JUBA URBAN FOOD SECURITY & NUTRITION ASSESSMENT

-September 2016-

IN NUMBERS

- ***51 percent*** *of households in Juba are food insecure, more than double the 2015 level that recorded 23 percent food insecure population.*
- ***11 percent*** *of children 6 to 59 months are acutely malnourished.*
- ***84 percent*** *of households in Juba experienced inadequate food consumption.*
- *Almost* ***one fifth*** *decrease in salaried workers and about* ***10% increase*** *of petty trade compared to 2015*
- ***82 percent*** *of households engaged in crisis to emergency coping strategies, to the likely detriment of future household productivity.*
- ***92 percent*** *of households reported unusually high prices as the most prominent shock.*

METHODOLOGY

Assessment was conducted in September 2016, involving interviews in some 619 households. A two stage sampling design was employed including selection of 54 Enumeration Areas (EAs). Probability proportional to population size was employed in the first stage to select the EAs while in the second stage, households were selected using systematic random sampling. The survey provided representative estimates of key variables/indicators for the Juba urban population

FOOD SECURITY & CONSUMPTION

A drastic reduction in the number of food secure and deterioration of the food consumption recorded

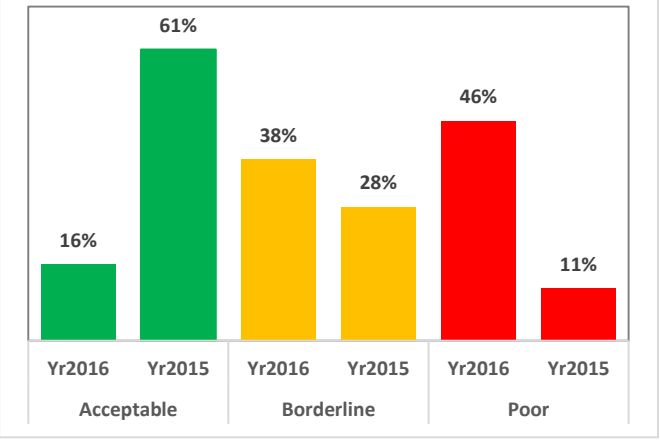


Figure 1: Food consumption score 2016 compared to 2015

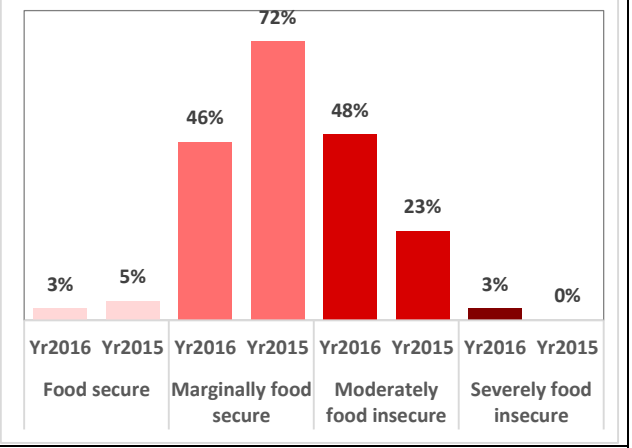


Figure 2: Food Security Situation 2016 compared to 2015

The food insecure population has more than doubled compared to July 2015. Majority of the Juba urban residents are struggling with the high cost of living due to hikes in the cost of food and fuel, rendering 51% of the households' food insecure, of which 3% are severely food insecure - unable to afford sufficient food to meet their food needs. Based on the Juba urban mid 2016 population, an estimated 260,280 households are food insecure. Households with poor consumption rose sharply from 11% to 46% in 2016. The deteriorating food security is mainly attributed to the unprecedented rates of inflation, the deteriorating South Sudanese pound, increased loss of employment opportunities, asset stripping and eroded purchasing power. Juba food security situation is further undermined by poor access to basic services, crowded living environment, the July 2016 conflict and insecurity around Juba impeding trade.

ASSETS AND WEALTH

Wealth is protective against household food insecurity; poor households are significantly more food insecure than better off households. However, a high proportion of better off are also food insecure.

Wealth was computed based on households' possession of a range of assets, housing facilities and access to water and sanitation facilities. The wealth distribution shows that 40% of the urban population constitute the poor and very poor population. Results indicate that the much better off decreased by almost doubled slipping mainly into worse off wealth status since 2015 (figure 3). This change is attributed to the economic crisis that has resulted in significant asset stripping among population. A nearly 3.5 fold increase in emergency coping reported attests to this finding.

Relatedly, wealth influenced household food security. Poor and very poor households were significantly more likely to be food insecure than the better off households. However, due to the increase in food insecurity in Juba, there are food insecure households among the better off and much better off (Figure 4). Further analysis show that the worsening food security status of the poor households is due to significant reduction in dietary

diversity, higher food expenditure share and poor consumption of animal protein rich foods. Findings further characterise the poor households as those that host orphans and have a disabled or chronically ill member. The children from wealthier households were significantly more likely to have the WHO recommended minimum dietary diversity.

