

Annual Needs and  
Livelihoods Analysis  
2011/2012

SOUTH SUDAN

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DRAFT

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**Abbreviations**

ANLA	Annual Needs and Livelihoods Analysis
ARI	Acute Respiratory Infection(s)
CES	Central Equatoria State
CFSAM	Crop and Food Security Assessment Mission
CFSVA	Comprehensive Food Security and Vulnerability Analysis
CPA	Comprehensive Peace Agreement
CSI	Coping Strategies Index
EES	Eastern Equatoria State
FAO	Food and Agriculture Organization of the United Nations
FCG	Food Consumption Group
FCS	Food Consumption Score
FEWS NET	Famine Early Warning System Network
FSMS	Food Security Monitoring System
FSNA	Food Security and Nutrition Assessment
FSTS	Food Security Technical Secretariat
GAM	Global Acute Malnutrition
HH	Household
IDPs	Internally Displaced Persons
IMSAM	Integrated Management of Severe Acute Malnutrition
IPC	Integrated Phase Classification
IYCF	Infant and Young Child Feeding
LRA	Lord's Resistance Army
MDG(s)	Millennium Development Goal(s)
MOAF	Ministry of Agriculture and Forestry
MOARF	Ministry of Animal Resources and Fisheries
MOH	Ministry of Health
MOPI	Ministry of Physical Infrastructure
MOSD	Ministry of Social Development
MT	Metric Ton
MUAC	Mid-Upper Arm Circumference
NBS	Northern Bahr el Ghazal State
NCDA	Nasir Community Development Agency
NGOs	Non-Governmental Organizations
OTP	Out-patient Therapeutic Programme
RCA	Rapid Crop and Livestock Assessment
RCSO	Resident Coordinator's Support Office
RMG	Rebel Militia Group
SAM	Severe Acute Malnutrition
SSP	South Sudanese Pounds
SFP	Supplementary Feeding Programme
SSRRC	South Sudan Relief and Rehabilitation Commission
TFP	Therapeutic Feeding Programme
TFU	Therapeutic Feeding Unit
UNHCR	United Nations High Commission for Refugees
UNICEF	United Nations Children's Fund

UNKEA	Upper Nile Kalaazar Eradication Association
UNOCHA	United Nations Office for Coordination of Humanitarian Affairs
VAM	Vulnerability Analysis and Mapping Unit
WASH	Water, Sanitation and Hygiene
WBS	Western Bahr el Ghazal State
WES	Western Equatoria State
WHZ	Weight-for-height
WFP	World Food Programme
WVI	World Vision International

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## Executive summary

The ANLA 2011/12 report marks the first edition since South Sudan's independence. Close to 4.7 million people are at risk of food insecurity, of whom approximately 1 million are estimated to be severely food insecure due to a convergence of three main factors: a cereal deficit of 473,000 tonnes attributable to poor production and large number of returnees, high food prices accentuated by trade restrictions between Sudan and South Sudan, and inter-communal conflicts.

Although the severely food insecure population did not change significantly from last year (11 percent this year versus 10 percent in 2011), the substantial increase in the moderately food insecure households from 26 percent to 37 percent is an early sign of a potentially precarious food security situation in 2012.

High prices have increased the number of poor people who allocate more than half of their expenditures on food from 26 percent to 40 percent, which is concerning for its direct bearing on health expenditures. While a relatively low proportion of households that have adopted high coping strategies, more households in 2012 than 2011 are making dietary adjustments such as reducing meal sizes and switching to less preferred food sources. These behaviours, coupled with high food prices, are likely to increase the risk of malnutrition as households reduce spending on health, hygiene to cope with high expenditures being incurred on food.

The main difference in food consumption between food secure and food insecure groups is the relatively higher consumption of micronutrient-rich fruits, vegetables, plant and animal based proteins among the former groups which underscores the need to improve micro-nutrient intake (e.g. iron, zinc, iodine and Vitamin A) among all population sectors to avoid long-term health consequences. Illness is a significant risk to malnutrition in South Sudan. The clear association between diarrhoea and malnutrition reinforces the need for health and WASH interventions.

While at least 80 percent of households are engaged in cultivation, low productivity has emerged as a primary concern with an average cereal yield of 0.5-0.8 t/ha in the small-holder sector compared to a possible 2.2-3.2 t/ha in neighbouring countries. Narrowing the productivity gap between the best and worst producers would require particular agricultural inputs (e.g. utilization of improved seeds, fertilisers, manure, water management and micro-irrigation schemes, crop and livestock husbandry practices, increased use of ox-ploughs to improve on the timeliness of land preparation).

However, to reap maximum benefit from technical inputs, immediate factors that affect supply and productivity of labour such as high disease burden, limited agricultural skills and knowledge should be addressed through simple practical knowledge-building activities and extension.

Livestock is considered also a source of growth for household food production. South Sudan has comparative advantage because of the already strong livestock focus. But it needs to be transformed to a more productive enterprise from its current predominant socio-cultural orientation to become both a source of food and financial security. Rearing of small stock and poultry should be encouraged to boost the contribution of livestock as a source of food.

Households in South Sudan are affected by recurrent shocks such as drought (and localized flood)-related crop production failures, high food prices, diseases and conflicts which calls for a multi-sector approach. The proposed Food Security Council (FSC) can largely fulfil this need with institutionalized early warning and food security monitoring systems and help to improve the detection of hazards, preparedness and mitigation.

The realization of the priority of rapid rural transformation outlined in South Sudan Development Plan 2011-2013 depends upon increasing household food production from both crop and livestock, strengthening market linkages to increase food access and provision of basic social infrastructure.

## **1 Background**

### **1.1 General introduction**

The Republic of South Sudan (RSS) is the world's newest country, having attained its independence on July 9, 2011, after two decades of war. This is a milestone in the history of South Sudan, but the severe neglect and destruction of infrastructure confers the country some of the worst socio-economic indicators. For example only slightly more than half of the population having access to improved sources of drinking water<sup>1</sup> and some of the highest infant mortality rates in the world at 75 per 1,000 live births in 2010<sup>2</sup>. Currently, South Sudan is not on track to achieve a single MDG<sup>3</sup>.

The enormous developmental challenges are well outlined in South Sudan Development Plan 2011-2013. The Plan identifies rapid rural transformation and livelihood improvement as a top priority for the development of the new state. The Government of Republic of South Sudan derives close to 98 percent of its budgetary resources from oil, all of which is sent to Sudan for export and/or processing. Because of this dependence, South Sudan's economy is tied to volatile fluctuations in global oil prices and is heavily dependent on its political relationship with Sudan and the success of the resolution of outstanding post-CPA issues of oil sharing among others. The highest growth potential outside of the oil sector is in the agriculture and livestock sectors; however, only 4 percent of arable land is cultivated according to the FAO Land Cover database (2010) and total livestock and fish production are 20 percent and 10 percent of their respective potential.<sup>4</sup>

The Annual Needs and Livelihood Analysis (ANLA) 2011/12 endeavours to provide analysis that helps to identify opportunities for realizing this potential and supporting the drive for rapid rural transformation.

### **1.2 Objectives**

This ANLA 2011/2012 is historic being the first to be conducted since South Sudan became an independent country. The overall goal of the ANLA 2011/2012 is to consolidate and build-on ANLA's new emphasis on analysis and cross-sectoral approach to generate more location-specific information on needs. The ANLA will dedicate to provide information that can be used for geographic targeting and continue the work started in ANLA 2011/12 with increased focus on identifying needs and their underlying causes and sectoral linkages.

The overall aim of 2011/2012 ANLA is to produce a "self-contained" document that identifies the needs, priority counties, estimated vulnerable populations as well as opportunities, and practical options to address the needs identified.

Therefore the 2011/2012 ANLA will seek to:

- 1) Improve the identification of county-specific needs through the use of statistical and qualitative judgement-based ranking methods.
  - a. Rank and prioritize counties based on some established criteria.
  - b. Use GIS to visualize, analyze and integrate evidence-based ranking data.
- 2) Design a matrix to track changes and improvements in food security and livelihoods at the state and county level. This will lay the ground for future monitoring of changes in needs and the underlying risks and positive factors.

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<sup>1</sup> Southern Sudan Centre for Census, Statistics, and Evaluation, Key Indicators for Southern Sudan, 2010.

<sup>2</sup> GOSS. 2006 and 2010 Sudan Household Health Surveys, Government of Southern Sudan.

<sup>3</sup> Republic of South Sudan, 2011. South Sudan Development Plan 2011-2013, Juba.

<sup>4</sup> WFP, 2010. South Sudan Annual Needs and Livelihoods Analysis

- 3) Assess shorter and longer-term food security and livelihood needs.
- 4) To incorporate more operational inputs from the government and partners in the needs and livelihood analysis process.
- 5) Identify programmatic implications of different cross-sectoral linkages.

### **1.3 Approach**

The ANLA process is collaborative activity involving the Government of the Republic of South Sudan, Food Security Technical Secretariat (FSTS), Ministry of Agriculture and Forestry (MoAF) and Ministry of Animal Resources and Fisheries (MoARF), United Nations agencies (WFP, FAO, UNICEF) and partners through Food Security Livelihood Cluster (FSL). It is facilitated by the Vulnerability Analysis and Mapping (VAM) Unit of WFP.

An idea paper was presented to the FSL outlining the strategy of 2011/12 ANLA on 27<sup>th</sup> September 2011 for review and comment by the cluster. The paper was also shared with the Nutrition Cluster. A ranking of the counties was attempted using composite index derived through a statistical analysis of secondary data and qualitative judgement-based pair-wise ranking. These two rankings were used to classify counties into three priority levels (high, medium, low).

The main primary data used for the ANLA was the five rounds of the Food Security Monitoring System (FSMS). The FSMS is implemented by WFP in collaboration with FAO and UNICEF, FSTS, MoAF, Ministry of Health (MoH) and MoARF.

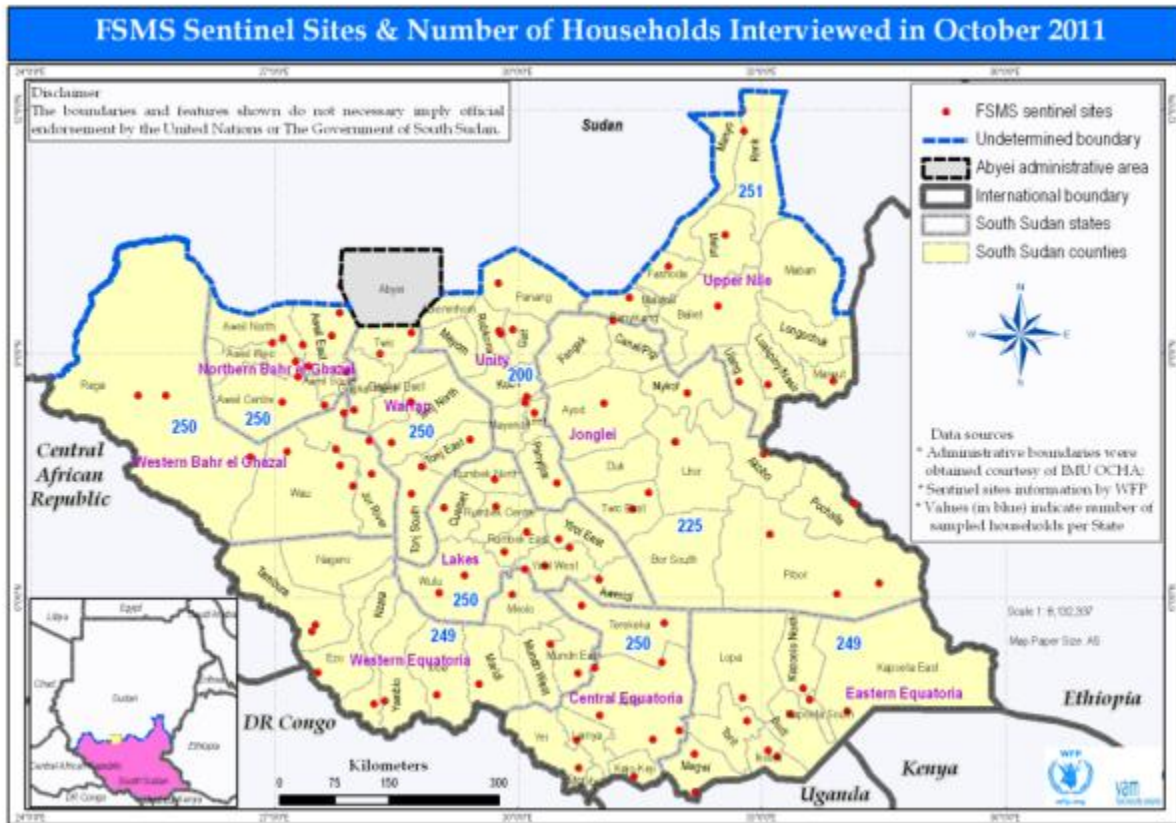
Other data sources for the analysis include:

- i) Quarterly Livelihood Analysis Forum (LAF) Integrated Phase Classification (IPC)--based food security outlook for December 2011 to March 2012.
- ii) Secondary data from National Bureau of Statistics: South Sudan Household and Health Survey (SHHS) 2006 & 2010, National Household Baseline Survey (2010) and Census (2009)
- iii) SMART surveys from the nutrition cluster.
- iv) State Humanitarian Action Plan (SHAP) data compiled by OCHA in 2010.

