The food security situation in South Sudan has deteriorated significantly compared to the same season last year (August 2014). Nearly a half of the country’s households are food insecure, of which 39% fall in the moderate and 9% under severe as opposed to last year where 33% were moderately food insecure and only 2% severely food insecure. The prevalence of food insecurity amongst female-headed households is significantly higher.

During the survey, it was observed that households are consuming fewer meals (just a meal per person per day as opposed to the typical two meals) than during the same season last year, coupled with little or no dietary diversity. The main driver for inadequate food consumption is low physical and economic access to food due to low local availability and poor purchasing power among the populations.

For their food supply, households continue to depend mainly on markets (52%) and own production (33%). The combined impact of the current depreciation of the South Sudanese Pound (SSP) and the high levels of poor income reliability (31%) significantly affected households’ ability to access food in the reference period. Furthermore, low internal availability during the lean season and reported dry spells during the cropping season further exacerbated the inadequacy of food consumption and increased adoption of coping mechanisms, particularly in conflict affected areas.

The overall nutrition situation remains critical with Global Acute Malnutrition (GAM) prevalence above the emergency threshold (GAM greater than 15%) in the conflict affected states of Greater Upper Nile (Jonglei, Unity and Upper Nile) and in states generally associated with high malnutrition rates (Northern Bahr el Ghazal and Warrap). Notable is the deterioration in Lakes state, with rates approaching the emergency threshold. High levels of acute malnutrition are attributable to inadequate food consumption, poor maternal and child feeding practices, morbidity, and constrained health and nutrition service delivery.

Countrywide Global Acute Malnutrition (GAM) is found to be 13% (CI 11.8% – 14.4%) with the weight-for-height z-score at (WHZ) less than -2 and/or oedema. Severe Acute Malnutrition stood at 2.6% (2% – 3.3%) WHZ<-3 and/or oedema. The situation is generally at the same as previous levels with notable deterioration observed in Northern Bahr el Ghazal and Lakes states. The worst nutrition situation is observed in Warrap (24.2%) followed by Northern Bahr el Ghazal (17.6%). SMART surveys that have been conducted in the Greater Upper Nile states indicate that GAM rates in the majority of areas in those states are above the emergency threshold, with the worst nutrition situation observed in Unity, which is attributable to the

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1 Weighted Malnutrition rates were only computed for the seven ‘non-conflict’ states. Jonglei, Unity and Upper Nile were excluded.
ongoing conflict, which has hindered humanitarian access, affected crop and livestock production, rendered markets non-functional, and led to major population displacements. Wasting based on Mid-Upper Arm Circumference (MUAC) (<230mm) was prevalent in 19.6% of the women, depicting an increasing trend from the previous rounds.

Insecurity in the Greater Upper Nile states has significantly reduced domestic trade, thus limiting food availability and access.

**Current food security situation**

It is estimated that 48% of the households in South Sudan are food insecure. The food security situation in South Sudan is worrying and especially alarming in Lakes, Warrap, Western Bahr el Ghazal, Northern Bahr el Ghazal, Upper Nile and Jonglei (Figure 1). August coincides with the lean season and increasing food insecurity across South Sudan. A general comparison of the food security situation July/August and same season last year indicates that food security has significantly deteriorated across the whole country, from a national total of 37% in August 2014 to 48% August 2015. Food insecurity is prominent among female-headed households particularly in Northern Bahr el Ghazal (66%) and Lakes (59%). Similarly, households that rely on sales of natural resources e.g. sale of charcoal, poles, firewood or grass were found to be more food insecure, with 34% severely food insecure and 25% moderately food insecure. The food insecurity, especially in Greater Upper Nile states, could be attributed to the limited planting area and disrupted cropping season due to the conflict, as well as to dry spells particularly in parts of Jonglei. In addition, insecurity drastically reduced market integration and domestic trade, hence limiting internal market food availability and underpinning food price spikes beyond the ordinary levels for the season. As for Warrap, crops were destroyed by floods during the harvest period so most households there have a cereal deficit.