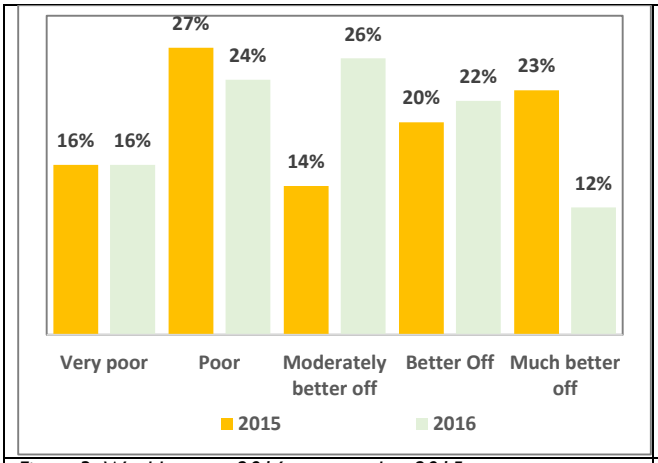


Figure 3: Wealth status 2016 compared to 2015

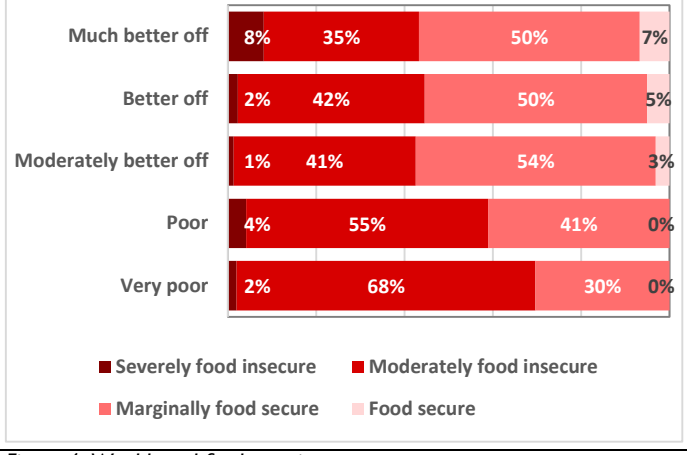


Figure 4: Wealth and food security

SOURCES OF INCOME

Livelihoods of the juba urban population decimated by conflict and the economic decline. The households relying on salaried income decline by one fifth whilst petty trade increased by almost 10 percent compared to last year.

Just like last year, salaried work (42%) and petty trade (23%) still remain the highest recorded sources of income. However, compared to same season last year there is a huge **reduction (20%) in the number of households who rely on salaried work** as a source of income and an increase of around **8% in the number of households relying on petty trade**.

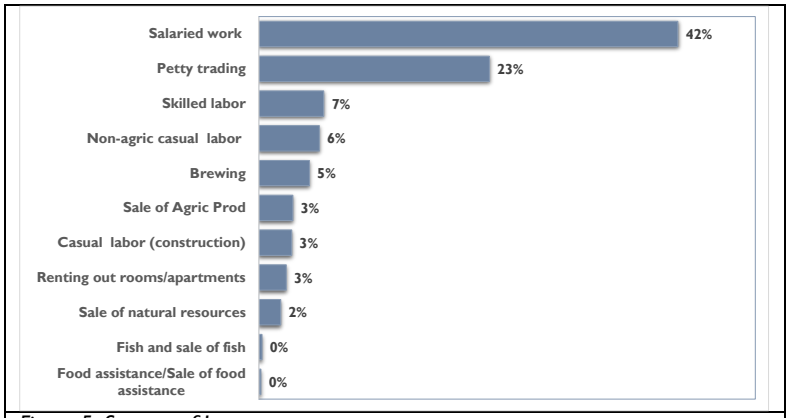


Figure 5: Sources of Income

The livelihoods have been decimated by the conflict and economic decline depicted by inflation reaching a peak of 730% in August, the pound depreciating from around SSP20 per USD in January 2016 to SSP80 in September 2016 and some businesses closing after the July conflict.

SHOCKS AND COPING STRATEGIES

More than 85% of households indicated shocks related to the economic crisis as the most important factor that is pushing them into poverty and food insecurity. Households adopting livelihood asset depletion increased by 44%. The number of days households spend days without eating borrowing food tripled compared to 2015

The protracted economic stress and increased vulnerability induced by the recent conflict on people's lives has further exacerbated households' coping. Compared to 2015, there was a 44% increase in households adopting coping mechanisms.

	2016	2015	Difference %
HH not adopting coping strategies	8%	52%	-44%
Stress coping strategies	10%	25%	-15%
Crisis coping strategies	20%	5%	14%
Emergencies coping strategies	62%	18%	44%

Figure 6: Summary of livelihood asset depletion

There was also a substantial increase in household adopting emergency and crisis coping mechanisms, an indication of the depth of food insecurity that has resulted from the economic pressure and depletion of household assets. Consequently, on average **62% of households are engaging in emergency coping strategies compared to 18% in 2015 (which include begging, migration and engaging in degrading jobs)**. Other coping strategies implemented by the affected households were, migration of members of the households, which was reported by 13% of the assessed population.

Given the stress households are facing and the limited coping options, majority of the households are using consumption coping, which has an immediate effect on their food security. For example, over 90% of the households reduced number of meals per day and 53% spent entire days without eating. Limiting the size of meals was reported by (98%) of the households while 97% consumed less preferred and cheaper foods. The average number of days adult consumption was restricted, borrowing of food, eating unusual wild foods and skipping days without eating more than tripled compared to 2015, an indication of the worsening food security situation (Fig. 7).

Strategies	Frequencies (%) of HH	Mean days	
	2016	2016	2015
Limited portion size of meals	98%	3.2	3.0
Relied on less preferred and less expensive food	97%	3.3	3.2
Reduced number of meals eaten in a day	93%	2.9	2.8
Restriced consumption by adults in order for small children to eat	88%	3.0	1.2
Borrowed food or rely on help from friends or relatives	74%	3.4	0.5
Collected any unusual amounts of types of wild foods for this season	71%	3.6	0.2
Skipped entire days without eating	53%	2.9	0.7

Figure 7: Consumption based coping

Households applying high and medium consumption coping strategies increased in 2016 compared to 2015 from 2 to 6%; and from 17 to 41% respectively.

