



FOOD SECURITY AND NUTRITION

South Sudan

Data collected in December
2019

February 2020



vam
food security analysis



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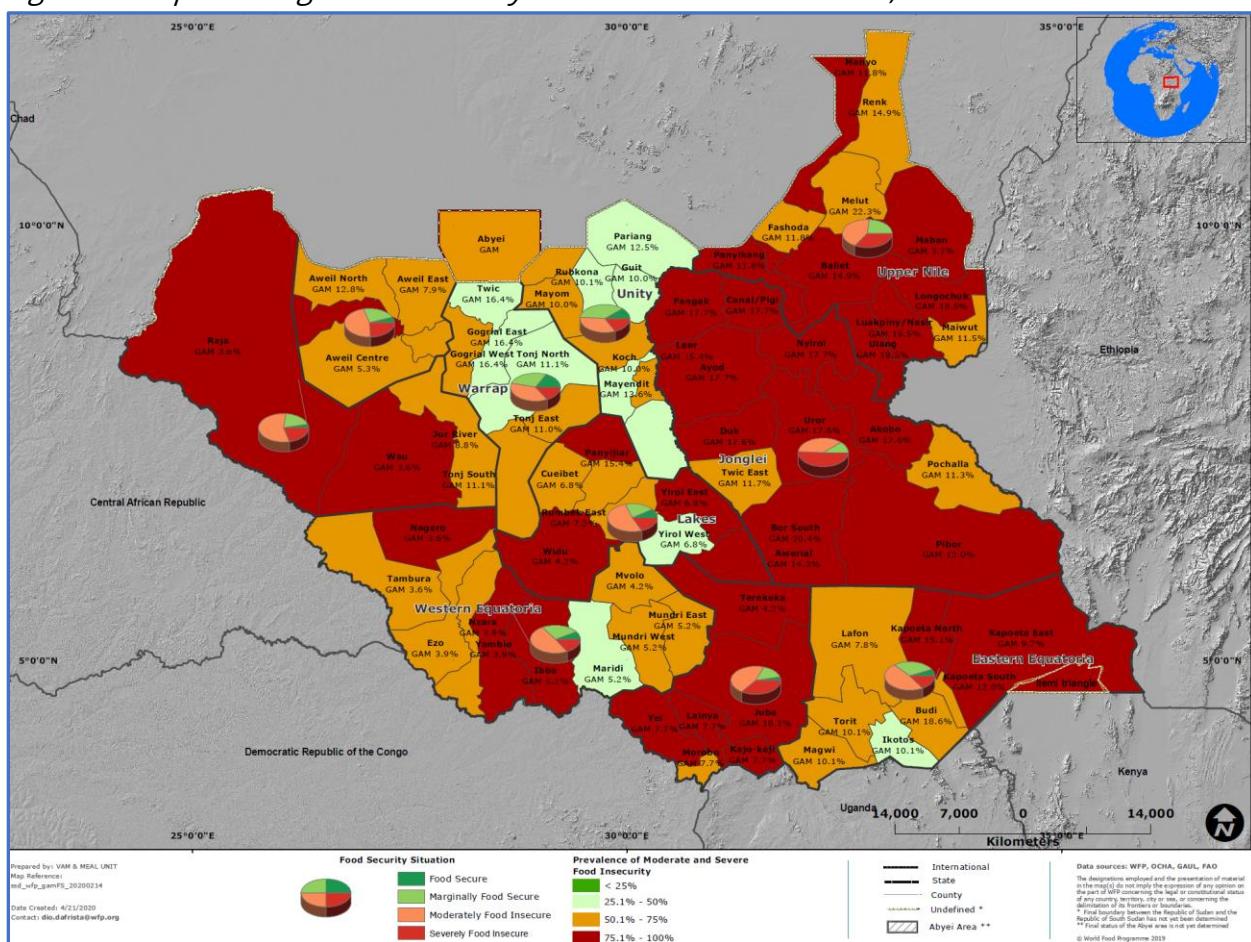
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Key Findings

Following the completion of the major harvest of crops in October and November 2019, the food insecurity situation across South Sudan has decreased slightly, while rates of malnutrition have increased marginally as compared to December 2018. Despite the marginal decrease in the proportion of food insecure households, the effects of floods and associated population displacements during the last rainy season, along with localized incidence of insecurity, persistent macro-economic challenges, sustained depletion of assets over several years and massive loss of livelihoods have continued to drive high levels of acute food insecurity across the country (Figure 1).

Figure 1: Map showing food insecurity and malnutrition situation, December 2019



With the consolidation of the peace process through the formation of a government of national unity in February 2020, there is renewed optimism about the prospects for economic and social development and the re-establishment of disrupted livelihoods in the

country which would contribute to improvement in the general well-being of the most vulnerable population and enable the worst affected households to meet their food needs.

The key findings from the survey include:

Food security overview

Based on the Consolidated Approach to Reporting Indicators of Food Security (CARI), 69.2 percent of households across South Sudan were food insecure in December 2019 of which 46.6 percent were moderately food insecure while 22.6 percent were severely food insecure. The marginal decrease in the prevalence of food insecurity by nearly 6 percent from 75 percent in August 2019 is the result of slight improvement in access to food from the main harvest in October and November while modest improvements in access to markets and livelihoods have also helped to sustain the current level of food security. Compared to December 2018 when 74.0 percent of households were affected, food insecurity in the country has decreased by 4.8 percent, with the situation assessed to have improved in 7 out of the 10 states. The improvement is attributed to better crop harvest in some counties and improved access to markets and livelihoods following the signing of the revitalized peace agreement in September 2018. Crop destruction by floods, too much rain and unusually high food prices together with insecurity are the key drivers of food insecurity in 2019/2020.

Nutrition Overview

Malnutrition rates estimates remained at serious levels in the post-harvest season since 2017. However, the increase of one percentage point from 2018 assessment to December 2019 is not significant. Several aggravating factors, explain the high malnutrition rates and these include; high morbidity rates in almost all states, compounded by poor quality of diet with only 4 percent of children achieving the required MAD (minimum Acceptable diet) and low WDD; The other aggravating factor is flooding that contributed to internal displacement in some locations, disrupting households' livelihoods and water.

The serious malnutrition rates were mitigated through strong and continuous treatment programme that ensured malnutrition did not escalate beyond the normal trends. Nutrition cluster and partners were also keen to monitor the flooding and coordinated activities that ensured continuity of treatment.

A correlation analysis between malnutrition and other factors showed significant association between malnutrition and food security, malnutrition and diseases, and malnutrition and feeding practices. Although there is a lot of treatment programs with significant coverage, efforts to strengthen preventive approaches need to be put in place. It is evident that addressing the sustained rates of wasting will need integrated approaches including nutrition treatment programs.

Nutrition status

Overall, the prevalence of Global Acute Malnutrition (GAM) and Severe Acute Malnutrition (SAM) in December 2019 was 12.6 percent and 3.3 percent respectively, reflecting a slight increase over the same period in 2018 when the prevalence rate was 11.6 percent for GAM and 2.3 percent for SAM. Seasonal improvement in the nutrition situation was observed in most parts of the country but gains in Upper Nile and Jonglei States were reversed by the severe impact of floods in those areas. While the nutrition situation improved in Unity and Western Equatoria States largely due to improved security conditions and the resumption of peace, the counties of Duk and Akobo were assessed to have severe levels of malnutrition. Persistent poor WASH services across the country, along with the outbreak of measles in Budi and Aweil south further contributed to high prevalence of malnutrition.

Dietary diversity and Quality

At the national level, 38.3 percent of households consumed 0-2 food groups in December 2019, down from 44.4 percent in December 2018. As compared to December 2017, the prevalence of poor or low dietary diversity has also decreased by 5.2 percent. The prevalence of inadequate diets increased in Western Bahr el Ghazal and Warrap where the proportion of households which consumed 0-2 food groups in December 2019 increased by 6 percent and 10.3 percent respectively when compared to December 2018. However, this decreased in Central Equatoria (15 percent), Lakes (21 percent), Unity (6 percent), Northern Bahr el Ghazal (21 percent) and Western Equatoria (13 percent). The decrease being either the result of temporary improvement in availability of food stocks or improved access to food assistance. On average, household consumption of cereals and vegetables was 5.3 days and 2.94 days respectively while the consumption of protein rich food was 0.85 days in December 2019. This reflects some slight improvement over December 2018, when households consumed cereals for 4.8 days, vegetables for 1.5 days and protein rich foods for 0.82 days on average.

Livelihood coping

The disruption of livelihoods and reduced agricultural activities associated with conflict conditions, along with low purchasing power has compelled households to resort to the use of livelihood-based coping strategies which have the tendency to erode the future resilience and productivity of those households. Generally, 56.2 percent of households across the country reported using emergency (43.3 percent) or crisis coping strategies (12.9 percent) while 10.5 percent used stress coping strategies because of lack of food or money to buy food during the 30 days preceding the assessment. At the national level, the use of crisis and emergency coping strategies reduced by 8.3 percent from 64.5 percent in December 2018 to 56.2 percent in December 2019. Most households who adopted these strategies had their crops destroyed by floods during the last growing season or faced constrained access to food due to high market prices and conflict-related food security challenges.

Monthly income and expenditure

Despite the impact of insecurity on the livelihoods, most households continue to rely on agriculture (37.6.2 percent), sale of livestock (12.6 percent) and the sale of firewood and other natural resources (7.7 percent) as their main sources of income. Some 37.3 percent of households across the country reported a reduction in their income over the previous year. Loss of income sources and changes in market conditions are main reasons for the decrease in household income. On average, 73.9 percent of household expenditure was on food, with expenditure on cereals accounting for 48.6 percent of the total food expenditure in December 2019. This represents a slight decrease in both expenditures on food and cereals when compared to August 2019, when it stood at 80 percent and 47 percent respectively.

Access to land for cultivation

Overall, 86.5 percent of households reported having access to land and 91.9 percent of those households actually planted crops during the past growing season. At the national level, the proportion of households who planted crops increased by 14.2 percent from 77.7 percent in December 2017 to 91.9 percent in December 2019. Despite the improving security situation and increasing proportion of households engaged in crop cultivation, the low proportion of households which had own-produced food stocks is clearly related to other constraints affecting agricultural production. The incidence of pest and diseases, floods, shortages of seeds and lack of agricultural inputs are the key challenges that constrained agricultural production during the last growing season.

Cereals production

While agricultural households in South Sudan typically rely on the cultivation of cereals for their own consumption, local production is mostly not adequate to meet the consumption needs of the entire population as more than half of those households produce at subsistence level and significant imports are required to cover the deficit. Of the 91.9 percent of households which cultivated crops during the 2019 agricultural season, 68.4 percent cultivated sorghum while 38.6 percent cultivated maize with only 8 percent cultivating millet. On average stocks of sorghum are expected to last for three months while maize and millet stocks are expected to last for 2.5 months each. As a result, households that rely solely on own-produced food would likely deplete their stocks before the normal start of the lean season in May 2020.

Livestock ownership

As livestock is an important source of meat and milk and the main source of income for 25.5 percent of households, livestock ownership is important for food security in rural areas of South Sudan. Some 48.9 percent of households reported owning livestock in December 2019, down from 52 percent in August 2019 and 50.6 percent in December 2018. The slight decrease in livestock ownership is attributed to the impact of the extensive floods between October and November 2019 which resulted in livestock losses for pastoral households due

to the outbreak of diseases. As compared to December 2018, 58.7 percent of households reported large (36.3 percent) to small (22.4 percent) decrease in livestock, with 50 percent of those households also citing disease outbreak as the biggest cause of the decrease in livestock numbers.

Water

Round 25 reported that 34 percent of households reported access to an improved water source in under 30 minutes without facing protection concerns. Thus, the remaining 66 percent of the households from across the country either rely on unimproved or surface water sources. The highest proportion of households relying on surface water or unimproved water sources were found in Greater Equatoria (71 percent).

Sanitation

Access to sanitation remains remained low, split between improved latrines (17 percent of households reporting owning a latrine in their compound), latrines shared between a small group of households (3 percent), and communal or shared latrines (4 percent). The gap continued, between those with access and those who reported that a latrine was their primary place of defecation – 23 percent access and 19 percent use.

WASH

Only 15 percent of HHs reported ownership of three key WASH items - buckets/jerrycans, soap, and mosquito nets. These key indicators show that WASH infrastructure coverage alone, for instance, water points and latrines, is weak in South Sudan. However, the impacts of poor WASH coverage are measurable through a multi-sectoral view. Poor access to WASH services and goods combined with high levels of food insecurity has a detrimental impact on the health of the most vulnerable, as seen through the high prevalence of malnutrition and water-borne diseases, with 72 percent of households reporting members being affected by a water or vector-borne disease. The most commonly self-reported diseases were malaria, fever and acute watery diarrhea.

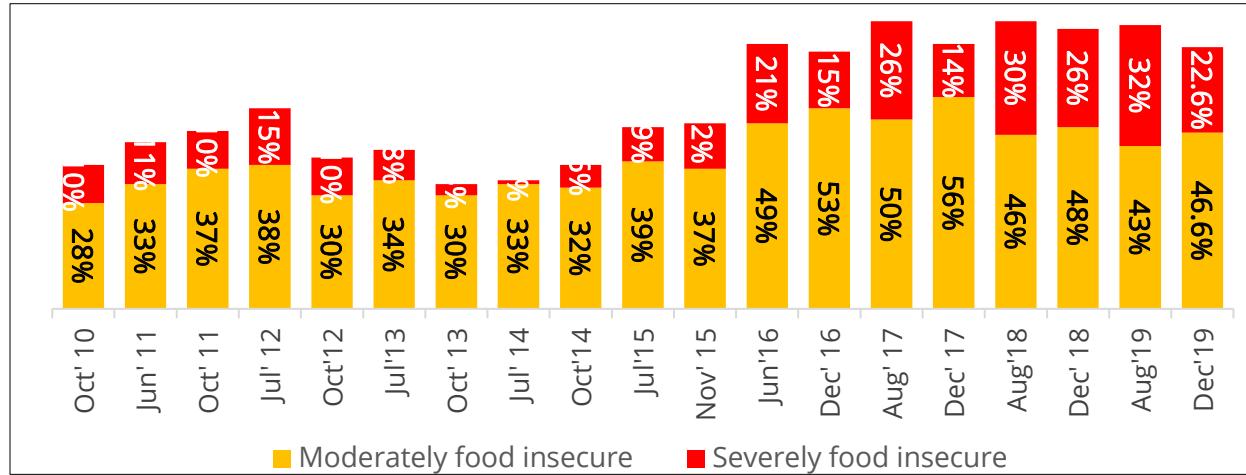
1. Food Security Overview

1.1. Overall food security trends¹ (CARI)

Based on the Consolidated Approach to Reporting Indicators of Food Security, 69.2 percent of households across South Sudan were food insecure in December 2019 of which 46.6 percent were moderately food insecure while 22.6 percent were severely food insecure (Figure 1.1). The food insecurity marginally decreased by nearly 6 percent from 75 percent in August 2019. Similarly, there has been a decrease of 4.8 percent from 74.0 percent of households affected by food insecurity in December 2018, with the situation assessed to have improved in 7 out of the 10 states. This was a result of the slight improvement in access to food from the main harvest in October and November coupled with better access to markets and livelihoods.

Despite overall improvements, household food insecurity remains high across most counties of South Sudan. The high levels of food insecurity are driven by continued isolated incidence of insecurity, which caused population displacements and livelihood disruptions; the worst floods in years led to crop destruction that impeded households' access to various food sources such as wild foods, fish and livestock products. Furthermore, high prices of food commodities and sustained depreciation of the South Sudanese pound against the United States Dollar has reduced the purchasing power of vulnerable households who are mostly dependent on markets to meet their food and other basic needs.

Figure 1.1: South Sudan Food Insecurity (CARI) Trends 2010 to 2019

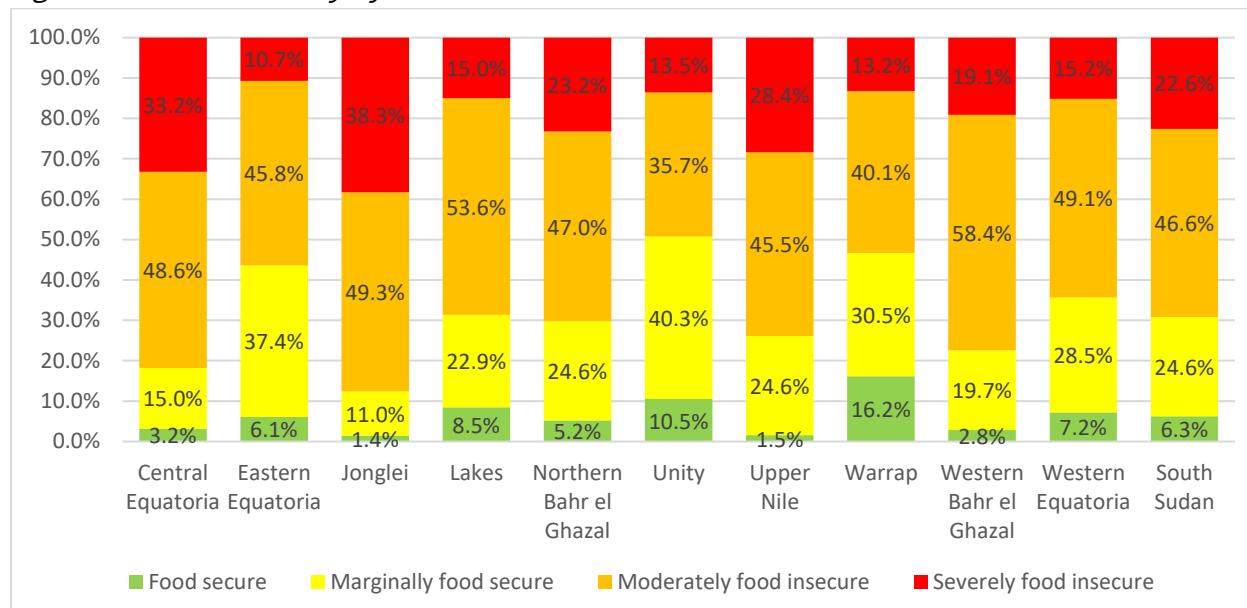


The highest proportion of food insecure households are found in Jonglei (88.3 percent) Central Equatoria (82.3 percent) and Upper Nile (75.6 percent) (Figure 1.2). For Jonglei, at least 4 in every 5 households in all counties were food insecure, with most of the affected

¹ The FSNMS Round 25 carried out in November to December 2019 sampled 8,529 households in 78 counties. The sample design and sample calculation was based on standard food security indicators. Sample calculation for food security component was representative at county level. In each county, a total of 9 clusters were randomly selected and then 12 households (HHs) within each cluster randomly selected to be included in the assessment.

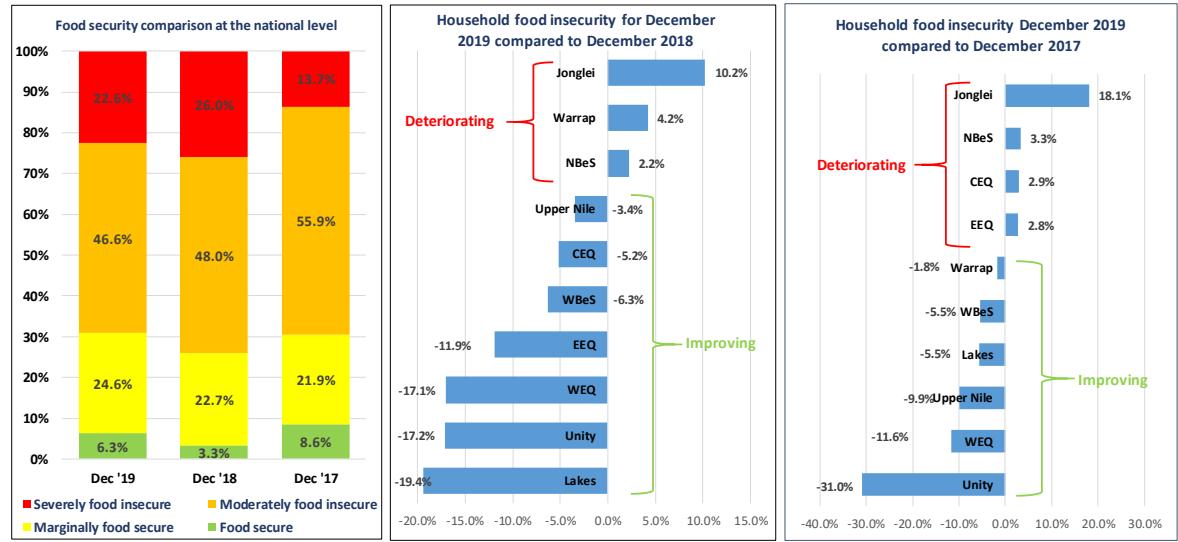
facing severe food insecurity except for Pochalla and Twic East counties. The high prevalence of food insecurity in Jonglei was driven by widespread crop destruction by floods in Akobo (41 percent), Duk (85 percent), Fangak (82.4 percent), Pibor (20.5 percent), Pochalla (38.6 percent) and Twic East (36.9 percent p). In Central Equatoria, food insecurity was driven by the combined impact of excessive rains/floods, unusually high food prices as well as loss of livelihood and income earning opportunities. In Upper Nile counties, food insecurity was mainly driven by crop damage by floods and excess rains, loss of livelihoods and income, coupled with unusually high food prices.

Figure 1.2: Food Security by State in December 2019



Whilst the food insecurity across states varied, there has been notable improvements in most states compared to December 2018 and 2017. Compared to December 2018, improvements have been noted in Lakes (19.4 percent), Unity (17.2 percent), Western Equatoria (17.1 percent) and Eastern Equatoria States (11.9 percent) but deteriorated in Jonglei by 10.2 percent and Warrap by 4.2 percent (Figure 1.3). This improvement could be attributed to an increase in the proportion of households who cultivated crops from 71.2 percent in January 2019 to 91.9 percent in January 2020 and increased access to food assistance from 21.9 percent of households in December 2018 to 25.2 percent in December 2019.

Figure 1.3. Comparing December 2019 to December 2018 by State



The prevalence of food insecurity was higher among IDP returnees (85.3 percent) and IDPs (80.4 percent) than among residents (65.5 percent) and refugee households (21.7 percent). This was attributable to IDPs having lost their livelihoods and income earning opportunities and are prone to shocks therefore limited purchasing power compared to resident households, whilst refugees receive food assistance on a monthly basis.

Generally, the food insecure households have access to various sources of income, a greater involvement in the sale of firewood/natural resources, the sale of food assistance and the gathering of wild foods compared to food secure and marginally food secure households. Hence, a higher proportion of food insecure households are reliant on assistance (8 percent), gifts from friends and family members (3.3 percent) and gathering of wild foods (7.3 percent). Furthermore, a higher proportion of food insecure households were affected by loss of livelihoods and reduced income, insecurity and violence, the impact of livestock disease outbreak and crop destruction by floods.

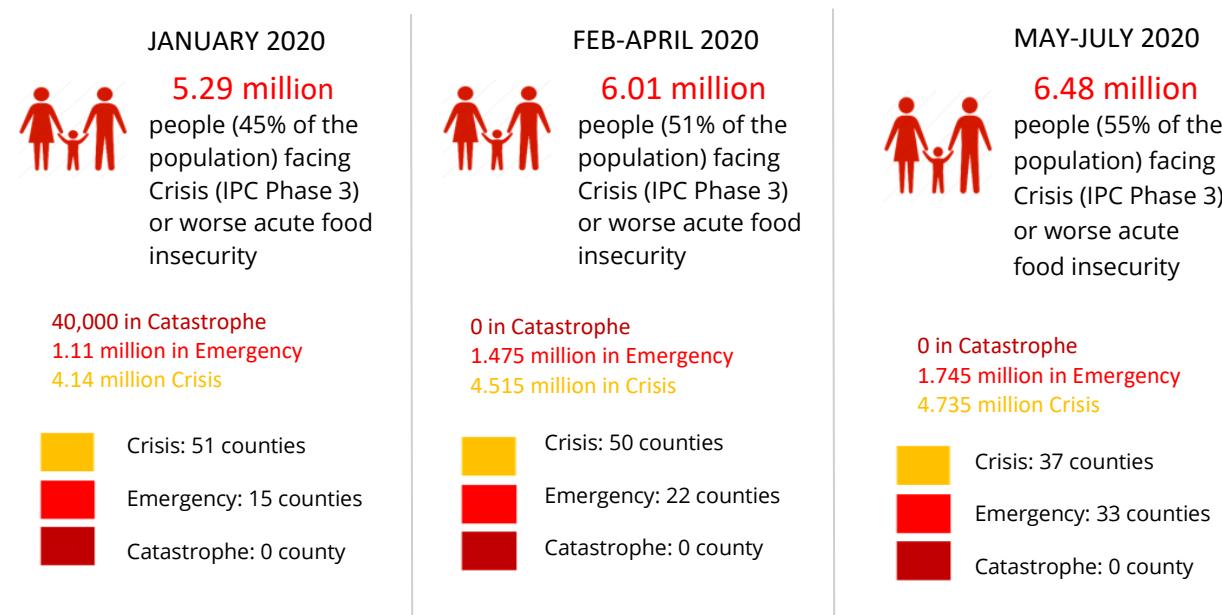
1.2. Integrated Phase Classification (IPC)² food security trends

The Integrated Phase Classification³ (IPC) has been conducted on regular basis at the state level since its introduction in 20027. IPC provide relevant information to decision makers

² The Integrated Food Security Phase Classification (IPC) is an innovative multi-partner initiative for improving food security and nutrition analysis and decision-making. The main goal of the IPC is to provide decision-makers with a rigorous, evidence- and consensus-based analysis of food insecurity and acute malnutrition situations, to inform emergency responses as well as medium- and long-term policy and programming.

regarding the severity of acute food insecurity and malnutrition. Hence, in January 2020 IPC was conducted for three periods: the current period (January 2020), first projected period (February to April 2020) and the second projected period (May to July 2020). The summary of key findings from these analyses are shown in Figure 1.4.

Figure 1.4: IPC January 2020 - current and projected analysis



During the current period (January 2020), 5.29 million people are estimated to be facing Crisis (IPC Phase 3) acute food insecurity or worse (Figure 1.5). Of this, 1.11 million people are facing Emergency (IPC Phase 4) acute food insecurity while 40,000 people are facing Catastrophe (IPC phase 5)⁴. As compared to January 2019, the proportion of the population facing Crisis (IPC Phase 3) or worse acute food insecurity has decreased by 9 percent.

⁴No counties were classified as in Famine (IPC phase 5) in January 2020 rather in some counties, fewer than 20 percent of the population were estimated to be in Catastrophe (IPC phase 5).

Figure 1.5: IPC map for current analysis period for January 2020

Despite an improvement in the situation in some areas compared to the previous year, the food insecurity levels remain elevated due to persistent poor macroeconomic conditions and the impact of flooding on livelihoods.

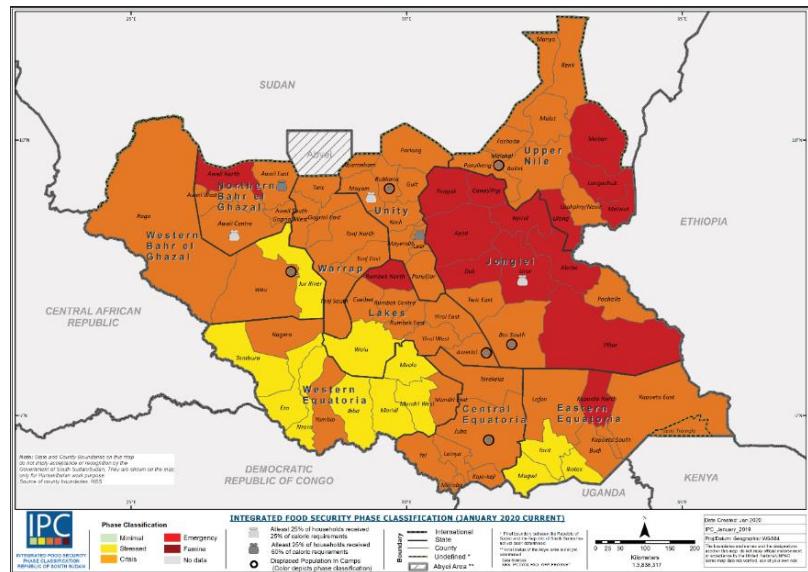
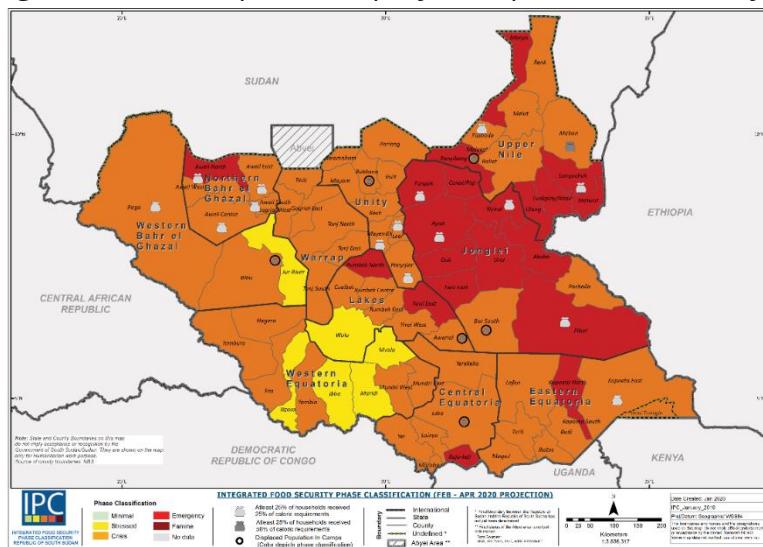


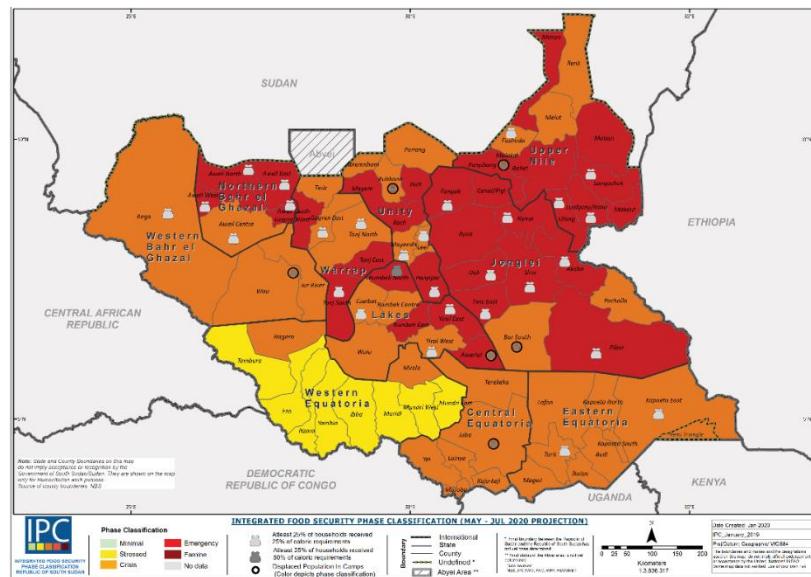
Figure 1.6: IPC map for first projected period of February to April 2020



During the first projected period of February to April 2020, a total of 6.01 million people (51.4 percent of the population) will likely face Crisis (IPC Phase 3) or worse acute food insecurity (Figure 1.6), with 20,000 people in the counties of Akobo and Duk estimated to be in Catastrophe (IPC Phase 5). As compared to February-April 2019, the proportion of the population facing Crisis (IPC Phase 3) or worse acute food insecurity has also decreased by 6 percent.

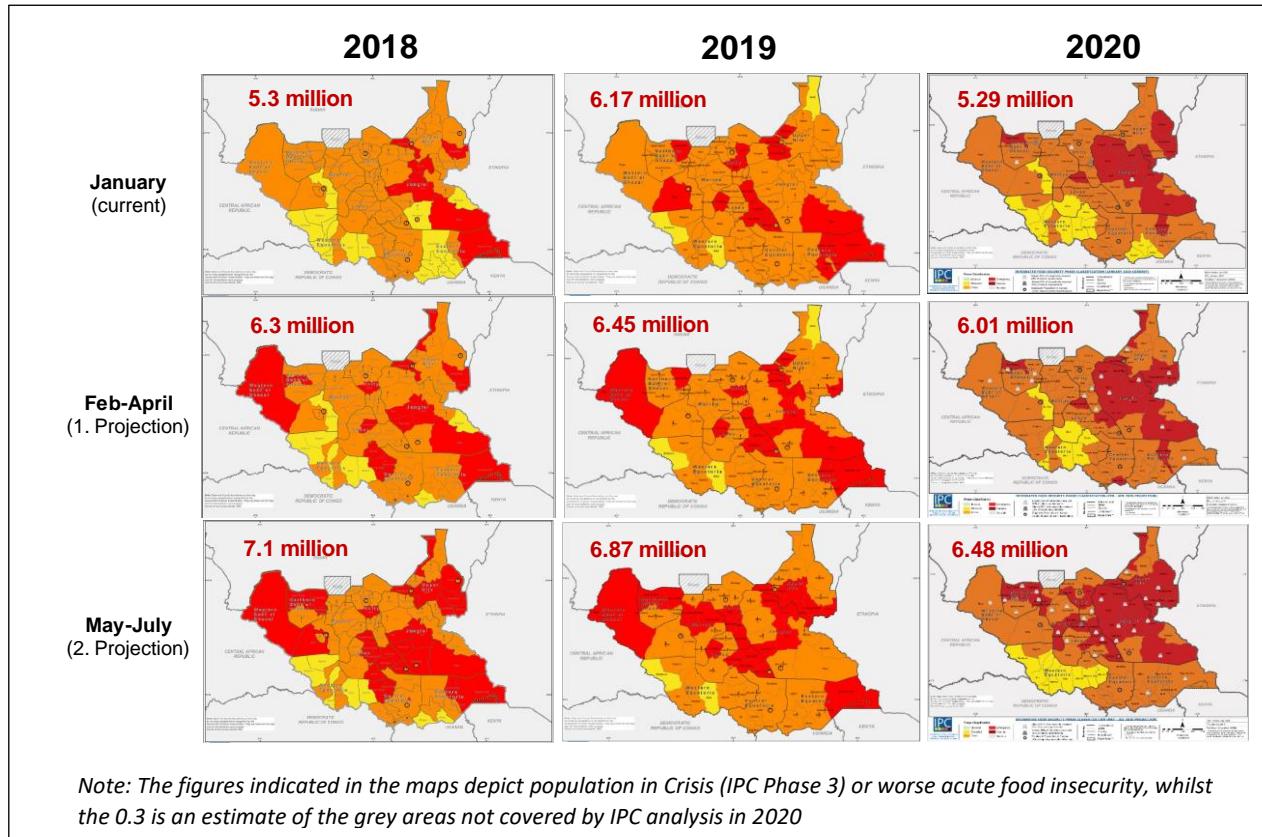
Figure 1.7: IPC map for second projected period of May to July 2020

During the second projected period of May to July 2020, a total of 6.48 million people (55.4 percent of the population) will face Crisis (IPC Phase 3) or worse acute food insecurity, which was 5 percent lower than the projected figures for January 2019 (Figure 1.7). The two projection analyses have factored in the presence of likely humanitarian food assistance.



Over the past 2 years, the proportion of population facing Crisis (IPC Phase 3) acute food insecurity or worse has decreased slightly. This was attributed to the impact of humanitarian assistance and improved security conditions that facilitated the access to markets and livelihood activities. In January 2020, 45 percent of the population was estimated to be facing Crisis (IPC Phase 3) acute food insecurity or worse compared to 54 percent in January 2019, and 48 percent in January 2018. During the first projected period from February to April 2020, 51.4 percent of the population was estimated to face Crisis (IPC Phase 3) or worse acute food insecurity, down from 57 percent for both February to April 2019 and 2018. Some 55.4 percent of the population will face Crisis (IPC Phase 3) or worse acute food insecurity from May to July 2020, down from 60 percent in May to July 2019 and 63 percent in May to July 2018 (Figure 1.8).

Figure 1.8: IPC maps trends for 2018 to 2020



Despite the apparent decrease in the population affected by acute food insecurity during the past two years, severe levels of acute food insecurity persist in several counties in the central and north eastern stretch of the country during the three analysis periods of 2020. Food insecurity in these areas (mostly Jonglei and parts of Upper Nile States) is driven by extensive floods which destroyed crops during the 2019 growing season, coupled with incidence of insecurity which disrupted livelihoods and constrained access to food. The most severe level of acute food insecurity conditions was found in the flood-affected counties of Akobo, Duk and Ayod.

2. Food Security Outcome Indicators

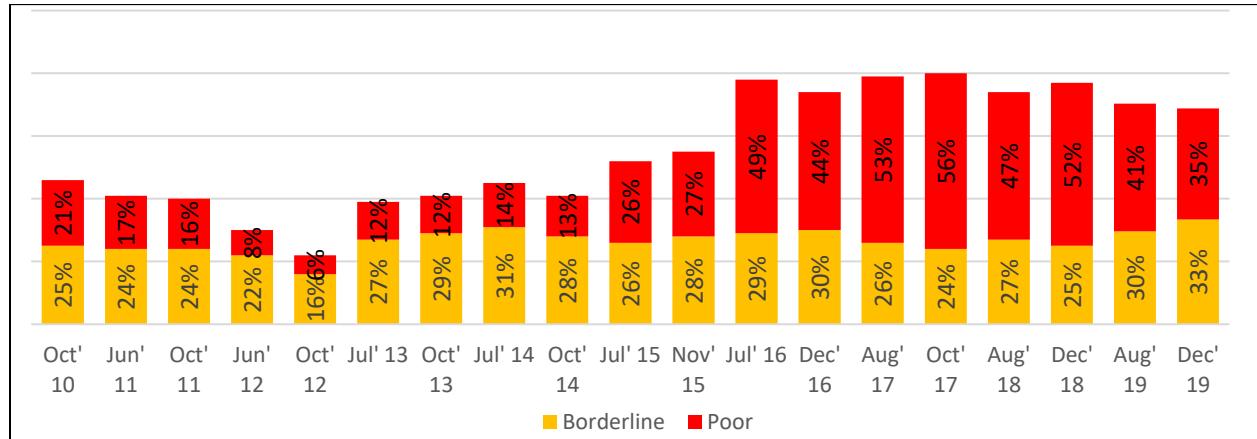
Across the country, the proportion of households facing severe food insecurity decreased to 22.6 percent in December 2019 from 26 percent in December 2018, resulting in a corresponding decrease in the total proportion of food insecure household from 74 percent in December 2018 to 69.2 percent in December 2019 which is consistent with the decrease in poor and borderline food consumption to 68.8 from 76.9 percent in December 2018.

