu* 2014 demonstrates the impact of targeted nutrition interventions by UN/NGOs. However, Somalia cannot rely forever on short-term emergency interventions which are brought in at great cost. There is a need to scale up the nutrition programmes to reach children during the critical period from pregnancy to the age of 2. Without **long-term sustainable intervention** the same scenarios (humanitarian emergency situation) will be repeated when there is a decline in humanitarian interventions.
- Contrary to popular belief, acute malnutrition in Somalia does not occur only in food insecure populations, implying that it not an issue of food access, but is largely influenced by caring practices, access to safe water/ sanitation and disease. This is highlighted by the paradox of Bay Agropastoral which is reportedly the food basket of Somalia but shows sustained **Critical** GAM and **Very Critical** SAM prevalence.
- **Many wasted children are often suffering from stunting as wel**l. This is suggested by the significant association of stunting with GAM prevalence ($r=0.39$, $p<0.05$) and prevalence of SAM ($r=0.51$, $p<0.01$). Similar association was also noted with MUAC< 12.5 ($r=0.66$, p, 0.01) and MUAC <11.5 ($r=0.54$, $p<0.01$).
- High levels of sustained acute malnutrition seen in most of the livelihoods in South-Central Somalia/IDPs suggest an urgent need for **Nutrition Causal Analysis** for humanitarian actors to identify and rank causes of under nutrition and plan more effective interventions to tackle persistent malnutrition in certain livelihoods.
- Although mortality is low, the high levels of wasting ,stunting, underweight and maternal malnutrition recorded in areas where prevalence of acute malnutrition is high requires ***further strengthening and expanding implementation of comprehensive multi-sectoral interventions*** to address the nutritional situation of under 5 children.
- Although current efforts underway to treat malnutrition must be intensified, bringing sustainable reductions in child malnutrition requires an integrated package of measures that tackle both the causes and effects of malnutrition, backed up by **strong political and institutional support**. Longer term flexible humanitarian funding for Somalia will help ensure continuity and linkage to early recovery and transition.

Map 5: Rural, Urban and IDP Food Security Projection (February - June 2015)



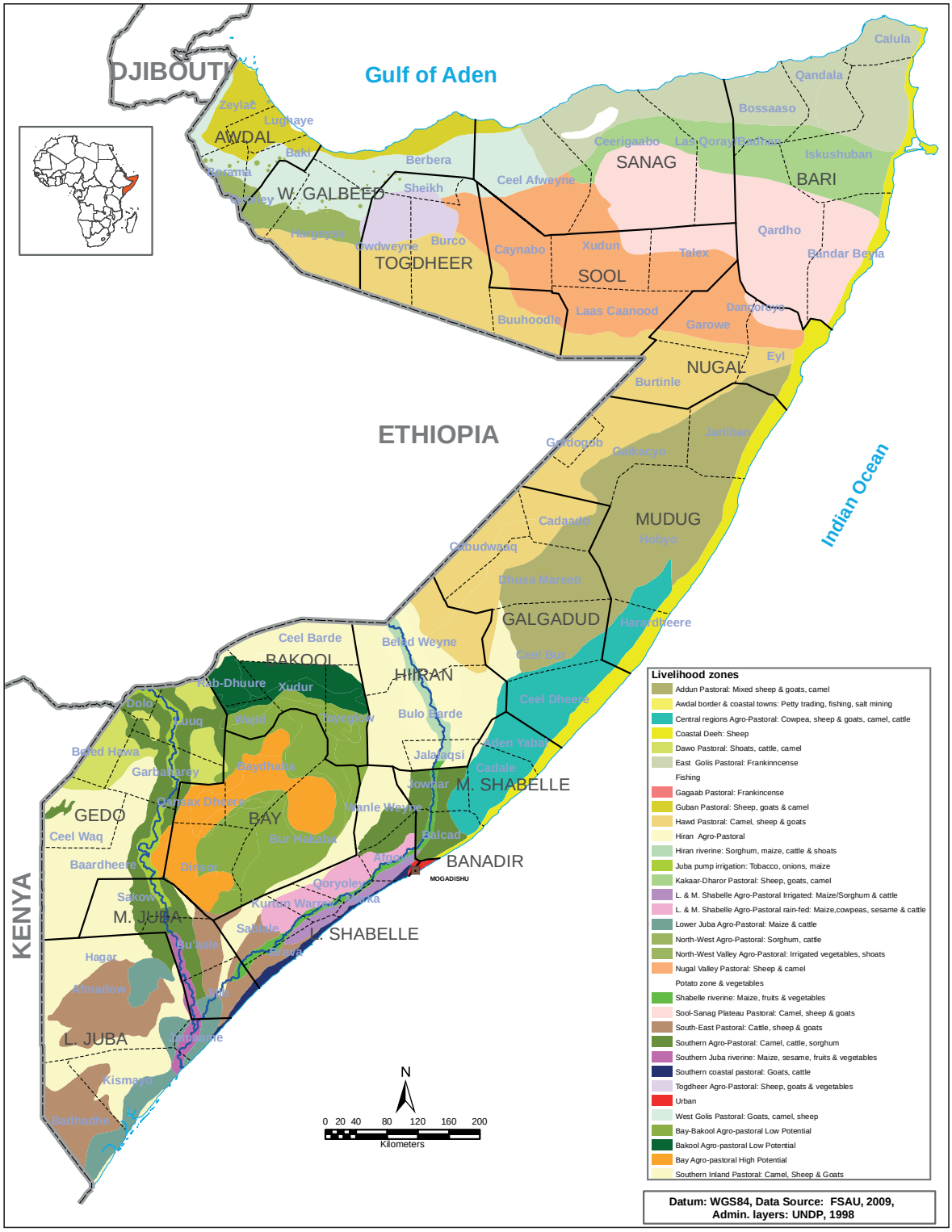
Map 6: Nutrition Situation Outlook (February – April 2015)



4: REGIONAL NUTRITION ASSESSMENT

FSNAU conducted 41 nutrition surveys and assessed the nutrition status of 28 996 children (6-59 months) drawn from different livelihood zones in Somalia (19 in South, 5 in Central, 9 in Northeast and 14 in Northwest). Out of the total 24 nutrition surveys were done among rural populations, 4 among urban populations and 13 among IDPs. The samples for nutrition surveys were done on the basis of a combination of regional boundaries and livelihood zones (Map 7).

Map 7: Somalia Livelihood Zones*



* FSNAU is in the process of finalizing re-zoning of Somalia's existing 33 livelihood zones into 19 reasonably homogeneous livelihood zones

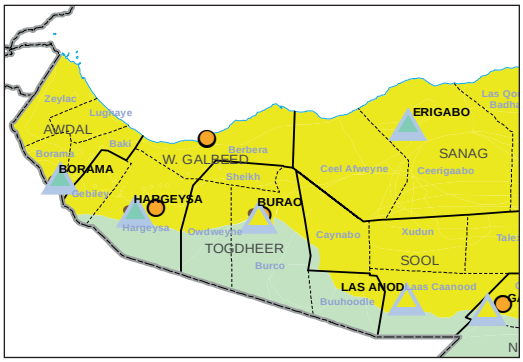
4.1: NORTHWEST REGIONS

FSNAU conducted a total of ten comprehensive assessments in North West region of Somalia (1 urban livelihood, 6 rural livelihoods and 3 IDP livelihoods). A total of **5 673** children (6-59 months) and **1 064** pregnant and lactating women from **3 572** households were surveyed.

CURRENT FOOD SECURITY SITUATION (POST *DEYR* 2014/15)

The food security situation has improved from the post *Gu* 2014 season in most pastoral and agro pastoral livelihoods of Northwest regions. In the January 2015 snapshot analysis, most livelihoods of the region were classified as **Stressed** (IPC Phase 2) except for Hawd livelihood which has been classified as **Minimal** (IPC Phase 1), (Map 8). In comparison to the post *Gu* 2014, the estimated number of rural population classified in **Stressed** (IPC Phase 2) decreased (by 28%) in January 2015 to 200 000 people from 280 000 people in *Gu* 2014. The total population in **Crisis** (IPC Phase 3) decreased significantly by 88 percent (3 000 people) from Post *Gu* 2014 (26 000 people). This improvement in part of the population from emergency to crisis was as a result of increased crop production that occurred mainly in the Agro pastoral livelihood in Waqooyi Galbeed and Awdal regions. The estimates of population in **Emergency** (IPC phase 4) in *Gu* 2014 (3 000 people) were upgraded to **Crisis** in this season and were considered as poor households. In the most likely scenario, the area classification of Hawd and West Golis/Guban and East Golis were classified as **Minimal (IPC Phase 1)**, while Sool plateau, Nugal valley and the Agropastoral remain in **Stressed** (IPC Phase 2), (Map 8). However, the estimates of population in **Stressed** (IPC Phase 2) are projected to decrease from January 2015 estimates by 6 percent (178 000 people), while populations in **Crisis** (IPC Phase 3) remain unchanged.

Map 8: Food Security Situation in Northwest Regions - Jan 2015



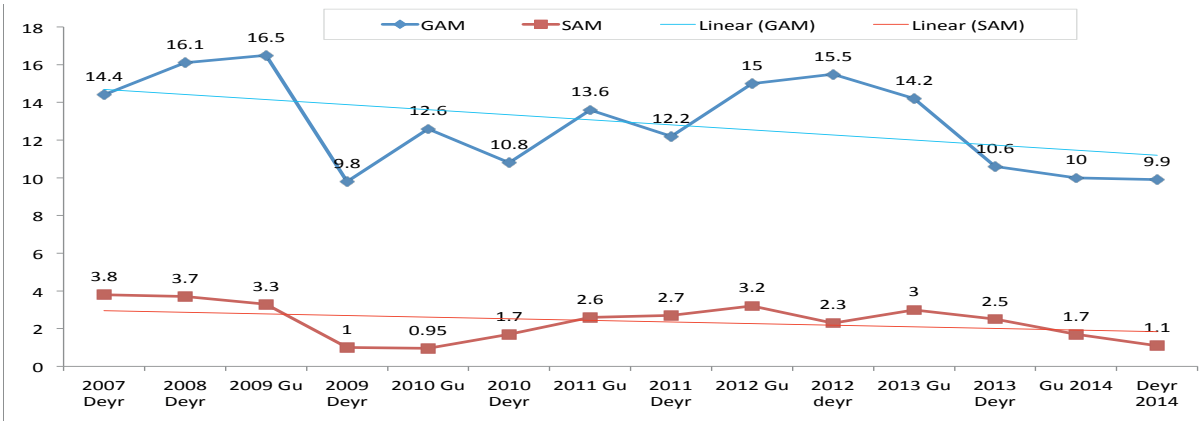
DEYR 2014/5 SURVEY RESULTS

The results of the current *Deyr* 2014 nutrition assessment conducted in North West Somalia are summarized in tables 9, 10, 11 and 12. Key highlights are discussed below:

Trends in Acute Malnutrition

For the first time, **Acceptable** (<5%) GAM levels have been recorded in the Northwest region of Somalia and at the same time no livelihood reported **Critical** GAM prevalence exceeding the 15 percent threshold. The overall nutrition situation in the North West has been steadily improving as depicted in Figure 20. In the last 4 seasons, GAM prevalence have been oscillating between **Serious** (10.0-14.9%) and **Alert** (5.0-9.9%) levels and decline in median GAM rate has been observed. During the same period, decline in the median SAM rate from **Serious** levels (2.5-4 %) to **Alert** levels (1.1-2.4 %) was also recorded.

Figure 20: Trends in Acute Malnutrition - *Deyr* 2014



ACUTE MALNUTRITION

The GAM and SAM prevalence in Northwest is summarized in Figure 21 and 22. None of the 10 livelihoods surveyed show GAM prevalence in excess of 15 percent during the 2014 *Deyr* assessments. Four livelihoods reported **Serious** nutrition situation while **Alert** nutrition situation was recorded in five livelihood zones and **Acceptable** in one livelihood (Northwest Agropastorals).

Figure 21: Prevalence of GAM in North West Region - *Deyr* 2014

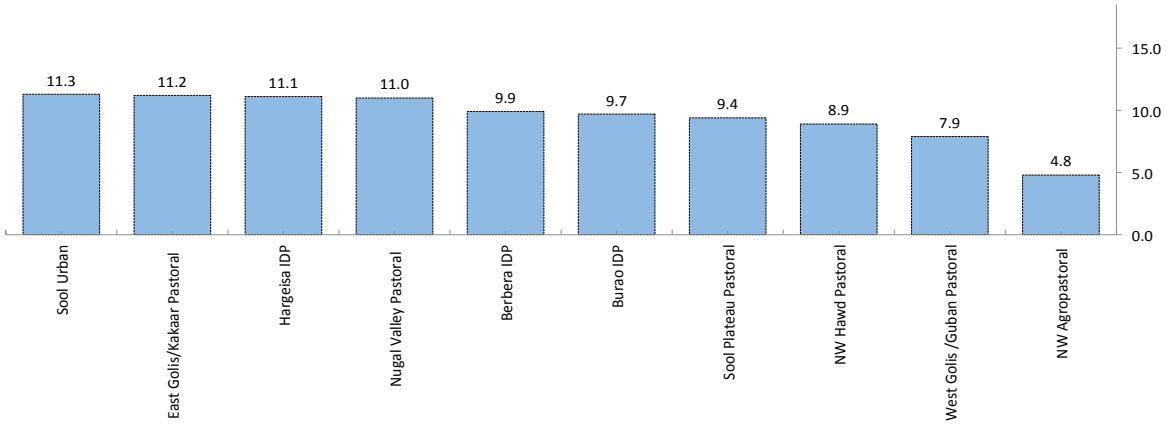
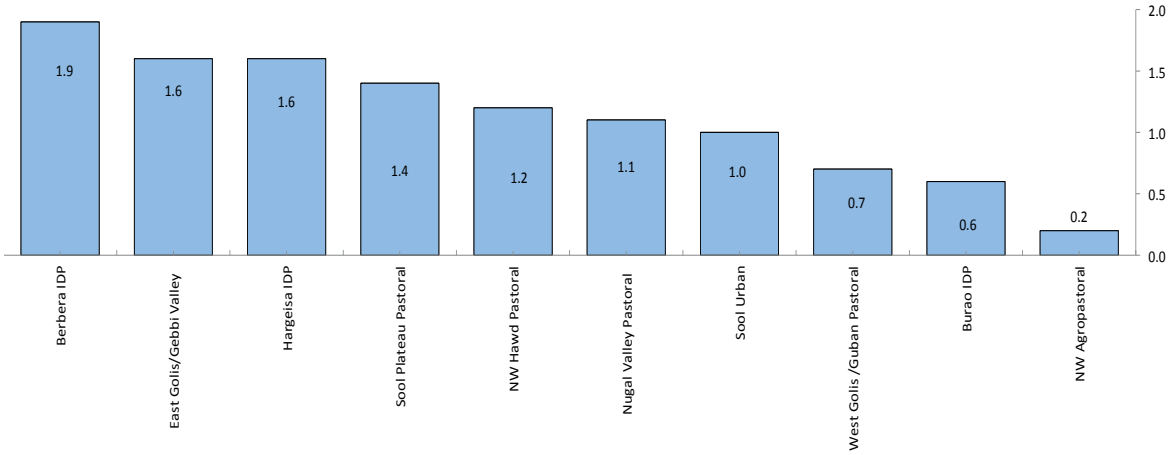


Figure 22: Prevalence of SAM in North West Region - *Deyr* 2014



As depicted in Figure 22, there was no critical prevalence of SAM prevalence (> 2%) in a livelihood. Alert levels of SAM were recorded in 6 livelihoods, namely Berbera IDPs, East Golis, Hargeisa IDPs, Sool Plateau, Northwest, Hawd Pastoral and Nugal Valley. **Acceptable** levels of SAM prevalence were noted in 4 livelihoods (Sool Urban, West Golis, Burao IDP and Northwest Agropastoral)

- **Northwest Agropastoral:** livelihood recorded **Acceptable** levels of both GAM (4.8 %) and SAM (0.2 %). Compared to *Gu* 2014 when **Serious** GAM levels were reported, this change indicates a statistically significant ($p<0.05$) improvement in the last six months. Following the favourable *Deyr* 2014 rains, this livelihood recorded improved crop production and pasture performance impacting on the household food security and is considered to have played a key role in the observed significant change.

- **West Golis/Guban:** recorded a GAM rate of 8.0 percent and SAM of 0.7 percent, indicating an **Alert** nutrition situation phase. Six months ago (*Gu* 2014) **Critical** nutrition (15.8 %) was reported and therefore in comparison to the current nutrition situation a statistically significant ($P<0.01$) improvement has been noted. Like in the Agropastoral livelihood, this improvement can be attributed to favourable performance of the *Deyr* 2014 rains which led to improved pasture, and as a result increased milk availability as household level. The past trends have also shown that increased milk availability has a highly favourable impact on children's nutrition status.

- **Sool Plateau: Alert** levels of GAM (9.4%) and **Serious** levels of SAM (1.4%) were reported indicating an improvement from **Serious** levels of GAM (12.0 %) recorded in *Gu* 2014. In comparison *Deyr* 2013, when **Alert** level of GAM were reported (8.6%), the situation shows seasonal stability.

- **Nugal Valley Pastoral: Serious** levels of GAM (11.0 %) and SAM (1.1%) were reported suggesting a deterioration from **Alert** levels of GAM (7.0 %) recorded in *Gu* 2014. Although in comparison to *Deyr* 2013 (14.5 %), the situation suggest seasonally stability, and it's worth noting that the closure of IMC run Outpatient Therapeutic Program (OTP) had some bearing on the deterioration observed in the past 6 months. This is because targeted feeding programmes play pivotal role in reducing cases of malnutrition in the community.

- **E.Golis/Gebbi Valley Pastoral: Serious** GAM prevalence (11.2 %) and SAM (1.6%) recorded in the current season indicate a phase change from **Alert** levels of GAM (9.0 %) reported in *Gu* 2014. This suggests deterioration in nutrition situation. Pasture conditions and availability of milk in some parts of East Golis were reportedly poor owing to below average rainfall performance and are contributory factors to the deterioration.

- **Hawd Pastoral: Alert** levels of GAM (8.9%) have been sustained since *Gu* 2014 (7.6 %). However, SAM prevalence (1.2 %) increased compared to six months ago when there was absolutely no cases of SAM reported. Seasonally, Hawd has remained stable due to livestock in-migration which ensures that even during dry season, milk availability remains average.

- **Hargeisa IDPs** recorded **Serious** levels of GAM (11%) and **Alert** SAM rate (1.6%) which indicate a deterioration from the rates observed in *Gu* 2014 GAM (8.1%) and SAM rate (0.3 %). When compared to *Deyr* 2013 (10.6%) the situation is sustained at **Serious**. There is a steady improvement linked to the continued humanitarian support among this population.

- **Berbera IDP** settlement recorded **Alert** prevalence of GAM (9.9 %) and **Alert** SAM rate (1.9%). Even though not statistically significant, a phase change from the **Serious** to **Alert** has been noted. Statistically significant ($p<0.05$) improvement was observed in the change since last *Deyr* 2013 (GAM 16%). The improvement is linked to the continued humanitarian support.

- **Burao IDP** settlement recorded **Alert** GAM prevalence of 9.7 percent and **Acceptable** SAM of 0.6 percent. This is an improvement compared *Gu* 2014 GAM (12.4 %) and *Deyr* 2013 (10.0%). This suggests a steady improvement in the nutrition situation due to the humanitarian assistance.

- **Sool Urban:** recorded a GAM rate of 11.3 percent and a SAM rate of 1.0 percent indicating a sustained **Serious** nutrition situation since *Gu* 2014.

STUNTING AND UNDERWEIGHT

Low prevalence of stunting and underweight was observed in all the 10 livelihoods surveyed in Northwest. The sustained levels of low prevalence for both stunting and underweight in the last 12 month suggest a stable nutrition situation (Annex 12 & 13).

MORTALITY

The Crude and under-five death rates in all the 10 livelihoods surveyed are within **Acceptable** levels of between <0.5 and <1/10 000/day. Both CDR and U5DR reflect a stable mortality situation in both seasons *Gu* 2014 to *Deyr* 2014 (Annex 11). This can be attributed to low morbidity rates in most livelihoods and improved food security situation.

MORBIDITY

Overall morbidity rates in the assessed livelihoods has always been low. However, apart from Northwest Agropastoral (11.5%), West Golis (14.5%) Berbera IDP (5.0%) and Hargeisa IDP (9.7%) all other livelihoods reported morbidity rates above 15 percent, indicating 1 in every 5 to 7 children assessed reported some form of illness in the 2 week period before the assessment. The highest morbidity levels were recorded in Nugal, Sool

plateau, Hawd,Burao IDP and East Golis with prevalence of 21.7, 20.3 19.1 and 17.8 and 17.3% respectively. Compared to the rural populations, the IDP population registered lower morbidity rates and this can be attributed to sustained health interventions in the IDP camps.

MATERNAL MALNUTRITION

Pregnant and Lactating Women were assessed in both the IDP and Rural livelihoods. The levels of maternal malnutrition (MUAC < 23 %) ranged from 0.5 percent in Northwest Hawd to 12.0 and 12.5 percent in West Golis and Sool plateau respectively. Also in *Gu* 2014, West Golis again reported highest prevalence (15.6%) and this likely suggest sustained high vulnerability of pregnant and lactating mothers to acute malnutrition in this area. Other than West Golis and Sool Plateau, the rest of the livelihoods registered levels below 10%.

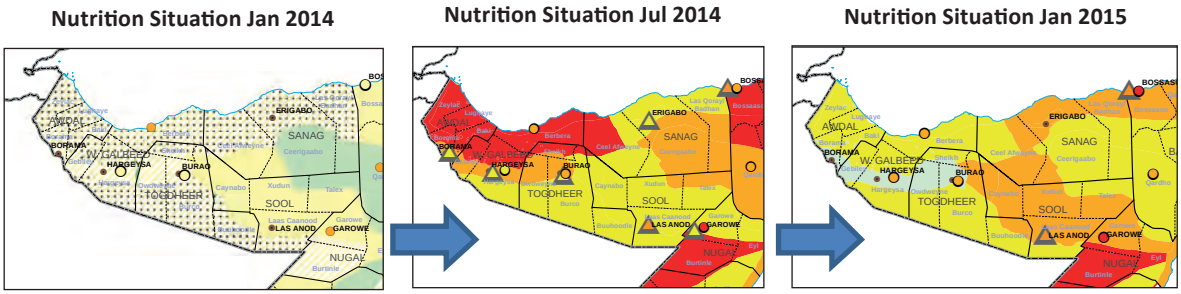
DIETARY DIVERSIFICATION

Similar to observation made in the past seasons, household dietary diversity measured as proportion of households consuming more than four food groups is high. There is no significant change in household dietary diversity in both seasons (*Gu* and *Deyr* 2014). These livelihoods are predominantly pastoral and therefore improved milk access and consumption is a key mitigating factor of malnutrition.

CHANGE IN NUTRITION SITUATION

The maps below (Figure 23) show the progression in nutrition situation from *Deyr* 2013 to *Deyr* 2014. The nutrition situation among the IDP livelihoods in Northwest region has for the last twelve months (*Deyr* 2013 to *Deyr* 2014) ranged between **Alert** to **Serious** to **Critical** levels. For the first time in a long while an **Acceptable** nutrition situation has been reported in North West region. In the rural population, apart from West Golis that reported **Critical** levels of malnutrition in *Gu* 2014, the malnutrition levels oscillate between **Alert** and Serious levels. The nutrition situation has largely been influenced by food security factors particularly access to milk among the predominant pastoral communities and morbidity patterns.

Figure 23: Progression of the Nutrition Situation *Deyr* 2013 to *Deyr* 2014 in Northwest



OUTLOOK FOR FEBRUARY TO APRIL 2015

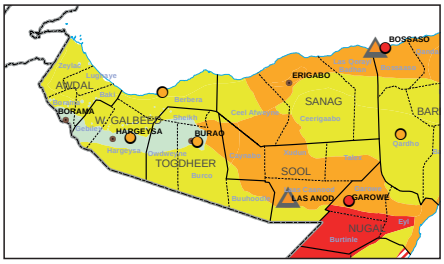
Majority of Northwest population are of pastoral livelihood and therefore water and pasture availability for animals plays a critical role in their nutritional wellbeing. The *Jilaal* season (Jan to March) is normally characterized by dry spells hence limited water availability for both livestock and human consumption. This situation is likely to contribute to out-migration of livestock. The impact of this is reduced milk availability at household level and increased milk prices in the market. Further to that, the knock-on effect may be felt through pressure on food budget resulting in minimal food diversity at the household level. In addition, the effects of chronic factors such as suboptimal Infant and Young Child Feeding (IYCF) practices, limited health facilities and insufficient sanitation practices persist further compounding the situation.

As a result improvements seen in Northwest Agropastoral and West Golis may not be sustained hence they are likely to deteriorate to **Alert** and **Serious** nutrition situation respectively.

Deterioration is also expected for Burao and Berbera IDP. This is linked to limited humanitarian interventions in these settlements and the typical trends observed based on historical data.

Figure 24: Nutrition Situation and Outlook January 2015 to April 2015 in Northwest

Current Nutrition Situation January 2015



Projected Nutrition Situation February to April 2015

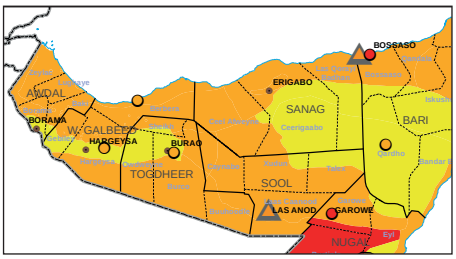


Table 9: Summary of Key Nutrition Findings: Northwest IDPs Livelihoods - *Deyr* 2014

	Hargeisa IDPs		Berbera IDPs		Burao IDPs	
	Clusters: 30 (n=578; Boys=287; Girls=291)		Clusters :28 (n=533:Boys255=;Girls=278)		Clusters: 32 (n=640; Boys=313; Girls=327)	
Indicator	% (CI)	Change from *Gu* 2014	% (CI)	Change from *Gu* 2014	% (CI)	Change from *Gu* 2014
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema)	11.1 (8.5–14.3)		9.9 (6.8-14.4)		9.7(7.7-12.1)	
Boys	11.5 (7.8–16.6)	Deteriorated	11.4(7.8-16.2)	Improved	12.8(9.5-17)	Improved
Girls	10.7 (7.0–15.8)		8.6(4.9-14.9)		6.7(4.5-10)	
Severe Acute Malnutrition (WHZ<-3 or oedema)	1.6 (0.9 – 2.7)		1.9(1.0-3.6)		0.6(0.2-1.6)	
Boys	1.0 (0.3 – 3.2)	Deteriorated	1.6(0.6-4.1)	Deteriorated	1.0(0.3-3.0)	Improved
Girls	2.1 (1.0 – 4.3)		2.2(0.9-5.1)		0.3(0-2.3)	
Mean of Weight for Height Z Scores	-0.63±1.05		-0.67±1.02		-0.41±1.13	
Oedema	0.2		0.0		0.0	
Proportion with MUAC<12.5 cm or oedema)	2.2 (1.4-3.5)		2.3(1.1-4.4)		3.8(2.2-6.3)	
Boys	2.1 (0.8-5.0)	Improved	2.0(0.8-4.6)	Deteriorated	2.6(1.2-5.3)	Deteriorated
Girls	2.4(1.3-4.4)		2.5(1-6.2)		4.9(2.4-9.6)	
Proportion with MUAC<11.5 cm or oedema	0.3 (0.1-1.4)		1.5(0.7-3.1)		1.1(0.5-2.2)	
Boys	0.7 (0.2-2.8)	Improved	2.8(1.4-5.5)	Improved	1.3(0.5-3.4)	Deteriorated
Girls	0.0		0.4(0-2.7)		0.9(0.3-2.8)	
Stunting (HAZ<-2)	3.3 (1.8-5.9)		1.5(0.7-3.1)		1.7(1.0-3.0)	
Boys	4.2 (2.1-8.1)	Sustained	2.8(1.4-5.5)	Sustained	2.6(1.4-4.8)	Sustained
Girls	2.4(1.1-5.2)		0		0.9(0.3-2.8)	
Severe Stunting (HAZ<-3)	0.3(0.1-1.5)		0.2(0-1.4)		0.2 (0-1.2)	
Boys	0.7(0.2-2.9)	Sustained	0.4(0-3.1)	Sustained	0	Sustained
Girls	0.0		0		0.3(0-2.3)	
Underweight (WAZ<-2)	6.7(4.8-9.4)		4.1(2.4-7.1)		3(1.8-4.9)	
Boys	8.7(6.0-12.4)	Sustained	5.5(2.6-11.4)	Sustained	3.2(1.7-5.9)	Sustained
Girls	4.8(2.8-8.3)		2.9(1.4-5.7)		2.8(1.3-5.9)	
Death Rates						
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.11 (0.04-0.33)	Sustained	0.14(0.04-0.47)	Sustained	0.04 (0.01-0.29)	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.18(0.02-1.38)	Sustained	0.0	Sustained	0.34 (0.04-2.57)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	0	Sustained	1.6(-1.4-4.6)	Sustained	0	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	3.1(-3.0-9.3)	Improved	8.1(-6.9-23.0)	Deteriorated	0.7 (0.1-2.6)	Improved

	Hargeisa IDPs		Berbera IDPs		Burao IDPs	
	Clusters: 30 (n=578; Boys=287; Girls=291)		Clusters :28 (n=533:Boys255=;Girls=278)		Clusters: 32 (n=640; Boys=313; Girls=327)	
Indicator	% (CI)	Change from *Gu* 2014	% (CI)	Change from *Gu* 2014	% (CI)	Change from *Gu* 2014
Morbidity Rates						
Morbidity	9.7(6.2-13.1)	Sustained	5.0(2.5-7.6)	Sustained	17.8(7.9-27.7)	Sustained
Boys	7.9(4.1-11.7)		6.6(3.5-9.8)		18.2(6.8-29.6)	
Girls	11.4(6.4-16.4)		3.6(1.1-6.0)		17.4(7.7-27.1)	
Diarrhoea	4.8(2.8-6.7)	Sustained	2.6(1.3-3.9)	Sustained	4.1(2-6.1)	Sustained
Boys	3.1(1.4-4.8)		3.5(1.6-5.4)		3.2(0.5-5.9)	
Girls	6.4(3.4-9.4)		1.8(0.3-3.3)		4.9(2.5-7.3)	
Pneumonia	3.2(1.1-5.4)	Sustained	2.4(0.9-3.9)	Sustained	12(4.1-19.9)	Sustained
Boys	3.1(0.9-5.3)		3.1(0.9-5.3)		12.8(4.4-21.2)	
Girls	3.4(0.1-6.6)		1.8(0.3-3.3)		11.3(3.4-19.2)	
Fever	5.4(3.4-7.4)	Sustained	3.2(1.5-4.8)	Sustained	13.4(4.9-21.9)	Sustained
Boys	4.1(1.9-6.3)		3.9(1.6-6.2)		15(4.9-25.2)	
Girls	6.7(3.5-10)		2.5(0.8-4.2)		11.9(3.9-19.9)	
Measles	0.8(0.0-1.7)	Sustained	0.2(-0.2-0.6)	Sustained	0.5(0.1-1.0)	Sustained
Boys	0.7(-0.3-1.7)		0.4(-0.4-1.2)		0.6(-0.3-1.5)	
Girls	1(0.2-2.2))		0		0.3(-0.3-0.9)	
Vitamin A Supplementation	77.3(66-88.5)	Sustained	49.5(32-67.1)	Deteriorated	96.6(94.4-98.7)	Sustained
Boys	78(65.9-90.1)		50.0(31.4-68.6)		96.5(93.4-99.6)	
Girls	76.5(64.6-88.4)		49.1(31.3-66.9)		96.6(94-99.2)	
Measles Vaccination	67.2(56.1-78.4)	Sustained	49.7(35-64.4)	Sustained	94.5(91.8-97.3)	Sustained
Boys	69.8(58-81.5)		52.3(36.6-68.1)		95.2(91.7-98.8)	
Girls	64.8(53-76.5)		47.3(32.8-61.8)		93.9(90.3-97.3)	
Polio Immunization	83.4(77.5-89.2)	Improved	87.3(82.8-91.8)	Improved	79.4(74.2-84.5)	Sustained
Boys	84.2(76.6-91.8)		85.5(79.4-91.7)		79.6(72.3-86.6)	
Girls	82.6(76.6-88.5)		88.9(85-92.8)		79.2(73.9-84.5)	
Women Nutrition and Immunization Status						
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	0	Sustained	0.4 (0.0-2.3)	Sustained	0.4(0.0-2.0)	Deteriorated
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	3.1(-3.0-9.3)	Sustained	2.0 (0.7-4.7)	Sustained	0.7 (0.1-2.6)	Sustained
Proportion of Women who received Tetanus immunization		Deteriorated		Sustained		Sustained
No dose	43.8 (25.4-62.2)		19.8(10.9-28.7)		4.7(2.4-7.1)	
One dose	11.3 (0.0-22.7)		10.8(5.4-16.2)		7.7(3.5-11.8)	
Two doses	22.0 (5.4-38.6)		31.3(22.5-40.1)		48.9(36-61.9)	
Three doses	22.9 (8.3-37.4)		38.1(25.9-50.4)		38.7(25-52.4)	
Public Health Indicators						
Household with access to sanitation facilities	77.3 (69.9-84.7)	Deteriorated	95.1(91-99.3)	Sustained	96.6(92.8-100.5)	Improved
Household with access to safe water	100	Sustained	54(37.3-70.7)	Deteriorated	98.8(96.7-100.8)	Sustained
Household's Main Food Source-Purchase	93.4(88.0-98.8)	Sustained	99.7 (99.0-100.3)	Sustained	100.0	Improved
Mean CSI	31.3	Deteriorated	37.8	Sustained	20.9	Sustained
OVERALL NUTRITION SITUATION	**Serious**		**Alert**		**Alert**	

Table 10: Summary of Key Nutrition Findings: Northwest Rural Livelihoods - *Deyr* 2014

	Northwest Agro-Pastoral LZ		West Golis /Guban Pastoral LZ		Sool Plateau	
	Clusters:28 n= 454 (Boys=230; Girls=224)		Clusters:30 n=609 (Boys=297; Girls=295)		Clusters:30 n=723 (Boys= 378; Girls= 345)	
Indicator	**% (CI)**	Change from *Gu* 2014	**% (CI)**	Change from *Gu* 2014	**% (CI)**	Change from *Gu* 2014
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema)	4.8 (2.8- 8.2)		8.0(5.6-11.5)		9.4 (6.9 – 12.8)	
Boys	5.2 (2.3-11.4)	Improved	10.1(7.0-14.3)	Improved	11.1 (8.2 – 14.8)	Improved
Girls	4.5 (2.4- 8.1)		6.1(3.3-10.9)		7.5 (4.4 – 12.5)	
Severe Acute Malnutrition (WHZ<-3 or oedema)	0.2 (0.0- 1.8)		0.7 (0.2- 2.2)		1.4 (0.6 – 10.5)	
Boys	0.0 (0.0- 0.0)	Improved	1.0 (0.3- 3.1)	Improved	1.3 (0.6 – 3.0)	Sustained
Girls	0.4 (0.1- 3.5)		0.3 (0.0- 2.4)		1.4 (0.5 – 4.1)	
Mean of Weight for Height Z Scores	-0.53±0.90		-0.50±1.09		-0.67±1.02	
Oedema	0		0		0.1	
Proportion with MUAC<12.5 cm or oedema)	1.3 (0.5- 3.6)		3.4 (2.1- 5.4)		1.4 (0.5 – 3.4)	
Boys	0.4 (0.1- 3.2)	Sustained	3.3 (1.8- 6.0)	Sustained	1.0 (0.3 – 3.4)	Sustained
Girls	2.2 (0.7- 6.9)		3.5 (2.0- 6.0)		1.7 (0.7 – 4.1)	
Proportion with MUAC<11.5 cm or oedema	0.2 (0.0- 1.7)		0.7 (0.3- 2.7)		0.4 (0.1 – 1.3)	
Boys	0.0 (0.0- 0.0)	Sustained	1.0 (0.3- 3.1)	Deteriorated	0.0 (0.0 – 0.0)	Sustained
Girls	0.4 (0.1- 3.4)		0.9 (0.3- 2.9)		0.9 (0.3 – 2.7)	
Stunting (HAZ<-2)	2.4 (1.2- 4.9)		12.2 (8.6-16.9)		6.0 (3.8 – 9.3)	
Boys	2.6 (1.2- 5.5)	Sustained	18.6 (13.4-25.3)	Sustained	7.9 (5.0 – 12.2)	Sustained
Girls	2.2 (0.8- 6.0)		6.1 (3.2-11.3)		4.0 (1.6 – 9.6)	
Severe Stunting (HAZ<-3)	0.2 (0.0- 1.7)		2.0 (1.1- 3.6)		0.5 (0.2 – 1.5)	
Boys	0.0 (0.0- 0.0)	Sustained	3.7 (2.0- 6.7)	Sustained	0.8 (-.3 – 2.4)	Sustained
Girls	0.4 (0.1- 3.4)		0.3 (0.0- 2.3)		0.3 (0.0 – 2.2)	
Underweight (WAZ<-2)	2.6 (1.2- 5.8)		8.6 (5.9-12.3)		6.0 (3.9 – 9.2)	
Boys	2.6 (1.0- 6.4)	Sustained	11.3 (7.6-16.6)	Sustained	6.8 (4.1 – 11.2)	Sustained
Girls	2.7 (0.9- 7.9)		6.0(3.4-10.2)		5.2 (2.9 – 9.1)	
Death rates						
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.17(0.05-0.53)	Sustained	0.19(0.05-0.51)	Sustained	0.10 (0.02-0.41)	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.00	Sustained	0.0 (0.00-0.00)	Sustained	0	Sustained
Underlying factors						
Morbidity						
Morbidity	11.5 (4.7-18.4)		14.5 (7.9-21.1)		20.3 (14.5 – 26.0)	
Boys	15.9(4.6-27.1)	Sustained	15.2 (7.5-23.0)	Sustained	21.7 (15.0 – 28.3)	Sustained
Girls	7.0(2.2-11.9)		13.8 (6.1-21.6)		18.7 (12.3 – 25.1)	
Diarrhoea	5.7(1.5-9.8)		10.3 (5.4-15.3)		7.3 (4.5 – 10.1)	
Boys	8.6(1.9-15.4)	Sustained	10.0 (4.2-15.9)	Sustained	8.3 (5.0 – 11.7)	Sustained
Girls	2.7(0.2-5.1)		10.6 (4.4-16.8)		6.2 (2.5 – 9.9)	
Pneumonia	5.3(0.0-10.8)		3.9 (0.5-7.3)		4.7 (1.8 – 7.7)	
Boys	8.6(0.0-19.0)	Sustained	4.7 (0.4-8.9)	Sustained	4.9 (1.4 – 8.4)	Sustained
Girls	1.8(0.0-3.9)		3.2 (0.0-6.8)		4.5 (1.6 – 7.4)	
Fever	10.8(4.1-17.3)		9.2 (4.3-14.2)		14.0 (8.9 – 19.1)	
Boys	15.1(3.9-26.3)	Sustained	11.0 (5.1-16.9)	Sustained	13.6 (7.9 – 19.2)	Sustained
Girls	6.3(1.8-10.7)		7.6 (2.8-12.7)		14.4 (9.1 – 19.8)	
Measles	0.4(0.0-1.1)		0.3 (0.0-0.9)		2.8 (1.0 – 4.6)	
Boys	0.4(0.0-1.3)	Sustained	0.3 (0.0-1.0)	Sustained	3.1 (0.6 – 5.6)	Sustained
Girls	0.5(0.0-1.4)		0.3 (0.0-1.0)		2.5 (0.6 – 4.4)	

Vitamin A Supplementation Boys Girls	52.1(34.6-69.6) 50.4(32.5-68.4) 53.8(35.8-71.8)	Sustained	65.9 (54.5-77.3) 68.1 (56.3-79.9) 63.8 (52.2-75.4)	Sustained	89.5 (83.6 – 95.5) 89.2 (82.9 – 95.4) 90.0 (83.9 – 96.0)	Sustained
Measles Vaccination Boys Girls	44.2(27.0-61.4) 42.2(24.6-59.7) 46.2(28.6-63.8)	Deteriorated	58.1 (44.4-71.7) 62.4 (49.2-75.5) 54.0 (39.1-68.9)	Sustained	89.8 (85.1 – 94.5) 88.9 (83.9 – 93.9) 90.8 (86.0 – 95.6)	Sustained
Polio Immunization Boys Girls	98.7(97.0-100.0) 99.1(97.8-100.0) 98.2(95.3-100.0)	Sustained	78.6 (64.4-92.7) 82.7 (69.4-95.9) 74.7 (58.9-90.5)	Improved	97.7 (95.9 – 99.6) 98.6 (96.9 – 100.) 96.8 (94.1 – 99.5	Sustained
Women Nutrition and Immunization Status						
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	0.5(0.0-2.6)	Sustained	4.2 (1.7-8.5)	Sustained	5.1 (1.0 – 9.3)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	4.6(2.2-8.4)	Sustained	12.0 (7.5-17.9)	Sustained	12.5 (6.3 – 18.8)	Sustained
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	15.8(8.4-23.1) 24.3(15.0-33.6) 32.4(22.5-42.4) 27.5(12.8-42.2)	Sustained	7.6 (0.3-14.9) 24.6 (15.0-34.2) 42.1 (30.2-54.0) 25.7 (10.4-41.0)	Sustained	12.7 (7.8 – 17.6) 13.0 (8.6 – 17.3) 30.5 (23.4 – 37.5) 43.7 (34.1 – 53.3)	Sustained
Public Health Indicators	n= 330		n= 366		n= 408	
Household with access to sanitation facilities	37.2(21.8-52.6)	Sustained	44.3(29.8-58.9)	Sustained	83.0 (73.9 – 92.1)	Sustained
Household with access to safe water	27.4(9.4-45.4)	Sustained	53.4 (36.2-70.6)	Sustained	3.9 (0 – 7.8)	Deteriorated
Proportion who reported to have consumed <4 food groups	16.1(8.9-23.3)	Deteriorated	1.0 (0.0-1.9)	Improved	0.5 (0.0 – 1.2)	Sustained
Household's Main Food Source-Purchase	85.5(75.7-95.3)	Sustained	98.8(96.3-100.0)	Deterioration	99.5 (98.8 – 100.)	Sustained
Mean CSI	9.7		5.3		4.1	
OVERALL NUTRITION SITUATION	**Acceptable**		**Alert**		**Alert**	