Not surprisingly, the economic crisis is one of the major and most important shocks that affects most Juba households. High food and non-food prices and depreciation of the SSP remained the greatest shock for majority of the households. Given that majority of households in Juba are net food buyers, the unusually high food prices (affecting 92%), depreciation of the SSP (90%), are likely to worsen households' access to staple foods, restricting households' purchasing power.

HUMANITARIAN ASSISTANCE

About 30% reported having received some form of humanitarian assistance- 6 times higher compare to last year same period

Of the assessed households, about 30% reported having received some form of humanitarian assistance (food, cash, health care, nutrition support, agriculture and livestock support and government support to poor households). Cash for work activities were the highest, benefiting 10% of the population, followed by food for young/malnourished children and/or pregnant/lactating women - 7% of the population. Compared to last year same period, the level of assistance was six times higher. The increase in humanitarian assistance is attributed to the humanitarian response to the July 2016 conflict and the economic crisis.

IMPACT OF HYPERINFLATION ON EXPENDITURES

Juba urban poor most hit by rising cost living. hyperinflation pushing more households into deepening poverty and food insecurity

South Sudan has been experiencing hyperinflation, aggravated by the cumulative effects of the multiple macro-economic-political shocks. The cost of living increased significantly in the post currency devaluation in mid-December 2015 with inflation rates being the highest in the world peaking at 730% in August 2016. The situation was further heightened by the recent renewed fighting in Juba in early July 2016 and consequential widespread violence and hostilities in many areas in the country, limiting commodity movement. The effect of the spiraling cost of living among vulnerable urban population is particularly high given their high dependence markets for food.

Around 98% of households still depend on market for food. This is structurally consistent with urban dwellers. Contribution of other sources is minimal. Therefore, many poor households in Juba are finding it extremely difficult to afford food, hence the increase in the level of food insecurity.

Source	2016	2015
Market	98.2%	98.0%
Own production	1.4%	1.4%
Gifts	0.3%	0.3%
Food aid	0.1%	0.04%
Borrowing	0.03%	0.01%
Work for food		0.1%

Figure 8: Source of food

The vulnerability to food inflation is worsened by households' high expenditure share on food. Expenditure share on food was categorized into low (>50%), medium (50% to 64.9%), high (65% to 74.9%) and very high (>75%). Overall, he expenditure share on food among Juba Urban population was on average at 67%, an increase of 31% from a year ago. With hyperinflation, the cost of a typical urban expenditure basket (presented in the annex[1]) rose

[1] *The Juba Urban Expenditure basket was developed using expenditure data collected during Round 2 of the Juba urban assessment. It represents the average expenditure patterns for a household of 6 people*

phenomenally (by four times) compared to August 2015. For a household of six, the monthly expenditure basket is estimated at SSP 12,093, which is about SSP 8,000 more than the same time last year.

On the other hand, incomes have not matched the hyperinflation. Consequently, the income-expenditure gap widened significantly for typical poor low income households. These households include lower cadre government (private) staff and those relying on casual labour/ petty trade/ as their main source of income.

The effects of the high food prices resulted in substantial cuts in expenditures on imported cereals, legumes, education, health and cooking fuel. Households substituted imported processed cereals with locally produced grain. The expenditure cuts for essential health care and children's education by households will have negative long-term development implications for the country. Most households have resorted to own collection of firewood instead of purchasing from the market. Expenditure cuts on non-food items, although affected most households, was proportionately higher among the food insecure (7-12%).

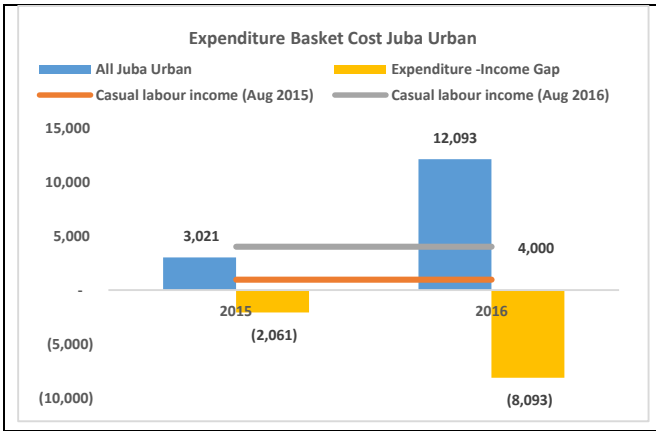


Figure 9: Cost of the household expenditure basket

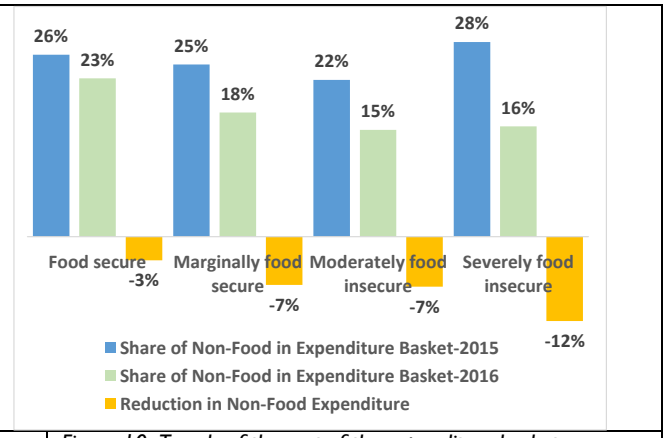


Figure 10: Trends of the cost of the expenditure basket

With hyper-inflation, the role of credit to both food and non-food expenditure can be an important household coping mechanism. However, contribution of credit to the household expenditure is much limited, credit is only 11% of the total household purchase for the food secure and this decreases with the level of food insecurity. Financing of the food purchases from credit is very limited and is much higher for the food insecure households with an average of SSP 245 per month. Most of the purchases of food on credit is on cereals. The food secure on average purchase 18% of the total non-food items on credit and this decreases with the level of food insecurity in terms of proportion and the value. The non-food credit expenditure for the severely food insecure averages only SSP 235 compared to the SSP 2,894 for food secure. Hence, consumption expandability, through credit and borrowing is not an option for the most vulnerable. Given that the greater part of the budget (75 to 82%) for the food insecure is allocated for food consumption, the population will remain in a food poverty trap.