Acceptable FCS increased from 23.1 to 31.2 percent	HDDS increased from 3.2 to 3.3	5.3 percent decrease in poor FCS
rCSI increased from 11.05 to 11.73	Severe Hunger increased by 2 percent	FES increased to 80 percent from 73.9 percent

2.1. Food Consumption

A total of 68.8 percent of households faced inadequate food consumption in December 2019, of which 35.4 percent had poor food consumption and 33.4 percent borderline food consumption. Only 31.2 percent of households had acceptable food consumption, a 9 percent increase from December 2018 (Figure 2.1).

Figure 2.1: Food Consumption Score

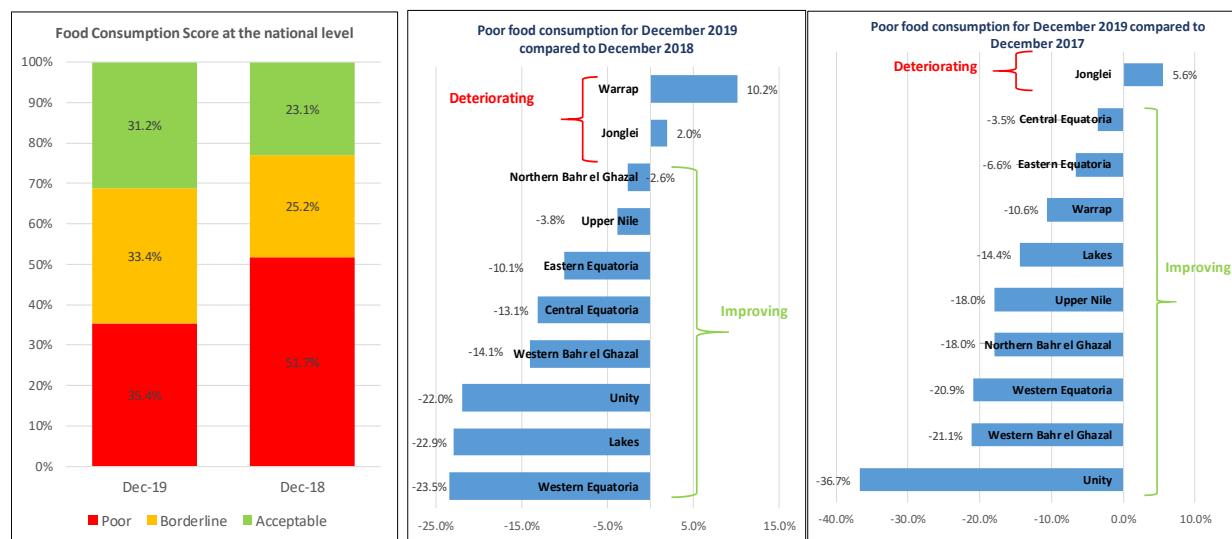


The proportion of households with inadequate food consumption has decreased consistently from 77 percent in December 2018 to 71 percent in August 2019 and to the current level of 68 percent. While the proportion of households with poor food consumption decreased from 52 percent in December 2018 to 41 percent and 35 in August 2019 and December 2019 respectively. The proportion of households with borderline food consumption increased from 25 percent in December 2018 to 30 percent in August 2019 and to 33 percent in December 2019 (Figure 2.1). On the other hand, the proportion of

households with acceptable food consumption has increased consistently since December 2017 from 19.9 to 32.1 percent, but remains below acceptable levels largely due to constrained economic access to food, slow recovery of livelihoods and continued exposure to shocks, which affects income levels and the purchasing power of households.

There was been a general improvement in food consumption across the states in 2019 compared to December 2018 and 2017. This was largely due to reduced proportion of households with poor consumption in Western Equatoria (23.5 percent), Lakes (22.9 percent), Unity (22 percent) Western Bahr el Ghazal (14.1 percent) and Central Equatoria (13.1 percent) (Figure 2.2). These states have benefited from reduced insecurity, access to humanitarian assistance and growing access to own food from agriculture production.

Figure 2.2 Changes in food consumption in December 2019 compared to December 2018 and 2017

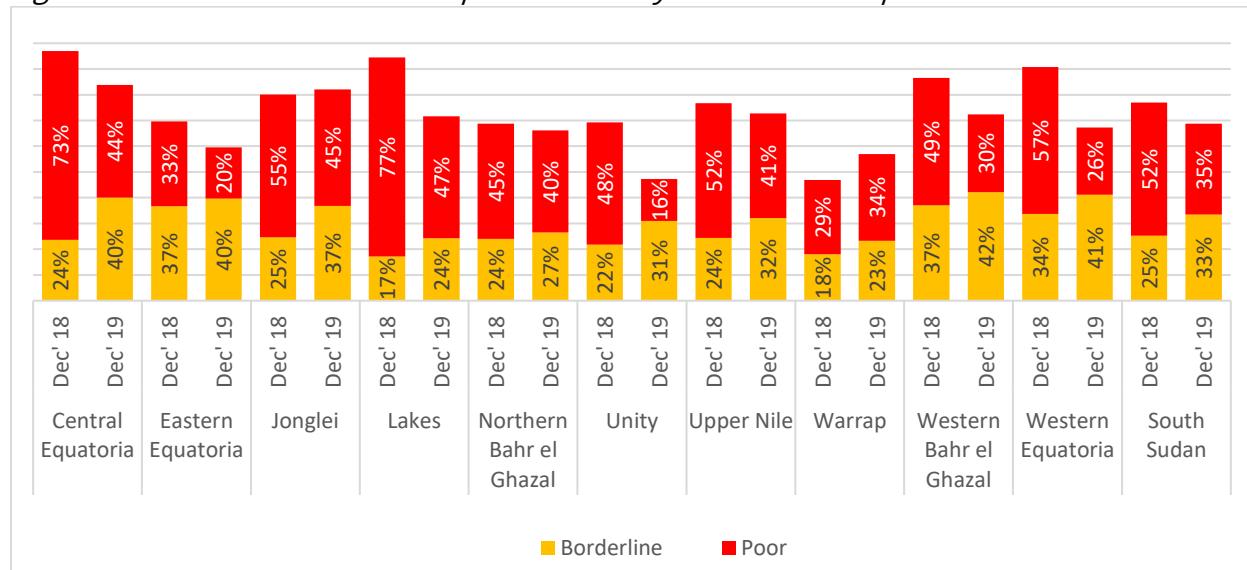


As the food consumption score was a proxy indicator of household caloric availability, the high proportion of household with poor and borderline food consumption was an indication that households consumed less nutritionally dense diets consisting mostly of cereals and vegetables. Generally, more than 8 in 10 households had inadequate food consumption in Central Equatorial and Jonglei, while 7 in 10 households had inadequate food consumption in Lakes and Western Bahr el Ghazal State.

The highest proportion of households with acceptable food consumption are in Eastern Equatoria (40 percent), Unity (53 percent), and Warrap (43 percent) while the highest proportion of households with inadequate food consumption are in Central Equatoria (84 percent), Jonglei (82 percent), Western Bahr el Ghazal (72 percent), Upper Nile (73 percent) and Lake States (72 percent). Apart from Unity State where 65 percent of households had access to humanitarian assistance. However, access to the assistance by most households

in Western Bahr el Ghazal and Jonglei (61 percent) did not resulted in a reduction in the level of inadequate food consumption due to the reduced amounts per person worsened off by the impact of shocks from reduced crop harvest, lost livelihoods, insecurity and market disruption. As would be expected, inadequate food consumption was higher among IDPs (80 percent) and returnees (85 percent) than among residents (68 percent) and refugees (45 percent).

Figure. 2.3: Current food consumption trends by state level compared to December 2018



Several counties have elevated levels of poor and borderline food consumption including Juba (91 percent), Akobo (96 percent), Canal/Pigi (100 percent), Nyirol (94 percent), Pibor (97 percent), Rumbek North (96 percent), Bailet (94 percent), Maban (99 percent) and Nagero (95 percent) where 9 in 10 households consumed very poor diets. Similarly, at least 8 in 10 households in the counties of Kajo-keji, Lainya, Terekeka, Magwi, Ayod, Awerial, Rumbek Centre, Wulu, Yirol East, Leer, Malakal, Ulang, Raja, Wau and Ibba had nutritionally inadequate diets consisting mostly of cereals with very little else during the week preceding the assessment.

2.2. Dietary Diversity

The prevailing macroeconomic conditions, livelihood and market disruptions as well as low agricultural production across the country present tremendous food access challenges for most households. To better understand the severity of these challenges on the quality of household diets, the Household Dietary Diversity Score was used as a proxy measure of households' food access and socio-economic status.

Overall, 38 percent of households across the country consumed 0 to 2 food groups and had inadequate diets, a slight improvement compared to 44 percent in December 2018. Similarly, 37 percent consumed 3-4 food groups, compared to 31 percent for the same

period last year. Households with good quality diets or diverse diets consuming more than 5 food groups remained at 25 percent for the two periods. The slight improvements are attributed to increased agriculture production for some areas, relative peace following the signing of the peace agreement and improved access to livelihoods.

Within the 10 states, Jonglei (50 percent), Central Equatoria (47 percent), Lakes (49 percent) and Warrap (41 percent) had the largest proportion of households with inadequate diets (0 to 2 food groups). Food access challenges were widespread in several counties including Terekeka (76 percent), Kapoeta Eastern (55 percent), Akobo (69 percent), Fangak (88 percent), Nyirol (76 percent), Pibor (81 percent) and Tonj north where most households consumed less than 3 food groups.

Cereals and vegetables were the two most commonly consumed food items. Consumption improved compared to December 2018, as households had on average, 5.29 days of cereals compared to 4.75 days and 2.09 days of vegetables compared to 1.53 days. Vegetable consumption was highest in the Greater Equatorial region. Households consumed on average pulses for 1.59 days and dairy products for 1.49 days. However, the consumption of foods rich in protein remained low at 0.85 days almost like the 0.82 days in December 2018.

Cereals consumption was generally adequate across all states (4-6 day on average). Consumption of pulses was highest in Western Bahr el Ghazal, while Upper Nile had the highest average consumption of protein rich foods due to greater access to fish and meat from the wild. Households in Unity had the highest consumption of dairy products at 3.56 days on average, and fruits in Western Equatoria states at 1.85 days on average. Western Bahr el Ghazal and Northern Bahr el Ghazal had the highest sugar consumption (Table 2.1).

Table 2.1: Average days of consumption by different food commodities

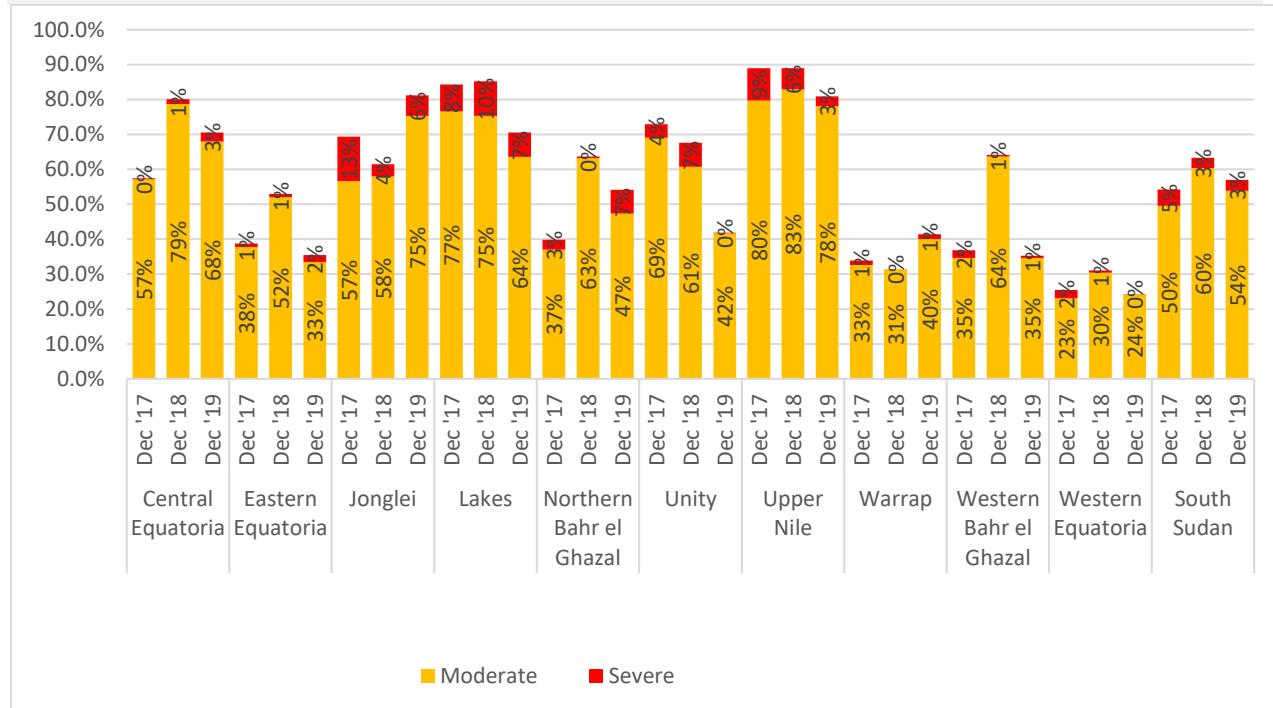
	Cereal /Tubers	Pulses	Milk/ Dairy	Meat fish eggs	Vegetable	Fruits	Oil	Sugar	Condiments
CES	4.65	1.74	0.26	0.37	3.39	1.50	1.35	0.97	2.75
EES	6.06	1.18	1.90	0.86	3.68	0.87	2.56	0.87	4.16
Jonglei	4.74	0.76	1.55	0.87	1.18	0.58	1.74	0.74	0.95
Lakes	4.40	2.38	1.09	0.59	2.31	0.25	1.04	1.95	2.19
NBEG	5.77	1.84	1.28	0.96	1.70	0.40	0.32	2.09	3.97
Unity	5.93	0.93	3.56	1.02	0.80	0.19	2.48	1.21	1.55
Upper Nile	4.73	0.73	1.60	1.58	1.19	0.42	1.99	1.57	1.61
Warrap	6.06	2.20	2.17	0.84	1.72	0.60	0.49	0.93	3.29
WBEG	5.56	3.16	0.39	0.55	2.41	0.30	0.51	2.71	3.64
WES	5.61	2.54	0.21	0.75	3.39	1.85	2.48	1.38	3.49
South Sudan	5.29	1.59	1.49	0.85	2.09	0.71	1.54	1.29	2.56

2.3 Household Hunger

The Household Hunger Scale measures households' experience of food deprivation. Over 57 percent of households across the country reported moderate (54 percent) to severe hunger (3 percent) during the 30 days preceding the assessment (Figure 2.4). This represent a 6 percent decrease from 63 percent in December 2018. Households that reported moderate and severe hunger were more reliant on the gathering of wild foods and sale of food assistance as source of income than those that reported slight or no hunger.

The largest improvements were in Upper Nile (78 percent), Lakes (64 percent), Central Equatoria (33 percent) and Unit State (42 percent). Despite these improvements, the incidences of severe hunger persisted in other states, with the highest prevalence reported in Lakes and Northern Bahr el Ghazal (7 percent each) and Jonglei (6 percent).

Figure 2.4: Trends in household hunger scale by state

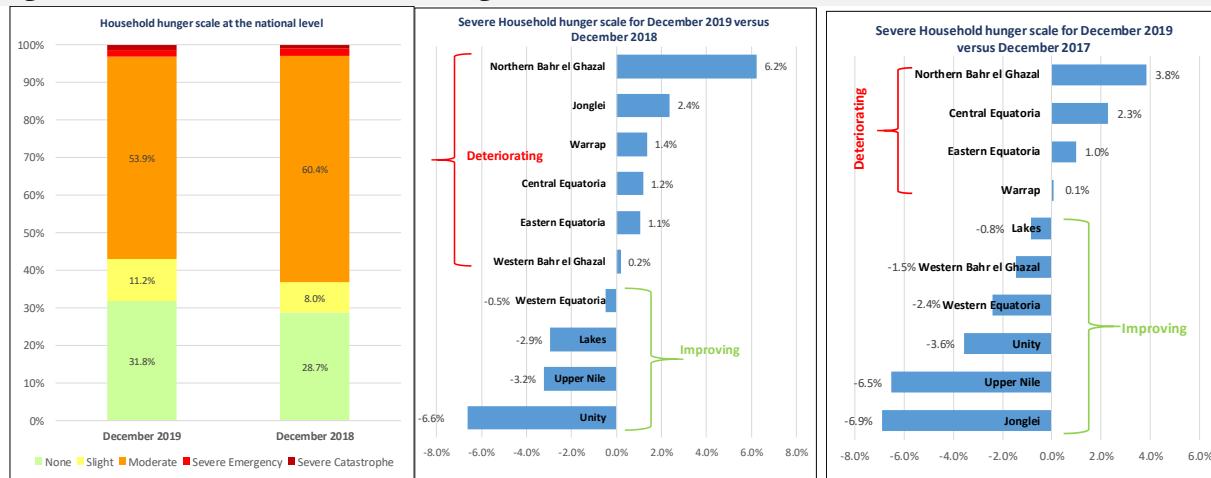


As compared to December 2017, the prevalence of moderate hunger at the national level decreased marginally by 4 percent from 50 percent to 54 percent in December 2019. While the incidence of severe hunger has decreased in most states, it increased marginally by 1 percent, 2.3 percent and 4 percent in Eastern Equatoria, Central Equatoria and Northern Bahr el Ghazal respectively compared to December 2017 (Figure 2.5).

In general, the households facing moderate and severe hunger were more generally affected by agro-meteorological shocks during the previous growing season than those with slight or no hunger. The proportion of the households that reported crop destruction by floods was

38 percent for those with severe hunger and 27 percent for the moderate hunger. Flood impact on crops among those with slight or no hunger was 16 percent each. Similarly, 18 percent of the households with severe hunger reported reduced incomes compared to 11 percent for those facing moderate hunger, 10 percent for those facing slight hunger and 6 percent for those who reported no hunger.

Figure 2.5 Trend in Household Hunger Scale between December 2017 and December 2019



3. Household Socio-Demographic & Food Insecurity Profiles

3.1. Food Security Profiling

Household vulnerability to food insecurity varies by socio-demographic, economic and geographic characteristics, livelihoods and living conditions. Table 3.1 provides a snapshot of core characteristics of severely food-insecure households. The range of variables significantly correlating to severe food insecurity partly explaining the tight link between access to food and poverty.

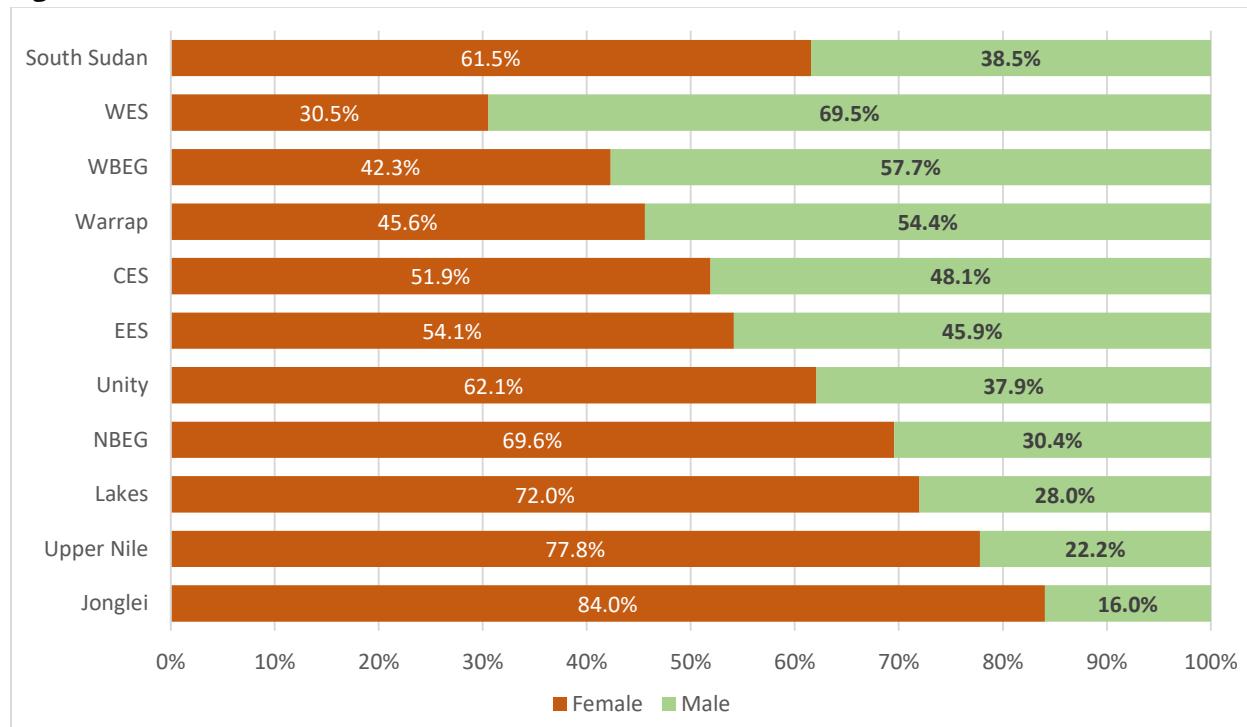
Table 3.1: Profile of severely food insecure households

Characteristics	Attribute	Households likely to be severely food insecure
	Female headed households	24.4% female headed compared to 18.3% of male headed.
	Lack of education of the household head	28.4% without formal schooling or completed primary level education headed households compared to 7.6% heads with post primary qualifications.
	Presence of physically/ mentally disabled/ chronically ill or injured household member	23.7% of households with a physically/ mentally disabled/ chronically ill or injured member than those without such members.
	Access to General Food Distribution in the last month	27.2% of households without access to GFD in the last month than those that had access to humanitarian food (22.8%).
	Household hosting orphans/ returnees and IDPs	23.4% of households hosting orphans, returnees, IDP returnees and IDPs
	Livestock ownership-access to milk, income and meat/ blood	27.2% of households without livestock were severely food insecure compared to 18% of households who owned livestock
	Livelihood source	Households which relied on unskilled casual labour, sale of firewood/charcoal, borrowing of foods and gathering of wild foods
	Assets sold/ looted	Households who had lost assets during conflict or severe coping
	Membership to social networks/ social groups and participation in trainings	Membership to social group and receiving training was found to be significantly positively correlated with food security- households which had members in social groups and having received training were more likely to be food secure (31-33%) compared with 21-22% of households which had no members in social groups.

3.2. Head of household

Most of the assessed households across the country were headed by females (61.5 percent) with the remaining 38.5 percent being headed by males. The heads of households vary significantly across states. In Western Equatoria (69.5 percent), Western Bahr el Ghazal (57.7 percent) and Warrap (54.4 percent) are headed by males, whilst in Central Equatoria (51.9 percent), Eastern Equatoria (54.1 percent), Unity (62.1 percent), Northern Bahr el Ghazal (69.6 percent), Lakes (72 percent) and Upper Nile (77.8 percent) are mostly headed by females. Jonglei State (84 percent) had the largest proportion of female-headed households, with just 16 percent of households headed by males (Fig. 3.1). The main reason for the high percentage of female headed households in most of these states was that several years of conflict caused many males to desert their families to join combat or are displaced internally or as refugees. Some 97.9 percent of male-headed households and 99.6 percent of female-headed households were involved in decision-making about food and other resources in the household.

Figure 3.1: Sex of the head of household



3.3. Households hosting IDPs

Nationally, 3.9 percent of the households reported hosting Internally Displaced Persons (IDPs) from other parts of the country, with Jonglei (6.7 percent), Lakes (5.1 percent), Unity (5.4 percent) and Upper Nile (6.2 percent) having the highest proportion of households hosting IDPs. Across the country, 65.8 percent of the IDPs are returning from another country, mostly Uganda (63.2 percent) and Sudan (19.3 percent). In all, 91.7 percent of the households identified themselves as residents while IDPs and returnees constituted 5.2

percent and 2.1 percent respectively. At the state level, Western Bahr el Ghazal had the largest proportion of IDP households (25.9 percent), with Upper Nile and Central Equatoria States having the largest proportions of IDP and refugee returnees respectively.

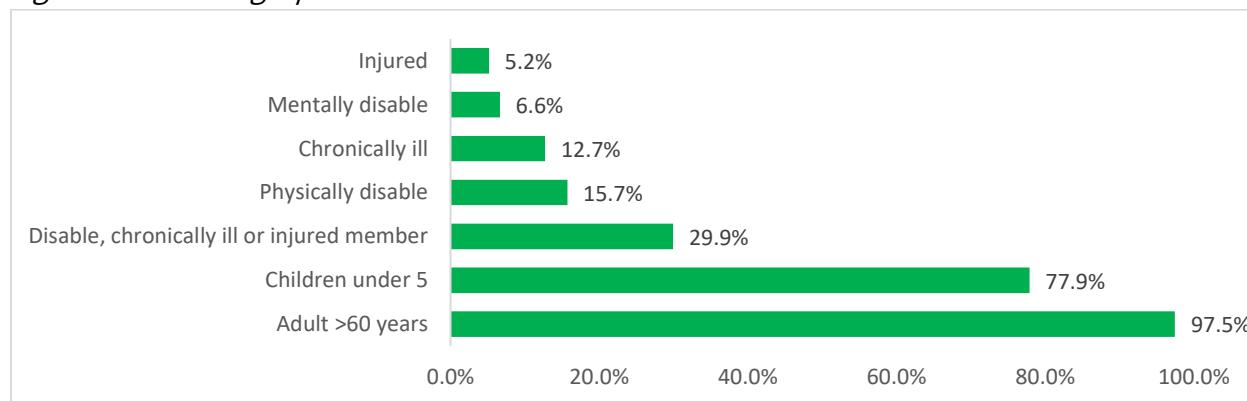
3.4. Disability and chronical illness

Households that have members with physical disability generally have a reduced capacity to generate adequate resources for food and other basic needs than those with able-bodied members. The burden of catering for other members who did not generally contribute towards the household's productivity and sustenance increases the risk of access to food. Some 15.7 percent of the households reported having at least one physically disabled member (Figure 3.2). The highest prevalence was in Unity (22.6 percent), Upper Nile (22 percent), Warrap (19.8 percent) and Western Equatoria (18.6 percent).

Some 12.7 percent of the households reported having at least one chronically ill member while 6.6 percent of households had a member with mental illness. The prevalence of chronically ill members was high in Unity (18.9 percent), Upper Nile (16 percent), Warrap (20.5 percent) and Central Equatoria (15 percent). Although only 8 percent of households' reported hosting orphans across South Sudan, there are significant variation across states. The proportion of households hosting orphans are high in Central Equatoria (15.9 percent), Lakes (10.7 percent), Unity (10.9 percent) and Western Equatoria (10.5 percent), whilst Western Bahr el Ghazal had the lowest proportion of 2.4 percent.

Economically active household members are generally required to provide for the needs of children under 5 years and adults over 60 years and the level of burden of the household impacts the food security situation. 77.9 percent of households had children under 5 years of age while 39 percent of households had adults over 60 years of age. As a result, 70.9 percent of households with children under 5 years are food insecure as compared to 68.1 percent of households without children of this age group.

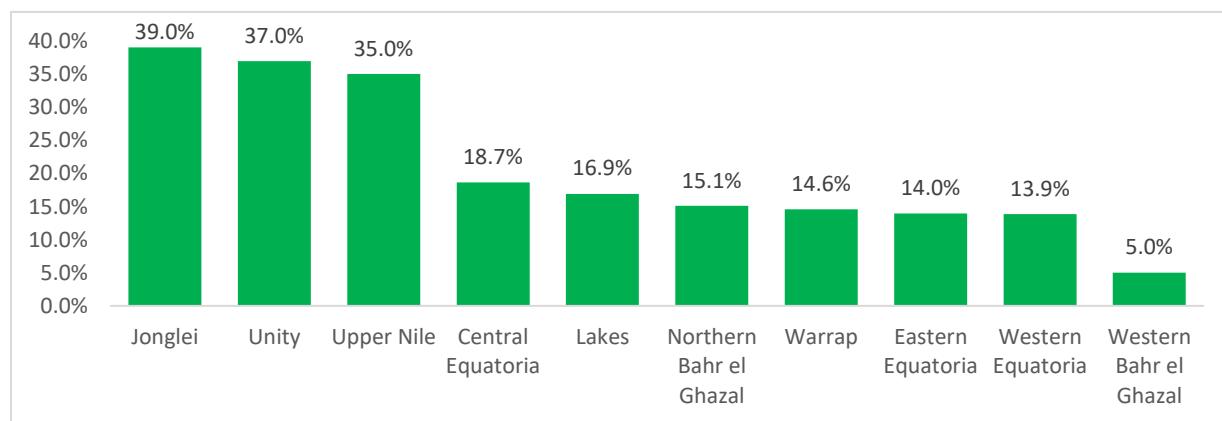
Figure. 3.2: Demographic Profile of households



3.5. Migration

The conflict situation in South Sudan characterized by large-scale displacement, macroeconomic challenges, food crisis and poor access to social services are key players in population migration. Hence, 23 percent of the households reported migration of members to other parts of the country in the past 12 months because of reasons not related to insecurity. Of the households which migrated, 42.8 percent moved to a town or city within South Sudan, while 36.8 percent relocated to a neighboring country, mainly Uganda, Ethiopia, Democratic Republic of Congo, Kenya, Sudan or Central African Republic. The states with the high proportion of households with at least one member who migrated include Jonglei (39 percent), Unity (37 percent) and Upper Nile (35 percent) (Figure 3.3). Households migrated to get educated (35 percent), due to lack of food in the household (19 percent) and in search for work or employment opportunities (14.1 percent). Lack of food was one of the main reasons for household member's migration in Eastern Equatoria (24 percent), Jonglei (29.6 percent), Lakes (22.5 percent) and Upper Nile (21.6 percent).

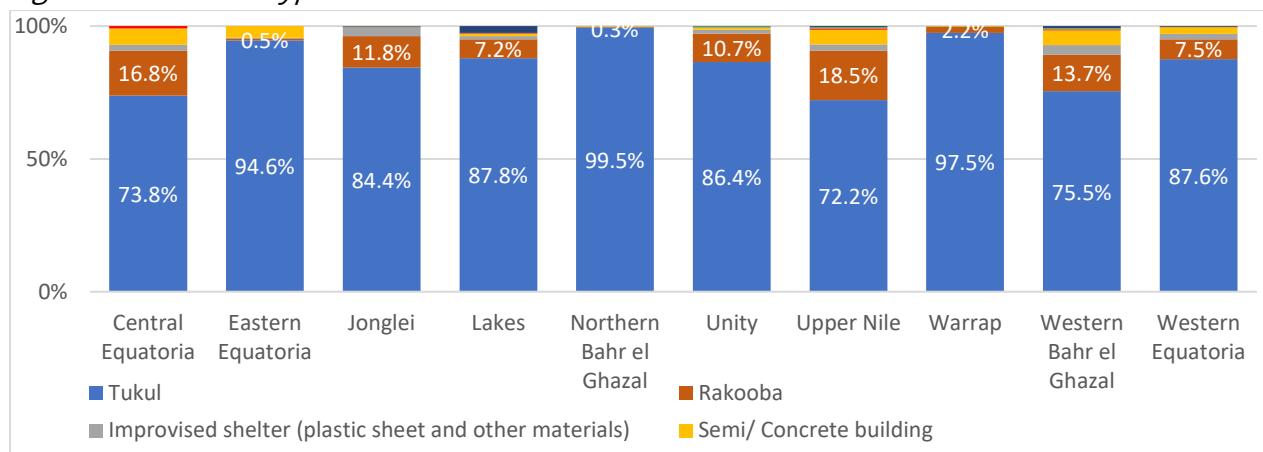
Figure. 3.3: Households reporting at least one member migrating in the past one year



3.6. Housing

Overall, most households across the country slept in Tukul (87.6 percent), with fewer households living in Rakooba (7.5 percent) improvised shelter (2 percent) and Semi/concrete buildings (2.6 percent). At the state level slightly higher proportions of households reside in Rakooba in Central Equatoria (16.8 percent), Jonglei (11.8 percent), Unity (10.7 percent), Upper Nile (18.5 percent) and Western Bahr el Ghazal (13.7 percent) which are more common in rural areas (Figure 3.4). Some 94.9 percent of households owned the houses in which they reside, with Western Bahr el Ghazal and Upper Nile reporting the lowest proportion of house ownership at 87 percent and 87.6 percent respectively.

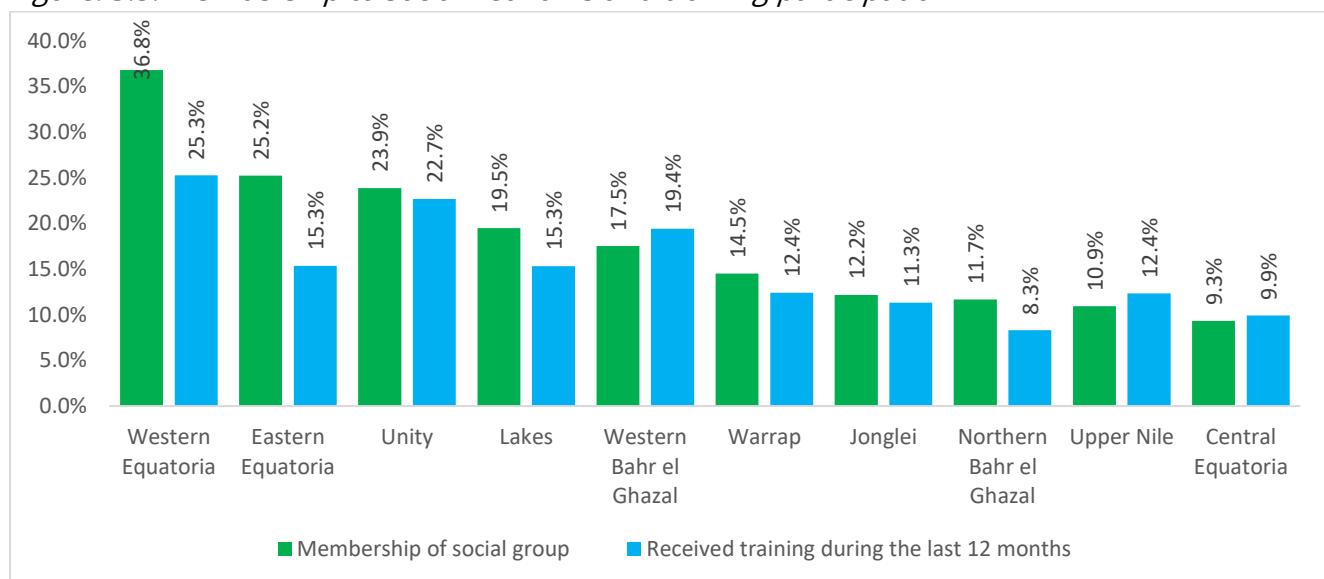
Figure 3.4: Shelter Type



3.7. Social networks

Overall, 17.1 percent of households had a member who belonged to a social support group, such as a community organization, farmers' association, savings group, youth group, mother support group and health committee. Membership of a social support group was high in Western Equatoria (36.8 percent), Eastern Equatoria (25.2 percent) and Unity State (23.9 percent) as compared to other states (Figure 3.5). Households' participation in these social groups provide opportunities to engage in skills enhancement training to improve livelihoods, and the largest share of those who received training were found in Western Equatoria (25.3 percent), Unity (15.3 percent) and Western Bahr el Ghazal (19.4 percent).