### **1.4 Methodology**

Food security and livelihood analysis was based on FSMS household and community-level data collected three times a year in February, June and October (**Figure 1**). There are 10 sentinel sites per state selected purposively to represent livelihood and administrative areas and from which food security, livelihood and nutrition indicators are monitored. From each sentinel site, 25 households were visited. A trader checklist was administered at each sentinel site for rounds 2 to 5. During Round 5 (October 2011) only 2,424 households out of the 2,500 target households were reached because some areas in Jonglei and Unity were inaccessible due to insecurity. Data entry support was provided by the FSTS.

**Figure 1:** FSMS sentinel sites and number of households interviewed in October 2011



#### 1.4.1 Food security analysis

Food security analysis<sup>5</sup> encompasses the integration of three main indicators: food access, food consumption, and coping strategies (Figure 2). The analysis was done in the following stages:

**Stage 1: Food access** indicator is derived by cross-tabulating reliability and sustainability of income sources with relative expenditure on food. Households are then classified as having poor, medium and good food access.

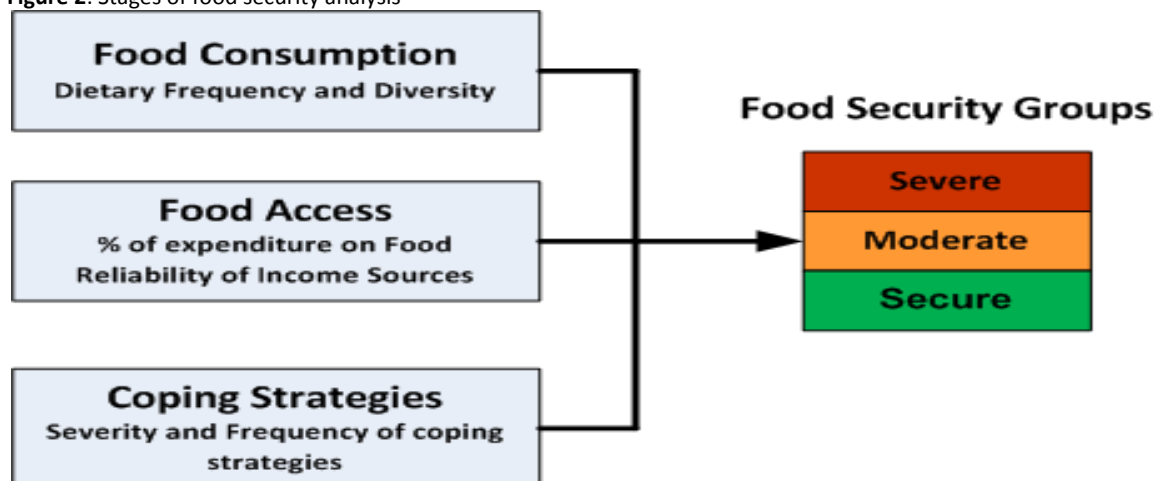
**Stage 2: Food consumption** pattern is computed based on food consumption score (FCS), which is weighted score of frequency of consumption of food groups and the nutritional value of the food. Based on the FCS, households are classified into food consumption groups (poor, borderline, acceptable).

**Stage 3: Reduced Coping strategy Index (CSI)** is computed based on the severity and frequency of coping strategies used. Based on this, households are then classified as having high, medium and low coping. A high CSI indicates severe stress and implies use of negative coping strategies that affect health and livelihoods and thereby undermine the household's future ability to meet its needs.

**Stage 4: Food security** groups are obtained by combining food access and coping strategies with food consumption. Households are then categorized into three food security groups; severely food insecure, moderately food insecure and food secure groups.

<sup>5</sup> WFP (2009). Emergency Food Security Assessment Handbook 2<sup>nd</sup> Edition, World Food Programme, Rome Italy

**Figure 2:** Stages of food security analysis



#### 1.4.2 Analysis for geographical targeting

The analysis for geographical targeting was achieved into two steps.

##### Step 1: Statistical analysis using Principal Component Analysis (PCA)

Principal Components Analysis (PCA) was done on a set of indicators of food security indicators of availability, access and utilization (**Table 1**). The PCA was used to reduce the number of indicators that best explain the variations between counties.

**Table 1:** Variables included in the analysis

Indicators used	Variables
Food availability	Per capita consumption to production ratio (CFSAM, 2012), mean livestock numbers (cattle, sheep, goats (Census 2009)
Food access	Percent of villages living within 10km from roads, percent of villages living within 10km from markets (2011 GIS data), percent of subsistence households (Census 2009), percent of households that cultivated in 2011 (FSMS 2011), mean wages and salaries (SHHS 2009), percent of households with high expenditure on food, percent of households with sustainable income (SHHS 2009)
Food utilisation	GAM and SAM rates (ANLA 2009), female gross and net school enrolment rate, percent of villages living more than 10km from health facilities, DPT3 coverage, access to toilet, population per improved water point, population per health facility (SHHS 2009, Census 2009 )
Transient food insecurity indicators	Rainfall fluctuation (coefficient of variation) for March – November 2011 compared to 10 years average (FEWS NET, 2011), conflict weighted index (2010/2011 Department of Security Services data), number of IDPs as percent of total (OCHA 2011), percent of county households with high coping strategies (FSMS 2011), returnees as percent of total returnees over January – September 2011 (OCHA, 2011)

Through PCA, 11 indicators were identified to account for the differences in counties (**Table 2**) and their corresponding factor scores. The factors scores of the first principal component (PC1 in table 2) were squared and then were multiplied with the original values of significant corresponding indicators (**Table 1**) and added up into a composite index<sup>6</sup>, which was used to rank the counties.

<sup>6</sup> McGuire, M. (2000). Evaluation of Food Security in the Sahel: An Analysis Using the Demographic and Health Survey (DHS) Data with a Geographical Information System; Bigman, D. and Fofack, H. eds (2000). Geographical Targeting for Poverty Alleviation Methodology and Applications, World Bank, Washington DC.

**Table 2: Results of the Principal Component Analysis**

Variable	PC1	PC2	PC3
Eigen values	3.173	2.554	1.510
% of variance	35.258	28.375	16.773
Cumulative % variance of PCs	35.258	63.633	80.406
Mean number of goats	.979	.007	-.062
Mean number of sheep	.972	-.035	-.109
Mean number of cattle	.962	-.044	-.117
Inverse of rainfall CV	.133	.878	.112
% Access toilet	-.288	.787	-.040
Inverse of GAM rate	.258	.781	.157
Inverse consumption production ratio	-.330	.679	-.291
% villages<10km health facility	-.003	.231	.867
% villages<10km roads	-.262	-.190	.777

Source: WFP, VAM (2011)

### Step 2: Judgement-based qualitative ranking

An independent qualitative pair-wise ranking was carried out at state level by group of 5-7 state “experts” based broad qualitative indicators: food production and security, health and nutrition, security and physical access. This independent ranking was used to validate the result of the PCA and to provide local knowledge and latest experiences from the state that is not captured by PCA. This helps to address potential exclusion errors of targeting due to lack of recent data. The lowest ranked counties<sup>7</sup> from statistical and qualitative approaches were compared. Counties that were common in both lists were assigned “high priority”, the remaining counties among the lowest ranked from each ranking method which were not common in both lists were assigned “medium priority” and all the rest were assigned “low priority”.

### Limitations of the analysis

Some data used in the analysis date back as far as 2008, especially from the 2008 Census. Also, county nutrition data is based on ANLA 2008 derived from the SHAP dataset. This may not reflect the current situation. It is hoped that the use of qualitative judgement-based ranking helped to limit potential exclusion errors associated with the use of relatively old data. In the course of 2012, deliberate effort will be made to improve the collection and integration of data geo-referenced data to augment physical access indicators.

<sup>7</sup> 3-5 lowest ranking counties were selected, depending on the total number of counties.

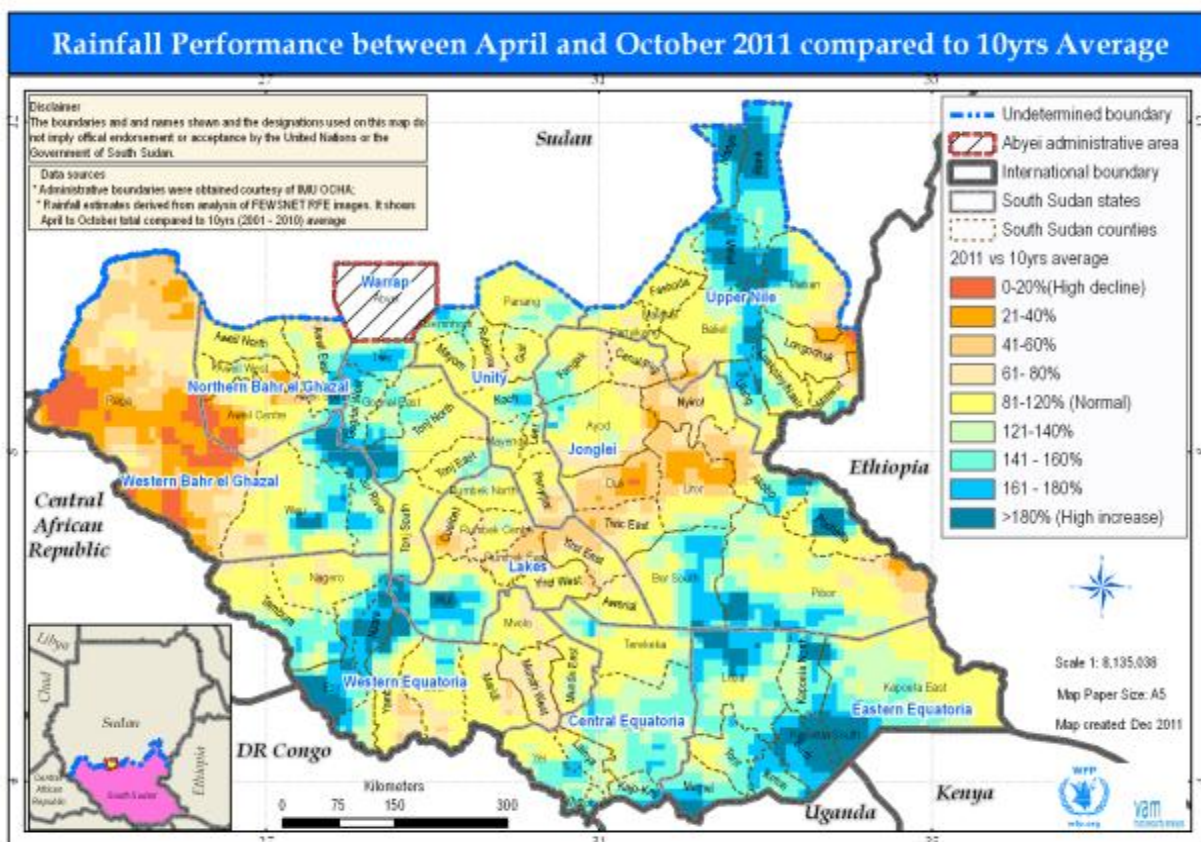


## 2 Overview of seasonal performance and main shocks

The IGAD Climate Applications Centre (ICPAC) issued favourable seasonal forecasts for South Sudan for March-May and June-September seasons of 2011. However, the season turned out to be more erratic than expected. Consequently rainfall performance from March to May, relevant for the Equatorias, was below normal and erratic in large parts of Eastern Equatoria (EES), especially in greater Kapoeta. Rainfall was normal to above normal in Western and Central Equatoria although not well distributed.