On the other hand, households that rely on agriculture/crop sales and livestock/livestock sales were more likely to be food secure compared to their counterparts that do have these livelihood opportunities. It is estimated that 62% of agriculture households are food secure (including the 26% marginally food secure). For livestock keepers, some 21% of households are food secure and 20% marginally food secure.
Nationally, some 56% of the households reported inadequate food consumption, which is an increase of 16% compared to the same period in 2014. Eastern Equatoria, Jonglei, Northern Bahr el Ghazal and Warrap, all have higher levels of inadequate food consumption than the national average of 56% (Figure 2).

The food consumption situation in South Sudan is lopsided and nutritionally unbalanced. The majority of households have inadequate diet in Lakes (57% poor and 24% borderline) and Upper Nile (31% poor and 27% borderline). States with inadequate diet during the same period last year included Lakes (22% poor and 37% borderline), Warrap (13% poor and 43% borderline) and Upper Nile (25% poor and 26% borderline) (Figure 2), similar to 2015, implying a persistent inadequate dietary intake in these particular states. The lowest prevalence of households with unacceptable food consumption this season are observed in Jonglei (33% poor and borderline combined), Western Bahr el Ghazal and Northern Bahr el Ghazal (48% each) and Eastern Equatoria (47%).

Female-headed households were more likely to have inadequate food consumption (62%--37% poor and 25% borderline), as compared to the male counterpart (54%--26% poor and 28% borderline). This is consistent with higher levels of poor dietary diversity observed among female-headed households (61%) compared to male-headed households (56%).

On average, the reported number of meals consumed are worrisomely low. Currently, children are consuming two meals and adults consume just a meal per day because of unavailability and inaccessibility of food. This is detrimental to households’ food security as well as to their nutritional and health status. The lowest average number of meals consumed among children was observed in Warrap and Upper Nile with averages of one and two meals per day, respectively. The low number of meals consumed in Upper Nile might be caused by low consumption associated with the lean season and recent insecurity leading to very poor market integration. With regards to adults, the lowest average number of meals per day (one each) was observed in Warrap and Lakes.

Households that consumed only a meal a day were more likely to have reported poor food consumption, indicating a prevalence of over 33% with poor FCS. There are 38% of households with children who took one meal a day. This is worrying because on average children should consume three to five meals a day. The number and quality of meals eaten by children has a significant impact on their mental and physical developmental.
The vast majority of households in South Sudan rely mostly on markets (55%) and own production (30%) for their food supply. Other currently used sources of food are hunting and gathering (6%) and food assistance (4%). Agro-pastoral states (the Greater Equatoria states) rely least on markets even during lean season (Figure 3), explained by better local production prospects, characterized by earlier green harvest compared to other areas.

The unfavorable macro-economic situation, insecurity, constrained movement and market integration, as well as low availability of local produce over the lean season are the main factors impacting on physical access of households to food during this period, and are amplified in the Greater Upper Nile states.

There was a strong positive relationship between food security and two of the sources of food (own production and food assistance). Hence a negative disturbance of those sources would negatively affect households’ food security situation.

Overall, the majority of households interviewed own livestock (59%), majorly in Lakes, Central Equatoria, Jonglei and Warrap with 73%, 72%, 69% and 68%, respectively. The states with the least number of livestock-owning households are found in Western Equatoria and Western Bahr el Ghazal with 19% and 36%, respectively (Figure 4). Households with livestock are less exposed to food insecurity (76% of whom are food secure) as opposed to those not owning animals (only 24% are food secure). There are significantly more households who do not own any livestock and are food insecure (54% are severely food insecure) as compared to households that have access to livestock (only 46% severely food insecure) [Figure 5]. The presence of livestock is positively
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Correlated with households’ food security attributed to their enhanced access to animal products. The lean season in South Sudan coincides with the peak of rains, which are conducive to the replenishment of water resources and regeneration of pastures in grazing lands, hence leading to increased calving and milking. On the other hand households that are more dependent on markets for food supply are therefore more exposed to the volatility of food prices in the lean season. At the time of survey, only 12% of households indicated residual availability of stock from the previous season.

For the current farming season, the main challenge faced by farmers is shortage of rains, experienced by some households relying on agriculture across the country. In particular, drought affected farmers in Eastern Equatoria (54%) and Jonglei (53%). Furthermore, the delay in rains has led households in Western Equatoria and Jonglei (particularly in Nagero, Mundri East and Pochalla counties) to replant their crops, with negative impact on the amount of crops produced.