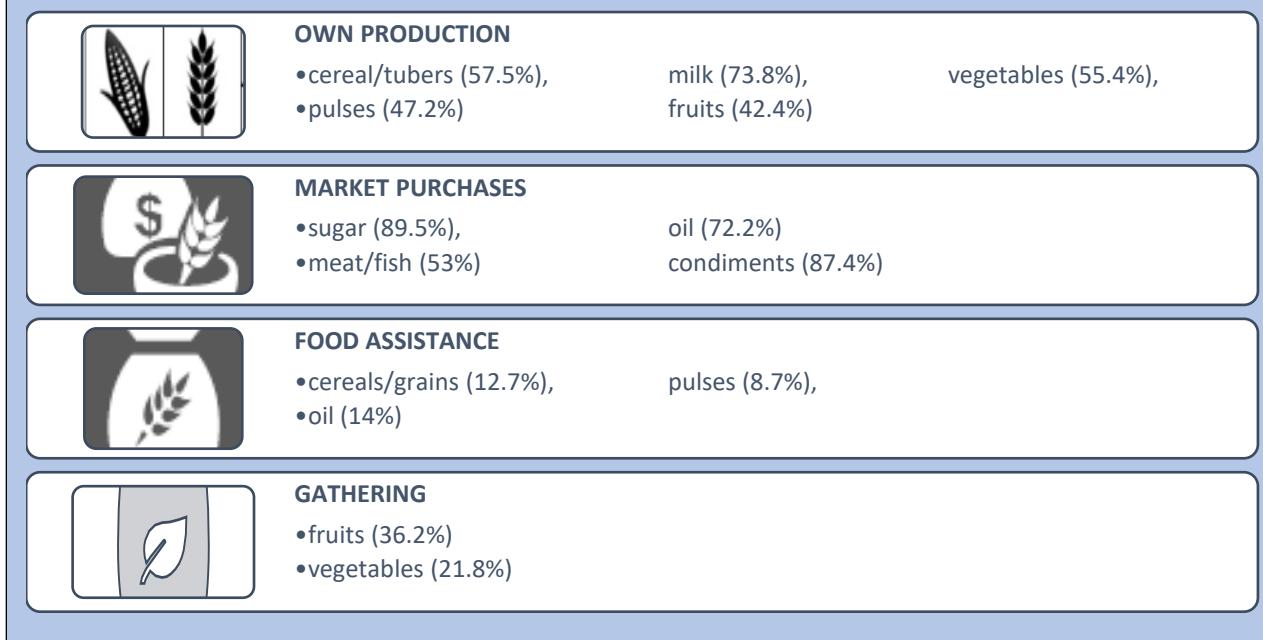
Figure 3.5: Membership to social networks and training participation



4. Sources of Food

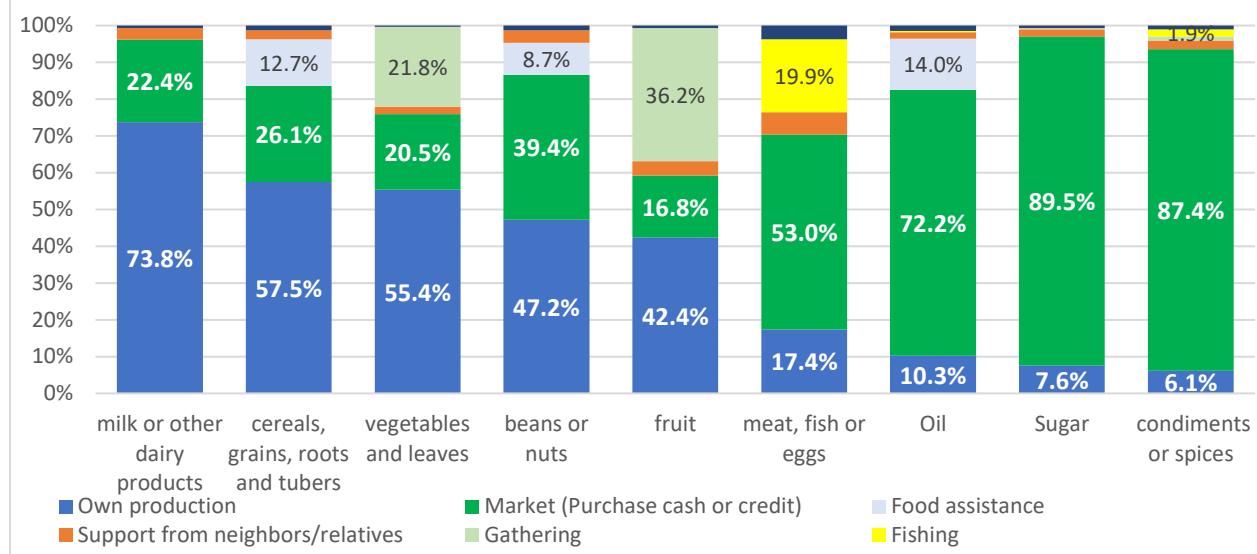
4.1. Overall food sources

Main food sources consumed during the week preceding the assessment



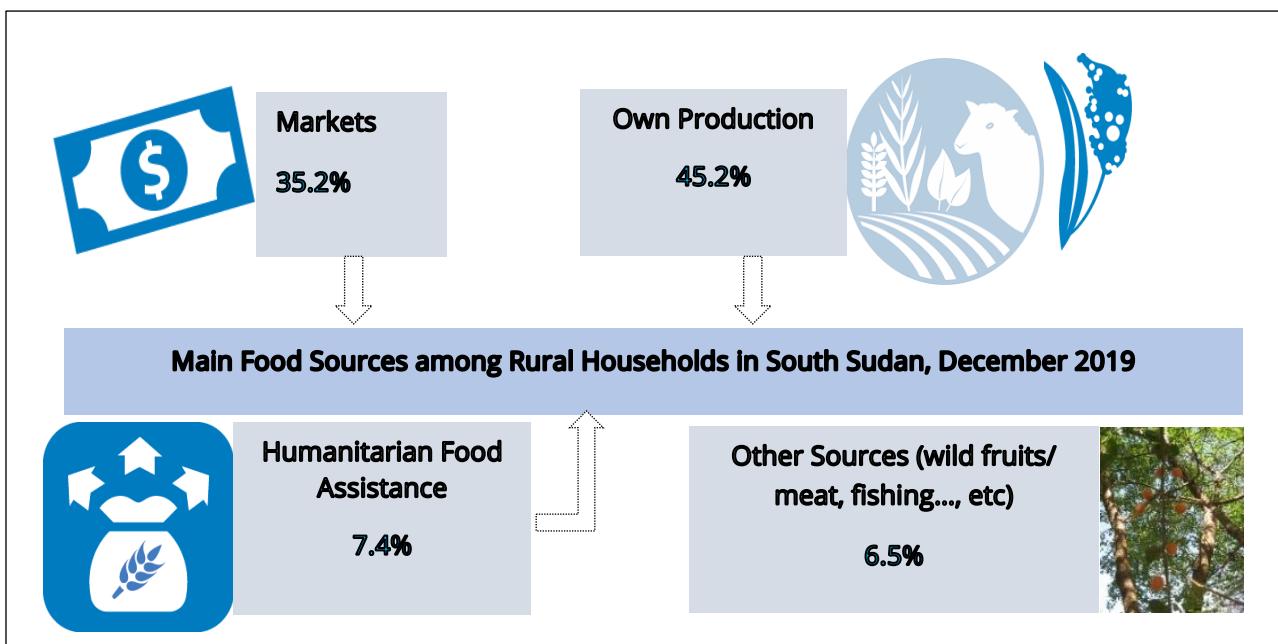
Overall, households' own production was the main source of cereal/tubers, milk, vegetables, pulses and fruits consumed during the week preceding the assessment while market purchases facilitated the consumption of sugar, oil, meat/fish and condiments. Gathering was mainly for vegetables and fruits. Access to own-produced food items was significantly boosted by the harvest of most cereals and grains which had been completed by the time of the assessment (Figure 4.1a).

Figure 4.1a: Sources of food by different food groups



Using data on the eight main food groups, the main sources from which households derived all food for consumption were obtained. Regardless of the type of food, most households across the country obtained food items consumed during the week preceding the assessment through their own production and the market (Figure 4.1b).

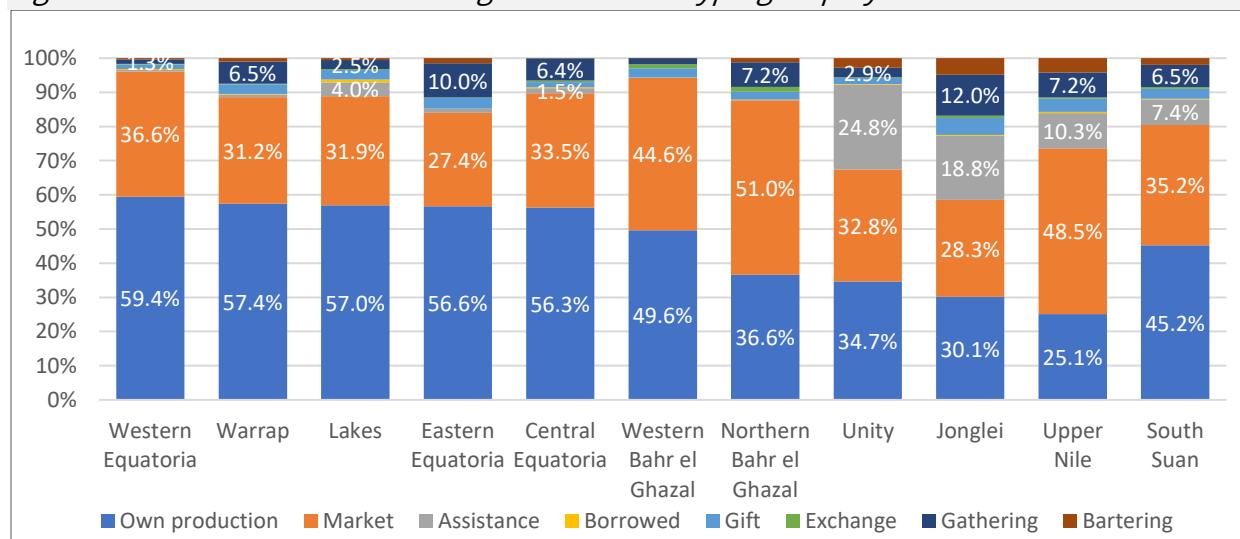
Figure 4.1b: Sources of all foods regardless of type/group



4.2. Food Sources by State

Over 50 percent of households in five states, namely Western Equatoria, Warrap, Lakes, Eastern Equatoria and Central Equatoria consumed food obtained through their own production. While market purchase constituted the second most important source of food in most states, it was the primary source of food by most households in Upper Nile and Northern Bahr el Ghazal. Furthermore, assistance from humanitarian source constituted an important part of households' food consumption in Unity (24.8 percent), Jonglei (18.8 percent) and Upper Nile (10.3 percent).

Figure 4.1c: Sources of all foods regardless of the type/group by state



By food type, seven states dependent on own production as main cereal and tubers source, except for Jonglei, Unity and Upper Nile that had a mixture of own production, markets and food assistance. The highest proportion of households that sourced cereal, grains and tubers from own production were from Western Equatoria (82.6 percent), Warrap (76.8 percent) and Eastern Equatoria (76.8 percent). On the other hand, Upper Nile, Jonglei and Unity had the lowest proportion of households that relied on own produced grains at 30.3 percent, 32.3 percent and 36.1 percent respectively. Markets were the major source of cereals for households in Upper Nile at 48.3 percent, followed by Northern Bahr el Ghazal (37.6 percent) and Western Bahr el Ghazal and Jonglei (28 percent) each and Unity (23 percent). Food assistance was a prominent source of cereals in Unity (39 percent), Jonglei (34 percent) and Upper Nile 18 percent).

Half of the states (Central Equatoria, Eastern Equatoria, Western Bahr el Ghazal, Western Equatoria and Lakes) consumed (>50 percent) pulses from own production, whilst markets are the major source of pulses for Northern Bahr el Ghazal (65 percent), Warrap (51 percent) and Upper Nile (45 percent). Food assistance is the main source of pulses for Unity (45

percent), whilst all the three main sources own production, markets and food assistance are almost equally used by Jonglei (26 to 34 percent).

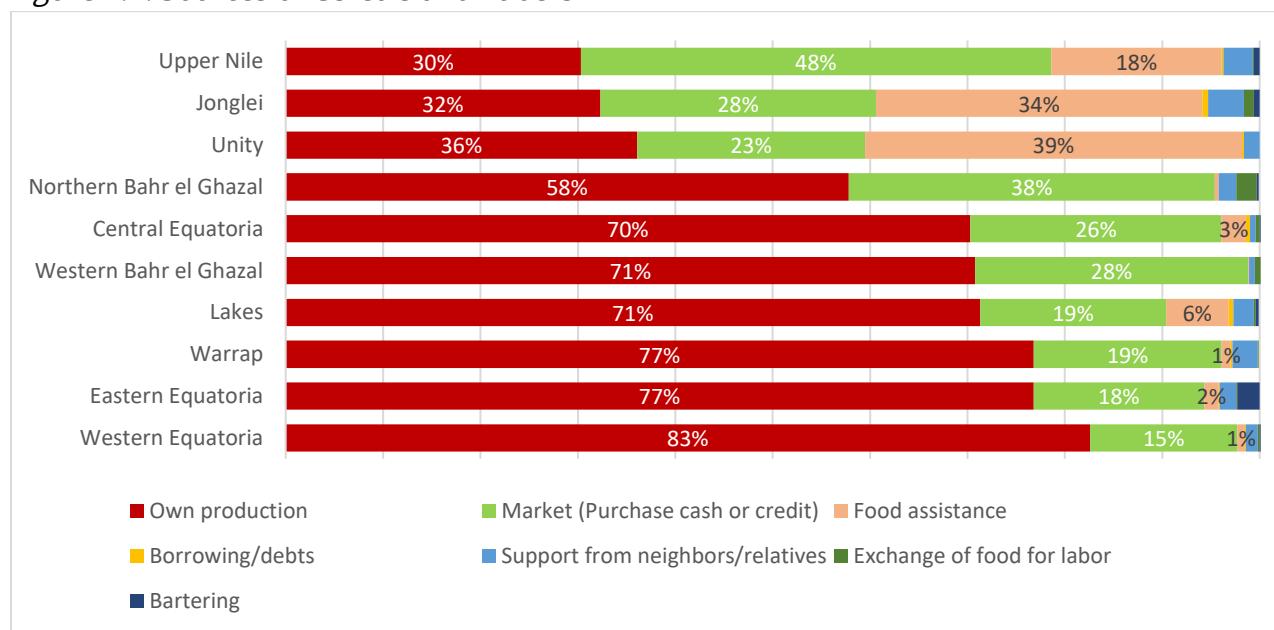
At least 56 percent of households in 9 out of the 10 states relied on own-produced milk from their cows and goats, with exception being Western Equatoria where 64 percent of households consumed milk from market purchase. At least a third of the households in Upper Nile (37 percent), Central Equatoria (36 percent), Western Bahr el Ghazal (33.5 percent) and Northern Bahr el Ghazal (31.8 percent) consume milk purchased from the market.

Households are generally dependent on market purchases for their consumption of meat/fish and eggs. The highest proportion are 91 percent in Western Bahr el Ghazal, 69.6 percent in Northern Bahr el Ghazal, 66.3 percent in Warrap, 64.9 percent in Western Equatoria and 64.5 percent in Central Equatoria. Some 39.6 percent of households in Jonglei, 31 percent in Unity and 28.1 percent in Upper Nile derived their protein consumption from fishing.

For fruits, gathering from the wild was the primary source of fruit consumption in Jonglei (70 percent), Northern Bahr el Ghazal (79.8 percent), Unity (83.2 percent) Upper Nile (51.5 percent) and Warrap (83.4). Households' own production constitutes the main source of fruit consumption in Western Equatoria, Eastern, Central Equatoria and Lakes region.

For the consumption of sugar and oil, at least 4 in 5 households in all states are reliant on market purchase. For cooking oil, a substantial proportion of households in Unity (43.2 percent), Jonglei (40.8 percent) and Upper Nile (18.9 percent) received oil from food assistance (Figure 4.2).

Figure 4.2: Sources of Cereals and Tubers



4.3. Food Assistance as source of food

Food assistance is either in cash or provided to households in the form of cereals, pulses and oil. The level of food assistance has decreased in December 2019 compared to the same period in 2018 and 2017. Effectively, the household's access to food assistance has decreased across key states and appears to have been terminated in Western Bahr el Ghazal which had a significant proportion of food assistance beneficiary households in August 2019. Across the country, food assistance generally ranks as the third most important source of food after own production and market purchases. Nationally, the proportion of households which received various food items in the form of food assistance during the 4 weeks preceding the assessment was 12.7 percent for cereal/tubers, 8.7 percent for pulses and 14 percent for oil. The largest share of cereals food assistance went to Unity (38.7 percent), Jonglei (34.5 percent) and Upper Nile (17.5 percent), with households in the remaining seven states receiving 6 percent or less each. There has been a marginal reduction in the proportion of sampled households receiving assistance compared to August 2019 for Unity and Jonglei, when it was 50 percent and 37 percent respectively.

In comparison with December 2018, food assistance receipts for cereals were higher in Unity at 45.2 percent, but lower in Jonglei and Upper Nile State at 19.7 percent and 13.5 percent respectively. The sustained access to food assistance to in these states contributed to the current reduction in food insecurity in these locations.

Similarly, food assistance receipts for pulses in December 2019 was 44.9 percent for Unity, 27.4 percent for Jonglei and 18.8 percent, less than the 67 percent for Unity, 47 percent for Jonglei and 20 percent for Upper Nile in December 2019. For cooking oil, the proportion of households receiving assistance for Unity, Jonglei and Upper Nile were 43.2 percent, 21.6 percent and 18.9 percent respectively compared to 57 percent in Unity, 36 percent in Jonglei and 24 percent in Upper Nile in August 2019.

4.4. Wild foods and vegetables

The main source of vegetables for households is own production, markets and gathering. Six of the states (Central Equatoria, Eastern Equatoria, Western Bahr el Ghazal, Western Equatoria, Warrap and Lakes) depend on own production (at least 60 percent of the households). Markets are reported as the main source of vegetables by over 40 percent of the households in Unity (48.5 percent) and Upper Nile (41.2 percent), whilst gathering was mainly reported by over a third of the households in Jonglei (57 percent), Upper Nile (37.6 percent) and Northern Bahr el Ghazal (33 percent).

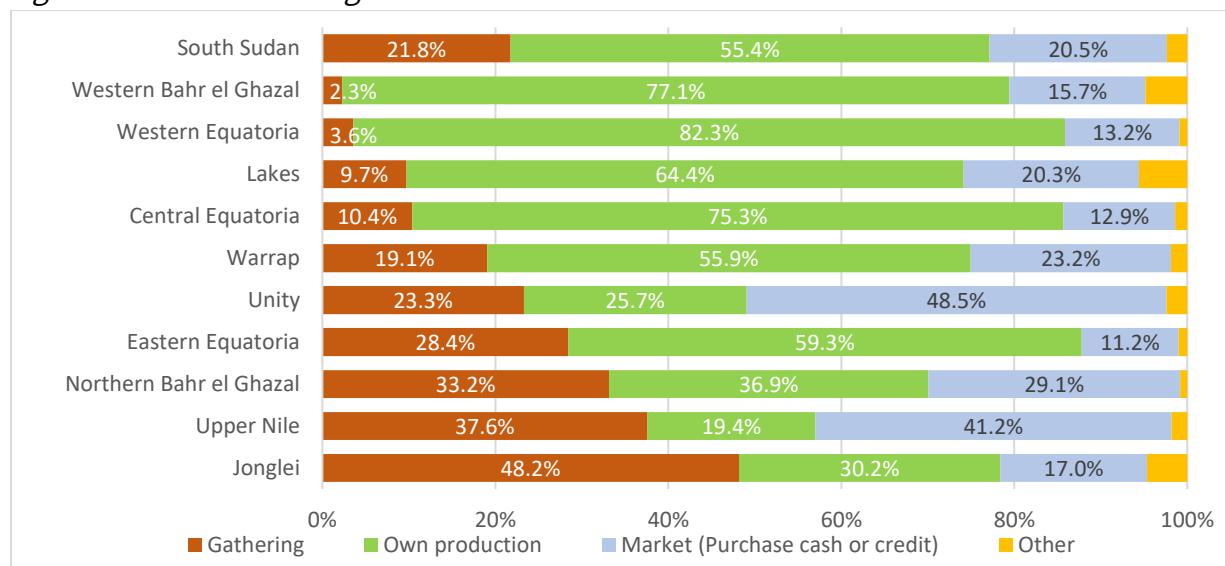
Generally, most households in rural areas consumed wild foods during the 7 days preceding the assessment in December 2019 as the consumption of such food items is considered to be normal for that time of the year. On average households consumed wild foods for 4.4 days in Warrap, 2.2 days in Upper Nile and 1.8 days in Central Equatoria. In December 2018,

households consumed wild foods for an average of 1.5 days across South Sudan, but higher level of wild food consumption was attained in Eastern Equatoria (3.1 days), Warrap (1.5 days) and Central Equatoria (1.5 days).

Some 21.8 percent of households across the country relied on gathering from the wild for the consumption of vegetables and leaves during the 7 days preceding the assessment in December 2019. Households depended on gathering for the consumption of vegetables to a high degree in Jonglei (57 percent), Upper Nile (37.6 percent), Northern Bahr el Ghazal (33.2 percent), Unity (23.3 percent), Eastern Equatoria (28.4) and to a lesser extent in Western Equatoria, Western Bahr el Ghazal, Central Equatoria, Lakes and Eastern Equatoria where own produced sources of vegetable and leaves are more dominant. As a result of seasonal changes in the availability of vegetable from the wild, there was a substantial reduction in reliance on wild vegetables as compared to August 2019 when the proportion of households was 57 percent in Jonglei, 51 percent in Upper Nile, 75 percent in Northern Bahr el Ghazal and 62 percent in Unity State (Figure 4.3).

Significantly higher proportions of households relied on gathering from the wild for the consumption of fruits as compared to vegetables and leaves. Some 36.2 percent of households consumed fruits through gathering compared to 21.8 percent who consumed vegetables gathered from the wild. At least 4 in 5 households in Warrap and Unity consumed fruits gathered from the wild while proportion of households in Northern Bahr el Ghazal, Jonglei, and Upper Nile was 79.8 percent, 69.7 percent and 51.5 percent respectively. Wild fruits consumption was lowest in Western Equatoria.

Figure 4.3: Sources of Vegetables and Leaves



5. Nutrition status of children (0-59 months) and women (15 to 49 years)

5.1. Child nutrition⁵

<i>Global acute Malnutrition (GAM)</i>	12.6% (serious)	<i>Severe acute Malnutrition (SAM)</i>	3.3%
<i>Stunting</i>	15.1%	<i>Severe stunting</i>	3.9%
<i>Exclusive breastfeeding</i>	68.1%	<i>Minimum acceptable diet</i>	4.1%
<i>children drunk from a bottle with a nipple</i>	47%	<i>Women underweight</i>	38.2%
<i>WDD</i>	29.7%	<i>Morbidity children (0 -59 months)</i>	54.6%

5.1.1. Acute malnutrition

Anthropometric measurements were taken for all children under five (U5) within the household and additional infant and young child feeding (IYCF) data were collected from children under two years. Women of Childbearing age (WCBA) were also included in the study, anthropometric measurements were taken for body mass index (BMI) calculation and feeding patterns data collected to assess Women dietary diversity (WDD).

A total of 8,537 households were reached, with a total of 11,228 children (49 percent girls and 51 percent boys) aged 0 to 59 months assessed. The overall sex ratio of boys to girls was within expected ratio of 1:1. The final analysis on nutrition status was based on 10,643 children and 8,738 WCBA. Emergency Needs Assessment (ENA) software (July 9th of 2015) was used to analyze the nutrition status of children based on Weight for height (WHZ-Score) and presence of bilateral pitting edema at both national and county level. Analysis for children was based on WHO 2006 standards and data was classified differently for SAM and MAM status. The analysis was jointly conducted by nutrition experts from Ministry of Health (MoH), National Bureau of Statistics (NBS), United Nations Agencies (UN) and National Non-Governmental Organizations (NGOs). The following definition was used for the analysis:

Term	Definition
<i>Global acute malnutrition</i>	<-2 z scores weight-for-height and/or oedema
<i>Moderate acute Malnutrition</i>	<-2 z-score and >=-3 z-score, no oedema
<i>Severe acute Malnutrition</i>	<-3z scores weight-for-height and/or oedema)
<i>Underweight</i>	Body Mass Index (BMI)<18.5
<i>Normal Weight</i>	BMI 18.5 to <25
<i>Overweight</i>	BMI >=25 and/or <30
<i>Obesity</i>	BMI>30

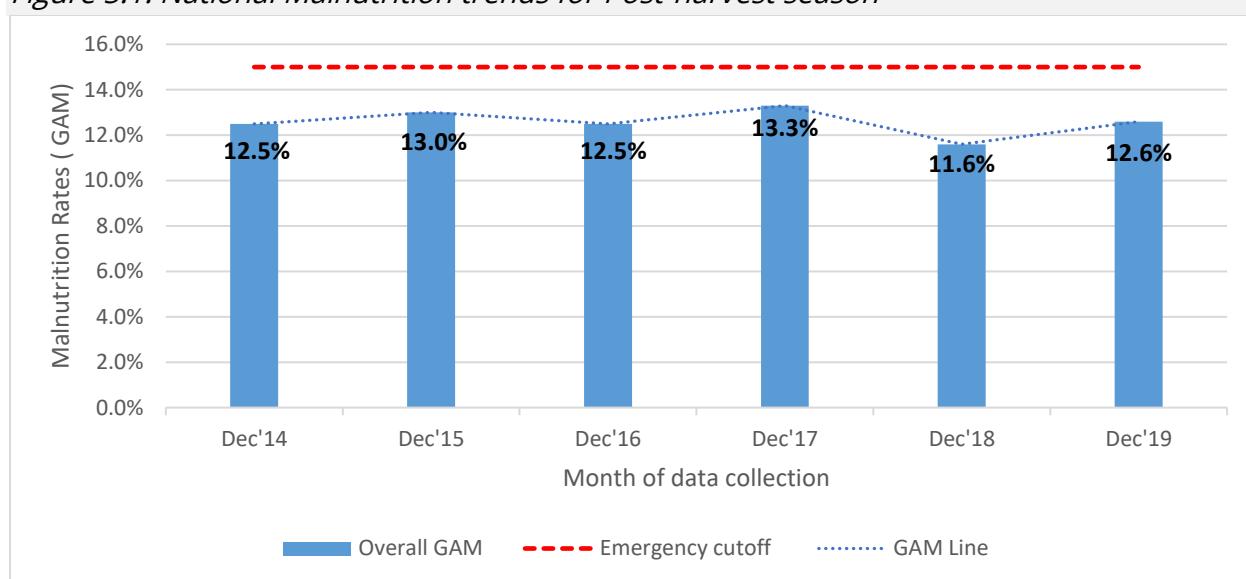
⁵ A total of 8537 HHs were accessed during the assessment reaching a total of 11, 228 children. The assessment covers all the states were covered with all 79 counties (including Abyei). Data was collected between November and December of 2019.

5.1.1.1. Current Nutrition status of Children

Global acute Malnutrition (GAM) at national level was estimated at 12.6 percent and classified as serious, this is a 2.4 percentage points short of the critical phase (15 percent) of malnutrition. SAM was estimated at 3.3 percent. The prevalence of acute malnutrition was significantly higher as compared to the same period in 2018 ($P<0.0001$). The prevalence of malnutrition (GAM) among boys and girls was not significantly different with a WHZ mean of -0.59 z-score for female and -0.64 for male.

5.1.1.1.2. Malnutrition Trends- Post Harvest season

Figure 5.1: National Malnutrition trends for Post-harvest season



Post-harvest malnutrition rates estimate for the past 6 years has remained serious (Figure 5.1 December 2017 recorded the highest rate of 13.3 percent; however, current malnutrition rates remain within serious phase.⁶

Slight increase in malnutrition rates compared to 2018 could be explained by the unusually high rainfall resulting in the worst flooding in 2019. The flood affected an estimated 908,000 individuals.⁷

⁶

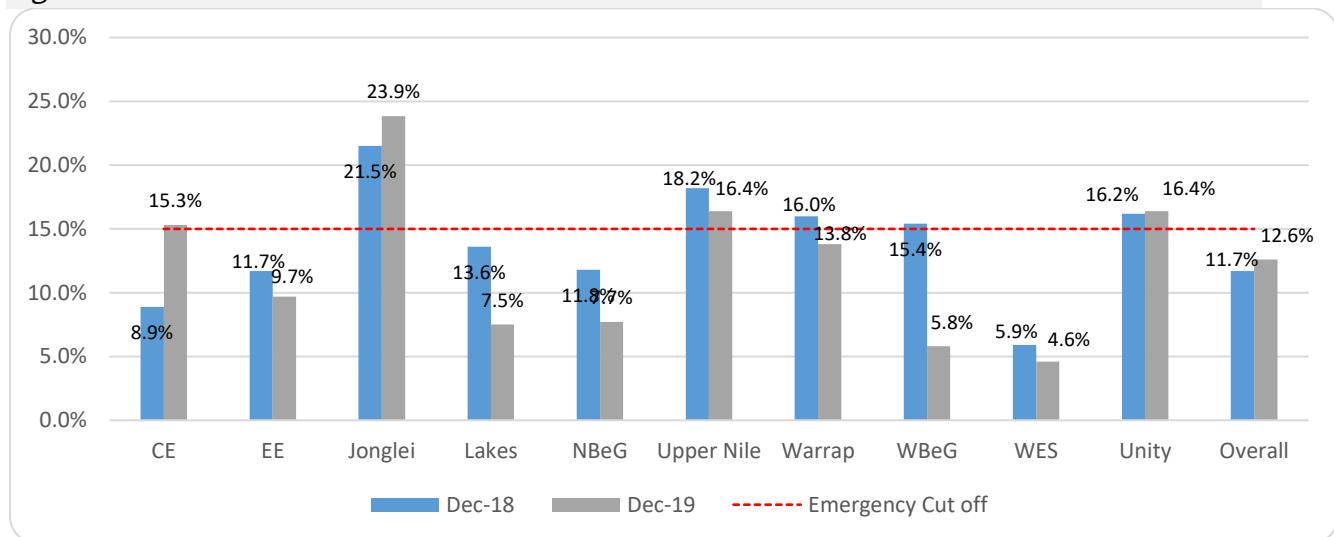
Acceptable	Alert	Serious	Critical
<5%	5- <10 %	10 to<15% or>usual and increasing	15-30%Or >usual and increasing

⁷ South Sudan: Floods Emergency Response strategy and funding requirements (As of 14 November 2019)

5.1.1.1.3. State Level Malnutrition Rates

Multiple of factors including livelihoods, malnutrition status explains the wide difference from one state to another (Figure 5.2 below).

Figure 5.1: Post harvest State level malnutrition rates



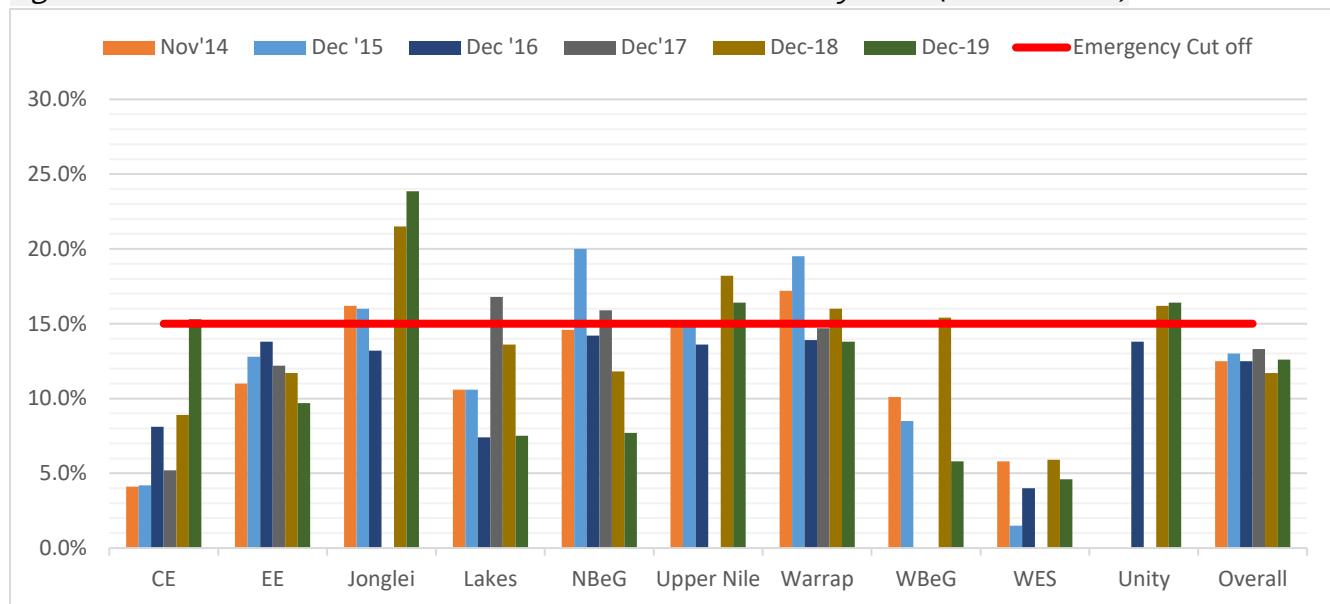
In four (4) states including Central Equatoria, Jonglei, Unity and Upper Nile, the GAM rates were above the Emergency threshold of 15 percent, this represents critical levels of malnutrition. In Central Equatoria, significantly higher rates were observed compared to the same season in 2018, with the severity rising from alert to critical levels, above the emergency threshold.

Traditionally malnutrition rates in the post-harvest season are expected to reduce with the increased food availability at household level. However, this has not been the case in the above-mentioned states given the increase observed. Additionally, high levels of morbidity in these states had direct correlation with the increase in malnutrition status. Morbidity in these locations was high at 46.2 percent, 47.9 percent 48.6 percent and 62.8 percent in Jonglei, Upper Nile, Central Equatoria and Unity respectively.

Western Bahr el Ghazal state recorded significantly the highest drop in malnutrition rates from 15.4 percent critical levels to 5.8 percent alert phase. Western Equatoria was the only state that recorded acceptable levels of <5 percent of malnutrition.

5.1.1.1.4. State level Post Harvest Malnutrition trends

Figure 5.2: Lean Season Trend of Global Acute Malnutrition by State (6-59 months)



Malnutrition rates pattern per state for the past six (6) post-harvest seasons of 2014-2019, indicates that for the last three seasons, Eastern Equatoria, Lakes and Northern Bahr el Ghazal exhibited a reducing trend in malnutrition rates (Figure 5.3 above). The highest reduction in the past three seasons was in Northern Bahr el Ghazal, with GAM reduction from 15.9 percent critical levels to 7.7 percent alert levels. However, Central Equatoria, Jonglei and Unity had an increasing trend, with Central Equatoria GAM rates increasing rapidly from 5.2 percent alert phase to 15.3 percent critical phase (Emergency Levels).

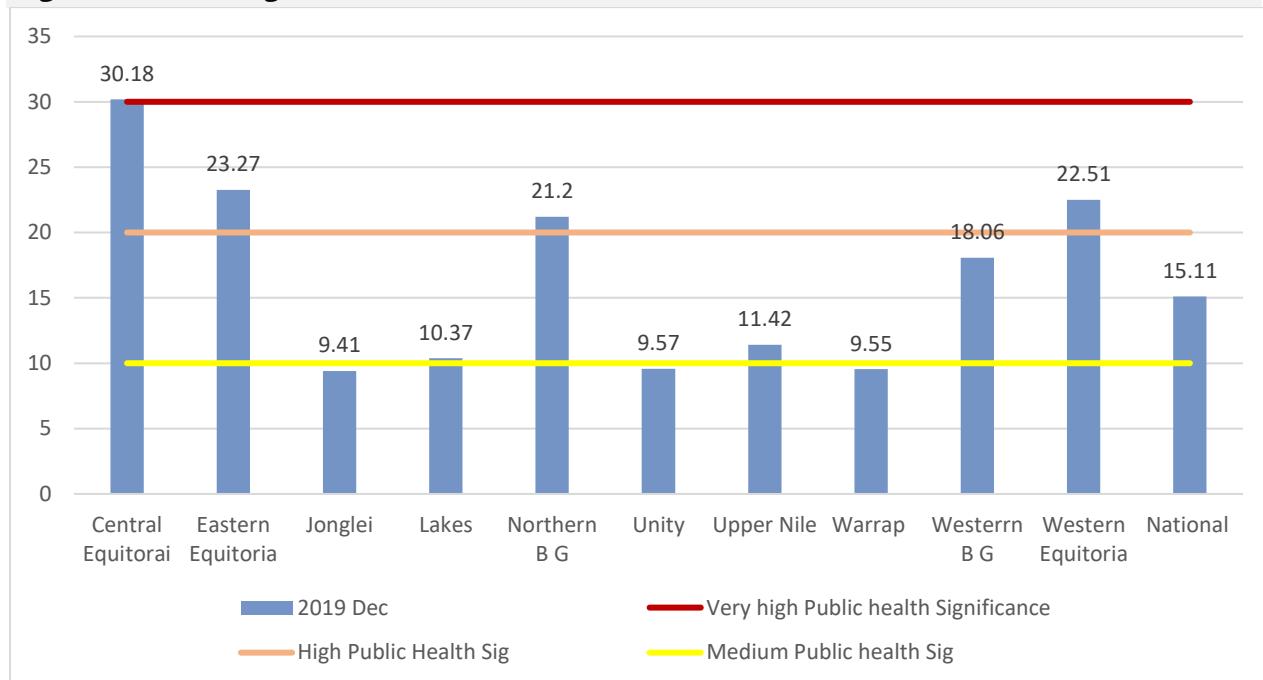
The remaining states show mixed patterns. The greatest improvement compared to similar 2018 season was in Wester Bahr el Ghazal, where the rates dropped from 15.4 percent critical phase to 5.8 percent alert phase a 9.6 percentage point decrease.

5.1.2. Stunting

5.1.2.1. Current Stunting rates

Chronic malnutrition among children has a lifelong negative impact on the person, including low economic productivity and cognitive ability. Stunting is measured through comparing children's height and their age. Children whose height-for-age Z-score is below minus two standard deviations (-2 SD) from the median of the reference population are considered short for their age (Stunted) and are chronically malnourished.

Figure 5.4: Stunting levels at national and state Levels_ Dec 2019



The assessment estimated stunting at 15.1 percent (14.2-16.3 95 percent C.I) and Severe stunting at 3.9 percent (3.4- 4.4 95 percent CI) at national level (Figure 5.4). Compared to the last round of assessment, the reduction of 0.4 percentage point is not significant. Estimates between 10 to <20 percent is classified as medium public health significance based on WHO classification for stunting⁸. The stunting among boys was 17 percent and 13.2 percent among girls. A comparison of stunting rates between boys and girls showed significant difference ($P<0.001$).

The highest stunting rates, classified as of very high public health importance were recorded in Central Equatoria, Eastern Equatoria, Northern Bahr el Ghazal and Western Equatoria (Figure 5.4 above). The states with low stunting rates were Jonglei, Unity and Warrap, with the rates like what was observed during the last assessment conducted in August 2019.

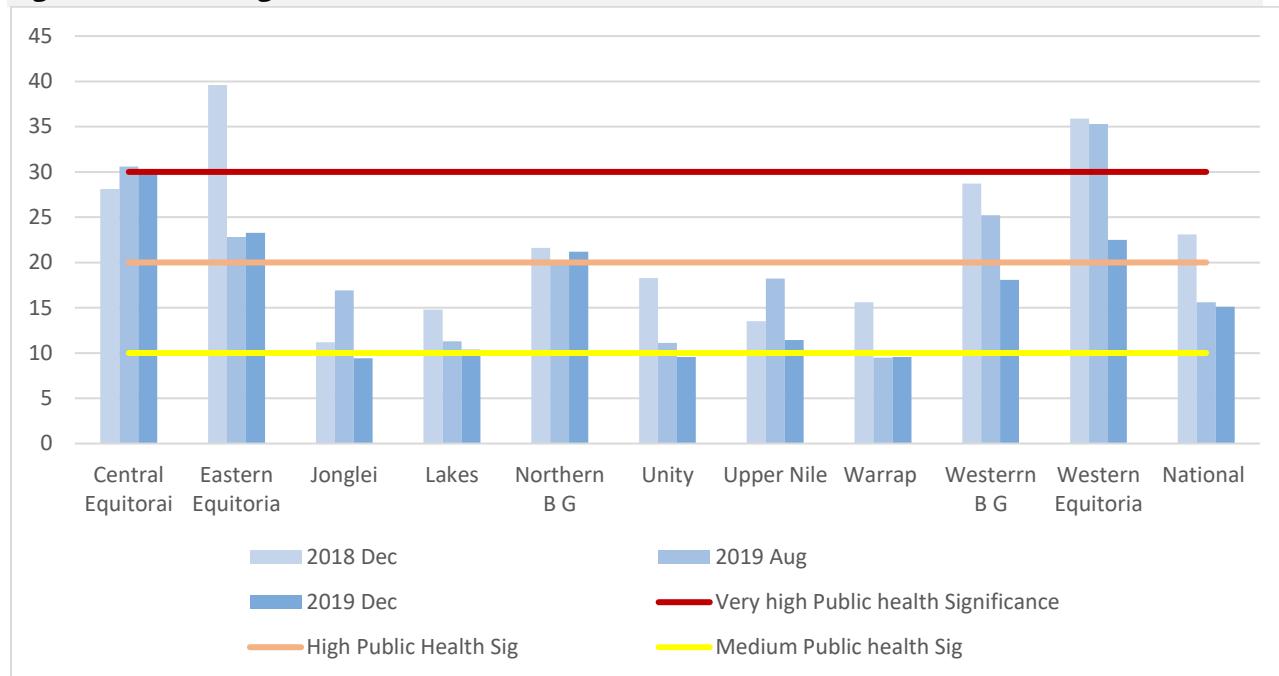
5.1.2.2. Stunting Trends

As opposed to wasting stunting is not affected by rapid food shortage or diseases experienced in certain seasons. Figure 5.5 below shows stunting rates for the last three nationwide assessments. The states with very high levels of stunting in the last three seasons were Central Equatoria, Eastern Equatoria and Western Equatoria, with an average of 29.6

⁸ New WHO classification: <2.5% - Very Low, 2.5-<10% Low, 10-<20% Medium, 20-<30% High, >=30 % Very high.

percent, 28.5 percent and 31.2 percent respectively, representing levels of very high public health significance.