The main rainfall season of June to September was similarly erratic especially in Lakes, Northern Bahr el Ghazal (NBS), EES, Warrap, some parts of Central Equatoria (CES) and Jonglei states (**Figure 3**). This pattern was attributed

**Figure 3:** Rainfall performance between April and October compared to 10yrs average



Source: CPC/FEWS NET (Graphics and analysis by VAM Unit)

to the transitional phase from La Niña of 2009 to normal conditions usually accompanied by erratic and delayed rainfall. This resulted in several replanting which reduced area planted and yields. Although the rainfall improved in August/September, this could not compensate for the productivity losses sustained at the start of the season due to the erratic rains. Consequently significant shortfalls in cereal production occurred in Upper Nile (UNS), Warrap, parts of Unity, NBS and Jonglei. According to the Crop and Food Security Assessment Mission (CFSAM) 2011, the area under production declined from 921,000 ha in 2010 to 860,000 ha in 2011. Similarly, yields have dropped from an average 0.75 t/ha to 0.65 t/ha resulting in a reduced overall production from 695,000 tonnes to 562,600 tonnes. Therefore a deficit in cereal production of 473,700 tonnes is expected in 2012, compared to

291,000 tonnes in 2011; an increase of nearly 180,000 tonnes, taking into account the increased needs created by the influx of close to 350,000 returnees in 2011.

Livestock conditions during the CFSAM field work in October was favourable due to rainfall received between August and September. However, due to the overall drier-than-normal conditions in 2011, there was reduced seasonal flooding and lower water levels in lowlands, which are the dry season grazing areas. As a consequence, scarcity of water and pasture resources is expected in the months ahead; possible impacts include higher incidence of disease outbreak (through higher concentration of animals in wet season grazing areas) and of conflict (due to increased competition for water and pasture).

## 2.1 Results of the food security monitoring

### 2.1.1 Current food security situation and past trends

Based on the estimates from the 2011 October FSMS at least 1 million people (11 percent) in South Sudan are severely food insecure. This category would require unconditional humanitarian food and non-food assistance. An additional 3.7 million (37 percent) are moderately food insecure. This category requires targeted conditional livelihood support (**Table 3**).

There has been no significant change in the number of severely food insecure people at 11 percent compared to 10 percent in 2010/11 ANLA. But the steep increase in the number of moderately food insecure from 26 percent to 37 percent is an early sign of a potentially precarious food security situation during the lean season of 2012 (**Figure 4**), which is projected to start as early as February (2 months earlier) due to the combination of factors including: such as poor production, reduced commercial cereal stocks (related to the trade blockade), and high food prices, among other shocks.

**Table 3:** Food security status by state in 2011/12

State	Projected population (2012)*	% rural population	Projected rural population (2012)	% severely food insecure	% moderately food insecure	% food secure	All (Rural and Urban)		
							Severely food insecure	Moderately food insecure	Food secure
WES	690,466	84%	578,888	3.0%	12%	85%	20,714	82,856	586,896
EES	1,016,166	91%	925,983	24.0%	41%	35%	243,880	416,628	355,658
Jonglei**	152,8037	90%	1,382,463	14.0%	42%	44%	213,925	641,776	672,336
Lakes	841,099	91%	762,478	15.0%	28%	57%	126,165	233,214	479,426
UNS	1,114,474	75%	835,856	14.0%	57%	29%	156,026	635,250	323,197
WBS	394,360	57%	225,294	15.0%	38%	46%	59,154	149,857	181,406
NBS	931,625	92%	860,034	9.0%	62%	28%	83,846	577,608	260,855
Warrap	1,067,883	91%	974,711	5.0%	26%	69%	53,394	277,650	736,839
CES	1,286,994	65%	841,074	3.0%	41%	55%	38,610	527,668	707,847
Unity**	763,294	79%	605,906	4.0%	21%	75%	30,532	160,292	572,471
<b>Total</b>	<b>9,634,398</b>	<b>83%</b>	<b>7,992,687</b>	<b>10.6%</b>	<b>36.8%</b>	<b>52.3%</b>	<b>1,026,246</b>	<b>3,702,797</b>	<b>4,876,931</b>

\*CFSAM 2011/12 figures based on 2008 census adjusted for annual growth rate of 2.052% plus returnees.

\*\*The final estimate of severely food insecure decreased to 12.2% and moderately severe to 33% when all clusters were included in the final computation.

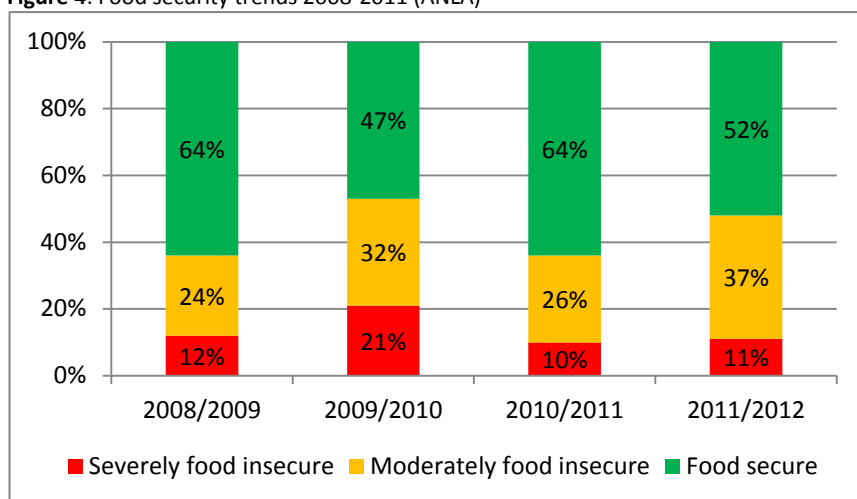
\*\*Adjusted to account for areas not visited due to insecurity.

The current food security status may continue to be undermined further by the following key risk factors:

- 1) Large cereal production gap of 473,700 tonnes due to poor production and influx of some 350,000 returnees that have to rely on markets to meet their food needs in 2012. A large number of returnees estimated at about 500,000 are expected in April 2012 at the end of moratorium period.
- 2) High food prices which were mainly triggered from May 2011 due to trade restrictions between Sudan and South Sudan and reduced the presence of Sudan traders.
- 3) Fuel prices continue to increase in 2012 affecting transportation costs resulting in cost-push inflation.
- 4) Continued trade blockade between Sudan and South Sudan.

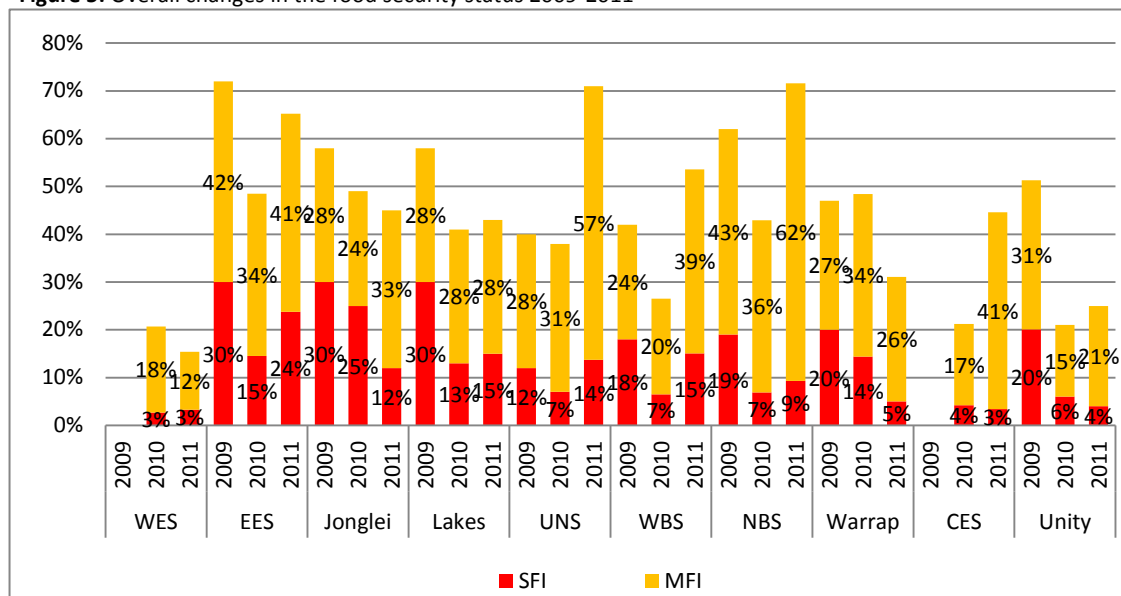
The scenarios are discussed in detail in Chapter 11.

**Figure 4:** Food security trends 2008-2011 (ANLA)



### 2.1.2 Overall changes in the food security status 2009-2011

The overall level of food insecurity, of moderately to severely food insecure households increased to 48 percent in 2011/12 compared to 36 percent in 2010/2011 (**Figure 5**). The states are ranked as follows in terms of severe food insecurity: EES (24 percent), Western Bahr el Ghazal (WBS) (15 percent), UNS (14 percent), Lakes (12 percent), Jonglei (12 percent), NBS (9 percent), Warrap (5 percent), CES (3 percent), WES (3 percent) and Unity (2 percent).

**Figure 5: Overall changes in the food security status 2009-2011**

### 2.1.3 Overall changes in selected food security indicators

**Table 4** gives a summary of the overall changes in selected food security indicators in 2009-2011. While there is a slight improvement in food consumption, individual household food consumption has declined. This implies that households will depend more on markets and other sources, a situation likely to create additional demands to markets which will consequently push food prices even higher. In addition, both the proportion of households with high expenditures (>65 percent of overall purchases) as well as the actual expenditure on food and specifically on cereals have increased from 2010 and are almost at 2009 levels. The average coping strategies index (CSI) has also increased, which shows there is an increase in the use of low to medium coping strategies compared to last year but it is still half of 2009 CSI.

**Table 4: Summary of food security changes between October 2009 and October 2011**

Indicator	Change	2009	2010	2011	
<b>Food consumption</b>	Poor	(-)	26%	19%	14%
	Acceptable	(+)	47%	58%	61%
<b>Own food production</b>	(-)	37%	47%	39%	
<b>Expenditures</b>	HH-high food expenditure (>65%)	(+)	41%	26%	40%
	HH Expenditure on (food)	(+)	55%	48%	55%
	HH expenditure on (cereals)	(+)	31%	24%	29%
<b>Mean Coping Strategy Index</b>	(+)	33	12	15	

## 2.2 Characteristics of food insecure households

**Table 5** highlights the main characteristics of the different food security groups based on some selected indicators of food production, income sources and expenditures on food.

**Table 5:** Summary of the characteristics of food insecure and food secure households (FSMS October 2011)

Indicator	Severely food insecure	Moderately food insecure	Food secure
HH with poor Food Consumption Score	91%	12%	0%
Protein intake (days/week)	1.0	4.4	5.2
Cereal intake (days/week)	5.3	6.4	6.5
HH with poor food access	64%	87%	0%
HH depending on natural resources for income	29%	25%	12%
Mean CSI <sup>8</sup>	21	16	12
HH with high expenditure on food (>65%)	64%	69%	16%
Mean expenditure on food	68%	69%	43%
Expenditure on cereal	47%	38%	18%
Own production as food source	44%	42%	56%
Markets as food source	42%	48%	36%

Based on the findings of the October FSMS (**Table 5**), severely food insecure households have poor food consumption (91 percent) as compared to moderately food insecure households (12 percent). Consumption of cereals in severely food- insecure households is comparable to those in moderately food-insecure households. Consumption of proteins including milk and oil is higher in moderately food-insecure households than in severely food-insecure households.

In terms of food expenditure, both severely and moderately food-insecure households spend more than 50 percent of income on food, 64 percent and 69 percent, respectively. Expenditure on cereals is highest among the severely food-insecure households.

The overall mean coping strategies index in 2010 was higher for the severely food insecure households compared to moderately food insecure.<sup>9</sup> More than half of severely and moderately food insecure households depend on sale of natural resources (firewood, charcoal, building poles) for income. This is an indication that as high and volatile market prices continue to undermine household purchasing power, the severely food insecure households will bear the biggest brunt and are likely to become extremely severely food insecure.

It is evident that markets and own food production are the main sources of food for all food security groups although vegetables and fruits are also obtained through gathering. This means that a deliberate effort is needed to build household productivity and develop markets as these are potentially self-reinforcing.

<sup>8</sup> Based on the cut-offs for CSI (<51 low; 51-100 medium; >100 high), the mean coping strategy index show that households are using low/medium coping strategies. However, the coping strategies are mostly used by the severely food insecure households.