Pests and weeds (21%) were also reported as a profound limitation to agricultural productivity across the country.

**Household income sources**

The main sources of income across rural households in South Sudan remain agriculture, sale of natural resources and livestock sales. Reliance on agriculture is reported by 30% of households, while sale of natural resources for about 22% and livestock sales about 16% (Figure 6). Agriculture (cropping) and sale of agricultural products were most prevalent in Central Equatoria, Western Equatoria, Lakes, Warrap, and Western Bahr el Ghazal. Reliance on natural resources was commonest in Upper Nile (46% of households) and Northern Bahr el Ghazal (32%). On the other hand, livestock and livestock products is more pronounced in Warrap (32%) with Jonglei and Eastern Equatoria (31% each). A relatively low number of households reported skilled and salaried labour, with the highest percentage observed in Western Bahr el Ghazal (13%) followed by Northern Bahr el Ghazal, Lakes and Western Equatoria (11% each).
A comparison of income reliability for this season and same season last year (July/August 2014) indicates that there is a reduction in the reliability and sustainability of income sources for males though the opposite is true for their female counterparts. Figure 7 shows that households across the country relying on poor and unsustainable income (such as sale of natural resources—firewood, charcoal, poles etc.) have increased by more than half. Poor and unsustainable income activities have increased in all states with the exception of Upper Nile, where households relying on such income activities decreased by 12% this year as compared to same period last year.

Diversification of household income activities is a key factor to household food security. Households with more access to reliable and sustainable income (e.g. livestock, cropping, salaried work etc.) generating activities are more food secure than households who do not have these benefits, and rely on sale of natural resources such as Upper Nile, Northern Bahr el Ghazal and Western Bahr el Ghazal with 46%, 32% and 27%, respectively (Figure 7).
Food insecurity has worsened across large areas of South Sudan especially in Greater Equatoria and Bahr el Ghazal Regions compared to the same season last year. Apart from the lean season decline in food consumption levels, the current situation also explained by the combined effect of conflict, an unfavorable macroeconomic context, and market shocks. These factors significantly contributed to the sharp decline in food access and livelihood opportunities compared to typical lean season levels. Cereal prices continue to rise in key markets.

Over 50% of the rural population rely mainly on markets for their food supply. The proportion is higher in Northern Bahr el Ghazal and Western Bahr el Ghazal states, where 73% and 65% respectively are dependent on markets. In these states, food prices were higher than in August 2014 and when compared to the five-year average. The retail price for white sorghum, a staple commodity in most households’ diets, increased by 23% and 43% in Aweil and Wau, respectively. This has resulted in the high food expenditure share (household whose expenditure share on food is above 75%) in Northern Bahr el Ghazal. A significant proportion of income in these states is spent on food (more than 65%) making these populations more vulnerable to price shocks, which in turn negatively affects their food security when staple food prices increase.

Similarly, insecurity along trade routes, economic downturn characterized by shortage of fuel and inadequate US Dollar currency as well as low local production of major cereals is starving the markets of essential commodities in most parts of the country, especially in the conflict states. Supplies to markets come from local production and from neighboring countries. All markets have witnessed continuous increases in prices, but also significant market disparities in prices. For example, a malwa (3.5 kilograms) of white sorghum stood at 30 SSP in Juba’s Konyokonyo market while the same unit costs 13 SSP and 15 SSP in Torit and Kapoeta, respectively (Figure 8).

Despite the relatively good local production, Western Equatoria also witnessed significant increases in staple food prices: sorghum and maize increased respectively by 18% and 20%, which is more than double their respective levels in 2014.

Despite gradual improvement of the security situation in the country following the signing of the current Compromise Peace Agreement (CPA) the levels of insecurity in Greater Upper Nile states remain high. Fighting has been reported in Malakal and Melut (Upper Nile), Leer, Guit and Rubkona (Unity) and Ayod and Duk (Jonglei). This has reduced the flow of consumer goods, leading to increased prices and limited trade supply, even during the harvest period. Currently, the price of white sorghum increased by 49% in

![Figure 8: White sorghum retail price from selected markets](image-url)
Malakal and 18% in Rubkona. In the states neighbouring the conflict areas, like Rumbek price increases were observed with price a malwa (3.5 kilograms) of white sorghum rising by 9%, to 33 SSP.