Table 11:Summary of Key Nutrition Findings: Northwest Rural Livelihoods - *Deyr* 2014

	East Golis/Gebi Valley Pastoral		**Nugal Valley Pastoral**		**Northwest Hawd**	
	Clusters : 28 **n= 493 (Boys=255; Girls= 238)**		**Clusters: 30** **n= 563 (Boys= 286;Girls= 277)**		**Clusters : 26** **n=: 497 (Boys=254;Girls=243)**	
Indicator	**% (CI)**	Change from *Gu* 2014	**%** (CI)	Change from Gu 2014	**% (CI)**	Change from Gu 2014
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	11.2(8.1-15.3) 12.9 (8.7-18.9) 9.2 (6.2-13.5)	Deteriorated	11.0(8.0-14.9) 13.3(8.4-20.4) 8.7(5.6-13.1)	Deteriorated	8.9 (6.5-11.9) 8.3 (5.3-12.8) 9.5 (5.9-14.9)	Sustained
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	1.6 (0.9- 3.0) 1.2 (0.4- 3.6) 2.1 (0.9- 4.8)	Deterioration	1.1 (0.4- 2.6) 1.0 (0.2- 4.6) 1.1 (0.4- 3.3)	Deteriorated	1.2 (0.5- 2.9) 1.2 (0.4- 3.6) 1.2 (0.4- 3.7)	Improved
Mean of Weight for Height Z Scores	-0.62±1.08		-0.61±1.09		-0.44±1.16	
Oedema	0		0		0.0	
Proportion with MUAC<12.5 cm or oedema) Boys Girls	5.8 (4.1- 8.0) 4.6 (2.8- 7.4) 7.0 (4.5-10.9)	Deteriorated	1.6 (0.8- 3.1) 1.0 (0.3- 3.2) 2.2(1.0- 4.6)	Sustained	1.0(0.4- 2.3) 0.4(0.0- 3.0) 1.6(0.6- 4.4)	Sustained
Proportion with MUAC<11.5 cm or oedema Boys Girls	1.0 (0.4- 2.3) 1.5 (0.6- 3.9) 0.4 ((0.1- 3.1)	Deteriorated	0.3 (0.1- 1.4) 0.3 (0.0- 2.6) 0.3 (0.0- 2.8)	Improved	0.2 (0.0- 1.6) 0.4 (0.0- 3.0) 0.0 (0.0- 0.0)	Sustained
Stunting (HAZ<-2) Boys Girls	2.6 (1.1- 5.9) 3.5 (1.5- 8.1) 1.7 (0.5- 5.5)	Sustained	3.7(1.9- 7.2) 6.2(3.1-11.9) 1.1 (0.3- 3.3)	Sustained	0.8(0.2- 2.7) 0.8(0.2- 3.2) 0.8(0.1- 6.3)	Sustained

Severe Stunting (HAZ<-3) Boys Girls	0.2 (0.0- 1.5) 0.4 (0.0- 3.0) 0	Sustained	0.2 (0.0- 1.3) 0.3 (0.0- 2.7) 0	Sustained	0.2 (0.0- 1.6) 0.0 (0.0- 0.0) 0.4 (0.1- 3.2)	Sustained
Underweight (WAZ<-2) Boys Girls	7.0 (4.9- 9.9) 5.7 (5.1-11.6) 6.2 (3.5-10.8)	Sustained	4.6 (2.9- 7.2) 7.2 (4.4-11.5) 1.8 (0.8- 4.2)	Sustained	2.2(1.1- 4.1) 3.4(1.7- 7.0) 0.8(0.1-5.9)	Sustained
Death Rates						
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.04 (0.00-0.29)	Sustained	0.00	Sustained	0.10 (0.02-0.43)	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.00	Sustained	0	Sustained	0	Sustained
Underlying and Risk Factors						
Morbidity						
Morbidity Boys Girls	17.3 (10.1-24.6) 15.8 (9.3-22.2) 19.0 (9.6-28.4)	Sustained	21.7 (13.5-29.8) 19.4 (10.6-28.1) 24.1 (15.0-33.2)	Sustained	22.4 (11.9-33.0) 24.3 (12.7-35.9) 20.4 (10.2-30.6)	Sustained
Diarrhoea Boys Girls	6.4 (3.0-9.9) 6.3 (1.9-10.7) 6.5 (2.3-10.7)	Sustained	4.5 (2.3-6.7) 3.7 (1.2-6.2) 5.4 (2.0-8.8)	Improved	6.2 (2.4-9.9) 5.7(1.7-9.8) 6.6(2.2-11.0)	Improved
Pneumonia Boys Girls	4.8 (2.7-6.9) 5.3 (2.1-8.7) 4.1 (1.0-7.3)	Sustained	5.8 (1.2-10.4) 5.1 (0.5-9.7) 6.5 (1.3-11.6)	Sustained	9.9(2.6-17.3) 11.5(2.7-20.2) 8.3 (1.4-15.1)	Improved
Fever Boys Girls	8.6 (3.2-14.1) 7.0 (1.8-12.1) 10.5 (4.0-17.1)	Sustained	16.5 (9.4-23.5) 14.0 (6.9-21.1) 19.1 (10.5-27.7)	Sustained	14.0 (6.3-21.7) 14.6(5.1-24.2) 13.3(5.9-20.6)	Sustained
Measles Boys Girls	2.3 (0.0-5.7) 1.2 (0.0-3.7) 3.4 (0.0-8.0)	Sustained	1.5 (0.3--2.9) 1.4 (0.0--3.1) 1.8 (0.0-3.6)	Sustained	2.6(0.5-4.7) 3.5(0.3-6.6) 1.6(0.1-3.2)	Sustained
Vitamin A Supplementation Boys Girls	58.0 (42.8-73.2) 58.7 (43.1-74.3) 57.3 (41.5-73.1)	Improved	83.1 (75.0-91.2) 83.2 (72.8-93.5) 83.0 (75.7-90.2)	Sustained	77.3(61.9-92.6) 75.7(59.1-92.3) 79.0(64.2-93.7)	Sustained
Measles Vaccination Boys Girls	57.6 (43.3-72.0) 58.1 (43.2-73.1) 57.1 (42.2-72.1)	Deteriorated	80.3 (71.8-88.8) 78.1 (66.6-89.5) 82.7 (75.8-89.6)	Sustained	78.5(62.6-94.3) 77.6(60.9-94.4) 79.3(63.9-94.7)	Sustained
Polio Immunization Boys Girls	79.4 (68.6-90.3) 81.6 (72.0-91.2) 77.1 (64.4-89.8)	Deteriorated	86.3 (85.3-87.2) 83.8 (83.5-84.1) 88.9 (87.1-90.7)	Deteriorated	95.6(90.7-100.0) 95.9(91.7-100.0) 95.3(89.2-100.0)	Sustained
Women Nutrition and Immunization Status						
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	0	Deteriorated	3.2 (2.0-5.2)	Sustained	4.6(2.2-8.4)	Deteriorated
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	3.8 (1-1-9.5)	Sustained	8.0 (5.9-10.7)	Sustained	0.5(0.0-2.6)	Sustained
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	34.0 (15.5-52.5) 18.4 (5.2-31.6) 22.3 (5.7-38.9) 25.2 (11.6-38.9)	Sustained	14.3 (5.5-23.2) 10.7 (5.2-16.3) 43.0 (33.7-52.3) 31.9 (22.6-41.2)	Sustained	15.8(8.4-23.2) 24.3(15.0-33.6) 32.4(22.5-42.4) 27.5(12.8-42.3)	Sustained
Public Health Indicators	N=222		N =274		N =312	
Household with access to sanitation facilities	34.1 (17.0-51.2)	Sustained	69.9 (56.6-83.1)	Sustained	40.2 (25.3-55.0)	Sustained
Household with access to safe water	29.6 (13.4-46.0)	Sustained	26.6 (7.4-45.9)	Sustained	9.2 (0.0-19.1)	Sustained
Proportion who reported to have consumed <4 food groups	5.3 (2.7-9.1)	Deteriorated	2.6 (0.0-7.1)	Deteriorated	3.3(0.3-6.4)	Sustained
Household's Main Food Source- Purchase	98.7 (97.2-100.0)	Deteriorated	99.2 (99.0-100.0)	Sustained	100.0	Improved
Mean CSI	5.5	Sustained	4.7		5.3	
OVERALL NUTRITION SITUATION	Serious		Serious		Alert	

Table 12: Summary of Key Nutrition Findings in Sool Urban Livelihoods - *Deyr* 2014

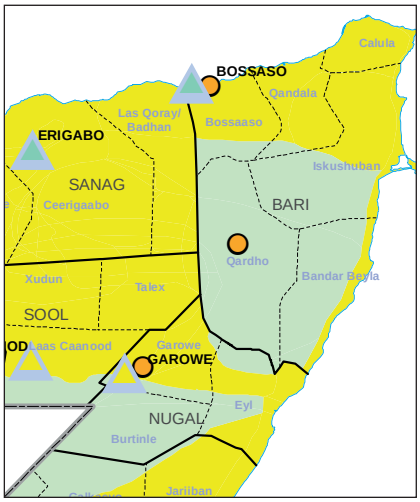
	Sool Region Urban Clusters:25 (n=564: Boys=280; Girls=284)	
Indicator	% (CI)	Change from *Gu* 2014
Child Nutrition Status		
Global Acute Malnutrition (WHZ<-2 or oedema)	11.3 (7.8-16.2)	Sustained
Boys	11.8 (7.2-18.8)	
Girls	10.8 (7.0-16.4)	
Severe Acute Malnutrition (WHZ<-3 or oedema)	1.0 (0.4- 2.4)	Sustained
Boys	0.8 (0.2- 3.3)	
Girls	1.2 (0.4- 3.7)	
Mean of Weight for Height Z Scores	Mean ± SD : -0.43±1.18	
Oedema	0.2	
Proportion with MUAC<12.5 cm or oedema)	1.5 (0.7- 3.5)	Sustained
Boys	0.8 (0.2- 3.2)	
Girls	2.2 (0.9- 5.6)	
Proportion with MUAC<11.5 cm or oedema	0.8 (0.3- 2.0)	Sustained
Boys	0.4 (0.1- 3.0)	
Girls	1.1 (0.4- 3.5)	
Stunting (HAZ<-2)	0.4 (0.1- 1.6)	Sustained
Boys	0.4 (0.1- 3.0)	
Girls	0.4 (0.0- 2.9)	
Severe Stunting (HAZ<-3)	0.2(0.0-1.5)	Sustained
Boys	0.0(0.0-0.0)	
Girls	0.4(0.0-2.9)	
Underweight (WAZ<-2)	5.5 (3.5- 8.5)	Sustained
Boys	4.7 (2.7- 8.3)	
Girls	6.2 (3.7-10.0)	
Public Health Indicators		
Household's Main Food Source- Purchase	96.7(92.2-100.0)	
Proportion who reported to have consumed <4 food groups	2.2 (0.0-4.3)	Deteriorated
Mean CSI	31.8	Deteriorated
OVERALL NUTRITION SITUATION	**Serious**	

4.2 NORTHEAST REGIONS

FSNAU conducted 13 nutrition surveys (4 IDPs, 3 urban areas and 6 rural livelihoods) in North-eastern Somalia, assessing the nutrition status of 8 298 children aged 6-59 months (4 256 boys and 4 042 girls) from 5 280 households. Comprehensive food and nutrition surveys were conducted in all IDPs and in one urban region using SMART methodology.

The food security situation of the populations in all rural livelihoods at the time of survey was classified as **Stressed** with the exception of the Coastal Deeh livelihood which was classified as **Crisis.** The food security situation among all IDPS was classified as **Crisis**. Although access to food in the region was reported as borderline, it was adequate to meet food consumption requirements. Rainfall was reported as normal in most of the livelihoods in the North-east.

Map 9: Food Security Situation in Northeast Regions - Jan 2015



CURRENT FOOD SECURITY SITUATION- POST *DEYR* 2014/15

The FSNAU*Deyr*14/15 integrated food security analysis indicates a **Stressed** (IPC Phase 2) Food security situation in the four rural livelihoods of East Golis, Karkaar/Dharoor, Addun, Coastal Deeh and Nugal Valley while Hawd and Sool plateau livelihoods show **Minimal** (IPC phase 1). This reflects a stable food security level since *Gu* 2014, The stability in the food security situation in Northeast Somalia is attributed to normal *Deyr* 2014 rains in most areas which resulted in improved pasture availability and increased the access to milk.

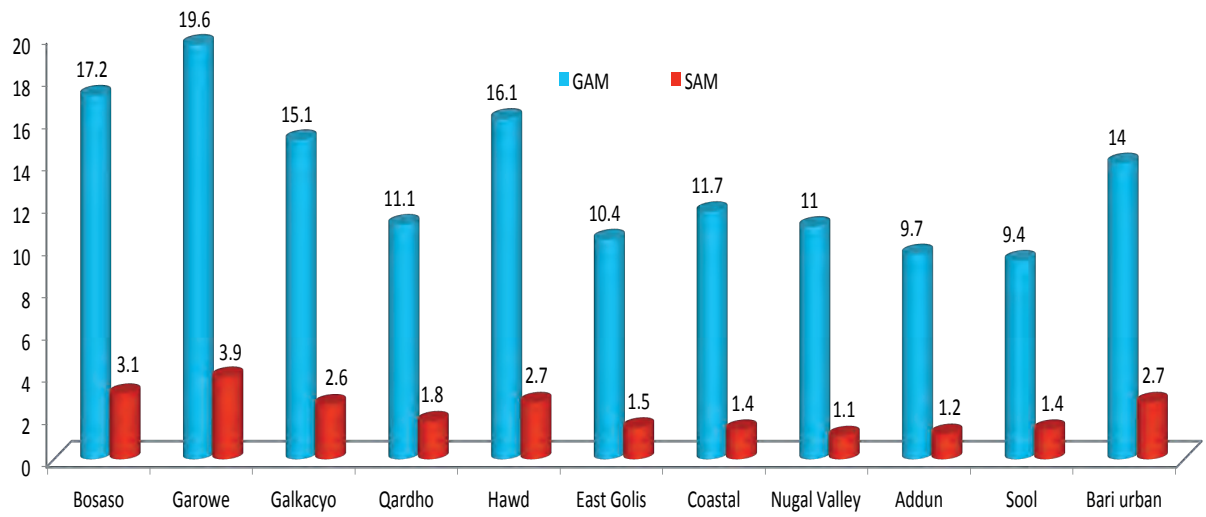
DEYR 2014/15 SURVEY RESULTS

The results of nutrition assessments carried out in North East Somalia are summarized in Tables 14-17. The key highlights are discussed below:

ACUTE MALNUTRITION

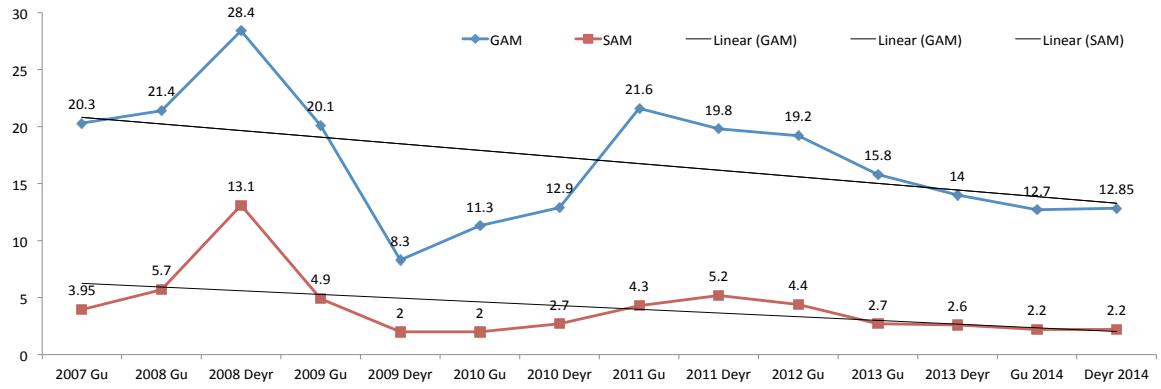
Based on the 11 WHZ comprehensive nutrition assessments conducted in Northeast regions, median GAM rate of 12.8 percent and SAM rate of 2.2 percent was observed, which is similar to observations made in *Gu* 2014 (Annex 9). The levels of acute malnutrition in assessed population groups (4 IDPs, 1 urban and 6 rural livelihoods) range from ***Alert*** in Sool plateau and Addun to ***Serious*** in Nugal Valley, East Golis/Karkaar and Coastal Deeh and ***Critical*** in Hawd livelihood. IDPs in Garowe and Galkacyo show a sustained ***Critical*** nutrition situation, while a sustained ***Serious*** nutrition situation was recorded among Qardho IDPs. The nutrition situation among Bosaso IDPs, however, has deteriorated from ***Serious*** to ***Critical*** (Figure 25).

Figure 25: Prevalence of Acute Malnutrition in Different Livelihoods of North-eastern Somalia - *Deyr* 2014



Trends in prevalence of acute malnutrition (GAM & SAM) in North-eastern Somalia (Figure 26) show a decline over time and a sustained **Serious** nutrition situation since *Deyr* 2013. There is no significant gender differences noted in the prevalence of acute malnutrition between boys and girls (Annex 20).

Figure 26: Trends in Prevalence of Acute Malnutrition in North-eastern Somalia, *Gu* 2007 - *Deyr* 2014



The change in prevalence of acute malnutrition situation in *Deyr* 2014 (Annex 9) is compared to the situation in *Deyr* 2014 as well as *Gu* 2014 is discussed below:

- **Bosaso IDP** settlements recorded a GAM rate of 17.2 percent and SAM rate of 3.1 percent indicating a **Critical** nutrition situation and deterioration when compared with GAM rate of 13.2 percent recorded in *Gu* 2014 or 13.5 percent GAM recorded in *Deyr* 2013. This deterioration is linked to high morbidity and the impacts of high temperatures recorded during the recent *Hagaa* season.

- **Qardho IDPs** settlements record a GAM rate of 11.1 percent and SAM rate of 1.8 percent indicating sustained ***Serious*** nutrition situation since *Gu* 2014. This is an improvement when compared with **Critical** GAM rate of 18.5 percent recorded in *Deyr* 2013/14.

- **Garowe IDPs** settlement show sustained **Critical** GAM (19.6 %) with **Serious** levels of SAM (3.9 %).

- **Galkacyo IDPs** settlement recorded sustained levels of **Critical** GAM (15.1 %) with **Serious** prevalence of SAM (2.6%).

- **Sool Plateau** livelihood recorded a GAM rate of 9.4 percent and SAM rate of 1.4 percent indicating an **Alert** nutrition situation. This is an improvement when compared with the **Serious** GAM rate of 12.0 percent and SAM rate of 2.2 percent previously recorded in *Gu* 2014, but stable situation when compared with GAM rate of 8.6 percent recorded in *Deyr* 2013/14.

- **Nugal Valley** pastoral livelihood recorded a GAM rate of 11.0 percent and SAM rate of 1.1 indicating ***Serious*** nutrition situation. This is a deterioration when compared with **Alert** nutrition situation (7.9 % GAM) recorded in *Gu* 2014 but stable when compared to *Deyr* 2013 (14.5% GAM).

- **Addun** livelihood record a sustained **Alert** nutrition since *Deyr* 2013 with GAM rate of 9.7 and SAM rate of 1.2 percent.

- **Coastal Deeh** pastoral livelihood recorded a GAM rate of 11.7 percent and SAM rate of 1.4 indicating a ***Serious*** nutrition situation which reflects a stable nutrition situation when compared to the GAM rate of 12.7 percent and SAM rate of 2.1 percent recorded in *Gu* 2014 and the GAM rate of 11.8 percent in *Deyr* 2013.

- **East Golis** livelihood recorded a GAM rate of 10.4 percent and SAM rate of 1.5 percent which is ***Serious*** nutrition situation this indicates improvement when compared to the GAM of 15.8 percent and SAM rate of 2.8 percent previously recorded in *Gu* 2014 but stable situation when compared to the GAM of 10.5 percent reported in *Deyr* 2013. The improvements are mainly related to seasonal factors.

- **Hawd** pastoral livelihood recorded a GAM rate of 16.1 percent and SAM prevalence of 2.7 which is ***Critical*** nutrition situation, that has been sustained since *Gu* 2014 (GAM rate of 17.3 percent and SAM rate of 4.6 percent), but has deteriorated since *Deyr* 2013 where GAM prevalence of 13.2 was recorded. Morbidity was high (42.9%) and it is among the major contributing factors of **Critical** level malnutrition

MORTALITY

The 90 day retrospective crude and under five death rates in the 11 assessed areas in Northeast Somalia are within the **Acceptable** levels (<0.5 and <1/10 000/day respectively), except for Qardho IDPs which reported **Serious** U5DR level of 1.09/10 000/day. The findings for *Deyr* 2014 reflect a stable mortality trend for most of assessed areas since *Gu* 2014 (Annex 11).

MORBIDITY

High morbidity levels were noted among most IDPs settlements and rural livelihoods. The IDP settlements of Garowe, Bosaso and Qardho and Galkayo as well as Hawd, East Golis/Karkaar and Addun livelihoods show ≥30 percent morbidity levels. The highest morbidity levels were recorded in Garowe IDPs and Hawd Pastoral livelihood where > 40 percent of the children were reported as sick two weeks prior to the nutrition assessment. However, most of the livelihoods showed the same trends in morbidity compared to previous months (Annex 15), with no disease outbreak being reported in the Northeast in the recent months.

CHRONIC MALNUTRITION-(STUNTING) AND UNDERWEIGHT

Low prevalence of stunting was seen in all assessed pastoral livelihood populations as well as Galkacyo, Garowe and Qardho IDPs. Of all the livelihoods assessed in Northeast Somalia, Bosaso IDPs had a **High** stunting prevalence (32.7%) which is significantly different (p<0.05) than the prevalence in *Gu* 2014, but not significantly different from the prevalence in *Deyr* 2014. **Low** prevalence of underweight level (<10%) was reported in most livelihoods, except Hawd which recorded **Moderate** prevalence of underweight level (12.0%). It was observed that the prevalence of underweight was higher among IDPs as medium levels of underweight prevalence was noted (10 – 20%) among Galkayo and Qardho IDPs, while Bosaso and Garowe IDPs report **High** prevalence of underweight (20 – 30%). Bari urban has also recorded a moderate underweight level of 16.9% (Table 13).

Table 13: Stunting and Underweight Prevalence among Different Livelihoods in Northeast Region - *Deyr* 2014

	Indicator	
Livelihood Assessed	**Stunting**	**Underweight**
East Golis	6.4	8.3
Sool plateau	6	6.0
Coastal Deeh	6.5	8.9
Bari Urban	15.9	16.9
Hawd Central	7.7	12.0
Addun Central	8.4	9.5
Nugal Valley	3.7	4.6
Bossaso IDP	32.7	29.8
Qardho IDP	16.7	15.9
Garowe IDP	18.4	23.1
Galkayo IDP	15.4	19.0

IMMUNIZATION

The reported Vitamin A supplementation, measles vaccination and polio immunization coverage by recall in Bossaso and Garowe IDPs was >80 percent, but Galkayo and Qardho IDPs showed < 80% coverage. The pastoral livelihoods, on the other hand, show different results with Coastal Deeh, Nugal valley, East Golis and Sool plateau reporting >80 percent coverage but lower coverage was noted among Addun and Hawd livelihoods. On the whole, none of the livelihoods/IDPs show coverage that meets the SPHERE recommendations of ≥95 percent.

MATERNAL MALNUTRITION

Very Critical levels of maternal malnutrition (34.4%) were recorded among pregnant and lactating women in Hawd livelihood, while Addun recorded ***Critical*** level (26.5%) percent of maternal malnutrition. **Serious** level of maternal malnutrition (16.8 – 23.3%) have been observed among Coastal Deeh livelihood and Garowe IDPs but the rest of Livelihoods and IDPs show **Alert** level (10.6 – 16.7 %) of maternal malnutrition.

DIETARY DIVERSIFICATION

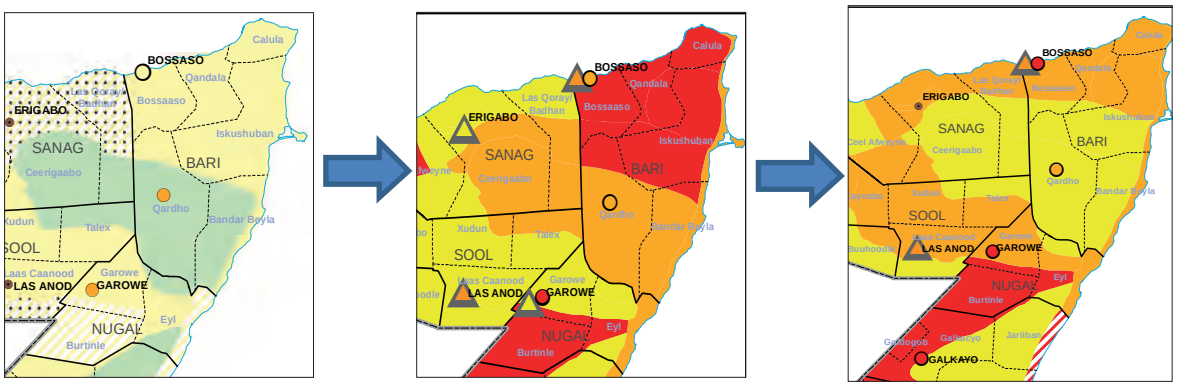
Household dietary diversity measured as the proportion of households consuming more than four food groups is high. There is no significant change in household dietary diversity between current findings *Deyr* 2013 and *Gu* 2014 seasons, although milk access and consumption shows improvement in some livelihoods compared to the previous *Gu* 2014 season (Annex 19). This could be one of the mitigating factors for the improved nutritional status in some livelihoods like East Golis/Karkaar and Sool plateau.

CHANGE IN NUTRITION SITUATION

The maps below show the change in nutrition situation from *Deyr* 2013 to *Deyr* 2014 (Figure 27). The nutrition situation among the urban, IDPs and Rural livelihoods in the Northeast region has ranged between ***Alert*** to ***Critical*** levels for the last twelve months (*Deyr* 2013 to *Deyr* 2014). Access to milk among the predominant pastoral communities and morbidity patterns appear to be the underlying factors influencing the nutrition situation, most of the livelihoods and IDPs either sustained or improved except Bosaso IDPs which deteriorated from **Serious** to **Critical** and Nugal valley from **Alert** to **Serious.**

Figure 27: Progression of the Nutrition Situation *Deyr* 2013 to *Deyr* 2014 in Northeast

Nutrition Situation, Jan 2014 **Nutrition Situation, Jul 2014** **Nutrition Situation, Jan 2015**



CURRENT HOT SPOT FOR ACUTE MALNUTRITION IN NORTHEAST SOMALIA

The current hotspots (GAM >15%) are the IDPs of Bosaso, Garowe and Galkayo, as well as Hawd livelihood, which require immediate interventions to both treat the acutely malnourished children and prevent further deterioration of the nutrition situation.

OUTLOOK FOR JANUARY- APRIL 2015

All the livelihoods in Northeast are expected to sustain the same phase as the current one during the coming three months with neither improvement nor deterioration projected. The maps below (Figure 28) show current and projected nutrition situation across livelihoods in Puntland. The current **Stressed** and minimal food security situation in most livelihoods of Northeast regions is similarly projected to remain stable up to March 2015.

Figure 28: Nutrition Situation and Outlook, January 2015 to April 2015 in Northeast

Current Nutrition Situation - Jan 2015 **Projected Nutrition Situation - Feb-April 2015**

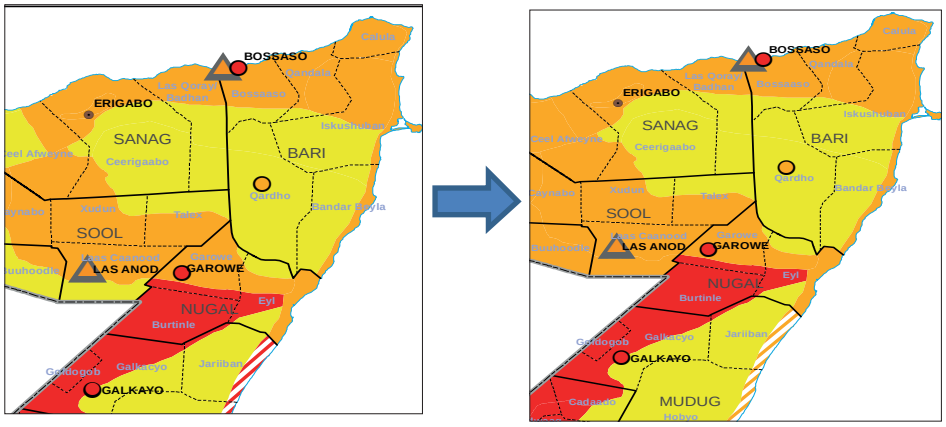


Table 14: Summary of Key Nutrition Findings in Northeast IDPs – *Deyr* 2014

	Name of livelihood: Bosaso IDPs		Name of livelihood: Garowe IDPs		Name of livelihood: Galkacyo IDPs	
	Clusters: 28 (n= 843: Boys=414; Girls= 429)		Clusters : 28 (n=867: Boys=451; Girls=416)		Clusters: 28 (n=973 :Boys=493; Girls=480)	
Indicator	% (CI)	Change from Gu 2014	% (CI)	Change from Gu 2014	% (CI)	Change from Gu 2014
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema)	17.2 (15.1 – 19.6)	Deteriorated	19.6 (16.7 – 22.9)	Sustained	15.1 (12.2-18.3)	Sustained
Boys	16.7 (13.2 – 20.8)		22.4 (18.3 – 27.1)		18.1 (14.1-22.9)	
Girls	17.7 (14.6 – 21.4)		16.6 (12.9 – 21.1)		12.1 (8.9-16.3)	
Severe Acute Malnutrition (WHZ<-3 or oedema)	3.1 (2.0 – 4.8)	Sustained	3.9 (2.8 – 5.4)	Improved	2.6 (1.7-3.9)	Sustained
Boys	2.9 (1.6- 5.3)		5.3 (3.6 – 7.8)		3.4 (5.3)	
Girls	3.3 (1.7 – 6.0)		12.4 (1.3 – 4.4)		1.7 (0.7-3.7)	
Mean of Weight for Height Z Scores	-1.02±1.03		-0.98±1.13		-0.95±1.04	
Oedema	0.0		0.0		0.0	
Proportion with MUAC<12.5 cm or oedema)	11.2 (9.0 – 13.7)	Deteriorated	5.9 (4,6 – 7.7)	Improved	8.7 (6.2-11.2)	Deteriorated
Boys	8.0 (5.3 – 11.9)		4.4 (2.7 – 6.9)		7.4 (4.8-11.2)	
Girls	14.2 (11.7 – 17.1)		37.7 (5.3 – 10.9)		10.0 (7.0 – 13.9)	
Proportion with MUAC<11.5 cm or oedema	2.4 (1.7 – 3.5)	Deteriorated	1.6 (0.9 – 2.7)	Sustained	1.3 (0.7-2.4)	
Boys	1.2 (0.5 – 2.7)		1.1 (0.5 – 2.5)		0.8 (0.3-2.1)	
Girls	3.7 (2.4 – 5.5)		2.2 (1.0 – 4.4)		1.9 (0.9 -3.8)	Deteriorated
Stunting (HAZ<-2)	32.7 (27.7 – 38.3)	Deteriorated	18.4 (14.6-23.0)	Improved	15.4 (11.3-20.6)	Sustained
Boys	36.8 (30.5 - 43.5)		19.3 (14.8 – 24.8)		18.6 (13.0 – 17.0)	
Girls	28.8 (23.1 – 35.3)		17.5)12.6 – 23.7)		12.2 (8.6 – 17.0)	
Severe Stunting (HAZ<-3)	11.2 (8.3 – 14.9)	Deteriorated	4.8 (3.4-6.9)	Sustained	5.4 (3.7 – 7.8)	Sustained
Boys	13.5 (9.5 – 18.7)		4.9 (3.2-7.4)		8.0 (5.0 – 12.6)	
Girls	9.1 (6.6 – 12.3)		4.8 (3.0 – 7.6)		2.7 (1.5 – 4.8)	

Underweight (WAZ<-2) Boys Girls	29.8 (26.0 – 33.9) 32.5 (27.2 – 38.2) 27.1 (23.0 – 31.7)	Sustained	23.1 (19.0-27.7) 25.8 (21.2-30.9) 20.1 (15.0-26.5)	Sustained	19.0 (15.4 – 23.1) 24.3 (19.0 – 30.5) 13.5 (10.4 – 17.4)	Sustained
Death Rates						
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.36 (0.15-0.86)	Sustained	0.20 (0.09-0.43)	Sustained	0.05 (0.01-0.22)	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.61 (0.26-1.38)	Sustained	0.59 (0.25-1.36)	Sustained	0	Sustained
	Morbidities					
Morbidity Boys Girls	30.9 (22.7-39.0) 30.8 (21.6-39.9) 31.0 (22.4 -39.6	Deteriorated	45.2 (36.4-54.1) 45.8 (37.3-54.2) 44.7 (33.9-55.4)	Deteriorated	23.2 (17.3-29.1) 22.2 (15.4 – 29.0) 24.2 (17.6 – 30.8)	Improved
Diarrhoea Boys Girls	12.4 (7.3 – 17.5) 12.3 (6.8 – 17.7) 12.5 (6.7 – 18.3)	Deteriorated	21.3 (14.6 – 27.9) 21.5 (14.1-28.8) 21.0 (14.2-27.8)	Deteriorated	11.7 (7.0 – 16.4) 11.2 (6.6 – 15.8) 12.2 (6.3 – 18.0)	Deteriorated
Pneumonia Boys Girls	17.2 (9.8 – 24.5) 16.1 (8.7 – 23.5) 18.2 (10.2 – 26.3	Sustained	6.2 (3.8 – 8.7) 7.9 (4.8 – 11.0) 4.4 (2.1-6.7)	Sustained	4.6 (2.4 – 6.9) 3.6 (1.4 – 5.7) 5.8 (2.8 – 8.8)	Sustained
Fever Boys Girls	16.9 (10.6 -23.2) 16.3 (9.1 – 23.5) 17.6 (11.1 – 24.1)	Sustained	40.9 (33.0-48.7) 41.9 (34.1-49.7) 39.8 (30.1-49.4)	Deteriorated	19.0 (13.7 – 24.3) 19.4 (13.4 – 25.5) 18.6 (12.5 – 24.7)	Improved
Measles Boys Girls	0.5 (0 – 1.1) 0.7 (0 – 1.8) 0.4 (0 – 1.1)	Sustained	7.2 (1.1-13.4 7.5 (2.2-12.8) 7.0 (0 – 14.2)	Sustained	0.5 (0 – 1.5) 0.6 (0 – 1.8) 0.4 (0 – 1.2)	Improved
Vitamin A Supplementation Boys Girls	93.3 (89.6 – 97.0) 93.6 (89.3 – 97.9) 93.1 (89.0 – 97.2)	Sustained	87.7 (82.0-93.5) 88.3 (82.3-94.3) 87.1 (81.1-93.1)	Sustained	72.0 (55.5 – 88.5) 74.9 (59.2-90.6) 69.0 (51.4-86.5)	Deteriorated
Measles Vaccination Boys Girls	88.7 (83.5 – 93.8) 88.8 (82.1 – 95.6) 88.5 (83.1 – 94.0)	Sustained	93.8 (91.3-96.2) 93.9 (90.5 – 97.3) 93.6 (91.0-96.2	Sustained	87.1 (79.9 – 94.3) 88.1 (81.1-95.1) 86.1 (78.5 – 93.7)	Improved
Polio Immunization Boys Girls	98.9 (98.0 – 99.8) 99.2 (98.2 – 100) 98.6 (97.3 – 99.8)	Sustained	97.1 (95.2-99.0) 97.2 (95.1-99.2) 97.1 (94.9 – 99.3)	Sustained	98.2 (97.2 – 99.3) 98.5 (97.0 – 100.0) 97.9 (96.4 – 99.3)	Sustained
Women Nutrition and Immunization Status	N=188				N= 164	
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	2.2 (0 -4.4)	Sustained	3.2 (1.1-5.3)	Sustained	6.4 (1.9 – 10.8)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	11.2 (6.2 – 16.2)	Improved	21.6 (16.5-26.8)	Deteriorated	16.6 (9.2 – 24.0)	Improved
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	8.9 (6.0 – 11.8) 5.9 (3.5 – 8.4) 17.7 (11.1 – 24.3) 67.3 (59.4 – 75.2)	Sustained	23.7 (19.2-28.3) 14.5 (10.7 – 18.4) 19.0 (14.8 – 23.3) 42.5 (36.6 – 48.4)	Sustained	10.3 (7.4 – 13.3) 23.9 (16.6 – 31.3) 30.4 (25.7 – 35.0) 35.2 (26.7 – 43.7)	Sustained
Public Health Indicators	N=553		N=619		N=588	
Household with access to sanitation facilities	93.8(86.3 – 100.)	Improved	100 (100 – 100)	Sustained	99.3 (98.4-100.0)	Sustained
Household with access to safe water	20.3 (7.5 – 33.1)	Deteriorated	100 (100 – 100)	Sustained	98.4 (96.1-100.0)	Sustained
Proportion who reported to have consumed <4 food groups	0.6 (0 – 1.4)	Sustained	0.9 (0 – 2.0)	Sustained	0.6 (0 – 1.5)	Sustained
Household's Main Food Source-Purchase	98.4 (96.2 – 100)	Sustained			100 (100 – 100)	Sustained
Mean CSI	14.1	Improved	14.9	Improved	29.1	Sustained

Table 15: Summary of Key Nutrition Findings in Northeast Rural Livelihoods – *Deyr* 2014