Figure 5.5: Stunting Trends at national and state level



5.2. IYCF practices

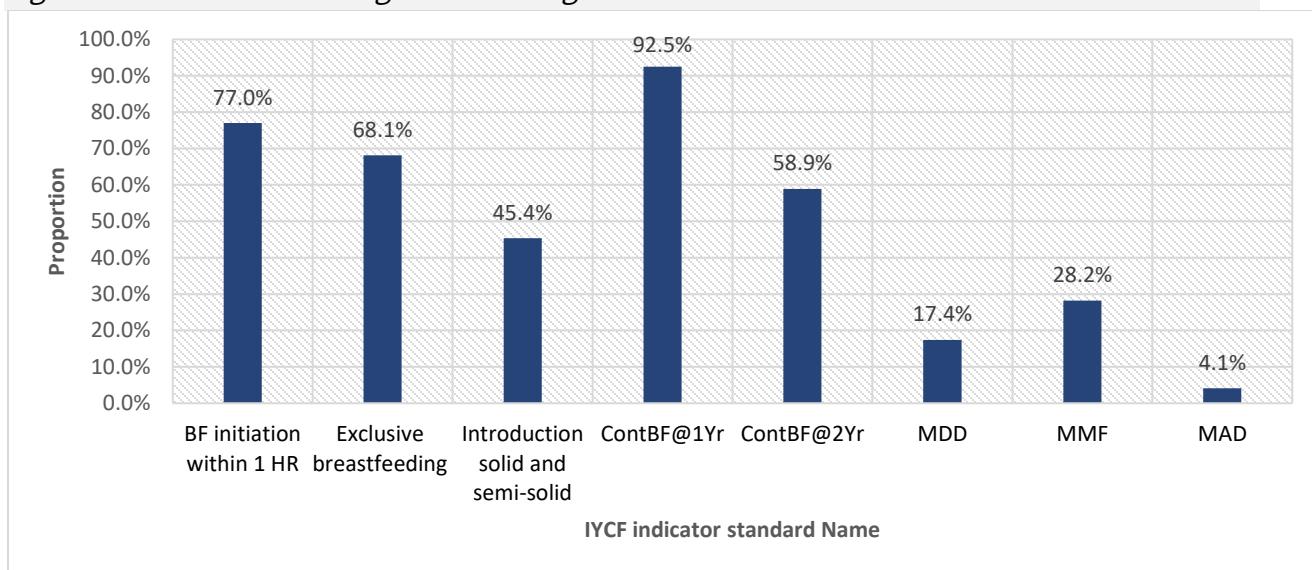
Inadequate Infant and young child feeding practices are one of the basic causes of malnutrition based on the nutrition causal framework. Infant and young child feeding assessment targeted children 0-23 months. Based on WHO's definition of the specific IYCF indicators, parents and caregivers responded to age specific questions based on a 24-hour recall as per standard WHO indicators in the following table:

Indicator	Age in months (Assessment subject)
<i>Early initiation</i>	0-23
<i>Exclusive Breastfeeding (EBF)</i>	<6
<i>Child ever BF</i>	0-23
<i>Continued BF at 1 year</i>	12-15
<i>Continued BF at 2 years</i>	20-23
<i>Minimum meal frequency (MMF)</i>	6-23
<i>Minimum Dietary Diversity (MDD)</i>	6-23
<i>Minimum Acceptable Diet (MAD)</i>	6-23

A total of 4,396 children aged 0 to 23 months were assessed. Of these 49.7 percent were girls and 50.2 percent boys. IYCF indicators were analyzed at national level.

Exclusive breastfeeding was practiced by 68.1 percent of respondents and there is no significant difference with rates observed in the last round 24 (August) survey (69.4 percent). Other than breastmilk, children <6 months are introduced to water (14 percent), milk (10.8 percent) and porridge (6.9 percent). The rest of other liquids are given to less than 5 percent of the children <6 months. Northern Bahr el Ghazal, Lakes and Jonglei states showed highest proportion of children <6 months being fed with milk at 23.6 percent, 23.8 percent and 20.0 percent respectively.

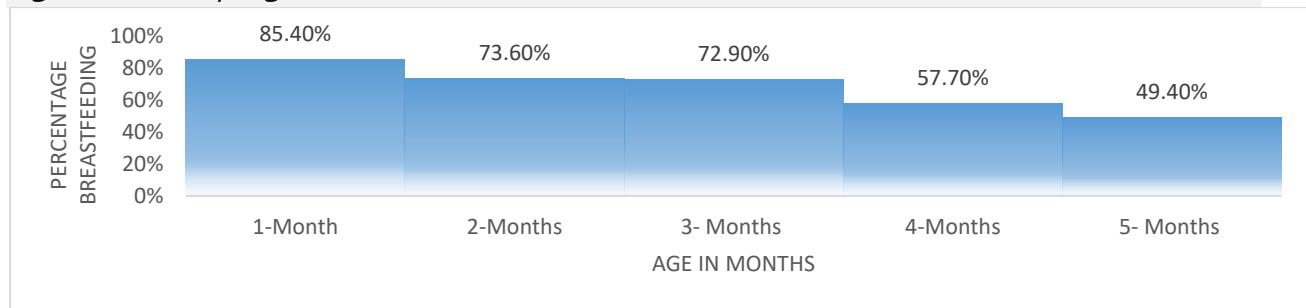
Figure 5.6: Infant and Young Child feeding indicators at national Level



EBF practice progression over the first recommended 6 months, indicate that although majority 85.4 percent of mothers start EBF at birth, 32 percent stop the practice by the 4th month and 42 percent also stop in the 5th month (Figure 5.7).

The assessment showed 77 percent of newborn babies were initiated to breastfeeding within one hour of birth as recommended. There was no significant change in the EBF practice compared to August, with estimates at 68.1 percent in December and 69.1 percent in the preceding survey (Round 24).

Figure 5.7: EBF progression from birth to 5 months



Continued breastfeeding rates were considerably high. Breastfeeding at year one⁹ (1) was universal at 92 percent whereas breastfeeding at two years (children 20 – 23 months) was 58.9 percent.

Optimal complementary feeding practices is key in sustaining the gains of EBF after the first 6 months. Both adequacy and quality of complementary food is important for optimal growth and development. Results for the assessment showed sub-optimal complementary feeding practices (Table 5.1). Only 17.4 percent of children 6-23 months received the required quality of food diversification, while 28.2 percent of children received the required meal frequency. Meal frequency is considered a proxy for energy intake from foods other than breast milk. The minimum acceptable diet is an indicator that reflects children who satisfied both dietary diversity and meal frequency. Only 4.1 percent met the minimum acceptable diet. That the sample was small to disaggregate data by states.

Table 5.1: Infant feeding at state level (%)

	BF initiation within 1 HR	Exclusive breastfeeding	ContBF@1Yr	ContBF@2Yr	Introduction solid and semi-solid	MDD	MMF	MAD
Central Equatoria	69.3	62.5	100.0	80.0	52.6	14.0	14.5	4.1
Eastern Equatoria	57.6	70.2	94.0	81.0	56.2	14.4	48.3	4.7
Jonglei	86.9	68.9	93.0	52.0	43.4	16.7	20.6	4.0
Lakes	84.8	62.6	88.0	37.0	32.0	10.6	30.2	3.7
Northern Bahr el Ghazal	92.1	80.0	98.0	72.0	29.4	10.5	11.5	2.6
Unity	75.9	74.3	94.0	57.0	51.1	18.4	43.5	5.9
Upper Nile	79.7	62.7	94.0	67.0	43.9	12.9	22.0	3.9
Warrap	73.6	62.1	83.0	46.0	22.7	8.0	26.7	4.6
Western Bahr el Ghazal	88.7	56.8	93.0	57.0	44.4	9.5	28.4	1.7
Western Equatoria	70.8	71.1	90.0	49.0	73.3	42.2	25.7	12.4
National	77.0	68.1	92.5	58.9	45.4	17.4	28.2	4.1

⁹ Continued breastfeeding at one year refers to the proportion of children 12 – 15.9 months of age who are still fed on breast milk.

There is indicative difference in IYCF indicators at state level. Calculation of the sample size did not specifically adjust for IYCF indicators and therefore there is need to interpret the results with caution at state level (Table 5.1 above).

Regional (State) differences is significant for several indicators, the range in practice of introduction to solid and semi-solid is from 73.3 percent in Western Equatoria to a low of 29.4 percent in Northern Bahr el Ghazal. Same states showed inverse achievement in continued breastfeeding up to 2 years where it was significantly higher in Northern Beahr Ghazal (72 percent) compared to 49 percent in Western Equatoria.

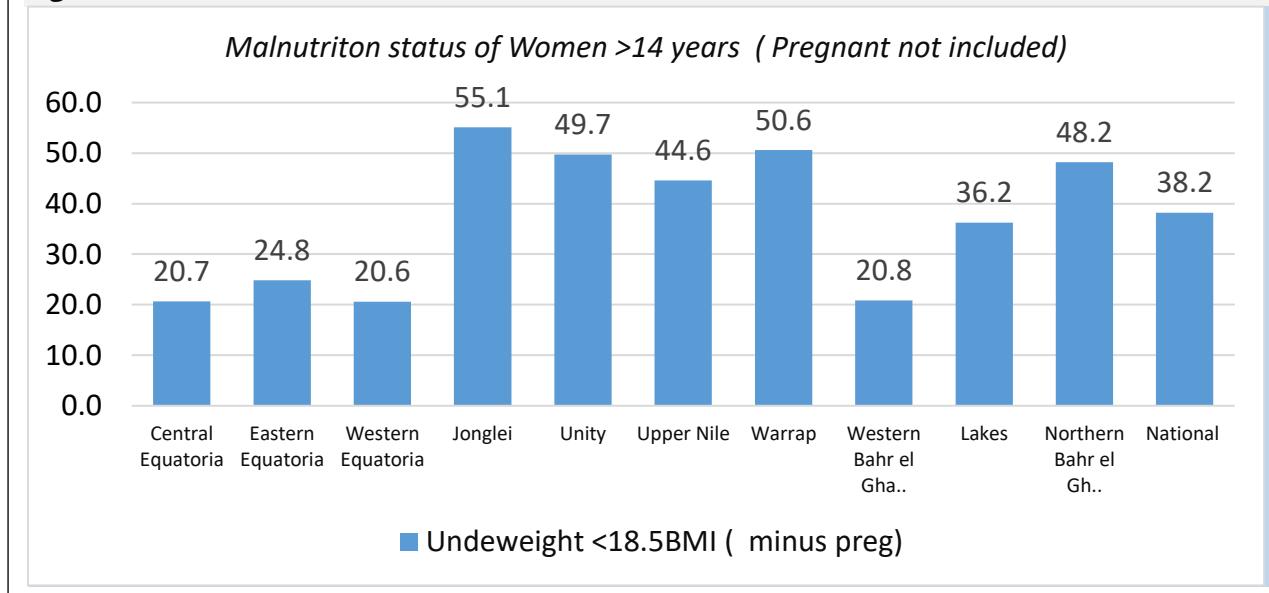
5.3. Bottle feeding

Caregivers of children 0-23 months were asked if their children drunk from a bottle with a nipple the day preceding the surveys. Nearly half (47 percent) of the assessment respondents reported to have fed their children using a bottle the previous day. Analysis of morbidity (diarrhea) incidences among the group of respondents using bottle was significantly higher by 7.13 percentage points ($p=0.001$).

5.4. Women nutrition Status

The nutritional status of women was assessed using Body Mass Index (BMI). Body Mass Index is an acceptable proxy for body composition and is associated with health risk in many populations. Previous estimations were conducted through Mid Upper Arm circumference (MUAC) and only targeted Pregnant and Lactating Women (PLW).

Figure 5.8: Malnutrition status of WCBA

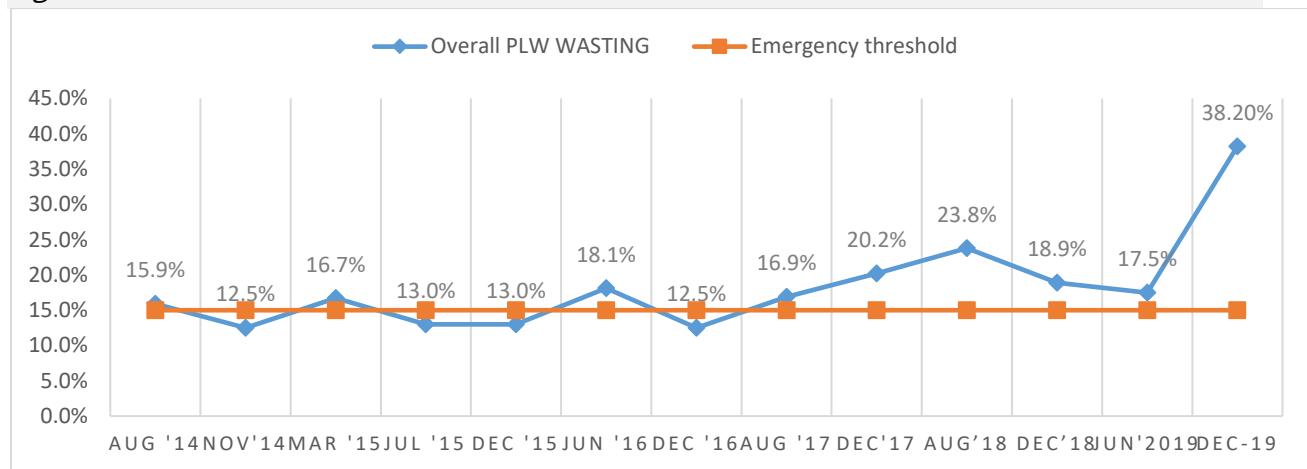


At national level 38.2 percent of women of childbearing age are malnourished (Underweight). The malnutrition was highest in four states of Jonglei, Unity, Warrap and Northern Bahr El Ghazal where approximately half of the WCBA population were found to be malnourished. There was a correlation between nutrition status of women and those of children under five.

Previous Assessment using MUAC shows a possible under estimation of the WCBA nutrition status as the highest estimations observed using MUAC criteria was 23.8 percent in August 2018.

A comparison of malnourished (underweight) WCBA over time indicate that the rates have increased in the last three years and have been consistently above the emergency threshold from 2017, with the worst observed in December 2019 (Figure 5.9)

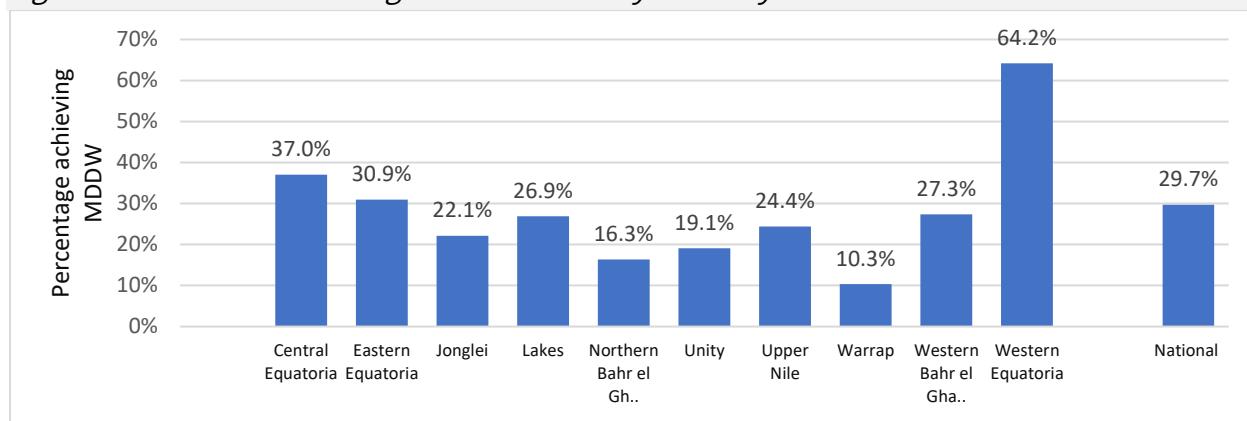
Figure 5.9: Malnutrition trends for PLW – 2014 to 2019



5.5. Women Dietary Diversity:

Overall dietary diversity among women of childbearing age was estimated at 29.7 percent. Apart from Western Equatoria, all other states recorded poor WDD. Warrap state had the lowest WDD with only 1 in every 10 women achieving the recommended WDD. Western Equatoria had the highest WDD. This is mostly tied to the high production of food in Western Equatoria during the harvest season (Figure 5.10).

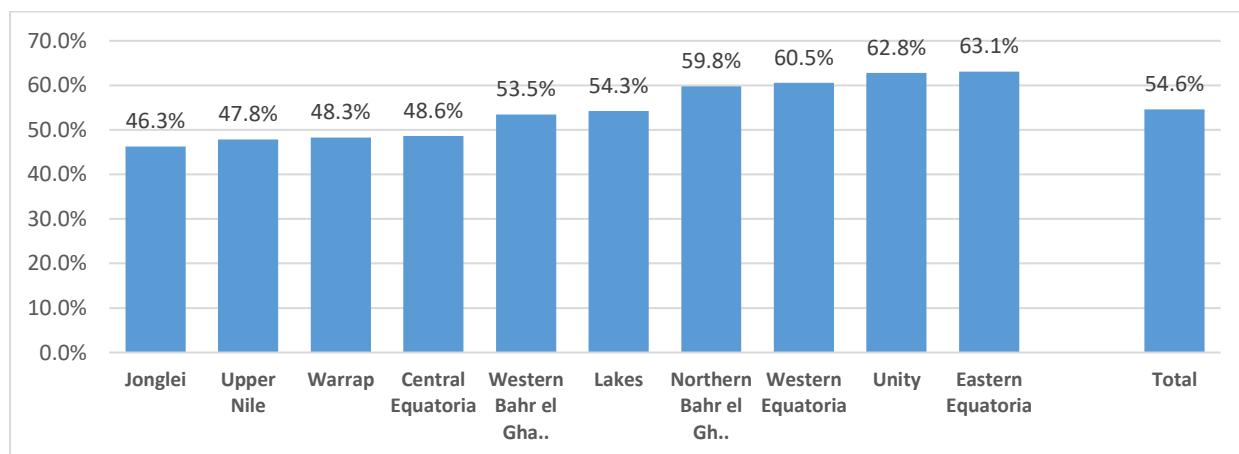
Figure 5.10: Women meeting Minimum Dietary Diversity



5.6. Retrospective morbidity

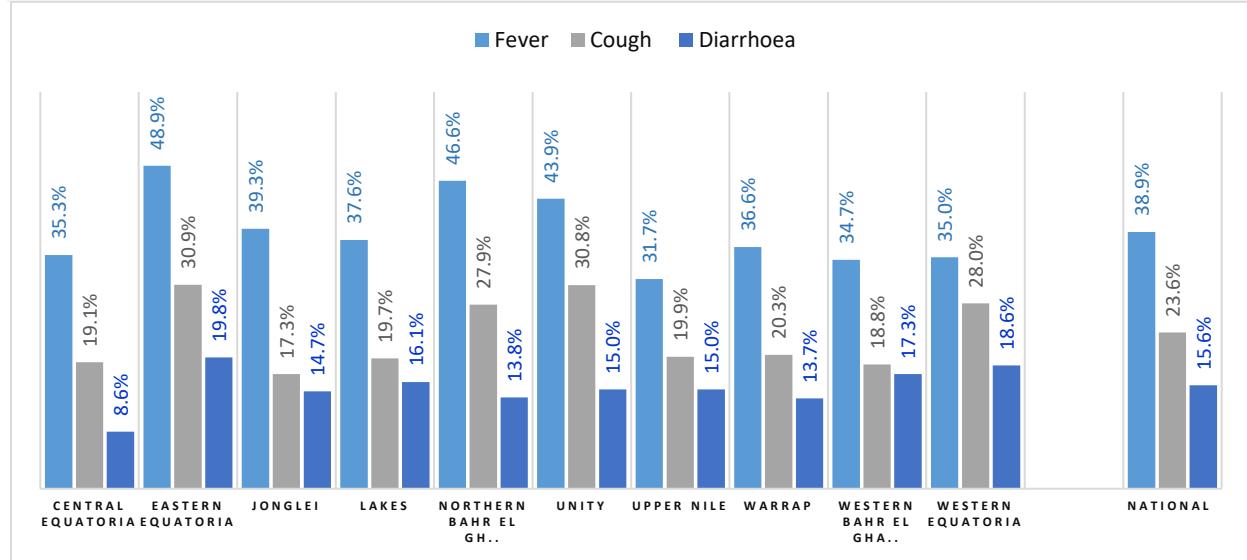
Morbidity data was collected from caregivers of children aged (0-59 months) from the sampled households. The interviews were based on retrospective two week recall prior to the survey data collection. An estimated 54.6 percent of total surveyed children were reportedly sick from one or more illness in the two weeks prior to the survey data collection (Figure 5.11). This morbidity estimate is higher than similar periods in the previous post-harvest season (49 percent). Increased rains above average could have contributed to water contamination resulting in increased water borne diseases. Flooding was also reported in many areas where significant number of households were affected. Morbidity affected both boys and girls equally with no significant difference in prevalence between the two.

Figure 5.11: Overall Morbidity among children <5 years, 2 weeks retrospective



The type of diseases experienced in December 2019 were similar to the same time in 2018, with the highest proportion (38.9 percent) of children suffering from fever, followed by cough (23.6 percent) and diarrhea (15.6 percent) (Figure 5.12).

Figure 5.12: Morbidity symptoms among children under 5 years of age



5.7. Vitamin A supplement and deworming

Vitamin A (VitA) has multiple benefits to a child, this includes supporting a strong immune system, reducing incidence and severity of diarrhoea and prevention of blindness. Vitamin A has also been shown to improve a child's survival chance by 12 percent. Data on Vitamin A and Deworming was collected for children 6-59 months. Caregivers were asked whether the child received Vitamin A and deworming tablets in the past six months.

At national level, 66 percent of children 6-59 months had received VitA supplements and 66.8 percent of children 12-59 months had been dewormed. All these rates are below the recommended >80 percent to have adequate impact of public health importance (Figure 5.13 and Figure 5.14).

Figure 5.13: Vitamin A Supplementation for 6-59 months children (Dec 2019)

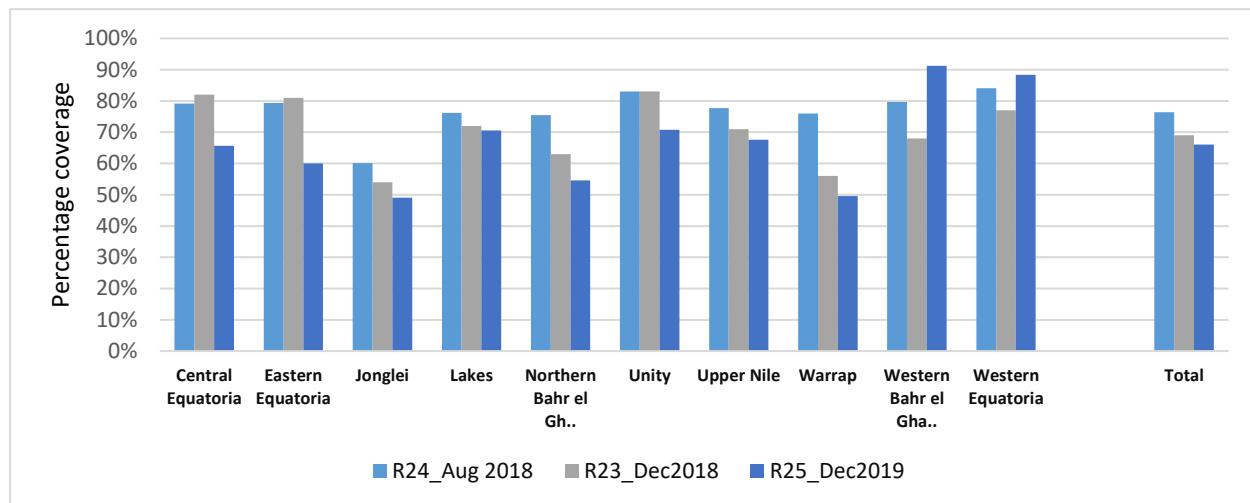
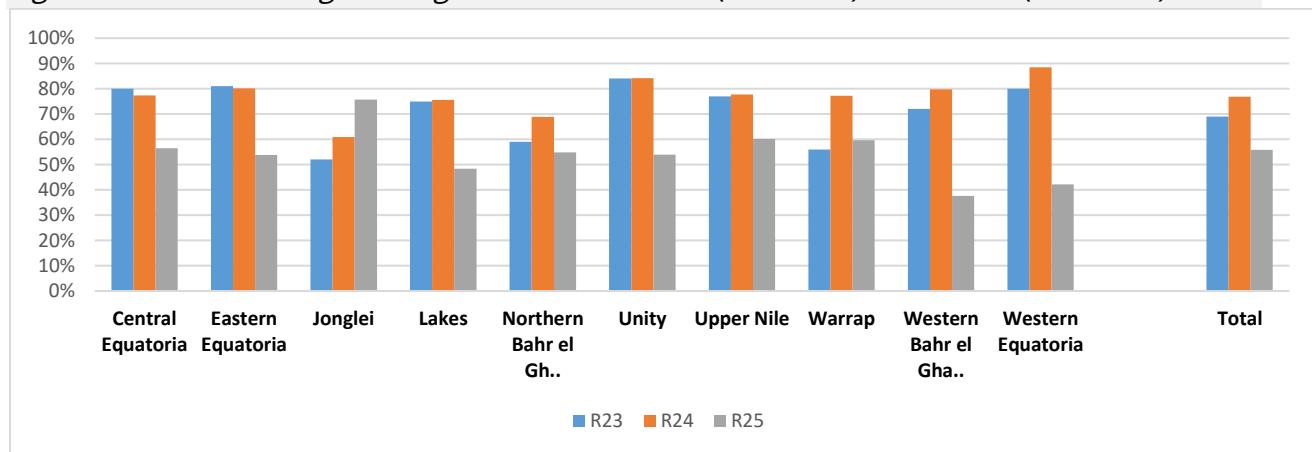


Figure 5.14: Deworming coverage FSNMS Round 23 (Dec 2018) - Round 25 (Dec 2019)



5.8. Causal Analysis of malnutrition

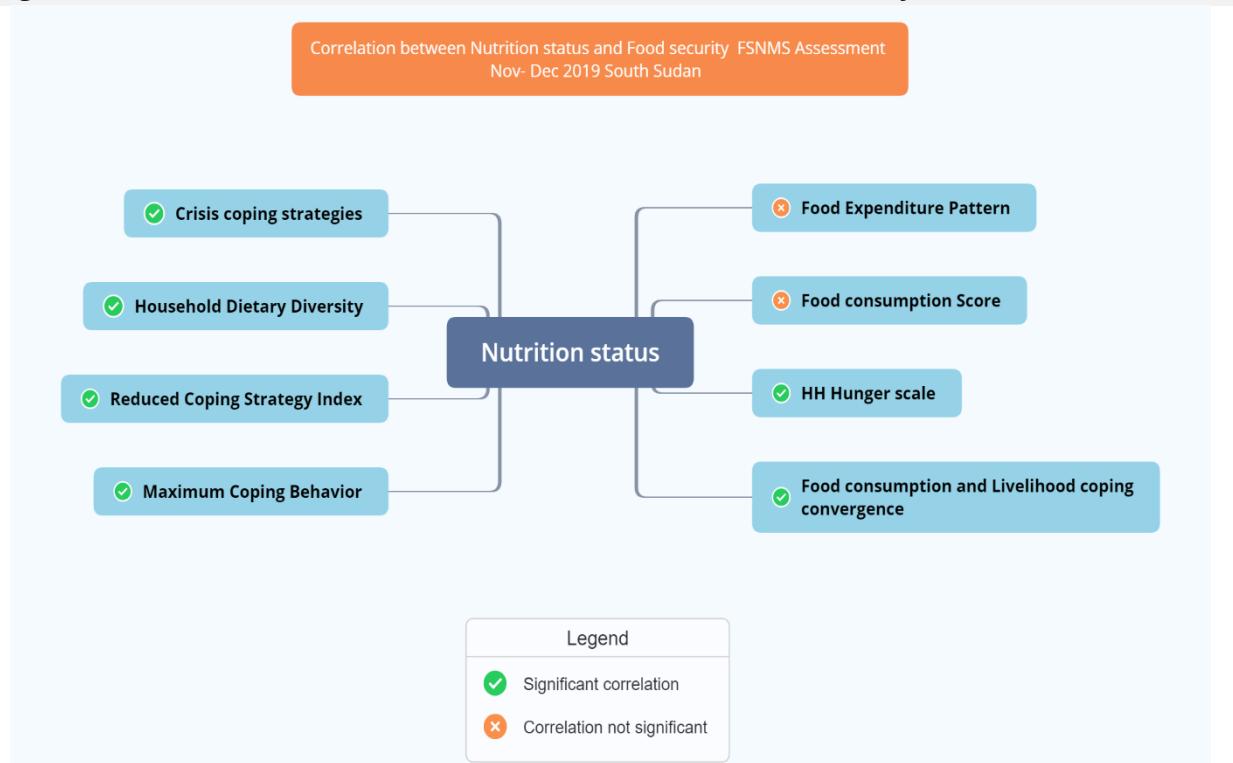
Correlation analysis was conducted to establish associations between different malnutrition causal factors. Using the malnutrition causal framework, analysis was run for food security, morbidity, care practice and WASH. Below are the results of the analysis:

5.8.1. Nutrition status and Food Security.

Analysis of nutrition status of under the age of five years children indicated significant correlation with food security indicators as shown in 5.15 below. Malnutrition showed significant ($P=0.001$) increasing rates from 8.8 percent (Alert) in Food consumption and Livelihood convergent (FCLC) phase 1 group, to 18.8 percent (Critical) in FCLC phase 5 group of households, this is an increase by 10 percent age points across the phases.

Association between coping behaviour scale and malnutriton rates showed significant correlation ($p=0.002$). households practising highest coping behaviour (maximum coping) contributed to 45 percent of the overall malnourished cases, the higest contribution within the different coping levels.

Figure 5.15: Correlation between Nutrition status and Food Security



Malnutrition steadily increased as household hunger increased. Proportion of malnourished cases increased from 10.4 percent in households with no hunger to 23 percent in household with severe hunger. This is an increase of more than 100 percent.

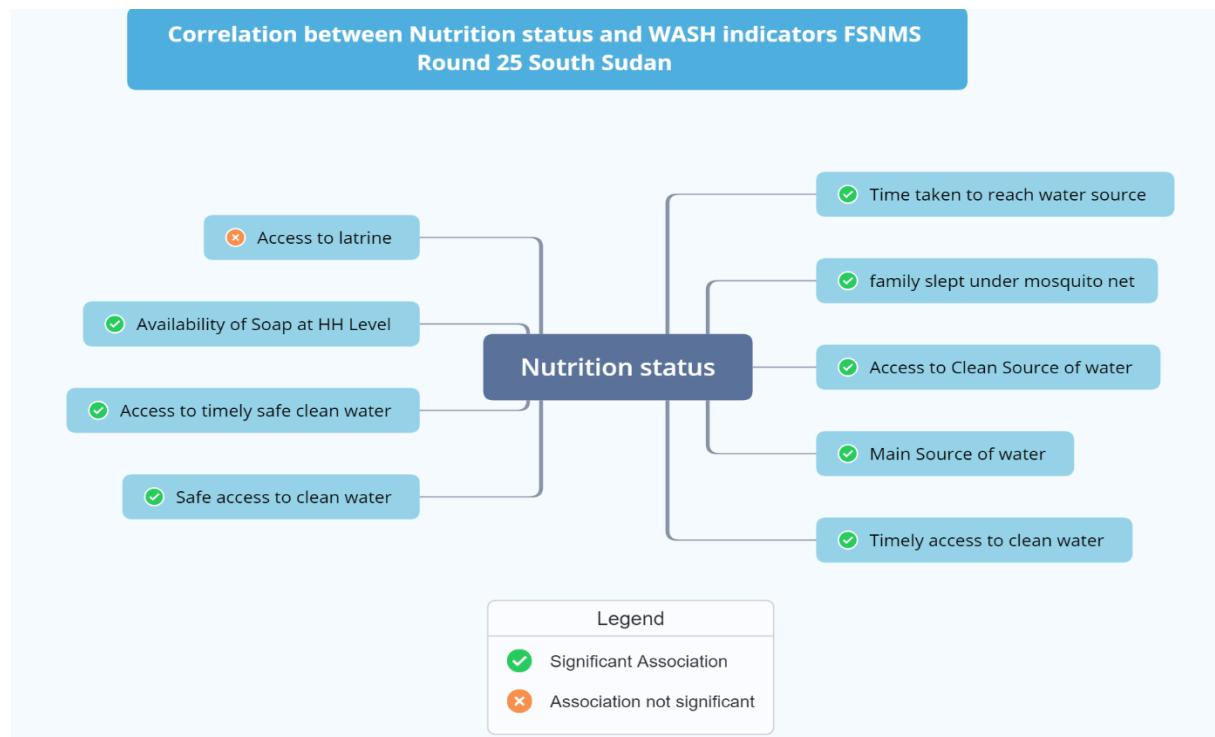
Household dietary diversity was also correlated with nutrition status as increase of dietary diversity from 1-2 food groups to 4+ food groups showed reduction in malnutrition from 14.55 to 13.3 percent. ($p=0.006$).

5.8.2. Nutrition status and WASH (Water sanitation and Hygiene).

Majority of WASH related variables had significant correlation with nutrition status of children under the age of five years. Figure 5.16 shows graphical representation of bivariate correlation between various indicators. Households with swamp as the main

source of water had the highest malnutrition rates 26.1 percent compared to the overall rate of 12.6 percent and 13.6 percent among households with tap as the main source of water. Significant difference in malnutrition rates ($P=0.048$) was also observed in households that took more than half a day to reach the main water source.

Figure 5.16: Correlation between WASH and Nutrition status FSNMS Round25



Malnutrition in these households was 21.95 percent compared to an average rate of 14.7 percent in households that either had water or spent less than half a day to reach the water collection points.

Convergence of WASH indicators to distance to water source, personal safety and cleanliness of the water showed significant correlation with nutrition status. Households accessing clean water in a safe environment had significantly lower rate of malnutrition (12.2 percent) compared to 13.8 percent among other households.

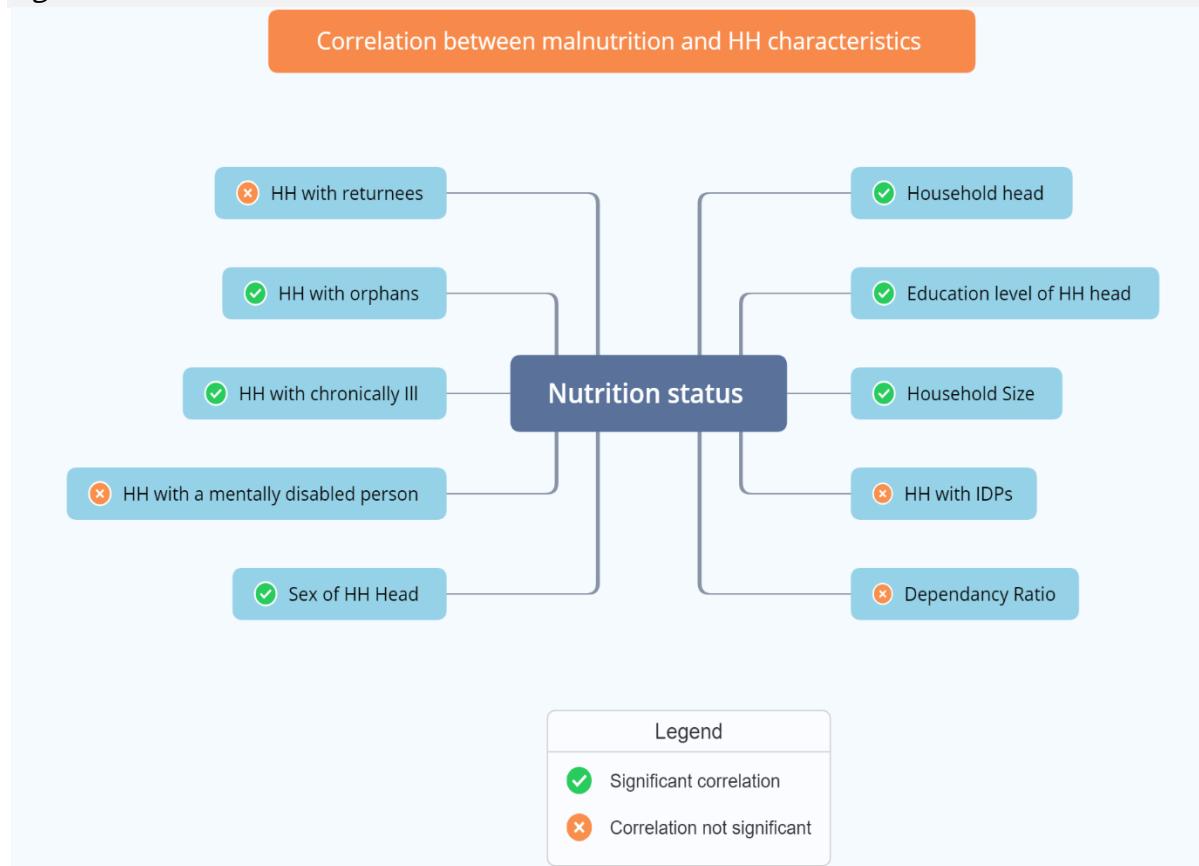
In general WASH is shown to have significant correlation with malnutrition rates. Similar pattern was observed for FSNMS Round 24.