**Household expenditure patterns**

On average, more than half of households’ expenditure is dedicated to food (54%). Figure 9 shows that the highest levels of food expenditure is observed in the Greater Bahr el Ghazal region (Northern Bahr el Ghazal at 76% and Western Bahr el Ghazal at 66%). The two states also register the highest proportion of households relying on markets as their principal sources of food (Northern Bahr el Ghazal 73% and Western Bahr el Ghazal 65%). The high expenditure share on food in Northern Bahr el Ghazal is attributed to the recurrent cereal deficits, which has been exacerbated during the lean season.

The high share of food expenditure observed across the country is partly attributed to the high food prices currently recorded in the main markets of South Sudan but also to the overall low local production in the economy. The Greater Equatoria states have the lowest average expenditure shares on food (Western Equatoria 32% and Central Equatoria 40%) with the exception of Eastern Equatoria where share of expenditure on food is 61%. In Central Equatoria and Western Equatoria, 44% and 58%, respectively, rely on own production as opposed to sourcing from the markets.

**Shocks experienced by households**

Overall, the most frequent shocks affecting the rural population this season are lack of free access/movement (28%), weeds and pests (21%), and sharing households with returnees/internally displaced persons (IDPs) (20%). Insecurity/violence and high food prices as shocks affecting households were reported by 8% and 6%, respectively compared to July 2014 when these shocks were reported at 15% and 24% of the households (Figure 10). This could be explained in part by the fact that Unity, where the ongoing conflict has escalated since April 2015, is not part of the current survey, precisely because of insecurity.

The prevalence of shocks such as lack of free access/movement, livestock diseases, floods, living with returnees/IDPs and weeds and pests have increased among households this season as compared to last season and these have a negative impact on households’ participation in agricultural production, which is one of the main food sources. Lakes, Upper Nile and Western Equatoria were most affected by insecurity with prevalences at 20%, 14% and 13%, respectively, which confirms trends from the previous season. The
recent upsurge of insecurity incidents in the Greater Mundri (Mundri east and West and Mvolo counties) explain the observed high prevalence.

Areas reporting the highest levels of price as a shock were: Western Equatoria (17%) and Upper Nile (11%). Weeds and pests have been reported by most households because they have a negative impact on the current livelihood of the season – farming.

**Coping strategies in response to food insecurity**

In order to cope with shocks, households applied a number of coping strategies. About 34% of the interviewed households applied both medium\(^2\) (31%) and high\(^3\) (3%) consumption related coping strategies (mainly shifting to less preferred food commodities, reducing the amount of meals or borrowing food from relatives or friends). A small percentage of households (3%) adopted high level coping strategies including like going for an entire day without eating.

Figure 11 shows that states with the highest levels of high consumption related coping (skipping a whole day’s meal) were Warrap (14%) and Lakes (5%). On the other hand Greater Equatoria has the lowest levels of households that were using any diet-related coping

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\(^2\) This refers to the use of moderate diet related coping—primarily borrowing food from relatives or friends, reducing number of meals or even shifting to less preferred and inexpensive foods.

\(^3\) High coping strategy index is likely to constitute households that have more frequent application of restricting adult consumption in order for small children to eat.
Based on a total of 3,141 children included in the anthropometric analysis, the weighted national Global Acute Malnutrition (GAM) was 13.0% (CI 11.8% – 14.4%) based on WHZ<-2 and/or oedema whilst severe acute malnutrition stood at 2.6% (CI 2% – 3.3%) using WHZ<-3 and/or oedema (Table 1). However, this estimate does not include Jonglei, Unity and Upper Nile whose data was not included in the computation. These malnutrition rates show that the situation is relatively stable compared to same period in 2014 (Figure 12) with the only notable deterioration observed in Northern Bahr el Ghazal and Lakes states.