### 2.3 Causes of food insecurity in 2011

The cause of food insecurity in South Sudan continues to be a combination of structural factors exacerbated by multiple shocks. The structural factors include low agricultural productivity and income, low human capital (knowledge and skills), limited access to social facilities and markets and disease burden<sup>10</sup> (Figure 6).

In 2011, the main types of shocks experienced in South Sudan were expensive food (high food prices), human diseases, delayed and erratic rainfall and insecurity. Delay in rains including its erratic nature which was more pronounced especially in EES where it was second most reported shock. The shocks

experienced in 2011 remain broadly the same but high food prices have become more prominent especially with the disruption of border trade between South Sudan and Sudan from May 2011. The realization of the priority of rapid rural transformation outlined in South Sudan Development Plan 2011-2013 is hinged upon a more deliberate effort to build household productive capacity to minimize exposure to these shocks on the one hand, and to increase resilience.

### 2.4 Coping strategies used

The percentage of households that are applying coping strategies has increased in October 2011 compared to 2010. The frequency of use of dietary adjustments such as consumption of less preferred food, reducing number of meals eaten per day and limiting the portion size of meals increased in October 2011 compared to October 2010 (Figure 7). Although 93 percent of households are applying low level coping strategies, the increasing average CSI score from 12 in October 2010 to 15 in October 2011 is an indication of a declining food security situation as a result of the combination of poor production, high food prices and trade blockade between Sudan and South Sudan. High and volatile food prices which continue to erode household purchasing power, is likely to affect household dietary behavior adversely in the coming months, considering the compounding disruption in tradeflows between Sudan and South Sudan as well as poor food production in 2011.

Figure 6: Percent of households reporting shocks 2009-2011 ANLA/FSMS

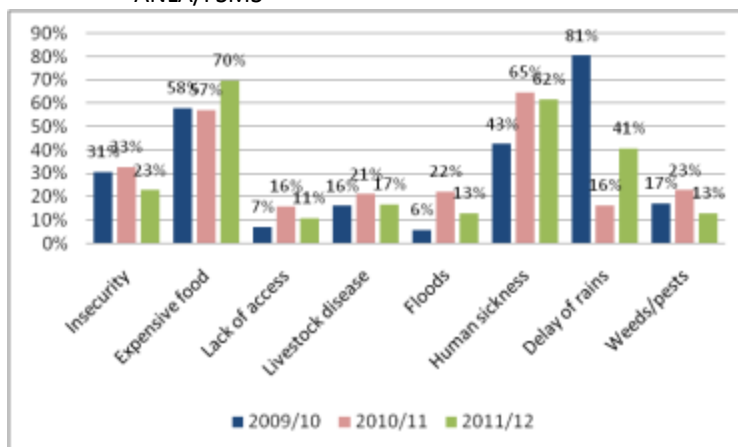
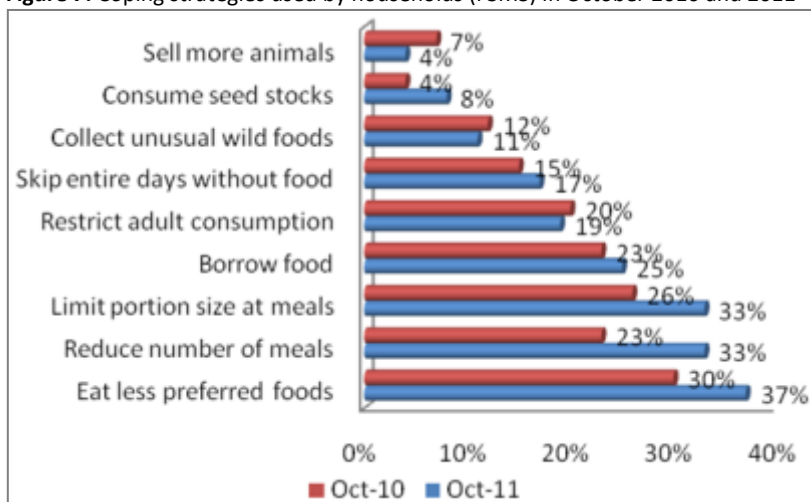


Figure 7: Coping strategies used by households (FSMS) in October 2010 and 2011



<sup>10</sup> The shocks and structural factors are discussed in detail in ANLA 2010/11.

## **2.5 Programmatic implications of the profiles of food insecure households**

Households, regardless of food security status, depend mainly on markets and their own food production as sources of food. This means that a deliberate effort is needed to improve household agricultural productivity, expand area under cultivation as well as develop markets. In terms of agricultural productivity there are no systematic data which can be used to monitor production. There is need to build community-based extension cadre to impart basic knowledge and skills to improve household food production, including flood and drought mitigation measures and also expand farmer field schools as well demonstration gardens.

On the side of markets little is known how markets function and how they are integrated both domestically and with neighbouring countries. More studies are needed to fill the gap of information on commodity networks. Households depend mostly on unreliable and unsustainable livelihood activities such as charcoal burning, firewood etc. There is evidence of that households sell some of their produce to obtain income and this indicates the potential to apply market incentives to stimulate production of marketable surpluses, which in the long-run will also boost household food availability. This also requires concomitant improvement in road and market infrastructure as well as agricultural inputs supported by necessary institutional arrangements (legal and policy research, extension services). Income and livelihood diversification activities would help to expand income options for households to boost resilience and reduce the current reliance on natural resources such as charcoal making and collection of firewood.

The consumption of cereal among food groups is quite comparable at this time. However, the main difference in consumption is the number of food groups consumed, especially the frequency of protein consumption. This has implications for crop diversification to include plant protein pulses as well as vegetables because the level of farm diversification is very low. Expansion of poultry and rearing goats and sheep and improvement on milk productivity of the large cattle herds would increase the availability of animal protein products and overall food consumption.

### 3 Agriculture

#### 3.1 Agricultural potential

South Sudan has vast potential for agricultural production with abundant fertile land and water resources. Its total land cover is estimated at 640,000 square kilometers, 80 percent of which is arable and suitable for crop production. The remaining 20 percent encompassing water bodies, marsh lands and marginal lands.

Despite the great potential, only 4 percent of the land is used for crop production<sup>11</sup>. Over 80 percent of the population of South Sudan derives their livelihood from agriculture, majority of who produce at subsistence level.

South Sudan is divided into seven livelihood zones, namely: Ironstone Plateau, Eastern and Western Flood Plains, the Hills and Mountain, Nile – Sobat corridor and the Greenbelt. All the livelihood zones have varying cropping conditions across and a great potential for a diversity of crops. In terms of rainfall patterns, the different zones experience uni-modal and bimodal rainfall regimes. The Greenbelt zone covering parts of EES, CES and WES experiences a bimodal rainfall regime with two cropping seasons while the rest of the livelihood zones experiences a single rainy season. Therefore, in the bimodal rainfall areas, two crops can be cultivated each year while in the uni-modal areas; only one major crop can be cultivated. Though the uni-modal rainfall regime areas have only one season, the soil type which is predominantly black cotton soil is very fertile and production can be easily scaled up to increase output from the single season. Diversity of crops are produced in South Sudan which include sorghum, maize, millet, cowpeas, groundnuts, rice, cassava, sweet potatoes, beans, etc and a variety of vegetables.

Crop production is mainly rain fed and dependent on hand tool with least mechanization. This therefore, exposes farmers to risks of negative effects of climate change, low acreage under production and poor production and productivity.

#### 3.2 Factors affecting agricultural production

Agricultural production in South Sudan is affected by wide range of factors which include hydro meteorological, biological and human processes.

**Hydro meteorological hazards:** Much of agricultural production in South Sudan is dependent on rainfall. The past years have shown a trend of unpredictable rainfall patterns which is possibly associated with climate change events. This situation is characterized by late onset and erratic rains, and long dry spells leading to crop failures across South Sudan.

**Insecurity:** Insecurity associated with cattle raiding, intra and inter ethnic conflicts, activities of Rebel Militia Groups (RMGs) and rebels militia result in displacement of population and directly impact agricultural production (through loss of assets) and inhibit access to far fields used for cultivation.

**Low productivity:** Average cereal productivity in South Sudan is quite low (average cereal yield do not exceed 0.8t/ha even in a good year)<sup>12</sup> due to inadequate agricultural extension services, limited access to appropriate seeds and planting materials and continuous use of rudimentary farm tools.

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<sup>11</sup> FAO SIFSIA Land Cover Database, 2010

<sup>12</sup> See ANLA 2010/11 for more details.



**Rural–urban migration phenomena:** A trend of young people drifting to urban areas for other livelihood opportunities other than through agriculture is causing serious problem of labour for agriculture production. Agriculture production is left to women, children and older people resulting in poor production and productivity.

**Road infrastructure:** Access to markets by producers in the surplus areas is limited due to poor road conditions and limited net work of feeder roads. This is therefore a disincentive to increased production

**Pests and diseases:** Pests and diseases cause significant losses to agriculture production. There is yet no clear policy and strategy for plant protection and the use of pesticides. In specific locations such as Renk and Nasir in Upper Nile and in Unity State, birds and insect pests have been serious limitations to sorghum production.

**Availability of and access to production inputs:** Though majority of farmers in South Sudan depend on own seeds kept from the previous seasons harvest, specific categories of people like IDPs, returnees, and host households who experienced crop failures in the previous seasons have difficulties in accessing production inputs like seeds and tools.

**Credit to farmers:** Lack of credit is a major factor limiting agricultural production because farmers cannot find capital to invest in farming activities including hire of labour and purchase inputs like seeds, tools, fertilizers and improve storage, hence limited opportunity to expand production. The microfinance services currently offered on the market are not suitable for farmers because of their collateral requirements complicated by an unclear land tenure system and repayment requirements.

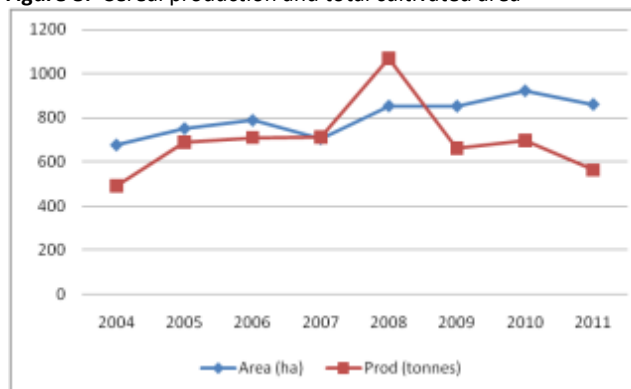
### 3.3 Trends in agricultural production

Agricultural production has been fluctuating a lot with significant decline in yields in 2011 compared to 2010 and 2008 (**Figure 8**). Manifestation of increased incidences of insecurity causing displacements of people from their homes and farms; unstable rainfall patterns characterized by late onset, erratic or below/above normal rains affected crop performance to large extent in most parts of South Sudan except in the Greenbelt zone.

### 3.4 Trends in mechanized agriculture

The topography of South Sudan is suitable for mechanized agriculture. However, mechanized farming is limited only to established scheme like Renk in UNS and Tonchol in NBS. To meet the demand for mechanized farming, the MAF responded by purchasing tractors with aim of increasing access to tractor services to increase acreage. As a result of the government initiative, close to 500 tractors have been imported and allocated to all the states. Unfortunately, so far the intended effect has not been achieved due to a number of operational challenges included poor access to spare parts, lack of expertise in operating the machineries, increasing cost of fuel and inappropriate tractors for soil type in South Sudan. However, ox plough technology has taken root and has played an important role in increasing productivity and production at the household level. Farmers in CES, Lakes, Warrap and NBS have adopted animal traction technology for agriculture production which has seen households increase acreage and crop production.

**Figure 8:** Cereal production and total cultivated area



### **3.5 Road infrastructure**

Significant progress has been made in improving road connections between states in South Sudan except in greater UNS which does not yet have good roads connection to neighbouring states. The improved inter states road connection has improved trade between states. However, the road net works within the states is still leaves a lot to be desired except NBS in which counties are connected with all year round road network. The poor road infrastructure is therefore a constraint to access to markets impacting negatively on agriculture production at the household level. In Greenbelt where farmers produce surplus, poor internal road and external road network to food deficit areas in other states is a major constrain to accessing markets by producers

### **3.6 Government grain reserves and commercial stocks**

After signing of the CPA, the Government of Southern Sudan (GOSS) endeavoured to establish cereal reserves across the country to ensure availability of cereals during the lean periods. However, the scheme ran into difficulties due to various technical challenges, and no more effort was made to create grain reserves. In the current political standoff between Government of Sudan and Government of the Republic of South Sudan resulting in continuous closure of borders between the two countries, commercial cereal stocks are very low and cereal prices remain very high. Before independence of South Sudan, of the bulk of cereals consumed in South Sudan came from the Sudan.