5.8.3. Correlation between Nutrition status and HH demographics

Significant difference in malnutrition rate was observed in the different households head categories of adult-male and adult-female at 11.8 percent and 16.3 percent respectively. The

difference is statistically significant ($P=<0.001$) and difference phase classification of serious and critical malnutrition for male and female headed respectively (Figure 5.17).

Figure 5.17: Correlation between household characteristics and Nutrition status



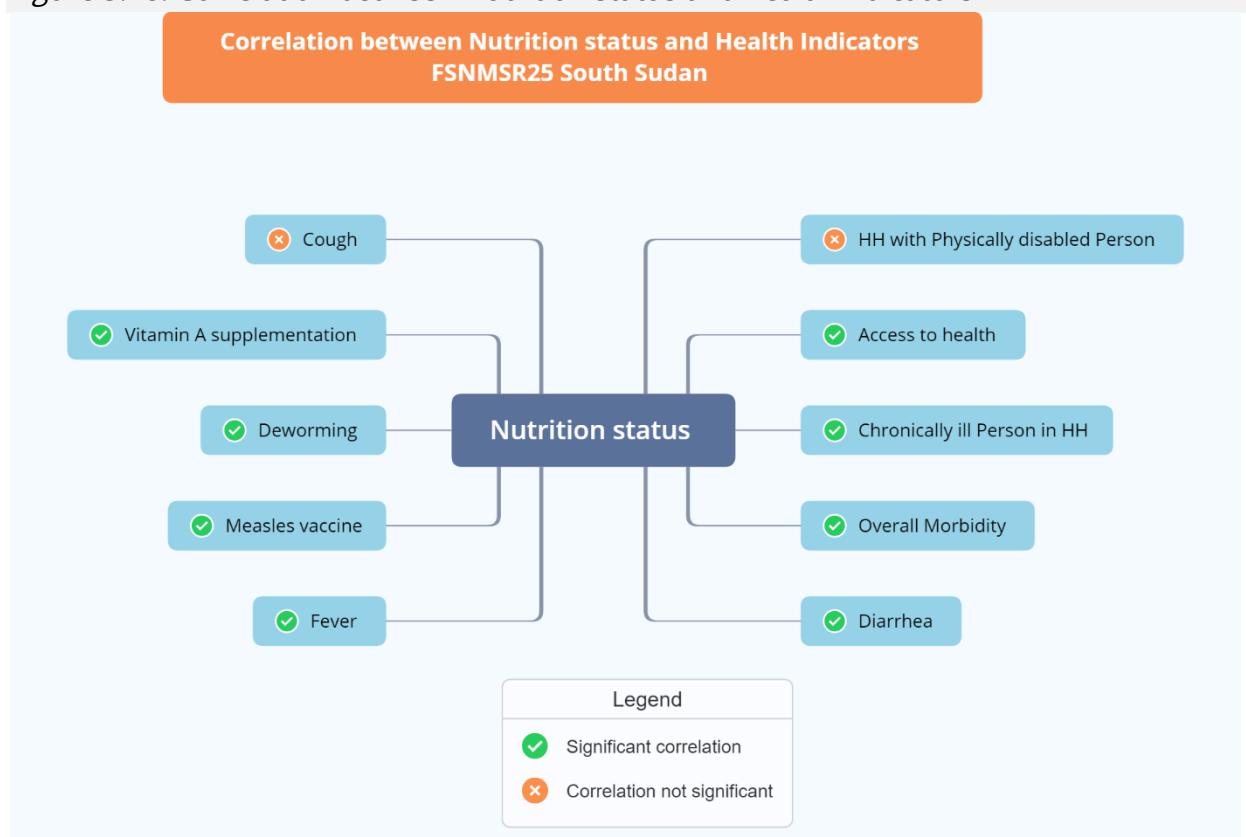
Significant correlation was observed between households' size and prevalence of SAM. Although no difference was observed for MAM cases, SAM cases significantly increased from households with <5 members (3.3 percent SAM) to 5.7 percent in households with >15 members.

5.8.4. Correlation between malnutrition and healthcare

Measles vaccination as a proxy for vaccine completion showed significant correlation with nutrition status. Difference between vaccinated children and those not vaccinated was significant with a 2.01 percentage point.

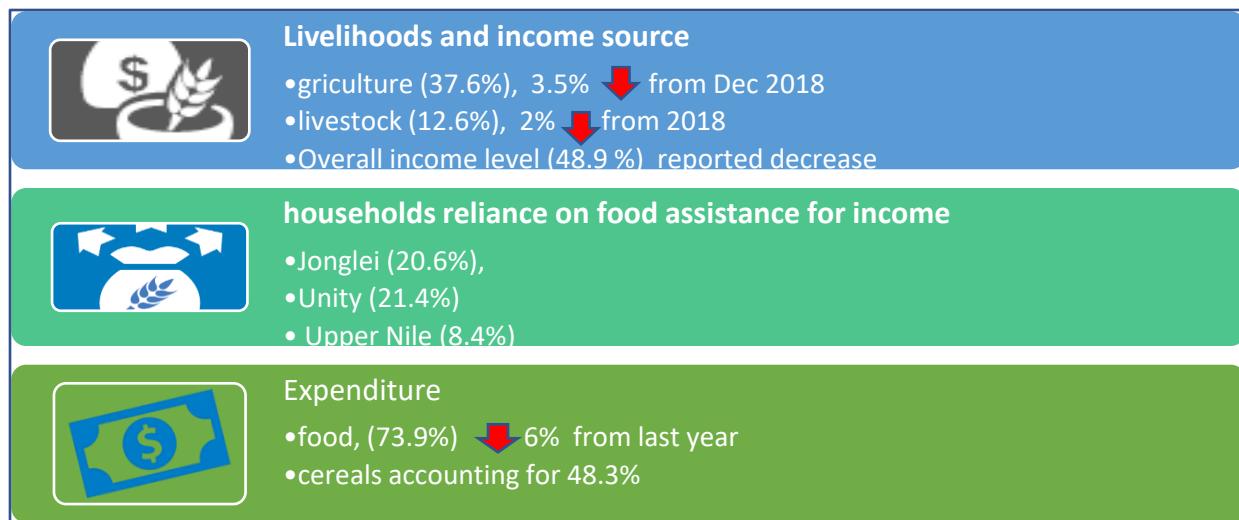
Fever was significantly higher (74 percent) among children who did not sleep under mosquito nets compared to 70 percent for those who slept under a mosquito net. This effect is further felt by the significantly higher malnutrition rates in households without nets (15.5 percent) compared to those with nets 12.3 percent.

Figure 5.18: Correlation between Nutrition status and health indicators



Diarrhea and fever showed significant correlation with malnutrition. Strong correlation was observed in Jonglei and Unity states, where the difference in GAM rates were 7 and 9 percentage points respectively.

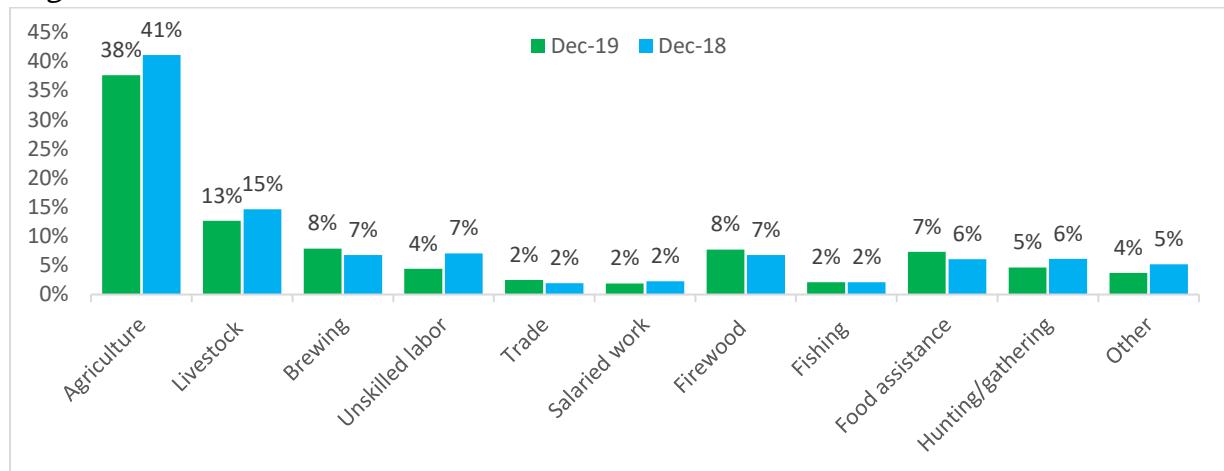
6. Livelihoods, Income and Expenditure



6.1 Main Sources of Livelihoods

Households were asked about their first and second most important sources for getting food and income during the three months preceding the assessment. Collectively, the main households' sources for food and income were agriculture (37.6 percent), livestock (12.6 percent), sale of alcoholic beverages (7.9 percent), sale of firewood/natural resources (7.7 percent) and sale of food assistance (7.3 percent) (Figure 6.1). As compared to December 2018, the proportion of those who relied on agriculture has decreased by 3.5 percent from 41 percent while the proportion of households that relied on livestock has also decreased by 2 percent. On the contrary, the proportion of households involved in the sale of food assistance and alcoholic beverages has increased marginally by 1.2 and 1.1 percent respectively.

Figure 6.1: Livelihoods Sources



When livelihood analysis was conducted for the first main source of income alone, agriculture accounted for 67.6 percent, followed by food assistance (6.8 percent), livestock sale (5.7 percent), sale of alcoholic beverages (4.6 percent) and sale of firewood and nature resources (4.1 percent). As compared to December 2018, households' reliance on agriculture as the main source of income has increased marginally by 0.3 percent while the sale of livestock has decreased marginally by 2.1 percent from 7.8 percent to 5.7 percent. On the contrary, sale of food assistance has increased marginally by 1.1 percent from 5.7 percent to 6.8 percent.

At the state level, the proportion of households who depend on agriculture is highest in Lakes (92.2 percent), Northern Bahr el Ghazal (83.9 percent), Western Equatoria (82.2 percent), Central Equatoria (80 percent) and Warrap (79 percent). On the other hand, households are more dependent on livestock in Eastern Equatoria (10 percent), Unity (12.8 percent), Jonglei (10.9 percent) and Upper Nile (9.9 percent) than other states. At the same time, a high proportion of households relied on food assistance for income in Jonglei (20.6 percent), Unity (21.4 percent) and Upper Nile (8.4 percent).

In comparison with December 2018, households' reliance on agriculture decreased in Central Equatoria, (5.1 percent), Unity (7.1 percent), Northern Bahr el Ghazal (4.9 percent) and Western Equatoria (7 percent). It however increased by 4 percent in Unity State. Similarly, households' reliance on livestock decreased by 4.3 percent in Central Equatoria, 4.5 percent in Jonglei and Unity and 8 percent in Warrap. Livestock-based livelihood increased by 3.9 percent in Upper Nile States. While the proportion of households which relied on food assistance as a source increased in Jonglei by 6.9 percent and marginally in Lakes and Warrap by 1.4 percent and 0.7 percent respectively but decreased in Unity and Western Bahr el Ghazal by 6.5 percent and 4.3 percent respectively (Figure 6.2). Figure 6.3 indicates the sources of livelihoods by state.

Figure 6.2: Main Livelihood Changes December 2018 compared to December 2019

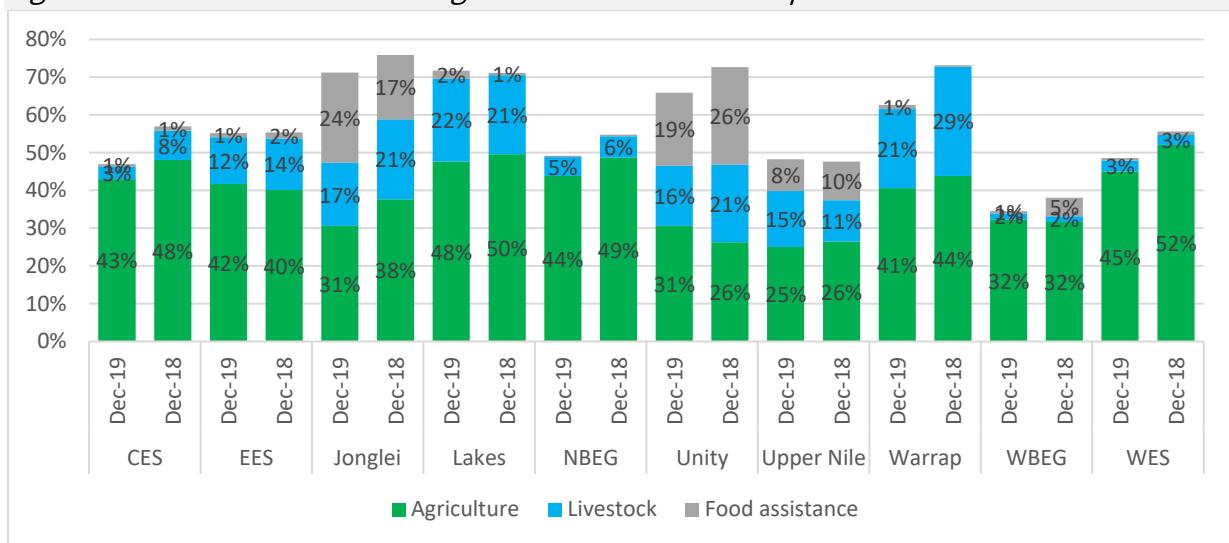
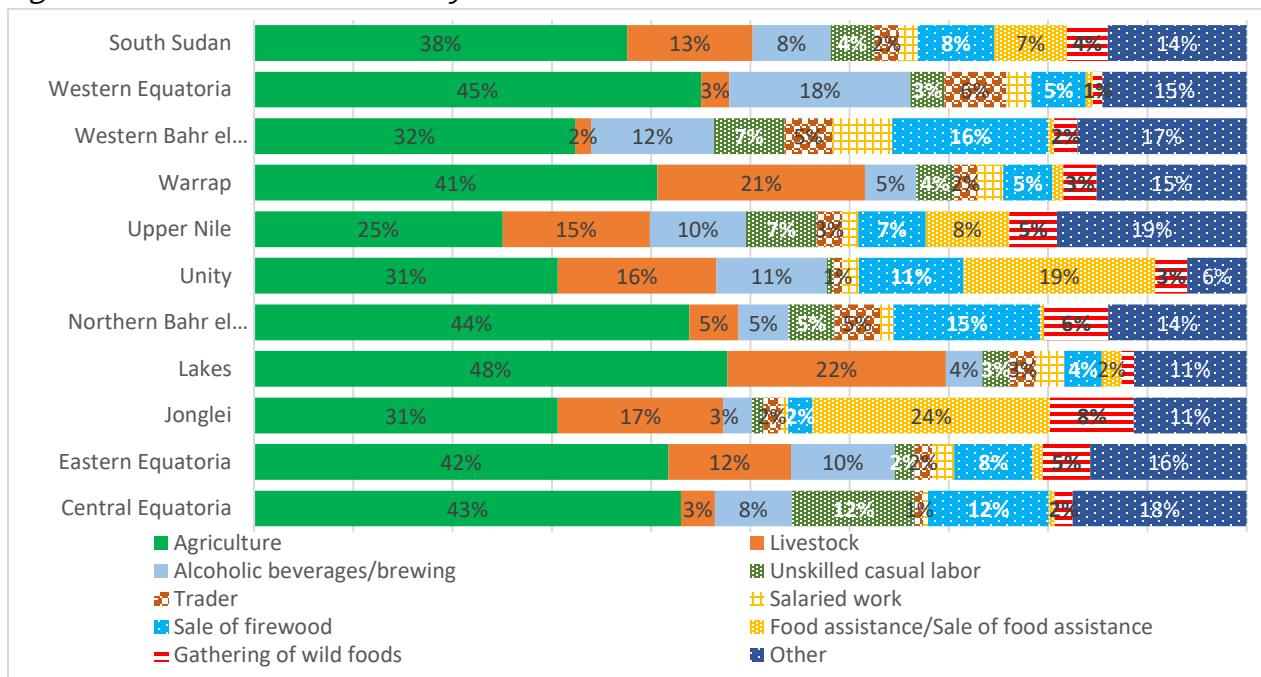


Figure 6.3: Livelihoods sources by state



6.2 Monthly income and expenditure

Localize conflicts, large-scale displacement and conflict-related disruption of economic activities and livelihoods have compromised the ability of households to generate income to meet their basic needs, including food thereby increasing the poverty levels. The decline in the economic fortunes due to conflict and economic contraction is manifested in the 48.9 percent of household who reported a decrease in their income sources when compared to the previous year. On the contrary, 30.8 percent of households reported no change in their

income sources as compared to the previous year while only 3 percent reported an increase in their income sources (Figure 6.4)

The main reasons for the decrease in income are loss of income earning opportunities (49.8 percent), of which lack of access to location of livelihood activity was (7.4 percent) and complete loss of income source (13.7 percent) or loss of some income sources (36.1 percent) while changes in prevailing market conditions have also reduced the income of 23 percent of households as a result of the prevailing security and macroeconomic conditions in the country. In addition, the impact of floods, along with pest and diseases reduced the incomes of some family households (Figure 6.5). The combined impact of the high inflationary trends and increasing prices of basic goods and services have resulted in reduced purchasing power for most households and reduced ability to meet their food and nutrition needs.

Due to the impact of the ongoing economic crisis and the high dependence on markets to meet food needs, households are increasingly affected by rising and high food prices. The share of total household expenditure is crucial for analyzing the impact of food price fluctuations on both the quality and quantity of household food consumption. The changes in prices often result in higher share of the total household expenditure spent on food, which tends to constrain household's access to resources due to increase in food prices.

Households that spend more than 75 percent of their total household expenditure on food are considered very vulnerable and consequently food insecure, whereas people who spend 65 to 75 percent of their total household expenditure on food are considered to have high food insecurity. Similarly, households that spend 50 to 65 percent of their income on food

Figure 6.4: Current income compared to December 2018

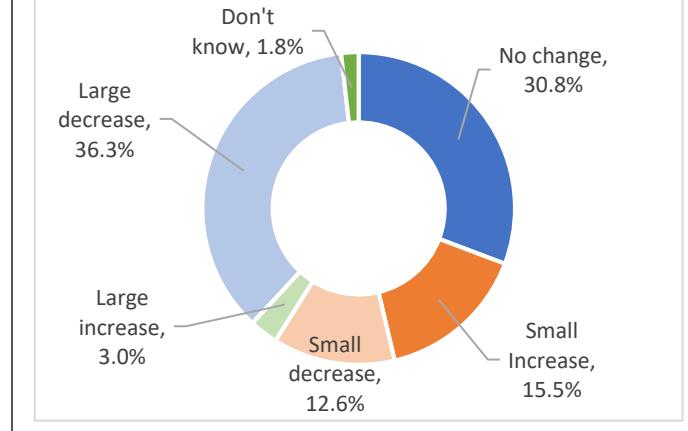
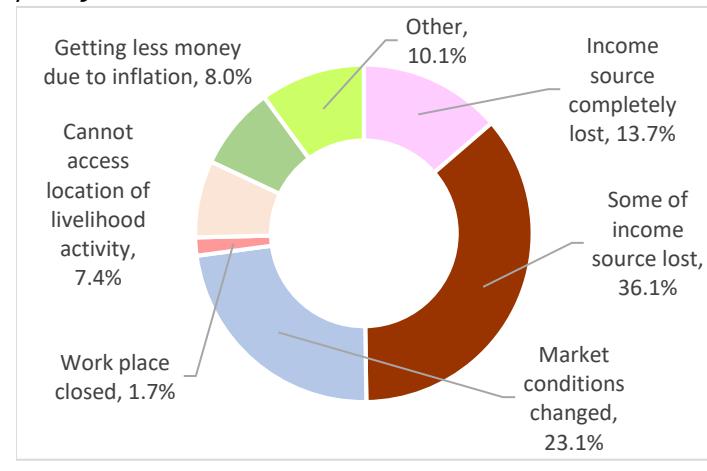


Figure 6.5: Reasons for reduced income over the past year



have medium food insecurity while those that spend less than 50 percent of their income on food are considered to have lower levels of food insecurity.

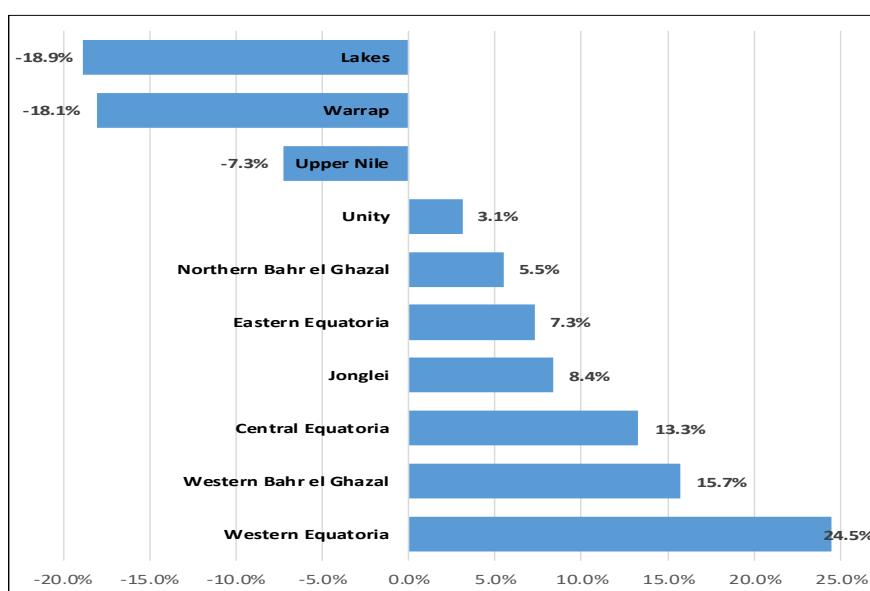
Across the country, 58 percent of households had very high (48 percent) to high (10 percent) expenditure on food alone. As a result, additional shocks tend to constrain their ability to sustain their food consumption through market purchases

On average, 73.9 percent of household expenditure was on food, with expenditure on cereals accounting for 48.3 percent of the total food expenditure in December 2019. This represents a slight decrease in both expenditure on food and cereals when compared to August 2019, when it stood at 80 percent and 47 percent respectively.

At the state level, Upper Nile (61.6 percent), Warrap (56.2 percent) and Northern Bahr el Ghazal (51.4 percent) all had more than 50 percent of households which spend more than 75 percent of their income on food alone. On the Contrary, Western Equatoria, Central Equatoria and Unity had the highest proportion of households with low expenditure at 49 percent, 34.9 percent and 35.1 percent respectively.

As figure 6.6 shows, the proportion of households with very high food expenditure share decreased by 18.9 percent in Lakes State, 18.1 percent in Warrap, and 7.3 percent in Upper Nile. On the contrary, the proportion of households with very high food expenditure share increased in Western Equatoria (24.5 percent), Western Bahr el Ghazal (15.7 percent), Central Equatoria (13.3 percent), Jonglei (8.4 percent) and Eastern Equatoria (7.3 percent) due in part to continuing macroeconomic challenges/inflation, unusually food prices and heavy market dependence to meet food needs.

Figure 6.6: Percentage change in households with very high expenditure share between Dec '19 and Dec '18



7. Agriculture

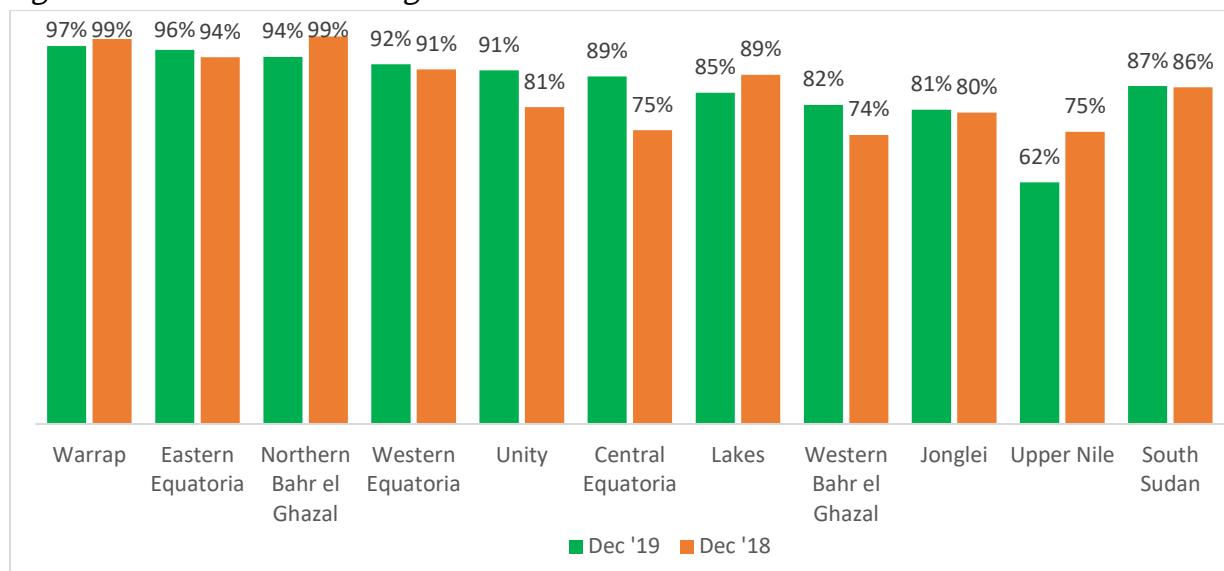
Land access	•87% of households •92% cultivated crops  17% from last year
Average cultivation (Area and % of HH)	•Sorghum 1.9 feddan 68.4% •Maize 1.8 feddans 38.6% •Millet 1.5 feddans 8% Groundnuts 30.3%
Seed Sources (% HH)	•Sorghum (57.4%) retained and 14.9 % assistance from FAO and NGOs. •Maize (28.5%) assistance from FAO and NGOs and 43.2% used own seeds •Groundnuts 32.5% market purchase and 56.7% own-produced seeds
Period Harvested Stocks last	•sorghum 3 months, •millet and maize over 2 months. •Rice 4 months

7.1. Land Access

In most agrarian and pastoral communities, access to land plays a key role in households' ability to engage in crop/livestock production and to access to food and income. Across South Sudan, 87 percent of the assessed households had access to land in December 2019 which implies that the low level of agricultural production is the result other constraints related to access to inputs, low agricultural mechanization, the impact of pest and diseases and sporadic inter-communal violence. As compared to December 2018, the proportion of households with access to land increased marginally by 1 percent from 86 percent.

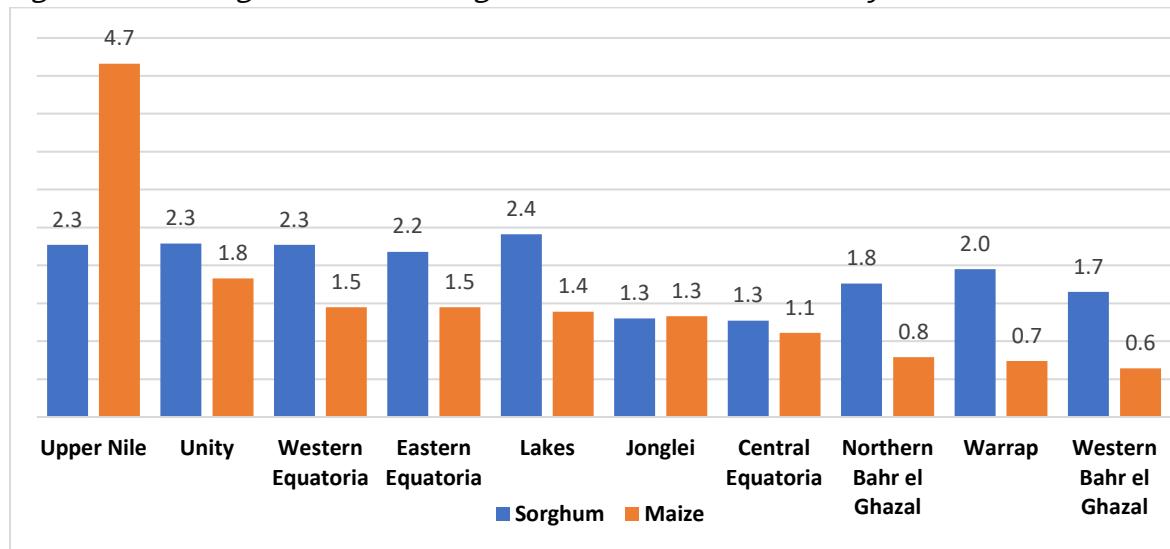
At state level, more than 9 in 10 households have access to land in Warrap (97 percent), Eastern Equatoria (96 percent), Northern Bahr el Ghazal (94 percent), Western Equatoria and Unity State (91 percent). Upper Nile had the lowest proportion of households with access to land (62 percent), which could be related to insecurity hampering crop cultivation (Figure 7.1). As compared to the previous year, access to land has decreased in Upper Nile, Northern Bahr el Ghazal and Lakes by 15 percent, 5 percent and 4 percent respectively. On the contrary, access to land increased in Central Equatoria (14 percent), Unity (10 percent) and Western Bahr el Ghazal (8 percent).

Figure 7.1: Households having access to land for cultivation



On average, households across the country cultivated 1.9 feddans of sorghum, 1.8 feddans of maize and 1.5 feddans of millet. The average feddans of sorghum cultivated was higher in Unity (2.3), Lakes (2.4) and Western Equatoria State, while the average feddans for maize was it's the highest in Upper Nile (4.66), Eastern Equatoria (1.45) and Western Equatoria (1.45) (Figure 7.2)

Figure 7.2: Average feddans of sorghum and maize cultivated by state in 2019

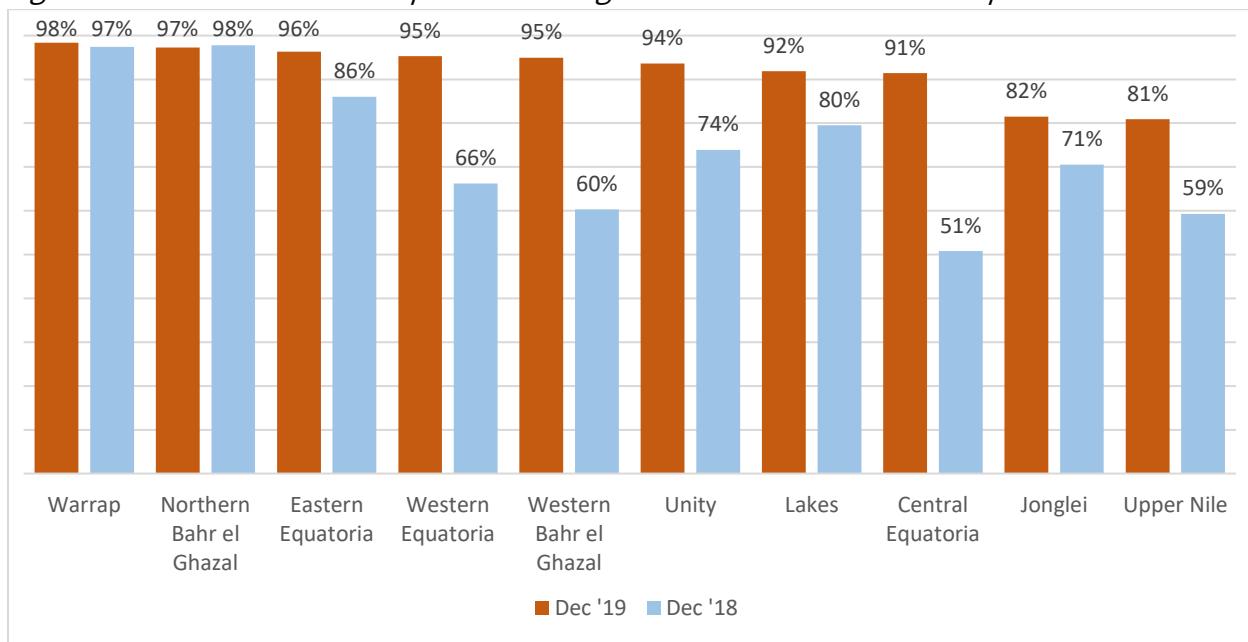


7.2. Crop planting

7.2.1. Area planted

Given the high proportion of households who had access to land, households' engagement in crop cultivation during the main agricultural season of 2019 was equally high. Nationally, 92 percent of households which had access to land cultivated crops, and this represents a significant jump of 17 percent from the previous growing season when 72 percent participated in crop cultivation. In Warrap and Northern Bahr el Ghazal, the proportion of households who cultivated crops remained generally the same as December 2018. However, there were increases in the proportion of households which cultivated in December 2019 as compared to the previous year, mainly in Western Equatoria (29 percent) Western Bahr el Ghazal (35 percent), Central Equatoria (40 percent), Upper Nile (22 percent) and Unity (20 percent). To a large extent, the improving security conditions in most of these states provided the impetus for the increased proportion of households who planted crops.

Figure 7.3a: Households who planted during the 2019 Main Season compared 2018

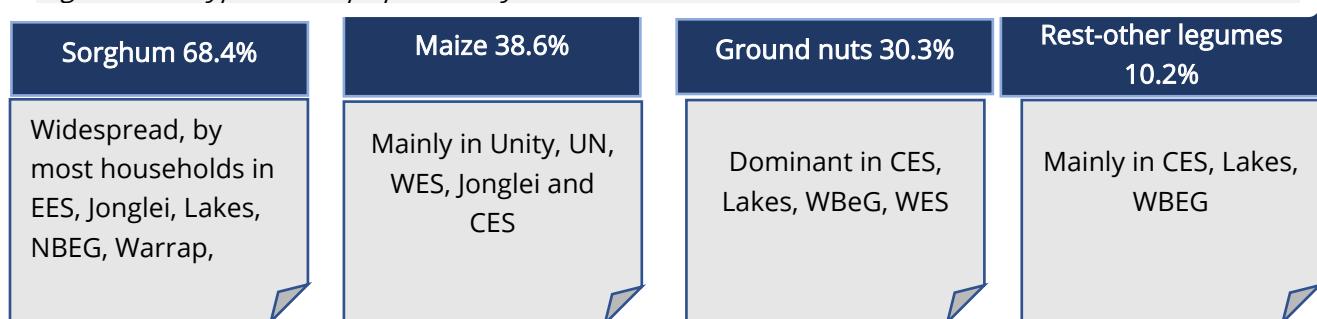


At the national level, the main crops cultivated during the 2019 growing season were sorghum (68.4 percent), maize (38.6 percent), groundnuts (30.3 percent) and millet (8.0 percent). At the state level, more households cultivated sorghum in Eastern Equatoria (87.9 percent), Jonglei (68.4 percent), Lakes (89.5 percent), Northern Bahr el Ghazal (99.5 percent), Warrap (99.5 percent) and Western Bahr el Ghazal (84.6 percent). Similarly, more than half of the assessed households cultivated maize in Jonglei (53.5 percent), Unity (82.7 percent) and Upper Nile (80.5 percent) while the cultivation of groundnuts was undertaken mostly by

households in Central Equatoria (50.1 percent), Lakes (70.8 percent), Western Bahr el Ghazal (77 percent) and Western Equatoria (68.9 percent).

Despite the increase in the proportion of households which planted in 2019, the harvest was assessed to be worse than the previous year for sorghum (63.8 percent), maize (61.4 percent) and millet (65.9 percent) across the country. Most households in Jonglei, Lakes, Northern Bahr el Ghazal, Unity, Upper Nile and Warrap reported worse harvest of sorghum and maize as compared to the previous in sharp contrast to Central Equatoria, Eastern Equatoria, Western Bahr el Ghazal and Western Equatoria where the harvest of maize and sorghum was assessed to be better or same as the previous year by most households. Nationally, 59.9 percent of household reported better or same harvest of crops as compared to the previous year.

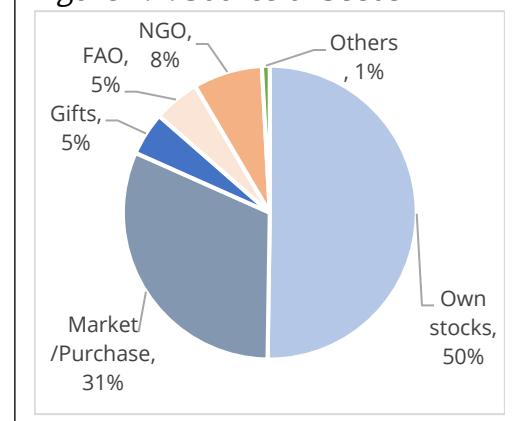
Figure 7.3b: Types of Crops planted by state



7.2.2. Seed sources

The source of seeds for planting varied depending on the type of crop. While most households (57.4 percent) across the country retained sorghum seed stock from the previous and 14.9 percent receiving assistance from FAO and NGOs. There was greater reliance on FAO and NGOs (28.5 percent) for maize seeds, but 43.2 percent used seed stock from the previous harvest. In the case of groundnuts, market purchase accounted for 32.5 percent of seed sources while 56.7 percent used own-produced seeds from the last harvest. Only 29.5 percent of households in Jonglei used their own seed stock and 49.4 percent was from support from FAO and NGOs.

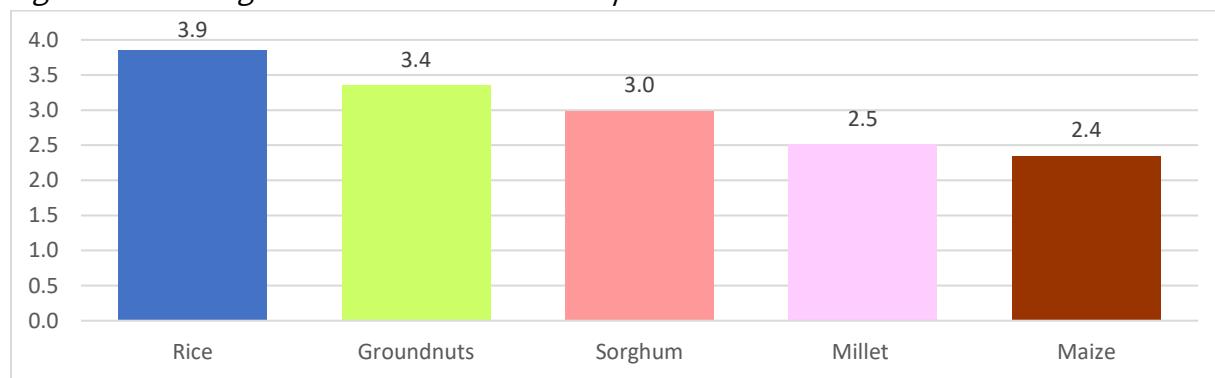
Figure 7.4: Source of Seeds



7.4. Length of time production last

Households in South Sudan generally do not produce enough food to meet their need even in very good years as production is typically at subsistence level and the number of feddan cultivated are few. As a result, own-produced stocks of cereals tend to be depleted a few months after the harvest and dependence of markets purchase or assistance becomes the main source of households' sustenance. Across the country, stocks of harvested sorghum are expected to last for just three months, while stocks of millet and maize will last for a little over 2 months. Rice stocks are expected to last for 4 months. At the state level, cereal stocks will last longer among households in Western Equatoria, being 5 months for sorghum and 4 months for millet (Figure 7.5). Consequently, the lean season was likely to start early in most states as cereal stocks and other food items become depleted earlier than normal.