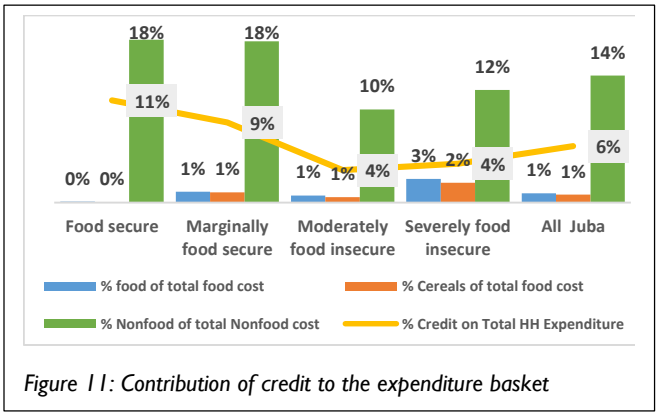


Figure 11: Contribution of credit to the expenditure basket

LIVESTOCK & AGRICULTURE:

Typical to urban populations, households' engagement in crop and livestock production is low. Participation in fishing is negligible

Urban agriculture has not expanded compared to last year's 13% of the households. About 14% of Juba urban dwellers have home-based gardens, whose production is primarily for own consumption. Of the households that cultivated, 36% planted vegetables, 22% maize and 15% beans with only 13 % selling part of their cereal harvest. The majority of households cultivated on average less than half of a feddan this cropping season. However, beans and maize production expanded compared to last year (Figure11).

Households keeping livestock increased by 3% to 7%, of these 76% own poultry. Households that rear livestock reported pests and diseases (35%), lack of veterinary services (19%), insecurity, lack of water and pasture (10%) as the main constraints to livestock production. Participation in fishing activities by Juba urban households was minimal (1%) (Figure12). Expansion in home gardens and small livestock should be encouraged to improve on the dietary diversity of the poor and contribute to reducing the high levels of food insecurity.

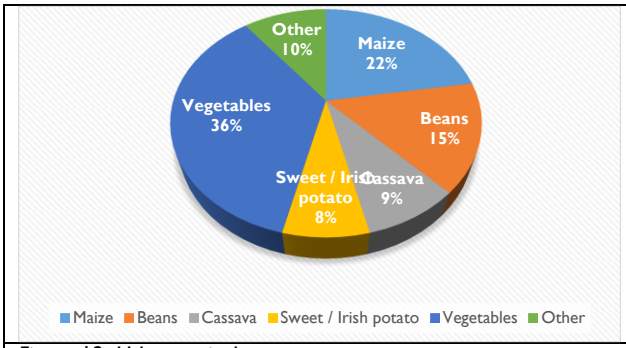


Figure 12: Urban agriculture

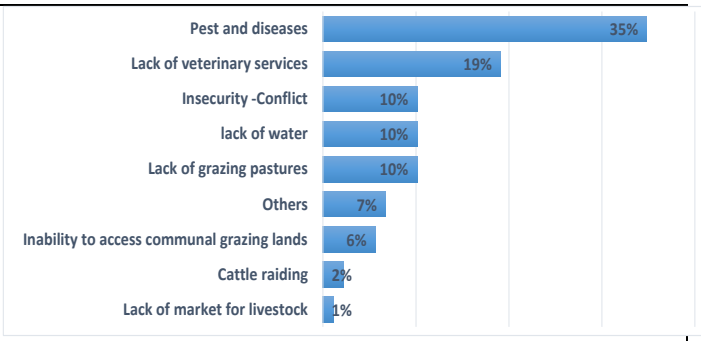


Figure 13: Livestock constraints

DEMOGRAHIC AND MIGRATION

Around 46% of the population that migrated are sheltered in the neighboring countries.

A total of 5,929 individuals were found in 619 sampled households with 35% being headed by females and 6% were headed by a person 60 years or older.

Around 20% of households reported presence of a disabled and chronically ill or mentally ill member in their household. During the assessment, few IDPs (5%) and returnees (2%) were found among surveyed households.

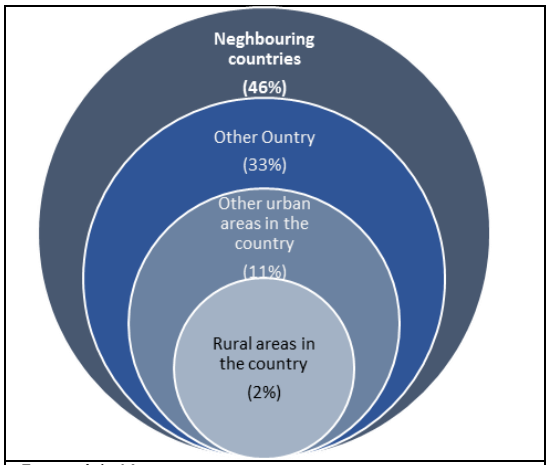


Figure 14: Migration

The already poor economic conditions and the July conflict have prompted a wave of migration of South Sudanese and foreigners to neighbouring countries and rural areas within the country. About 13% of the assessed households indicated that one or more household members had migrated. Some ***46% of the populations that migrated are being sheltered in the neighbouring countries - Uganda, Ethiopia, DRC, Kenya, Sudan, CAR. This wave of migration to neighbouring countries is a 69% increase compared to last year same season.***