	Name of livelihood: Hawd		Name of livelihood: Addun		Name of livelihood: Coastal Deeh	
	Clusters: 27 (n= 90 :Boys = 466; Girls =435)		Clusters : 25 (n=660 : Boys=351; Girls=309)		Clusters :30 (n=794:Boys=403; Girls=391)	
Indicator	% (CI)	Changes from Gu 2014	% (CI)	Changes from Gu 2014	% (CI)	Changes from Gu 2014
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema)	16.1 (13.3-19.4)	Sustained	9.7 (6.5-14.2)	Sustained	11.7 (9.1-14.9)	Sustained
Boys	18.9 (15.4 – 23.0)		12.3 (8.2-17.8)		16.4 (12.3-21.4)	
Girls	13.1 (9.6 – 17.6)		6.8 (3.6-12.4)		6.9 (4.5-10.5)	
Severe Acute Malnutrition (WHZ<-3 or oedema)	2.7 (1.7 – 4.2)	Improved	1.2 (0.6- 2.5)	Improved	1.4 (0.7- 2.7)	Improved
Boys	3.6 (2.1 – 6.2)		1.1 (0.4- 3.0)		1.7 (0.8- 3.9)	
Girls	1.6 (0.8 – 3.2)		1.3 (0.5- 3.5)		1.0 (0.4- 2.7)	
Mean of Weight for Height Z Scores	-0.89±1.09		-0.64 ± 1.06	Improved	(-0.66 ± 1.09)	Improved
Oedema	0.0		0.0		(0.0)	
Proportion with MUAC<12.5 cm or oedema)	10.1 (6.5 – 15.3)	Sustained	4.1 (2.4- 6.9)	Sustained	1.5 (0.6- 3.4)	Sustained
Boys	9.7 (6.0 – 15.3)		3.9 (2.1- 7.2)		2.0 (0.8- 5.0)	
Girls	10.6 (6.4 – 16.8)		4.4 (2.0- 9.1)		1.0 (0.3- 3.4)	
Proportion with MUAC<11.5 cm or oedema	2.0 (1.0 – 3.7)	Sustained	0.3 (0.1- 1.2)	Sustained	0.1 (0.0- 1.0)	Sustained
Boys	2.3 (1.1 – 4.7)		0.6 (0.1- 2.4)		0.0 (0.0- 0.0)	
Girls	1.6 (0.7 – 3.3)		0.0 (0.0- 0.0)		0.3 (0.0- 2.0)	
Stunting (HAZ<-2)	11.1 (7.6 – 15.9)	Sustained	8.4 (5.6-12.4)	Sustained	6.5 (4.9- 8.7)	Sustained
Boys	11.2 (7.7 – 16.0)		9.4 (6.1-14.2)		9.7 (7.4-12.6)	
Girls	11.0 (6.8 – 17.2)		7.3 (4.4-11.8)		3.3 (1.6-6.7)	
Severe Stunting (HAZ<-3)	2.3 (1.3 – 4.1)	Sustained	2.1 (1.2- 3.8)	Sustained	1.1 (0.6-2.3)	Sustained
Boys	2.7 (1.5 – 4.9)		2.0 (0.9- 4.3)		2.0 (1.0-3.9)	
Girls	1.8 (0.8 – 4.3)		2.2 (1.0- 5.0)		0.3 (0.0-2.0)	
Underweight (WAZ<-2)	14.7 (11.0 -19.4)	Sustained	9.5 (6.1-14.5)	Sustained	8.9 (6.3-12.3)	Sustained
Boys	17.5 (13.5 – 22.4)		11.0 (7.0-16.8)		14.2 (9.9-19.9)	
Girls	11.7 (7.7 – 17.6)		7.9 (4.5-13.4)		3.3 (1.8-5.9)	
Death Rates						
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.33 (-.14-0.75	Sustained	0.13 (0.03-0.59)	Sustained	0.21 (0.08-0.57)	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.89 (0.39 – 2.04)	Sustained	0.15 (0.02-1.18)	Sustained	0.75 (0.27-2.06)	Sustained
	Morbidities					
Morbidity	42.9 (35.6 – 50.1)	Deteriorated	38.3 (28.7-48.0)	Deteriorated	27.4 (19.9-35.0)	Deteriorated
Boys	42.3 (34.2 – 50.4)		39.8 (30.2-49.4)		24.8 (16.8-32.7)	
Girls	43.4 (35.8 -51.1)		36.6 (25.6-47.7)		30.2 (21.6-38.8)	
Diarrhoea	16.3 (11.0 -21.6)	Deteriorated	13.1 (8.8-17.3)	Deteriorated	8.4 (5.7-11.0)	Deteriorated
Boys	16.9 (10.6 – 23.3)		12.5 (8.1-17.0)		9.1 (5.6-12.6)	
Girls	15.6 (10.5 -20.8)		13.7 (8.1-19.3)		7.6 (4.6-10.6)	
Pneumonia	14.1 (8.4 – 19.9)	Sustained	12.6 (6.6-18.6)	Sustained	9.2 (5.1-13.3)	Sustained
Boys	11.5 (6.7 – 16.3)		12.8 (7.1-18.5)		9.3 (4.4-14.2)	
Girls	17.0 (9.6 – 24.4)		12.4 (5.5-19.4)		9.1 (4.6-13.7)	
Fever	36.7 (29.4 – 44.0)	Deteriorated	32.0 (21.8-42.2)	Deteriorated	21.4 (15.4-27.5)	Sustained
Boys	36.0 (28.0 – 44.1)		34.0 (24.1-43.9)		17.4 (10.9-23.9)	
Girls	37.4 (29.6 – 45.2)		29.8 (18.1-41.5)		25.6 (18.9-32.4)	

Measles Boys Girls	3.0 (1.1 – 4.9) 2.9 (1.1 – 4.6) 3.1 (0.2 – 6.0)	Sustained	2.6 (0.3-5.0) 1.7 (0.0-3.5) 3.7 (0.5-6.9)	Improved	2.7 (1.3-4.1) 2.9 (1.0-4.9) 2.5 (1.0-4.1)	Improved
Vitamin A Supplementation Boys Girls	41.8 (30.3 – 53.3) 40.2 (28.8 – 51.6) 43.5 (30.7 – 56.4)	Deteriorated	63.0 (47.6-78.4) 63.5 (48.0-79.0) 62.4 (46.5-78.3)	Sustained	86.9 (79.5-94.3) 85.3 (76.5-94.1) 88.6 (81.6-95.6)	Sustained
Measles Vaccination Boys Girls	53.5 (40.8 68.1) 52.6 (37.4 67.7) 54.4 (40.8 68.1)	Deteriorated	57.3 (42.7-71.8) 57.9 (42.4-73.5) 56.5 (42.3-70.7)	Deteriorated	85.0 (77.2-92.8) 82.7 (73.6-91.8) 87.3 (80.0-94.5)	Sustained
Polio Immunization Boys Girls	87.7 (80.4 – 95.1) 86.5 (79.3 – 93.8) 89.0 (80.9 – 97.0)	Sustained	83.4 (73.9-92.9) 85.2 (76.5-94.0) 81.4 (70.7-92.0)	Improved	92.8 (89.3-96.3) 92.6 (88.9-96.4) 92.9 (88.9-96.9)	Sustained
Women Nutrition and Immunization Status	N = 247					
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	20.6 (10.8 – 30.4)	Deteriorated	7.7 (1.6-13.8)	Sustained	3.3 (0.6-6.1)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	34.4 (22.0 – 46.8)	Sustained	26.6 (14.0-39.2)	Sustained	20 (13.5-26.5)	Deteriorated
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	N = 569 18.9 (12.4 – 25.4) 21.9 (14.1 – 29.7) 30.5 (24.0 – 37.1) 28.4 (19.7 – 37.1)	Sustained	19.2 (11.2-27.1) 10.8 (5.0-16.5) 31.2 (21.3-41.2) 38.8 (26.6-51.1)	Sustained	17.6 (10.7-24.5) 5.2 (2.9-7.5) 23.0 (17.4-28.7) 54.1 (44.8-63.5)	Sustained
Public Health Indicators	N=595					
Household with access to sanitation facilities	65.7 (50.2 – 81.3)	Sustained	60.4 (46.0-4.8)	Sustained	84.6 (75.9-93.3)	Sustained
Household with access to safe water	44.3 (27.1 – 61.6)	Sustained	42.7 (21.8-3.5)	Improved	40.2 (23.2-57.2)	Deteriorated
Proportion who reported to have consumed <4 food groups	2.1 (0.1 – 4.1))	Sustained	0.2 (0.0-0.8)	Sustained	0.2 (0.0-0.6) 99.8 (99.4-100.2)	Sustained
Household's Main Food Source-Purchase	98.3 (95.9 –100.0)	Improved	93.1 (85.1-101.1)	Sustained	99.8 (99.4-100.2)	Sustained
Mean CSI	6.3		9.1		10.5	

Table 16: Summary of Key Nutrition Findings in Northeast Rural Livelihoods – *Deyr* 2014

	Name of livelihood: Sool Plateau		**Name of livelihood: East Golis/Karkaar**		**Name of livelihood: Nugal Valley**	
	Clusters: 30 (n=723: Boys = 378; Girls = 345)		**Clusters : 26 (n= 747: Boys = 385; Girls= 362)**		**Clusters: 30 n= 563 (Boys= 286;Girls= 277)**	
Indicator	% (CI)	Change from Gu 2014	% (CI)	Change from Gu 2014	% (CI)	Change from Gu 2014
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	9.4 (6.9 – 12.8) 11.1 (8.2 – 14.8) 7.5 (4.4 – 12.5)	Improved	10.4 (7.8-13.8) 11.4 (8.6-15.) 9.4 (5.9-14.7)	Improved	11.0(8.0-14.9) 13.3(8.4-20.4) 8.7(5.6-13.1)	Deteriorated
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	1.4 (0.6 – 10.5) 1.3 (0.6 – 3.0) 1.4 (0.5 – 4.1)	Sustained	1.5 (0.8- 2.6) 2.1 (1.1- 3.9) 0.8 (0.3- 2.6)	Improved	1.1 (0.4- 2.6) 1.0 (0.2- 4.6) 1.1 (0.4- 3.3)	Deteriorated
Mean of Weight for Height Z Scores	-0.67±1.02	Improved	0.69±1.03	Sustained	-0.61±1.09	
Oedema	0.1				0	

Proportion with MUAC<12.5 cm or oedema) Boys Girls	1.4 (0.5 – 3.4) 1.0(0.3 – 3.4)1.7 (0.7 – 4.1)	Sustained	5.4 (3.2- 8.8) 5.3 (2.9- 9.5) 5.5 (2.9-10.2)	Sustained	1.6 (0.8- 3.1) 1.0 (0.3- 3.2) 2.2(1.0- 4.6)	Sustained
Proportion with MUAC<11.5 cm or oedema Boys Girls	1.4 (0.1 – 1.3) 0.0 (0.0 – 0.0) 0.9 (0.3 – 2.7)	Sustained	0.9 (0.4- 2.0) 1.0 (0.3- 3.5) O.8 (0.3- 2.5)	Sustained	0.3 (0.1- 1.4) 0.3 (0.0- 2.6) 0.3 (0.0- 2.8)	Improved
Stunting (HAZ<-2) Boys Girls	6.0 (3.8 – 9.3) 7.9 (5.0 – 12.2) 4.0 (1.6 – 9.6)	Sustained	6.4 (4.0- 9.9) 7.9 (5.1-12.2) 4.7(2.5- 8.8)	Sustained	3.7(1.9- 7.2) 6.2(3.1-11.9) 1.1 (0.3- 3.3)	Sustained
Severe Stunting (HAZ<-3) Boys Girls	0.5 (0.2 – 1.5) 0.8 (-.3 – 2.4) 0.3 (0.0 – 2.2)	Sustained	0.9 (0.4- 2.0) 0.8 (0.2- 2.4) 1.1 (0.3- 3.5)	Sustained	0.2 (0.0- 1.3) 0.3 (0.0- 2.7) 0	
Underweight (WAZ<-2) Boys Girls	6.0 (3.9 – 9.2) 6.8 (4.1 – 11.2) 5.2 (2.9 – 9.1)	Sustained	8.3 (6.4-10.8) 10.8 (8.0-14.5) 5.7 (3.8- 8.6)	Improved	4.6 (2.9- 7.2) 7.2 (4.4-11.5) 1.8 (0.8- 4.2)	Sustained
Death Rates						
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.10(0.02-0.41)	Sustained	0.9 (0.4 – 2.0)	Sustained	CDR-0.00	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.0	Sustained	6.4 (4.0 -9.9)	Sustained	U5DR-0	Sustained
	Morbidites					
Morbidity Boys Girls	20.3 (14.5 – 26.0) 21.7 (15.0 – 28.3) 18.7 (12.3 – 25.1)	Sustained	34.8 (29.8-39.9) 32.6 (26.4 -38.8) 37.1 (30.8-43.5)	Deteriorated	21.7 (13.5-29.8) 19.4 (10.6-28.1) 24.1 (15.0-33.2)	Deteriorated
Diarrhoea Boys Girls	7.3 (4.5 – 10.1) 8.3 (5.0 – 11.7) 6.2 (2.5 – 9.9)	Sustained	8.5 (6.1 -11.0) 7.8 (4.1-11.6) 9.2 (5.5-13.1)	Sustained	4.5 (2.3-6.7) 3.7 (1.2-6.2) 5.4 (2.0-8.8)	Deteriorated
Pneumonia Boys Girls	4.7 (1.8 – 7.7) 4.9 (1.4 – 8.4) 4.5 (1.6 – 7.4)	Sustained	7.7 (4.6-10.9) 7.3 (3.9-10.8) 8.1 (4.4-11.9)	Sustained	5.8 (1.2-10.4) 5.1 (0.5-9.7) 6.5 (1.3-11.6)	Deteriorated
Fever Boys Girls	14.0 (8.9 – 19.1) 13.6 (7.9 – 19.2) 14.4 (9.1 – 19.8)	Sustained	30.1 (25.7-34.4) 28.8 (22.5-35.1) 31.4 (26.2-36.5)	Deteriorated	16.5 (9.4-23.5) 14.0 (6.9-21.1) 19.1 (10.5-27.7)	Deteriorated
Measles Boys Girls	2.8 (1.0 – 4.6) 3.1 (0.6 – 5.6) 2.5 (0.6 – 4.4)	Sustained	1.4 (0.6-2.3) 1.0 (0—0.202) 1.9 (0.4-3.4)	Sustained	1.5 (0.3--2.9) 1.4 (0.0--3.1) 1.8 (0.0-3.6)	Improved
Vitamin Supplementation Boys Girls	89.5 (83.6 – 95.5) 89.2 (82.9 – 95.4) 90.0 (83.9 – 96.0)	Sustained	85.7 (80.9-90.4) 85.0 (79.3-90.8) 86.3 (80.1-91.8)	Improved	83.1 (75.0-91.2) 83.2 (72.8-93.5) 83.0 (75.7-90.2)	Sustained
Measles Vaccination Boys Girls	89.8 (85.1 – 94.5) 88.9 (83.9 – 93.9) 90.8 (86.0 – 95.6)	Sustained	85.1 (80.8-89.5) 84.0 (78.9-89.1) 86.3 (80.7-92.0)	Improved	80.3 (71.8-88.8) 78.1 (66.6-89.5) 82.7 (75.8-89.6)	Improved
Polio Immunization Boys Girls	97.7 (95.9 – 99.6) 98.6 (96.9 – 100.) 96.8 (94.1 – 99.5)	Sustained	96.0 (93.8-98.3) 95.1 (91.8-98.5) 97.0 (94.7-99.2)	Improved	86.3 (85.3-87.2) 83.8 (83.5-84.1) 88.9 (87.1-90.7)	Deteriorated
Women Nutrition and Immunization Status	N = 135					
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	5.1 (1.0 – 9.3)	Sustained	15.9 (11.7-20.1)	Deteriorated	3.2 (2.0-5.2)	Sustained

Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	12.5 (6.3 – 18.8)	Sustained	33.7 (28.3-39.1)	Deteriorated	8.0 (5.9-10.7)	Sustained
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	12.7 (7.8 – 17.6) 13.0 (8.6 – 17.3) 30.5 (23.4 – 37.5) 43.7 (34.1 – 53.3)	Sustained	12.5 (9.0 – 15.9) 17.3 (12.2 – 22.5) 38.3 (30.5 – 46.1) 31.7 (20.0 – 43.4)	Sustained	14.3 (5.5-23.2) 10.7 (5.2-16.3) 43.0 (33.7-52.3) 31.9 (22.6-41.2)	Sustained
Public Health Indicators	N= 408		62.2 (46.0-79.3)			
Household with access to sanitation facilities	83.0 (73.9 – 92.1)	Improved	17.6 (1.2-34.0)	Deteriorated	69.9 (56.6-83.1)	Sustained
Household with access to safe water	3.9 (0 – 7.8)	Deteriorated	17.6 1.3 – 34.0)	Sustained	26.6 (7.4-45.9)	Sustained
Proportion who reported to have consumed <4 food groups	0.49 (0 – 1.2)	Sustained	0.5 (0-1.0)	Sustained	2.6 (0.0-7.1)	Sustained
Household's Main Food Source- Purchase	99.5 (98.8 – 100.)	Sustained	62.2 (46.0-79.3)	Sustained	99.2 (99.0-100.0)	Sustained
Mean CSI		4.1	5.6		4.7	

Table 17: Summary of Key Nutrition Findings for Bari Urban and Qardho IDPs – *Deyr* 2014

	Name of livelihood: Gardo IDPs		**Name of livelihood: Bari Urban**	
	Clusters : Exhaustive (N=496: Boys=243; Girls=253)		**Clusters: 27 (N= 731: Boys = 386; Girls = 345)**	
Indicator	% (CI)	Changes from Gu 2014	% (CI)	Changes from Gu 2014
Child Nutrition Status				
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	11.1 11.9 10.3	Sustained	14.0 (11.2 – 17.3) 15.8 (12.0 – 20.5) 11.9 (8.2 – 16.9)	Improved
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	1.8 1.2 2.4	Sustained	2.7 (1.6 – 4.6) 3.1 (1.7 – 5.5) 2.3 (1.1 - 5.0)	Improved
Mean of Weight for Height Z Scores	-0.75±0.98	Sustained	-0.77±1.12	Improved
Oedema	0.0	Sustained	0.7	
Proportion with MUAC<12.5 cm or oedema) Boys Girls	8.5 8.8 8.2	Deteriorated	5.4 (3.7 – 7.8) 4.6 (2.6 – 8.1) 6.3 (3.9 – 9.9)	Improved
Proportion with MUAC<11.5 cm or oedema Boys Girls	1.8 1.6 2.0	Deteriorated	1.7 (0.9-3.0) 1.5 (0.6 – 3.6) 1.9)0.9 – 4.2)	Sustained
Stunting (HAZ<-2) Boys Girls	16.7 22.6 10.8	Sustained	15.9 (12.8 – 19.5) 17.4 (13.1 – 22.8) 14.2 (10.8 – 18.4)	Sustained
Severe Stunting (HAZ<-3) Boys Girls	3.8 4.8 2.8	Sustained	3.8 (2.3 – 6.0 4.9 (2.9 – 8.1) 2.6 (1.2 – 5.2)	Sustained
Underweight (WAZ<-2) Boys Girls	15.9 20.4 11.4	Sustained	16.9 (13.8 – 20.5) 19.1 (14.8 – 24.4) 14.4 (11.1 – 18.5)	Sustained

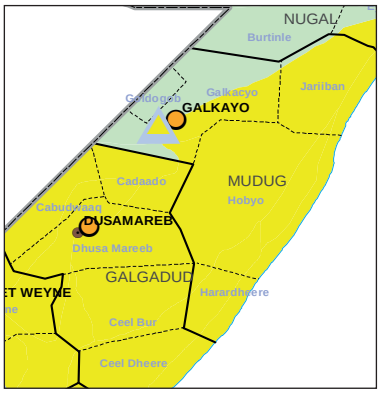
Death Rates				
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.36	Sustained	0.41 (0.22 – 0.79)	
Under five deaths, per 10,000 per day (retrospective for 90 days)	1.09	Deteriorated	0.65 (0.28 – 1.53)	
Morbidities				
Morbidity Boys Girls	37.8 37.5 38.2	Improved	N/A	N/A
Diarrhoea Boys Girls	19.4 18.7 20.0	Improved	N/A	N/A
Pneumonia Boys Girls	13.6 13.5 13.7	Improved	N/A	N/A
Fever Boys Girls	27.7 27.5 27.8	Improved	N/A	N/A
Measles Boys Girls	8.3 8.4 8.2	Sustained	N/A	N/A
Vitamin A Supplementation Boys Girls	78.7 81.0 76.4	Improved	N/A	N/A
Measles Vaccination Boys Girls	76.6 78.1 75.2	Improved	N/A	N/A
Polio Immunization Boys Girls	87.2 85.1 85.1	Sustained	N/A	N/A
Women Nutrition and Immunization Status	N=165		N/A	N/A
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	7.9	Sustained	N/A	N/A
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	15.8	Deteriorated	N/A	N/A
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	 21.6 12.2 23.0 43.2	Sustained	N/A	N/A
Public Health Indicators	N= 279		N=595	
Household with access to sanitation facilities	99.3	Improved	65.7 (50.2 – 81.3)	N/A
Household with access to safe water	75.7	Improved	44.3 (27.1 – 61.6)	N/A
Proportion who reported to have consumed <4 food groups	1.4	Sustained	2.1 (0.1 – 4.1))	N/A
Household's Main Food Source- Purchase	78.2	Improved	98.3 (95.9 – 100.0)	N/A
Mean CSI				N/A

4.3: CENTRAL REGIONS

Central regions are composed of four livelihoods, of which two- Hawd and Addun are cross cutting with NEZ (Puntland). The Addun areas (South Mudug and Galgadud), Cowpea and Coastal Deeh are based in Central zone while Hawd livelihood areas are located in NEZ (Puntland). Therefore for nutrition assessment during *Deyr* 2014/15 the surveyed clusters were both in NEZ and in Central region.

FSNAU and partners conducted 5 nutrition surveys (1 IDP and 4 rural livelihoods) in the central regions of Somalia and assessed nutrition status of 3 545 children months (1 800 boys and 1 745 girls) aged 6-59 from 1 795 independent Households. Integrated nutrition and food security assessments were conducted among Dhusamareb IDPs and nutrition assessment in the two rural livelihoods of Hawd and Addun. In the Cow pea and Coastal Deeh livelihoods where FSNAU staff faced the challenge of access, a representative sampled MUAC Surveys was conducted.

Map 9: Food Security Situation in Central Regions - Jan 2015



CURRENT FOOD SECURITY SITUATION- POST *DEYR* 2014/15

The food security situation in post *Gu* 2014 in central regions of Somalia, was classified for the livelihoods of Hawd, Addun and Coastal deeh as **Stressed** (IPC phase 2) while coastal deeh livelihood was phased as **Crisis** (IPC phase 3). Post *Deyr* 2014/15 assessment shows that the food security situation has improved in central regions when compared to post *Gu* 2014. The current food security situation indicates **Stressed** (IPC phase 2) in livelihoods of Addun, Coastal Deeh and Cowpea belt, while Hawd pastoral livelihood is at **Minimal** (IPC phase 1).

DEYR 2014/15 SURVEY RESULTS

The results of *Deyr* 2014/15 nutrition assessments and key highlights are discussed below.

ACUTE MALNUTRITION

The nutrition situation in the central region shows a mixed picture- Deterioration in Coastal Deeh from **Serious** to **Critical** was seen while Hawd and Addun livelihoods sustained **Critical** and **Alert** levels respectively. But an improvement has been noted in Dhusamareeb IDPs and from **Critical** to **Serious** and Cowpea belt **Serious** to **Alert** respectively (Annex 9).

Based on the assessments median GAM rates of 14.4 percent and SAM rate of 2.7 percent was observe, indicating an improvement compared to *Gu* 2014 when 17.3 percent GAM and 4.6 percent SAM was recorded. In terms of prevalence of acute malnutrition there was no significant gender differences noted for boys and girls. 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 20).

Hawd: *Deyr* 2014/15 assessment results show sustained prevalence of **Critical** levels of GAM among Hawd Central livelihood (16.1%) since *Gu* 2014. The current GAM prevalence is deterioration from **Serious** levels (13.2%) recorded during *Deyr* 2013 though differences are statistically not significant. **Serious** levels of SAM prevalence (2.7%) in *Deyr* 2014 are indication of seasonal variation and an improvement from **Critical** levels recorded in *Gu* 2014 (4.6%).

Figure 29: Trends in Acute malnutrition among livelihoods of Hawd Central

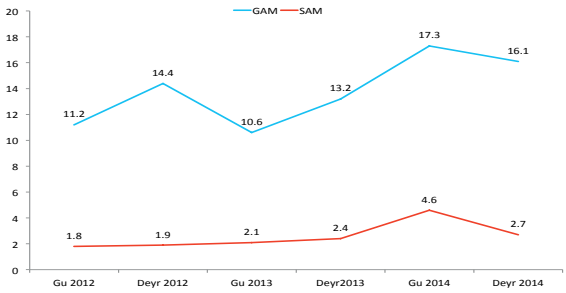
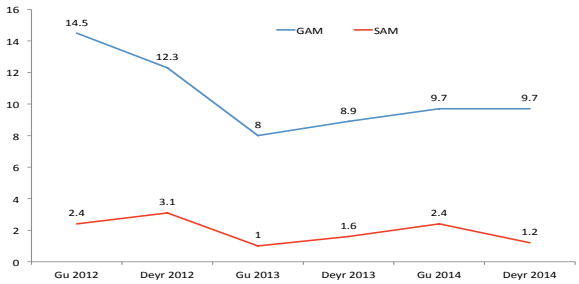


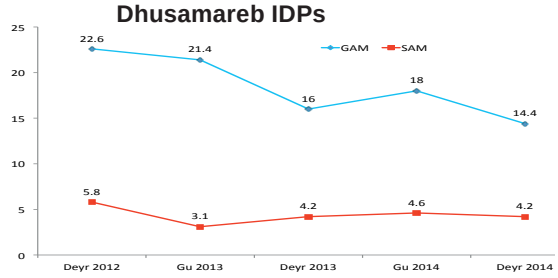
Figure 30: Trends in Acute malnutrition among 6-59 months children in Addun Central



Addun: Addun livelihood recorded a GAM rate of 9.7 percent and SAM rate of 1.2 percent which shows a sustained **Alert** nutrition situation. The prevalence of acute malnutrition is sustained since *Deyr* 2013 when GAM prevalence of 8.9 percent with 1.6 percent SAM was recorded.

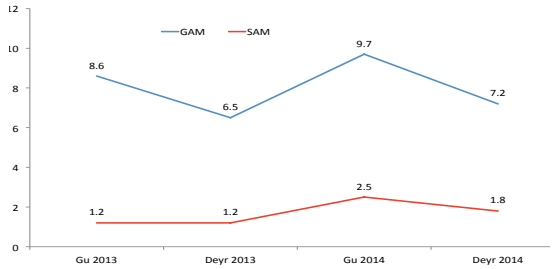
Dhusamareb IDP: Improvement among the Dhusamareb IDPs is suggested by the **Serious** levels of GAM prevalence (14.4 %) recorded during *Deyr* 2014. However it may be noted that this improvement from the **Critical** GAM level recorded in *Gu* 2014 (18.0 %) and *Deyr*2013 (16.0 %) is statistically not significant. Prevalence of **Critical** levels of SAM (>4%) are sustained since *Deyr* 2013 (Figure 31).

Figure 31: Trends in Acute malnutrition among Dhusamareb IDPs



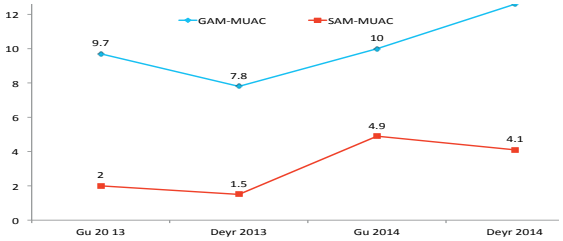
Cowpea Belt: *Deyr* 2014/15 assessment shows an **Alert** nutrition situation with GAM MUAC of 7.2 percent and SAM MUAC of 1.2 percent. This is a seasonal variation though an improvement compared to the **Serious** level of MUAC (9.7%) recorded in *Gu* 2014 but sustained **Alert** when compared to *Deyr* 2013 GAM- MUAC results (6.5%) [Figure 32].

Figure 32: Trends in prevalence of Acute Malnutrition (MUAC) in Cowpea Belt



Coastal Deeh: *Deyr* 2014 results suggest a **Critical** nutrition situation in Coastal Deeh with GAM-MUAC of 12.6 percent. This is a deterioration compared to the **Serious** levels of *GAM-MUAC* recorded in *Gu* 2014 (10.0%) and *Deyr* 2013 (7.8%). Sustained prevalence of **very Critical** levels of SAM-MUAC (>4%) were recorded during *Deyr* 2014 (Figure 33).

Figure 33: Trends in prevalence of Acute Malnutrition (MUAC) in Coastal Deeh



MORTALITY

All livelihoods of Central region with exception of Coastal Deeh report **Acceptable** levels of CDR (<0.5/1/10 000/day) and U5DR (<1/10 000/day) during the last 90 days from the period of assessment. However **Serious** levels of U5DR (1.30/10 000/day) were recorded among Coastal Deeh, levels which are sustained since *Gu* 2014.

MORBIDITY

High morbidity of 42.9 percent among Hawd central and 38.3 Percent among Addun livelihoods is observed during *Deyr* 2014/15 assessments with Dhusamareb IDPs report 28.6 percent with critical prevalence of SAM. Morbidity < 20 percent observed in the Coastal Deeh livelihoods where **Serious** morbidity levels of CDR and U5DR were recorded.

CHRONIC MALNUTRITION –STUNTING AND UNDERWEIGHT

Sustained **low** level of stunting prevalence (<20%) were observed in the pastoral livelihoods of central regions (Hawd and Addun) and among Dhusamareb IDPs since *Gu* 2012 (Figure 34).

Figure 34: Trends in Stunting among 6-59 months children in Central Somalia

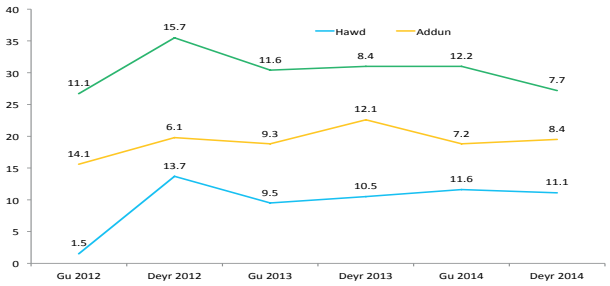
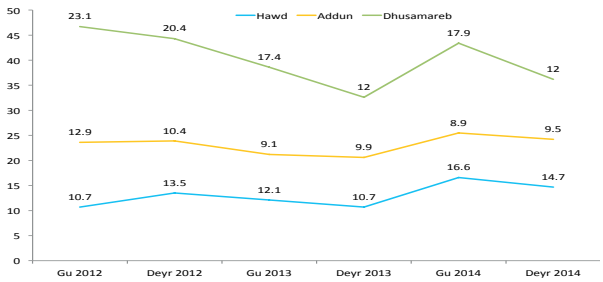


Figure 35: Trends in Underweight among 6-59 months children in Central Somalia



Addun livelihood show sustained **low** prevalence of underweight (<10%) since *Gu* 2013 while sustained **moderate** levels of underweight prevalence (10-20%) were noted among the Hawd livelihood and Dhusamareb IDPs (Figure 35).

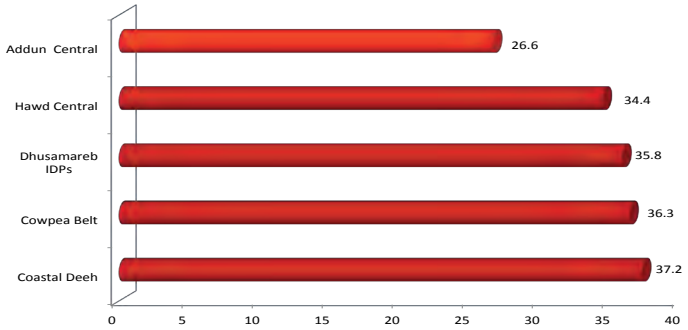
IMMUNIZATION

Low coverage (< 50%) of Vitamin A supplementation and measles vaccination was noted among all the livelihoods assessed in the central regions of Somalia (Annex 16 and 17).

MATERNAL MALNUTRITION

Very high levels of maternal malnutrition were recorded in all livelihoods of Central region. Addun recorded **Critical** levels of maternal malnutrition (26.6%) while **Very Critical** levels (≥ 31.5%) were noted in other livelihoods (Figure 36)

Figure 36: Maternal Malnutrition in Central livelihoods - *Deyr* 2014

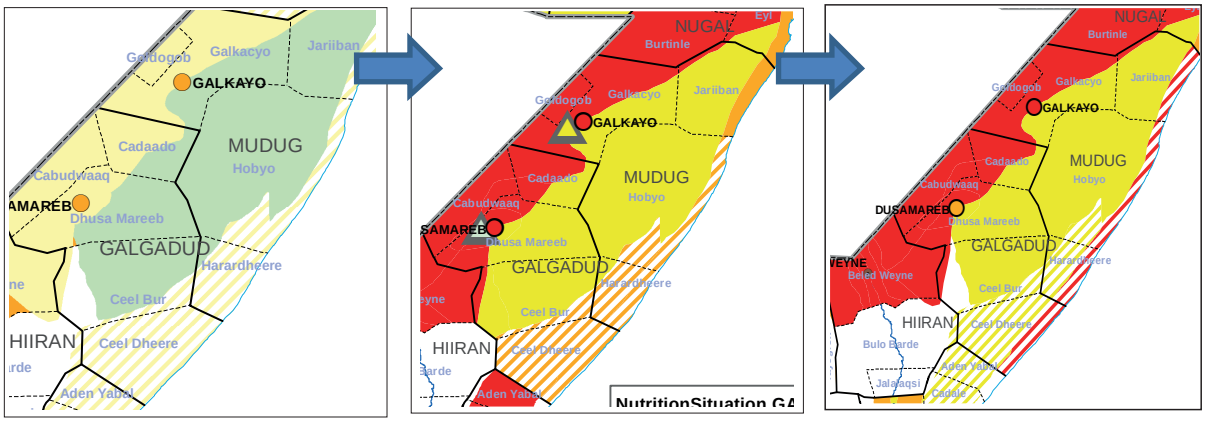


CHANGE IN NUTRITION SITUATION:

Coastal Deeh deteriorated from **Serious** to ***Critical*** while Hawd and Addun sustained **Critical** and **Alert** levels respectively, and Dhusamareb IDPs have improved from **Critical** to **Serious**, where cowpea belt has also improved from ***Serious*** to **Alert.** The figure below shows the changes of malnutrition in central Somalia from *Deyr* 2013 to *Deyr* 2014.

Figure 37: Progression of the Nutrition Situation *Deyr* 2013 to *Deyr* 2014 in Central Regions

Nutrition Situation, Jan 2013 | **Nutrition Situation, Jul 2014** | **Nutrition Situation, Jan 2015**



CURRENT HOT SPOTS FOR ACUTE MALNUTRITION IN CENTRAL SOMALIA

Hawd livelihood with 16.1 percent GAM and Coastal Deeh with 12.6 percent GAM-MUAC are the current hotspots in Central Somalia with critical levels of acute malnutrition.

OUTLOOK FOR FEBRUARY – APRIL, 2015

Current prevalence of nutrition situation expected to be sustained during February – April 2015 in most of the livelihoods in the Central region. This is because neither improvement nor deterioration is expected within the next three months. Cowpea belt is an exception as it is likely to deteriorate based on historical trends and limited access to health care/humanitarian support.

Figure 38: Nutrition Situation and Outlook, January to April 2015 in Central regions

Current Nutrition Situation - Jan 2015 **Projected Nutrition Situation - February-April 2015**

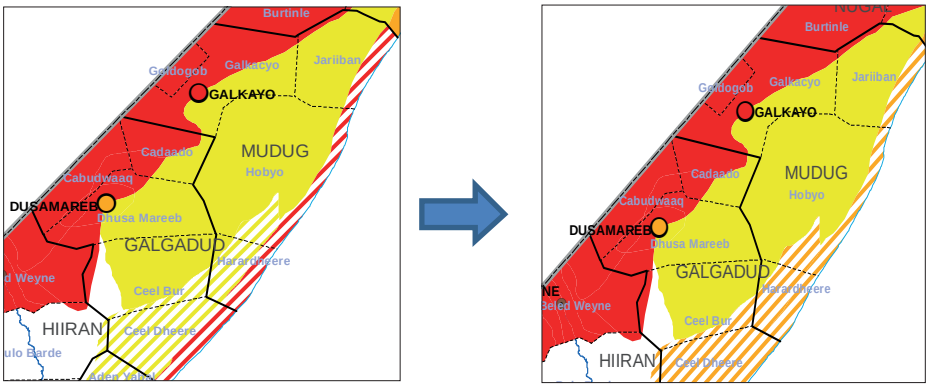


Table 18: Summary of Key Nutrition Findings in Central livelihoods and IDPs - *Deyr* 2014

Indicator/Livelihood	Hawd		Addun		Dhusamareeb IDP	
	Clusters: 27 (n= 90 :Boys 466;Girls= 435)		Clusters : 25 (n=660 : Boys=351; Girls=309)		Clusters: Exhaustive (n= 430: Boys=218; Girls= 212)	
	% (CI)	Change from Gu 2014	% (CI)	Change from Gu 2014	% (CI)	Change from Gu 2014
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	16.1 (13.3-19.4) 18.9 (15.4 – 23.0) 13.1 (9.6 – 17.6)	Sustained	9.7 (6.5-14.2) 12.3 (8.2-17.8) 6.8 (3.6-12.4)	Sustained	14.4 14.7 14.2	Sustained
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	2.7 (1.7 – 4.2) 3.6 (2.1 – 6.2) 1.6 (0.8 – 3.2)	Improved	1.2 (0.6- 2.5) 1.1 (0.4- 3.0) 1.3 (0.5- 3.5)	Improved	4.2 5.5 2.8	Sustained
Mean of Weight for Height Z Scores			-0.64 ± 1.06	Improved	-0.64 ± 1.06	Improved
Oedema	0.0		0.0		0.0	Sustained
Proportion with MUAC<12.5 cm or oedema) Boys Girls	10.1 (6.5 – 15.3) 9.7 (6.0 – 15.3) 10.6 (6.4 – 16.8)	Sustained	4.1 (2.4- 6.9) 3.9 (2.1- 7.2) 4.4 (2.0- 9.1)	Sustained	7.2 4.9 9.6	Sustained
Proportion with MUAC<11.5 cm or oedema Boys Girls	2.0 (1.0 – 3.7) 2.3 (1.1 – 4.7) 1.6 (0.7 – 3.3)	Sustained	0.3 (0.1- 1.2) 0.6 (0.1- 2.4) 0.0 (0.0- 0.0)	Sustained	0.7 0.9 0.5	Improved
Stunting (HAZ<-2) Boys Girls	11.1 (7.6 – 15.9) 11.2 (7.7 – 16.0) 11.0 (6.8 – 17.2)	Sustained	8.4 (5.6-12.4) 9.4 (6.1-14.2) 7.3 (4.4-11.8)	Sustained	7.7 9.9 5.5	Sustained
Severe Stunting (HAZ<-3) Boys Girls	2.3 (1.3 – 4.1) 2.7 (1.5 – 4.9) 1.8 (0.8 – 4.3)	Sustained	2.1 (1.2- 3.8) 2.0 (0.9- 4.3) 2.2 (1.0- 5.0)	Sustained	0.7 1.3 0	
Underweight (WAZ<-2) Boys Girls	14.7 (11.0 -19.4) 17.5 (13.5 – 22.4) 11.7 (7.7 – 17.6)	Sustained	9.5 (6.1-14.5) 11.0 (7.0-16.8) 7.9 (4.5-13.4)	Sustained	12.0 13.5 10.5	Sustained
Death Rate						
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.33 (-.14-0.75	Sustained	0.13 (0.03-0.59)	Sustained	0.07	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.89 (0.39 – 2.04)	Sustained	0.15 (0.02-1.18)	Sustained	0.0	Sustained
Contextual factors						
Morbidity Boys Girls	42.9 (35.6 – 50.1) 42.3 (34.2 – 50.4) 43.4 (35.8 -51.1)	Sustained	38.3 (28.7-48.0) 39.8 (30.2-49.4) 36.6 (25.6-47.7)	Deteriorated	28.6 26.8 30.5	Sustained
Diarrhoea Boys Girls	16.3 (11.0 -21.6) 16.9 (10.6 – 23.3) 15.6 (10.5 -20.8)	Sustained	13.1 (8.8-17.3) 12.5 (8.1-17.0) 13.7 (8.1-19.3)	Sustained	4.7 4.4 4.9	Sustained

Pneumonia Boys Girls	14.1 (8.4 – 19.9) 11.5 (6.7 – 16.3) 17.0 (9.6 – 24.4)	Sustained	12.6 (6.6-18.6) 12.8 (7.1-18.5) 12.4 (5.5-19.4)	Sustained	8.6 8.8 8.5	Sustained
Fever Boys Girls	36.7 (29.4 – 44.0) 36.0 (28.0 – 44.1) 37.4 (29.6 – 45.2)	Sustained	32.0 (21.8-42.2) 34.0 (24.1-43.9) 29.8 (18.1-41.5)	Sustained	25.7 23.2 28.3)	Sustained
Measles Boys Girls	3.0 (1.1 – 4.9) 2.9 (1.1 – 4.6) 3.1 (0.2 – 6.0)	Sustained	2.6 (0.3-5.0) 1.7 (0.0-3.5) 3.7 (0.5-6.9)	Sustained	2.0 2.6 1.3	Sustained
Vitamin A Supplementation Boys Girls	41.8 (30.3 – 53.3) 40.2 (28.8 – 51.6) 43.5 (30.7 – 56.4)	Sustained	63.0 (47.6-78.4) 63.5 (48.0-79.0) 62.4 (46.5-78.3)	Sustained	33.3 36.6 30.0	Sustained
Measles Vaccination Boys Girls	53.5 (40.8 68.1) 52.6 (37.4 67.7) 54.4 (40.8 68.1)	Sustained	57.3 (42.7-71.8) 57.9 (42.4-73.5) 56.5 (42.3-70.7)	Sustained	33.8 36.2 31.4	Sustained
Polio Immunization Boys Girls	87.7 (80.4 – 95.1) 86.5 (79.3 – 93.8) 89.0 (80.9 – 97.0)	Sustained	83.4 (73.9-92.9) 85.2 (76.5-94.0) 81.4 (70.7-92.0)	Sustained	96.6 96.4 96.9	Improved
Pregnant and Lactating women						
# of PLW	n = 247		n=145		n=179	
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	20.6 (10.8 – 30.4)	Deteriorated	7.7 (1.6-13.8)	Sustained	13.4	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	34.4 (22.0 – 46.8)	Sustained	26.6 (14.0-39.2)	Sustained	35.8	Deteriorated
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	N = 569 18.9 (12.4 – 25.4) 21.9 (14.1 – 29.7) 30.5 (24.0 – 37.1) 28.4 (19.7 – 37.1)	Sustained	19.2 (11.2-27.1) 10.8 (5.0-16.5) 31.2 (21.3-41.2) 38.8 (26.6-51.1)	Sustained	24.4 15.7 32.7 27.2	Sustained
Public Health Indicators n=595						
Household with access to sanitation facilities	65.7 (50.2 – 81.3)	Sustained	60.4 (46.0-4.8)	Sustained	69.4	Deteriorated
Household with access to safe water	44.3 (27.1 – 61.6)	Sustained	42.7 (21.8-3.5)	Improved	91.1	Sustained
Food Security Indicator						
Proportion who reported to have consumed <4 food groups	2.1 (0.1 – 4.1))	Sustained	0.2 (0.0-0.8)	Sustained	98.7	Sustained
Household's Main Food Source-Purchase	98.3 (95.9 –100.0)	Improved	93.1 (85.1-101.1)	Sustained	83.5	Sustained
Mean CSI			9.18			

Table 19: Summary of Key Nutrition Findings in Central Rural livelihoods -*Deyr* 2014

Indicator	**Coastal Deeh of central-(MUAC)**		**Cowpea- (MUAC)**	
	Clusters : 25 (N=740: Boys=361; Girls=379)		**Clusters : 25 (N=817: Boys=394; Girls=423)**	
	n% (CI)	**Change from Gu 2014**	**% (CI)**	**Change from Gu 2014**
Child Nutrition Status				
Mean of Weight for Height Z Scores	141.3 ± 12.9			
Oedema	0.9		0.2	
Proportion with MUAC<12.5 cm or oedema) Boys Girls	12.6 (10.0-15.7) 13.3 (9.5-18.3) 11.9 (8.9-15.7)	Deteriorated	7.2 (4.8 – 10.7) 7.1 (4.6 – 10.9) 7.3 (4.2 – 12.6)	Improved
Proportion with MUAC<11.5 cm or oedema Boys Girls	4.1 (2.8- 5.8) 3.6 (1.9- 6.6) 4.5 (2.7- 7.3)	Sustained	1.8 (0.7 – 4.5) 1.3 (0.5 – 3.0) 2.4 (0.8 – 8.6)	Improved
Death Rate				
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.57 (0.34-0.97)	Sustained	0.17 (0.06 – 0.49)	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	1.30 (0.63-2.67)	Sustained	0.00	Improved
Contextual Factors				
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	15.2 (10.2-20.2	Improved	23.6 (16.2 – 30.9	Improved

Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0) (n=322)	36.3 (32.2-40.5)	Sustained	37.2 (29.9 – 44.5)	Sustained
Morbidity Boys Girls	15.8 (11.7-20.0) 13.6 (8.9-18.3) 17.9 (13.5-22.4)	Sustained	13.9 (8.8 – 19.0) 12.3 (7.2 – 17.4) 15.3 (9.3 – 21.3)	Sustained
Diarrhoea Boys Girls	6.1 (3.4-8.8) 4.7 (2.2-7.2) 7.4 (3.8-11.0)	Sustained	5.5 (3.8 – 7.2) 5.5 (3.1 – 8.0) 5.4 (3.2 – 7.6)	Sustained
Pneumonia Boys Girls	7.6 (4.2-10.9) 6.9 (3.7-10.1) 8.2 (4.0-12.3)	Sustained	5.1 (2.3 – 7.9) 6.0 (2.6 – 9.4) 4.2 (1.4 – 7.0)	Sustained
Fever Boys Girls	8.1 (5.5-10.7) 7.2 (3.9-10.5) 9.0 (5.8-12.2)	Sustained	5.49 (3.7 – 7.2) 4.2 (2.1 – 6.4) 6.6 (4.0 – 9.1)	Sustained
Measles Boys Girls	0.8 (0.2-3.4) 1.9 (0.0-4.1) 1.6 (0.2-3.0)	Increased	2.3 (0.4 – 4.1) 1.7 (0 – 3.6) 2.8 (0.5 – 5.1)	Sustained
Vitamin A Supplementation Boys Girls	55.3 (38.9-71.6) 57.9 (40.0-75.8) 52.8 (37.2-68.3)	Sustained	47.1 (35.7 – 58.5) 49.2 (37.1 – 61.3) 45.1 (33.7 – 56.5)	Sustained
Measles Vaccination Boys Girls	36.4 (20.4-52.3) 38.5 (21.8-55.2) 34.3 (18.8-49.8)	Sustained	4.2 (0.4 – 8.0) 4.0 (0.2 – 7.8) 4.5 (0.3 – 8.6)	Sustained
Polio Immunization Boys Girls	55.3 (38.9-71.6) 57.9 (40.0-75.8) 52.8 (37.2-68.3)	Sustained	48.4 (37.0 – 59.0) 51.5 (39.7 – 63.3) 45.6 (34.0 – 57.1)	Sustained

4.4 SOUTH REGIONS

Nutrition status of 15 881 children (6-59 month) from 12 rural livelihoods, two urban and five IDPs were assessed during the *Deyr* 2014/15 surveys. Owing to constraints in access, the nutrition situation in the Agropastoral and Riverine livelihoods of South Gedo and Juba and the Cowpea Belt were assessed through MUAC surveys.