Figure 7.5: Average number of months own-produced stocks will last



7.5. Challenges to agricultural production

Nationally, the key challenges which affected a substantial proportion of farming households were shortage of rain, floods/too much water, pest and diseases, heavy weed infestation and shortage of agricultural tools. These challenges contributed to a reduction in the area under cultivation, reduced crop harvest or the destruction of field crop which ultimately undermine the food security situation of the affected households. The impact of these challenges varied across different states. While shortage of rains negatively affected farming activities of most households in Lakes (65.5 percent), Unity (40 percent) and Western Bahr el Ghazal, field crops were destroyed by floods or too much rain in Central Equatoria (41.8 percent), Jonglei (90.9 percent), Northern Bahr el Ghazal (85 percent), Upper Nile (70.5 percent) and Warrap (80.5 percent).

The impact of pest and diseases was widespread across all states, but the states in which most households were affected include Central Equatoria (65.5 percent), Eastern Equatoria (71.7 percent), Jonglei (51 percent), Unity (51.8 percent), Western Bahr el Ghazal (53.1 percent) and Western Equatoria (62 percent). Beside these environmental challenges, other structural constraints such as shortage of seeds and agricultural tools were widespread across all states with the greatest seed shortage being reported in Central Equatoria (63.2

percent) and Western Bahr el Ghazal while shortage of agricultural tools were reported by most households in Central Equatoria (67.7 percent). Despite the modest improvement in the security situation, safety concerns and insecurity hampered crop cultivation across the country with the highest incidence in Lakes (29.1 percent), Western Equatoria (11.9 percent), Western Bahr el Ghazal (14.2 percent), Upper Nile (10.6 percent) and Jonglei (10.2 percent).

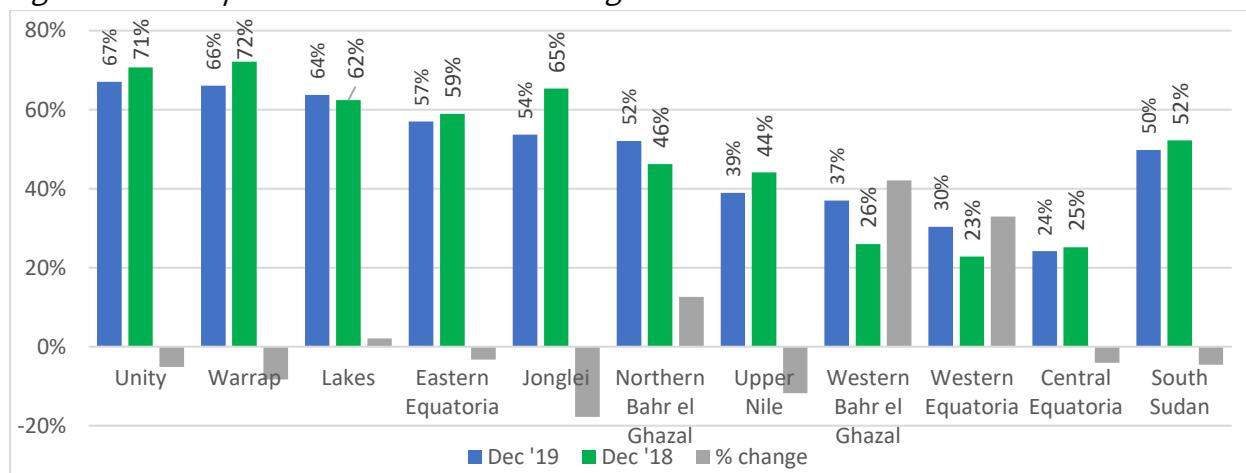
Some 9 in 10 households reported crop damage by fall armyworm across South Sudan, with sorghum and maize being the key crops affected. While 38.4 percent of households reported damage to only small area of small field, 24.8 percent reported damage on most of their maize crop. Similarly, damage to most of the sorghum crop was reported by 33.4 percent of households across the country, but 34.3 percent report damage to a small area. At the state level, highest incidence of maize crop damage by fall armyworm was reported in Unity (46.3 percent), Upper Nile (35.9 percent) and Warrap (32 percent).

8. Livestock

8.1 Livestock ownership

Livestock ownership is of critical importance in South Sudan as it serves as a source of milk and meat products as well as a means of securing household's financial capital. Some 49.8 percent of households owned livestock in December 2019, a decrease of 2.4 percent from December 2018 when livestock ownership was 52.2 percent (Figure 8.1). The current livestock ownership has increased marginally (0.4 percent) over December 2017 when 49.4 percent of households owned livestock. Within the states, livestock ownership has increased in Western Bahr el Ghazal, Western Equatoria, and Northern Bahr el Ghazal by 42 percent, 33 percent and 13 percent respectively as compared to December 2018. It however decreased by 18 percent in Jonglei, 12 percent in Upper Nile, 8 percent in Warrap, 5 percent in Unity and 3 percent in Eastern Equatoria. Nationally, 71.2 percent of households sold livestock to purchase food, non-food items (30.4 percent) payment of dowry and payment of debts or fines. Some 56.7 percent of household also relied on livestock for milk and dairy products.

Figure 8.1: Comparison of household owning livestock - Current vs December 2018



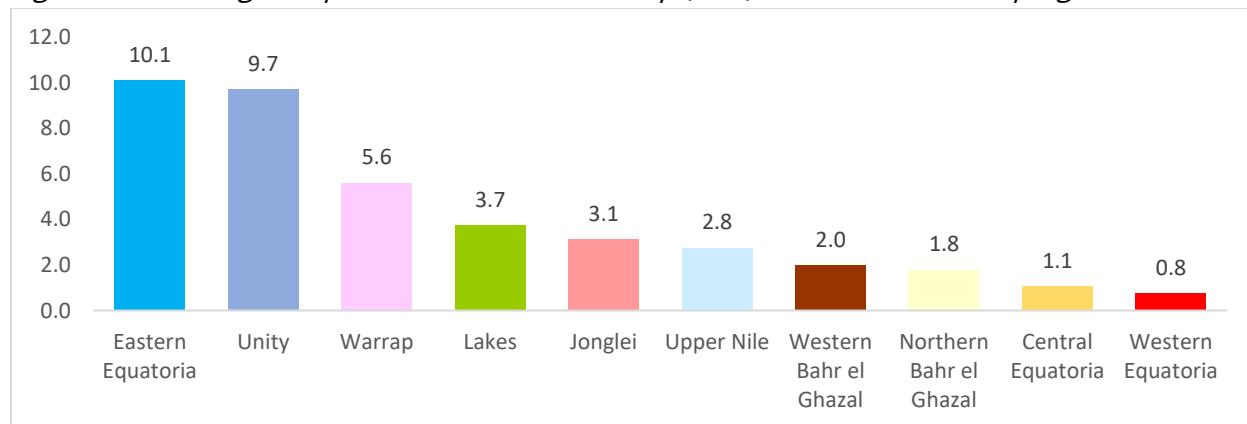
There was a significant variation in livestock ownership at the state level, with most households reporting ownership in Unity (67.1 percent), Warrap (66.1 percent), Lakes (63.7 percent), Eastern Equatoria (57 percent), Jonglei (53.7 percent) and Northern Bahr el Ghazal (52 percent) while Central and Western Equatoria have the lowest proportion of livestock ownership at 24.2 percent and 30.2 percent respectively. When compared to December 2018, livestock ownership has decreased in most states, notably in Jonglei (11.6 percent), Unity (3.6 percent), Warrap (6 percent) and Western Bahr el Ghazal (4 percent). Although the current livestock ownership among households has increased in Eastern Equatoria and Unity State as compared to December 2017, it has decreased in Lakes, Northern Bahr el Ghazal, Warrap and Upper Nile States. Overall, 41.1 percent of households across South Sudan have ever owned livestock, with the largest proportion of these households located in Jonglei,

Unity, Warrap, but these households lost most of their livestock to armed groups (25 percent), intercommunal raids (19.1 percent), disease outbreaks and bride prize payment (13.2 percent). Within the states, intercommunal raids caused most of the livestsos loses in Lakes (52.4) and Unity State (46.6 percent) while disease outbreak had a significant impact in Eastern Equatoria (29.5 percent), Northern Bahr el Ghazal (35.6 percent) and Western Equatoria (54.6 percent).

Across the country, livestock ownership has changed when compared to the same time last year with 58.7 percent of households reporting small (22.4 percent) to large decrease (36.3 percent) while 25.1 percent reported small (20.2 percent) to large increase (4.9 percent) in their herd. The states of Jonglei (59.8 percent), Warrap (40 percent), Eastern Equatoria (37.4 percent), Northern Bahr el Ghazal (37.4 percent), Upper Nile (35.4 percent) were all affected by large decrease in livestock numbers. Compared to the previous year, the largest decrease in livestock ownership was caused by disease outbreak (50.5 percent) and floods (17.4 percent). The states of Jonglei (51.2 percent) and Upper (39 percent) reported the highest proportion of households which attributed decrease in livestock number to floods.

On average, households which kept livestock owned 4.1 Tropical Livestock Units (TLUs) across South Sudan. Tropical livestock units are the reference units that facilitate the aggregation of livestock from various species using pre-established co-efficient. Unity and Equatoria states had the highest TLUs of 10.1 and 9.7 respectively followed by Warrap and Lakes states at 5.6 and 3.7 respectively while Central Equatoria and Western Equatoria have the lowest TLUs of 1.1 and 0.8 respectively. A reduction in TLUs compromises household's ability to meet various needs including access to meat, milk and the purchase of food. As compared to December 2018, the TLU across South Sudan has decreased marginally by 0.3. Although the TLUs remain unchanged in Central Equatoria as compared to December 2018, it increased in Warrap, Western Bahr el Ghazal and Lakes, but decreased significantly in Warrap and Upper Nile, potentially compromising households' access to livestock products and income (Figure 8.2).

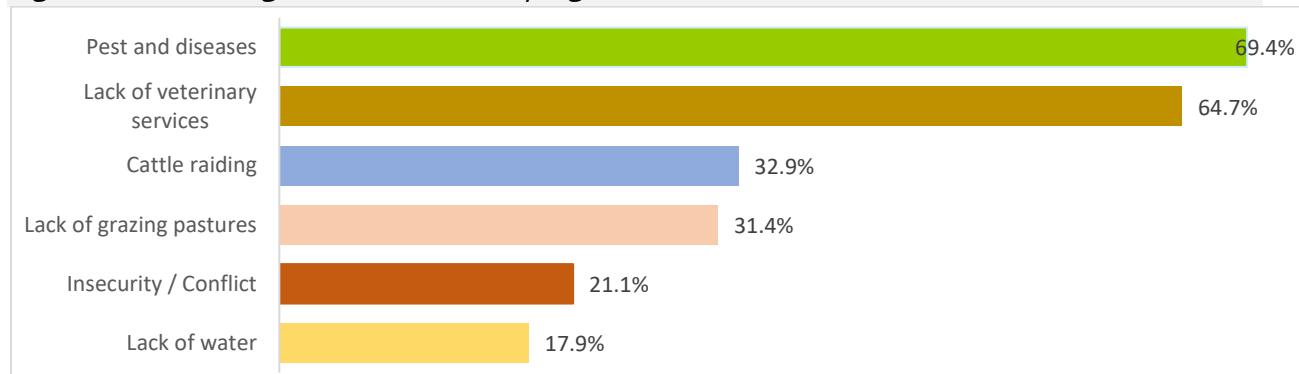
Figure 8.2: Average Tropical Livestock Ownership (TLU) of households keeping livestock



8.2 Challenges in livestock management

There are several challenges facing livestock rearing households, which have the consequence of contributing to a decline of herd size and the level of benefits derived from livestock ownership (Figure 8.3). The greatest challenges facing pastoral and agro-pastoral households across the country are incidence of pest and diseases (69.4 percent), Lack of veterinary services (64.7 percent), cattle raiding (32.9 percent) and lack of grazing pastures (31.4 percent).

Figure 8.3: Challenges to livestock keeping

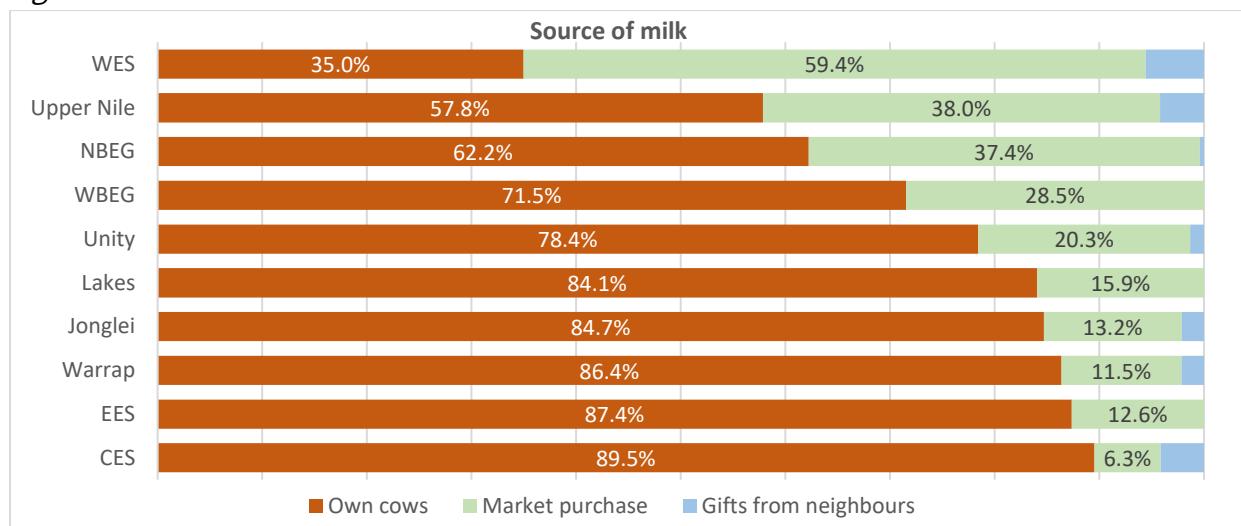


The incidence of pest and diseases as well as lack of veterinary services are generally widespread and affect most livestock-keeping households in all states, while raiding was more prevalent in Eastern Equatoria (46.7 percent), Jonglei (41.6 percent), Lakes (58.2 percent), Unity (48 percent), Upper Nile (25.7 percent) and Warrap (26.5 percent).

8.3. Access to Milk

At the time of the assessment, 33.4 percent of households were able to obtain milk for consumption mainly from their own cows (77.6 percent) and through market purchase (20.3 percent). Milk consumption was common across most states, with 74.5 percent of households in Unity reporting its consumption, but fewer households consumed milk in Central Equatoria (5.5 percent), Western Bahr el Ghazal (8.1 percent) and Western Equatoria (6.6 percent). In almost all states, households sourced the milk from their own cows except in Western Bahr el Ghazal where 59.4 percent relied on market purchase (Figure 8.4). In December 2018, 32.4 percent households were able to obtain milk for their consumption needs, with 72.7 percent getting it from their own livestock while 21.9 percent purchased milk from the market.

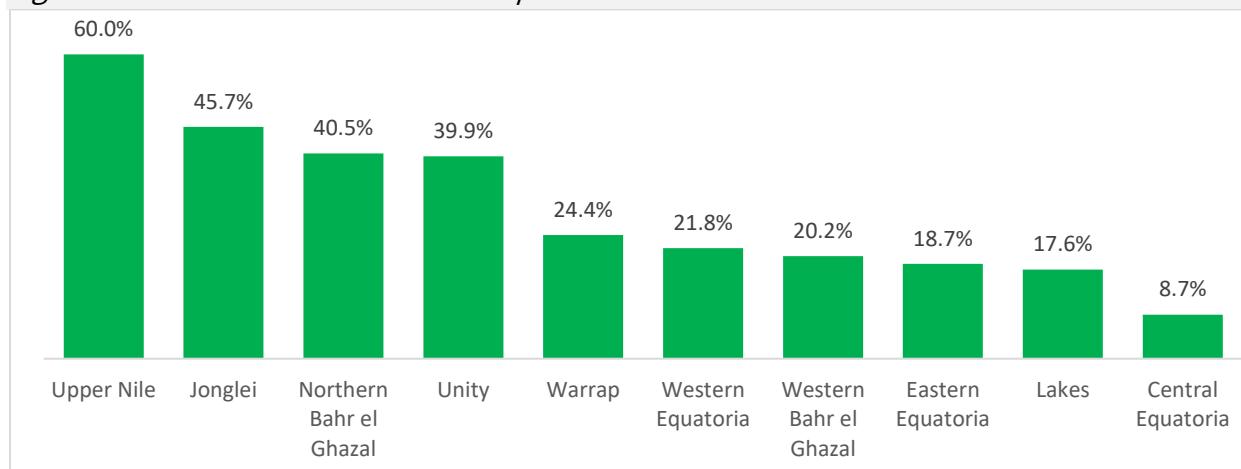
Figure 8.4: Household Source of milk



8.4. Fishing and Access to Fish for Consumption

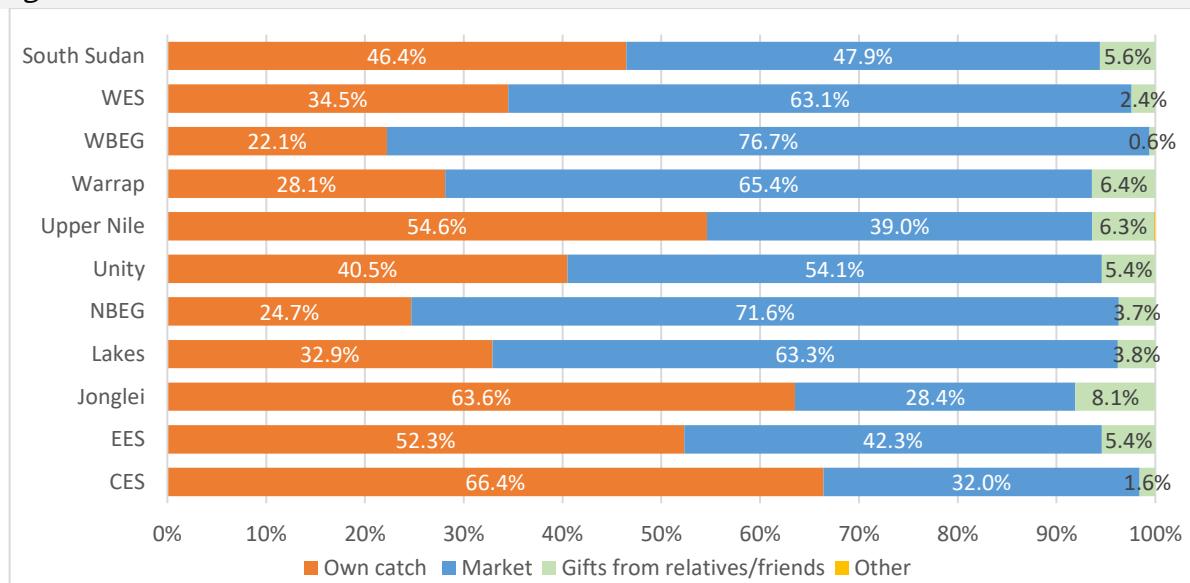
Fish is an important source of protein and income for riverine communities across South Sudan and 30.9 percent of households had access to fish for consumption during the time of the assessment in December 2019, up from 26.9 percent in December 2018. A higher proportion of households in Upper Nile (60 percent), Jonglei (45.7 percent), Northern Bahr el Ghazal (40.5 percent) and Unity State (39.9 percent) consumed fish while fewer households in Central Equatoria and Lakes had fish for consumption (Figure 8.5). Fish consumption decreased in Central Equatoria, Warrap, and Western Bahr el Ghazal by 4.8 percent, 15.4 percent and 8.6 percent in December 2019 as compared to the previous year. On the other hand, fish consumption increased by 18.8 percent in Jonglei, 7.7 percent in Lakes, 7.9 percent in Northern Bahr el Ghazal, 8 percent in Unity and 6 percent in Upper Nile.

Figure 8.5: Access to Fish for Consumption



Except for Central Equatoria, Jonglei and Upper Nile where own fish catch provided most of the fish consumed by households, reliance on purchased fish was generally higher in Lakes (63.3 percent), Northern Bahr el Ghazal (71.6 percent), Unity (54 percent), Warrap (65.4 percent) Western Bahr el Ghazal (76.7 percent) and Western Equatoria (63 percent) (Figure 8.6). Lack of fishing equipment and unpredictable water levels are the two main challenges affecting fishing households. Some 36.8 percent of households did not own any fishing equipment, but 33.6 percent received fishing equipment from FAO and NGOs, with 18.3 percent purchasing their equipment from the market. Some 63.7 percent of households gets the most quantity of fish between September and December. On the other hand, January to April was the period when 51.9 percent of households catches the lowest quantity of fish.

Figure 8.6 Household sources of fish



9. Water and Sanitation

Water source	•Improved water access in 30mins	34%
Access to sanitation	•Improved latrines in compound •Access to latrine as primary defecation	17% 23%
WASH	•Ownership of buckets/jerrycans, soap, and mosquito nets •72 per cent of households reported a self-diagnosed vector or water-borne •affected by water or vector-borne disease •50 counties were classified as Level 4 (Alert), 27 as Level 3 and only one, Magwi, in Level 2	15% 72%

9.1. WASH Summary and Severity mapping¹⁰

The WASH situation remains concerning across the entire country. Regardless of displacement status or location, the average severity of WASH needs across South Sudan remained, as in Round 23 and Round 24, at Level 4 (Alert). Throughout the country, 50 counties were classified as Level 4, 27 as Level 3 and only one, Magwi, in Level 2. Nevertheless, important differences were observed between population groups, settings, and regions and the different composite indicators. Great Bahr el Ghazal (GBeG)¹¹ and Greater Upper Nile (GUN)¹² also had severity rankings of Level 4 (averaging 3.8 and 3.7 respectively), though the severity per indicator varied by states. Greater Equatoria (GE) had the lowest overall severity ranking at 3.4.¹³

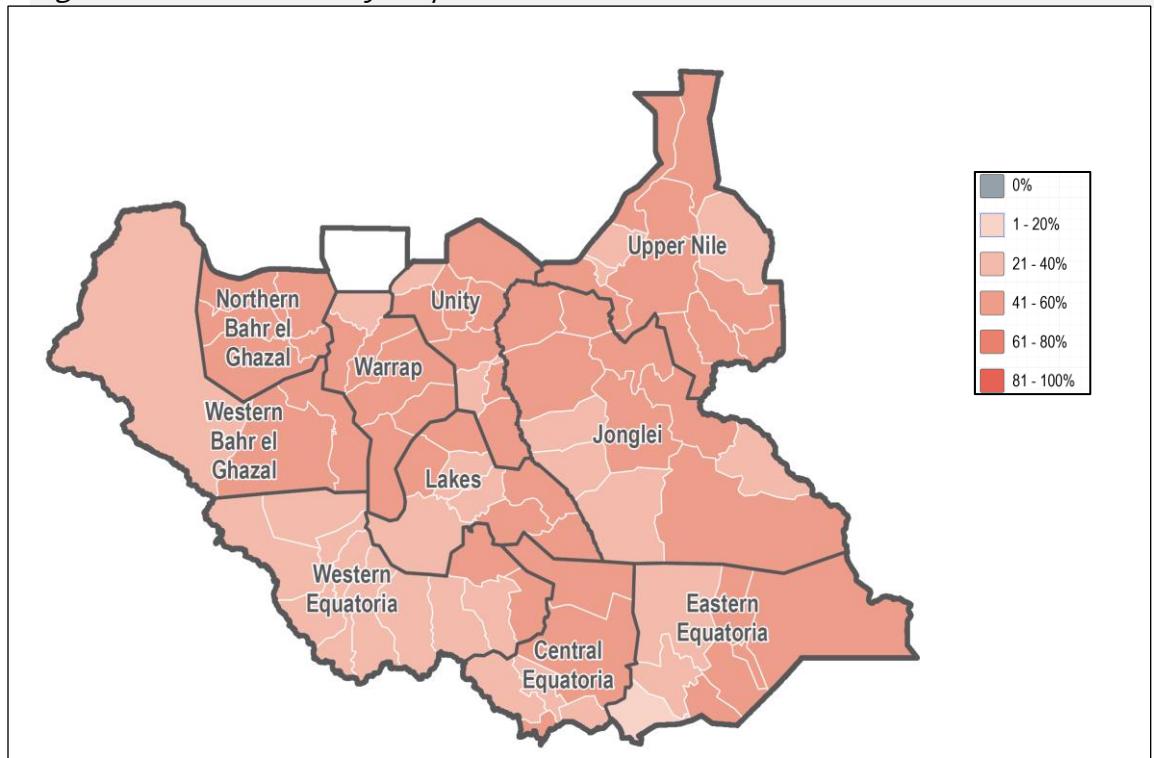
¹⁰ Four core WASH indicators were used to rank WASH severity, ranking from level 1 (normal) to level 5 (emergency). The final severity ranking was created by calculating the average level from the four, with all parameters given equal weight: 1. Water - Safe access to and use of an improved water source (borehole, tap stand, water yard) in less than 30 minutes as a main source of drinking water (composite indicator). 2. Sanitation - Having access to a latrine (private, shared, or communal/institutional). 3. NFI - Owning a jerrycan or bucket with a lid and soap, and that every member of the HH slept under a mosquito net (composite indicator). 4. Health - Having one or more household members affected by self-reported water or vector borne disease in the two weeks prior to data collection

¹¹ GBeG states include: Lakes, Warrap, Northern Bahr el Ghazal, and Western Bahr el Ghazal.

¹² GUN states include: Unity, Jonglei, and Upper Nile.

¹³ GE states include: Central Equatoria, Western Equatoria, and Eastern Equatoria.

Figure 9.1: WASH severity map



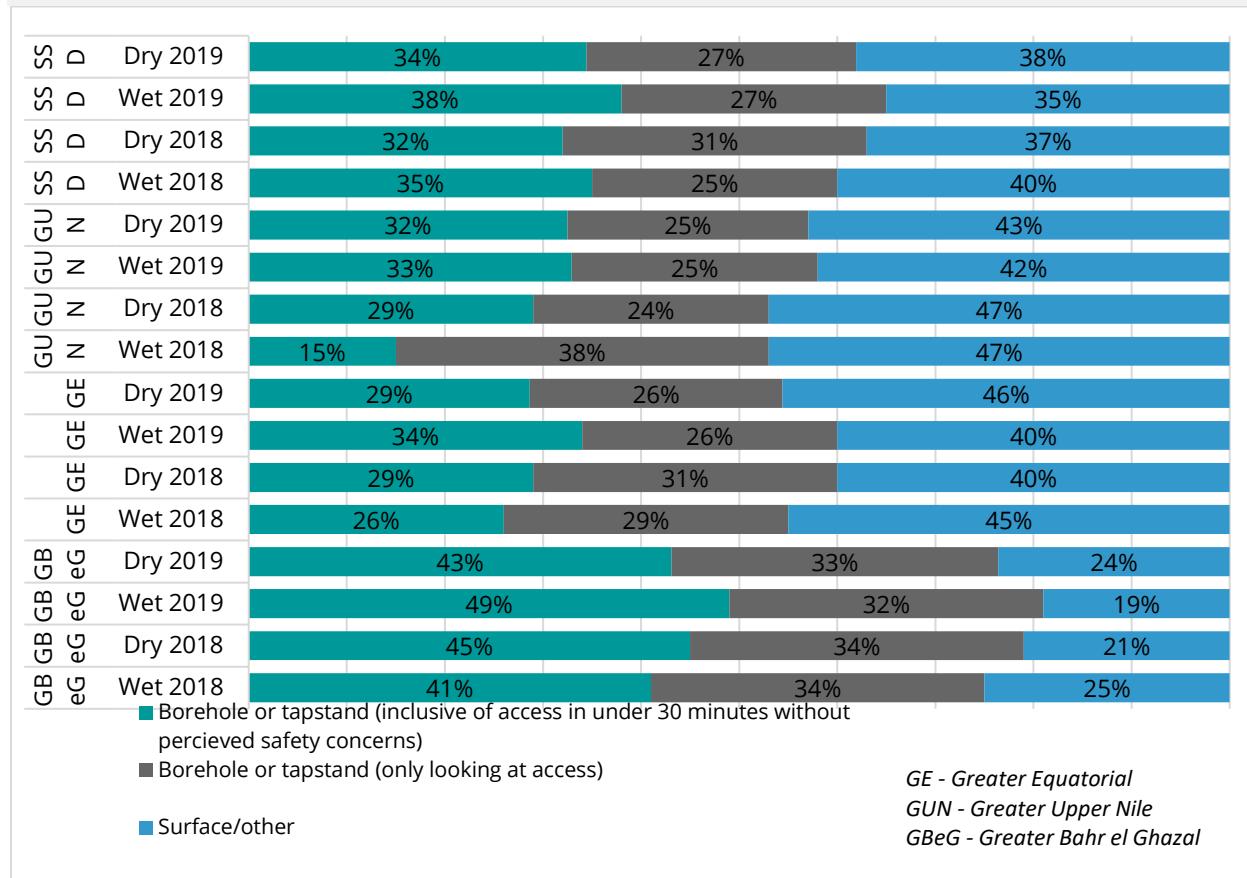
9.2. Access to water

A slight drop from FSNMS round 24, across the country 34 percent of households reported access to an improved water source in less than 30 minutes without protection concerns (WASH Chart 1). There was a shift from round 23 and 24, where the lowest proportion of HHs with access to an improved water source were found in Greater Upper Nile (33 percent), with the Greater Equatoria (GE) States having the lowest proportion across the country (29 percent) (Figure 9.2). However, the three counties that reported more than 90 percent of households used surface water or unimproved water sources as their primary source of water came from Greater Upper Nile (GUN) - Canal/Pigi and Maiwut (100 percent), Panyikang (97 percent) and Pibor (93 percent).

As was the case in 2018 and the 2019 rainy season, access to water from borehole or tap stand across the country almost doubled when perception of safety and time spent accessing water points are not considered (Figure 9.2). However, there was a slight decrease in all regions to improved water and an increased reliance on surface water. The counties reporting a significant decrease in access to a borehole or tap stand in less than 30 minutes without perceived safety concerns between the wet and dry season were spread throughout the country, starting with Tonj North (38 percent decrease), Awerial (37 percent decrease), Nasir (35 percent decrease), Tambura and Bor South (28 percent decrease), and Melut, Yirol

West, Gogiral East, Rumbek Center and Twic East (27 percent decrease). Counties that saw substantial proportions of HHs requiring more than 30 minutes to access a borehole or tapstand were found in Rumbek (65 percent), Panyijar (63 percent), Abiemnhom (57 percent), Pariang (56 percent), and Yirol West and Twic East (54 percent).

Figure 9.2: Primary Sources of Drinking Water: Wet Season and Dry Season 2018 and Wet Season 2019

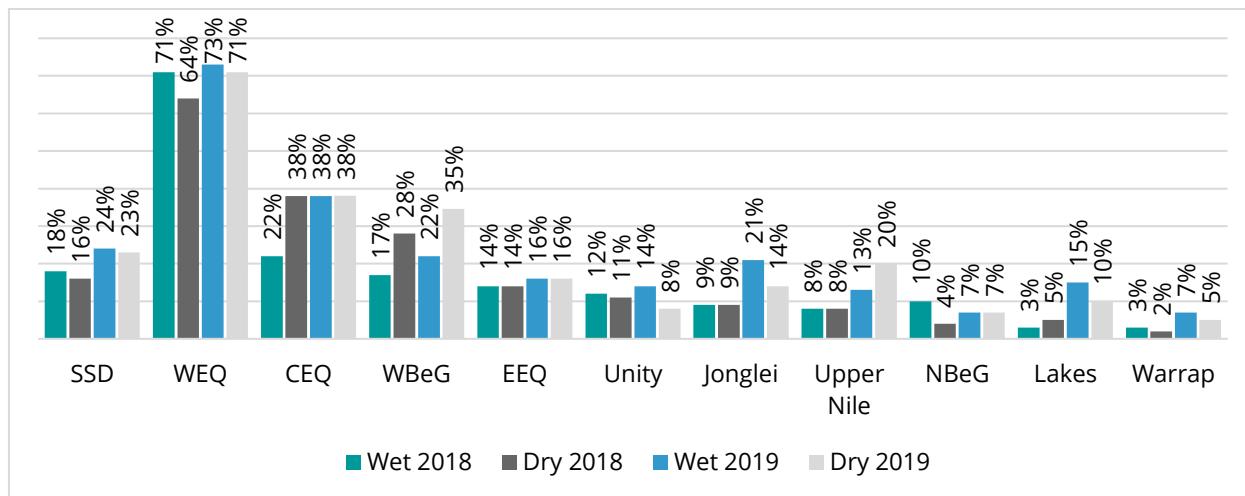


The largest proportion of households reporting perceptions of insecurity when accessing water points were in GUN (19 percent of households), followed by 15 percent of households in the GE and 13 percent Great Bahr el Ghazal States (GBeGs). Although only one county reported that 50 percent or more of households reported safety concerns while accessing their preferred water points - Ayod (54 percent), compared to four during round 24, the national average remained constant at 16 percent, indicating that throughout the country parts of the population continue to face protection concerns while accessing water.

9.3. Access to sanitation

Across South Sudan, access to latrines increased from the same time in 2018 (Figure 9.3). As in 2018, the national average was driven by high levels of reported access in Western Equatoria with Warrap and NBeG recording the lowest proportion of households (5 and 7 percent respectively) that stated they have access to some form of latrine (household, communal or institutional).

Figure 9.3: Latrine presence in December 2018 compared to 2019



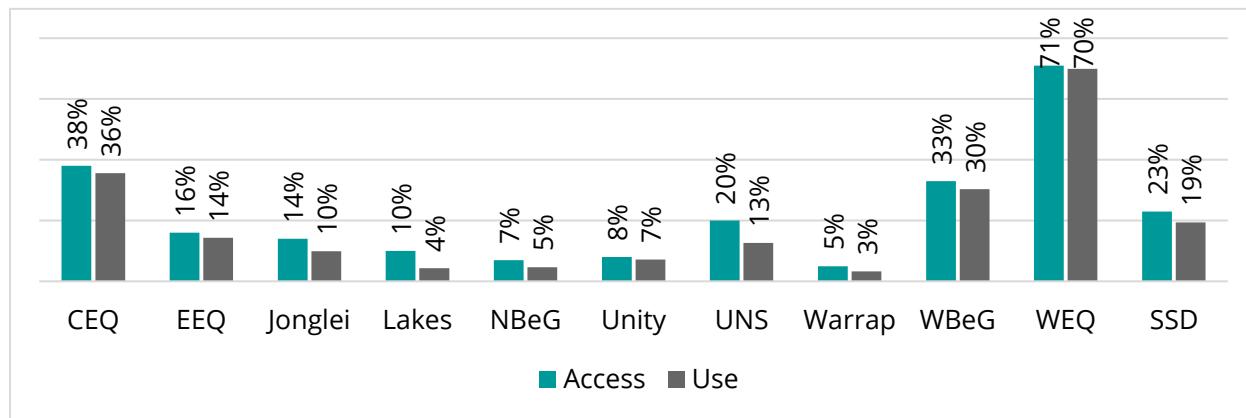
However, as shown in Figure 9.4, access to a latrine did not automatically translate to a latrine being the location households chose to defecate in. The largest access and usage gap were in Upper Nile (7 percent difference), followed by Lakes (6 percent difference).

The only counties reporting 90 percent or more households always defecated in latrines were Nzara (97 percent), Maridi (96 percent), Tambura and Ezo (95 percent), Ibba (91 percent) and Yambio (91 percent). The rationale behind the lack of access and use of improved sanitation facilities stem from these states traditionally having more widespread sanitation infrastructure and established cultural practices around latrine use. Conversely, in 47 counties 10 percent or less of households reported using latrines¹⁴.

This low proportion of households with access to latrines across the country, was a continuation from 2018. Households with no access at all, highlighted that the need for both increased sanitation infrastructure and sensitization remains a sanitation priority.

¹⁴ Aweil West, Gogrial East, Guit, Kapoeta East, Leer, Maban, Nyirol, Pibor, Tonj East, Tonj North, and Yirol East 0%; Gogrial West, Kapoeta South and Yirol West 1%; Maiwut, Akobo, Rubkona, Kapoeta North, Rumbek North and Ulang 2%; Aweil East and Fangak 3%; Ayod, Cueibet, Tonj South, Uror and Awerial 4%; Terekeka and Panyikang 5%; Aweil North, Luakpiny/Nasir, Melut, Pariang, Wulu, Aweil Centre, Rumbek East, Baliet and Pochalla 6%; Mayom 7%, Longochuk and Panyijiar 8%; Aweil South 9%; Juba, Koch, Budi and Ikotos 10%.

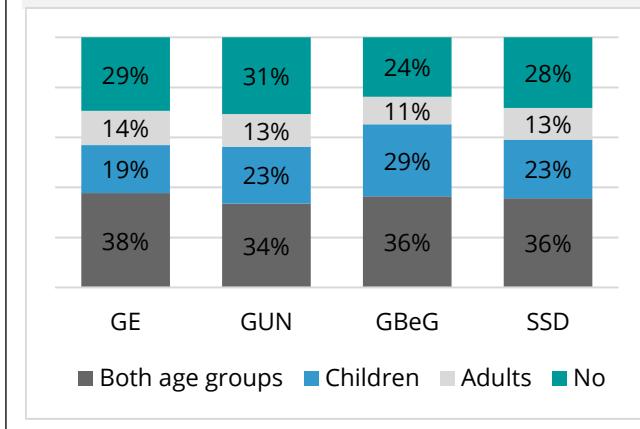
Figure 9.4: Latrine Access and Use



9.4. Self-diagnosed water and vector borne diseases

In Round 25, 72 percent of households reported a self-diagnosed vector or water-borne disease in the two weeks prior to data collection. As in 2018, malaria remained the most prevalent self-diagnosed water or vector borne disease (40 percent for children and 23 percent for adults), followed by fever (36 percent for children and 15 percent for adults) then Acute Watery Diarrhea (AWD) (10 percent for children and 3 percent for adults). When broken down into age groups, as in 2018 it was more commonly found that children under 5 years of age would fall ill as opposed to adults (Figure 9.5).