NUTRITION STATUS OF CHILDREN 6 TO 59 MONTHS AND WOMEN 15 TO 49 YEARS

Global acute malnutrition has been maintained at WHO "Serious" level. Improved coverage of public health and nutrition programmes may have averted a worsening nutrition situation amidst major shocks experienced by the juba urban population

The global acute malnutrition (GAM) remains at WHO "Serious" level at 11.2% (9.2%-13.6% 95% CI, WHZ<-2 and/or oedema) whilst severe acute malnutrition (SAM) stands at 2.2% (1.3%-3.6%) (WHZ<-3 and/or oedema). The GAM based on mid-upper arm circumference (MUAC) was 4.8 % (3.2 - 7.0 95% C.I). The nutrition situation among the Juba urban population is worse than that in the rural parts of Central Equatoria (6.4%). However, contrary to the food security situation that recorded a pronouched deterioration, GAM remained at a similar level as that reported in 2015 (12.2 percent).

Findings suggest that increase in coverage of nutrition and public health programmes since 2015 may have averted a worsening nutrition situation in Juba urban amidst extensive recent and ongoing shocks experienced by the population. The scale of nutrition interventions has improved since 2015. Correspondingly, the coverage of vaccination and supplementation has improved considerably while a significant increase in the access to safe water was also noted (details below). Findings show a significant correlation between deworming, diarrhoea and malnutrition.

Wasting based on MUAC (<230mm) was prevalent in 13.4% of women, slightly higher than the 2015 prevalence (10.5%) and among women in rural Central Equatoria (8.4%). Wasting among pregnant and lactating women was slightly higher than that of the general population at 15.1% .

INFANT AND YOUNG CHILD FEEDING (IYCF) AND HOUSEHOLD CONSUMPTION OF NUTRIENT RICH FOODS

Child feeding status remains deplorable with a meagre proportion of children under two years receiving the recommended minimum acceptable diet.

Findings from the 24-hour recall of complimentary feeding indicate that 28.7% of children met their minimum dietary diversity (MDD) of at least 4 food groups, depicting a gap in the consumption of diverse diets among children 6 to 23 months. Similarly, the minimum meal frequency (MMF) was low, at only 19% while a meagre 5.7% were meeting the minimum acceptable diet (MAD). This is is similar to the 2015 Juba urban estimates of 27.6% MDD, 19% MMF and 7.8% MAD. The poor performance of the IYCF indicators is consistent with the deterioration in the household food security/food consumption.

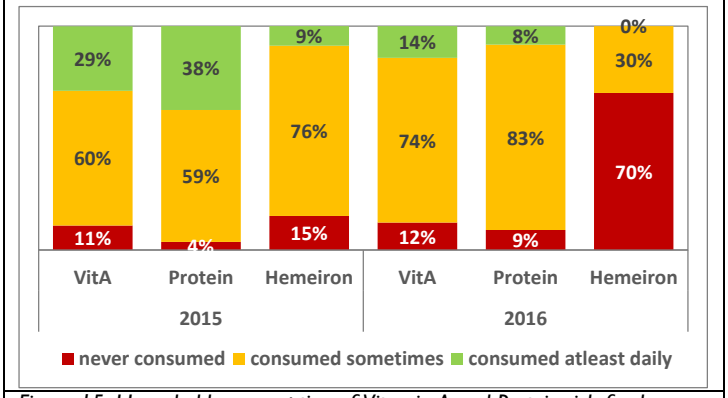


Figure 15: Household consumption of Vitamin A and Protein rich foods.

Furthermore, findings indicate a reduction in the proportion of households that consumed protein and vitamin A rich foods when compared to 2015 urban assessment findings. A severe reduction in the consumption of animal rich proteins is notable. In addition, children in households that were food insecure and or had medium to low household dietary diversity were signifcantly more likely to have received less than the recommended minimum dietary diversity and minimum acceptable diet further reinforcing the role of food security in ensuring optimal child feding.

WATER, SANITATION, HYGIENE AND CHILD MORBIDITY

Marked improvements in access to safe water and latrine/toilet ownership. however

The majority of households in urban Juba (93.4%) own toilet facilities; including 22.1% owning water seal latrine or improved latrine with concrete slab, traditional pit latrines and 5.2% owning flush or pour-flush to piped sewer system or septic tank. Some 6.6% of the households reported having no toilet and using bush/open space to dispose fecal matter. Improvement was noted in ownership of a toilet facility from the 81.3% registered in 2015.

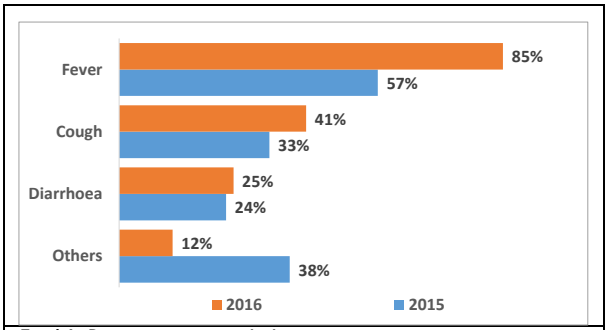


Fig 16: Retrospective morbidity

Similarly, access to safe/protected water has improved tremendously since 2015. About 64% of households are accessing safe/protected water whilst only 27.6% had access to safe/protected water sources in 2015. Water quality is enhanced by treatment of water for drinking. Some 69.3% of the households reported treating their drinking water by chlorination or boiling.