4.4.1 GEDO REGION

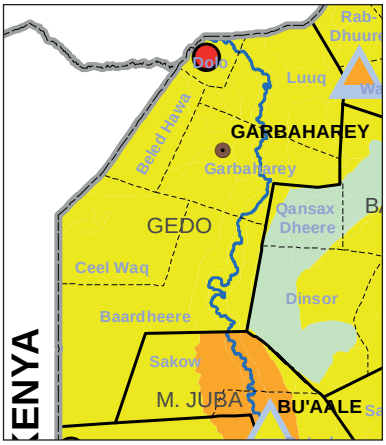
BACKGROUND

In post-*Deyr* 2014/15, FSNAU conducted seven nutrition surveys in Gedo region (four comprehensive SMART surveys - one in Dolow IDPs and three in North Gedo rural livelihoods) and three rapid MUAC surveys. During the survey the nutrition status of 6 089 children aged 6-59 months from 3 555 household was assessed.

CURRENT FOOD SECURITY SITUATION (POST DEYR'2014)

The food security situation has improved in the post-*Deyr* 2014/2015 in all rural livelihoods of the region. In January 2015, the food security situation in all livelihoods was classified as **Stressed** (IPC Phase 2) with an estimated 72 000 people, reflecting a modest decrease (12%) since the post-*Gu* 2014. An estimated 16 000 people (11 000 in Dawo Pastoral and 4 800 in Southern Agro-pastoral) have been downgraded from **Crisis** (IPC Phase 3) in the post-*Gu* 2014 to **Stressed** (IPC Phase 2) in January 2015. In the most likely scenario, the area classification is expected to remain the same in all livelihood zones during February-June 2015. The estimates of the population classified as **Stressed** (IPC Phase 2) is projected to increase slightly, reaching 82 000 people (Map 10).

Map 10: Food Security Situation in Gedo Regions - Jan 2015



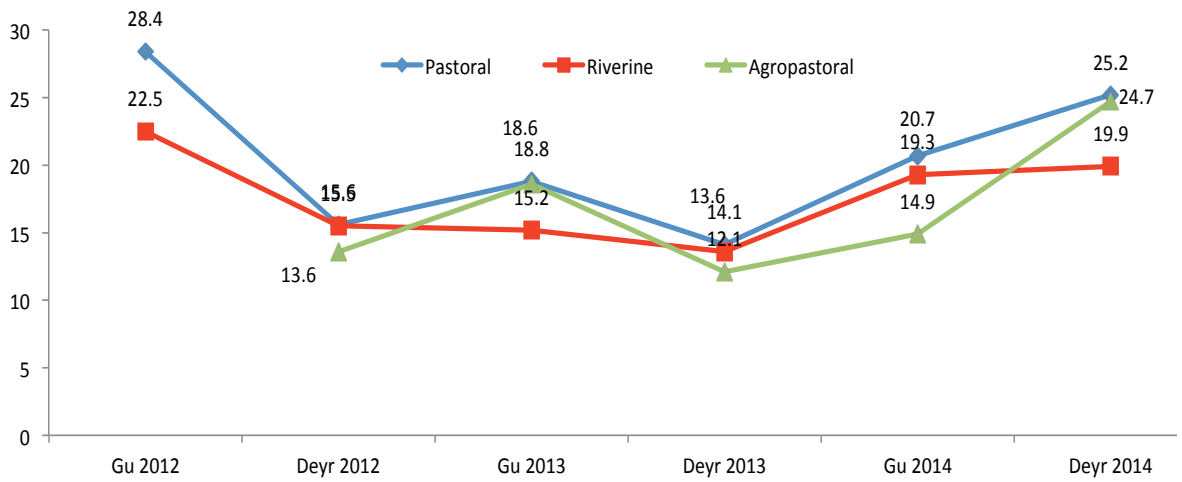
CURRENT NUTRITION SITUATION POST *DEYR* 2014/15

The results of the post-*Deyr* 2014/15 assessment are shown in Table 20-22 and key highlights are summarized below:

ACUTE MALNUTRITION

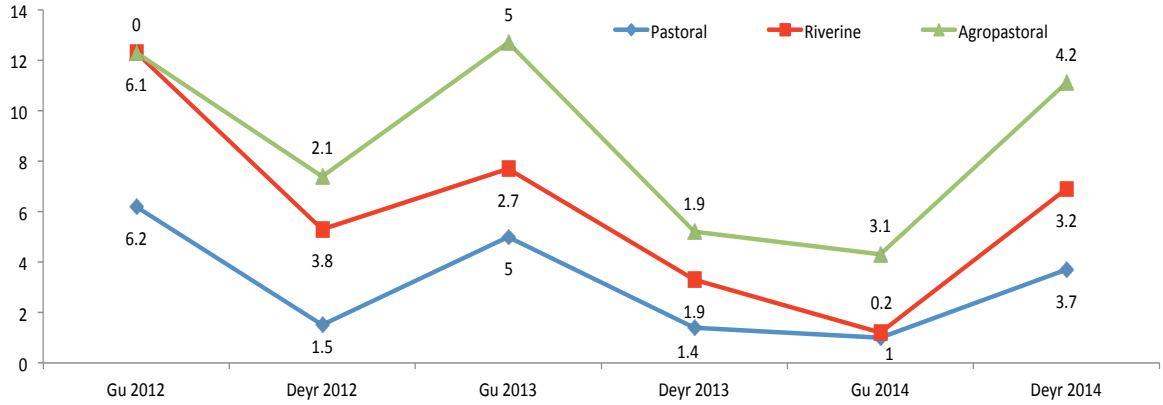
North Gedo region: Critical GAM prevalence was observed in North Gedo Pastoral (25.2%), Agropastoral (24.7%) and Riverine livelihoods 19.9%). **Critical** GAM prevalence is sustained among the Pastoral and Riverine populations in North Gedo (Annex 9). All the three livelihoods have shown a significant increase in GAM since *Deyr* 2013 (Figure 39) which may have resulted from high morbidity, reduced milk access and family splitting during low rainfall season low (*Gu* 2014 and *Deyr* 2013), low immunization coverage and limited health services.

Figure 39: GAM trends in different livelihoods in North Gedo region - *Deyr* 2014



The declining trend observed in SAM prevalence among all the livelihoods of North Gedo region till *Gu* 2014 appears to be reversed in *Deyr* 2014 (Figure 2). *Deyr* 2014/15 assessment results (Annex 9) shows a significant increase in prevalence of SAM among Pastorals (3.7%) and Agropastorals (4.2%) and sustained **Serious** levels of prevalence of SAM (.3.2%) among the Riverine population.

Figure 40: SAM trends in different livelihoods in North Gedo - *Deyr* 2014



Dolow IDP settlements record sustained **Critical** prevalence of GAM 21.6 percent (Figure 40) as well as SAM 4.3 percent (Figure 41 and 42).

Figure 41: GAM trends among Dolow IDPs - *Deyr* 2014

Figure 42: SAM trends among Dolow IDPs - *Deyr* 2014

MORBIDITY

In *Deyr* 2014, high levels of morbidity were recorded among North Gedo Pastoral (27.1), Agropastoral (21.6%) and Riverine livelihood (20.9%) communities which is likely to be the key aggravating factors for high prevalence of acute malnutrition observed in these livelihoods. An improvement in morbidity prevalence was noted in Dolow IDPs from 55.2 percent seen in *Deyr* 2013 to 36.9 percent in *Deyr* 2014 (Annex 15), however it's still the highest in North Gedo region.

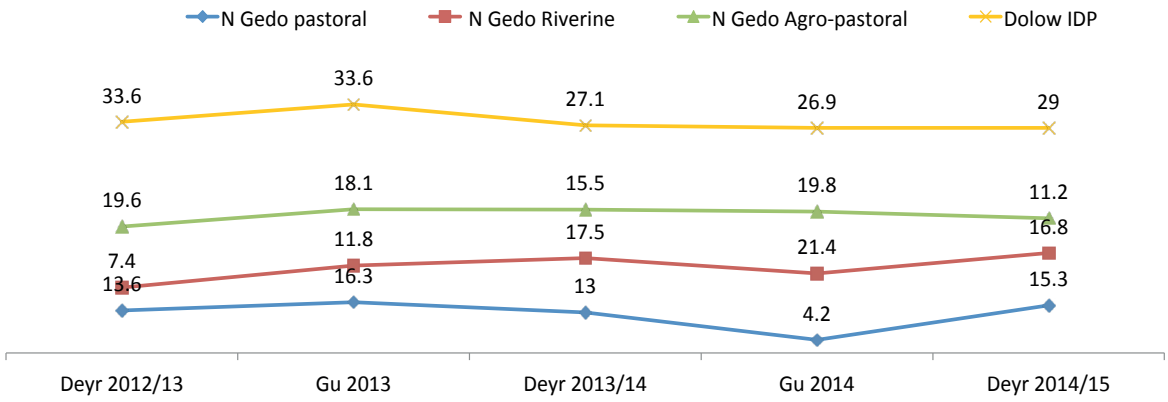
MORTALITY

Deyr 2014/15 results show that in spite of **Critical** prevalence of acute malnutrition, **Acceptable** mortality rates CDR (<0.5 /10 000/day) and U5DR (<1/10 000/day) are recorded among Riverine and Agropastoral population seen in the livelihoods of Gedo region (Table 20). **Serious** levels of CDR and U5DR recorded among the pastoral population suggesting a seasonal change.

CHRONIC MALNUTRITION-STUNTING

Deyr 2014/15 results show sustained **low** levels of stunting prevalence among Gedo Pastoral (15.3%), Riverine (16.8 %) and Agro-pastoral rural livelihoods (11.2%) since *Deyr* 2013 (Figure 42). Dolow IDPs show **medium** levels of stunting (29%) in *Deyr* 2014 which is sustained since *Deyr* 20134 (27.1) but is an improvement from **high** levels of stunting seen in *Gu* 2013 (37.1%) or *Deyr* 2012 (33.6 %).

Figure 43: Trends in stunting among different livelihoods of North Gedo region - *Deyr* 2014

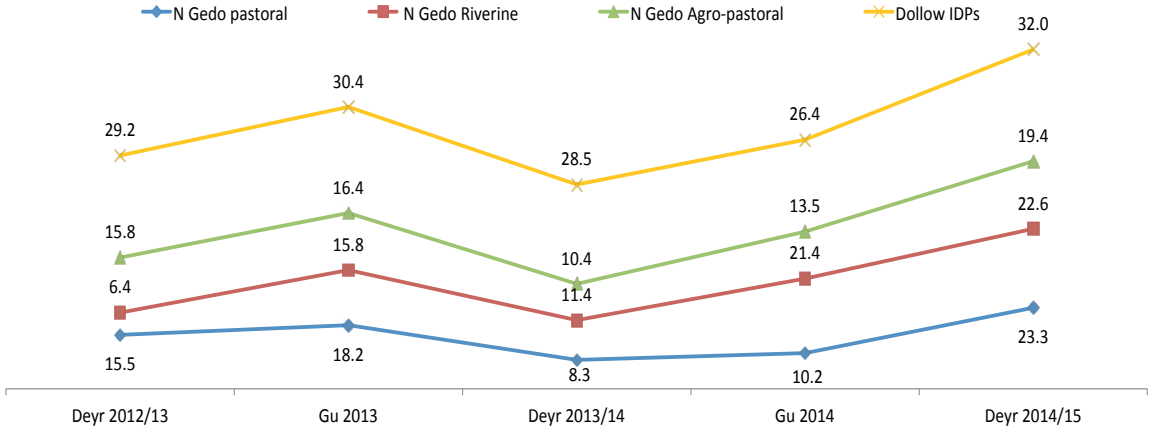


UNDERWEIGHT

High prevalence levels of underweight was observed among North Gedo Pastoral (23.3 %) and North Gedo Riverine (22.6 %) which reflects a deterioration from **medium** prevalence observed in *Gu* 2014 and *Deyr* 2013. North Gedo Riverine shows sustained **high** prevalence of stunting since *Gu* 2014. **Medium** Prevalence was seen in North Gedo Agropastoral (19.4%) which is sustained since *Gu* 2014 and *Deyr* 2013 (Annex 13).

A very high level of underweight prevalence (32.0%) was recorded in Dolow IDPs, during *Deyr* 2014 which is showing a deterioration compared to the **high** prevalence of 26.4% recorded in *Gu* 2014 and 28.5 % in *Deyr* 2013 (Figure 44).

Figure 44: Trends in Underweight prevalence in North Gedo - *Deyr* 2014



IMMUNIZATION

Low levels of measles vaccination coverage (< 50%) were recorded in all livelihoods of North Gedo Pastoral, Agropastoral and Riverine community which is far below the SPHERE recommended coverage of 95 percent. Vitamin A supplementation coverage is around 70 percent while coverage of polio immunization is >90 percent. Dolow IDPs recorded **low** levels of vitamin A supplementation (66.5%), and measles vaccination (61.8%) although the coverage of Polio immunization was quite high (88%).

MATERNAL MALNUTRITION

Critical levels of maternal malnutrition (>22.4%) were recorded among the pregnant and lactating women in the Agro-pastoral livelihoods and Dolow IDPs while **Serious** levels were seen in Gedo Pastoral and Riverine livelihoods.

SOUTH GEDO

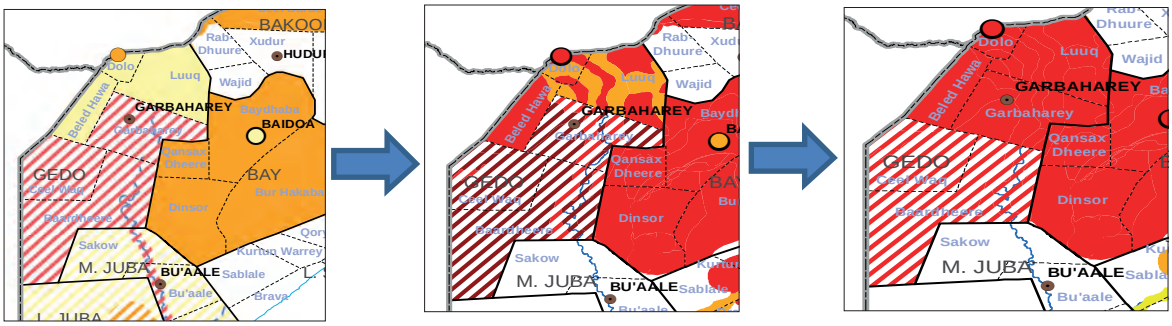
The*Deyr* 2014 representative MUAC assessment conducted in South Gedo shows sustained **Critical** nutrition situation among the Pastoral (12.9%), Riverine (14.6%) and Agropastoral livehihoods (Table 21). Measles outbreak was reported in parts of South Gedo, particularly in Burdhubo districts, and high morbidity > 30 percent were recorded among the all assessed livelihoods, which may have contributed to the underlying factors for sustained **Critical** levels of acute malnutrition seen among South Gedo livelihoods. The morbidity rates are mainly linked to limited availability of health services and access to health facilities in the region and poor access to WASH. In addition there is recurring disease outbreak in the region, which makes Gedo region livelihood communities more vulnerable to malnutrition (Annex 15).

CHANGE IN NUTRITION SITUATION

The maps in Figures 44 and 45 show change in nutrition situation from *Deyr* 2013 to *Deyr* 2014. Deterioration in the nutrition situation among the Gedo Pastoral, Riverine and Agro pastoral livelihoods from ***Serious*** to ***Critical*** levels is noted during the last 12 months. North Gedo Agro –pastoral showed significant deterioration compared to ***Serious*** nutrition situation recorded in *Gu* 2014 and *Deyr* 2013. The deterioration of nutrition situation in Gedo agropastoral is likely due to seasonal increase in morbidity prevalence, measles outbreak, and sub-optimal infant and young child feeding practices. Dolow IDPs show sustained **Critical** levels of acute malnutrition since the last 12 months. The level of acute malnutrition in North Gedo has shown a deterioration trend since *Deyr* 2013 as indicated in the progression map below (Figure 45).

Figure 45: Progression of the Nutrition Situation *Deyr* 2013 to *Deyr* 2014 in Gedo Region

Nutrition Situation, Jan 2014 **Nutrition Situation Jul 2014** **Nutrition Situation, Jan 2015**



CURRENT HOT SPOT FOR ACUTE MALNUTRITION IN GEDO REGION

All livelihoods of Gedo region (South with GAM-MUAC > 10.6 percent & North with GAM > 15%) and Dolow IDPs are currently hot spots for acute malnutrition.

OUTLOOK FOR FEBRUARY - APRIL 2015

The **critical** levels of acute malnutrition seen in Gedo region is largely expected to be sustained as **Critical** in the coming three months due to the prevailing high morbidity rates, limited access to humanitarian interventions, and limited milk access. The maps below (Figure 46) show current and projected nutrition situation across livelihoods in Gedo Region.

Figure 46: Nutrition Situation and Outlook Jan 2015 to April 2015 in Gedo region

Current Nutrition Situation Jan 2015 **Projected Nutrition Situation Feb – Apr 2015**

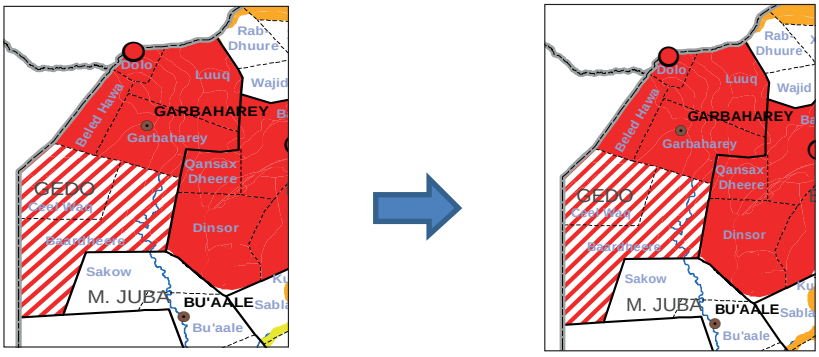


Table 20: Summary of Key Nutrition Findings North Gedo Regions - *Deyr* 2014

	North Gedo Pastoral (n=624; Boys=330; Girls=294 Clusters:27		North Gedo Riverine (n=875 Boys=472: Girls=403) Clusters :29		North Gedo Agro-pastoral (n=744;Boys=366; Girls=378) Clusters: 28	
Indicator	**% (CI)**	**Change from Gu 2014**	**% (CI)**	**Change from Gu 2014**	**% (CI)**	**Change from Gu 2014**
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema)	**25.2** (21.3-29.5)	Sustained	**19.9** (16.1-24.3)	Sustained	**24.7** (20.0-30.2)	Deteriorated
Boys	26.7 (21.5-32.5)		21.6 (16.9-27.1)		27.0 (21.4-33.6)	
Girls	23.5 (18.4-29.5)		17.9 (14.2-22.3)		22.5 (17.4-28.5)	
Severe Acute Malnutrition (WHZ<-3 or oedema)	**3.7** (2.4- 5.7)	Deteriorated	**3.2 (** 2.1- 4.9)	Sustained	**4.2** (2.7- 6.4	Deteriorated
Boys	3.6 (2.2- 5.9)		3.2 (1.9- 5.2)		4.9 (3.0- 8.0)	
Girls	3.7 (1.8- 7.4)		3.2 (1.8- 5.6)		3.4 (2.0- 5.9	
Mean of Weight for Height Z Scores	-1.29±1.00	Deteriorated	-1.17±1.00		-1.30±0.99	Deteriorated
Oedema	0.2	Deteriorated	0.0	Sustained	0.0	Sustained
Proportion with MUAC<12.5 cm	**6.5** (4.2- 9.9)	Improved	**5.9** (4.3- 7.9)	Improved	**5.7** (3.8- 8.4)	Improved
Boys	6.0 (3.2-11.0)		6.1 (4.0- 9.0)		5.4 (3.2- 8.8)	
Girls	7.1 (4.2-11.7)		5.7 (4.1- 7.7		6.0 (3.6- 9.8)	
Proportion with MUAC<11.5 cm	**0.8** (0.3- 1.8)	Improved	**0.8** (0.4- 1.5)	Improved	**0.3** (0.1- 1.1)	Improved
Boys	0.3 (0.0- 2.3)		0.8 (0.3- 2.1		0.0 (0.0- 0.0)	
Girls	1.4 (0.5- 3.5)		0.7 (0.2- 2.3)		0.5 (0.1- 2.1)	
Stunting (HAZ<-2)	15.3 (12.4-18.7)	Sustained	16.8 (13.0-21.4)	improved	11.2 (8.4-14.9	Sustained
Boys	17.5 (13.8-22.0)		20.0 (15.8-25.0)		15.5 (12.0-19.8	
Girls	12.8 (8.6-18.7		13.0 (9.0-18.4		7.1 (4.3-11.6	
Severe Stunting (HAZ<-3)	2.4 (1.5- 4.0)	Improved	3.8 (2.6- 5.6)	Improved	2.1 (1.1- 4.2)	Deteriorated
Boys	2.1 (1.1- 4.2)		5.2 (3.5- 7.6)		3.3 (1.6- 6.5)	
Girls	2.8 (1.4- 5.5		2.3 (1.2- 4.3)		1.1 (0.3- 3.5)	
Underweight (WAZ<-2)	23.3 (19.1-28.1)	Deteriorated	22.6 (18.9-26.8)	Sustained	19.4 (15.7-23.7)	Sustained
Boys	26.4 (22.1-31.2)		25.6 (21.2-30.6)		21.7 (16.4-28.2)	
Girls	19.7 (13.0-28.7)		19.1 (14.3-25.0)		17.1 (13.1-22.0	
Death Rates						
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.51 (0.32-0.80)	Deteriorated	0.40 (0.20-0.80)	Improved	0.48 (0.28-0.87)	Improved
Under five deaths, per 10,000 per day (retrospective for 90 days)	1.01 (0.45-2.41)	Deteriorated	0.79 (0.31-2.00)	Sustained	0.53 (0.20-1.40)	Improved
Morbidity	27.1(16.9-37.3)	Improved	20.9 (13.7-28.2)	Improved	21.6 (12.4-30.7)	Improved
Boys	24.6(13.4-35.6)		22.9 (15.4-30.5)		19.8 (10.9-28.7)	
Girls	30.1(19.4-40.7)		18.5 (10.3-26.7)		23.3 (12.5-34.1)	

Diarrhoea Boys Girls	14.1(7.9-20.3) 11.4(4.5-18.3) 17.2(10.6-23.8)	Deteriorated	8.5(4.6-124) 8.9(4.7-13.2) 7.9(3.6-12.2)	Improved	11.7 (5.018.3) 11.3 (5.0-17.5) 12.0 (4.0-20.0)	Improved
Pneumonia Boys Girls	10.9(4.2-17.7) 10.5(3.3-17.7) 11.5(3.1-19.8)	Deteriorated	7.6(3.5-11.7) 8.4(3.4-13.3) 6.7(2.8-10.5)	Improved	9.7 (3.2-16.1) 7.8 (1.8-13.7) 11.5 (4.0-18.9)	Improved
Fever Boys Girls	16.9(9.7-24.2) 15.3(7.3-23.3) 18.9(10.9-26.8)	Improved	11.3(6.1-16.5) 11.5(6.7-16.2) 11.1(4.7-17.5)	Improved	10.9 (4.1-17.9) 10.5 (3.3-17.6) 11.5 (3.4-19.5)	Improved
Measles Boys Girls	0	sustained	0.1(0.0-0.03) 0.2(0.0-0.6) 00	sustained	0.5 (0.0-1.17) 0.5 (0.0-1.6) 0.5 (0.0-1.2)	sustained
Vitamin A Supplementation Boys Girls	72.4(58.9-85.8) 70.9(56.4-85.5) 73.9(60.7-87.3)	Improved	69.3(53.7-84.9) 66.8(49.9-83.7) 72.3(58.1-86.6)	Improved	85.4 (75.2-95.7) 85.8 (74.2-97.3) 85.1 (75.7 -94.4)	Improved
Measles Vaccination Boys Girls	37.8(22.0-53.5) 38.9(22.5-55.3) 36.5(20.5-52.5)	Deteriorated	45.7(28.9-62.4) 43.4(25.9.2-60.8) 48.4(32.2-64.5)	Deteriorated	43.4 (28.6 -58.3) 42.9 (27.2-58.6) 43.9 (29.1-58)	Improved
Polio Immunization Boys Girls	91.3(86.2-96.3 91.3(85.6-97.1) 91.2(86.0-94.4)	Improved	96.0(92.2-99.9) 95.6(91.3-99.9) 96.5(93.1-100.0	Improved	89.8 (81.2-98.4) 90.3 (80.5-100.2) 89.3 (81.5-96.9)	Deteriorated
Women Nutrition and Immunization Status						
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	4.3(0.01-8.8)	Improved	10.8(5.5-16.2)	Deteriorated	5.6(3.1-8.1)	Improved
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	22.4(16.1-28.6)	Improved	22.3(15.2-29.4)	Improved	25.4(20.5-30.3)	Improved

Table 21: Summary of Key Nutrition Findings in South Gedo Regions - *Deyr* 2014

	South Gedo Pastoral		**South Gedo Riverine**		**South Gedo Agro pastoral**	
	Clusters: 26 **(n=993: Boys=485; Girls= 508)**		**Clusters : 27** **(n=1202: Boys=601; Girls=601)**		**Clusters: 27** **(n=991 :Boys= 491; Girls=500)**	
Indicator	**% (CI)**	**Change from Gu 2014**	**% (CI)**	**Change from Gu 2014**	**% (CI)**	**Change from Gu 2014**
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	12.9(11.0-15.0) 9.5(6.8-13.1) 16.1(13.9-18.6)	Sustained	14.6(12.3-17.3) 15.8(12.4-19.9) 13.5(10.8-16.7)	Sustained	14.4 (11.9-17.5) 13.8 (11.1-17.2) 15.0 (11.6-19.1)	Sustained
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	1.5(0.8-3.0) 1.2(0.5-3.0) 1.8(0.7-4.1)	Sustained	1.3(0.8-2.2) 1.2(0.5-2.5) 1.5(0.7-3.0)	Improved	1.0 (0.6-1.7) 1.0 (0.4-2.4) 1.0 (0.4-2.3)	Improved
Mean of Weight for Height Z Scores			-0.98±1.13		-0.95±1.04	
Oedema	0.1		0.1		0.1	
Proportion with MUAC<12.5 cm or oedema) Boys Girls	11.4(9.7-13.3) 8.2(5.8-11.6) 14.4(12.2-16.8)	Improved	13.3(11-16.0) 14.6(11.6-18.3) 12.0	Improved	13.4(11.0-16.3) 12.8(10.2-16.1) 14.0(10.7-18.0)	Sustained
Morbidity Boys Girls	36.4(31.1-41.6) 38.9(33.8-44.1) 33.9(26.7-41.0)		30.4(24.9-35.7) 29.3(23.2-35.4) 31.4(25.2-37.7)		32.9(27.5-38.5) 32.6(25.7-39.4) 33.4(27.7-39.1)	

Diarrhoea Boys Girls	5.7(3.1-8.3) 8.0(5.1-10.9) 3.5(1.1-5.9)		12.6(9.8-15.2) 12.9(9.1-16.9) 12.1(8.8-15.5)		16.4(13.2-19.7) 16.9(11.8-22.0) 16.0(12.8-19.2)	
Pneumonia Boys Girls	10.3(6.3-14.2) 11.3(7.0-15.6) 9.4(5.1-13.8)		11.9(9.3-14.7) 10.5(7.5-13.5) 13.4(9.8-17.1)		12.5(10.2-14.7) 11.2(7.9-14.4) 13.8(11.0-16.6)	
Fever Boys Girls	21.5(16.7-26.2) 21.4(16.9-25.9) 21.5(15.1-27.8)		7.3(5.3-9.3) 6.9(4.3-9.7) 7.6(5.4-9.8)		6.4(5.0-7.9) 6.3(5.7-6.8) 6.6(4.1-9.1)	
Measles Boys Girls			0.1(0.0-0.3) 0.2(0.0-0.5) 0.0			

Table 22: Summary of Key Nutrition Findings in Dolow IDPs *Deyr* 2014

	Name of livelihood Dolow IDPs	
	Exhaustive **(n=818 Boys=403: Girls=415)**	
Indicator	**% (CI)**	**Change from Gu 2014**
Child Nutrition Status		
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	21.6 26.8 16.6	Sustained
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	4.3 6.0 2.7	Sustained
Mean of Weight for Height Z Scores	-1.21±1.04	
Oedema	0	Improved
Proportion with MUAC<12.5 cm Boys Girls	7.1 7.1 7.1	Improved
Proportion with MUAC<11.5 cm Boys Girls	1.2 1.5 0.9	Improved
Stunting (HAZ<-2) Boys Girls	29.0 31.9 26.3	Sustained
Severe Stunting (HAZ<-3) Boys Girls	9.6 10.4 8.8	Sustained
Underweight (WAZ<-2) Boys Girls	32.0 38.4 25.8	Deteriorated
Death Rates		
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.46 (0.27-0.79)	Improved
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.89(0.44-1.78)	Improved

Morbidity Boys Girls	36.9 40.1 33.6	Improved
Diarrhoea Boys Girls	12.1 13.4 10.9	Deteriorated
Pneumonia Boys Girls	10.2 12.9 7.6	Improved
Fever Boys Girls	26.5 27.9 25.1	Improved
Measles Boys Girls	0.96 0.97 0.94	Improved
Vitamin A Supplementation Boys Girls	66.5 68.1 64.9	Deteriorated
Measles Vaccination Boys Girls	61.8 60.1 63.5	Improved
Polio Immunization Boys Girls	88 89.5 86.5	Improved
Women Nutrition and Immunization Status		
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	6.3 (3.7-8.9)	Deteriorated
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	22.9 (16.2-29.7)	Deteriorated
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	 17.2 13.1 19.2 50.1	Deteriorated
Public Health Indicators		
Household with access to sanitation facilities	97.7	Improved
Household with access to safe water	93.3	Improved
Proportion who reported to have consumed <4 food groups	6.8 (3.1-10.4)	Deteriorated
Household's Main Food Source-Purchase	78.3	Improved
Mean CSI	38.8	Improved

4.4.2: MIDDLE AND LOWER JUBA REGIONS

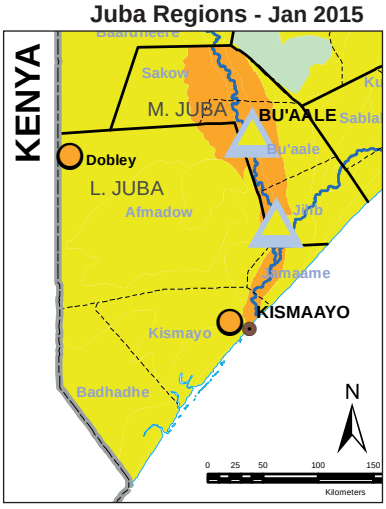
BACKGROUND

Three comprehensive SMART nutrition surveys were conducted in the Juba region. These surveys assessed the nutrition status of 2 700 children aged 6-59 months from 1 712 households.

CURRENT FOOD SECURITY SITUATION POST *DEYR* 2014/15

In the post-*Deyr* 2014/15 (January 2015), the food security situation in Middle Juba Riverine and Southern Agropastoral livelihoods is classified as **Crisis** (IPC Phase 2). On the other hand, the situation has remained stable since the post-*Gu* 2014 in Lower Juba Agropastoral (except that of Jamame district). South East Pastoral (cattle pastoralists) is classified as **Stressed** (IPC Phase 2) while deterioration has been witnessed in Southern Inland Pastoral (camel pastoralists) from **Minimal** (IPC Phase 1) to **Stressed** (IPC Phase 2) in January 2015.The number of people in rural Juba region in **Crisis** (IPC Phase 3 and IPC Phase2) **were** estimated at 47 000 and 109 000 respectively. Of these, 29 000 and 41 000 in **Crisis** and **Stressed** phases respectively were in Middle Juba, while 18 000 and 68 000 in **Crisis** and **Stressed** phases respectively, were in Lower Juba.

Map 11: Food Security Situation in Juba Regions - Jan 2015



The most likely scenario is that the area classifications will remain the same for all the livelihoods in the projection period (February-June 2015) [Figure 4]. However, the estimates in **Crisis** (IPC Phase 3) are expected to decline to 33 000 due to some improvements anticipated in the Riverine livelihood of Middle Juba and Dasheks Agropastoral of Lower Juba region (Jamame district). The estimates in **Stressed** (IPC Phase 2) are also projected to decline to 100 000 (31 000 in Middle Juba and 69 000 in Lower Juba).

CURRENT NUTRITION SITUATION POST *DEYR* 2014/15

The results of the *Deyr* 2014/15 assessment is shown in Table 25, the key highlights of which are summarized below:

DHOBLEY IDPs

ACUTE MALNUTRITION

A comprehensive nutrition assessment carried out in Dhobley IDPs recorded **Serious** levels of GAM (11%), which is a significant improvement ($p<0.01$) from **Critical** levels since *Gu* 2014 (16.5) and *Deyr* 2013 (15.8) respectively. *Deyr* 2014/15 results also show significant improvement ($p<0.001$) in SAM prevalence to **Alert** levels (1.4%) compared to **Critical** levels (4.1%) recorded in *Gu* 2014 and *Deyr* 2013 (4.8%) (Annex 9).

MORTALITY

Critical levels of CDR (1.25/10 000/day) and **Serious** levels of U5DR (1.55/10 000/ day) were recorded among Dhobley IDPs, which is a deterioration since *Gu* 2014 and *Deyr* 2013 (Annex 11). The main causes of death in Dhobley IDPs were reported as diarrhea (23%), malaria (18.6%) and pneumonia (18.6%) [Table 23].

Table 23: Cause of CDR among Dhobley IDPs - *Deyr* 2014

Breathing difficulty	8
Diarrhea	10
Pregnancy/Birth complications	4
Malnutrition/Hunger	2
Hypertension	1
Malaria	8
Natural	4
Total deaths	37

MORBIDITY

The comprehensive assessment conducted in Dhobley IDPs has recorded high morbidity rates of 34.1 percent, which can be linked to limited health service, low Vitamin A supplementation and measles vaccination coverage.

CHRONIC MALNUTRITION- STUNTING

Dhobley IDPs show sustained low levels of stunting (9.4%) among children under five years of age, which are not significantly different from results in *Gu* 2014 (10.3%), but significantly different (p<0.01) from results recorded in *Deyr* 2013 (14.9%). These sustained low levels of stunting suggest that it is not a problem of public health significance in this community (Annex 12).

UNDERWEIGHT

Low prevalence of underweight (8.1%) among Dhobley IDPs was recorded in the assessment, which is an improvement from a medium prevalence seen in both *Gu* 2014 (12.3%) and *Deyr* 2013 (14.5%) [Annex 13].

MATERNAL MALNUTRITION

Critical levels of maternal malnutrition (23.8%) were seen among pregnant and lactating mothers in Dhobley IDPs, which are an improvement from **Serious** levels previously recorded in *Gu* 14 (21.3%) or sustained **Critical** levels recorded in *Deyr* 2013 (24.1%) [Annex 14].

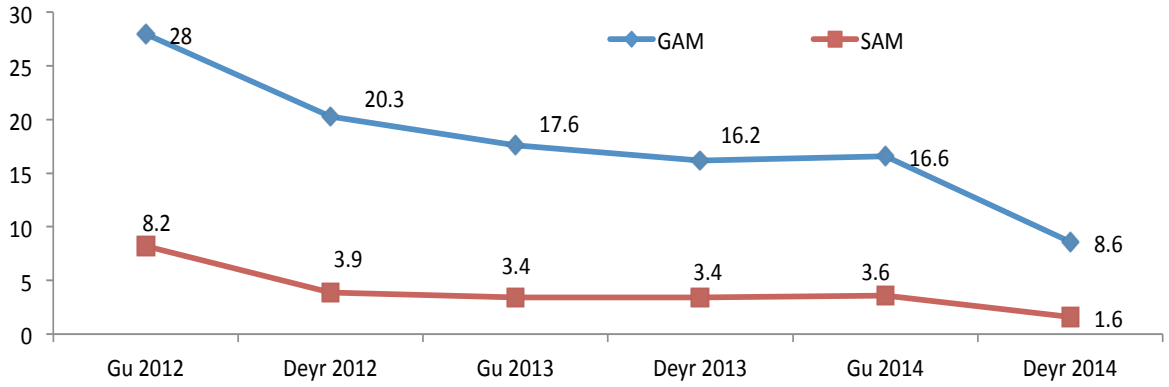
KISMAYO IDPS AND KISMAYO URBAN

The comprehensive nutrition assessment conducted among Kismayo IDPs recorded **Alert** levels of GAM (<10%), which indicates a significant improvement (p<0.05) in the nutrition situation from **Critical** levels recorded during *Gu* 2014 (16.6%) or *Deyr* 13 (16.2). SAM prevalence among Kismayo IDPS also shows significant improvement (p<0.02) to **Alert** (1.6%) from **Serious** levels observed in *Gu* 2014 (3.6%) and *Deyr* 2013 (3.4%).

Kismayo urban recorded **Alert** levels of GAM (8.9%) during *Deyr* 2014 which indicates a significant improvement (p<0.05) from **Serious** l levels recorded in *Gu* 2014 (12.4%). Significant improvement (p<0.05) was also noted in prevalence of SAM, where **Alert** SAM prevalence (1.7%) was observed during *Deyr* 2014 compared to **Serious** levels (3.2%) recorded during *Gu* 2014.