### **3.7 Programmatic implications**

Agriculture in South Sudan is rain-fed, which is subject to recurrent production failures as observed in 2009 and lately in 2011 due to drought. Micro-irrigation and cultivation of short-cycle cereal varieties is an option that could reduce vulnerability to droughts. Households are over-dependent on cultivation of cereals. Therefore diversification of cropping could help households to maximise production of the entire cropping season.

The crop yields are dwindling from year to year and even in a good year the productivity gap is much lower than the potential. Transforming the traditional subsistence agriculture into a productive enterprise meeting household food needs is key for making agriculture the engine of economic growth.

This could be achieved through the expansion of farmer training opportunities such as farmer field school and demonstration farming to boost subsistence farming and by strengthening market linkages as an incentive to increase household surplus food production. This should be supported with appropriate mechanisms to improve access to high quality seeds, tools and credit. Investment in social facilities such as health and water would boost both the supply and productivity of agricultural labour.

## **4 Livestock**

### **4.1 Background**

Livestock (cattle and small ruminants) rearing is an important part of the production system in South Sudan. Over 80 percent of the population depends on agriculture which also includes cattle keeping<sup>13</sup>. Livestock is a productive asset which is a source of food, income and draught power, to a limited extent. It also plays a central role in socio-cultural life of pastoralist communities. The livestock production is most important in environmental conditions that do not adequately support crop production such as in dry lands or mountainous areas. Under such situation, transhumance<sup>14</sup> production systems may be the only sustainable livelihood system as the human-livestock interaction is the main way to produce food while protecting the natural resource base. Livestock in mixed farming systems play important roles in improving household food availability and soil fertility levels and thereby making the farming systems more sustainable than those without livestock<sup>15</sup>. In mixed farming or crop/livestock systems in semi-arid regions, keeping animals is directly linked to crop production, as the animals provide draught power and soil fertility depends on manure.

### **4.2 Livestock potential**

The rangelands of South Sudan have got a large number of animals available in all the livelihood zones except the tsetse fly infested south-westerly Greenbelt where only small ruminants may be found (Abate, 2006). The livestock production system in South Sudan is based on agro-pastoral and pastoral exploitation with a cattle population estimated to be approximately 11.7 million (with an asset value of at least USD \$2.4 billion), plus 12.4 million goats, and 12.1 million of sheep. This makes South Sudan one of the countries densely populated with livestock mainly cattle and small ruminants, with as calculated average number of livestock to be 25 per household<sup>16</sup>. Despite the vast livestock resources existing in the country, it is currently a net importer of livestock products from the neighbouring countries. The livestock production system is characterized by low milk production, low meat for market production, lack of value addition on products and high mortality<sup>17</sup>. However, increased urbanization and investment, the livestock would make significant contribution to food and income security of livestock keepers.

### **4.3 Contribution of livestock to household food security**

Livestock, especially cattle are regarded as a safety net for hard times especially during the dry season. Livestock provide particularly poor households with the potential to 'bank' their savings, which enhances their 'capacities' to cope with shocks and reduces<sup>18</sup>. In times of severe crises (due to drought or conflicts), livestock are targeted. Loss of such livelihood assets increases vulnerability of affected households to food and livelihood insecurity.

### **4.4 Challenges in livestock production**

Key factors affecting growth in the livestock sector include: limited government and private sector investments, climatic change conditions causing shrinking and degradation of pasture and water resources for livestock production, insecurity manifested in cattle rustling, and poor marketing infrastructure and information.

To cope with the scarcity of resources, transhumance is adopted as the mechanism for coping in such an environment. Livestock especially cattle are usually trekked for long distance in search of pasture in certain seasons of the year.

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<sup>13</sup> World Bank (2011). A Poverty Profile for Southern Sudan States, March 2011.

<sup>14</sup> Transhumance is the seasonal migration of livestock and those who tend livestock in search of pasture and water resources

<sup>15</sup> Kassa, H.B. (2003). Livestock and Livelihood Security in the Harar Highlands of Ethiopia: Implications for research and development. Doctoral thesis. Agraria 388. Swedish University of Agricultural Sciences, Department of Rural Development Studies. Uppsala.

<sup>16</sup> FAO/WFP CFSAM report 2011, and Musinga, et al. 2010

<sup>17</sup> Musinga, M., Gathuma, J.M., Engorok, O., and Dargie, T.H. (2010). The Livestock Sector in South Sudan - Results of a Value Chain Study of the Livestock Sector in Five States of Southern Sudan covered by MDTF with a Focus on Red Mead. Final Report, November, 2010

<sup>18</sup> Livestock Net 2006

Livestock health is also a major constraint to livestock productivity and particularly emerging diseases such as East Coast Fever is a threat to productivity. Other diseases like Foot and Mouth Disease (FMD), contagious bovine pleura-pneumonia not only affects the health of animals, but also diminishes the prospects for livestock product exports according to the FAO/MARF Livestock Assessment Report of 2011.

Despite the increasing trend in demand for live animal and products, the current livestock production is less than 20 percent of the potential due to high calf mortality rate (of about 40-50 percent) and adult livestock mortality (10-15 percent), which are well above the acceptable rates<sup>19</sup>. The challenges that face the livestock sector *inter-alia* include: inadequate veterinary and advisory services, low breed potential, traditional husbandry practices, seasonal feed and water availability and quality, and poor livestock marketing structure. Specifically for marketing, major include: lack of market information at both primary and terminal markets; poor or inadequate physical infrastructure along marketing routes e.g. holding grounds and quarantine facilities.

#### **4.5 Conclusion and programmatic implications**

Although there is abundant pasture and water resources, sustainable livestock production requires some investment in these resources to increase both production and productivity. Livestock are an important asset with tremendous potential economic value. However, cultural values especially use of livestock for dowry still overshadows cattle as a livelihood and economic tool. Livestock production system has not yet fully integrated with crop production system, which is one way of reinforcing the two enterprises.

Some immediate response options in the livestock sector to support resilience of pastoral communities include:

- Improving milk production and promoting marketing of milk and dairy products including milk hygiene and safety.
- Livestock marketing and meat handling and hygiene.
- Improving animal disease monitoring and surveillance and to ensure effective disease prevention and control measures.
- Promotion of pastoralist field schools to build critical mass of change agents.
- Develop pastoralist early warning system indicators as precursors for destocking.

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<sup>19</sup> Musinga, M., Gathuma, J.M., Engorok, O., and Dargie, T.H. (2010). The Livestock Sector in South Sudan. Results of a Value Chain Study of the Livestock Sector in Five States of Southern Sudan covered by MDTF with a Focus on Red Meat. Final Report, November, 2010.

## 5 Fisheries sector

### 5.1 Introduction

Fishing is a source of food and livelihood for fisher folks. It makes significant contribution to household food basket in most parts of South Sudan, alongside livestock and agriculture. Fishing also constitutes an important coping mechanism in situation of shocks to the food production system. The advantage of fishing as a livelihood activity is that it suffers little damage from looting or pillage except in situation of conflict when communities have no access to their traditional fishing grounds.

### 5.2 Fishing potential

Fish is a seasonally important source of food in many parts of the country, and throughout the year in the Nile-Sobat corridor and other areas with permanent water bodies. During flooding, communities near rivers and lakes get opportunity to catch fish. The Sudd, with a size of about 100,000 hectare swamps has huge fishing potential. In general South Sudan's waters have limited fishing pressure with total catch estimated at 40,000 tons per annum; overall fish production for the whole of Sudan is estimated at 60,000 tons per annum which could be only 20 percent of the fisheries potential. However, the annual yield of the Sudd alone is estimated at between 300,000 and 400,000 tonnes per annum<sup>20</sup>.

### 5.3 Fish commodity value chain

#### Pisces of economic importance

About 115 different species of fish are found in the Nile basin most of which are of economic importance. The most important of which are Tilapia, Synodontis, *Lates nilotica*, Alestes, Hyrocynus, Labeo, Barbus, Distichodus, Citharinus, Heterotis, Clarias, Protopterus, Mormyrus, Bagrus, Shilbe, Heterobranchus, Heterotis, Polyterus, Gynmnarchus, Gnathonemus, Marcusenius, Petrocephalus, Hyperropisus, Eutropius, Malapterurus, Clatrotus, Tetradon, Auchionoglans, Chrychythis and others not mentioned here.

#### Fisheries products

Fisheries product vary a lot e.g. sundried fish are in three types, those preserved without salt, with coarse salt and with brine (salt water solution); wet salted fish; smoked fish--cold and hot smoked; deep fried fish, fish jam and fish concentrate.

#### Challenges in marketing

Markets for fish is readily available, however the existing infrastructures are not sufficient for effective fish and fish products marketing. The fisheries markets are divided into state market, weekly market and daily market. The state markets are located in state capitals, weekly markets are found in remote rural trading centres, and daily markets occur in un-gazetted locations in rural or urban areas.

Marketing facilities are very poor and face some critical issues that need to be addressed to ensure access to markets and improve quality of marketable fish. The issues facing fish marketing include lack of tables for displaying fresh or processing the fish, shade and water for cleaning; poor sanitation in market centres and equipment and materials for preserving the fish such as ice, refrigeration system, insulated means of transport and lack of good storage facilities cause high post harvest losses in the fishing industry.

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<sup>20</sup> FAO, 2008. Food Security and Livelihoods Interventions in Southern Sudan

No wide dissemination of effective post-harvest management system including technology leading to high post harvest losses. Post harvest losses are caused mainly by infestation with fly-maggots and hide beetles during process and storage especially during the most humid period of the year. Post harvest spoilage of 40 percent is not uncommon.

#### **5.4 Challenges to the fish sector**

Limited or no access to credit, limited skills and lack of processing equipments limit production and productivity in the fisheries sector. Fish marketing is constrained by limited marketing infrastructure and information, unavailability packaging materials, transportation and preservation. The fisheries sector in South Sudan experience high post harvest wastage.

#### **5.5 Response options for the fish sector**

- Improving access to appropriate fishing gears that ensures sustainable fishing practices.
- Skills transfers in fishing methods, post harvest management including processing and preservation and introduction of appropriate technology for post harvest handling and marketing.
- Improving infrastructures to support the fish industry like construction of landing sites, marketing infrastructures and access roads.
- Provision of targeted credit system to promote the fisheries sector.
- Sustainable management of fisheries resources through appropriate policies and legislation and strengthening institutional capacity for effective fisheries resource management.