Figure 9.5: % of households with one or more members affected by self-reported water or vector borne disease in the two weeks prior to data collection.



9.5. Access to WASH non-food items

The high prevalence of households reporting a member of households being ill is likely not only connected to poor access to improved water but also limited WASH non-food items (NFIs). The proportion of households with access to key WASH NFIs did not move more than a few percentage points from 2018. In Round 25, 15 percent of households reported access to all three WASH NFIs (soap, buckets/jerrycans and mosquito nets) (WASH Figure 9.6), with 42 counties reported 10 percent or less of households having all three items.

The most commonly owned WASH NFI was a mosquito net, with 67 percent of households reporting that every member of the household slept under a mosquito net. This was an increase of 12 percent, from Round 24 (Figure 9.7). The prevalence of malaria throughout both seasons may also be linked with 45 percent of the population sleeping without a

mosquito net. However with the lowest proportion remained in Central Equatoria (32 percent), followed by Eastern Equatoria (42 percent). Sleeping under a mosquito net decreases the potential of catching malaria or other vector-borne diseases. Increased access to WASH NFIs could act as a strong mitigation against vector and water-borne diseases.

Two thirds of households reported access to at least one jerrycan or bucket, the average number of storage devices across the country being two. This left 33 percent of households without access to a jerrycan or bucket that can be sealed once water was collected. Even if water is collected from an improved water source, inadequate storage conditions can lead to an increase in the microbial contamination of water stored within, thus increasing the risk of infectious diseases.

The risk of contracting and limiting the spread of water-borne diseases is further compounded by limited access to the key sanitation NFI, soap, with only 21 percent of household reporting owning soap. 28 counties reporting 10 percent or less HHs had access to soap.¹⁵ The smallest proportion of HHs able to produce soap when asked came from Central Equatoria, Jonglei and Warrap (14 percent), followed by Upper Nile (14 percent) and Lakes (16 percent).

(WASH Figure 6 shows the increase and decrease of key WASH NFIs through the country, comparing Round 24 to Round 25. Access to mosquito nets showed the most improvement, while access to water storage devices decreased between Round 24 and Round 25 (WASH Figure 9.7). Of all the regions, GUN showed the most improvement of key WASH NFIs, and GBeG the biggest decreases in access.

Figure 9.6: Access to WASH Non-Food Items

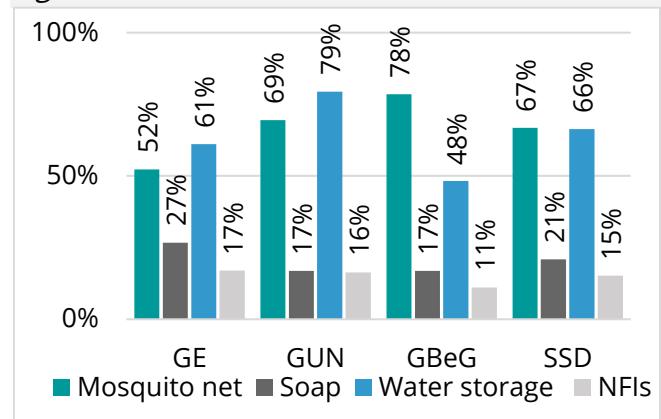
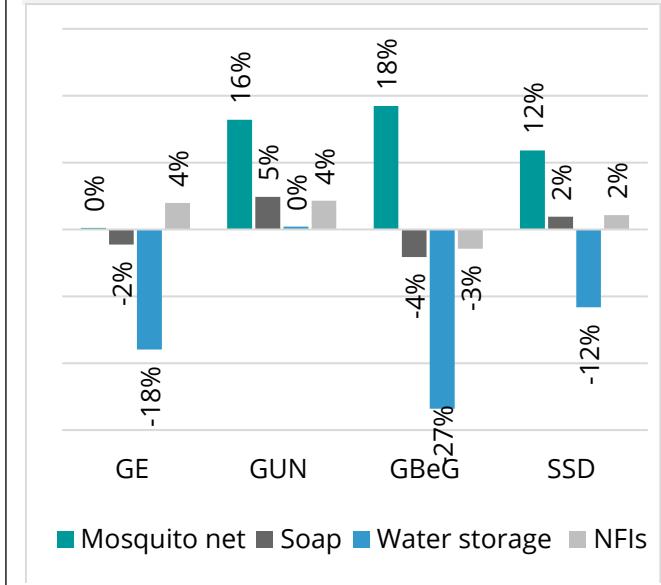


Figure 9.7: Change in Non Food Items Round 25 compared to Round 24



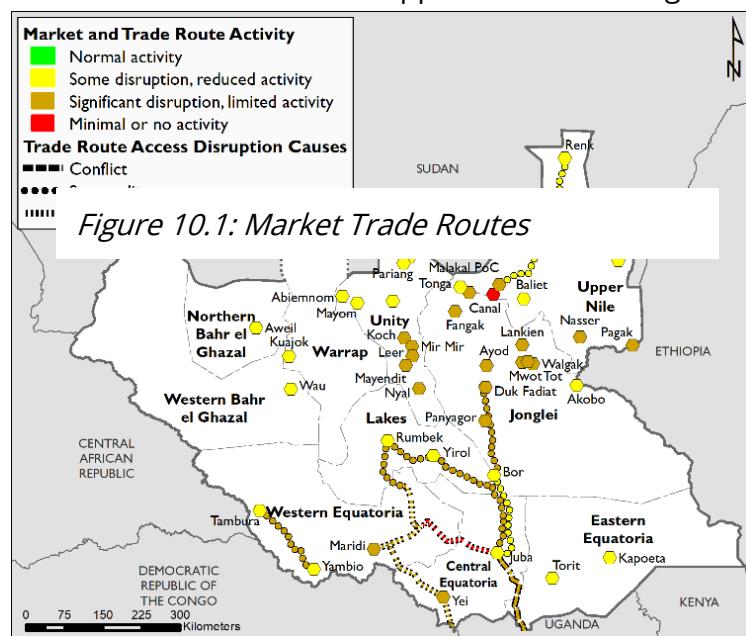
¹⁵ Duk, Uror 0%; Fangak, Longochuk, Nasir 1%; Gogrial West, Yirol East, Kapoeta East 2%; Aweil East, Maiwut 3%; Nagero, Ulang 4%; Pochella, Fashoda, Tonj East 5%; Aweil, Kajo-Keji, Baliet 6%; Pariang 7%; terekeka 8%; Yei, Rumbek North, Aweil South, Mayendit 9%; Maban, Kapoeta North, Kapoeta South 10%

10. Markets and Household Food Access

Physical access to markets	<ul style="list-style-type: none"> • local markets or neighbouring village 35% • purchase locally from community members 13% • do not purchase food at all 18%
Commodity Prices	<ul style="list-style-type: none"> • The 2019 prices were lower than their levels in 2018 between January-June • From July prices were as high as 126% above 2018 same time
Frequency of using markets	<ul style="list-style-type: none"> • Cereal purchase once a month 46% • Pulses purchase once a month 37%

10.1. Market Functionality

The main markets in former state capitals and some rural areas are beginning to recover, albeit slowly. A rapid assessment of Juba markets conducted by FEWS NET in July-August revealed that due to improving security situation, major trade routes are beginning to open, leading to increased commodity and trade flows. The signing of the peace agreement in September 2018 and the prevailing good will and optimism of different stakeholders resulted in decreased hostilities overall, yet insecurity, access constraints, market disruptions, restriction of movement, bureaucratic impediments and occasional road route ambushes as well as reduced trade activities persist in some localities. These include in Yei, Lainya, and Morobo of Central Equatoria, in Greater Mundri of Western Equatoria, Aweil West and Aweil North of Northern Bahr el Ghazal and Maiwut of Upper Nile. According to the [OCHA¹⁶](#), armed clashes/ cattle raiding were reported in Lainya, Central Equatoria; Torit, Eastern Equatoria; Maiwut, Upper Nile; and Tonj, Warrap in August 219, resulting in displacements, market and trade disruptions and suspension of humanitarian activities. Clashes and ambushes between signatories and non-signatories of the peace agreement also continued although at a lower scale and intensity than before.



¹⁶ [South Sudan Humanitarian Snapshot \(Aug 2019\)](#)

According to the market and trade route activity monitoring¹⁷ done by FEWSNET in June 2019, the restriction on the movement in the Western Corridor (Equatoria states), between Juba-Maridi road has limited flow of locally produced and imported food from the food basket to the Bhar el Gazal. Significant trade and market disruptions were also reported on the road from Canal/Pigi to Renk, disrupting free movement of goods and people and increasing the cost of transportation, which has contributed to the increasing cost of goods in the markets.

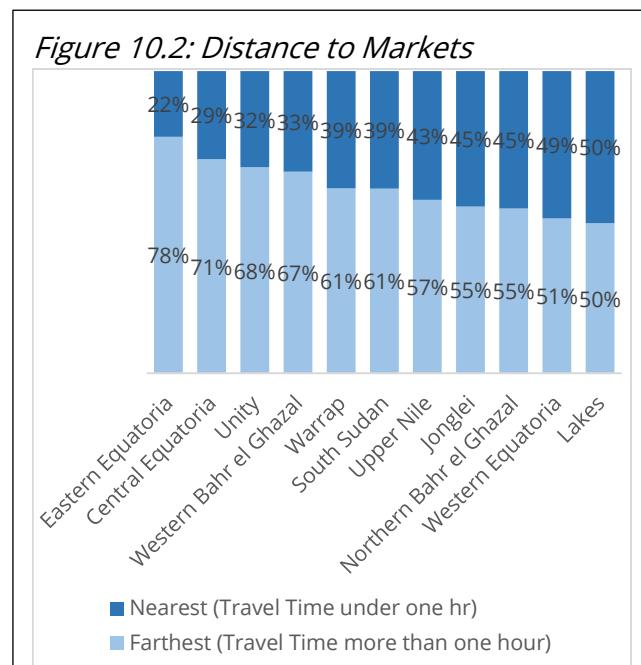
Overall, despite the recent improvements, the recovery of trade and market activities has been slow and remain lower than their pre-conflict levels, limiting households' physical access to the markets.

The main rainy season from June-September 2019, impacted negatively on the road access from Juba into the hinterland. The July to October floods rendered many roads impassable thus constraining access to affected areas, particularly in Akobo, Pibor, Duk and Uror counties in Jonglei, Aweil Centre County in Northern Bahr el Ghazal, Mayendit County in Unity and in Gogrial West, Gogrial East and Tonj North counties in Warrap. The floods also destroyed shelters, crops, water sources, public infrastructure like schools and health facilities and increased the risk of water-borne diseases among communities.

10.2. Physical access to markets

Of the nearly 50 percent of households who rely on markets to purchase staple food for consumption, majority (35 percent) buy food either from local markets within the village or from markets from the neighboring villages. Some 13 percent purchase locally from community members, and 18 percent do not purchase food at all. Purchase of food from markets is particularly highest in WBeG, NBeG, Upper Nile, and Lakes (>90 percent of households), while the lowest was in Jonglei (61 percent). Sourcing of food from local markets within villages is lowest in Eastern Equatoria, Jonglei, Unity and Upper Nile where market recovery from conflict related disruptions has been lowest.

The main challenge faced by households' accessing markets in the month preceding the assessment was long distances to the markets/ lack of transport (61 percent). The other reason cited was flooding particularly



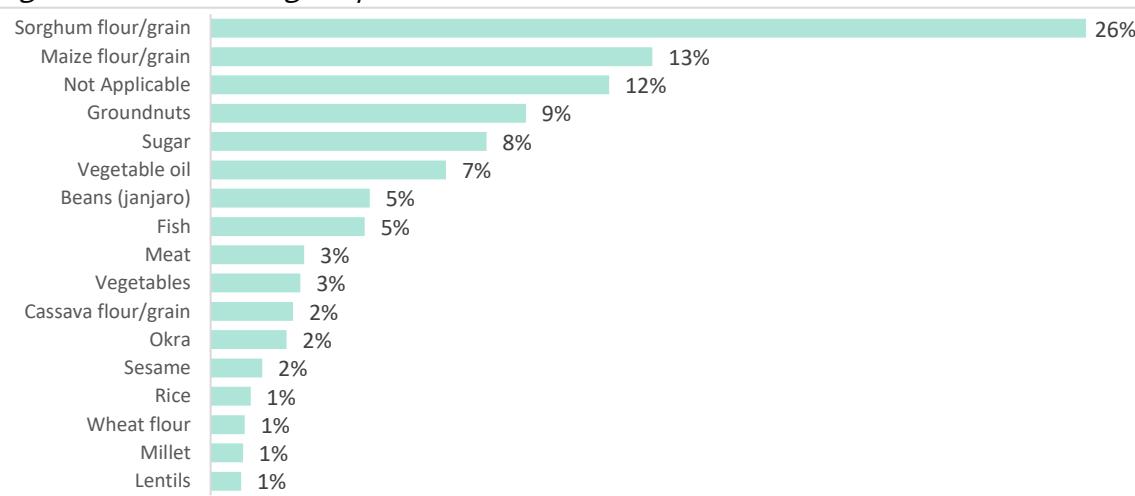
¹⁷ FEWSNET June 2019

in parts of Jonglei, Northern Bahr el Ghazal, Upper Nile, Central Equatoria and Eastern Equatoria.

Nationally, up to 62 percent of households spend more than one hour to travel to and from the nearest market in the month before the assessment. Markets are farthest in Eastern Equatoria (78 percent), Central Equatoria (71 percent), Unity (68 percent), Western Bahr el Ghazal (67 percent) and Warrap (61 percent) but are somehow nearest in Lakes, Western Equatoria and Northern Bahr el Ghazal. In some parts in Eastern Equatoria and Upper Nile State, more than 20 percent spent more than one day to travel and return from markets.

Cereals are purchased by households mostly once a month (46 percent), with more frequent purchases done in Northern Bahr el Ghazal partly due to high dependence on markets. For pulses, nearly 50 percent never purchased from markets while 37 percent purchased once a month. Majority (89 percent) of the households bought food using local currency (SSP) while the rest bought either on credit or through barter trade. Most of the purchases were on cereals (52 percent)-particularly for maize and sorghum. Other food commodities purchased by relatively fewer households included; groundnuts, sugar, vegetable oil, beans and meat (Fig. 10.3).

Figure 10.3: Percentage Expenditure on food

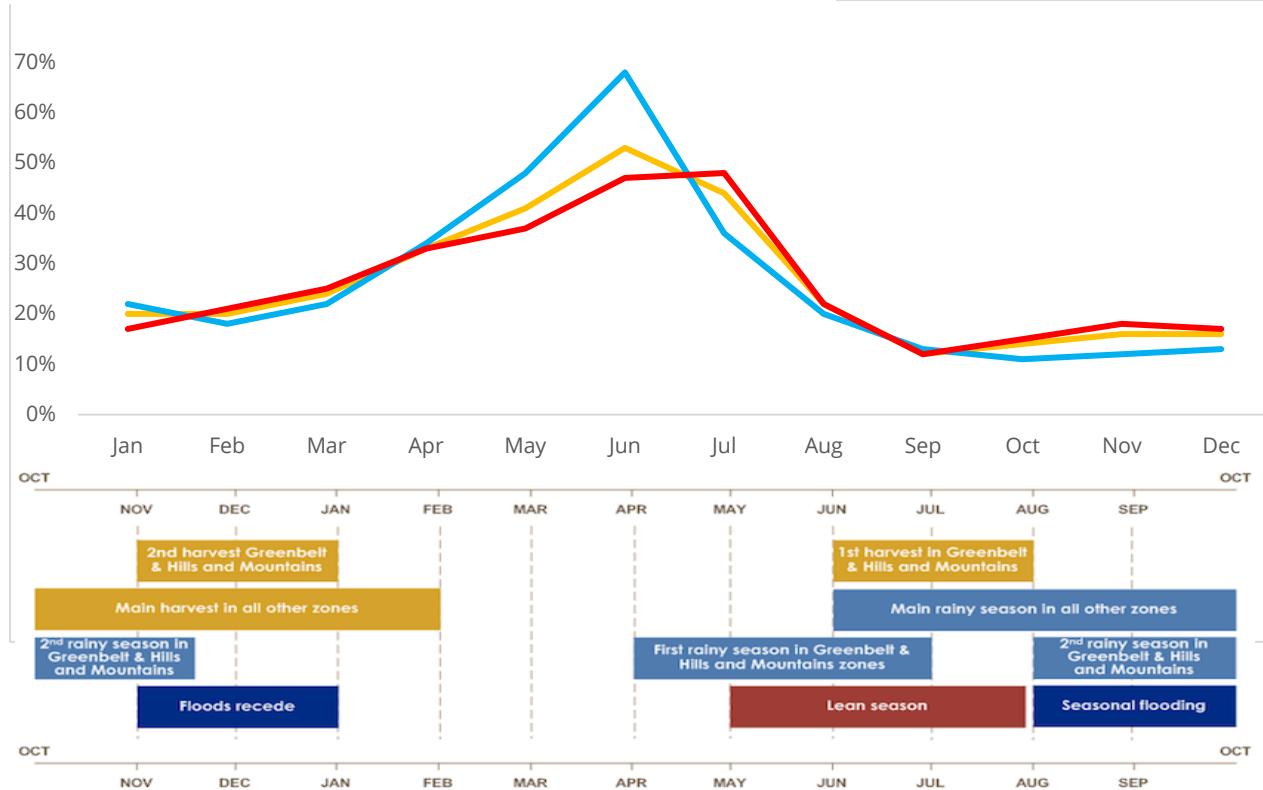


10.3. Availability of food in markets

Food availability in the markets follow a seasonal trend rising from February and peak in June. Thereafter availability reduce monthly until September and start to slightly improve at the harvest time from October-December. This is in line with the seasonal calendar, as the dry season is from November/December to March/April when most roads are accessible allowing traders to transport food into the hinterland and prepositioning for the wet season. This therefore improves dry season markets food availability when imported commodities as well as the inter-state trade for locally produced food occurs (Figure 10.4). Additionally,

the first harvests in the greenbelt, hills and mountains (the Bi-modal Zones of Greater Equatoria) happens from June and the second harvests in these areas start from November coinciding with the harvests in unimodal areas of Greater Upper Nile and Greater Bhar el Gazal.

Figure 10.4: Months of Food Availability in Markets



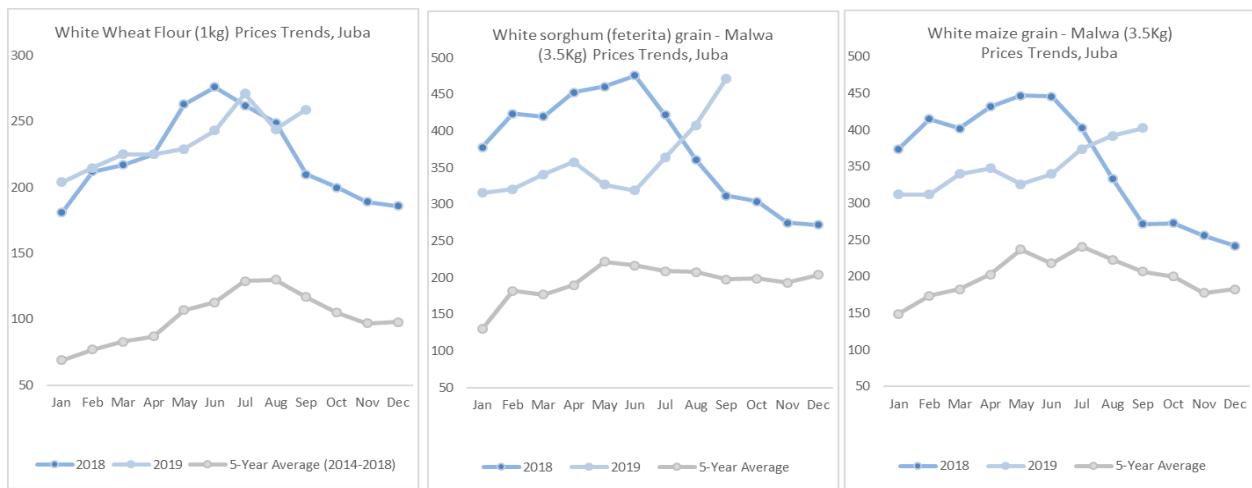
10.4. Market Prices

In Juba, prices of staple cereals have been increasing steadily in the first six months of 2019, ranging between 6-27 percent, 6-18 percent and 5-10 percent for maize, sorghum and wheat flour respectively. This increase was attributed to the continued depreciation of the South Sudanese Pound exacerbated by the seasonal early depletion of stocks from the record low 2018 harvests. Sharp price increases were recorded for cereals from July through September as first harvests in green belt and hills and mountains, normally expected between June-August, were delayed following late March-April-May rains. The 2019 prices were lower than their levels in 2018 between January-June but surpassed the 2018 prices from July by as high as 126 percent above 2018.

Reasons for price increases include the economic crisis (weak local currency), and the cumulative effect of the protracted conflict. The cost of food was exceptionally higher than

the 5-year average as well as the pre-conflict (2012-2013) and pre-economic crisis period (July 2015) when the local currency began to rapidly depreciate. Other reasons for the high price levels were tight supplies, a fragile security situation underlying slow recovery of livelihoods, poor markets functionality and trade flows and high transport and fuel costs. Many main markets across the country had high prices, for an example in Wau (Western Bhar el Gazal), the retail price of white sorghum in July-August was 29-42 percent higher than the same time in 2018 and 131-135 percent higher than the five-year average. However, in Aweil Centre and Aweil East (Wanyjok), due to their proximity to the Republic of Sudan border and improved cross-border trade flows, retail prices of white sorghum reduced significantly (37-76 percent) between July and August 2019, although they were still significantly higher than the five-year average (Figure 10.5)..

Figure 10.5: Trends in cereals prices in Juba



11. Macroeconomic Crisis Implications on Food Security

11.1 Macro-economic Situation

The ongoing economic crisis in South Sudan escalated progressively from the country's disagreement with the Republic of Sudan over sharing of oil revenues and oil pipeline fees, leading to the 2012 oil production/export shutdown. This was worsened off by the two periods of war from December 2013 and from June 2016, which led to higher defense spending and disruptions of oil production. Consequently, the country faced severe and devastating macro-economic and fiscal crisis including insufficient foreign inflows, reduced government revenues, wider budget deficit, increased public debt, a higher and increasing parallel forex market rate, higher inflation, widening balance of payment deficits and successive years of negative economic growth (recession). The crisis worsened following the floating of the currency in 2016, leading to massive currency devaluation and hyper-inflation. The protracted conflicts that eased off with a revitalized peace agreement of September 2018 deepened the situation further, devastating the economy, with the country showing all the signs of near macro-economic collapse.

Despite recent encouraging developments on the political front and an increase in production and export of crude oil by 20 percent starting from February 2019, the macroeconomic situation has remained dire. The country's real Gross Domestic Product (GDP) contracted by

Figure 11.1: Trends in GDP Growth, South Sudan



approximately 11 percent in 2015 and 2016, by about seven percent in 2017 and by a further 3.5 percent in 2018¹⁸. The current account turned to an estimated deficit of 12.7 percent of GDP in 2018 while the fiscal deficit was estimated at 1.5 percent of GDP in 2018, down from a surplus of 5.8 percent in 2017. According to the African Development Bank, recent debt sustainability analysis puts South Sudan in the debt distress category, with total public debt estimated at 48.5 percent of GDP in 2018 and public external debt at 32.6 percent of GDP.

Inflation soared to an estimated 43 percent in 2018 with the very high levels sustaining in 2019, driven by a sharp devaluation of the Sudanese pound and fiscal deficit. As of March,

¹⁸ FSIN Global Report on Food Crises 2019.

2019¹⁹, the overall cost of living remained one of the highest in the world, increasing by 56 percent in March year-on-year. The food consumer price index in March 2019 was much higher at 82 percent while that of alcoholic beverages and tobacco reduced by 54 percent when compared to the same month in 2018. Notably, there was a slight reduction in the overall cost of living between July–October 2018 following increased oil production and decline in fighting following the signing of a new peace agreement in September 2018, combined with seasonal harvests brought temporary relief to consumers. However, these gains were short-lived, as the food prices resumed increasing from December 2018.

The South Sudanese pound depreciated further in 2019 in the parallel market, and the economy continued to have severe foreign exchange shortages, leading to an active parallel market, hard currency and fuel shortages. Foreign currency scarcity and an overvalued official exchange rate has sustained the growth in the currency exchange parallel market. Between July–August 2019, the local currency depreciated by between 28-40 percent. On the other hand, the official exchange rate, which is controlled by the Central Bank, remained relatively stable in 2019, although it depreciated slightly when compared to 2018. The difference rates between parallel and official markets increased steadily in 2019, encouraging growth of the market, implying faster depreciation of the local currency in the parallel markets compared to the official rate. The government's move to crack down on parallel market currency exchange operations to prevent the pound from further depreciating against the US dollar and reduce the wide gap between official and parallel market exchange rates did not work.

Figure 11.2: Inflation Trends, South Sudan

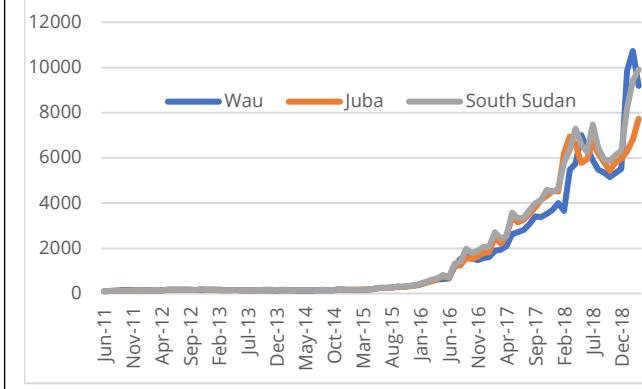
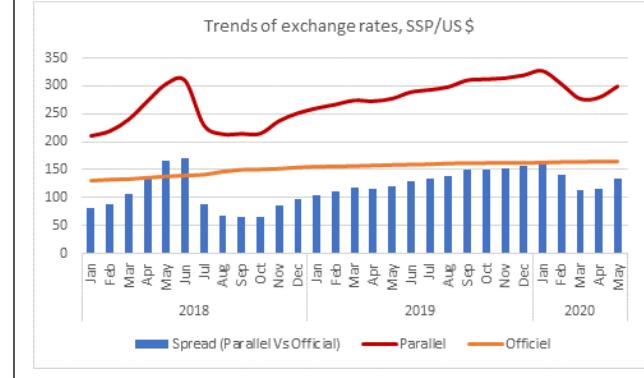


Figure 11.3: Trends of currency exchange rates in Juba, SSP/US \$

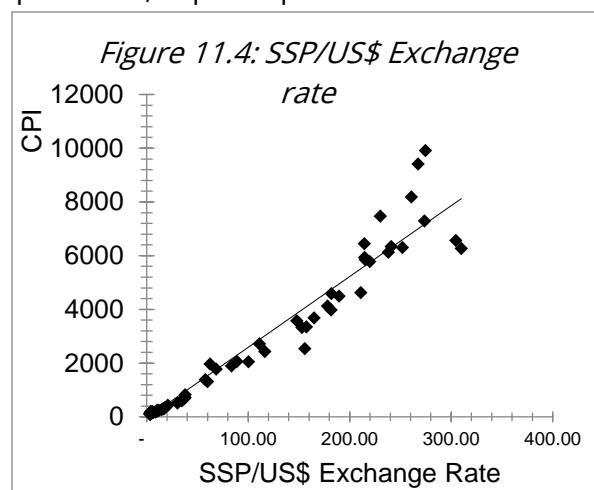


¹⁹ The Latest publicly available information on inflation

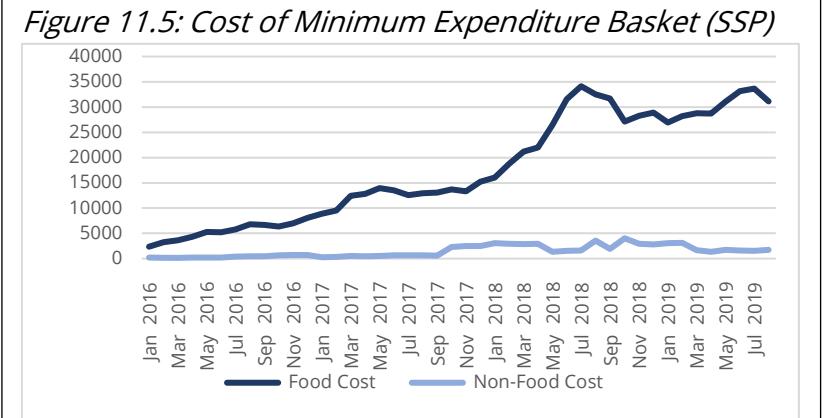
11.2 Implications of the Economic Crisis on Livelihoods and Food Insecurity

11.2.1 Increased cost of living and reduced consumer purchasing power

For a country that relies heavily on import of staple foods, rapid depreciation of the local currency from 2015 to date has made food imports more expensive, decreasing the purchasing power of households living with inelastic incomes and high rates of unemployment. Food prices increased sharply in 2019 in tandem with the currency devaluation, inflation, disrupted agricultural production and trade flows, limiting household economic access to food, affecting not only the poor who mainly rely on markets during the lean season but also the returnees, and IDPs who have lost assets and are yet to recover (Figure 11.4).



The cost of the minimum expenditure basket²⁰, which measures what a household requires to meet basic needs²¹, increased to 82,850 SSP in August 2019 (currently equivalent to more than 200 dollars) mainly driven by high prices of food items (Figure 11.5). This means that majority of poor households especially those in urban areas with low and inelastic wages cannot afford the minimum cost of basic needs, leaving them with huge food gaps and reduced expenditure on essential non-food items.



11.2.2. Decimated value of wages and massive unemployment

Over time, the SSP has fallen in value so much that salaries of formally employed and wages of those in informal employment cannot match the higher food prices (Figure 11.6). The real

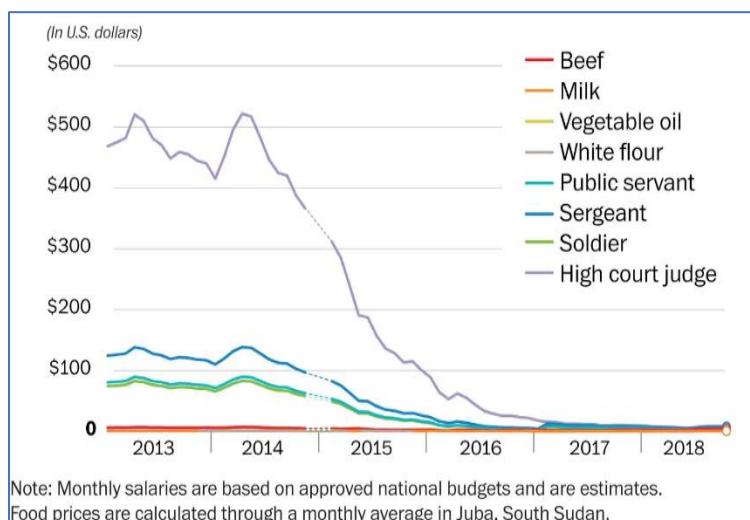
²⁰ Source CLIMISS

²¹ Min energy requirement of 2,100 kcal/pp/day plus a few NFIs for household of 6 people

value of salaries of civil servants paid in SSP fell to below USD10 in as early as 2017 to date from an average of 100-500. This is compounded by the contracting national economic growth that reduced employment opportunities including for casual labour and trade.

Salaried staff in the public service have gone for several months without pay in 2019, resulting in significant salary arrears. The reduced incomes and employment opportunities of the poor means they are less able to acquire food, leading to the adoption of negative coping strategies such as substitution of less preferred and cheaper alternatives and non-diversified diets, selling of productive assets, becoming trapped in debt, withdrawing children from school and forced migration.

Figure 11.6: Real values of salaries/ incomes

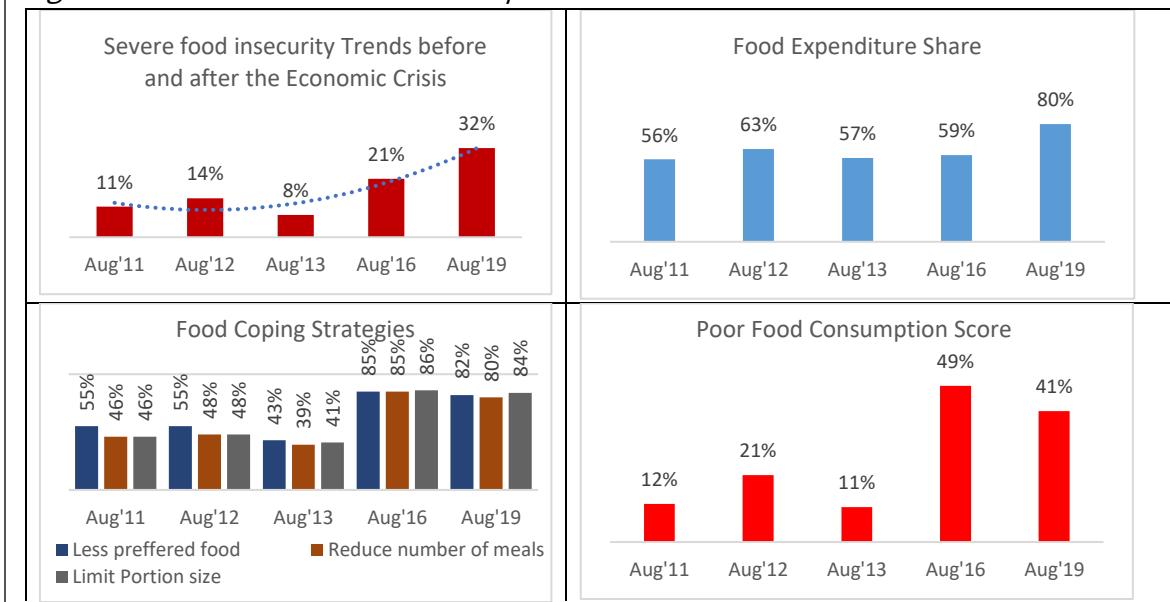


Note: Monthly salaries are based on approved national budgets and are estimates. Food prices are calculated through a monthly average in Juba, South Sudan.

11.2.3. Poor food consumption outcomes

Trend analysis of food coping mechanisms, food expenditure share, food consumption score and overall food security index show significant deterioration in the food security situation after the start of the economic crisis in July 2016. While severely food insecure households ranged between 8-14 percent in August of any year before the economic crisis, this jumped to 21 percent immediately after the crisis started to the current level of 32 percent. Households adopting food consumption-based coping strategies increased from below 50 percent in the pre-crisis period to over 80 percent during the economic meltdown. On average households with poor food consumption ranged between 11-21 percent before the economic crisis and increased rapidly to 49 percent immediately after the crisis and stood at 41 percent in August 2019 (Figure 11.7).

Figure 11.7: Trends in food consumption outcomes



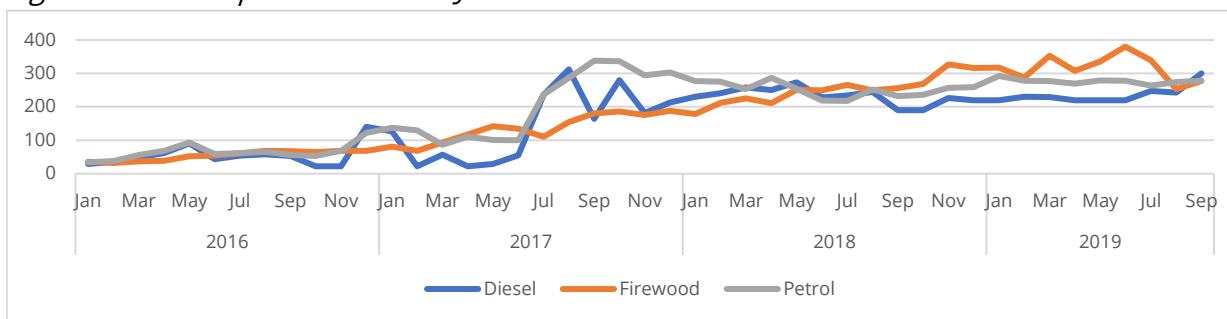
11.2.4. Increased cost of agricultural and livestock inputs

Agricultural production and livestock sectors have also been affected by the crisis as households' inability to afford high cost of inputs (seeds and fertilizers) and drugs, led to reduced acreage under cultivation-reducing food availability for consumption and in the markets. Livelihoods have been damaged and destroyed, with agricultural production reduced by a third as insecurity and economic crisis hampered agricultural activities.

11.2.5. Increased cost of fuel, transport and transmission to food prices

As of October 2017, Nile Petroleum Corporation, which was the sole fuel importer in South Sudan, stopped importing fuel for subsidized sale, and allowed private firms to import and sell fuel at market prices. This led many consumers turn to the thriving parallel market where petrol and diesel premium prices were charged up to 278-300 SSP/ litre (Figure 11.8). Fuel was rarely available in the pumps but was mostly sold in the parallel market with a high risk of adulteration. The increase in the cost of fuel and transport is passed directly to consumers in form of high food prices.

Figure 11.8: Fuel prices trends in Juba



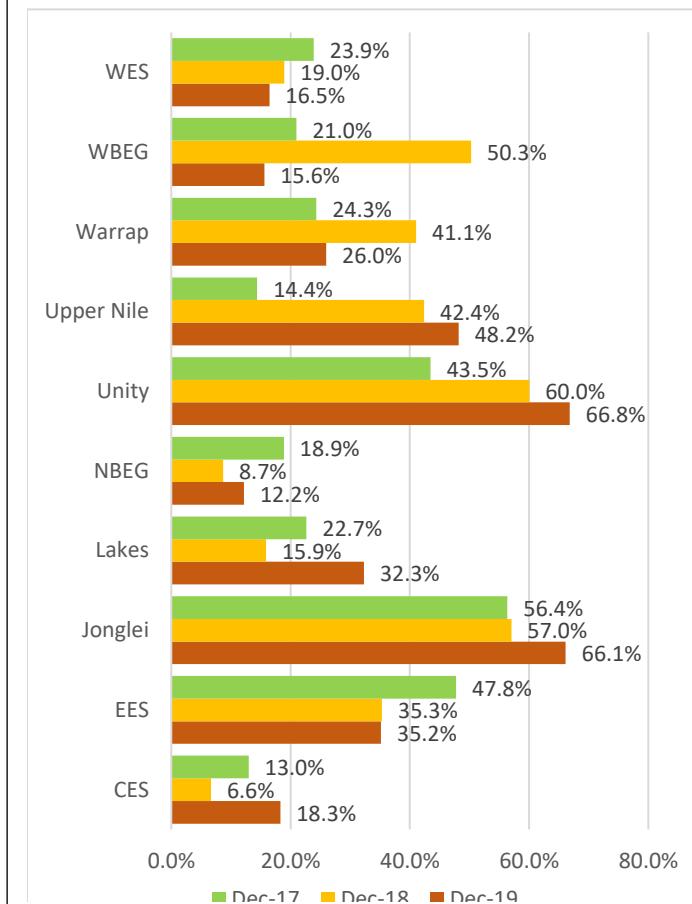
12. Humanitarian Assistance Received

12.1. Households receiving humanitarian assistance

The volatile humanitarian situation in South Sudan characterized by large displacement of civil population, disrupted livelihoods and low output of agriculture and other livelihood activities drives high levels of food insecurity which necessitates the provision of humanitarian assistance to save lives and livelihoods of the most vulnerable households. During the three months preceding the assessment in December 2019, 37 percent of households across country received food assistance, compared to 24 percent of households in December 2018 and 80 percent of households in December 2017. Of the households that received humanitarian assistance in December 2019, 29 percent received food assistance.