Trends in prevalence of acute malnutrition (GAM & SAM) among Kismayo IDPS are summarized in Figure 47. The highest GAM (28%) and SAM (8.2%) were noted during *Gu* 2012 (Figure 47). Even though the prevalence of acute malnutrition has declined over time, it has always remained **Critical,** above the WHO threshold (>15%), with no seasonal variation noted. However this *Deyr* 2014 saw a sharp decline in the GAM (8.5%) and SAM rate (1.6%). These improvements from **Critical** to **Alert** levels are mainly attributed to availability of food, supplementary feeding programs, cash for voucher and increased access to labour opportunities.

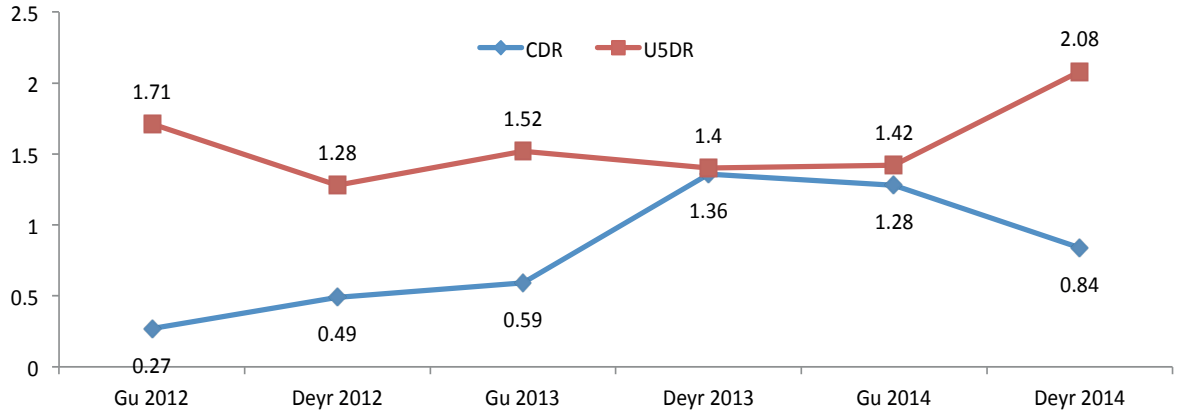
Figure 47: Trends in GAM and SAM among Kismayo IDPs



MORTALITY

In *Deyr* 2014 the assessments conducted in Kismayo IDPs recorded Serious levels of CDR (0.84/10 000/day), which is an improvement since *Gu* 2014 (1.3) or *Deyr* 2013 (1.4). However Critical U5DR (2.08/10 000/day), levels seen during *Deyr* 2014/15 assessments for suggest deterioration from **Serious** levels compared to *Gu* 2014 (1.4) and *Deyr* 2013 (1.4). These under five death rates for the recall period of 90 days prior to the survey are mainly linked to diarrohea (57%), pneumonia (16%) and measles (16%). In Kismayo urban, however, **Alert** CDR and **Acceptable** U5MR were recorded.

Figure 48: Mortality Trends among Kismayo IDPs



Trends in Mortality among Kismayo IDPs (Figure 48) show decline in CDR but sustained **Serious** levels of U5DR. A decline or improvement in CDR to **Serious** levels has been noted in *Deyr* 2014 (0.84) compared to *Gu* 2014 (1.28) or *Deyr* 2013 (1.36), while U5DR has noted a reverse or deterioration to **Critical** levels compared to *Gu* 2014 (1.42) or *Deyr* 2013 (1.4). These trends in under five death rates are mainly linked to diarrhoea (57%), pneumonia (16%) and measles (16%) as well as limited availability of health services, low access to health facilities and recurrent disease outbreaks (Table 24).

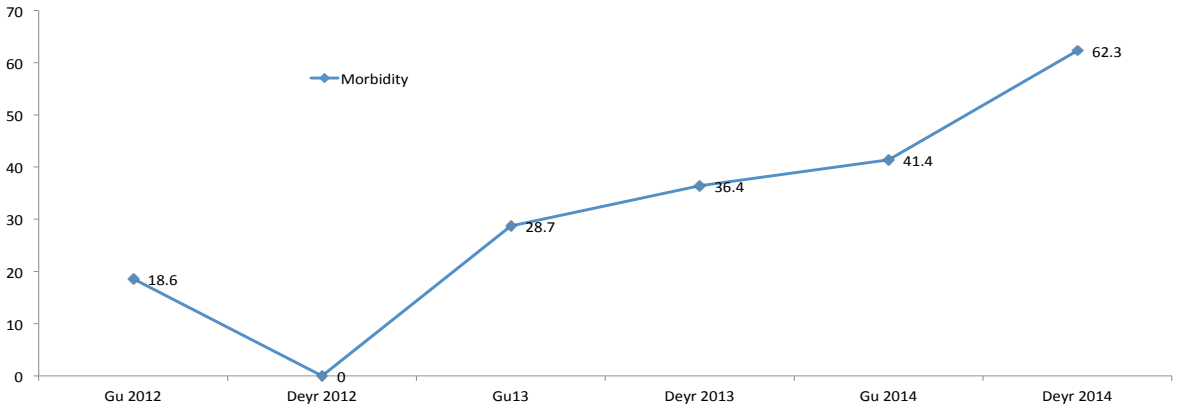
Table 24: Cause of death reported for U5DR in Kismayo IDPs

Cause	Number
Diarrhoea	11
Measles	3
Pneumonia	3
Violence	1
Malnutrition	1
Total deaths reported	13

MORBIDITY

The assessment conducted in *Deyr* 2014 recorded high morbidity levels in Kismayo IDPs (62.3%) and Kismayo urban (47.6%) which reflect limited availability/access to health services among the Kismayo IDPs and Kismayo town. The morbidity levels in Kismayo IDPS have shown an increasing trend since *Gu* 2013 (28.7%) to the current high levels of 62.3 percent in *Deyr* 2014 (Figure 49).

Figure 49: Morbidity Trends among Kismayo IDPs



CHRONIC MALNUTRITION- STUNTING

In *Deyr* 2014, Kismayo IDPs recorded **high** levels of stunting (38.9%) and Kismayo urban recorded moderate levels of stunting (26.1%). This shows sustained high levels of stunting compared to *Gu* 2014 (39.9%) or *Deyr* 2013 (30.7%) for Kismayo IDPs, while for Kismayo urban it suggests a deterioration compared to *Gu* 2014 (19.9%) or sustained in *Deyr* 2013 (39.2%) [Annex 12].

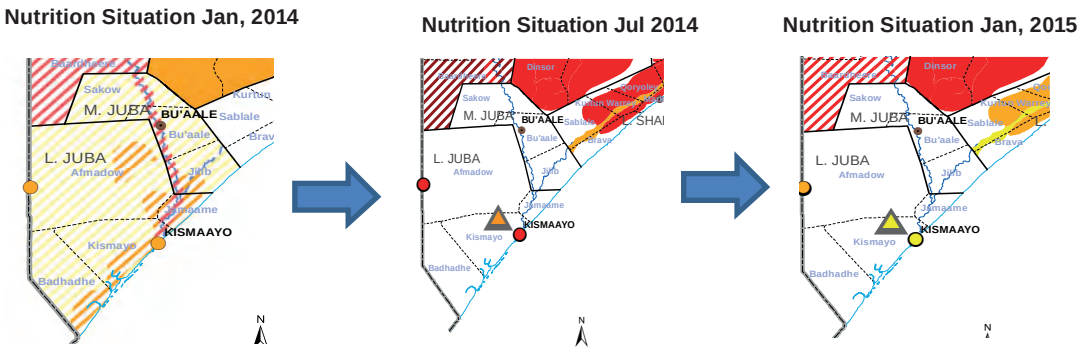
UNDERWEIGHT

In *Deyr* 2014, high prevalence of underweight was seen in Kismayo IDPs (23.2%) which is an improvement since *Gu* 2014 (32.8) and *Deyr* 2013 (30.1), which were both very high levels. However, a moderate prevalence of underweight was recorded in Kismayo urban (14.7%), which is sustained since *Gu* 2014 (17.2%) (Annex 13).

CHANGE IN NUTRITION SITUATION

The maps below show the progression in the nutrition situation from *Deyr* 2013 to *Deyr* 2014 (Figure 50). The nutrition situation among the Dhobley and Kismayo IDPs for the last twelve months (*Deyr* 2013 to *Deyr* 2014) has improved from **Serious** to **Alert** since *Gu* 2014 or *Deyr* 2013, respectively. This change in nutrition situation has largely been influenced by seasonal morbidity and deteriorating food security.

Figure 50: Progression of the Nutrition Situation *Deyr* 2013 to *Deyr* 2014 in Juba Regions



OUTLOOK FOR FEBRUARY - APRIL 2015

The nutrition situation in Juba region is largely expected to remain stable in the coming three months. The maps below (Figure 51) show current and projected nutrition situation in Juba IDPs. In Dhobley and Kismayo IDPs, it is projected that the nutrition situation will remain stable, that is, **Serious** and **Alert** up to April 2015.

Figure 51: Nutrition Situation and Outlook for Juba Region (January – April 2015)

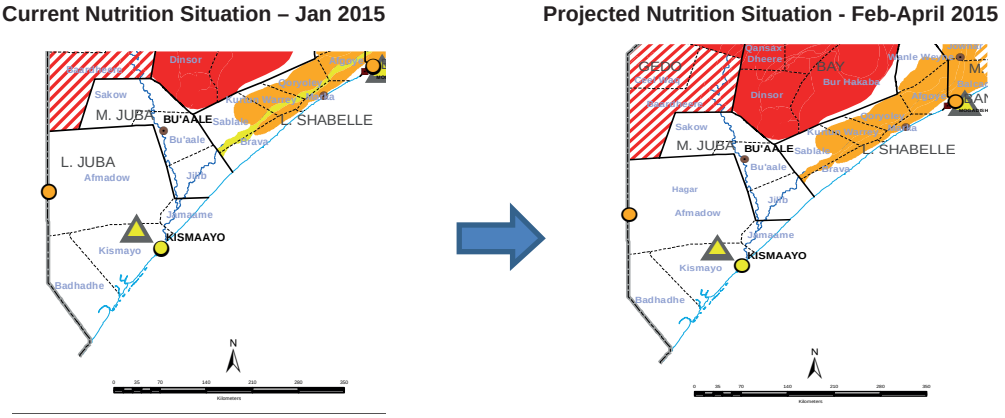


Table 25: Summary of Key Nutrition Finding in Kismayo Urban, Kismayo and Dhobley IDPs - *Deyr* 2014

	Dhobley IDPs		Kismayo IDPs		Kismayo Urban	
	Clusters: (N=986; Boys=506; Girls=480)		Clusters: 30 (N=943;Boys=460; Girls=483)		Clusters: 30 (N=771:Boys=397;Girls=374)	
Indicator	% (CI)	Change from Gu 2014	% (CI)	Change from Gu 2014	% (CI)	Change from Gu 2014
Child Nutrition Status						
Global Acute Malnutrition (WHZ<-2 or oedema)	11.0 (9.2-13.1)		8.5(6.6-10.8)		8.9(6.9-11.6)	
Boys	10.9 (8.4-13.9)	Improved	10.4(7.3-14.7)	Improved	9.6(7.2-12.5)	Improved
Girls	11.0(8.5-14.2)		6.6(4.3-10)		8.3(5.6-12)	
Severe Acute Malnutrition (WHZ<-3 or oedema)	1.4(0.8-2.4)		1.6(0.9-2.7)		1.7(1-2.9)	
Boys	1.6(0.8-3.1)	Improved	2.4(1.4-4)	Improved	1.8(0.9-3.4)	Improved
Girls	1.3(0.6-2.7)		0.8(0.2-2.8)		1.6(0.7-3.5)	
Mean of Weight for Height Z Scores	-0.75±1.03		-0.46±1.09		-0.46±1.09	
Oedema	0	Improved	0.3	Sustained	0.4	Sustained
Proportion with MUAC<12.5 cm	4.1(3.0-5.5)		10.6(8.3-13.3)		8.8(6.7-11.6)	
Boys	2.5(1.5-4.2)	Improved	10.1(7.1-14)	Improved	8.8(6-12.8)	Improved
Girls	5.8(4.0-8.2)		11(8-15)		8.9(6.1-12.7)	
Proportion with MUAC<11.5 cm	0.7(0.3-1.4)		3.1(2.1-4.6)		1.8 (1-3)	
Boys	0.4(0.1-1.4)	Improved	3.2(1.8-5.8)	Improved	2(0.8-4.8)	Improved
Girls	1.0(0.4-2.4)		3.1(1.9-4.9)		1.6(0.7-3.6)	
Stunting (HAZ<-2)	9.4(7.8-11.4)		38.9(33.9-44.1)		26.1(21.4-31.5)	
Boys	10.0(7.7-13.0)	Improved	42.8(36.7-49.1)	Improved	29.6(23.7-36.2)	Improved
Girls	8.8(6.6-11.7)		35.1(29.3-41.4)		22.4(16.7-29.4)	
Severe Stunting (HAZ<-3)	1.2(0.7-2.2)		17.1(13.6-21.4)		8.4(6.1-11.4)	
Boys	1.0(0.4-2.3)	Improved	21(17-25.6)	Improved	9.4(6.7-13.1)	Improved
Girls	1.5(0.7-3.1)		13.4(9.4-18.8)		7.3(4.4-11.8)	
Underweight (WAZ<-2)	8.1(6.6-9.9)		23.2(19.7-27.1)		14.7(12.1-17.8)	
Boys	8.3(6.2-11.0)	Improved	29(25-33.5)	Improved	16.4(13.5-19.7)	Improved
Girls	7.9(5.8-10.6)		17.6(13-23.4)		13(9.2-18.1)	
Death Rates						
Crude deaths, per 10,000 per day (retrospective for 90 days)	1.25 (0.90-1.73)	Deteriorated	0.84(0.57-1.21)	Improved	0.55(0.33-0.90)	Na
Under five deaths, per 10,000 per day (retrospective for 90 days)	1.55(0.96-2.50)	Deteriorated	2.081.20-3.45()	Sustained	0.62(0.21-1.76)	Na
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	8.9	Improved	1.17(-0.0-2.4)	Improved	0	Improved
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	23.8	Improved	16.4(11.5-21.2)	Improved	0	Improved
Morbidity	34.1		62.3(53.1-71.4)		47.6(39.2-56)	
Boys	33.5	Sustained	64.6(55-74.2)	Deteriorated	45.9(36-55.8)	Sustained
Girls	34.8		60.1(50.4-69.8)		49.5(40.5-58.4)	
Diarrhoea	3.5		35.8(27.2-44.3)		18.3(14.2-22.2)	
Boys	4.0	Improved	36.9(27.9-45.9)	Deteriorated	19.2(13.3-25.1)	Sustained
Girls	2.9		34.7(25.8-43.6)		17.4(12.7-22.1)	
Pneumonia	16.5		31.3(20.4-42.2)		16.8(11.8-21.8)	
Boys	16.1	Improved	33.3(21.8-44.8)	Deteriorated	14.8(8.7-20.9)	Sustained
Girls	17.0		29.4(18.6-40.3)		18.9(13.6-24.2)	
Fever/Malaria(Kismayo Urban)	28.1		36.3(27.1-45.4)		9.9(5.7-14.1)	
Boys	27.0	Improved	38.6(28.3-48.9)	Deteriorated	9.7(4.6-14.8)	Sustained
Girls	29.2		34.1(24.7-43.4)		10.1(6.1-14.1)	
Measles	3.2		9.5(4-15)		2.6(1.5-3.8)	
Boys	2.9	Improved	10.9(4.3-17.5)	Deteriorated	2.2(0.7-3.7)	Sustained
Girls	3.5		8.3(3.2-13.3)		3.1(1.4-4.8)	

Vitamin A Supplementation	41.7		61.1(50.4-71.9)		0	
Boys	41.7	Sustained	60.1(48.9-71.4)	Sustained	0	NA
Girls	41.7		62.1(51.2-73)		0	
Measles Vaccination	76.9		66.1(53.5-78.7)		0	
Boys	76.5	Improved	65.5(52.7-78.2)	Improved	0	NA
Girls	77.5		66.7(53.3-80.2)		0	
Polio Immunization	87.9		88.3(83.9-92.7)		0	
Boys	87.6	Improved	87.4(82.2-92.6)	Improved	0	NA
Girls	88.3		89.1(84.2-94)		0	
Women Nutrition and Immunization Status						
Proportion of Women who received Tetanus immunization					0	
No dose	40.4(36.5-44.5)		33.0(29.4-36.9)		0	
One dose	30.3(26.7-34.2)	Sustained	29.9(26.4-33.6)	Sustained	0	NA
Two doses	19.9(16.2-22.6)		23.9(20.6-27.4)		0	
Three doses	10.1(7.9-12.9)		13.3(10.8-16.2)		0	
Public Health Indicators						
Household with access to sanitation facilities	98.8(96.7-99.6)	Improved	90.8(87.4-93.4)	Improved	0	NA
Household with access to safe water	100	Improved	3.1(1.7-5.5)	Deteriorated	0	NA
Proportion who reported to have consumed <4 food groups	73.4(70.6-76.1)	Improved	72.6(69.8-75.2)	Improved	42.4 (39.1-45.7)	NA
Household's Main Food Source- Purchase						
Mean CSI	15.22		22.79		32.52	
FCS	88.1		90.5		98.5	

4.4.3: MIDDLE AND LOWER SHABELLE REGIONS

BACKGROUND

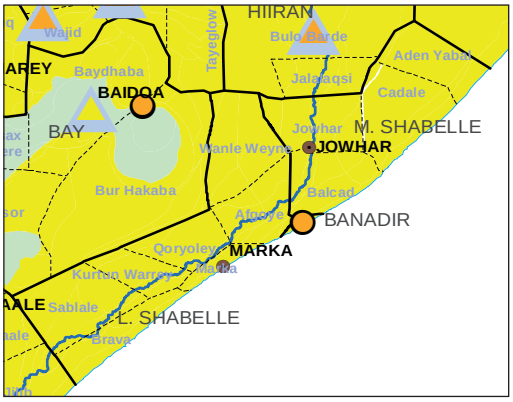
Shabelle constitutes Lower and Middle Shabelle and is one of the main agriculture regions in Somalia. Farming in this area is mainly rain fed and also dependent on flood and irrigation. Demographically, Lower Shabelle accounts for 18.5 percent of the Somali population and is the most populous of the two regions with an estimated population of 850 651 and 80 percent dwelling in the rural areas; whereas, Middle Shabelle has an estimated population of 514 901. In these areas the rural livelihoods depend on both agriculture and pastoralism and comprise of riverine (pure farmers) and agro pastoralists. Civil insecurity continues to be a challenge impacting negatively on the livelihoods and contributing to high number of internally displaced persons (IDPs). The riverine is also vulnerable to floods that usually occur during the *Gu* and *Deyr*.

In *Deyr* 2014, FSNAU conducted 4 assessments in the region including Shabelle and Banadir (Lower and Middle Shabelle in Shebelle's, Mogadishu IDPs and urban assessments in Banadir). In these assessments a total of 140 clusters were covered in which nutrition status of 3 103 children (6-59 months) from 1 909 households were assessed.

SUMMARY OF CURRENT FOOD SECURITY SITUATION

The food security situation of rural Shabelle has shown improvement in the *Deyr* 2014/15 season with majority of population in the Shabelle region identified as **Stressed** (IPC Phase 2). However parts of Lower Shabelle particularly in Merca and Qorioley have sustained **Crisis** since *Gu* 2014. The improvement is linked to the positive impacts of average rainfall that has led to crop production, improved livestock condition, minimal flood damages in the riverine areas, and purchasing power. This has resulted in improved availability of milk and milk products in the area.

Map 12: Food Security Situation in Shabelle Regions - Jan 2015



DEYR 2014/15 RESULTS:

The results of nutrition assessment done in Shabelle and Banadir region are summarized in Table 26 and 27 and key highlights are being discussed below:

ACUTE MALNUTRITION

Lower and Middle Shabelle

Acute malnutrition levels in Shabelle Agro-pastoral show improvement from ***Critical*** in *Gu* 2014 to S***erious*** levels in *Deyr* 2014, while Shabelle Riverine improved from **Serious** in *Gu* 2014 to **Alert** levels in *Deyr* 2014. The improvement noted in the Shabelle riverine is not statistically significant (p=0.46))

Shabelle Agropastoral recorded a GAM rate of 12.3 percent and SAM rate of 3.5 percent indicating a **Serious** nutrition situation which is an improvement when compared to GAM rate of 18.8 percent and SAM rate of 1.6 percent recorded in *Gu* 2014 and GAM rate of 8.0 percent noted in *Deyr* 2013/14 (Annex 9). Increased in SAM levels were also noted though prevalence is still sustained as **Serious** levels since *Deyr* 2013.

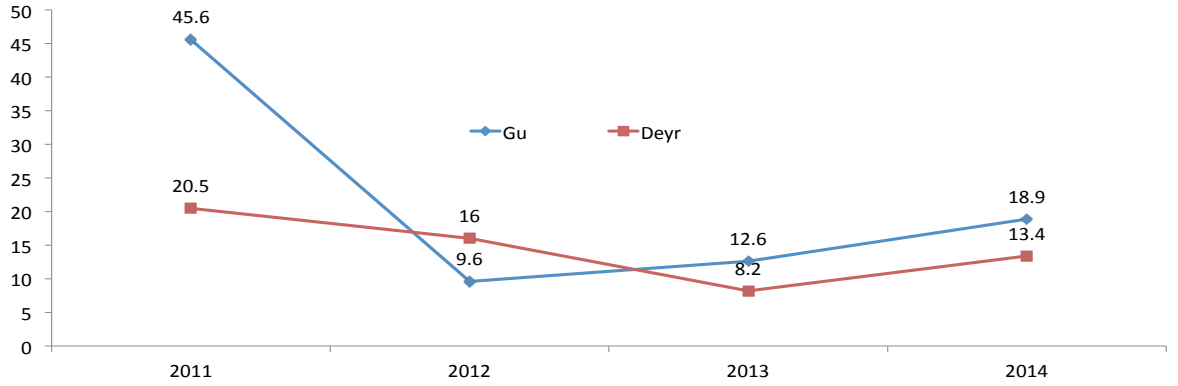
Shabelle Riverine livelihood recorded a GAM rate of 9.6 percent and SAM rate of 1.8 percent indicating ***Alert*** nutrition situation which reflects an improved nutrition situation compared to GAM of 11.2 percent and SAM rate of 2.5 percent recorded in *Gu* 2014 and GAM of 8.0 percent reported in *Deyr* 2013. The slight improvement noted is however not statistically significant. Major factors that improved the nutrition status may include improved milk access due to average normal *Deyr* 2014 rains and limited humanitarian interventions.

Mogadishu IDPs settlement**:** recorded a GAM rate of 13.4 percent and SAM rate of 2.5 percent indicating a **Serious** nutrition situation which is an improvement compared to the **Critical** nutrition situation reported in *Gu* 2014 with GAM rate of 18.9 percent and SAM rate of 5.5 percent, but a deterioration compared to GAM rate of 8.2 and SAM rate of 1.6 percent in *Deyr* 2013. Reduction in SAM levels was noted from ***Critical*** levels in

Gu 2014 to **Serious** levels recorded in *Deyr* 2014 at 2.5 percent. The improvement is linked to scaling up of nutrition services in these settlements by the humanitarian actors.

Figure 52 shows the GAM trend among Mogadishu IDPs since 2011. Current serious situation (13.4% GAM) will not be sustained/improved without further strengthening and expanding implementation of comprehensive multisectoral ***interventions*** to address the nutritional situation of under 5 children.

Figure 52: GAM Trends Mogadishu IDPs - *Deyr* 2014



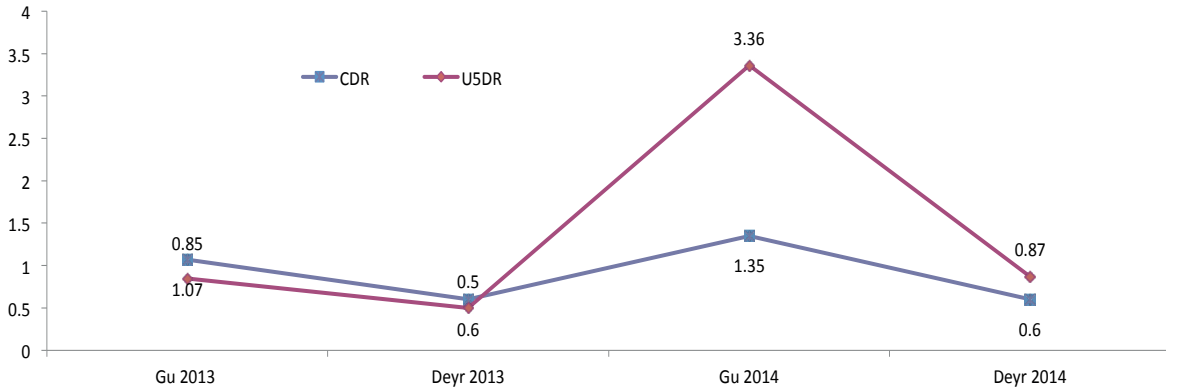
Mogadishu Urban: Among the urban population, a GAM rate of 9.7 percent and a SAM rate of 0.9 percent with no oedema cases were observed. This indicates ***Alert*** nutrition situation, showing improvement from serious levels (GAM rate of 10.1 percent) recorded in *Gu* 2014. Although nutrition surveys conducted in the Shabelle, Mogadishu IDPs and Mogadishu urban livelihoods show a higher proportion of boys than girls are acutely malnourished, this difference is not of statistical significance (p>0.05) (Annex 20).

MORTALITY

Deyr 2014/15 assessment recorded ***Serious*** CDR(at 0.60/10 000/day) and ***acceptable*** U5DR (0.87/10 000/day) among Mogadishu IDPs, which is an improvement compared to emergency CDR levels of 1.35/10 000/day and U5DR (3.36 /10 000/day) reported in *Gu* 2014 (Annex 11). Mortality trends among Mogadishu IDPs are summarized in Figure 52. Reduction in mortality is attributed to scaling up of targeted health and nutrition interventions and declining outbreaks, which reduced vulnerability of the population to risk of deaths.

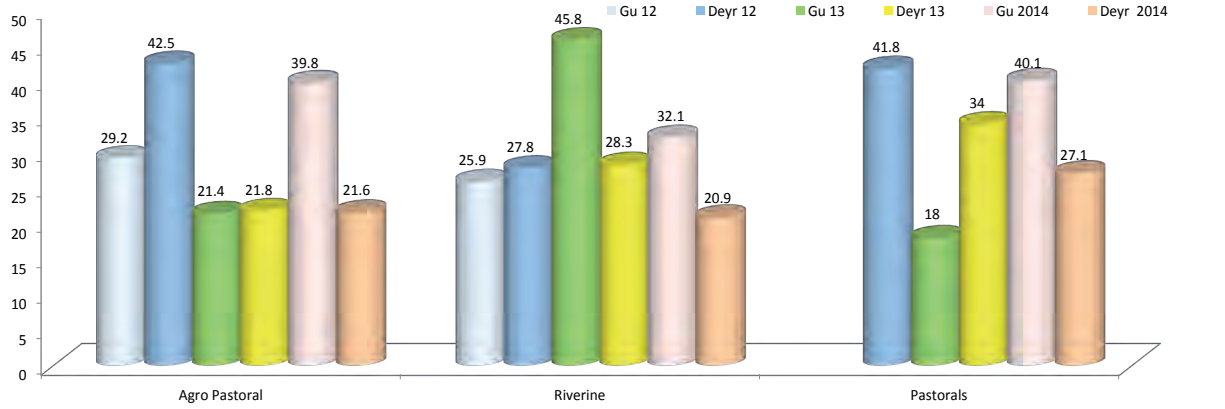
In Mogadishu urban ***Acceptable*** levels of CDR at 0.48 and U5DR at 0.75 were observed during *Deyr* 2014. Shabelle agropastoral shows **Acceptable** levels of both CDR (0.35/10 000 per day) and U5DR (0.52/10 000 per day) which is an improvement compared to ***Serious* levels of** CDR (0.70) and U5DR (1.59/10 000 recorded in *Gu* 2014. Shabelle Riverine shows an improvement in U5DR from **Serious** (1.10/10 000/day) to **Alert** levels (1/10 000/day). However, there is slight deterioration in CDR to Serious (0.52/10 000/day) in *Deyr* 2014 compared to **Alert** (0.5/10 000/day) levels recorded in *Gu* 2014.

Figure 53: Mortality trends Mogadishu IDPs - *Deyr* 2014



High morbidity levels persist in Mogadishu IDPs (39.2 %) which appear to be a key aggravating factor for current acute malnutrition (Figure 54). Morbidity trends are higher during *Gu* compared to *Deyr* seasons, due to increasing AWD during the dry period when water levels decrease and availability of safe water is compromised. Other factors that contribute to the increase in high morbidity in Mogadishu IDPs include the continuing population displacement, overcrowding, unsanitary living conditions and limited health services. In Mogadishu urban, morbidity levels were at 15.3 percent, which is an improvement from 18 percent in *Gu* 2014 and 29.4 in *Gu* 2013.

Figure 54: Morbidity trends Mogadishu IDPs - *Deyr* 2014



Shabelle Riverine show an increase in morbidity levels during *Deyr* 2014/15 (34.6%) compared *Gu* 2014 at (31.5 %). Disease outbreaks continued during the time of assessment with measles incidences, five cases of under five deaths being reported in Middle riverine in December 2014[1] (FSNAU Dec, 2014)..Although limited, humanitarian interventions in the form of targeted outpatient therapeutic programs (OTPs) and outreach supplementary feeding programs by organizations such as INTERSOS, IMC, NEW WAY, SWISS KALMO, in parts of the of the riverine and agro-pastoral livelihood zone may have assisted to mitigate the poor nutrition situation and morbidity in Shabelle region. This support needs to be continued and expanded to cover more rural villages in both livelihoods.

CHRONIC MALNUTRITION (STUNTING) AND UNDERWEIGHT

Deyr 2014/15 assessment shows **Low** prevalence of stunting and **Medium** levels of underweight prevalence among Agropastoral and Riverine Shabelle. Among Shabelle Agropastorals, stunting was 9.7 percent and underweight 11.1 percent while Shabelle Riverine show prevalence of stunting and underweight was 10.4 and 11.1 percent respectively.

Among the displaced group in Mogadishu, *Deyr* 2014/15 assessment recorded stunting rate of 12.1 percent (**low** prevalence) and 14.3 percent for underweight (**medium** prevalence). This reflects sustained **low** levels of stunting recorded in *Gu* 2014 at 16 percent , but deterioration compared to ***medium*** prevalence in *Deyr* 2013. The situation of underweight levels has increased from **medium** prevalence at 16.6 percent recorded in *Deyr* 2013 to **high** prevalence at 23 percent in *Gu* 2014 (Annex 13)

In Mogadishu Urban, **low** levels of stunting (7.9%) and underweight prevalence (9.8%) were recorded. Since *Deyr* 2013 sustained low stunting levels have been noted while Underweight prevalence shows some improvement from **medium to low**.

IMMUNIZATION

Among the displaced in Mogadishu IDP camp, the reported coverage for vitamin A supplementation and Measles vaccination (52.3 and 47.4 percent respectively) showed low coverage compared to *Gu* 2014 and *Deyr* 2013 but still remain below 95 percent the recommended SPHERE coverage.(Annex 16 and 17).

Vitamin A supplementation and Measles vaccination coverage in Shabelle Agropastorals and Riverine was relatively very low (<15 percent) which has been sustained since *Gu* 2014.

1 There are reports of on-going acute watery diarrhoea reported from parts of middle Shabelle riverine and Agro-pastoral villages. A total of 140 AWD cases with 2 death cases of under-five were recorded in Jowhar hospital (INTERSOS, 16 Jan-February 2015)

MATERNAL MALNUTRITION

Decrease in maternal malnutrition rates among pregnant and lactating women (MUAC <23.0 cm) among Shabelle Agropastoral from **Serious** (20.1%) recorded in *Gu* 2014 to **Acceptable** level at (7.6 %). Shabelle Riverine show sustained **Alert** levels in *Deyr* 2014 (10.5 %) when compared with *Gu* 2014 (10.9%).

An improvement in maternal malnutrition (MUAC <23cm) was noted among the Mogadishu IDPs from **Serious** levels in *Gu* 2014 (20.0%) to **Alert** levels in *Deyr* 2014 (11.3%)

CHANGE IN NUTRITION SITUATION

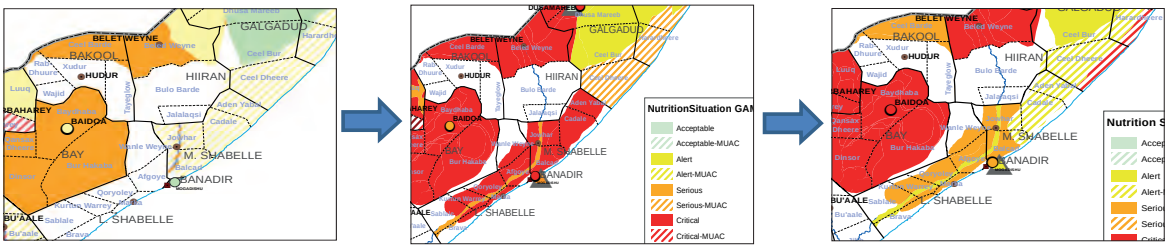
The maps below show the change in nutrition situation from *Deyr* 2013 to *Deyr* 2014 (Figure 55 and 56) The nutrition situation has improved from **Critical** to **Serious** levels among Mogadishu IDPs. This was as a result of reduced outbreak of diseases such as measles and AWD and increased humanitarian interventions. Improvement was also reported in the Mogadishu urban assessment with increased security linked to improvement of health environment.

In the Shabelle, the nutrition situation show an improving trend as a result of the good *Deyr* 2014 rains. This was evidenced in Shabelle agro pastoral where nutrition situation improved from *Critical* in *Gu* 2014 to serious in *Deyr* 2014. Shabelle riverine showed marginal improvement from Serious to **Alert** in *Deyr* 2014, though improvement is not statically significant (p=0.05).

Overall nutrition situation has remained precarious in Shebelle's with parts of middle Shabelle being the most affected due to ongoing AWD and measles outbreaks.

Figure 55: Progression of Nutrition situation *Deyr* 2013 to *Deyr* 2014 in Shabelle regions

Nutrition Situation Jan, 2014 **Nutrition Situation Jul 2014** **Nutrition Situation Jan, 2015**



OUTLOOK FOR FEBRUARY - APRIL 2015

For the next 3 months (Feb-April 2015), the nutrition situation among Shabelle Agropastoral and Mogadishu IDPs is likely to remain as **Serious** and Mogadishu Urban will remain as **Alert** due to scaling up of nutrition interventions. Nutrition situation among Shabelle Riverine is likely to deteriorate due to ongoing measles AWD outbreaks, insecurity and limited Interventions.

Figure 56: Nutrition Situation and Outlook, January to April 2015 in Shabelle regions

Current Nutrition Situation – Jan 2015 **Projected Nutrition Situation - February-April 2015**

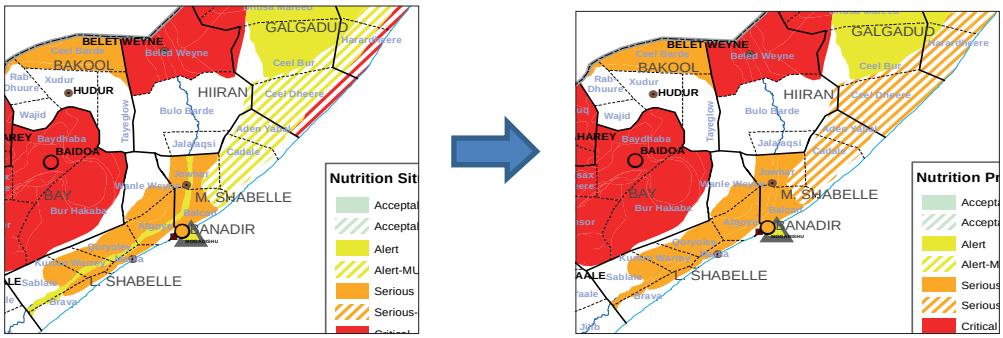


Table 26: Summary of Key Nutrition Findings Shabelle Region - *Deyr* 2014

	Shabelle Agro-pastoral		Shabelle Riverine	
	30 Clusters (n=810 Boys=409 Girls=401)		30 Clusters (n=711: Boys=336; Girls=375)	
Indicator	% (CI)	Change from Gu 2014	% (CI)	Change from Gu 2014
Child Nutrition Status				
Global Acute Malnutrition (WHZ<-2 or oedema)	**12.3 (9.2-16.4)**		**9.6 (7.2-12.7)**	
Boys	14.9 (10.5-20.7)	Improved	12.2 (8.9-16.5)	Improved
Girls	9.7 (6.7-14.0)		7.2 (4.7-10.8)	
Severe Acute Malnutrition (WHZ<-3 or oedema)	**3.5 (2.2- 5.5)**		**1.8** (1.0- 3.5)	
Boys	4.4 (2.5- 7.7)	Deteriorated	2.7 (1.3- 5.6)	Improved
Girls	2.5 (1.3- 4.8)		1.1 (0.3- 3.6)	
Mean of Weight for Height Z Scores	-0.75±1.10		-0.63 ± 1.03	
Oedema	0		0.0	
Proportion with MUAC<12.5 cm	**11.5** (8.5-15.2)		**9.3** (7.5-11.3)	
Boys	10.5 (6.9-15.6)	Deteriorated	8.6 (6.0-12.1)	Deteriorated
Girls	12.4 (9.3-16.5)		9.9 (7.6-12.8)	
Proportion with MUAC<11.5 cm	3.1 (1.9- 4.9)		3.6 (2.5- 5.4)	
Boys	2.4 (1.3- 4.4)	Deteriorated	3.3 (1.9- 5.4)	Deteriorated
Girls	3.7 (2.2- 6.4)		4.0 (2.4- 6.5)	
Stunting (HAZ<-2)	9.7 (6.4-14.5)		10.4 (6.2-16.9)	
Boys	12.4 (8.4-18.1)	Sustained	13.9 (9.0-20.9)	Sustained
Girls	7.0 (3.7-12.6)		7.2 (3.6-14.0)	
Severe Stunting (HAZ<-3)	0.7 (0.3- 2.1)		1.4 (0.6- 3.1)	
Boys	0.7 (0.2- 2.3)		2.4 (1.1- 4.9)	
Girls	0.7 (0.2- 2.4)		0.5 (0.1- 4.0)	
Underweight (WAZ<-2)	11.1 (8.7-14.1)		10.1 (7.1-14.2)	
Boys	13.7 (10.1-18.1)	Sustained	14.8 (10.6-20.3)	Sustained
Girls	8.5 (5.8-12.2)		5.9 (3.3-10.1)	
Death Rates				
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.35 (0.20-0.61)	Improved	0.52 (0.30-0.93)	Deteriorated
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.52 (0.15-1.75)	Sustained	1.00 (0.53-1.85)	Improved
Morbidity	29.6 (21.8-37.3)		34.6 (29.7-39.5)	
Boys	26.8 (18.6-35.1)	Improved	37.9 (31.7-44.0)	Deteriorated
Girls	32.3 923.9-40.8)		31.7 (26.4-37.0)	
Diarrhoea	12.1 (7.2-16.9)		11.8 (7.4-16.1)	
Boys	12.2 (6.6-17.8)	Improved	14.2 (8.4-20.0)	Improved
Girls	11.9 (7.0-16.8)		9.6 (5.6-13.6)	
Pneumonia	6.2 (3.8-8.4)		8.3 (5.2-11.3)	
Boys	5.9 (2.7-9.0)	Improved	7.4 (3.2-11.6)	Deteriorated
Girls	6.4 (3.6-9.4)		9.1 (5.8-12.3)	
Fever	13.7 (9.2-18.2)	Improved	16.8 (13.6-20.1)	
Boys	10.9 (6.0-15.9)		18.3 (14.5-22.2)	Deteriorated
Girls	16.4 (11.3-21.6)		15.5 (11.5-19.4)	
Measles	1.2 (0.0-2.7)		1.7 (0.5-2.8)	
Boys	0.97(0.0-2.2)	Deteriorated	3.0 (0.8-5.1)	Deteriorated
Girls	1.5 (0.0-3.2)		0.5 (0.0-1.3)	

Vitamin A Supplementation Boys Girls	2.5 (0.5-4.4) 2.2 (0.2-4.2) 2.7 (0.4-2.0)	Improved	8.4 (3.5-13.3) 6.5 (2.7-10.3) 10.1 (3.8-16.5)	Improved
Measles Vaccination Boys Girls	3.9 (0.9-6.9) 3.7 (0.0-7.5) 4.2 (1.4-7.1)	Deteriorated	10.7 (2.2-19.2) 9.2 (0.3-18.0) 12.0 (3.4-20.6)	Improved
Polio Immunization Boys Girls	71.2 (58.5-83.9) 68.9 (54.6-82.9) 73.6 (62.1-85.2)		68.7 (58.0-79.5) 68.0 (56.0-80.1) 69.3 (59.1-79.6)	
Women Nutrition and Immunization Status			248	
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	0.9 (0.0-1.96)		1.6 (0.0-3.2)	
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	7.6 (3.8 -11.4)		10.5 (6.6-14.3)	