Table 1: Prevalence of acute malnutrition by state

The nutrition situation in South Sudan is concerning. Northern Bahr el Ghazal and Warrap have the highest levels of under nutrition (24.2% and 17.6%, respectively). In the two states, GAM has been consistently above the emergency threshold (greater than 15%). Key contextual factors related to poor food consumption and inadequate maternal/child care correlate with the poor nutrition situation. The persistent inter-communal conflicts in parts of the Greater Bahr el Ghazal coupled with increasing food prices has compromised access to and consumption of food and is affecting child nutrition. Additionally, these states have registered very high levels of morbidity among children and wasting among women. A strong correlation was found between these two indicators (morbidity and wasting among women) and acute malnutrition in children.

Nutrition indicators were not computed for Unity, Jonglei and Upper Nile states during this current assessment as a result of inadequate sample for children. However, SMART surveys that have been conducted in the Greater Upper Nile states (prior to this assessment) indicate that GAM rates in the majority of areas is above the emergency threshold (>15%), with the worst malnutrition levels observed in Unity. Extremely high levels of GAM have also been reported in Protection of Civilian sites and among IDPs (34% GAM in Bentiu POC and 22% GAM among Renk IDPs). High levels of acute malnutrition in these states...
are attributable to the effects of ongoing conflict which has hindered humanitarian access, affected crop and livestock production, rendered markets non-functional, and led to major population displacements.

Overall, the nutrition situation in South Sudan calls for continuing interventions specifically those targeting the Greater Upper Nile states, as well as Warrap Northern Bahr el Ghazal and Lakes, in order to address the high level of child under nutrition.

**Women Nutrition**

Among the women assessed (N=2,177), 10.5% were pregnant, 45.8% were lactating and 43.7% were neither pregnant nor lactating. Wasting based on MUAC (less than 230mm) was prevalent in 19.6% of the women, indicating an increasing trend when compared to the same time GAM of 17.1% among women 15 to 49 years.

Wasting was 20.2% among pregnant and lactating women and does not differ significantly from wasting among non-pregnant, non-lactating women (18.6%), implying that programmes that address women nutrition need to target all women of reproductive age.

**Retrospective morbidity**

Overall, results showed high levels of morbidity with nearly four in every ten children under five suffered from at least one of the common childhood illnesses.

Diarrhoea and fever are the most common illnesses that afflict children in South Sudan (Figure 14). It is also important to note that morbidity has remained high compared to previous assessment in 2014 and earlier this year. Additionally, the high morbidity prevalence is reported in all states.
Analysis also indicates that children that suffered from at least one of the illnesses had a 20% higher chance of being acutely malnourished than those that did not suffer any illness. Addressing gaps in disease prevention measures will likely result in gains in addressing the nutrition situation in South Sudan.

### Household consumption of Vitamin A, Iron and Protein rich foods

The nutrition quality analysis of household food consumption provides an indicator of nutrient gaps at the household level. Overall, among the groups included in the analysis, protein from animal sources was least consumed, notably in Western Bahr el Ghazal, Central Equatoria, Northern Bahr el Ghazal, Upper Nile and Jonglei states with more than half of the interviewed households having not consumed any animal protein foods in the seven days prior to the assessment (figure 15). Although Jonglei and Western Bahr el Ghazal states registered relatively good food consumption in aggregate terms, with the analysis of the nutrient quality shows significant consumption gaps in intake of animal protein rich foods.

Poor/inadequate consumption of protein rich foods in Western Equatoria and Lakes also define the markedly high levels of poor food consumption. The survey reveals that even states dominated by livestock rearing like Lakes, Warrap and EES still report deplorably high levels of inadequate intake of protein from animal sources.

Overall, Vitamin A rich foods are more frequently consumed in the Greater Equatoria region. The role of these nutrients is evident in the assessment’s findings: households that consumed no vitamin A and/or no animal or plant protein rich foods were significantly more likely to have a wasted child, a wasted woman, high prevalence of inadequate food consumption and poor food security status than their counterparts with good intake of these
foods. It follows, therefore, that delivery of protein component of the food ration as well as continued supplementation for children and women is necessary.