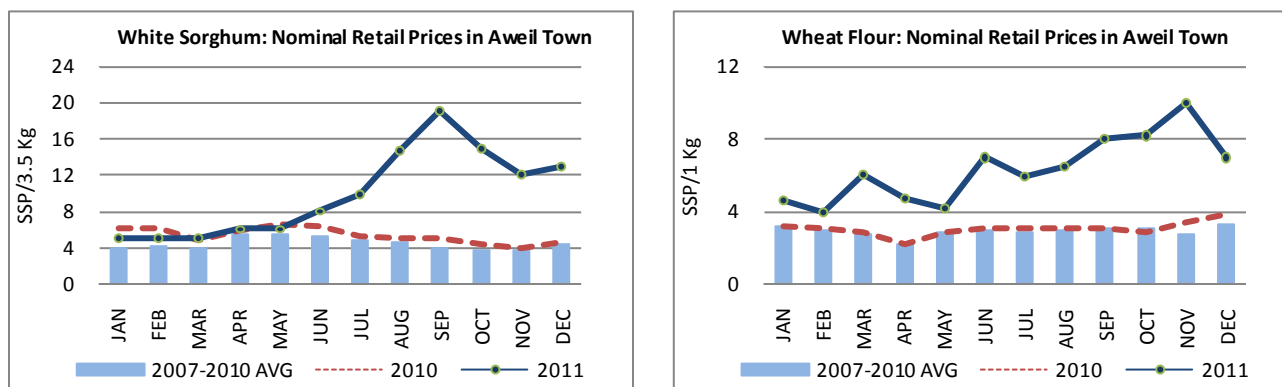
## 6 Markets and food prices

### 6.1 Overview of market conditions

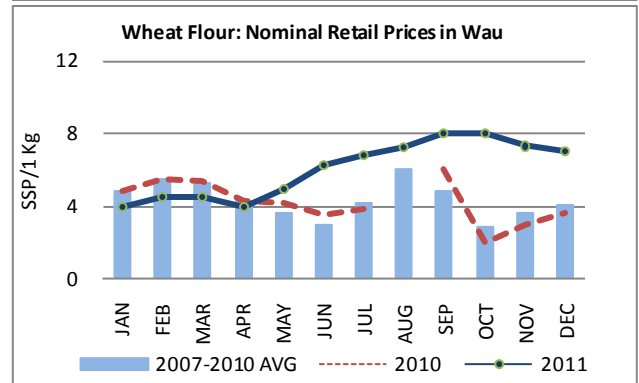
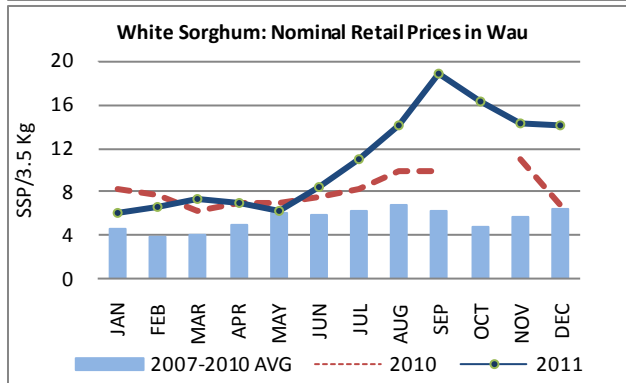
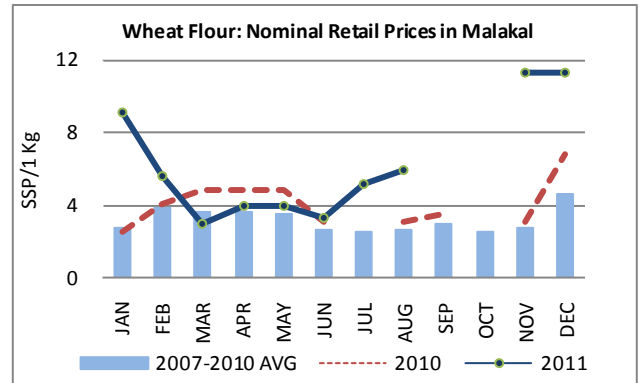
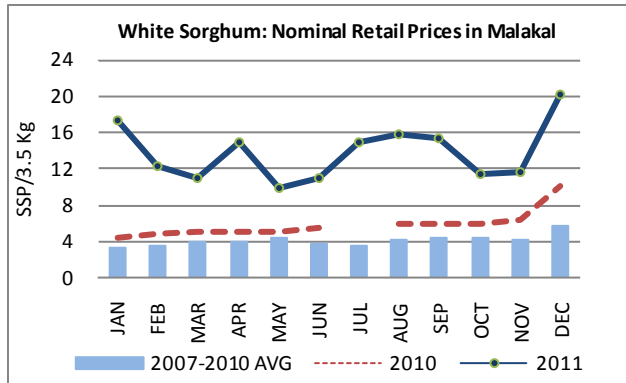
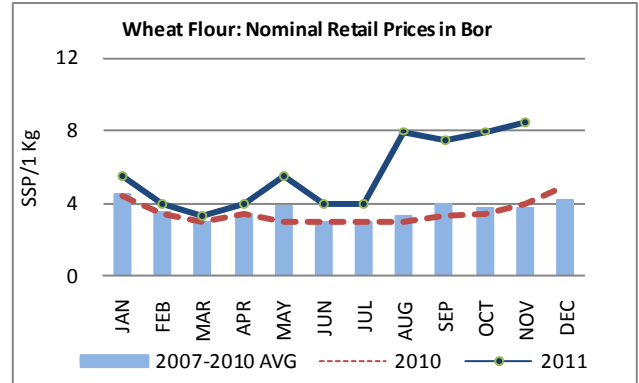
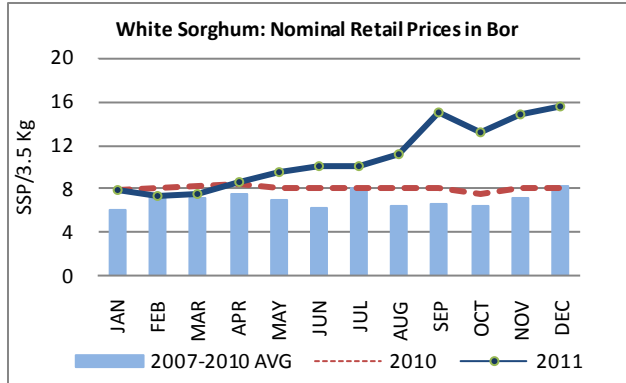
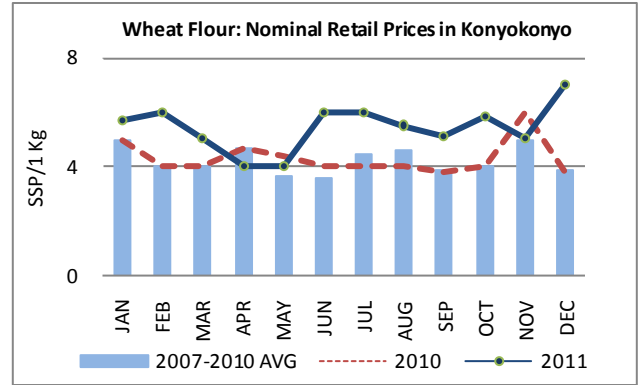
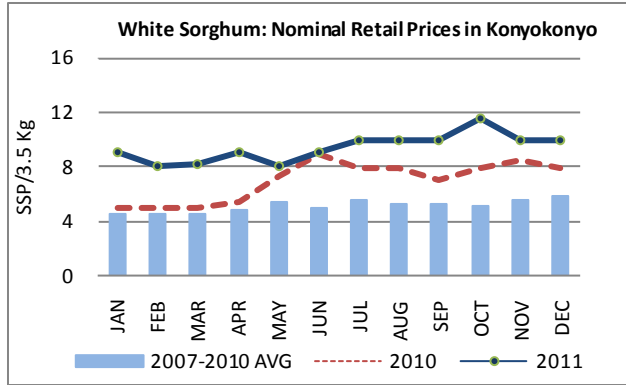
The two main political events in 2011; Referendum of January 9 and independence of July 9, have affected market situation in South Sudan significantly. Both the number of traders and trade volumes declined significantly because of the political uncertainties of these events. However, the sudden closure of roads between North and South in May 2011 caused the most significant disruption in trade between South Sudan and Sudan. FEWS NET estimates that over 80,000 mt of key food staples, including sorghum, wheat flour, millet, wheat grain and groundnuts were supplied in 2010 from Sudan, which underscores the significant potential effect of the trade blockade on the food security of South Sudan.

As a result of the changes in market structure, market prices of main commodities started rising in March and this were sustained by the prolonged hunger due to erratic season, increased demand from returnees and displaced residents from Abyei and IDPs in other areas as well as high fuel prices (**Figure 9**). Prices eased off temporarily in November due to post-harvest food supply. Considering the poor performance of the agricultural season in 2011, the reprieve in market prices is likely to be short-lived without a major effort to offset the high cereal deficits. As a result generally high food prices are likely to be passed onto 2012. In general high price levels occurred in the markets bordering Sudan as they are highly dependent on trade with Sudan where price of white sorghum is between 100 and 180 percent compared on last year in market of northern states. The price of wheat flour is between 60 and 90 percent higher compared to the same time last year. In markets in the southern part of the country also report high white sorghum prices between 25 and 80 percent for Juba, Bor and Rumbek and wheat flour is 30-110 percent higher than last December. Prior to the recent increase in food and fuel prices in October 2010, 26 percent of households allocated more than 65 percent of their expenditures on food while in October 2011, the proportion who spend highly on food increased to 40 percent.<sup>21</sup>

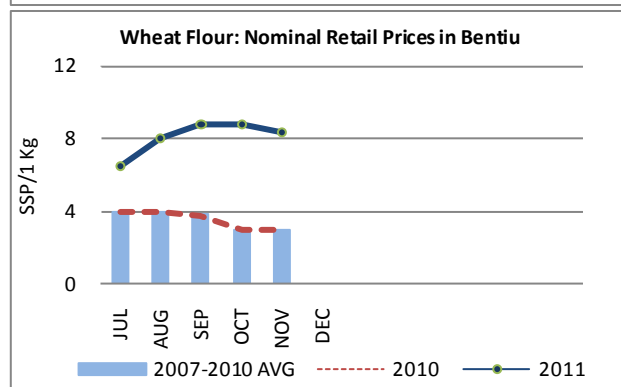
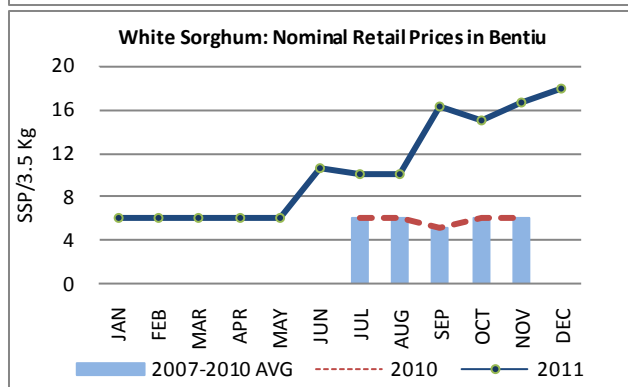
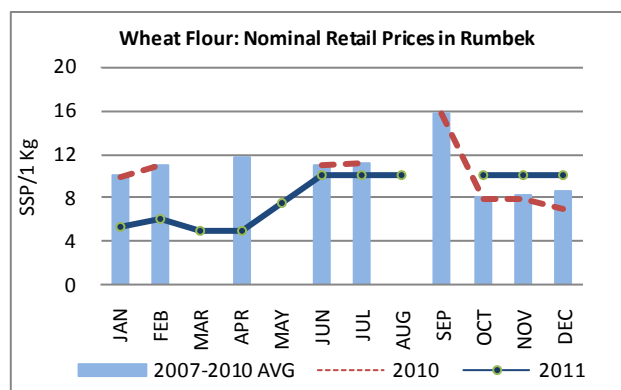
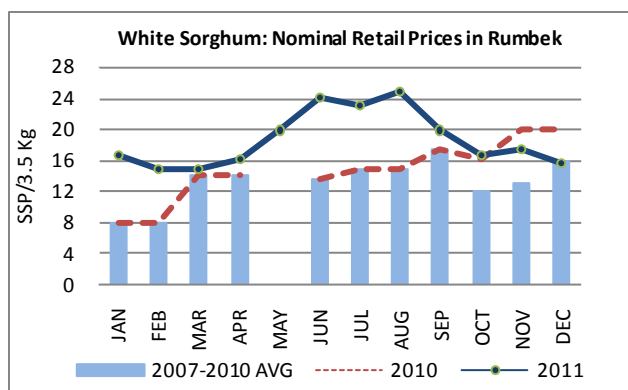
**Figure 9:** Evolution of nominal retail prices of white sorghum and wheat flour in 2011 (WFP market monitoring)



<sup>21</sup> WFP, October 2011. Food Security Monitoring System.







Source: WFP VAM Market Monitoring

### 6.2 Programmatic implications

- Basic information on commodity value chains is needed to understand how markets work and identify areas of interventions in markets.
- There is need for a supply-side incentive to respond to high market prices. This includes expansion of local purchase initiatives. However, gross margin analysis of agricultural enterprises is needed to evaluate the competitiveness of agricultural production in South Sudan.