Table 27: Summary of Key Nutrition Findings Banadir Region - *Deyr* 2014

	Name of livelihood: **Mogadishu IDPS**		**Name of livelihood** **Mogadishu Urban**	
	Clusters: 40 **(n=922 Boys=472 Girls=450)**		**Clusters: 40** **(n=660;Boys=347; Girls=313)**	
Indicator	**% (CI)**	**Change from Gu 2014**	**% (CI)**	**Change from Gu 2014**
Child Nutrition Status				
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	13.4 (10.1-17.6) 15.5 (11.7-20.2) 11.3 (7.9-16)	Improved	9.7 (7.0-13.2) 11.2 (7.5-16.4) 8.0 (5.1-12.3)	Improved
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	2.5 (1.5- 4.0) 3.4 (2.0- 5.6) 1.6 (0.7- 3.4)	Improved	0.9 (0.4- 2.0) 1.2 (0.4- 3.1) 0.6 (0.2- 2.6)	Improved
Mean of Weight for Height Z Scores	-0.69±1.11		-0.49 ± 1.05	
Oedema	0		0	
Proportion with MUAC<12.5 cm Boys Girls	12.8 (9.7-16.6) 12.7 (9.3-17.0 12.9 (9.0-18.1	Sustained	4.5 (2.6- 7.8) 2.0 (0.9- 4.5) 7.3 (3.7-14.0)	Improved
Proportion with MUAC<11.5 cm Boys Girls	3.1 (2.0- 4.8 2.3 (1.2- 4.5) 4.0 (2.2- 7.0	Sustained	1.1 (0.4- 2.9) 0.0 (0.0- 0.0) 2.2 (0.8- 6.0)	Improved
Stunting (HAZ<-2) Boys Girls	12.1 (8.8-16.4) 16.9 (12.6-22.3) 7.1(4.2-11.8)	Sustained	7.9 (5.5-11.2) 10.1 (7.0-14.4) 5.4 (2.8-10.1)	Sustained
Severe Stunting (HAZ<-3) Boys Girls	2.5 (1.5- 4.0) 3.4 (2.0- 5.7) 1.6 (0.7- 3.5)		1.2 (0.6- 2.5) 1.7 (0.8- 3.7) 0.6 (0.2- 2.6	
Underweight (WAZ<-2) Boys Girls	14.3 (10.7-18.8) 18.1 (13.7-23.6) 10.2 (6.9-14.8)	Improved	9.8 (6.8-13.9) 12.4 (8.7-17.4) 7.0 (3.7-13.0)	Sustained
Death Rates				
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.6(0.4-0.9)	Improved	0.48(0.26-0.86)	
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.87(0.45-1.67)	Improved	0.75(0.27-2.05)	

Morbidity Boys Girls	39.2(33.3-45.2) 37.8(31.5-44.0) 40.8(32.9-48.7)	Improved	15.3 (10.4-20.4) 13.5 (8.5-18.6) 17.5 (11.1-24.0)	Improved
Diarrhoea Boys Girls	9.1 (6.3-11.9) 9.7(7.0-12.4) 8.4(4.6-12.2)	Improved	4.5 (2.5-6.6) 3.7 (1.5-6.0) 5.4 (2.3-8.5)	Improved
Pneumonia Boys Girls	15.1 (12.0-18.3) 13.3(9.8-16.7) 17.1(12.2-21.9)	Improved	7.1 (3.9-10.3) 6.3 (3.0-9.6) 7.9 (3.8-12.2)	Deteriorated
Fever Boys Girls	30.7 (25.8-35.6) 28.3(22.8-33.7) 33.3(26.5-40.0)	Improved	3.4 (1.9-5.1) 3.2 (1.0-5.3) 3.8 (1.5-6.1)	Sustained
Measles Boys Girls	2.1 (0.7-3.3) 2.1(0.6-3.6) 2.0(0.5-3.5)	Improved	0.3 (0.0-0.9) 0.0 (0.0-0.0) 0.6 (0.0-1.9)	Improved
Vitamin A Supplementation Boys Girls	52.3(42.6-62.1) 51.1(40.7-61.4) 53.7(43.0-64.3)	Deteriorated		
Measles Vaccination Boys Girls	47.4(39.0-55.7) 45.6(36.2-55.0) 50.7(40.2-58.2)	Deteriorated		
Polio Immunization Boys Girls	66.1(56.8-75.3) 62.7(51.8-73.5) 69.6(60.7-78.5)	Deteriorated		
Women Nutrition and Immunization Status				
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	2.9(1.7-4.7)			
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	11.3(8.8-14.3)			
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	30.5(26.7-34.5) 29.0(25.4-33.0) 23.4(20.0-27.1) 17.1(14.1-20.5)			
Public Health Indicators				
Household with access to sanitation facilities	99.2(98.1-100.4)			
Household with access to safe water	89.2(82.3-97.6)			
Proportion who reported to have consumed <4 food groups	0.8(0.0-1.7)	Improved		
Household's Main Food Source- Purchase	96.1(93.4-98.9)		97.9 (96.0-99.9)	
Mean CSI	62.6	Sustained	16.76	

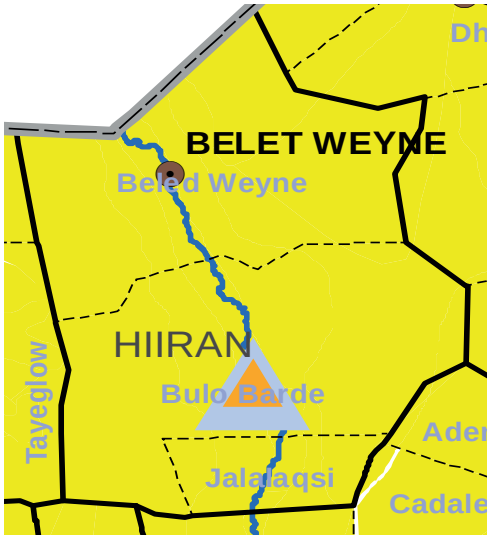
4.4.4: HIRAN REGION

The security situation in Hiran region has been fragile for the last couple of years resulting in limited access to the area by humanitarian organizations. The recurring civil conflicts in the region, droughts and floods have negatively impacted on the population's means of livelihood. This coupled with poor access to humanitarian assistance, has affected the population's overall food security, health, nutrition and wellbeing. Furthermore, lack of adequate health facilities combined with limited access to the few existing health facilities has resulted in sustained high morbidity levels and critically low immunization coverage in the area. Of the five districts in Hiran region, only Beletweyne and Mataban were accessible for the *Deyr* 2014/15 nutrition survey.

FOOD SECURITY SITUATION POST DEYR 2014/15

The food security situation in all pastoral livelihood zones of the Hiran region has improved in this post-*Deyr* 2014/15 season compared to the post-*Gu* 2014 (July 2014) season. In January 2014, all livelihoods of the region were classified as **Stressed** (IPC Phase 2). The area classification remains unchanged in the projection period (February 2015 - June 2015). In January 2014, an estimated 101 000 people were classified as **Stressed** (IPC Phase 2), while 16 000 were categorized in **Crisis** (IPC Phase 3), which indicates a considerable decline of (70%) since the post-*Gu* 2014 figures (54 000 people). The estimates in **Crisis** (IPC Phase 3) include agro pastoralists and Riverine livelihoods. In the most likely scenario, during the projected period (February 2015-June 2015), the number of people in **Crisis** (IPC Phase 3) are projected to decline by 15 percent (from 16 000 to 12 000) as a result of the anticipated improvements in riverine livelihood from the incoming *Gu* 2015 activities. However, the estimated number of people in **Stressed** (IPC Phase 2) is projected to remain stable, estimated 101 000 people, as 25% of poor riverine downgraded to stress offset 25% of middle moved to minimal

Map 13: Food Security Situation in Hiran regio - Jan 2015



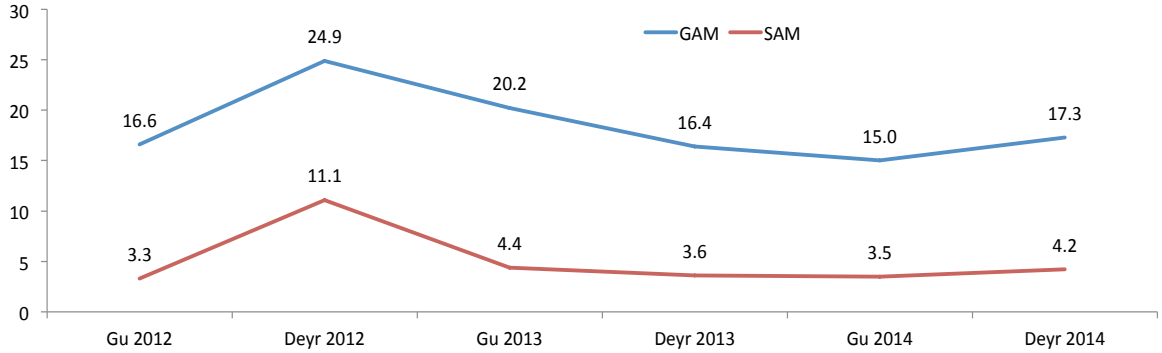
NUTRITION SITUATION POST DEYR 2014/15

Table 28 summarizes the results of *Deyr* 2014/15 nutrition assessment in Beletweyne and Mataban districts, the key highlights of which are discussed below**. Critical** nutrition situation is sustained in both Beletweyne and Mataban districts (Annex 9).

Beletweyne District

For the past six seasons, from *Gu* 2012 to *Deyr* 2014/15, the prevalence of acute malnutrition in Beletweyne district has been sustained at **Critical** levels (Figure 57). The *Deyr* 2014/15 survey reported an increase in the prevalence of SAM to **Critical** levels (4.2%) from **Serious** levels (3.5% and 3.6%) previously recorded in *Gu* 2014 and *Deyr* 2013/14 respectively, although the difference is not statistically significant. The sustained **Critical** nutrition situation (GAM & SAM) can be attributed to the ongoing civil unrest, repeated displacement resulting from conflicts, recurrent droughts and floods that destroy the crops at the waterfront and the deterioration in the sanitary conditions following the floods and displacement, which are evidenced by the high morbidity levels in the area.

Figure 57: Trends in Acute Malnutrition in Beletweyne - *Deyr* 2014

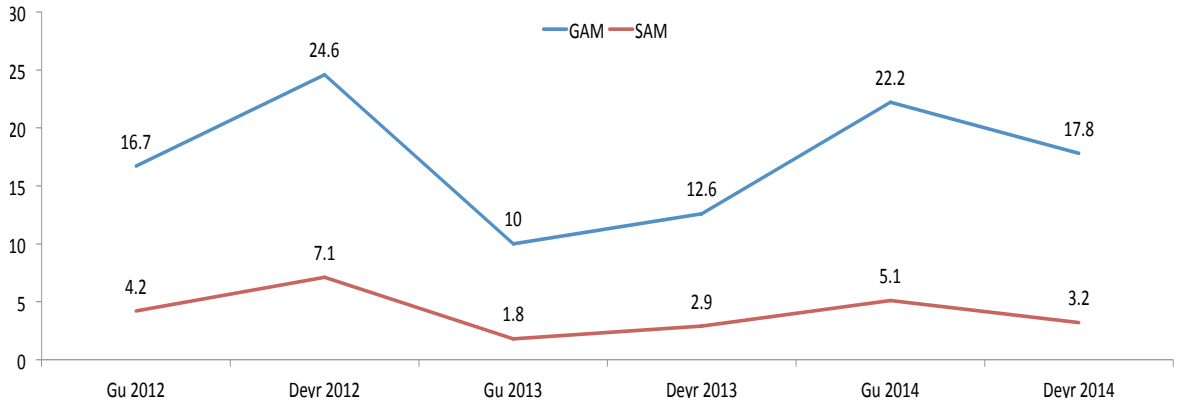


Mataban District

The acute malnutrition trends in Mataban district (Figure 58) indicate sustained **Critical** levels of GAM for the last 12 months (22.2% *Gu* 2013 and *17.8%* in *Deyr* 2014) which represents a deterioration in the nutrition situation from the **Serious** levels recorded in the preceding surveys (Annex 9) conducted in *Gu* 2013 and *Deyr* 2013/14 (10% and 12.6% respectively).

The GAM prevalence (17.8%) in *Deyr* 2014/15 is also significantly higher ($p < 0.05$) than the GAM prevalence observed in *Deyr* 2013/14 (12.6%). Improvement in SAM prevalence was observed from **Critical** levels recorded during *Gu* 2014 (5.2%) to **Serious** (3.2%) in *Deyr* 2014/15.

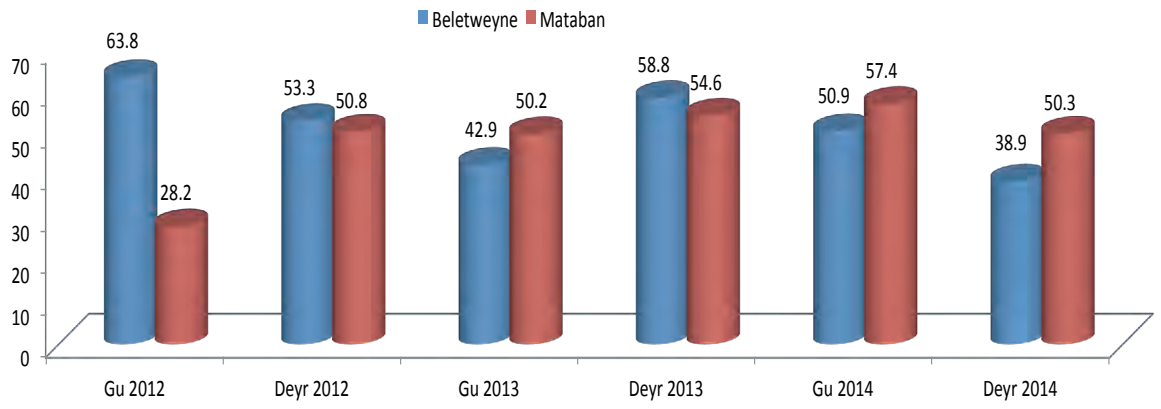
Figure 58: Trends in Acute Malnutrition in Mataban - *Deyr* 2014



MORBIDITY AND MORTALITY

The proportion of children who fell sick two weeks before the surveys has been consistently high for years. The results from the current assessment (Figure 59) show high morbidity rates in Beletweyne (38.9%) and Mataban (50.3%) districts, with the average morbidity rate for the last three years standing at 51.4 percent and 48.6 percent, for two districts, respectively.

Figure 59: Morbidity Trends in Beletweyne and Mataban Districts - *Deyr* 2014



STUNTING AND UNDERWEIGHT

The results of the current survey (Table 28) show similar prevalence rates for stunting (24.2%) and underweight (23.5%). Although prevalence for both stunting and underweight has declined since *Deyr* 2013/14 (Figure 60), current rates suggest that the mean prevalence of stunting and underweight in Beletweyne (Figure 61) are at **Alert** and **Serious** levels, respectively.

In spite of the high prevalence of acute malnutrition reported in Mataban district, the stunting and underweight prevalence have remained relatively low (11.6% and 16.8% respectively), an outlook which has been maintained since last *Gu* 2014, which reported stunting and underweight prevalence at 9.9 and 16.7 percent, respectively (Figure 60).

Figure 60: Trends in Stunting and Underweight in Mataban - *Deyr* 2014

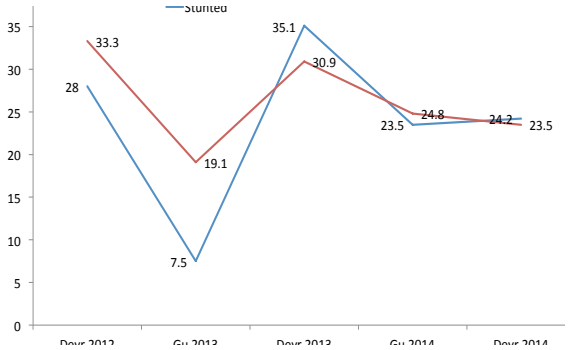
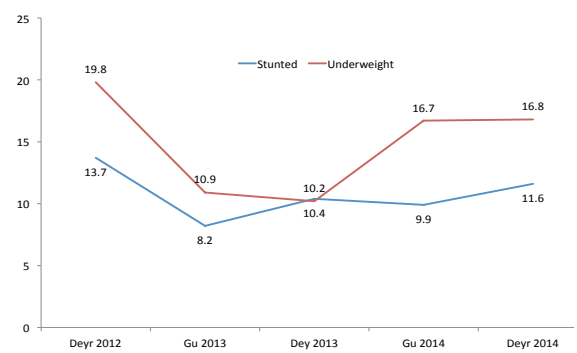


Figure 61: Trends in Stunting and Underweight in Beletweyne - *Deyr* 2014



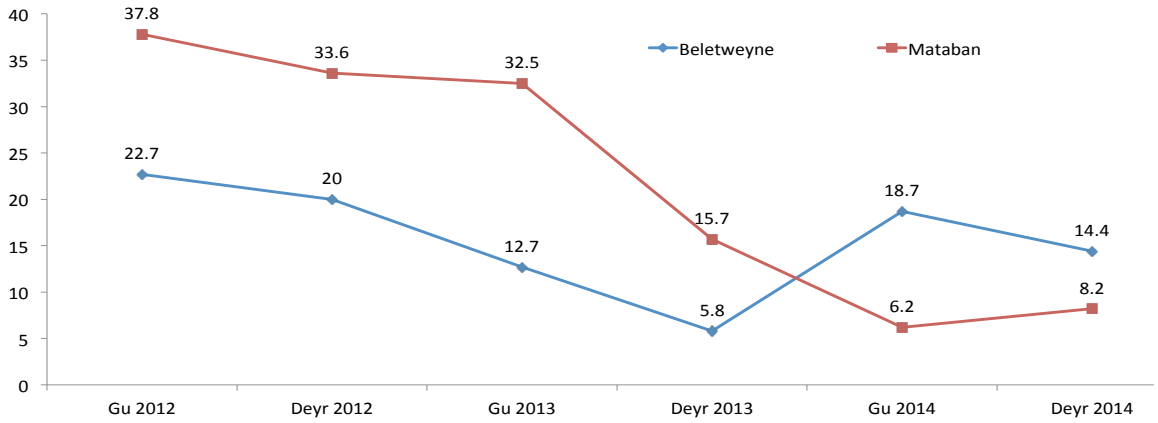
IMMUNIZATION

The health service provision in both Beletweyne and Mataban is either completely lacking or where present, is very limited with low coverage in essential preventive efforts including immunization. In Beletweyne the measles immunization coverage rate was 6.5 percent whereas Vitamin A supplementation coverage was 44.7 percent for *Deyr* 2014/15. In Mataban, measles immunisation coverage was 16.3 percent and coverage with vitamin A supplementation was 22.8 percent. The reported immunization and vitamin A supplementation coverage for both districts (Annex 16 & 17) 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.

MATERNAL MALNUTRITION

Decline in the proportion of malnourished pregnant and lactating women in both Beletweyne and Mataban was observed (Figure 62). In Beletweyne improvement in maternal nutrition is suggested by a decrease in maternal malnutrition levels from **Serious** (18.7%) recorded in *Gu* 2014 to **Alert (**14.6%) in *Deyr* 2014/15. In Mataban district, **Acceptable** levels (8.2%) of maternal malnutrition in *Deyr* 2014/15 suggest that it is not a problem of public health significance.

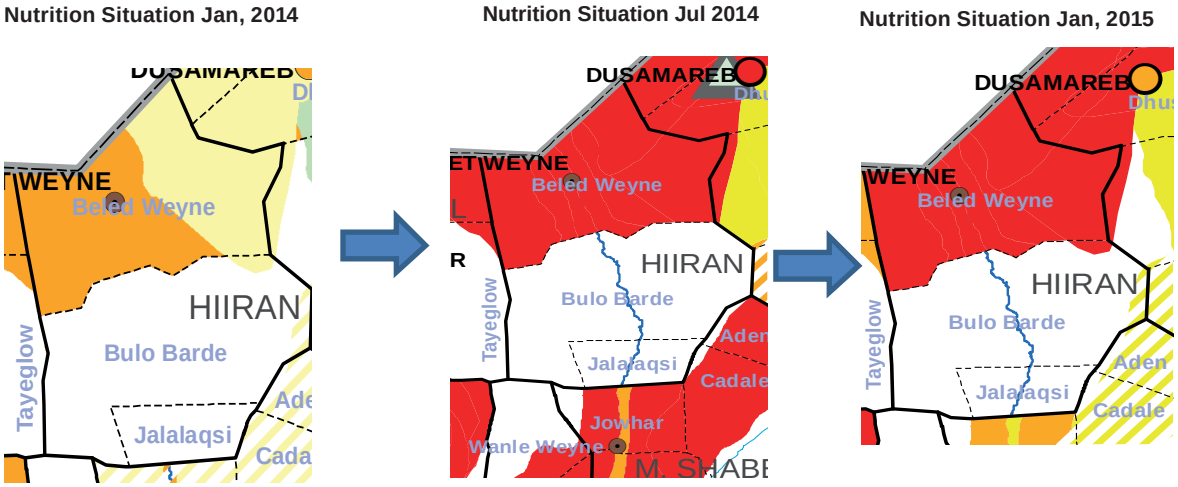
Figure 62: Trends in Maternal Malnutrition in Beletweyne and Mataban Districts - *Deyr* 2014



CHANGES IN NUTRITION SITUATION

The progression in the nutrition situation in Hiran region since *Deyr* 2013/14 is shown in Figure 63. The nutrition situation in the surveyed areas of Beletweyne and Mataban has been sustained as **Critical** since the last *Gu* 2014 season. The underlying causes of malnutrition seen in the region have been suggested as poor sanitation, low immunization and Vitamin A supplementation coverage due of limited access to health services which have resulted into high morbidity rate recorded in the two districts for the last three years. Civil insecurity, trade movement restrictions, displacement due insecurity and floods, coupled with recurrent floods which have destroyed the crops in riverine areas of Beletweyne district resulting in poor harvest have also contributed to the current nutrition situation.

Figure 63: Progression in the Nutrition Situation in Hiran Region - *Deyr* 2013 to *Deyr* 2014



CURRENT HOTSPOTS FOR ACUTE MALNUTRITION IN HIRAN REGION

Both Beletweyne and Mataban districts have remained hot spots for acute malnutrition since last July 2014. Sustained **Critical** GAM prevalence, high morbidity and extremely low or lack of service provision have been recorded in both districts.

OUTLOOK FOR FEBRUARY-APRIL 2015

Considering the current nutrition findings, the nutrition outlook for the last 12 months as well as the identified aggravating factors, the situation is projected to remain critical for the coming quarter, February to April 2015 (Figure 64).

Figure 64: Nutrition situation and Outlook, January to April 2015 in Hiran region

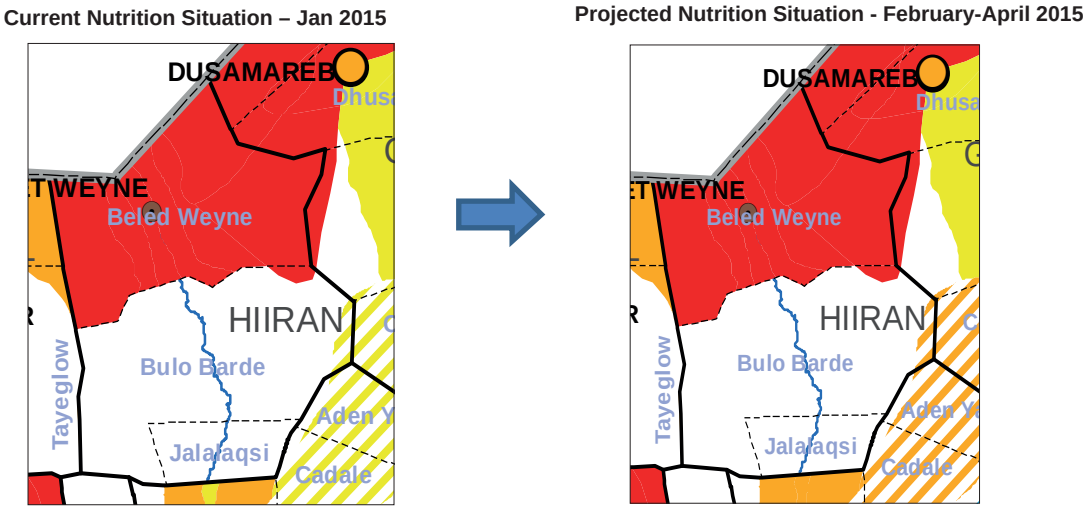


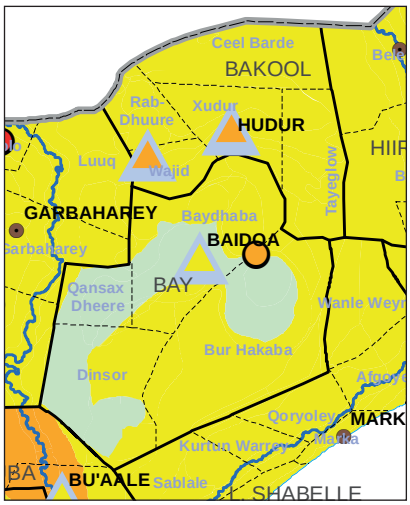
Table 28: Summary of Key Nutrition Findings in Hiran Region – *Deyr* 2014/15

	Beletweyne		Mataban	
	Clusters: 30 A: 730 B: 371 G: 359		Clusters: 30 A: 875 B: 448 G: 427	
Indicator	% (CI)		% (CI)	
Child Nutrition Status				
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	17.3(13.8-21.3) 18.6(14.9-23) 15.9(11.4-21.6)	Sustained	17.8(14.3-22) 17(12.2-23.1) 18.7(14.3-24.2)	Sustained
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	4.2(2.9-6.1) 5.1(3.3-7.9) 3.3(1.8-6.1)	Deteriorated	3.2(2-5.2) 4(2.4-6.7) 2.3(1-5.5)	Improved
Mean of Weight for Height Z Scores	-0.99±1.07		-1.03±1.04	
Oedema	0.5		0.1	
Proportion with MUAC<12.5 cm Boys Girls	9.9(7.2-13.5) 6.8(4.7-9.8) 13.1(8.6-19.5)	Sustained	7(4.9-10.1) 4.6(2.7-7.5) 9.7(6.7-13.7)	Sustained
Proportion with MUAC<11.5 cm Boys Girls	1.7(0.9-3.3) 1.3(0.6-3) 2.2(1-4.8)		1.1(0.4-2.7) 0.9(0.3-2.3) 1.4(0.5-3.8)	
Stunting (HAZ<-2) Boys Girls	24.2(19.4-29.9) 25.2(19.8-31.5) 23.3(17.7-30)	Sustained	11.6(8.4-15.8) 15.2(10.7-21.1) 7.8(5.2-11.4)	Sustained
Severe Stunting (HAZ<-3) Boys Girls	6.5(4.8-8.8) 8.3(5.7-12) 4.7(2.7-8)		1.9(1-3.6) 2.5(1.3-4.8) 1.4(0.5-3.8)	
Underweight (WAZ<-2) Boys Girls	26.4(21.8-31.5) 29.9(24.6-35.7) 22.7(17.4-29.1)	Sustained	16.8(13.1-21.3) 19.5(14.4-25.9) 13.9(9.8-19.5)	Sustained
Death Rates				
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.29 (0.12-0.69)	Deteriorated	0.47 (0.24-0.92)	Improved
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.41 (0.09-1.88)	Sustained	0.00 (0.00-0.00)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	3.5 (1.48-5.67)		3.44 (1.09-5.79)	
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	14.03 (9.24-18.81)	Improved	12.20 (6.24-18.16)	Deteriorated
Morbidity				
Morbidity Boys Girls	38.99 (28.59-49.29) 39.55 (28.33-50.86) 38.27 (27.46-49.08)	Sustained	50.3 (39.91-60.52) 48.05 (38.35-57.75) 53.07 (41.18-64.96)	Sustained
Diarrhea Boys Girls	18.44 (12.20-24.69) 19.55 (13.03-26.07) 17.15 (10.14-24.16)	Sustained	21.31 (13.78-28.83) 20.77 (12.34-29.21) 21.86 (14.21-29.52)	Sustained
Pneumonia Boys Girls	6.28 (3.61-8.95) 6.93 (3.71-10.14) 5.52 (2.45-8.58)	Improved	17.75 (11.70-23.81) 17.31 (10.86-23.76) 18.22 (11.15-25.29)	Sustained
Fever Boys Girls	31.28 (20.87-4169) 31.93 (20.66-43.19) 30.52 (19.76-41.28)	Sustained	27.30 (20.16-34.44) 27.05 (21.09-33.02) 27.56 (18.10-37.01)	Sustained
Measles Boys Girls	0 (0.00-0.00) 0 (0.00-0.00) 0 (0.00-0.00)	Sustained	0.55 (-0.16-1.27) 0.86 (-0.16-1.89) 0.22 (-0.23-0.69)	Sustained
Immunization coverage				
Vitamin A Supplementation Boys Girls	44.78 (29.43-60.14) 43.06 (26.89-59.24) 46.80 (31.51-62.09)	Sustained	22.86 (14.31-31.41) 22.29 (13.41-31.17) 23.46 (14.76-31.15)	Sustained
Measles Vaccination Boys Girls	6.55 (0.04-13.05) 5.69 (-0.17-11.55) 7.55 (0.09-15.02)	Sustained	16.31 (9.35-23.27) 15.56 (8.61-22.55) 17.08 (9.40-24.76)	Sustained
Polio Immunization Boys Girls	63.90 (52.01-75.79) 65.34 (53.85-76.83) 62.20 (48.91-75.50)	Sustained	63.92 (15.26-76.59) 64.71 (51.34-78.08) 63.09 (50.15-76.05)	Sustained

4.4.5: BAY AND BAKOOL REGIONS

FSNAU conducted three nutrition surveys (one IDP and two rural livelihoods) in Bay and Bakool regions (South West) of Somalia. The nutrition status of 2 226, children aged 6-59 month old (1 115 boys and 1 111 girls) from 1 397 households was assessed. While comprehensive assessments (nutrition and food security) were conducted in Baidoa IDP, in Bay Agro pastorals and Bakool pastoral rural livelihoods, the nutrition situation was assessed using a short anthropometric questionnaire.

Map 14: Food Security Situation in Bay Bakool Regions - Jan 2015



CURRENT FOOD SECURITY SITUATION- POST *DEYR* 2014/15

The food security situation for all rural livelihoods in Bay and Bakool regions has improved according to results from the *Deyr* 2014/15 assessment. In January 2015, the total number of the affected people (IPC - Phase 2) in Bay region was estimated as 110 000, of which 43 per cent (47 300) are in Bay high potential Agropastoral and 57 per cent (62 500 are in Bay-Bakool low potential Agropastoral livelihoods. The current food security situation for these livelihoods is classified as **Stressed** (IPC - Phase 2), reflecting a 30 per cent decline (110 000) from the last *Gu* 2014 season (157 000). The Bay high potential area showed marked improvement to **minimal** (IPC Phase 1). In the most likely scenario, the area classification is projected to remain **Stressed** (IPC - Phase 2) for all rural livelihoods between February and June 2015. In this period, the number of people expected to experience a **Stressed** food security situation is projected at 133 000, showing an increment of 21 per cent (110 000 people) from the current situation.

Similar improvement have recorded in all Bakool rural livelihoods, hence a total of 81 000 people (88 % agro pastoral, 12 % Pastoral) are identified as **Stressed** (IPC - Phase 2), pointing to 25 per cent higher than the last *Gu* 2014 (65 000). This is attributed to the fact that a large number of people that were previously in **Crisis** (44 000) are now in the **Stressed** phase.

In the most likely scenario, the area classification is projected to remain as **Stressed** (IPC - Phase 2) for all rural livelihoods between February and June 2015. The projected area classification in Bakool region will possibly be sustain in the **Stressed** phase (IPC - Phase 2) for both Agropastoral (70 000 people) and Pastoral livelihoods (11 000 people) in the upcoming months (February – June 2015).

POST *DEYR* 2014/15 SURVEY RESULTS

The results of nutrition assessments done in Bay and Bakool region are summarized in Tables 29 and 30, the key highlights of which are discussed below:

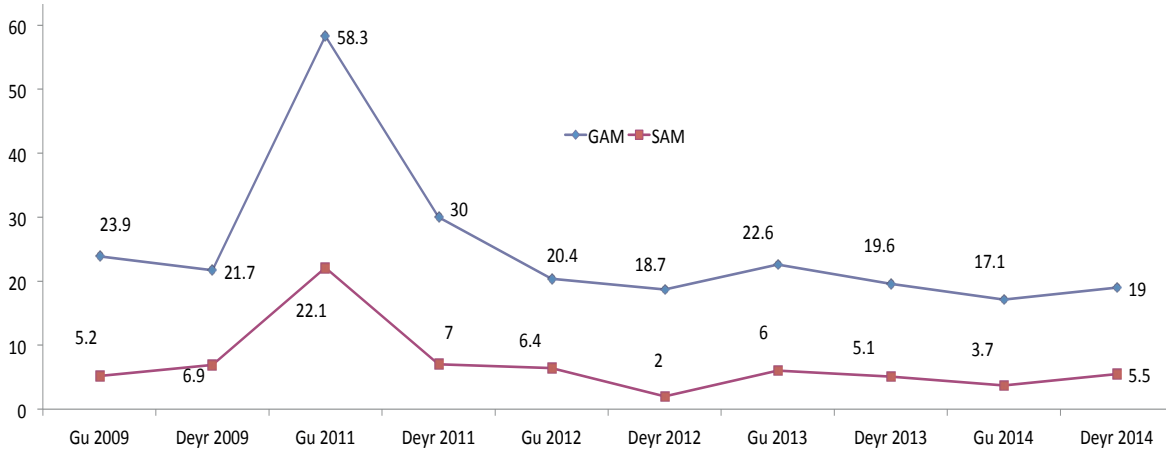
ACUTE MALNUTRITION

Bay Agropastoral

The results of post-*Deyr* 2014 nutrition assessment in Bay Agro-pastoral show **Critical** prevalence levels of acute malnutrition, which are sustained since *Gu* 2012 (Figure 64).

The current SAM rates (5.5%) shows deterioration compared to *Gu* 2014 (3.7%) but it is a seasonal change as prevalence (5.5%) is similar to levels recorded in *Deyr* 2014 (5.5%). The highest GAM (58.3%) and SAM (22.1%) prevalence was seen in *Gu* 2011 during the famine period and although prevalence of acute malnutrition has declined over time, it has always remained **Critical** (above the WHO threshold of15%). Additionally, no seasonal variation in *Gu* and *Deyr* were noted (Figure 65). The underlying factors for high malnutrition appear to be sustained high morbidity rates, low immunization, poor access to safe water and sanitation facilities and poor infant and young child feeding practices.

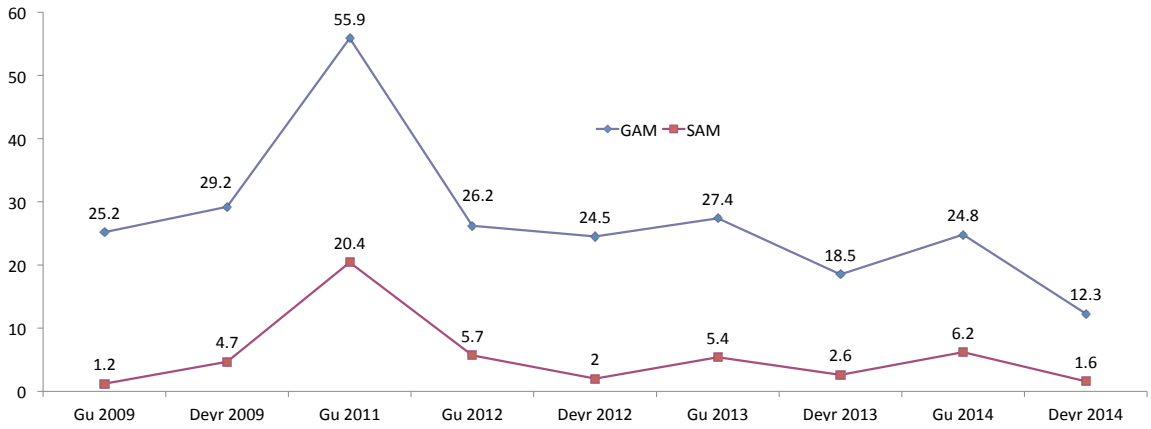
Figure 65: GAM and SAM Trends in Bay Agropastoral Livelihood - *Deyr* 2014



Bakool Pastoral

Bakool Pastorals recorded significant improvement in prevalence of acute malnutrition in both GAM (12.3% - **Serious**) and SAM prevalence (1.5%- **Alert**) (Annex 9). This is in contrast to the sustained **Critical** trends of GAM (above the WHO threshold of15%) seen in this livelihood in the past (Figure 65). Analysis using the t-test showed that the difference between the current results and the two previous seasons were statistically significant at the 99% significance level ($p<0.001$).The highest GAM (55.9%) and SAM (20.4%) prevalence was seen was in *Gu* 2011, and during the famine period. There are no seasonal variations observed between *Gu* and *Deyr*, however. This improvement is mainly attributed to the distribution of cash for voucher, food distribution to the families with malnourished children in the supplementary feeding clinic and high accessibility of milk as well as low morbidity rate and no recent outbreaks of measles and diarrhea.

Figure 66: Trends in Acute Malnutrition in Bakool Pastoral Livelihood - *Deyr* 2014



Baidoa IDPs

Deterioration in GAM prevalence to **Critical** (15.3%) in *Deyr* 2014 compared to **Serious** 12.9%) GAM in *Gu* 2014 or *Deyr* 2013 is observed (Table 30). Similar increase in SAM prevalence in *Deyr* 2014 (3.3%) was noted compared to **Serious** levels (2.4%) recorded in *Gu* 2014 but this appears to be a seasonal change. Analysis using t-test showed that the difference between the current results and the two previous seasons were not statistically significant at ($p>0.05$), therefore this deterioration is not it is statistically significant but it is only a phase change.

MORTALITY

Sustained Crude and under five death rates in Bay Agropastoral and Bakool Pastoral livelihoods within the **Acceptable** range of <0.5 and <1/10,000/day respectively were observed during *Deyr* 2014 (Annex 11). However among Baidoa IDPs, sustained **Serious** levels of CDR (0.51) and increase in U5DR (1.01) were observed.

MORBIDITY

During *Deyr* 2014, decrease in morbidity was observed among Bay Agropastorals (19.3%) compared to ≥ 25 percent in *Gu* 2014 and *Deyr* 2013. High morbidity rates were reported among Baidoa IDPs (45.2%) and Bakool pastoral (31.7%) which is sustained since *Deyr* 2013 (Annex 15)

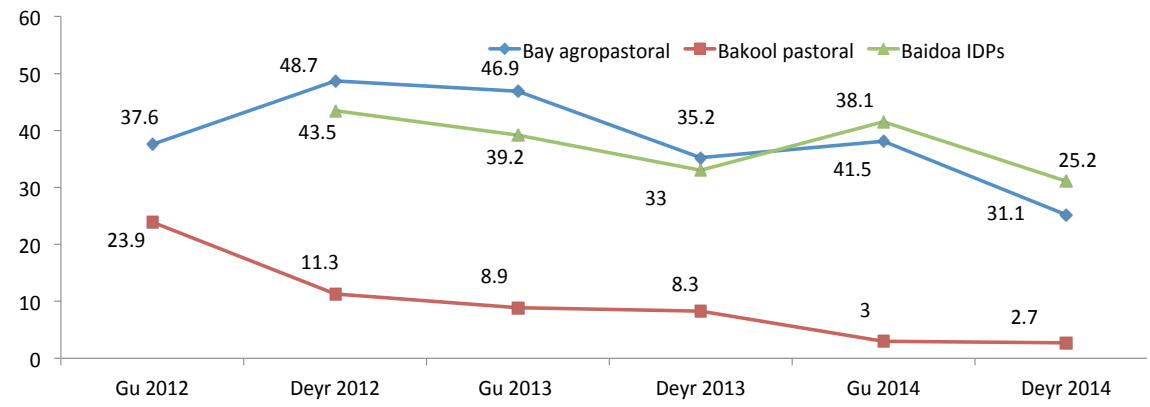
IMMUNIZATION

Low coverage of Vitamin A supplementation and measles vaccination by recall was reported in all the livelihoods of Bay and Bakool region. Among Baidoa IDPs, coverage with both Vitamin A supplementation (57.5%) and measles vaccination (44.8 %) is low, although almost similar to coverage reported among Bakool pastoral (Vitamin A supplementation coverage of 67.7% and measles vaccination coverage of 59.5%). In Bay Agropastoral coverage is almost negligible as seen by Vitamin A supplementation rate of 3.9 percent and 0.7 percent measles vaccination respectively.

CHRONIC MALNUTRITION-STUNTING

In spite of sustained **Critical** levels of acute malnutrition, low prevalence of stunting was seen among Bakool Pastorals (2.7%), while medium prevalence of stunting was seen among Bay Agropastoral (25.2$) with a decreasing trend (Annex 12, Figure 67). On the other hand Baidoa IDPs showed high prevalence of stunting (31.1%), with a decreasing trend. This shows that Bay Agropastoral and Baidoa IDPs have a high seasonal morbidity cases with recurrent outbreaks of diarrhea, pneumonia, malaria and measles. These trends are mainly attributed to limited health services, poor water and sanitation facilities and poor infant and young feeding practices.