**Humanitarian assistance received by households**

About 21% of the assessed households had received some form of humanitarian assistance during the three months preceding the assessment, of which 81% had received food assistance. The Greater Upper Nile states had the highest number of recipients of general food assistance: Upper Nile, 96% and Jonglei, 79%, followed by Lakes and Western Bahr el Ghazal which also reported by high receipt of food assistance. Most of the food assistance received in the Greater Equatorias and Greater Bahr el Ghazals were typically through livelihood support and targeted nutrition supplies whereas the Greater Upper Nile mainly reported benefitting from general food distributions.

Of the populations that received food assistance, 52% received general food distributions, 25% participated in food for asset creation activities, 14% received school meals and 9% received supplementary nutrition support. Female-headed households are the highest recipients of general food distributions (75% against 72% of their male counterparts), while male-headed households were more likely to have participated in food for asset creation programmes (12% versus 9% of female-headed households).

**Food Security outlook**

The food security situation in South Sudan, especially in the Greater Upper Nile and Greater Bahr el Ghazal regions (particularly Warrap and Lakes) will likely continue to be of greater concern. If the dry spells persist, then there is likely to be inadequate fish as well as lack of pastures and water for animals. Rains as projected to be normal to below normal in many parts of the country due to the El Nino effects And that negatively affect the crop prospects for this year given the delays in rainfall reported this year.

In addition, the food security situation in the Greater Equatoria region has worsened and that might continue if the erratic rains persist during the second cropping season. On the other hand, onset of the harvest season, even if minimal, could stabilize market prices in Equatorias.

The continuing political instability will weigh heavily against opportunities for income and market functionality thus continuing to hinder household food access since approximately 52% of households in South Sudan depend on markets. At the same time, the depreciation of the SSP is likely to continue discouraging importation from Uganda further limiting food availability. The concurrent below average harvest projections in Ethiopia and Sudan further exacerbate the risk of gaps between internal requirements and internal availability, whose effects may become tangible over the next months. Thus, humanitarian assistance is projected to remain the most viable remedy for the majority of vulnerable households in the country. The most vulnerable groups are IDPs both in camps and in communities, the urban poor and most residents of Greater Upper Nile and parts of Greater Bahr el Ghazal who either had limited production in the previous season or are already severely affected by the downward spiraling of prices.
**Methodology**

The Food Security and Nutrition Monitoring System (FSNMS) is a collaborative effort involving over 35 organizations (government, UN, NGOs and community-based organizations) that aims to provide periodic food security findings that are representative at national and state levels. It provides and allows monitoring of trends and changes in key food security and nutrition indicators over time. Data were collected from 28 clusters/sites randomly selected from each of the ten states based on probability proportional to sizes, factoring in population movements in the case of Greater Upper Nile. In the second stage, after segmentation and/or household listing at the village level with a total of 15 households were randomly selected and surveyed in each cluster/site. One community/key informant interview (where applicable) was conducted at each selected site to provide supplementary information that would explain some of the quantitative findings.

The data collection process experienced accessibility and security challenges: three sites each in Jonglei Unity and a site in Eastern Equatoria were not surveyed. However, the number of sites surveyed were still sufficient to provide valid and representative information.

Data collection from a total of 3,906 households was undertaken in Aug/Sep 2015, followed by analysis and reporting in May 2015. Of the assessed households, 26% were female-headed. The average household size is seven persons.

In understanding the food security situation, the below basic indicators were used:

Food consumption was derived using a seven-day recall period. Food items were weighted based on their nutritional value to establish a food consumption score that classifies the households having either acceptable, borderline or poor food consumption.

The reduced Coping Strategies Index was derived from the severity and the frequency of the consumption coping strategies applied by households in the last seven days prior to the assessment. More severe coping strategies are often those with irreversible effects on the households’ livelihoods.

Livelihood coping mechanisms was also analyzed with the coping mechanisms categorized into: emergency, crisis and stress coping mechanisms.

Household food security categories were established according to a composite index derived from household’s food consumption indicators and coping capacity (using indicators measuring economic vulnerability and asset depletion). From the CARI analysis, households are grouped into five categories: severely food insecure (SFI), moderately food insecure (MFI), marginally food secure (MFS) and food secure (FS).

**State abbreviations**

Western Equatoria (WES), Eastern Equatoria (EES), Central Equatoria (CES), Upper Nile (UNS), Western Bahr el Ghazal (WBS), Northern Bahr el Ghazal (NBS)