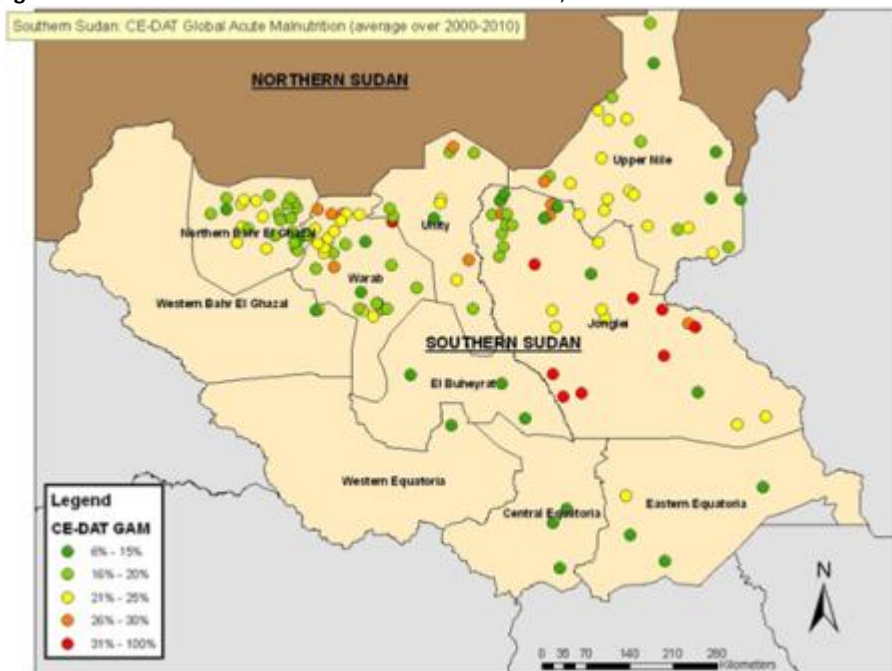
## 7 Nutrition

A review of 265 surveys<sup>22</sup> carried out over a 10 year period (2000-2010) showed global acute malnutrition (GAM) levels above 10 percent for nearly all surveys, which indicates an 'at-risk' nutritional situation;<sup>23</sup> more notably, the majority of surveys reported GAM levels above the 15 percent WHO emergency threshold.

Current national data is based on SHHS from 2006 and 2010<sup>24</sup>. SHHS 2010, conducted in March, found that 27.6 percent of the children under 5 years are underweight, 31.1 percent are stunted and 22.7 percent are wasted. The nutrition cluster partners have started to conduct county-level pre and post-harvest nutrition surveys in 2010 and 2011 using standardized methodology (SMART) in high priority counties as capacity and resources limit coverage of all counties.

FSMS also provides a seasonal indication of the national acute nutrition situation however there are some limitations in comparing the data with SHHS and SMART surveys because anthropometry is measured with Mid-Upper Arm Circumference (MUAC) rather than weight for height Z-score (WHZ) and the sampling methodology is done according to livelihood zones within states rather than random sampling.

**Figure 10: South Sudan CE-DAT Global Acute Malnutrition, 2000-2010**



### 7.1 Prevalence of child malnutrition

Results from pre-harvest surveys conducted in April/May 2011 across 20 counties in Warrap, NBS, Jonglei, UNS, EES and Lakes states show an average GAM of 17.4 percent and average Severe Acute Malnutrition (SAM) of 3.4 percent in children under five years in the survey areas. GAM rates exceeded the emergency threshold of 15

<sup>22</sup>CRED, July 2011. Health data in civil conflicts: South Sudan under scrutiny. Survey distribution: WES, 3 Lakes, 5 EES, 13 CES, 26 WBS, 28 Warrap, 38 Unity, 38 Upper Nile, 55 Jonglei, and 58 NBS.

<sup>23</sup> Humanitarian Training Package version 2, 2011. Module 7: Measuring malnutrition: Population assessment.

<sup>24</sup> SHHS 2010 report expected release date is January 2012

percent in 13 of the 20 surveys, with an additional 5 counties surpassing GAM of 20 percent. NBS, Warrap and UNS exceeded the overall average while Jonglei, Lakes and EES fell below.

FSMS indicates an overall lower rate of acute malnutrition than surveys utilizing weight for height methodology. MUAC and WHZ have different sensitivities to detect wasting. WHZ is strongly affected by body shape which changes with age and with location. In populations with low sitting height to standing height ratios such as South Sudan, its use can lead to overestimation of prevalence in older and/or taller children. MUAC is more associated with morbidity and mortality than WHZ and has a more constant global interpretation. FSMS indicates wasting is highest among the children under two years with a relatively consistent reduction among older children (Figure 12). FSMS data shows seasonality of child wasting, with a peak in June, reduction by the October round and the lowest level during the February round.

Figure 11: Pre harvest GAM and SAM rates in six states, March-May 2011

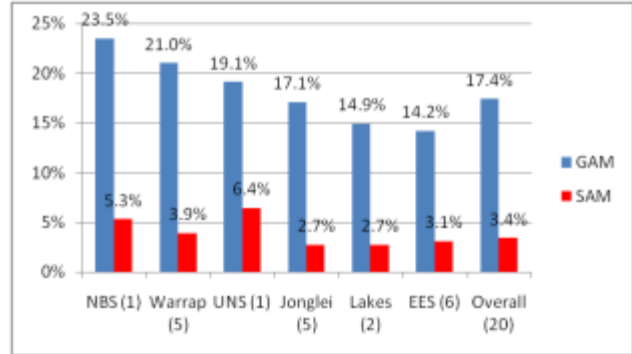
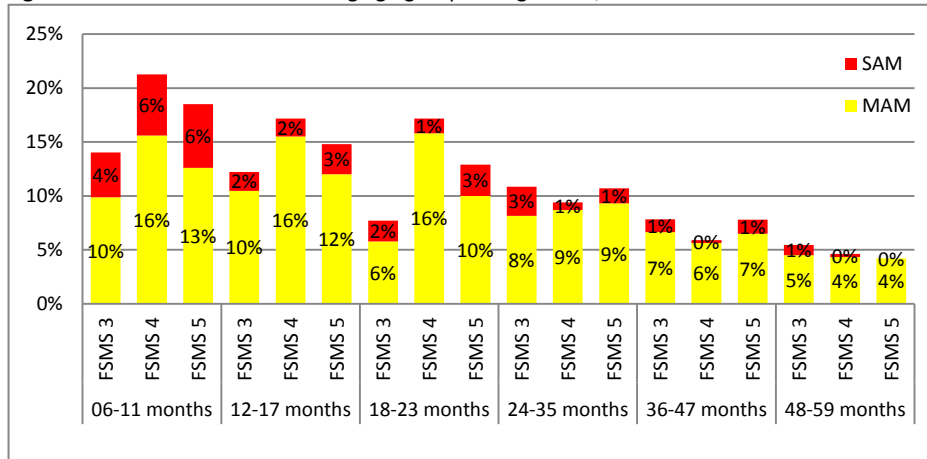


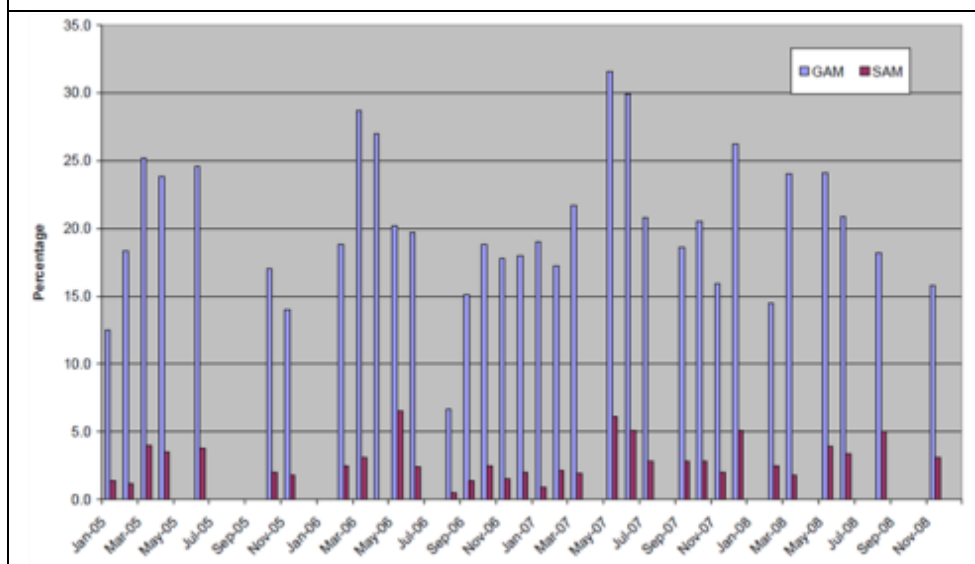
Figure 12: Child malnutrition among age groups using MUAC, FSMS data



### 7.2 Seasonal nutrition trends

Analysis of past nutrition surveys shows that acute malnutrition peaks from April to June, coinciding with the dry season and high incidence of diarrhoea diseases. This also coincides to some degree with livestock and population movements and the agricultural lean season. A second smaller peak is associated with increased malaria incidences during the height of the rainy season in August and September.<sup>25</sup>

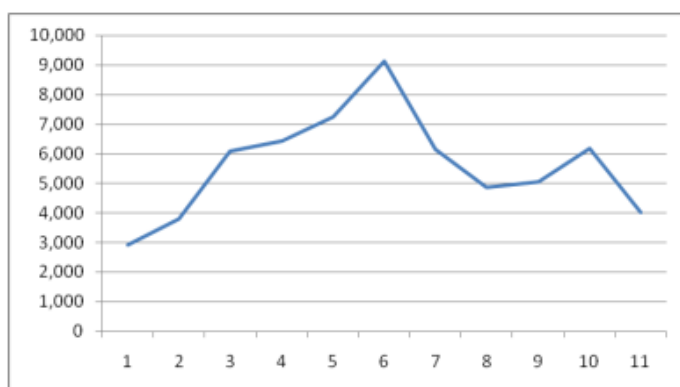
**Figure 13:** Reported average GAM and SAM rates for children under five from 89 surveys conducted in 2005-2008



Another review of 89 nutrition surveys conducted between 2005 and 2008 showed an average of 18 percent GAM and 3 percent SAM for children under five years with distinct seasonal variation of rates –i.e. higher levels of acute malnutrition in surveys conducted between March and July and relatively lower levels between September and February.

Analysis of trends in admission for treatment of SAM from nutrition cluster partner monthly reports–also shows two seasonal peaks in numbers of children being admitted to OTP, first in June which there is a significant peak and a smaller peak in October.

**Figure 14:** Cumulative number of new OTP admissions per month in 2011



<sup>25</sup>FANTA 2 USAID December 2010, *Situational Analysis of Nutrition in South Sudan* based on June 2009 Assessment

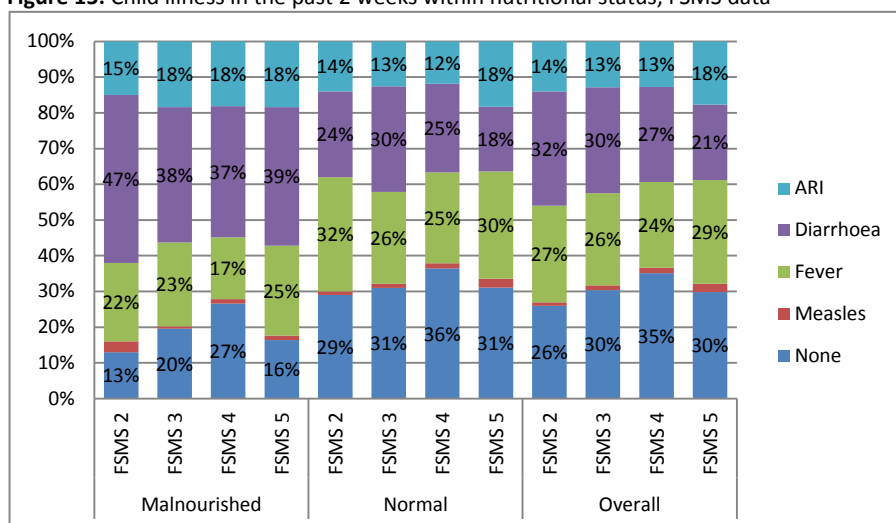
### 7.3 Causes of malnutrition

Inadequate intake of food and illness constitute the immediate causes of malnutrition, which are in turn linked to food shortages caused by recurrent shocks (e.g. drought, crop failure, insecurity, and high food prices), poor infant and young feeding practices, poor hygiene and sanitation and poor access to quality health services.

#### 7.3.1 Links between illness and malnutrition

Analysis of FSMS data shows that acutely malnourished children experience a higher degree of illness than non-malnourished children. Approximately four-fifths of malnourished children under 2 years experienced illness in the 2 weeks prior to FSMS rounds versus only about two thirds of 'normal' (non-malnourished) children (**Figure 15**). Diarrhoea was the main cause of illness for the malnourished children whereas fever was the main morbidity for the non-malnourished children. The prevalence of Acute Respiratory Infection (ARI) slightly increased during the rainy season while diarrhoea decreased.