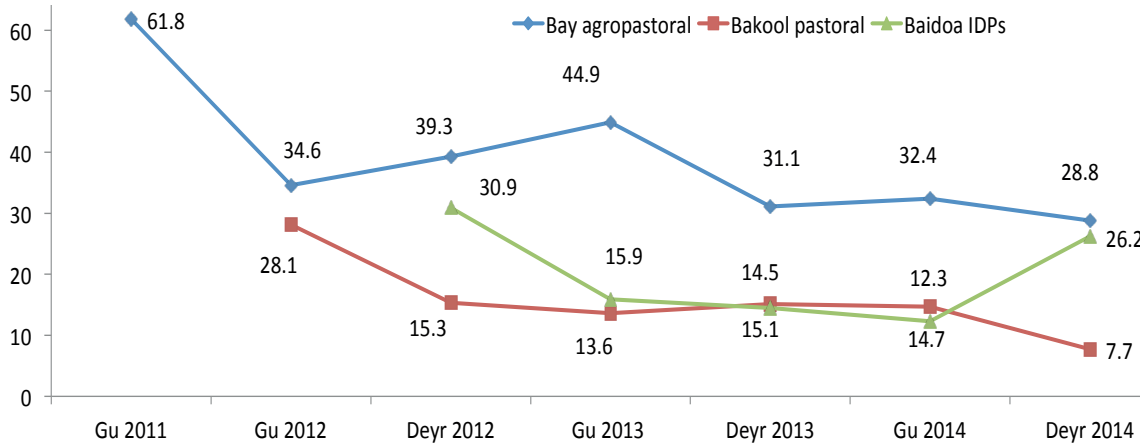
Figure 67: Stunting Trends among Bay Agropastoral, Bakool Pastoral and Baidoa IDPs - *Deyr* 2014



UNDERWEIGHT (Acute & Chronic Malnutrition)

In Bay Agropastoral high prevalence of underweight (28.8%) was noted though underweight shows a declining trend (Figure 68). Similar observations were made in Baidoa IDPs (26.2%) while low prevalence of underweight (7.7%) was observed in Bakool pastoral livelihood, which is consistent since *Gu* 2014 and *Deyr* 2013. Therefore Bay Agropastoral and Baidoa IDPs are far from reaching the millennium development goals.

Figure 68: Underweight Trends among Bay Agropastorals, Bakool Pastoral and Baidoa IDPs - *Deyr* 2014



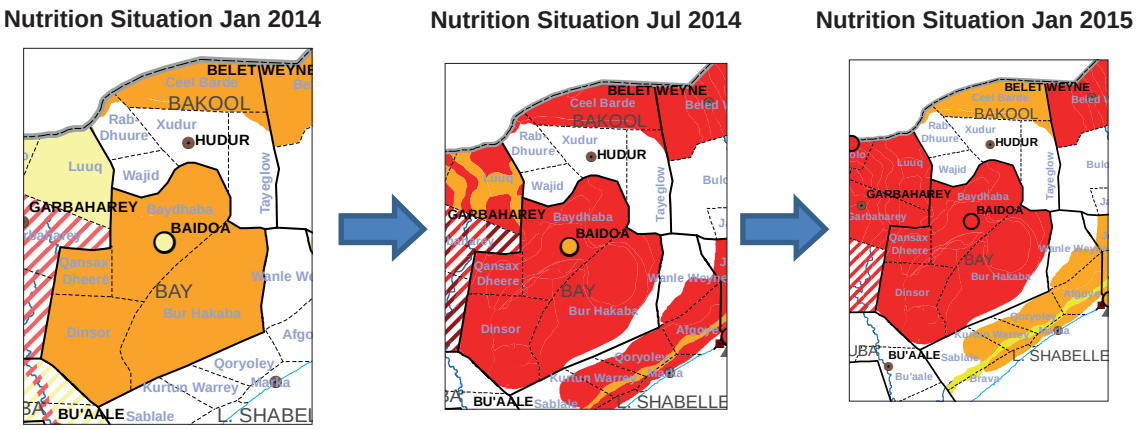
MATERNAL MALNUTRITION

Improvement in maternal malnutrition was observed among all the livelihoods of Bay and Bakool region. Among Bakool Pastoral decrease in maternal malnutrition to **Acceptable** levels (9.7%) was seen in *Deyr* 2014 compared to **Critical** levels seen during *Gu* 2014 (24.9%). Bay Agropastoral recorded an improvement to **Alert** (16.7%) in *Deyr* 2014 compared to **Serious** levels recorded during *Gu* 2014 (22.9%). In Baidoa IDPs **Serious** (20.9%) levels of maternal malnutrition was noted, which is an improvement compared to *Gu* 2014 (23.4%), but a deterioration when compared to *Deyr* 2013 (7.7%) [Annex 14].

CHANGE IN NUTRITION SITUATION

The maps below (Figure 69) show the change in nutrition situation from *Deyr* 2014 to *Deyr* 2015. Sustained **Critical**, deterioration from **Serious** to **Critical** and improvement from **Critical** to **Serious** levels are observed among rural livelihoods in Bay Agropastoral, Baidoa IDPs and Bakool Pastoral respectively for the last twelve months. In Bakool Pastoral an improvement was observed in *Deyr* 2014 with a GAM rate of 12.3 percent and SAM rate of 1.6 percent. This improvement is mainly attributed to the distribution of cash for voucher, food distribution for the families with malnourished children in the supplementary feeding clinic and high accessibility of milk and low morbidity rates, with no recent measles and diarrhea outbreaks noted. The sustained deterioration in Baidoa IDPs and Bay Agropastoral livelihoods, on the other hand, are mainly attributed to highly seasonal morbidity, the overall morbidity rates recorded two weeks prior to the assessment was (45.2%), low immunization coverage and limited humanitarian assistance.

Figure 69: Progression of the Nutrition Situation *Deyr* 2013 to *Deyr* 2014 in Bay Bakool Regions



CURREN HOT SPOTS FOR ACUTE MALNUTRITION IN BAY REGION

Bay Agropastoral with **Critical** GAM level (>15%) and **Serious** levels of SAM (5.5) also has medium prevalence of stunting 25.2%) and high prevalence of underweight 28.8%) and is a current hotspot for malnutrition. Similarly Baidoa IDPs with **Critical** levels of prevalence of GAM- (15.3 %) as well as **Serious** levels of SAM-(3.3%) and high prevalence of chronic malnutrition (31.1% stunting) and underweight (26.2 %) is also a hotspot for malnutrition.

These hotspots require immediate interventions to treat the acutely malnourished children, provide health services, clean water and sanitation facilities and prevent further deterioration of the nutrition situation.

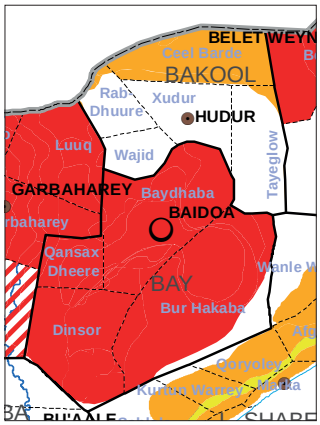
OUTLOOK FOR FEBRUARY - APRIL 2015

The nutrition situation is projected to be sustained as **Critical** in Bay Agropastoral and Baidoa IDPs due to high morbidity levels, low access of health services, poor availability of clean water, lack of sanitation facilities, prevailing insecurity and declining access for humanitarian assistance. The improvement recorded in Bakool Pastoral will remain sustained if the current interventions are sustained; otherwise it will reverse to the **Critical** levels experienced before.

The maps below (Figure 70) show the current and projected nutrition situation for the region.

Figure 70: Nutrition Situation and Outlook January to April 2015 in Bay and Bakool regions

Nutrition Situation Estimates, January 2015



Nutrition Projection Estimates, Feb- April 2015

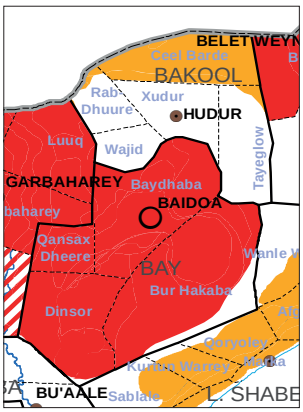


Table 29: Summary of Key Nutrition Findings in Bay Agropastoral and Bakool Pastoral Livelihoods - *Deyr* 2014

	Bay Agro Pastoral Clusters : 35 (N=1084;Boys=553;Girls=531)		Bakool pastoral Clusters (N=620:Boys=313;Girls=307)	
Indicator	**% (CI)**	**Change from Gu 2014**	**% (CI)**	**Change from Gu 2014**
Child Nutrition Status				
Global Acute Malnutrition (WHZ<-2 or oedema)	19.0(14-25.3)		12.3% (9.9-15.1)	
Boys	19.5(14-26.5)	Sustained	14.7% (11.2-19.0)	improved
Girls	18.5(13.6-24.6)		9.8% (6.9-13.6)	
Severe Acute Malnutrition (WHZ<-3 or oedema)	5.5(3.9-7.7)		1.5% (0.8- 2.7)	
Boys	6.3(4.1-9.6)	Sustained	2.6% (1.3- 5.0)	improved
Girls	4.7(3.2-7.0)		0.3% (0.1- 1.8)	
Mean of Weight for Height Z Scores	-1.07±1.06		-1.0±0.85	
Oedema	0.3		0	
Proportion with MUAC<12.5 cm	13.4(11.2-15.9)		7.4% (5.6- 9.8)	
Boys	11.8(9.8-14)	Sustained	4.5% (2.7- 7.4)	Sustained
Girls	15.1(11.4-19.6)		10.4% (7.5-14.3)	
Proportion with MUAC<11.5 cm	3.2(2.1-5.1)		1.0% (0.4- 2.1)	
Boys	2.1(1-4.2)	Sustained	1.3% (0.5- 3.2)	Sustained
Girls	4.5(2.7-7.3)		0.7% (0.2- 2.3)	
Stunting (HAZ<-2)	25.2(20.3-30.8)		2.7% (1.7- 4.3)	
Boys	29.5(23.3-36.6)	Sustained	3.5% (2.0- 6.2)	Sustained
Girls	20.7(16.1-26.1)		2.0% (0.9- 4.2)	

Severe Stunting (HAZ<-3) Boys Girls	7.3(5.5-9.6) 9.4(6.5-13.2) 5.1(3.4-7.6)	Sustained	0.3% (0.1- 1.2) 0.3% (0.1- 1.8) 0.3% (0.1- 1.8)	Sustained
Underweight (WAZ<-2) Boys Girls	28.8(22.6-35.9) 33.5(26.2-41.7) 23.8(18.1-30.6)	Sustained	7.7% (5.9-10.1) 11.2% (8.2-15.2) 4.2% (2.5- 7.1)	Sustained
Death Rates				
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.26(0.14-0.49)	Sustained	0.21 (0.11-0.42)	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	0.27 (0.09-0.84)	Sustained	0.52 (0.17-1.54)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	1.9(-2.0-5.9)	Sustained	0.3 (0.0-0.8)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	16.7(4.2-29.3)	Sustained	9.2 (9.2-12.5)	Sustained
Morbidity Boys Girls	19.3(16.1-22.5) 17.9(13.8-21.9) 20.9(16.8-25)	Sustained	31.7 (25.7-37.7) 30.6(24.2-37.1) 32.8 (25.4-40.3)	Sustained
Diarrhoea Boys Girls	9.7(6.8-12.6) 8.7(5.3-12) 10.8(7.2-14.5)	Sustained	13.2 (10.3-16.1) 11.8 (8.2-15.3) 14.6(10.0- 19.3)	Sustained
Pneumonia Boys Girls	3.4(1.8-5.0) 2.9(1.2-4.7) 3.8(1.7-6.0)	Sustained	12.4 (8.7-16.1) 13.4 (8.1-18.7) 11.4 (7.5-15.2)	Sustained
Fever Boys Girls	10.7(8.7-12.7) 9.7(7.0-12.5) 11.7(9.1-14.3)	Sustained	13.2 ()9.6-16.7 12.1 (8.1-16.1) 14.3 (9.7-18.9)	Sustained
Measles Boys Girls	1.2(0.5-1.8) 1.6(0.5-2.6) 0.7(-0.1-1.6)	Sustained	0 0 0	Sustained
Vitamin A Supplementation Boys Girls	3.9(1.5-6.3) 4.5(1.5-7.5) 3.3(1.2-5.4)	Sustained	67.1 (56.4-77.7) 67.7 (57.5-77.9) 66.4 (54.3-78.5)	Sustained
Measles Vaccination Boys Girls	0.7(0.1-1.4) 0.5(-0.1-1.1) 0.9(-0-1.9)	Sustained	59.5(46.6-72.3) 58.4(45.1-71.8) 60.5(46.8-74.3)	Sustained
Polio Immunization Boys Girls	23.3(13.8-32.9) 24.1(14-34.2) 22.5(13-32.1)	Sustained	83.1(74.9-91.1) 83.1 (74.1-92.0) 83.1 (74.4-91.6)	Sustained

Table 30: Summary of Key Nutrition Findings in Baidoa IDPs - *Deyr* 2014

	Baidoa IDPs	
	Clusters : 30 **(N=522; Boys=249; Girls=273)**	
Indicator	% (CI)	**Change from Gu 2014**
Child Nutrition Status		
Global Acute Malnutrition (WHZ<-2 or oedema) Boys Girls	15.3(11.8-19.7) 14.5(10.2-20.1) 16.1(11.6-21.9)	deteriorated
Severe Acute Malnutrition (WHZ<-3 or oedema) Boys Girls	3.3(1.9-5.6) 4(2.1-7.4) 2.6(1.1-5.7)	Sustained
Mean of Weight for Height Z Scores	-0.81±1.10	
Oedema	0.2	Sustained
Proportion with MUAC<12.5 cm Boys Girls	9.8(6.6-14.1) 7.1(4-12.2) 12.1(8-18.1)	improved
Proportion with MUAC<11.5 cm Boys Girls	2.3(1.1-4.4) 2.4(1-5.8) 2.1(1-4.5)	Sustained

Stunting (HAZ<-2) Boys Girls	31.1(25.4-37.4) 34(27-41.8) 28.5(22-36)	Sustained
Severe Stunting (HAZ<-3) Boys Girls	10.6(7.7-14.3) 11.5(8-16.2) 9.7(6.4-14.5)	Sustained
Underweight (WAZ<-2) Boys Girls	26.2 (21-32.2) 27.5(22.3-33.4) 25.1(17.4-34.8)	Sustained
Death Rates		
Crude deaths, per 10,000 per day (retrospective for 90 days)	0.74 (0.45-1.21)	Sustained
Under five deaths, per 10,000 per day (retrospective for 90 days)	1.21 (0.62-2.35)	deteriorated
Proportion of acutely malnourished pregnant and lactating women (MUAC<21.0)	6.3(1.5-11.1)	Sustained
Proportion of acutely malnourished pregnant and lactating women (MUAC<23.0)	20.9(13.6-28.2)	Sustained
Morbidity Boys Girls	45.2(37.8-52.6) 49(40.4-57.6) 41.8(33.7-49.9)	Sustained
Diarrhoea Boys Girls	15.2(9.8-20.6) 15.4(9.1-21.7) 15(9-21)	Sustained
Pneumonia Boys Girls	10.3(5.9-14.8) 10.7(5-16.4) 10(5.5-14.5)	Sustained
Fever Boys Girls	30.2(24.2-36.2) 33.6(26.4-40.8) 24.1(20.4-33.9)	Sustained
Measles Boys Girls	4.1(1.2-7.1) 3.6(0.7-6.4) 4.6(0.8-2.2)	Sustained
Vitamin A Supplementation Boys Girls	57.5(47.5-67.5) 50.8(40.9-60.7) 57.5(47.5-67.5)	Sustained
Measles Vaccination Boys Girls	44.8(34.8-54.8) 45.6(34.7-56.6) 44.1(33.7-54.5)	Sustained
Polio Immunization Boys Girls	90.9(86.7-95.3) 90.1(84.5-95.8) 91.8(87.3-96.3)	Sustained
Women Nutrition and Immunization Status		
Proportion of Women who received Tetanus immunization No dose One dose Two doses Three doses	15.6(11.5-19.8) 18.2(13.4-23.1) 28.4(23.5-33.3) 37.7(32.4-43)	Sustained
Public Health Indicators		
Household with access to sanitation facilities	38.3(33.4-43.1)	deteriorated
Household with access to safe water	23.3(14.4-32.2)	Sustained
Proportion who reported to have consumed <4 food groups	63 (58.8-67.1)	improved
Mean CSI	14.27	
FCS	86.5	

5. GENDER

5.1 GENDER DIFFERENCES IN PREVALENCE OF MALNUTRITION IN CHILDREN UNDER 5 YRS IN SOMALIA

It is almost three decades since the collapse of Saidi Barre government which potentially contributed to the protracted crisis that the world has witnessed in Somalia to date. Again, after the collapse of the said government, what exists in Somalia is a dysfunctional cum weak government institutions which compounded with failed rains or recurrent droughts, has put Somali citizens (women and men) to one of the prolonged humanitarian crisis in the world's history. That said and in reference to the gender inequality index for Somalia[1], we can say that the crisis has affected women, men, boys and girls differently. Additionally the country's child mortality and maternal mortality rates amongst the highest in the world[2] a fact that signifies the profound challenges which women and under five children (girls and boys) face. These insights explain why the humanitarian players are consistently seeking for evidence based information to strengthen their efforts to improve mortality levels of women, boys and girls by meaningfully reprogramming their response. To help humanitarian actors meet this objective, FSNAU continues to collect, analyze sex disaggregated data and provide periodic update on nutrition status of under-fives in Somalia. The under five children are grouped into two major grouping; 6 to 23 months and 24 to 59 months. The core indicators for nutrition that are and were examined against the underlying gender differences include global acute malnutrition, severe acute malnutrition, stunting, underweight and morbidity. The global acute malnutrition and severe acute malnutrition describes presence and degree of humanitarian emergencies, for children <5: whilst stunting and underweight indicates the underlying vulnerability associated with food insecurity, socio-economic status and poverty in the longer term.

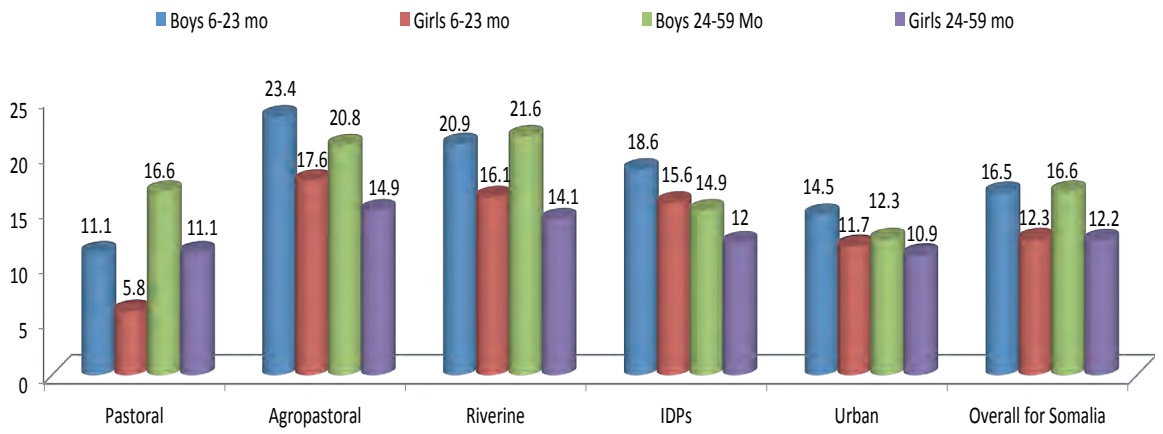
RESULTS:

Summary of gender disaggregated information on nutrition situation is given in Annex 20 and key highlights are discussed below.

GLOBAL ACUTE MALNUTRITION (GAM)

The prevalence of GAM was higher in boys of both 6-23 months and 24-59 months compared to girls in the five livelihood zones of Somalia (Figure 71). The gender difference in GAM prevalence were statistically significant among Agropastoral, pastoral and IDPs. In the Riverine livelihoods, gender differences were statistically significant only among older children (24-59 months) . The likelihood of boys to continue showing high GAM compared to girls is almost twice (this is per the risk reduction ratio percentage)

Figure 71: Gender differences in GAM Prevalence in different regions - *Deyr* 2014

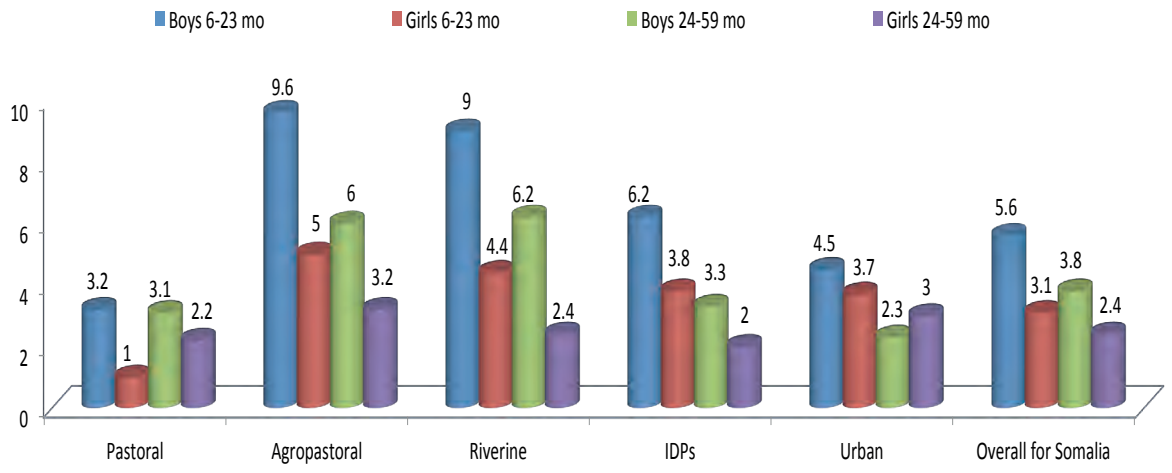


1 Of 0.776 (with a maximum of 1 denoting complete inequality), placing the country at the fourth highest position globally.
2 http://www.unicef.org/infobycountry/somalia_statistics.html

SEVERE ACUTE MALNUTRITION (SAM)

Just like GAM, among children aged (6-23 and 24- 59 months) boys exhibited higher SAM prevalence compared to girls among pastoral, agro pastoral, riverine, and IDPs (Figure 72). In urban areas, reverse trend was noted as higher prevalence of SAM in girls was noted compared to boys in the age group of 24-59 months. The gender differences were statistically significant in under-fives for agro pastoral, IDPs and pastoral livelihoods . For Riverine livelihood, gender differences in SAM prevalence were statistically significant only in older children. Unlike GAM, the likelihood of boys continuing to exhibit higher SAM is low (this is per the risk reduction ratio percentage).

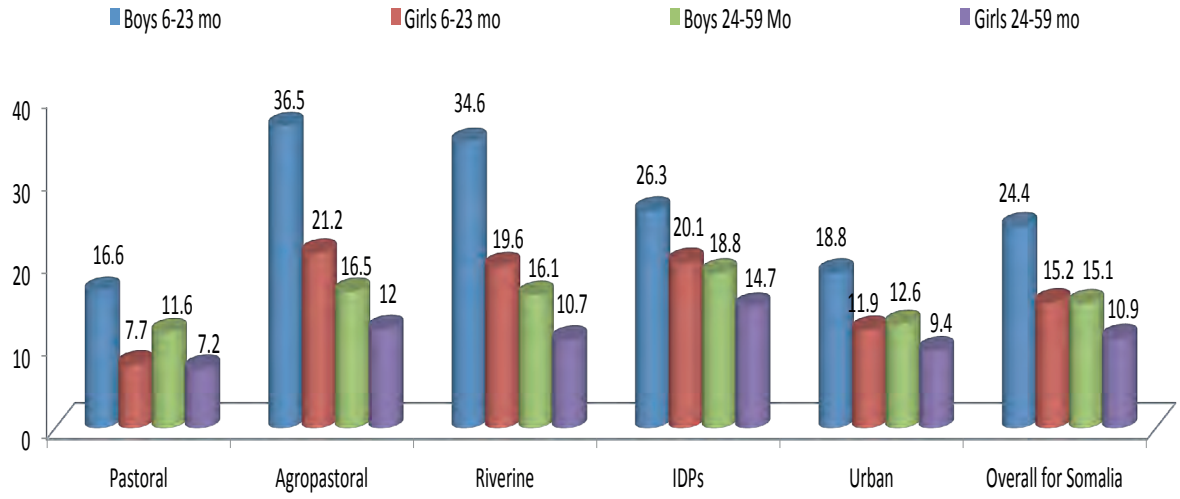
Figure 72: Gender differences in SAM Prevalence in different regions - *Deyr* 2014



STUNTING

Prevalence of stunting in boys & girls show the same trend as acute malnutrition—higher proportion of boys compared to girls were stunted in all livelihoods (Figure 73). The difference was statistically significant.

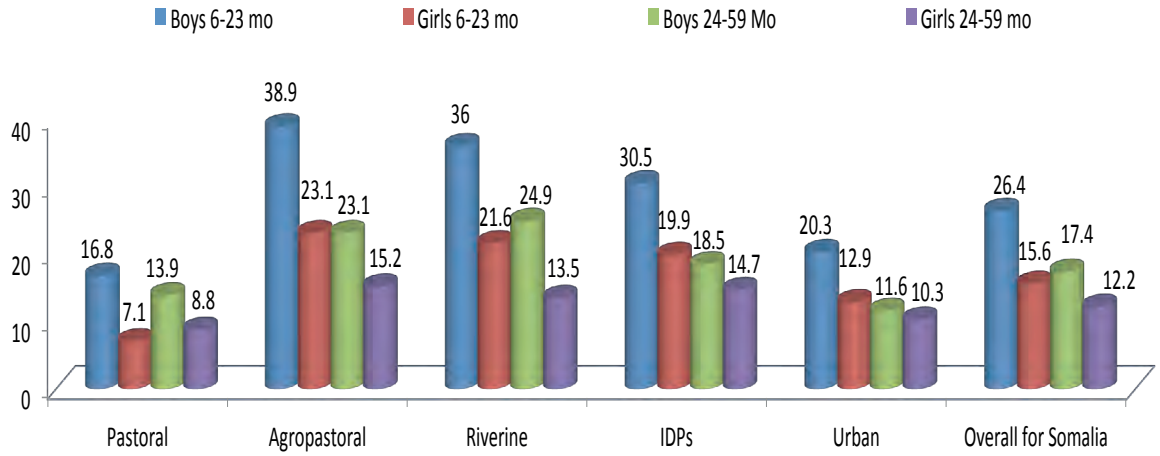
Figure 73: Gender differences in Prevalence of Stunting in different regions - *Deyr* 2014



UNDERWEIGHT

Underweight prevalence was higher in boys compared to girls among under five children in all livelihoods (Figure 74). The difference were statistically significant for pastoral, agro pastoral, riverine and IDPs. Only in young urban children (6-23 months) did the difference show statistical significance.

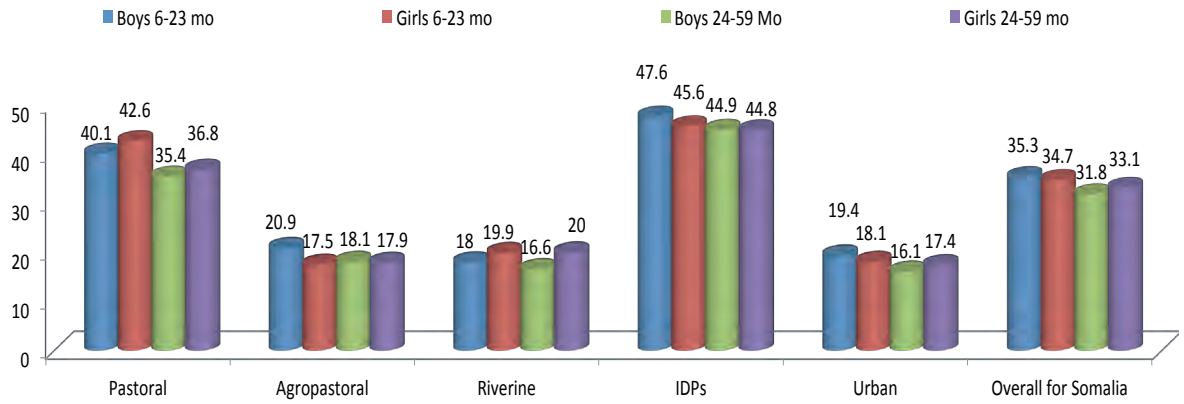
Figure 74: Gender differences in Underweight Prevalence in different regions - *Deyr* 2014



MORBIDITY

Higher morbidity among girls was reported compared to boys among pastoral and riverine livelihoods. However in IDPs and agro pastoral livelihoods, morbidity rate was higher in boys compared to girls. In older urban children higher morbidity was observed in girls compared to boys. The gender difference in morbidity was statistically significant in all under five children and among all the livelihood zones (Figure 75).

Figure 75: Gender differences in Prevalence of Morbidity in different regions - *Deyr* 2014



CONCLUSION

Among under five children in Somalia, boys compared to girls continue to exhibit higher prevalence of malnutrition .A finding that is likely to bring many questions than answers to readers considering Somalia is a country dominated by a robust patriarchal system which is a potential driver of gender discrimination toward girl child and women. Although to date- no study has been done to explain vividly why among the under five children boys compared to girls consistently exhibit higher prevalence of GAM, SAM, underweight, stunting-the persistent trend may be attributed to the cherish of boys by their fathers and a resultant close association of fathers and their boys which is a likely contributor of fathers spending most time with their under five sons, may be going with them to markets/tea places/ herding etc. And as a result, potentially making them miss regular meals. On the other hand, girls by virtue of being at home with mothers, and most likely accompanying them in the kitchen, could mean they get chance to eat regularly and as result show improved nutrition. However, more in depth research is needed to reconfirm these nutritional differences. In the interim, behavior nutrition communication particularly targeting fathers is needed to narrow the gender nutritional differences.

6. APPENDICES

6.1 Overall Time frame for the *DEYR* 2014/15 Nutrition Survey

Date	Activity
Oct 1- Oct 17, 2014	Health facility revisits by nutrition field staff
	Review of *Deyr* Assessment Instruments
	Finalization of *Deyr* Field Instruments & Sampling for IDPs /urban assessments
Oct 25-29, 2014	survey team training for IDPs and Urban—in all 3 regions
Oct 30- Nov 16, 2014	Data Collection & Fieldwork -- IDPs and Urban-all 3 regions
Nov 17-26, 2014	Data Entry & Analysis for IDP/Urban ; Draft Report for Nutrition Update. Preparation for Rural
Nov 27, 2014	Travel to field for rural assessment
Nov 29- Dec 3, 2014	Survey team training for Rural assessments
Dec 4- Dec 25, 2014	Data collection fieldwork for rural Livelihoods
Dec 26, 2014- Jan 5, 2015	Data cleaning, entry and analysis
Jan 8,2015	Travel to Hargeisa for All Team analysis
Jan 10-17, 2015	Jan 10-17. All Team Meeting . Finalization of Nutrition results . Preparation of Presentations for Nutrition Vetting Return to Nairobi on Jan 18
Jan 18, 2015	Travel to Duty Station All NAs plus the Rotational Analysts on 22 Jan
Jan 19-23, 2015	Review and finalization of nutrition results/preparation of presentation for vetting with cluster & stakeholders
Jan 19, 2015	Vetting of Nutrition results with cluster in Mogadishu
Jan 21, 2015	Vetting of Nutrition results with technical partners/stakeholders
Jan 22, 2015	Vetting of Food Security Results with technical partners/stakeholders
Jan 26, 2015	Sharing *Deyr* results with HCT in Nairobi
Jan 27, 2015	Sharing *Deyr* results with Federal Govt of Somalia in Mogadishu, Garowe and Hargeisa
Jan 29, 2015	Presentation to stakeholders and technical release
29 Jan-11 Feb, 2015	Food Security and Nutrition outlook report
Feb 4- Feb 28, 2015	Detailed Analysis & Write-up of Technical Series Report
Feb 28, 2015	Public Release of Technical Report

*Three Additional Nutrition Surveys were conducted in Juba but survey results were discarded due to poor data quality.

6.2 Areas Accessed in the *DEYR* 2014/15 Survey

Details			
Rural livelihood (n=24)	**Urban livelihood (n=4)**	**IDPs (n=13)**	**Total (n=41)**
SOUTH			
Bakool Pastoral	Mogadishu Town	Mogadishu IDPs	**19**
Bay Agropastoral	Kismayo town	Kismayo IDPs	
North Gedo Pastoral		Dhobley IDPs	
North Gedo Riverine		Baidoa IDPs	
North Gedo Agro pastoral		Dolow IDPs	
South Gedo Pastoral-MUAC			
South Gedo Agropastoral-MUAC			
South Gedo Riverine-MUAC			
Hiran pastoral-Mataban District			
Beletweyne District			
Shabelle Agropastoral			
Shabelle Riverine			
12	**2**	**5**	
CENTRAL			
Coastal Deeh-MUAC		Dusamareb IDPs	**5**
Cow pea Belt-MUAC			
Hawd Pastoral			
Addun Pastoral			
4		**1**	
NORTH EAST			
Sool Plateau	Bari Region Urban	Bossaso	**9**
East Golis/Kakaar Pastoral		Qardho	
Nugal Valley Pastoral		Garowe	
Coastal Deeh		Galkayo	
4	**1**	**4**	
NORTHWEST			
Agropastoral Livelihood Zones (Togdheer) Northwest	Sool Region Urban	Hargeisa IDPs	**14**
West Golis / Guban Pastoral Livelihood Zones		Burao	
Sool Plateau		Berbera IDPs	
East Golis/Kakaar Pastoral			
Nugal Valley Pastoral			
Northwest Hawd			
6	**1**	**3**	

6.3 Nutrition Indicators Used

Nutrition Classification	Phase 1-Minimal	Phase 2: Stressed	Phase 3-Crisis	Phase 4 - Emergency	Phase 5 -Famine
	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 oedema) *(R=3)*	<1	1.1-2.4	2.5-4	4-5.6	>5.6
Crude death rate (CDR)/ 10,000/day *(R=3)*	<0.5	<0.5	0.5 to <1	1 to <2	>2
Under five death rate (U5DR)/10,000/day *(R=3)*	≤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=3)-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=3)* 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 & suspected malaria & measles, , whooping cough & severe ARI-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 Suspected whooping cough/ ARI -5 cases in the same community same week	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%		
HIS[1] Trends of Acutely Malnourished Children *HIS, (R=1)*	V. low (<5%) proportion in the preceding 3mths relative to ≥2yr seasonal trends	Low proportion (5 to <10%) and stable trend in the preceding 3mths relative to ≥2yr seasonal trends	Moderate (10 to <15%) and stable or low (5 to <10%) but increasing proportion in the preceding 3mths relative to ≥2yr seasonal trends	High (≥ 15%) and stable proportion in the preceding 3mths relative to ≥2yr seasonal trends	High (≥ 15%) and increasing proportion in the preceding 3mths relative to ≥2yr seasonal trends
Sentinel[2] Site Trends: levels of children identified as acutely malnourished(WHZ), *FSNAU' (R=2)*	Very low (<5%) and stable levels	Low levels (5 to <10%)and one round indicating increase, seasonally adjusted	Low (5 to < 10%) & increasing or moderate (10 to <15%) levels based on two rounds (seasonally adjusted)	High levels (≥ 15%) of malnourished children and stable (seasonally adjusted	High levels (≥ 15%) and increasing with increasing trend (seasonally adjusted)
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%	

6.3 Nutrition Indicators Used (Continued)

Complementary feeding in addition to breastfeeding i. -Introduction of complementary food at 6 months of age: % introduced ii. -Meeting minimum recommended feeding frequency iii. -Dietary Diversity score	≥95% ≥95% ≥95%	80-94% 80-94% 80-94%	60-79% 80-94% 80-94%	0-59% 0-59% 0-59%	
Access to Water	usually adequate (> 15 litres ppp day), stable-100%	borderline adequate (15 litres ppp day); unstable	7.5-15 litres ppp day, accessed via asset stripping	< 7.5 litres ppp day (human usage only)	< 4 litres ppp 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=1)*	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 confl ict
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 signifi cantly > 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:*				

INDICATOR	Level 1 Low chronic food insecurity	Level 2 Moderate Chronic Food Insecurity	Level 3 High Chronic Food Insecurity	Level 4 Very High Chronic Food Insecurity
	Low Prevalence	Medium Prevalence	High Prevalence	Very High Prevalence
Stunting - WHO	<20%	20-30%	30-40%	>40%
Underweight: WHO	<10 %	10-19.9%	20-29.9%	> 30 %
BMI <18.5	<10%	10-20%	20-40%	>40%
FCS	<10% HH	10-20% HH	20-40% HH	>40%HH
HDD<4 food groups	<10% HH	10-20% HH	20-40% HH	>40%HH

Reliability scores for each indicator used in the classification		
Indicator	**Reliability Score (3=high, 2=medium, 1=low)**	**Remarks**
GAM among children 6-59 months	3	- Representative nutrition surveys that pass quality check - Surveys should be from the current season; if not RS should be less
MUAC <125 mm among children 6-59 months	3	Representative data from surveys or rapid assessments
Sentinel Site Data	2	Guidance to be provided on what type of sentinel site data can be included
HMIS Data	1	Guidance to be provided on what type of HMIS data can be included
Screening (purposive)	1	Guidance to be provided on what type of screening data can be included
Programme Data	1	

1 Health Information System, data source – health facilities
2 Data source, over 120 sentinel sites in different livelihoods in South Central Somalia

6.4: Sampling Details *Deyr* 2014/15

Region	Population	Estimated U5 pop	GAM	Desired precision	Design effect	% of U5 Children	HH Size	% Non responder	# HH to be included	# Cluster to be included	# Children to be included
1. West Golis&Guban	62940	12588	15.8	4	1.5	20%	6	3%	498	30	522
2. Northwest Agro pastoral	51791	10356	10.4	3.5	1.5	20%	6	3%	455	28	477
3. Northwest Hawd	57836	11568	10	3.5	1.5	20%	6	3%	440	30	461
4. East Golis	30250	6050	9	3.5	1.5	20%	6	3	400	28	419
5. Nugal Valley	74267	14853	7.9	3	1.5	20%	6	3%	484	30	507
6. Sool Plateau	75374	15074	12	3.5	1.5	20%	6	3%	516	30	541
7. Hargeisa IDPs	65640	13128	8.1	3	1.5	20%	6	3	495	30	519
8. Berbera IDPs	3410	628	10	3.5	1.5	20%	6	3	440	28	461
9. Burao IDPs	8670	1734	12.4	3.5	1.5	20%	6	3	539	30	556
10. Sool Region Urban	128,019	25603	11.3	3.5	1.5	20%	6	3	490	30	513
TOTAL FOR NW	**558197**	**111582**							**4757**	**294**	**4976**
1. Bossaso IDP	99249	19850	15	3.5	1.5	20%	6	300%	623	28	653
2. Qardho IDP	10, 646	Exhaustive									
3. Garowe IDP	10838	2168	17	3.5	1.5	20%	6	300%	690	28	723
4. Galkayo IDP	59778	11956	18	3.5	1.5	20%	6	3	721	28	756
5. Dusamareb IDP	3324	Exhaustive									
6. Sool Plateau	142700	28540	15	3.5	1.5	20%	6	300%	623	31	653
7. East Golis/Kakaar Pastoral	158200	31640	15	3.5	1.5	20%	6	3	623	26	653
8. Nugal Valley Pastoral	119900	23980	16	3.5	1.5	20%	6	3	657	31	688
9. Coastal Deeh	28110	4522	15	3.5	1.5	20%	6	3	516	25	541
10. Costal Deeh (Central)	101,040	20208	18	3.5	1.5	20%	6	3	721	25	756
11. Cow pea Belt	137827	28540	18	3.5	1.5	20%	6	300%	721	27	756
12. Hawd Pastoral	173934	34787	13	3.5	1.5	20%	6	300%	553	27	579
13. Addun Pastoral	84979	16996	14	3.5	1.5	20%	6	300%	589	25	617
14. Bari Region Urban	151030	30206	17	3.5	1.5	20%	6	3%	637	30	723
TOTAL FOR NORTHEAST & CENTRAL	**1270909**	**253393**							**7674**	**331**	**8098**
1. Bakool Pastoral	38445	7689	24.8	3.5	1.5	20%	6	100%	893	40	955
2. Bay Agropastoral-	545910	109182	17.1	3.5	1.5	20%	6	100%	679	30	726
3. North Gedo Pastoral	47922	9584	20.7	4	1.5	20%	6	100%	587	28	627
4. North Gedo Riverine	94344	18869	19.3	3.5	1.5	20%	6	1	746	29	798
5. North Gedo Agro pastoral	23930	4786	14.9	3.5	1.5	20%	6	100%	607	28	649
6. S Gedo Pastoral-MUAC	11540	2308	20	3.5	1.5	20%	6	100%	766	26	819
7. S Gedo Agropastoral-MUAC	31018	6204	14.9	3.5	1.5	20%	6	1	607	28	649
8. S Gedo Riverine-MUAC	9100	1820	19.3	3.5	1.5	20%	6	1	746	27	798
9. Hiran pastoral-Mataban	25,833	5166	22.2	3.5	1.5	20%	6	1	827	28	884
10. Beletweyne district	94912	18982	15	3.5	1.5	20%	6	100%	679	28	726
11. Shabelle Agro pastoral	75497	15099	18.9	3.5	1.5	20%	6	200%	739	30	782
12. Shabelle Riverine	85487	17097	11.2	3.5	1.5	20%	6	200%	481	30	509
13. Mogadishu IDPs	341581	68316	18.9	3.5	1.5	20%	6	100%	749	40	785
14. Mogadishu Town	1780677	356135	10.1	3.5	1.5	20%	5	400%	538	40	465
15. Kismayo IDPs	17040	3408	16.6	3.5	1.5	20%	6	100%	663	30	709
16. Kismayo town	97500	19500	12.6	3.5	1.5	20%	6	1	527	35	564
17. Dhobley IDPs	25320	5062		NA							
18. Baidoa IDPs	16218	3200	12.9	3.5	1.5	20%	6	100%	538	30	575
19. Dolow IDPs	7776	Exhaustive									
TOTAL FOR SOUTH	**3370050**	**672407**							**11372**	**527**	**12020**
GRAND TOTAL	**5199156**	**1037382**							**23803**	**1152**	**25094**