A retrospective assessment of morbidity among children two weeks prior to the assessment reveals a high disease burden, with more than half (61.5%) of children under five having suffered from at least one of the common child illnesses. Out of the children that suffered from any disease, 84.9% suffered from fever, 41.3% from cough, 25.3% from diarrhea and 11.8% from other illnesses. The assessment registered an increase in the morbidity level when compared to findings from August 2015. Also important to note is the relationship found between morbidity and latrine ownership. Children were significantly more likely to suffer from diarrhea when they belonged to a household that owned no toilet, underpinning the role of sanitation in nutrition status of children.

VACCINATION, SUPPLEMENTATION AND DEWORMING

Notable improvements in vitamin a and deworming coverage provided a buffer against a worsening nutrition situation whilst a nearly exhaustive measles vaccination prevented disease spread.

Nearly all children (96%) received the measles vaccination at the time of the interview, similar to findings of the 2015 Juba Urban assessment. The level of vaccination confers the desired herd immunity, a common and proven successful method of preventing the spread of many infectious diseases. A marked increase in vitamin A supplementation and deworming was recorded since 2015 from 74% to 92.3% for Vitamin A supplementation and 40% to 81.1% for deworming. It is not surprising therefore that the nutrition situation among the Juba urban population has not deteriorated, given the protective effect of deworming against malnutrition as demonstrated by the findings. The use of impregnated mosquito net remains widespread, with 97% of children under five reporting to have slept under a mosquito net the night before the interview. The establishment of the Juba urban task force led to improvements in coverage of the public health and nutrition interventions.

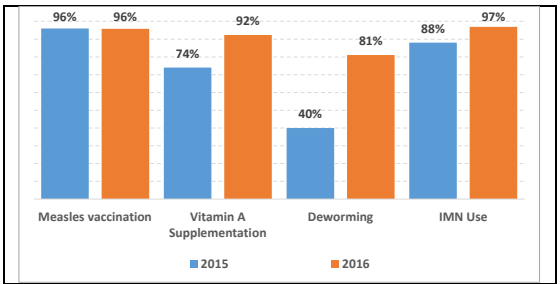
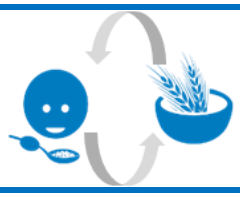


Fig 17: Vacinnation, Deworming and Supplementation



FOOD SECURITY – NUTRITION LINKAGES

Nonfood factors remain the most plausible drivers of acute malnutrition whilst some socio-economic and demographic factors underlie the food security and nutrition situation in juba urban areas.

Unlike the rural areas where a significant correlation was found between food security and nutrition, the Juba urban assessment findings suggest that food insecurity/access is not the major underlying factor of acute malnutrition. This reinforces the findings from the previous Juba urban assessment that indicated that **non-food factors were the key drivers of acute malnutrition among the Juba urban population.** The factors underlying the food security and nutrition outcomes included the following;

Some socio- economic and demographic factors were correlated with the food security and nutrition outcomes. Households with members that migrated (including in and out migration) were more likely to have a malnourished child than those that did not experience any migration. Out migration underlines household resources/food access constraints while household members returning may increase dependency and present a strain on household resources. These will in turn adversely affect the food security status of a household. Furthermore, findings show the **typical correlation of child age and malnutrition;** younger children (children under two years) are more malnourished than the older children.

The **findings also demonstrate the renowned relationship between wealth and food security as well as good nutrition outcomes. Better off households were significantly more likely to be food secure**, consumed more diversified/richer diets and had lower food expenditure share. In addition, children from wealthier households were more likely to meet the recommended minimum dietary diversity. Relatedly, earning an income supported better nutrition outcomes of children under five. Households that had income earning activities were significantly less likely to have a malnourished child. Findings distinguish the poor households as those hosting orphans or having a disabled or chronically ill member.

Findings show the role of access to social capital in alleviating food access constraints. Households were more likely to have better food security outcomes when they borrowed money in the last 12 months. The protective effect of borrowing on food security stems from the impact borrowing has on household purchasing power and increase of disposable income to meet nonfood needs.

Additionally, **findings suggest efficient programme targeting and point to enhanced programme outcomes respectively**. **Households with malnourished children were significantly more likely to have received food for nutrition** than households with no malnourished children. Also, **households that reported have received food for work were more likely to be food secure than their counterparts** that were not receiving food for work. This is a clear indication of strengthened livelihoods/better food access due to food assistance.

Some **maternal and childcare factors were related to the nutrition status of children**. **Children that suffered from diarrhea were more likely to be malnourished than those that did not suffer from diarrhea.** This is against a backdrop of a considerable proportion (36 percent) of the Juba Urban population that has no access to safe/protected water sources and the proportion that reported not to be treating drinking water (31 percent). Also, **malnutrition was significantly less prevalent among children that were dewormed whilst children of wasted mothers were more likely to be malnourished.**

CONCLUSION AND RECOMMENDATIONS

- *A sharp deterioration in the food security status among the Juba Urban population is noted, attributed to insecurity and the recent conflict as well as the ongoing economic crisis. Several factors underlie the deterioration. Wealth plays a fundamental role in household food security. Moreover a considerable proportion of households have slipped into worse wealth status when compared to 2015. Results distinguish poorer households as those that host orphans or have a disabled or chronically ill member, who should be necessarily targeted for livelihood support.*

- *A drastic increase in adoption of disruptive and non-reversible coping mechanisms is noted with resultant detrimental effects on future household productivity and ability to succumb to shocks. Programmes targeting the most vulnerable households to build their resilience are paramount.*

- *The effect of the spiraling cost of living among the vulnerable urban population is notable. Findings revealed a doubling of the food expenditure share since 2015 against a backdrop of disproportionate changes in income. Consequently, the income-expenditure gap widened significantly for typical poor/low income households. These findings call for relief and development actors to immediately scale up social transfers to the poor and most vulnerable segments of the population to compensate for the economic problems and welfare losses.*