In December 2019, the largest proportion of households who received various forms of humanitarian assistance were in Jonglei (66.1 percent), Unity (66.8 percent), Upper Nile (48.2 percent) While Northern Bahr el Ghazal (12.2 percent), Central Equatoria (18.3 percent), Western Bahr el Ghazal (15.6 percent) and Western Equatoria (16.5 percent) had the lowest proportion of households who received assistance (Figure 12.1). Among households who received food assistance, 65.4 percent were food insecure compared to 71.4 percent of households who did not receive assistance, suggesting that assisted households are relatively better-off than those not receiving assistance. Similarly, the proportion of households with poor food consumption (30.4 percent) was lower among households who received assistance compared to poor food consumption households who did not receive assistance (38.3 percent). The high proportion of food insecure households who received assistance could reflect the high level of sharing culture and their inability to complement consumption from other sources due to low purchasing power.

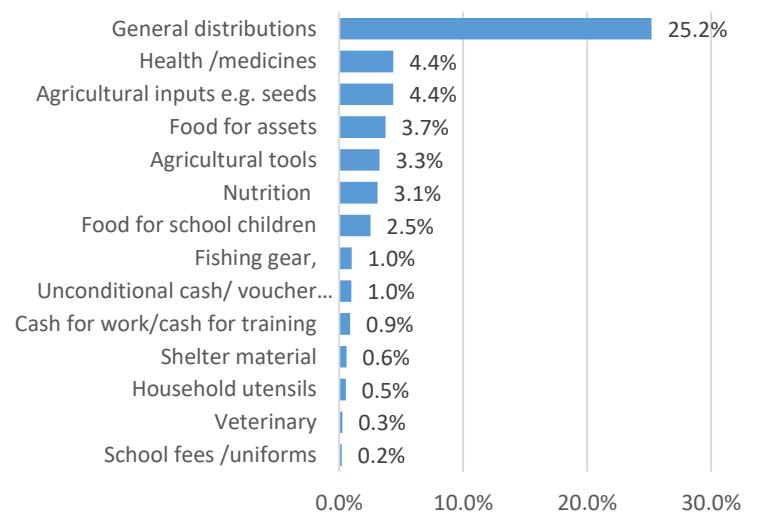
Figure 12.1 Households receiving food assistance



12.2 Type of assistance received

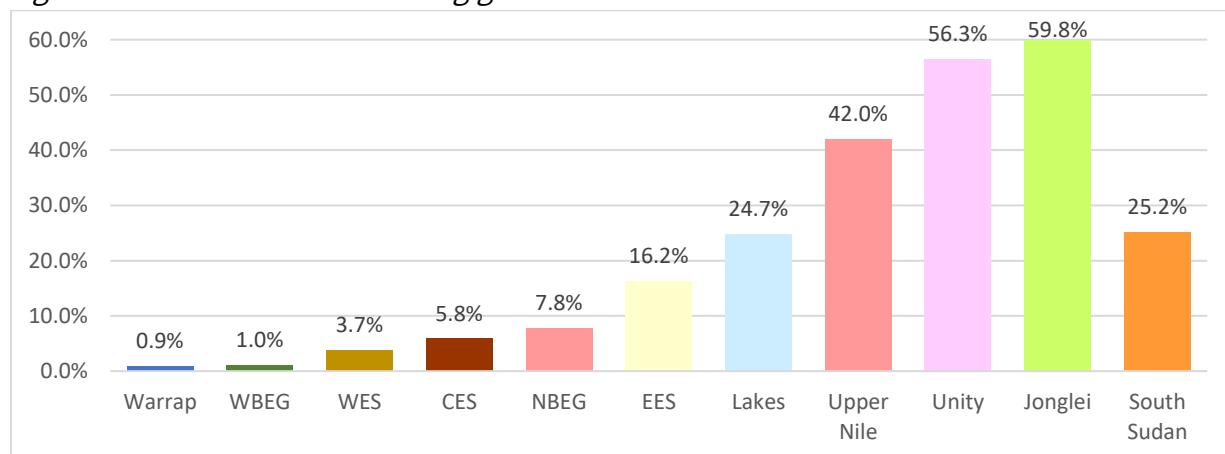
Among households that received assistance during the three months preceding the assessment, 30.2 percent received general food, while 6.6 percent received agricultural inputs, with 6.1 percent receiving health care or medicine (Figure 12.2). Other important forms of assistance received were agricultural tools (6 percent), food for assets (4.9 percent), blanket supplementary feeding (4.4 percent), food for school children (2.4 percent) and fishing gear (2.0 percent).

Figure 12.2: Type of assistance received



More than half of households in Jonglei (57.8 percent) Western Bahr el Ghazal (62 percent) and Unity (63.5 percent) received general food distributions during the three months preceding the assessment (Figure 12.3). On the other hand, fewer households in Warrap (0.9 percent), Central Equatoria (2.3 percent) and Western Bahr el Ghazal (4.9 percent) received general food distributions.

Figure 12.3: Households receiving general food distributions

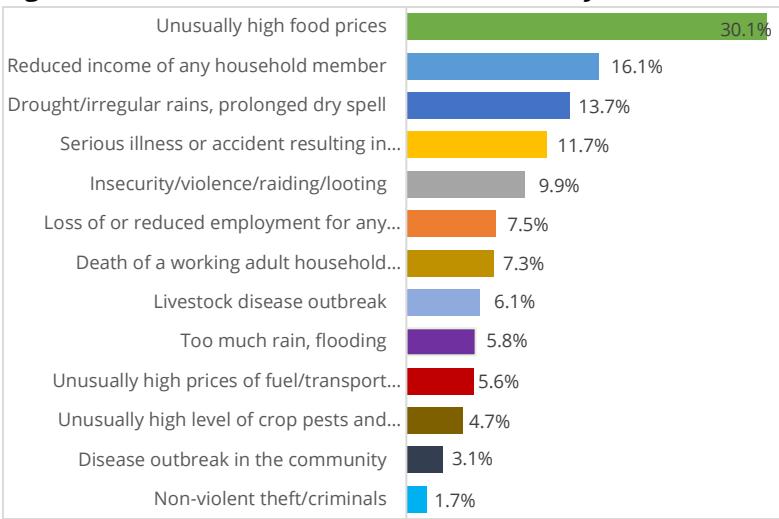


13. Shocks and Coping

13.1. Shocks

Households across South Sudan continue to be impacted by a variety of shocks which affect their ability to access food, therefore increasing their vulnerability to food insecurity. Thirty percent of households were affected by unusually high food prices while reduced income of a household member impacted 16.1 percent of households. Drought/irregular rains (13.7

Figure 13.1: Percent households affected by shocks



percent), illness or injury to a household member (11.7 percent), insecurity/ violence/ looting (9.9 percent), loss of employment for a household member (7.5 percent) and death of a working adult household member (7.3 percent) were the main shocks affecting household across the country.

13.1.1. Impact of floods on crops

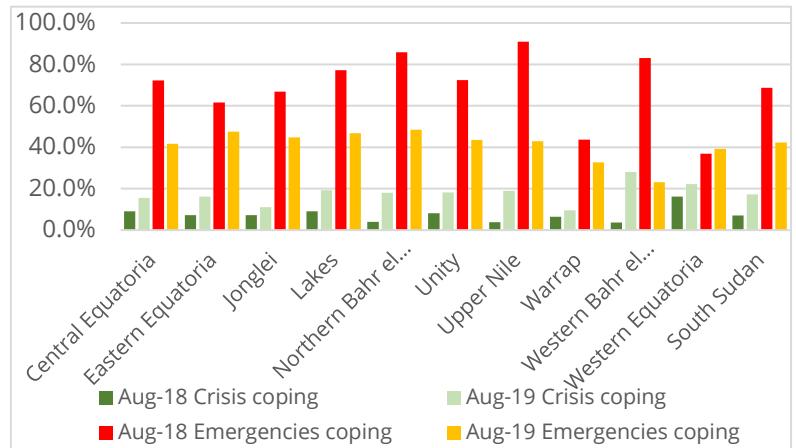
At the state level, crop destruction by floods was more common in Jonglei (29.4 percent), Northern Bahr el Ghazal (34 percent) and Warrap (22 percent). Unusually high prices of food commodities had the effect of reducing access to food for market dependent poor households, potentially increasing the risk of food insecurity. Unusually high food prices affected 15.4 percent of households in Eastern Equatoria, 10.5 percent in Unity, 21.9 percent in Western Bahr el Ghazal and 12.2 percent in Western Equatoria while the incidence of insecurity/violence was reported by 13.6 percent of households in Lakes State and 9.6 percent in Western Bahr el Ghazal. The combined impact of these shocks resulted in reduced availability of own-produced food stocks, loss of income opportunities as well as lower purchasing power which contributed to the prevalence of food insecurity.

13.2 Livelihood-based coping strategies

Households affected by reduced economic access to food tend to adopt strategies to cope with the shortage which further expose them to others shocks as some of these strategies reduces the productive assets, negatively affecting future productivity.

While 28.3 percent of households did not use any livelihood-based coping strategies, 42.2 percent of households used emergency coping strategies with 17.2 percent resorting to crisis coping strategies. As compared to August 2018, the proportion of households which adopted emergency coping strategies has reduced by 26.6 percent while the proportion of households using crisis coping strategies have increased by 10.1 percent. Across the 10 states, Eastern Equatoria (47.6 percent), Jonglei (44.7 percent) Lakes (46.8 percent) and Northern Bahr el Ghazal reported the highest proportion of households adopting emergency coping strategies. On the other hand, Warrap (40.3 percent), Western Bahr el Ghazal reported the highest proportion of households not adopting any livelihood-based coping strategies (Figure 13.2).

Figure 13.2: Crisis and emergency coping strategies 2018 and 2019



13.3. Reduced coping strategies

When households do not have food or money to buy food, they often resort to immediate and short-term alteration of food consumption patterns. The reduced coping strategy index computes the frequency and severity of five standard food consumption behaviors into a score which is an indicator of household food access or food security status. Thus, households using more severe food-based coping strategies tend to have greater food access challenges and higher score in the reduced coping strategy index than those that do not. Overall, 89.4 percent of households across the country used food-based coping strategies. Among the food-based coping strategies adopted, four in five households (81.9 percent) relied on less preferred/less expensive food and reduced portion size at mealtimes while 72.4 percent of households restricted adult consumption in favor of children and 78.2 percent of households resorted to the consumption of fewer meals.

When compared to August/September 2018, the proportion of households that resorted to eating less preferred food increased by 11.6 percent. Similarly, the proportion of households that reduced portion size at mealtimes, restricted adult consumption in favour of children and reduced the number of meals have both increased by 7.6, 9.5 and 1.9 percent respectively. Lakes, Central Equatoria, Northern Bahr el Ghazal and Upper Nile had the highest proportion of households that used food-based coping strategies.

14. Conclusions and Recommendations

14.1. Conclusions

Food security situation

- Despite the improvement in food security conditions during the lean season over the previous year, the general food security and nutrition situation remained worrisome due to persistent localized conflicts, population displacements, low crop production and slow economic recovery.
- Generally, access to humanitarian food assistance across the country slightly improved compared to the past 2 years. Furthermore, households that received humanitarian assistance had better food consumption compared to those which did not.

Acute Malnutrition

- The high prevalence of malnutrition in the country is associated with multiple immediate and underlying causes such as WASH indicators, care practices, prevention activities (measles and deworming) and morbidity. The strong association of WASH indicators and diseases with wasting and underweight potentially explains the discrepancy of improved food security and worsened nutrition situation in 2019 in some parts of South Sudan.

Markets Interventions

- Despite the opening of major trade route to state capitals and rural markets, trade and market disruption on the Canal/Pigi to Renk road as well as movement restrictions in the Western Corridor (Juba-Maridi) and other parts of the country disrupted the free movement of goods and increased the cost of food items.
- Market dependent rural and urban households continue to suffer inadequate food access and consumption partly explained by low purchasing power due to the slow recovery of markets and livelihoods as well as the sustained negative impact of the economic crisis and high food prices. As a result, most households are resorting to coping strategies that erodes their long-term resilience.

WASH issues

- The coverage of water and sanitation services across South Sudan remain weak, with most households in the country either relying on unimproved or surface water sources, which combined with high levels of food insecurity has a detrimental impact on the health of the most vulnerable households as manifested in high prevalence of malnutrition and water-borne diseases.

Livelihood and income sources

- Although agriculture, petty trade and livestock keeping are the three most important livelihood sources, incomes from livelihood sources have widely decreased across the country as compared to the previous year, mainly because of changes in market conditions and loss of income sources.
- Whilst livestock contribute significantly to household food security through the availability of milk, meat products and sale of animals for income, this activity is saddled with persistent challenges such as disease outbreak, lack of veterinary services, lack of grazing pastures and water as well as intercommunal raiding.

Shocks

- Households across South Sudan are affected by several shocks, key among which are unusually high food prices, reduced income of a household member, insecurity and droughts or prolonged dry spells. These shocks among many others reduced their access to income and food and compelled households to adopt strategies that compromise their resilience to future shocks.

14.2. Recommendations

Recommendation	Responsibility
<p>14.2.1. Food Security:</p> <ul style="list-style-type: none"> • Humanitarian assistance should be sustained to avert the continued acute food insecurity conditions in most counties in the country. Given the persistent food insecurity conditions, there is need to consider conditionality of transfers in many different contexts to avert the food aid dependency syndrome within the affected populations. • Stabilization efforts: To address the protracted food deficit and the food consumption gap of households, increased investments in security stabilization, livelihoods and market support is needed. • Safety nets for extremely vulnerable groups: Special attention needs to be given to the extremely vulnerable households such as households headed by disabled, child headed, women headed, without sustainable livelihoods and able-bodied persons. Sustainable form of safety nets should be considered 	<p>WFP and Partners</p> <p>UN agencies, Donors. NGOs and Government</p>
<p>14.2.2. Nutrition Interventions:</p> <ul style="list-style-type: none"> • Curative interventions: There is need to sustain the current nutrition treatment programs (Targeted Supplementary Feeding Programme (TSFP), Outpatient therapeutic program and Stabilization Centers) and scale-up to locations where coverage is limited. • Nutrition sensitive agriculture and education: interventions should not be limited to TSFP but also initiatives to educate the populations 	<p>WFP and Partners</p> <p>UNICEF/ WFP/ FAO/</p>

<p>to expand their dietary patterns as well as nutrition sensitive agriculture should be promoted to reduce the continued increase in acute malnutrition.</p> <ul style="list-style-type: none"> Addressing underlying causes: As some malnutrition is also caused by poor WATSAN and child feeding practices, there is need to strengthen the programmes associated with these causes. Preventive interventions and integration: Scaling up of quality Growth Monitoring and quality social behavior change communication on nutrition, health and WASH as well as strengthen inter-sectoral collaboration with health, WASH and the Food Security and Livelihood cluster to implement Blanket Supplementary Feeding Programmes during the lean season. Program Convergence: Reinforce partnership convergence between Outpatient therapeutic program and Targeted Supplementary Feeding Programme and strengthen geographic convergence of nutrition, health, WASH and FSL interventions at village/Boma level. Improve surveillance: quality and scope and analysis of bi-annual FSNMS to monitor nutrition situation by strengthening surveillance in counties where the nutrition situation is critical and projected to deteriorate. 	<p>Government and partners UNICEF/ WHO/ relevant NGOs and Government UNICEF/ WFP / WHO / Government and partners</p> <p>All stakeholders UNICEF, Ministry of Health and relevant NGOs</p>
<p>14.2.3. Market Interventions</p> <ul style="list-style-type: none"> Facilitation of markets: Market and trade policies such as removal of multiple taxes and access limitations along major trade routes and improving market access through opening up of roads will be crucial for strengthening the supply and availability of food and other essential items. Seed and tools provision: To stimulate food production in states and counties engaged in agricultural production, the provision of seeds and tools (farm inputs) will be crucial in supporting farmers to increase the acreage cultivated. 	<p>Government of South Sudan UN agencies, NGOs, Donors and Government</p>
<p>14.2.4. Livelihoods and income sources:</p> <ul style="list-style-type: none"> Support livelihoods: In states and counties where households are engaged in pastoral activities, support for livestock production and small-scale subsistence producers should be scaled-up as the survey revealed that the main challenges in rearing livestock (which are also the same reasons for the decrease in livestock ownership) include disease outbreaks and lack of veterinary services. Veterinary services provision: The scaleup of veterinary support (animal health services such as treatment and vaccination) would significantly contribute towards improving livestock productivity and mitigating losses. 	<p>UN agencies, NGOs and Government</p>

<p>14.2.5. WASH services scale -up</p> <ul style="list-style-type: none"> To address the weak coverage of water and sanitation services and its detrimental impact on malnutrition and diseases, agencies involved in the WASH sector need to scale-up the provision of these services to the most vulnerable segment of the population. 	UN agencies, NGOs and Government
<p>14.2.6. Peace building promotion:</p> <ul style="list-style-type: none"> Peace building, promotion of re-integration of returnees as well as peaceful co-existence between communities should also be prioritized, to ensure sustainable resumption of livelihoods of the population across the country. 	UN agencies, NGOs and Government
<p>14.2.7. Resilience building to mitigate shocks</p> <ul style="list-style-type: none"> The humanitarian community and the Government of South Sudan need to support communities to reduce rural poverty and mitigate the impact of shocks by implementing resilience building programs complemented with comprehensive small-scale agriculture development to create employment opportunities for the youth and women. 	UN agencies, NGOs and Government

Annexes

Annex 1: Methodological notes

The Food Security and Nutrition Monitoring System (FSNMS) is a nationwide exercise establish to monitor key food security indicators, acute and chronic malnutrition rates among children below 5 years and mothers as well as identifying geographic areas and socio-economic groups that are food insecure.

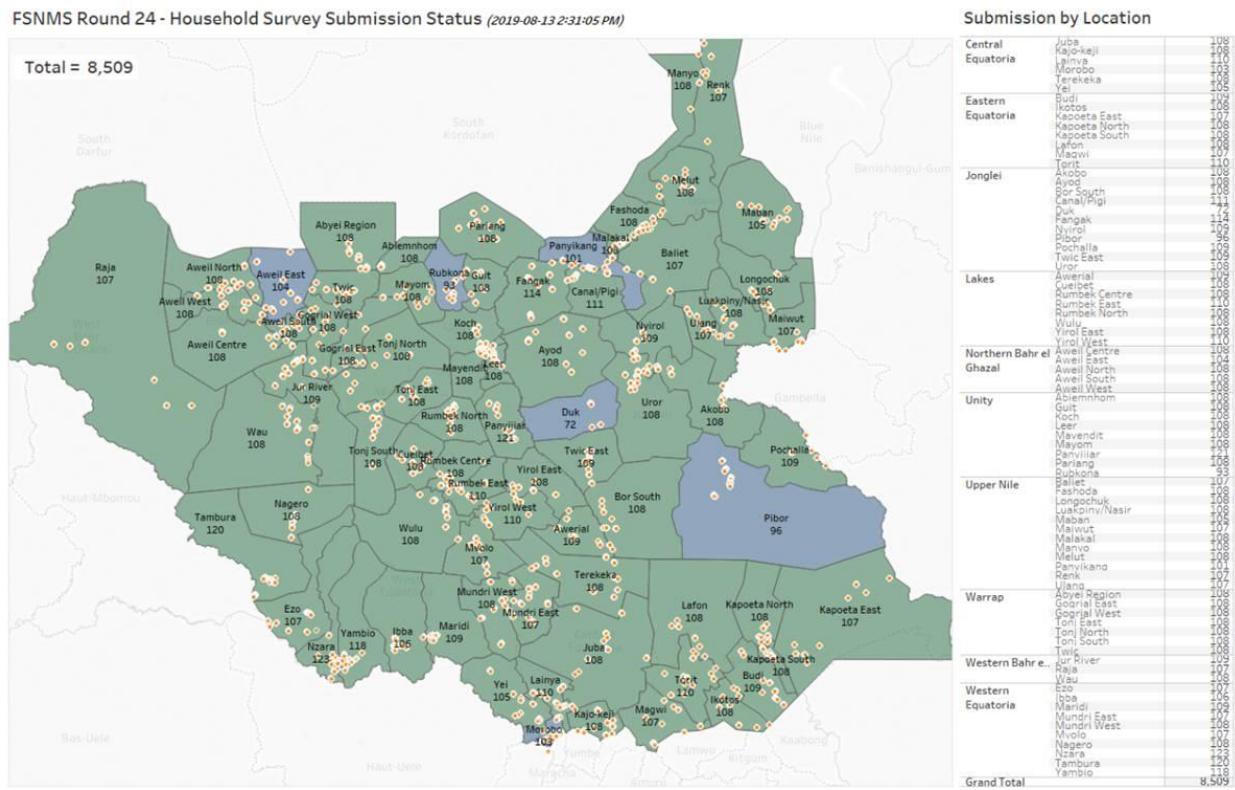
The twenty fourth round of the FSNMS was conducted in July-August 2019. It involved surveys of households across the country with a sampling plan provided by the National Bureau of Statistics in order to obtain statistically representative results on food security at county level. The sampling size was designed by considering 95 percent confidence interval, a margin of error of 10 percent. Random selection of clusters or enumeration areas (EA) was done at the first stage of a two-stage stratified and households were randomly selected at the second stage. During this round, nine clusters or enumeration areas (EA) were selected in each county and 12 households were selected per enumeration area making the total of 105 households per county.

The survey instrument consisted of food security and nutrition modules including anthropometry of children under five. Training of enumerators was provided in 33 locations across the country that preceded the Training of Trainers (ToT) in Juba in July 2019. The trainings were facilitated by WFP, FAO, UNICEF, Food Security Cluster, the Government and FEWSNET colleagues. Electronic tablets were used for data collection in the field and data was uploading into the online server.

The Open Data Kit (ODK) was used as the data collection tool, programmed with high quality data checks to ensure high quality data at the time of data collection. Once the data was uploaded, regular data quality checks were carried and feedback was provided to the teams in the field to further improve the quality of data. The data was online plotted on the map using Tableau through which real time data collection monitoring was ensured and regular updates were shared with the partners and teams on the ground.

Access constraints due to heavy rains and impassable roads were the main challenge during this round of data collection. Worst affected area in terms of impassable road was Duk County. However, access situation in the round 24 (August 2019) improved compared to Round 23 (December 2018), allowing data collection in Lainya, Yei and Morobo counties in Central Equatoria and Nagero county of Western Equatoria. The total number of households surveyed was 8,505.

A map showing household level coverage for FSNMS round 24 (August 2019).



Annex 2: Main food security outcome indicators by state and county

State	County	Food Consumption Score (FCS)				Household Dietary Diversity (HDDS)					Household Hunger Score					rCSI			Livelihood Coping				Food Expenditure Share						
		Mean	poor	Borderline	Aceptable	Mean	Food 0-2 groups	Food 3-4 groups	Food groups 5	Food groups 6	(None) 0	(Slight) 1	(2-3 Moderate)	(Severe) 4	(Severe) 5-6	Mean	No to 0-3 (Low Coping)	Medium (Coping)	High 19+ (Coping)	Mean	HH not adopting coping	Stress coping strategies	Crisis coping strategies	Emergencies coping strategies	Mean	(Low) 50%	65%-50% (Medium)	75%-65% (High)	Very 75%+
Central Equatoria	Juba	22	46%	44%	9%	2	57%	25%	13%	5%	22%	4%	70%	3%	1%	12	17%	58%	25%	3	30%	4%	13%	54%	72%	10%	24%	18%	48%
Kajo-keji	14	82%	14%	4%	2	71%	21%	8%	1%	8%	6%	71%	13%	2%	10	12%	79%	9%	3	32%	23%	15%	30%	70%	31%	10%	6%	53%	
Lainya	20	64%	31%	6%	3	56%	26%	10%	8%	14%	17%	69%	23%	2%	11	1%	93%	6%	3	29%	13%	19%	39%	58%	44%	10%	9%	37%	
Morobo	20	58%	34%	8%	3	52%	30%	14%	4%	16%	23%	59%	2%	11	10%	76%	15%	3	15%	17%	32%	37%	63%	31%	14%	14%	40%		
Terekeka	10	92%	8%	1	1	84%	15%	1%	19%	15%	62%	4%	13	81%	19%	3	30%	6%	8%	56%	78%	16%	6%	8%	70%				
Eastern Equatoria	Budi	23	51%	36%	13%	3	43%	48%	6%	3%	11%	1%	77%	9%	2%	20	10%	47%	43%	3	15%	15%	20%	50%	91%	2%	5%	4%	89%
Ikotos	27	48%	31%	21%	3	11%	75%	11%	3%	57%	16%	27%			5	59%	33%	7%	3	73%	19%		7%	86%	7%	5%	6%	82%	
Kapoeta East	33	29%	14%	57%	3	54%	37%	6%	3%	2%	7%	85%	4%	3%	34	2%	98%	4	10%	8%	81%	94%	1%	1%	1%	97%			
Kapoeta North	39	16%	23%	61%	4	27%	25%	14%	34%	3%	2%	54%	35%	6%	21	1%	55%	44%	4	1%	3%	8%	88%	91%	1%	1%	97%		
Kapoeta South	45	16%	24%	60%	4	17%	30%	22%	31%	6%	8%	86%			20	1%	56%	44%	4	3%	10%	87%	86%	3%	2%	8%	87%		
Lafon	33	30%	40%	31%	4	11%	65%	17%	7%	17%	6%	77%			7	43%	50%	7%	3	15%	19%	42%	24%	81%	13%	4%	6%	77%	
Magwi	26	25%	62%	13%	4	9%	42%	29%	20%	84%	5%	11%			8	42%	51%	7%	2	73%	10%	10%	7%	68%	26%	11%	7%	56%	
Torit	30	34%	35%	32%	4	5%	55%	25%	15%	52%	8%	40%			15	14%	65%	21%	3	17%	16%	30%	36%	82%	7%	7%	11%	75%	
Jonglei	Akobo	25	47%	22%	31%	3	49%	36%	8%	6%	18%	15%	62%	5%	1%	12	20%	63%	17%	3	29%	21%	14%	36%	80%	12%	9%	14%	65%
Ayod	31	23%	33%	44%	3	38%	36%	13%	13%	44%	7%	44%	6%		9	27%	65%	8%	2	57%	6%	13%	24%	78%	20%	7%	5%	68%	
Bor South	36	19%	34%	47%	4	19%	43%	20%	18%	21%	12%	66%	1%		13	13%	69%	19%	3	31%	13%	21%	34%	83%	7%	2%	13%	79%	
Duk	29	43%	18%	39%	4	17%	47%	15%	21%	8%	10%	82%			13	7%	76%	17%	4	8%	3%	17%	72%	84%	6%	5%	15%	74%	
Fangak	32	31%	27%	42%	3	48%	37%	5%	10%	11%	6%	83%			5	55%	39%	5%	3	25%	9%	10%	57%	79%	13%	5%	4%	77%	
Nyiroi	17	70%	17%	13%	2	73%	21%	5%	1%	4%	3%	90%	1%	3%	23	1%	28%	71%	4	1%	1%	13%	85%	96%	2%	3%	2%	94%	
Pibor	29	31%	25%	44%	3	36%	34%	18%	11%	2%	5%	85%	4%	3%	12	1%	86%	13%	3	10%	17%	13%	60%	77%	15%	11%	62%		
Pochalla	26	52%	31%	17%	5	10%	54%	8%	28%	32%	61%	7%			12	12%	88%	2	46%	46%	4%	5%	86%	2%	10%	5%	83%		
Twic East	33	26%	34%	40%	4	27%	40%	11%	22%	13%	6%	82%			19	6%	41%	53%	4	6%	8%	78%	78%	9%	13%	13%	66%		
Uror	22	67%	16%	18%	2	89%	11%								10	1%	99%		2	94%	1%	6%	80%	14%	6%	6%	65%		
Lakes	Awerial	23	55%	34%	11%	5	8%	37%	23%	32%	33%	7%	57%	2%	1%	13	8%	72%	19%	3	21%	19%	33%	27%	79%	12%	9%	8%	71%
Cueibet	33	36%	27%	37%	4	22%	35%	19%	24%	5%	14%	81%			19	3%	61%	36%	4	6%	6%	19%	70%	86%	4%	7%	5%	85%	
Rumbek Centre	23	50%	26%	23%	3	46%	42%	10%	2%	9%	10%	76%	3%	2%	32	4%	57%	3	51%	4%	22%	23%	75%	14%	12%	8%	67%		
Rumbek East	19	70%	20%	10%	3	48%	40%	7%	5%	13%	10%	72%			14	8%	73%	19%	3	50%	6%	6%	39%	68%	28%	14%	8%	50%	
Rumbek North	19	62%	23%	15%	2	73%	21%	4%	2%	16%	8%	61%	14%	1%	22	47%	53%	3	22%	15%	18%	45%	70%	28%	4%	10%	58%		
Wulu	20	60%	31%	8%	3	45%	48%	4%	3%	10%	16%	74%			17	2%	67%	31%	3	27%	22%	32%	19%	82%	11%	2%	5%	82%	
Yirol East	23	56%	28%	16%	2	69%	21%	5%	5%	1%	48%	31%	19%	3%	1%	23	37%	63%	3	1%	2%	14%	83%	68%	31%	7%	54%		
Yirol West	25	52%	24%	25%	4	32%	35%	19%	15%	5%	2%	88%	4%	1%	14	5%	71%	25%	3	14%	68%	72%	19%	12%	8%	62%			
Northern Bahr el Ghazal	Aweil Centre	22	51%	30%	18%	3	47%	22%	18%	13%	13%	2%	77%	7%	1%	13	7%	69%	24%	3	13%	9%	24%	54%	83%	7%	6%	4%	83%
Aweil East	26	43%	31%	26%	4	21%	50%	13%	16%	1%	7%	87%			17	1%	61%	38%	3	17%	14%	24%	44%	94%	2%	1%	97%		
Aweil North	29	58%	8%	35%	4	42%	25%	8%	25%	29%	19%	53%			14	23%	46%	31%	3	34%	21%	5%	40%	78%	15%	7%	8%	71%	
Aweil South	28	44%	24%	32%	3	46%	43%	8%	3%	13%	1%	82%	4%	1%	11	10%	76%	14%	3	18%	12%	19%	53%	94%	2%	1%	96%		
Aweil West	40	17%	30%	54%	5	14%	33%	12%	41%	4%	6%	81%			17	9%	46%	44%	3	18%	10%	20%	52%	88%	3%	6%	92%		
Unity	Abiemnhom	36	17%	35%	48%	5	6%	27%	19%	49%	54%	22%	24%			8	45%	44%	10%	3	38%	10%	6%	45%	83%	6%	11%	6%	77%
Gui	38	10%	21%	69%	2	72%	26%	1%	1%	46%	18%	36%			8	20%	78%	2%	3	13%	7%	21%	58%	68%	28%	6%	59%		
Koch	24	51%	21%	28%	3	50%	36%	9%	5%	31%	15%	55%			7	31%	68%	2%	3	34%	19%	19%	28%	68%	25%	17%	9%	49%	
Leer	37	6%	35%	59%	4	8%	64%	16%	12%	31%	15%	55%			8	45%	44%	10%	3	30%	10%	31%	30%	82%	7%	9%	9%	75%	
Mayendit	26	50%	26%	23%	3	37%	37%	10%	15%	29%	4%	62%			6	5%	69%	24%	7	30%	3%	8%	59%	68%	25%	13%	50%		
Mayom	54	1%	9%	90%	4	25%	44%	19%	13%	69%	10%	20%			8	21%	78%	1%	3	40%	19%	9%	31%	84%	11%	5%	5%	79%	
Panyijar	28	26%	44%	30%	2	71%	24%	2%	2%	1%	71%	24%	24%	1%	15	3%	69%	27%	3	6%	5%	22%	67%	83%	6%	14%	75%		
Pariang	45	6%	19%	75%	5	11%	28%	16%	45%	19%	23%	56%	1%	1%	12	6%	80%	15%	3	20%	23%	22%	34%	86%	3%	4%	7%	87%	
Rubkona	36	18%	29%	53%	3	25%	52%	15%	9%	17%	16%	67%			8	26%	73%	1%	3	17%	23%	25%	35%	67%	31%	12%	3%	55%	
Ballet	9	97%	2%	1%	2	60%	36%	4%	5%	1%	94%	1%	94%			15	6%	64%	31%	3	19%	19%	22%	40%	90%	5%	5%	84%	
Fashoda	25	57%	15%	28%	2	63%	21%	8%	8%	25%	21%	53%	1%		10	19%	74%	7%	2	50%	24%	11%	15%	82%	17%	1%	3%	79%	
Longochuk	8	92%	8%	3%	3	51%	36%	7%	6%	1%	95%	3%	1%			15	8%	80%	20%	4				100%	83%	11%	9%	68%	
Luakpiny/Nasir	27	19%	66%	15%	4	7%	62%	19%	12%	2%	100%					16	69%	31%	4	2%	9%	67%	22%	95%			5%	95%	
Maban	19	72%	21%	7%	3	54%	39%	7%	22%	2%	75%	1%			10	12%	77%	10%	3	43%	18%	8%	31%	85%	5%	10%	5%	80%	
Maiwut	22	50%	41%	10%	3	18%	64%	11%	7%	18%	6%	75%	1%	1%	13	93%	7%	4	2%	8%	31%	59%	86%	11%	2%	82%			
Malakal	20	66%	28%	6%	3	58%	33%	6%	2%	34%	2%	63%	1%		13	95%	5%	3	58%	3%	11%	28%	98%			1%	99%		
Manyo	23	55%	23%	22%	3	44%	26%	21%	8%	28%	11%	58%	3%		9	24%	68%	8%	3	34%	10%	10%	45%	90%</td					

Annex 3: Prevalence of acute malnutrition (WFH) by state, FSNMS Round 24 (July 2019)

State	Emergency threshold	Aug '14	Nov '14	Mar '15	Jul '15	Dec '15	Jun '16	Dec '16	Aug '17	Dec '17	Aug '18	Dec '18	Jul 2019
CE	15.0%	13.5%	4.1%	7.2%	3.7%	4.2%	6.4%	8.1%	15.3%	5.2%	8.2%	9.6%	9.6%
EE	15.0%	11.8%	11.0%	10.0%	11.1%	12.8%	15.2%	13.8%	20.4%	12.2%	11.8%	9.1%	13.6%
Jonglei	15.0%	13.8%	16.2%	19.5%		16.0%	17.7%	13.2%	22.6%		19.4%	19.7%	24.4%
Lakes	15.0%	14.4%	10.6%	12.2%	14.4%	10.6%	12.6%	7.4%	21.7%	16.8%	12.2%	7.3%	11.2%
NBeG	15.0%	13.9%	14.6%	19.7%	24.2%	20.0%	33.3%	14.2%	17.7%	15.9%	11.7%	12.9%	14.8%
Unity	15.0%	17.1%		19.0%			26.2%	13.8%	23.8%		16.6%	13.0%	19.6%
UNS	15.0%	16.6%	15.2%	15.4%		15.1%	16.7%	13.6%	18.8%		16.3%	13.7%	22.6%
Warrap	15.0%	14.8%	17.2%	21.2%	17.6%	19.5%	23.1%	13.9%	22.0%	14.7%	15.3%	13.5%	15.1%
WBeG	15.0%	16.9%	10.1%	12.0%	12.1%	8.5%	20.6%		19.6%		10.4%	5.8%	15.5%
WES	15.0%	8.0%	5.8%	1.8%	5.9%	1.5%	5.2%	4.0%	4.7%		4.2%	4.1%	8.0%
Overall	15.0%	15.9%	12.5%	16.7%	13.0%	13.0%	18.1%	12.5%	19.1	13.3%	13.3%	11.7%	16.2%

Trends of wasting among women of reproductive age (15 to 49 years) by state

	Emergency threshold	Aug '14	Nov'14	Mar '15	Jul '15	Dec '15	Jun '16	Dec '16	Aug '17	Dec'17	Aug'18	Dec'18	
CE	15	13.50	4.10	7.20	3.70	4.20	6.40	8.10	15.30	6.70	6.40	9.4	
EE	15	11.80	11.00	10.00	11.10	12.80	15.20	13.80	20.40	23.10	24.30	14.3	
Jonglei	15	13.80	16.20	19.50		16.00	17.70	13.20	22.60	28.60	31.60	34.0	
Lakes	15	14.40	10.60	12.20	14.40	10.60	12.60	7.4%	21.7%	16.30	24.70	17.2	
NBeG	15	13.90	14.60	19.70	24.20	20.00	33.3%	14.2%	17.7%	16.20	15.50	13.9	
Upper Nile	15	16.60	15.20	15.40		15.10	16.70	13.60	18.80	25.40	32.70	26.7	
Warrap	15	14.80	17.20	21.2%	17.6%	19.50	23.1%	13.9%	22.0%	17.20	23.00	19.1	
WBeG	15	16.90	10.10	12.00	12.10	8.50	20.60		19.60	10.60	15.70	20.2	
WE	15	8.00	5.80	1.80	5.90	1.50	5.20	4.00	4.70	20.20	12.10	16.9	
Unity	15	17.10		19.00			26.20	13.80	23.80	20.60	20.80	5.0	
Overall	15	15.90	12.50	16.70	13.00	13.00	18.1%	12.5%	19.1	13.3%	20.20	23.80	18.90

Deworming and Vitamin A supplementation by state

State	Vitamin A		Deworming	
	N	%	N	%
Central Equatoria	430	79.2	370	77.4
Eastern Equatoria	807	79.4	702	80.1
Jonglei	954	60.1	830	60.9
Lakes	915	76.2	795	75.6
Northern Bahr el Ghazel	471	75.5	357	68.9
Unity	1,155	83.0	1018	84.2
Upper Nile	1,215	77.7	1056	77.7
Warrap	660	76.0	573	77.2
Western Bahr el Ghazel	282	79.7	251	79.7
Western Equatoria	1,043	84.1	963	88.5
Total	7,932	76.4	6915	76.8