6.5: Populations Assessed In *Deyr* 2014

Livelihood Zone/Population assessed	# Clusters	# HH	# Children	# Boys	# Girls	# PLW
SOUTH						
Bay Agropastorals	35	621	1084	553	531	454
Bakool Pastoral	35	349	620	313	307	279
Baidoa IDPs	30	427	522	249	273	301
Mogadishu IDPs	40	597	922	472	450	317
Mogadishu urban	40	393	660	347	313	NA
Beletweyne District	30	468	730	371	359	335
Shabelle Riverine	30	416	711	336	375	249
Shabelle Agropastoral	30	503	810	409	401	329
Mataban District	30	570	875	448	427	377
North Gedo pastoral	28	391	624	330	294	255
North Gedo Agro-pastoral	28	431	744	366	378	303
North Gedo Riverine	29	533	875	472	403	395
Dolow IDPs	Exhaustive	530	818	403	415	331
Dhobley IDPs	Exhaustive	585	986	506	480	470
Kismayo Town	30	429	771	397	374	NA
South Gedo Pastoral	26	615	993	485	508	NA
South Gedo Agropastoral	28	479	991	491	500	NA
South Gedo Riverine	27	576	1202	601	601	NA
Kismayo IDPs	30	549	943	460	483	342
Total South	526	9462	15881	8009	7872	4737
CENTRAL						
Addun Central	25	407	660	351	309	145
Hawd Central	27	595	901	466	435	247
Dhusamreeb IDP's	Exhaustive	158	430	218	212	179
Total Central	52	1160	1991	1035	956	571
NORTH EAST						
E Golis (NE)	26	487	747	385	362	170
Bari Urban	27	595	731	386	345	N/A
Sool plateau	30	408	723	378	345	135
Coastal Deeh NE	30	475	794	403	391	180
Bossaso IDPs	28	553	843	414	429	188
Qardho IDPs	Exhaustive	279	496	243	253	165
Garowe IDPs	28	619	867	451	416	271
Galkayo IDP's	28	588	973	493	480	164
Total NE	197	4004	6174	3153	3021	1273
NORTH WEST						
Nugal Valley	30	274	563	286	277	167
Sool Region Urban	30	426	494	245	249	~
Northwest Agropastoral	28	330	454	230	224	69
WGolis/Guban	30	366	607	297	312	172
EGolis (NW)	28	226	493	255	238	97
Hawd NW	26	312	588	298	290	136
Hargeisa IDPs	30	467	578	287	291	97
Burao IDPs	32	413	640	313	327	130
Berbera IDPs	28	350	533	255	278	61
Total NW	262	3164	4950	2466	2486	929
TOTAL	**1037**	**17790**	**28996**	**14663**	**14335**	**7510**

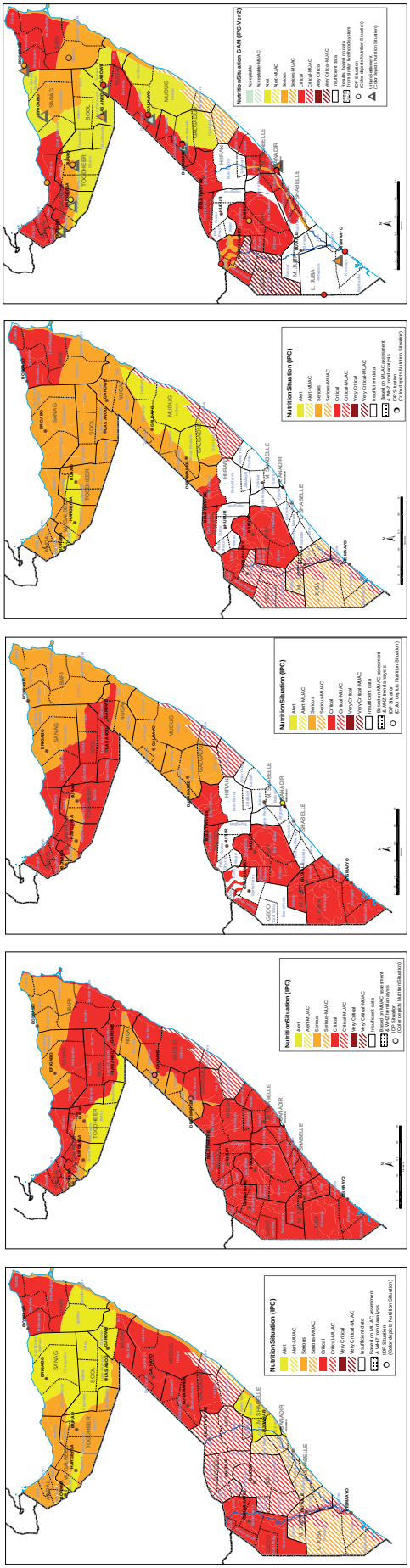
6.6: Institutions which participated in Nutrition Results Vetting- *Deyr* 2014/15

Meeting in Mogadishu	Meeting in Nairobi
1. Nutrition Cluster	1. Nutrition Cluster
2. MoH	2. Save the Children
3. IRC	3. CAFDARO
4. New Ways	4. SORRDO
5. INTERSOS	5. ARDISOM
6. CARE	6. WFP-Food Security
7. AID VISION	7. WFP-Regional
8. HIMILO	8. WFP-Somalia
9. WFP	9. UNICEF
10. Mercy USA	10. CEDA-Somalia
11. African Relief and Development	11. HED RELIEF-Somalia
12. SomaliAid	12. FEWSNET
13. SRDA	13. ARDI
14. SHARDO	14. EPHCO
15. JCC	15. CISP
16. DRS	
17. MGV	
18. SAACID	
19. SHADA	
20. APD	
21. HDOS	
22. Trocaire	
23. SORRDO	
24. QRCS	
25. SCI	
26. MAVK/MoH	
27. Banadir Hospital	
28. BPSC	
29. CAFDARO	
30. IOM	
31. FERO	
32. SARD	
33. SOYDA	
34. WACPO	
35. ACF	
36. CWW	
37. SOYVGA	
38. WCH	
39. SRC	

6.7: Overall Nutrition Situation - *Deyr* 2014

Livelihood assessed	GAM	SAM	Stunted	Underweight	CDR	U5DR	Morbidity
SOUTH CENTRAL REGION							
Bay Agropastoral	19.0	5.5	25.2	28.8	0.26	0.27	19.3
Bakool Pastoral	12.3**	1.5**	2.7	7.7	0.21	0.52	31.7
N Gedo pastoral	25.2	3.7**	15.3	23.3	0.51	1.01	27.1
N Gedo Riverine	19.9	3.2	16.8	22.6	0.41	0.82	20.9
N Gedo Agro-pastoral	24.7**	4.2**	11.2	19.4	0.48	0.53	21.6
Beletweyne District	17.3	4.2	24.2	26.4	0.29	0.41	38.9
Mataban District	17.8	3.2	11.6	16.8	0.47	0.00	50.3
Shabelle Riverine	9.6	1.8	10.4	10.1	0.52	1.00	34.6
Shabelle Agropastoral	12.3*	3.5	9.7	11.1	0.35	0.52	29.6
Baidoa IDP	15.3	3.3	31.1	26.2	0.74	1.21	45.2
Mogadishu IDP	13.4*	2.5**	12.1	14.3	0.60	0.87	39.2
Dolow IDP	21.6	4.3	29.0	32.0	0.46	0.89	36.9
Dhobley IDP	11.0**	1.4**	9.4	8.1	1.25	1.55	34.1
Kismayo IDP	8.5**	1.6*	38.9	23.2	0.84	2.08	62.3
Mogadishu urban	9.7	0.9	7.9	9.8	0.48	0.75	15.3
Dhusamareb IDP	14.4	4.2	7.7	12.0	0.07	0.00	28.6
Hawd Central	16.1	2.7	11.1	14.7	0.33	0.89	42.9
Addun Central	9.7	1.2	8.4	9.5	0.13	0.15	38.3
Kismayo Urban	8.9*	1.7*	26.1	14.7	0.55	0.62	47.6
Median	15.3	3.3	11.6	14.7	0.5	0.8	
NORTHEAST REGION							
E Golis (NE)	10.4**	1.5	6.4	8.3	0.11	0.00	34.8
Hawd Central	16.1	2.7	11.1	14.7	0.33	0.89	42.9
Addun Central	9.7	1.2	8.4	9.5	0.13	0.15	38.3
Sool plateau	9.4	1.4	6.0	6.0	0.10	0.00	20.3
Coastal Deeh	11.7	1.4	6.5	8.9	0.21	0.75	27.4
Bari Urban	14.0	2.7	15.9	16.9	0.41	0.65	~
Bossaso IDP*	17.2	3.1	32.7	29.8	0.36	0.61	30.9
Qardho IDP	11.1	1.8	16.7	15.9	0.36	1.09	37.8
Garowe IDP	19.6	3.9	18.4	23.1	0.20	0.59	45.2
Galkayo IDP	15.1	2.6	15.4	19.0	0.05	0.00	23.2
Median	12.9	2.2	13.3	15.3	0.2	0.6	
NORTHWEST REGION							
NW Agro pastoral*	4.8	0.2**	2.4	2.6	0.17	0.00	11.5
W Golis/Guban	8.0	0.8**	12.2	8.6	0.19	0.00	14.5
Nugal Valley	11.0	1.1	3.7	4.6	0.00	0.00	21.7
EGolis (NW)	11.2	1.6	2.6	7.0	0.04	0.00	17.3
Hawd NW	8.9	1.2	0.8	2.2	0.08	0.00	19.1
Sool Region Urban	11.3	1.0	0.4	5.5	0.10	0.00	~
Hargeisa IDP	11.1	1.6	3.3	6.7	0.11	0.18	9.7
Burao IDP	9.7	0.6	9.7	3.0	0.04	0.34	17.8
Berbera IDP	9.9	1.9	1.5	4.1	0.14	0.00	5
Median	9.9	1.1	2.6	4.6	0.1	0.0	
MUAC							
	<12.5	<11.5					
Coastal deeh Central	12.6	4.1	~	~	0.57	1.3	15.8
Cowpea Belt	7.2	1.8	~	~	0.17	0.0	13.9
South Gedo Pastoral	12.9	1.5					36.4
South Gedo Agropastoral	14.4	1.0					32.9
South Gedo Riverine	14.6	1.3	~	~	~	~	30.4

6.8: Progression of Estimated Nutrition Situation



6.10 Change in MUAC *Deyr* 2013 to *Deyr* 2014

	MUAC <12.5 (GAM-MUAC)			MUAC <11.5 (SAM-MUAC)		
	Deyr 2014	Gu 2014	Deyr 2013	Deyr 2014	Gu 2014	Deyr 2013
	LIVELIHOOD ZONES					
Livelihoods assessed	SOUTHCENTRAL					
Bakool Pastoral	7.4	9.9	10.1	1.0	2.3	1.9
Bay Agropastoral	13.4	15.4	12.5	3.2	3	2.2
North Gedo Pastoral	6.5	21.1	5.6	0.8	3.6	1.1
North Gedo Riverine	5.9	9.7	3.3	0.8	2.3	0.9
North Gedo Agro-pastoral	5.7	20.3	1.5	0.3	2.3	0.4
Beletweyne District	9.9	9.4	12	1.7	1.4	2.6
Mataban District	7	7.7	3.8	1.1	1.8	0.5
Shabelle Riverine	9.3	7	9.5	3.6	1.3	3.1
Baidoa IDP	9.8	16.9	12.7	2.3	3.5	4
Mogadishu IDP	12.8	14	9.2	3.1	3.3	2.9
Dolow IDP	7.1	10.9	10.4	1.2	2.1	3.4
Dhobley IDP	4.1	11.3	12.2	0.7	3.3	9.8
Kismayo IDP	10.6	20.1	12.8	3.1	5.1	2.4
Dhusamareb IDP	7.2	6.3	13.3	0.7	2.7	2.7
Hawd Central	10.1	12.8	7.1	2	2.5	0.6
Addun Central	4.1	4.1	6.7	0.3	0.5	0.9
Shabelle Agropastoral	11.5	7.7	8	3.1	1.6	1.9
Mogadishu urban	4.5	9.5	~	1.1	2.1	~
Kismayo Town	8.8	8.9	~	1.8	1.5	~
Coastal Deeh	1.5	3.2	3.8	0.1	0.6	0.9
S. Gedo Pastoral-MUAC	12.9	16.9	16.6	1.5	1.9	2
S. Gedo Agropastoral-MUAC	14.4	15.6	17.8	1	2.2	3.8
S. Gedo Riverine-MUAC	14.6	17.7	17.1	1.3	3.4	3.4
Coastal deeh -MUAC	12.6	9.7	7.8	4.1	2.5	1.5
Cowpea Belt-MUAC	7.2	10	6.5	1.8	4.9	1.2
MEDIAN	**8.8**	**10**	**9.5**	**1.3**	**2.3**	**2**
NORTHEAST						
EGolis (NE)	5.4	5.4	2.6	0.9	0.8	0.7
Sool plateau	1.4	1.5	1.8	0.4	0.3	0.2
Bari Urban	5.4	4.9	~	1.7	1.2	~
Bossaso IDP	11.2	6.6	8.1	2.4	1	2
Qardho IDP	8.5	5.7	12.9	1.8	0.7	3.9
Garowe IDP	5.9	8.3	11.5	1.6	1.5	2.9
Galkayo IDP	8.7	2.1	7.5	1.3	0.2	2.9
MEDIAN	**5.9**	**5.4**	**7.8**	**1.6**	**0.8**	**2.5**
NORTHWEST						
Northwest Agropastoral	1.3	2	2.4	0.2	0.2	0.2
WGolis/Guban	3.4	3.5	5.3	1	0.7	1.3
Nugal Valley	1.6	2	1.9	0.3	0.5	0.5
EGolis (NW)	5.8	3.7	2.2	1	0.6	0.5
Hawd NW	1	0.7	3.7	2	0.2	0.9
Sool Region Urban	1.5	2.9	~	0.8	0.2	~
Hargeisa IDP	2.2	4.8	4.6	0.3	1	0.9
Burao IDP	3.8	1.6	3.1	1.1	0.3	0.6
Berbera IDP	2.3	1.4	7.2	0.6	0.3	2.3
MEDIAN	**2.2**	**2**	**3.4**	**0.8**	**0.3**	**0.75**
OVERALL MEDIAN	**7**	**7.7**	**7.5**	**1.1**	**1.5**	**1.9**

6.11: Change In CDR and U5DR

	CDR				U5DR		
Livelihood Zone/ Population assessed	**CDR *Deyr* 20142015**	**CDR *Gu* 2014**	**CDR *Deyr* 20132014**		**U5DR *Deyr* 20142015**	**U5DR *Gu* 2014**	**U5DR *Deyr* 20132014**
SOUTH CENTRAL							
Bay Agropastoral	0.26	0.50	0.20		0.27	1.00	0.60
Bakool Pastoral	0.21	0.40	0.20		0.52	0.80	0.70
North Gedo pastoral	0.51	0.50	0.76		1.01	0.90	1.29
North Gedo Riverine	0.41	0.70	0.79		0.82	0.90	1.18
North Gedo Agropastoral	0.48	0.80	0.90		0.53	1.20	1.89
Beletweyne District	0.29	0.30	1.70		0.41	0.10	2.72
Mataban District	0.47	0.70	0.20		~	0.20	0.20
Shabelle Riverine	0.52	0.50	1.01		1.00	1.10	1.87
Baidoa IDP	0.74	0.70	0.40		1.21	0.80	0.97
Mogadishu IDP	0.60	1.40	0.60		0.87	3.40	0.50
Dolow IDP	0.46	0.70	0.77		0.89	1.24	1.29
Dhobley IDP	1.25	0.46	0.40		1.55	0.95	0.40
Kismayo IDP	0.84	1.28	1.30		2.08	1.42	0.40
Dhusamareb IDP	0.07	0.15	0.08		~	0.32	0.80
Hawd Central	0.33	~	~		0.89	~	~
Addun Central	0.13	~	~		0.15	~	~
Shabelle Agropastoral	0.35	0.70	0.50		0.52	0.80	1.59
Mogadishu urban	0.48	~	~		0.75	~	~
Kismayo Town	0.55	~	~		0.62	~	~
MEDIAN	**0.47**	**0.70**	**0.60**		**0.82**	**0.90**	**0.97**
NORTHEAST							
EGolis (NE)	0.11	0.24	0.33		~	0.14	0.85
Sool plateau	0.10	0.06	~		~	~	NA
Coastal Deeh	0.21	~	0.04		0.75	~	0.29
Bari Urban	0.41	~	~		0.65	~	~
Bossaso IDP	0.36	0.32	0.13		0.61	0.40	0.29
Qardho IDP	0.36	0.28	0.36		1.09	0.69	0.87
Garowe IDP	0.20	0.10	0.23		0.59	0.12	0.28
Galkayo IDP	0.05	0.09	0.29		~	0.36	0.41
MEDIAN	**0.21**	**0.17**	**0.26**		**0.65**	**0.36**	**0.35**
NORTHWEST							
Northwest Agropastoral	0.17	0.14	~		~	0.42	NA
WGolis/Guban	0.19	0.14	~		~	~	NA
Nugal Valley	0.00	0.15	0.13		~	~	0.29
EGolis (NW)	0.04	0.07	~		~	0.61	NA
Hawd NW	0.08	0.14	~		~	~	NA
Sool Region Urban	0.10	~	~		~	~	~
Hargeisa IDP	0.11	0.14	0.21		0.18	0.68	0.55
Burao IDP	0.04	0.12	0.19		0.34	0.32	0.35
Berbera IDP	0.14	0.18	0.22		~	0.32	0.41
MEDIAN	**0.10**	**0.14**	**0.20**		**0.26**	**0.42**	**0.38**
OVERALL MEDIAN	**0.28**	**0.30**	**0.33**		**0.70**	**0.69**	**0.60**

6.12: Change in Stunting

		Deyr 2014	*Gu* 2014	*Deyr* 2013	*Gu* 2013	*Deyr* 2012
SOUTHCENTRAL	Bay Agropastoral	25.2	38.1	8.3	46.9	48.7
	Bakool Pastoral	2.7	3	35.2	8.9	11.3
	North Gedo pastoral	15.3	4.2	13	16.3	13.6
	North Gedo Riverine	16.8	21.4	17.5	11.8	7.4
	North Gedo Agro-pastoral	11.2	19.8	15.5	18.1	19.6
	Beletweyne District	24.2	23.5	35.1	7.5	28
	Mataban District	11.6	9.9	10.4	8.2	13.7
	Shabelle Riverine	10.4	19.5	~	~	~
	Baidoa IDP	31.1	41.5	33	36	43.5
	Mogadishu IDP	12.1	16	20	22.1	47.4
	Dolow IDP	29	26.9	27.1	33.6	33.6
	Dhobley IDP	9.4	10.3	14.9	14.2	13.9
	Kismayo IDP	38.9	39.8	30.7	40.1	41.5
	Dhusamareb IDP	7.7	12.2	8.4	11.6	15.7
	Hawd Central	11.1	11.6	10.5	9.5	13.7
	Addun Central	8.4	7.2	12.1	9.3	6.1
	Shabelle Agropastoral	9.7	10.3	~	~	~
	Mogadishu urban	7.9	8.3	~	10.6	5.2
	Kismayo Town	26.1	19.9	~	39.2	~
	MEDIAN	**11.6**	**16**	**15.5**	**14.2**	**14.8**
NORTHEAST	EGolis (NE)	6.4	9.1	9.3	9.7	8.4
	Sool plateau	6	3.6	2	5	6.7
	Coastal Deeh	6.5	6.5	12.9	14.7	13.9
	Bari Urban	15.9	7.5	~	6.6	14.3
	Bossaso IDP	32.7	22.8	29.5	30	21.1
	Qardho IDP	16.7	16.5	30.9	22.9	19
	Garowe IDP	18.4	22.3	21.4	14.1	31.1
	Galkayo IDP	15.4	15.3	19.6	27.7	20.5
	MEDIAN	**15.65**	**12.2**	**19.6**	**14.4**	**16.65**
NORTHWEST	Northwest Agropastoral	2.4	2.8	~	1.8	5.3
	WGolis/Guban	12.2	7.1	~	6.4	9.7
	Nugal Valley	3.7	3.1	1.6	2	3.1
	EGolis (NW)	2.6	1.6	~	5.2	0.3
	Hawd NW	0.8	2.1	~	2.5	4.7
	Sool Region Urban	0.4	2.1	~	1.2	~
	Hargeisa IDP	3.3	4.1	7.1	8.2	8.8
	Burao IDP	9.7	2.1	2.8	2.6	3.1
	Berbera IDP	1.5	2.2	6.1	2.4	9.4
	MEDIAN	**2.6**	**2.2**	**4.45**	**2.5**	**5**
	OVERALL MEDIAN	**10.75**	**10.1**	**13.95**	**10.15**	**13.7**

6.13: Change in Underweight

		Deyr 2014	*Gu* 2014	*Deyr* 2013	*Gu* 2013	*Deyr* 2012
SouthCentral	Bay Agropastoral	28.8	32.4	31.4	44.9	39.3
	Bakool Pastoral	7.7	14.7	15.1	13.6	15.3
	North Gedo pastoral	23.3	10.2	8.3	18.2	15.5
	North Gedo Riverine	22.6	21.4	11.4	15.8	6.4
	North Gedo Agro-pastoral	19.4	13.5	10.4	16.4	15.8
	Beletweyne District	26.4	24.8	30.9	19.1	33.3
	Mataban District	16.8	16.7	10.2	10.9	19.8
	Shabelle Riverine	10.1	15.6	~	~	~
	Baidoa IDP	26.2	31.6	25.3	24.3	30.7
	Mogadishu IDP	14.3	23	16.6	19	30
	Dolow IDP	32.0	26.4	28.5	30.4	29.2
	Dhobley IDP	8.1	12.3	14.5	15.9	16.2
	Kismayo IDP	23.2	32.8	30.1	41.7	46.4
	Dhusamareb IDP	12.0	17.9	12	17.4	20.4
	Hawd Central	14.7	16.6	10.7	12.1	13.5
	Addun Central	9.5	8.9	9.9	9.1	10.4
	Shabelle Agropastoral	11.1	19.9	~	~	~
	Mogadishu urban	9.8	8.9	~	10.1	10
	Kismayo Town	14.7	17.2	~	40.4	~
	MEDIAN	**14.7**	**17.2**	**14.5**	**17.4**	**18**
NorthEast	EGolis (NE)	8.3	13.2	9.2	15.1	12.3
	Sool plateau	6.0	6.3	2.9	6.2	6.4
	Coastal Deeh	8.9	8.5	10.4	18.7	10.8
	Bari Urban	16.9	13.5	~	15.1	~
	Bossaso IDP	29.8	22.6	26.2	29.9	35.9
	Qardho IDP	15.9	18.7	27	21.8	31.4
	Garowe IDP	23.1	25.1	23.1	19.7	25.9
	Galkayo IDP	19.0	17.8	20.6	28.1	22.5
	MEDIAN	**16.4**	**15.65**	**20.6**	**19.2**	**22.5**
NorthWest	Northwest Agropastoral	2.6	5.8	~	4.9	8.2
	WGolis/Guban	8.6	9.4	~	15.6	13.5
	Nugal Valley	4.6	3.9	2.6	~	7.5
	EGolis (NW)	7.0	4.3	~	6.7	3.6
	Hawd NW	2.2	1.2	~	5.7	11.3
	Sool Region Urban	5.5	5	~	3	~
	Hargeisa IDP	6.7	7.4	8.6	12.3	8.6
	Burao IDP	3.0	2.7	3.7	5.4	8.1
	Berbera IDP	4.1	5.6	12	6.1	17.2
	MEDIAN	**4.6**	**5**	**6.15**	**5.9**	**8.4**
	OVERALL MEDIAN	**11.6**	**14.1**	**12**	**15.8**	**15.5**

6.14: Change in Maternal Malnutrition

	Livelihood Zone	*Deyr* 2014	*Gu* 2014	*Deyr* 2013
SOUTH CENTRAL	Bay Agropastoral	16.7	22.9	17.1
	Bakool Pastoral	9.2	24.9	10.4
	North Gedo pastoral	22.4	30	15.1
	North Gedo Riverine	22.3	51.8	22.7
	North Gedo Agro-pastoral	25.4	38.6	21.1
	Beletweyne District	14.6	18.7	5.8
	Mataban District	8.2	6.2	15.7
	Shabelle Riverine	10.5	26.6	~
	Baidoa IDP	20.9	23.4	7.7
	Mogadishu IDP	11.3	20	1
	Dolow IDP	22.9	18.6	25.3
	Dhobley IDP	23.8	21.3	24.1
	Kismayo IDP	16.4	22.8	23.6
	Dhusamareb IDP	35.8	54.8	38.2
	Hawd Central	34.4	32	26.8
	Addun Central	26.6	25.3	10.3
	Shabelle Agropastoral	7.6	16.1	~
	MEDIAN	**20.9**	**23.4**	**17.1**
NORTH EAST	EGolis (NE)	12.5	28.4	31.5
	Sool plateau	7.6	10.5	11.2
	Coastal Deeh	20	11.8	7.1
	Bossaso IDP	11.2	16.7	19.9
	Qardho IDP	15.8	27.1	31.7
	Garowe IDP	21.6	15.5	10.9
	Galkayo IDP	16.6	20.6	24.9
	MEDIAN	**15.8**	**16.7**	**19.9**
NORTH WEST	Northwest Agropastoral	6.7	2.4	~
	WGolis/Guban	12	15.6	~
	Nugal Valley	8.6	12.2	13.8
	EGolis (NW)	3.8	9.09	~
	Hawd NW	1.5	1	~
	Hargeisa IDP	3.1	4	8
	Burao IDP	~	6	5.7
	Berbera IDP	8.1	0.9	1.1
	MEDIAN	**6.7**	**5**	**6.85**
	OVERALL MEDIAN	**15.8**	**19.35**	**16.4**

6.15: Change In Morbidity

	Livelihood zone	*Deyr* 2014	*Gu* 2014	*Deyr* 2013
SOUTHCENTRAL	Bay Agropastoral	19.3	25.9	25.6
	Bakool Pastoral	31.7	25.0	30.4
	North Gedo pastoral	27.1	39.8	21.8
	North Gedo Riverine	20.9	32.1	28.3
	North Gedo Agro-pastoral	21.6	40.1	34.0
	Beletweyne District	38.9	50.9	58.8
	Mataban District	50.3	57.4	54.6
	Shabelle Riverine	34.6	31.5	~
	Baidoa IDP	45.2	32.3	44.4
	Mogadishu IDP	39.2	43.2	37.3
	Dolow IDP	36.9	43.3	55.2
	Dhobley IDP	34.1	24.4	23.2
	Kismayo IDP	62.3	41.4	36.4
	Dhusamareb IDP	28.6	30.1	46.5
	Hawd Central	42.9	33.5	16.9
	Addun Central	38.3	31.0	35.9
	Shabelle Agropastoral	29.6	37.0	~
	Mogadishu urban	15.3	18.0	~
	Kismayo Town	47.6	33.3	~
	MEDIAN	**34.6**	**33.3**	**35.9**
NORTHEAST	EGolis (NE)	34.8	19.0	35.7
	Sool plateau	20.3	19.6	31.0
	Coastal Deeh	27.4	19.4	40.7
	Bari Urban	~	18.2	~
	Bossaso IDP	30.9	22.8	40.6
	Qardho IDP	37.8	52.4	46.4
	Garowe IDP	45.2	32.8	40.5
	Galkayo IDP	23.2	29.8	33.4
	MEDIAN	**30.9**	**21.2**	**40.5**
NORTHWEST	Northwest Agropastoral	11.5	6.4	24.4
	WGolis/Guban	14.5	20.7	34.4
	Nugal Valley	21.7	18.3	39.0
	EGolis (NW)	17.3	13.6	29.5
	Hawd NW	19.1	26.8	29.6
	Sool Region Urban	~	11.8	~
	Hargeisa IDP	9.7	12.0	19.9
	Burao IDP	17.8	15.6	13.6
	Berbera IDP	5.0	5.8	9.80
	MEDIAN	**15.9**	**13.6**	**26.95**
MUAC	Coastal deeh Central	15.8	14.7	~
	Cowpea Belt	13.9	15.9	~
	South Gedo Riverine	30.4	~	~
	South Gedo Pastoral	36.4	~	~
	South Gedo Agropastoral	32.9	~	~
	MEDIAN	**30.4**	**15.3**	**~**
	OVERALL MEDIAN	**29.6**	**26.4**	**34.2**

6.16: Coverage with Vitamin A Supplementation

	LIVELIHOOD ZONE	*Deyr* 2014	*Gu* 2014	*Deyr* 2013
Southcentral	Shabelle Riverine	8.4	3.4	~
	Bay Agropastorals	3.9	8.6	13.9
	Shabelle Agropastoral	2.5	12	~
	Bakool Pastorals	67.1	35.7	59.5
	North Gedo Agro-pastoral	85.4	35.8	83.8
	Beletweyne District	44.7	38.2	18
	Dhusamreeb IDP's	33.3	38.2	29.2
	Mataban District	22.8	41.6	17.6
	Baidoa IDPs	57.5	51.9	36.9
	North Gedo Pastoral	72.4	52.1	84.6
	Dolow IDPs	66.5	56.4	~
	North Gedo Riverine	69.3	61	81.5
	Mogadishu IDPs	52.3	61.2	41.8
	Kismayo IDPs	61.1	61.8	~
	Addun Central	63	64.7	73
	Hawd Central	41.8	65.7	64.6
	Dhobley IDPs	41.7	~	~
	MEDIAN	**52.3**	**46.75**	**50.65**
Northeast	E Golis (NE)	85.7	75.3	63.8
	Galkayo IDP's	72	83.4	91.6
	Qardho IDPs	78.7	56.2	85.9
	Bossaso IDPs	93.3	86	79.1
	Coastal Deeh	86.9	90.2	79.4
	Garowe IDPs	87.7	92.7	62.9
	MEDIAN	**86.3**	**84.7**	**79.25**
Northwest	WGolis/Guban	65.2	65.3	~
	Hargeisa IDPs	77.3	66.6	58.3
	Berbera IDPs	49.5	71.8	63.8
	Northwest Agropastoral	51	77.3	~
	Hawd NW	61.9	65.7	~
	EGolis (NW)	57	80.8	~
	Sool plateau	89.5	84.6	76.5
	Nugal Valley	81.5	85	85
	Burao IDPs	96.6	92.4	86.6
	MEDIAN	**65.2**	**77.3**	**76.5**
Southcentral - MUAC	Cowpea Belt (MUAC)	47.1	40.7	~
	Coastal deeh Central (MUAC)	55.3	39.2	~
	MEDIAN	**51.2**	**39.95**	**~**
	OVERALL MEDIAN	**64.1**	**64.7**	**64.6**

6.17: Change in Measles Coverage

	LIVELIHOOD ZONE	*Deyr* 2014	*Gu* 2014	*Deyr* 2013
Southcentral	Shabelle Riverine	10.7	1.1	~
	Bay Agropastorals	0.7	5.7	7.2
	Shabelle Agropastoral	3.9	2.6	~
	Bakool Pastorals	59.5	26.5	23.5
	North Gedo Agro-pastoral	43.4	42	81.2
	Beletweyne District	6.5	10.9	27.9
	Dhusamreeb IDP's	33.8	37.8	33.3
	Kismayo urban	~	~	~
	Dolow IDPs	61.8	71.7	~
	Mataban District	16.3	34.7	16.3
	Baidoa IDPs	44.8	40.4	41.5
	North Gedo pastoral	~	51.9	81.2
	North Gedo Riverine	~	60.6	78.8
	Mogadishu IDPs	47.4	70.8	48.5
	Kismayo IDPs	66.1	51.7	~
	Addun Central	57.3	64	70.8
	Hawd Central	53.5	62	66.3
	Dhobley IDPs	76.9	~	~
	MEDIAN	**44.8**	**41.2**	**45**
Northeast	Galkayo IDP's	87.1	89.9	89.7
	E Golis (NE)	85.1	74.9	53
	Qardho IDPs	76.6	58.9	85.9
	Bossaso IDPs	88.7	79.2	79.9
	Coastal Deeh	85	89	71.6
	Garowe IDPs	93.8	89.6	57.8
	MEDIAN	**86.1**	**84.1**	**75.75**
Northwest	WGolis/Guban	56.9	56.2	~
	Hargeisa IDPs	67.2	64.8	52.6
	Berbera IDPs	49.7	68.6	54.4
	Northwest Agropastoral	44	72.8	~
	Hawd NW	62.4	62	~
	EGolis (NW)	56.4	79.8	~
	Sool plateau	89.8	82.8	71.1
	Nugal Valley	79.2	83	75.5
	Burao IDPs	94.5	91.2	75.4
	MEDIAN	**62.4**	**72.8**	**71.1**
Southcentral - MUAC	Cowpea Belt (MUAC)	4.2	18.1	~
	Coastal deeh Central (MUAC)	36.4	12.9	~
	MEDIAN	**20.3**	**15.5**	**~**
	OVERALL MEDIAN	**58.4**	**62**	**66.3**

6.18: Change in GAM and SAM Caseloads

Region								
	GAM Caseloads				SAM Caseloads			
	Deyr 2014	*Gu* 2014	*GU* 2013	*Deyr* 2013	*Deyr* 2014	*Gu* 2014	*GU* 2013	*Deyr* 2013
L Shabelle	19 750	29 250	21 150	21 150	5 250	8 350	4 200	6 120
Banadir	20 000	24 100	18 200	15 250	2 700	5 300	3 400	2 550
Bay	23 600	21 250	28 050	24 350	6 850	4 600	7 450	6 350
Galgadud / Mudug	14 650	16 750	10 700	13 950	2 000	4 300	1 450	2 500
M Shabelle	12 200	13 900	12 850	13 250	3 300	2 550	2 550	3 780
W Galbeed	12 250	15 400	14 450	16 700	1 050	2 100	1 700	4 250
L Juba (Hoose)	15 050	12 850	13 350	13 250	3 100	2 150	3 200	4 250
Gedo	16 100	12 600	12 050	14 750	2 550	700	3 150	5 250
Hiran	11 500	11 200	11 450	10 150	2 550	2 600	2 400	2 250
Bakool	13 050	11 100	14 350	10 000	2 850	2 400	3 700	2 100
Bari	7 400	9 000	8 200	6 950	950	1 750	1 400	950
Toghdeer	7 050	8 800	8 300	9 550	600	1 500	1 000	2 450
M Juba -(Dheexe)	9 250	8 000	8 300	8 200	1 950	1 350	2 000	2 600
Awdal	5 350	6 700	6 350	7 250	500	1 150	700	1 900
Sanaag	4 700	5 950	5 600	6 450	450	1 050	650	1 650
Sool	2 650	3 200	3 100	3 600	250	550	350	900
IDP Northeast & Central	3 500	3 300	3 950	3 100	600	650	750	650
Nugal	2 350	2 900	2 650	2 250	350	550	400	300
Northwest IDP	2 200	2 050	3 050	2 550	350	250	500	450
Total	**202 600**	**218 300**	**206 100**	**202 700**	**38 200**	**43 850**	**40 950**	**51 250**

6.19: Change in Food Security

Food Security Phase	*Deyr* 2014	*Gu* 2014	*Deyr* 2013
SOUTH			
Bay Agro-pastoral	Stressed	Stressed/crisis	Stressed
Bakool Pastoral	Stressed	Stressed	Stressed
Baidoa IDPs	Crisis	Crisis	Stressed
Dhobley IDPs-	Crisis	Emergency	Emergency
Kismayo IDPs	Crisis	Emergency	Emergency
Kismayo Town	Stressed	Emergency	~
Beletweyne	Stressed	Stressed	Stressed
Mataban	Stressed	Stressed	Stressed
North Gedo Pastoral	Stressed	Stressed	Stressed
North Gedo Riverine	Stressed	Stressed	Stressed
North Gedo Agro Pastoral	Stressed	Stressed	Stressed
Dolow IDPs	Emergency	Crisis	Stressed
South Gedo Pastoral-MUAC	Stressed	Stressed	Stressed
South Gedo Agro-Pastoral-MUAC	Stressed	Stressed	Stressed
South Gedo Riverine-MUAC	Stressed	Stressed	Stressed
Shabelle Agro pastoral	Stressed	Stressed	Stressed
Shabelle Riverine	Stressed	Stressed	Stressed
Mogadishu IDPs	Crisis	Crisis	Crisis
Mogadishu Urban	Stressed	Stressed	Stressed
CENTRAL			
Dhusamareeb	Crisis	Crisis	Emergency
Hawd Pastoral	Stressed	Stressed	Stressed
Addun Pastoral	Stressed	Stressed	Stressed
Cowpea Belt-MUAC	Stressed	Stressed	Stressed
Coastal Deeh-MUAC	Stressed	Stressed	Stressed
NORTHEAST			
Bossaso IDPs	Crisis	Crisis	Crisis
Galkayo IDPs	Crisis	Crisis	Crisis
Qardho IDPs	Crisis	Crisis	Stressed
Garowe IDPs	Crisis	Crisis	Stressed
East Golis Pastoral	Crisis	Stressed	Stressed
Sool Plateau Pastoral	Stressed/crisis	Stressed	Stressed
Coastal Deeh-	Crisis	Crisis	Stressed
Bari Urban	Stressed	Stressed	~
NORTH WEST			
Agro-Pastoral	Stressed	Stressed	Stressed
West Golis/Guban	Stressed	Stressed	Stressed
Sool Plateau	Stressed	Stressed	Stressed
Hawd Livelihood	Stressed	Stressed	Stressed
Eastgolis/GebbiValley	Stressed	Stressed	Stressed
Nugal Valley	Stressed	Stressed	Stressed
Hargeisa IDP	Stressed	Crisis	Crisis
Berbera IDP	Stressed	Crisis	Crisis
Burao IDP	Stressed	Crisis	Crisis

6.20: Nutrition Indicators by Gender and Age - *Deyr* 2014

REGION											
INDICATOR	AGE(Months)	SOUTH		CENTRAL		NORTHEAST		NORTHWEST		OVERALL FOR SOMALIA	
		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
GAM	6-23 months	19.8*	14.3*	14.5	11.7	15.5*	12.4*	9.0*	6.1*	15.4*	11.4*
	24-59 Months	20.5*	16.9*	13.2	14.3	17*	14.4*	12	12.1	16.5*	14.6*
	Overall	20.3*	15.9*	13.6	13.4	16.5*	13.7*	11	10	16.1*	13.4*
SAM	6-23 months	6.6*	4*	4.2	3.7	4.5	3.4	2.6*	0.9*	4.8*	3.0*
	24-59 Months	4.5	3.6	2.6	2.3	3.8	2.8	2.4	2.5	3.5*	2.9*
	Overall	5.3*	3.7*	3.1	2.8	4	3	2.5	1.9	4.0*	3.0*
GAM-MUAC	6-23 months	0.7*	0*	20.6	24.7	49.2	53.1	7.5*	5.0*	16.5	16.2
	24-59 Months	0.6*	0*	12	14.7	44	47	6.5*	4.3*	14.4	14.5
	Overall	0.7*	0*	14.8	18.1	45.8	49.2	6.8*	4.5*	15.1	15.1
SAM-MUAC	6-23 months	18.5	18.5	17.1	20.7	16.7	20	5.3	4.7	14.5	15.3
	24-59 Months	14.8	15	11.4	13.9	19.3	19.2	2.3	2.4	12	12.3
	Overall	16.2	16.4	13.2	16.2	18.4	19.5	3.4	3.2	12.9	13.4
UNDERWEIGHT	6-23 months	31.7*	19.8*	19.2*	10.7*	21.2*	16.4*	9.6*	4.3*	22.1*	14*
	24-59 Months	23.1*	18.2*	13.4	13.2	14.6	12.7	5.7	5.2	15.*	12.5*
	Overall	26.4	18.8*	15.3	12.3	16.9*	14*	7.0*	4.9*	17.5*	13.1*
STUNTING	6-23 months	30.7*	21.1*	18.7*	9.2*	20.5*	15.7*	10.3*	4.6*	21.7*	14.3*
	24-59 Months	23.4*	18.7*	13.5*	8.6*	11.6	10.1	3.7	3.4	13.7*	11.1*
	Overall	26.1	19.6	15.2*	8.8*	14.8*	12.1*	5.9*	3.8*	16.6*	12.2*
MORBIDITY	6-23 months	38.4	39	36.9	40.4	34.2	36	26.6	25.1	34.1	34.6
	24-59 Months	35.9	35.7	29.7	29.2	24	24	19.9	19.4	27.7	27.4
	Overall	36.9	37	32	33	27.6	28.2	22.2	21.4	30	30
	*** Chi- square test(with 95% confidence interval) showed statistical significant difference (P<0.05)**										

6.21: 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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