- *The Global acute malnutrition was maintained at WHO "Serious" level. Coverage of public health and nutrition interventions prevented deterioration of the nutrition situation. Therefore, it is important to continue scaling up programmes for treatment of malnutrition as well as the common public health measures such as vaccination, deworming, supplementation and water and sanitation. The role of deworming in nutrition status of children is notable and hence the need to continue deworming all eligible children. Disease prevention measures particularly for the oral fecal diseases is crucial to improving the nutrition situation given the fact that findings showed that incidence of diarrhea was related to child malnutrition.*

- *Children from food insecure households and or households that had poor household dietary diversity were significantly more likely to have received less than the recommended minimum dietary diversity and minimum acceptable diet. Promoting household food security/food access will support improvement of the deplorable IYCF status of the Juba Urban children.*

- *Access to non-food factors such social basic services need to be addressed if malnutrition rates are to be arrested within Juba.*

- *Given the hyperinflation that has continued to affect the economy continuous monthly monitoring of the Juba urban minimum basket cost versus the income levels is needed to understand the depth of the income gap and the likely implications to food and nutrition security particularly for the poor households.*

ANNEXES

I. EXPENDITURE BASKET COST

		Food secure	Marginally food secure	Moderately food insecure	Severely food insecure	All Juba
Cash	Cereals and Tubers	3,880.59	4,193.06	4,915.07	7,008.68	4,619.66
	Meat & fish	441.76	337.50	454.23	409.74	398.97
	Pulses and sesame	617.94	528.48	844.19	516.58	683.07
	Fruits & vegetables	162.94	218.68	322.14	306.32	269.81
	Milk	0.00	53.03	124.77	126.32	88.47
	Sugar	500.00	705.87	672.64	632.63	681.92
	Oil and fats	497.71	324.99	454.20	439.21	395.65
	Drinks (water and soda water)	235.88	172.75	333.14	298.95	255.83
	Milling and grinding	7.06	155.49	146.09	17.37	142.63
	Total Cash Food	**6543.65**	**6864.92**	**8467.55**	**9921.26**	**7724.04**
Credit	Cereals and Tubers	-	48.05	53.48	220.00	54.63
	Meat & fish	-	1.49	1.40	-	1.36
	Pulses and sesame	-	0.54	5.48	18.42	3.46
	Fruits & vegetables	-	1.41	0.48	1.58	0.93
	Milk	-	-	-	-	-
	Sugar	1.47	0.21	2.34	5.26	1.43
	Oil and fats	3.53	0.67	2.71	0.00	1.71
	Drinks (water and soda water)	-	-	-	-	-
	Milling and grinding	-	-	-	-	-
	Total credit Food	**5.00**	**52.76**	**66.74**	**245.26**	**64.11**
Total Food Cash and Credit		**6,548.65**	**6,917.68**	**8,534.29**	**10,166.53**	**7,788.15**
NonFood	NonFood Total Cash	6,175.29	3,756.30	2,887.23	1,617.02	3,337.28
	NonFood Total Credit	2,894.31	1,510.48	388.66	235.35	967.46
	Total NonFood Cash & Credit	**9,069.61**	**5,266.79**	**3,275.89**	**1,852.37**	**4,304.74**
Total Expenditure	**TOTAL HH MONTHLY CASH**	**12,718.94**	**10,621.22**	**11,354.78**	**11,538.28**	**11,061.32**
	TOTAL HH MONTHLY CREDIT	**2,899.31**	**1,563.25**	**455.39**	**480.61**	**1,031.57**
	TOTAL HH MONTHLY FOOD AND NONFOOD	**15,618.25**	**12,184.47**	**11,810.18**	**12,018.89**	**12,092.89**

Basket of Food Commodities

		Basket Quantities by Food Security Status				
Commodity	Unit of Measurement	Food secure	Marginally food secure	Moderately food insecure	Severely food insecure	All Juba
Maize flour	Kg	20.5	24.8	28.4	36.4	27.0
Sorghum flour	Kg	12.5	13.5	13.9	10.8	13.8
White Sorghum grain	Malwa (3.5 kg)	13.1	8.3	12.9	12.1	10.6
White maize grain	Malwa (3.5 kg)		9.8	10.7	20.0	11.0
White wheat flour	Kg	40.9	16.0	12.9	5.6	14.0
Rice kg	Kg	1.3	2.8	3.9	8.3	3.4
Bread	Piece (500 grams)	1.3	2.4	3.0	6.9	2.8
Millet	Malwa (3.5 kg)		6.8	4.2		4.2
Casava flour	Malwa (3.5 kg)	3.5	4.4	5.1	3.5	4.8
Dry Okra	Kg	1.5	2.4	3.9	4.8	3.1
Beef meet	Kg	2.5	2.5	2.5	-	2.5
Shelled Ground nuts	Kg	0.3	0.9	1.5	0.3	1.0
Beans (janjaro)	Kg	1.3	2.0	3.0	3.6	2.3
Sesame	Kg		0.3	0.5		0.4
Cowpeas	Malwa (3.5 kg)	0.2	0.4	0.4	0.5	0.4
Fresh Milk	Litre		1.2	1.2	1.4	1.2
Sugar	Kg	1.4	3.2	4.1	4.7	3.9
Salt	Kg	0.5	0.6	0.8	0.9	0.7
Vegetable oil	Litre	1.5	1.8	2.2	3.1	2.0
Drinking water	Litre	21.3	18.7	19.3	25.0	19.5
Grinding/ Milling Cost	3.5 kg malwa	1.5	3.3	3.3	15.0	3.3
Parafin	Litre		9.8	10.2	31.3	10.2
Firewood	Bundle	10.0	10.5	10.7	12.9	10.7

Expenditure Line	Food secure	Marginally food secure	Moderately food insecure	Severely food insecure	All Juba Urban
Maize flour	-1.6%	-1.8%	-2.2%	-2.9%	-2.2%
Sorghum flour	-0.4%	-0.5%	-0.6%	-0.5%	-0.6%
White Sorghum grain	5.4%	2.7%	3.7%	2.9%	3.1%
White maize grain	0.0%	7.4%	7.2%	12.0%	7.7%
White wheat flour	-1.5%	-0.6%	-0.6%	-0.3%	-0.7%
Rice kg	-0.2%	-0.3%	-0.4%	-0.9%	-0.4%
Millet	0.0%	-3.6%	-2.2%	0.0%	-2.3%
Casava flour	1.1%	1.2%	1.2%	0.7%	1.2%
Dry Okra	-1.0%	-1.5%	-2.3%	-2.7%	-1.9%
Beef meet	-0.5%	-0.5%	-0.5%	0.0%	-0.6%
Beans (janjaro)	-0.6%	-0.9%	-1.2%	-1.4%	-1.0%
Fresh Milk	0.0%	2.6%	2.5%	2.6%	2.6%
Sugar	0.3%	0.6%	0.7%	0.6%	0.6%
Drinking water	2.0%	1.4%	1.4%	1.6%	1.4%
Grinding/ Milling Cost	0.1%	0.3%	0.2%	0.9%	0.2%
Parafin	0.0%	-2.8%	-2.8%	-8.0%	-2.9%
Firewood	-4.4%	-4.0%	-3.9%	-4.4%	-4.1%
Clothing	0.0%	1.1%	0.7%	0.0%	0.8%
Soap	-0.4%	-0.4%	-0.4%	-0.6%	-0.4%
Tabacco and alcohol	2.2%	0.5%	0.4%	0.0%	0.5%
Medical/ health care	-1.1%	-0.9%	-0.7%	-0.5%	-0.8%
Education (school	-0.9%	-0.5%	-0.4%	-0.3%	-0.5%
House rent	1.9%	0.5%	0.6%	1.4%	0.6%

2. PREVALENCE OF GLOBAL ACUTE MALNUTRITION

		All	Boys	Girls
		n = 858	n = 446	n = 412
Prevalence of global malnutrition	**(<-2 z-score and/or oedema)**	(96) **11.2 %**	(56) **12.6 %**	(40) 9.7 %
		(9.2 - 13.6 95% C.I.)	(9.6 - 16.3 95% C.I.)	(7.3 - 12.8 95% C.I.)
	(< 125 mm and/or oedema)	(42) 4.8 %	(15) 3.3 %	(27) 6.4 %
		(3.2 - 7.0 95% C.I.)	(1.8 - 5.9 95% C.I.)	(4.1 - 9.8 95% C.I.)
Prevalence of moderate malnutrition	**(<-2 z-score and >=-3 z-score, no oedema)**	(77) 9.0 %	(43) 9.6 %	(34) 8.3 %
		(7.3 - 11.0 95% C.I.)	(7.2 - 12.8 95% C.I.)	(6.1 - 11.1 95% C.I.)
	(< 125 mm and >= 115 mm, no oedema)	(28) 3.2 %	(9) 2.0 %	(19) 4.5 %
		(2.0 - 5.0 95% C.I.)	(0.9 - 4.2 95% C.I.)	(2.8 - 7.2 95% C.I.)
Prevalence of severe malnutrition	**(<-3 z-score and/or oedema)**	(19) 2.2 %	(13) 2.9 %	(6) 1.5 %
		(1.3 - 3.6 95% C.I.)	(1.6 - 5.1 95% C.I.)	(0.7 - 3.2 95% C.I.)
	(< 115 mm and/or oedema)	(14) 1.6 %	(6) 1.3 %	(8) 1.9 %
		(0.8 - 3.0 95% C.I.)	(0.6 - 2.9 95% C.I.)	(0.8 - 4.3 95% C.I.)
The prevalence of oedema is 0.6 %				

3. PLAUSIBILITY CHECK FOR: JUBA_URBAN_08.2016.AS

Standard/Reference used for z-score calculation: WHO standards 2006

(If it is not mentioned, flagged data is included in the evaluation. Some parts of this plausibility report are more for advanced users and can be skipped for a standard evaluation)

Overall nutrition data quality

Criteria	Flags*	Unit	Excel.	Good	Accept	Problematic	**Score**
Flagged data (% of out of range subjects)	Incl	%	0-2.5 0	>2.5-5.0 5	>5.0-7.5 10	>7.5 20	**0** (2.4 %)
Overall Sex ratio (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	**0** (p=0.213)
Age ratio(6-29 vs 30-59) (Significant chi square)	Incl	p	>0.1 0	>0.05 2	>0.001 4	<=0.001 10	**4** (p=0.001)
Dig pref score - weight	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**0** (5)
Dig pref score - height	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**4** (15)
Dig pref score - MUAC	Incl	#	0-7 0	8-12 2	13-20 4	> 20 10	**0** (7)
Standard Dev WHZ . .	Excl Excl	SD SD	<1.1 and >0.9 0	<1.15 and >0.85 5	<1.20 and >0.80 10	>=1.20 or <=0.80 20	**0** (1.05)
Skewness WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	**0** (-0.04)
Kurtosis WHZ	Excl	#	<±0.2 0	<±0.4 1	<±0.6 3	>=±0.6 5	**0** (0.03)
Poisson dist WHZ-2	Excl	p	>0.05 0	>0.01 1	>0.001 3	<=0.001 5	**0** (p=0.061)
OVERALL SCORE WHZ =			0-9	10-14	15-24	>25	**8** %

The overall score of this survey is 8 %, which is excellent.