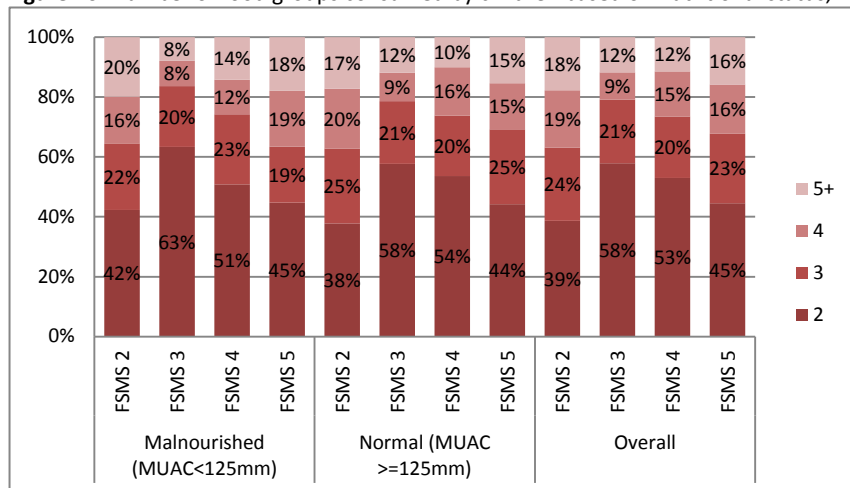
**Figure 15:** Child illness in the past 2 weeks within nutritional status, FSMS data



#### 7.3.2 Links between food intake and malnutrition

For the first six months of life, breast milk provides all the nutritional requirements for an infant's growth and development and so in this period infants should be exclusively breastfed. Infants should continue to be breast fed until 2 years of age; however, complementary foods should be introduced at six months of age, when breast milk alone is no longer adequate for the child's growth. Young children need at least four meals per day as they are not able to absorb larger quantities of nutrients in fewer meals. Dietary diversity is considered adequate when a child consumes food from four or more food groups. Based on SHHS 2010, 33 to 57 percent (depending on state) of children less than 6 months were exclusively breastfed.

Based on FSMS (**Figure 16**), only one third of children consume an adequate diet with the highest proportion in October after the harvest and lowest in February at the beginning of the lean period. In general, diversity does not differ that much between the malnourished and non-malnourished children, which underscores illness as significant determinant of nutrition status in South Sudan.

**Figure 16:** Number of food groups consumed by children based on nutritional status, FSMS

#### 7.4 Micronutrients

Micronutrient deficiencies are thought to be widespread in South Sudan with cases of deficiencies in vitamin A, iodine, iron and vitamin C presenting at health facilities; however, there has not been any recent assessment to determine the prevalence of these deficiencies. The MoH of South Sudan recommends Vitamin A supplementations for children every 6 months; 100,000 IU to children 6-11 months and 200,000 IU for children 12-59 months. In 2011 Vitamin A supplementation for children 6-59 months was 74 percent through the National Immunisation Days campaign.<sup>26</sup>

#### 7.5 Programmatic implications

The MoH and nutrition cluster partners use the national guidelines for integrated management of severe acute malnutrition (IMSAM) as the approach to management of SAM and guidelines for the management of moderate acute malnutrition (MAM) are in development.

Coverage of therapeutic treatment for children with SAM has significantly increased over the last few years with new partners starting to provide services and existing partners expanding services. At the end of 2011, 64 out of 79 counties had one or more facilities for outpatient treatment of SAM and 41 counties had inpatient treatment facilities for cases of SAM with complications.

Treatment for MAM through targeted supplementary feeding (SFP) is now available in parts of 25 counties in five states while blanket SFP was provided in parts of 32 counties in six states for children under two years and in parts of 31 counties for pregnant and lactating women in 2011. The low coverage of targeted SFP combined with the generally high GAM rate justifies continued implementation and expansion of blanket SFP for children 6-35 months in high priority counties in 2012, in the period leading up to and during the hunger gap/lean period when acute malnutrition levels peak (March to July) and also in situations of GAM between 10-14 percent in the presence of aggravating factors.<sup>27</sup>

As part of the nutrition programmes, children receive Vitamin A supplementation while pregnant and lactating women receive iron folate and multiple micronutrient supplementation. Promotion of optimal health, hygiene and IYCF practices is supported at facility and community level, working through health workers, community extension workers and volunteers and mother support groups. The nutrition cluster will also work with other clusters/sectors to ensure development of complementary IEC messages and necessary referral linkages for treatments.

<sup>26</sup> UNICEF Annual Report 2011

<sup>27</sup> Aggravating factors include: CMR>1/10,000/day; epidemic of measles or whooping cough; high prevalence of ARI or diarrhoeal diseases

**Table 6:** Estimated Nutrition Cluster caseload in 2012

	U5s – Treatment		U3s - Prevention
	SAM	MAM	BSFP
<b>Estimated need</b>	118,000	399,500	660,000*
<b>Estimated caseload</b>	83,000	200,000	200,000
<b>Estimated coverage</b>	70%	50%	30%

*\*Estimate based on blanket coverage for the total 6-35 month population of South Sudan.*

*Source: South Sudan Nutrition Cluster*

## **8 Water and sanitation**

Safe drinking water and appropriate sanitation are core elements for good health. Studies have shown that improvements in one or more components of water, sanitation and hygiene can substantially reduce the rates of morbidity and severity of ascariasis and diarrhoeal diseases among other water-borne/related diseases<sup>28</sup>, is directly related to general morbidity and mortality but are critical determinants of nutritional status and child survival.

### **8.1 Drinking water source**

In 2006, some 56 percent obtained water from boreholes and unprotected wells. Boreholes are not however always fully utilized as pumps may be broken and some wells also dry out during the dry season.

In general, water needs to be collected from outside the household premises. Traditionally this is done by young women around the age of 15. On average, one third of the households needs at least 30 minutes to get to the nearest safe drinking water point and another one third spends more than 30 minutes. For those some third who rely on unimproved water sources, 12 percent travel at least 30 minutes and 16 percent more than 30 minutes.

### **8.2 Sanitation**

Access to latrines in South Sudan remains limited. The majority of the population in South Sudan use open air defecation in undesignated areas. Analysis from 11 Nutrition Cluster's SMART surveys 2011 showed less than 10 percent of the population used latrines, in some areas 100 percent of population used open defecation; and hand washing after toileting ranged from 21-74 percent but was mostly on the lower range. Open defecation and current poor hand washing practices will contribute to increased faeco-oral contamination and will subsequently negatively impact the health status of young children and other vulnerable groups.

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<sup>28</sup> Esrey, S.A., Potash, J.B., Roberts, L. and Shiff, C. (1991). Effects of improved water supply and sanitation on ascariasis, diarrhea, dracunculiasis, hookworm infection, schistosomiasis and trachoma, *Bulletin of World Health Organization* 69 (5): 609-621.



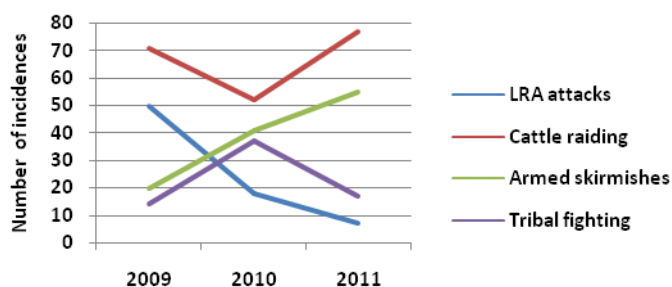
## 9 Conflict and insecurity

### 9.1 Introduction

The North-South civil war was by far the most significant cause of food and livelihood insecurity. The last wave of the conflict lasted 23 years from 1983 to 2005 when the CPA was signed, effectively ending nearly 20 years of hostilities between then northern and southern Sudan. This war destroyed livelihood assets (human, physical, social and financial), institutions and governance systems and left a trail of land mines and illegal small-arms. Such factors have collectively manifested into different degrees of structural food insecurity within South Sudan ranging from displacements and loss of household assets and social facilities to limited market access and low incomes.

Although peace agreement was signed in 2005, localized conflict and insecurity in the form inter-communal clashes and traditional hostilities, armed insurgencies, cattle raiding and Lord's Resistance Army (LRA) continues to be the key shock responsible for widespread livelihood and food insecurity in large areas of South Sudan. Livelihood conflicts also become more predominant e.g. among agriculturalists and pastoralists.

Figure 17: Types and frequency of conflicts 2009-2011



About 460 conflict incidents were recorded in the South Sudan United Nations Department of Safety and Security (UNDSS) database between January 2009 and June 2011. Cattle raiding has increased and is the most frequent incident accounting for 44 percent of the reported incidents, followed by armed skirmishes (25 percent), Lord's Resistance Army attacks (16 percent) and tribal fighting (15 percent) (Figure 17).

### 9.2 Cattle raiding

Cattle are a social symbol of wealth and status and have been used for dowry payments and dispute settlement for generations, so raiding is reinforced by the high socio-cultural value attached to them. Cattle raiding is considered an easy but illegal way of acquiring wealth and the practice has been fuelled in the past few years by the proliferation of small arms. A statistically significant positive correlation between cattle raiding and armed skirmishes suggests that armed skirmishes are almost always associated with cattle raiding, although the direction of causality cannot be established. The surge in raiding also signifies a lack of livelihood diversification, and widespread poverty inequalities within the pastoral and agro-pastoral groups.

### 9.3 Inter-communal fighting

At least 15 inter-communal fighting groups are identified in South Sudan. These are driven by long-held and unresolved tribal issues (injustices, historical rivalries etc.) (Table 7). These are triggered by competition and disagreements over communal grazing resources and minor disagreements at traditional social gatherings, which degenerate into full-scale fighting and reprisals. The demarcation of electoral constituencies, seen as a key means of obtaining resources and funding for communities, has become an additional source of inter-communal tension. Resource/livelihood-based conflicts between different agriculturalists and pastoralists have also caused localized but very serious conflicts which occur during the seasonal migration of cattle from the dry season grazing areas causing trampling of agriculturalists farms. Some examples include *Jurbel* agriculturalists and *Dinka* agro-pastoralists in Wullu and Mvolo counties of Lakes and WES respectively. *Bari* agriculturalists and *Mundari*

pastoralists in CES. Likewise the seasonal migration of the *Misseriya* tribe from Abyei and South Kordofan has been a perennial source of insecurity in northern parts of Unity state (Mayom and Abiemnom) as well as in WBS.<sup>29</sup>

#### 9.4 Armed skirmishes

Armed skirmishes increased significantly in Unity and Jonglei states in 2010 after the first elections for South Sudan, suggesting that RMG has been used as a tool to gain political recognition and influence. The RMG activities have caused deaths, abduction and rape, loss of assets, destruction of infrastructure, displacement, fear and uncertainty that undermines key livelihood activities such as cultivation and trade. The significant correlation between cattle raiding and armed skirmishes, which have both increased in number over the last two years, suggests that the illegal acquisition of weapons by pastoralists to protect against cattle raiding is fueling cases of armed skirmishes. The newly formed government has extended amnesty to some of the militia groups, which gradually will help to consolidate the security situation.

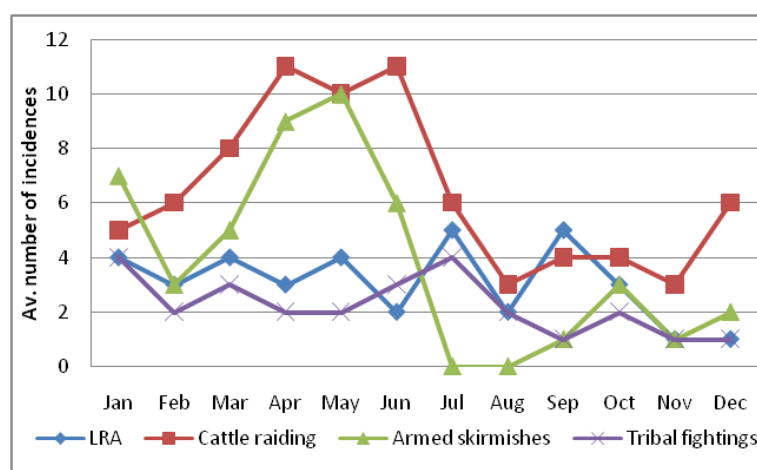
#### 9.5 The Lord's Resistance Army (LRA)

The LRA has increasingly posed a major threat to regional security of South Sudan, Central African Republic and Democratic Republic of Congo. In South LRA attacks have mainly been concentrated in WES but it has also been reported in WBS where it has led to the displacement of over 120,000 people (between 2009 and 2010) and constrained livelihood capacities of communities that were hitherto food secure and self-reliant. Following the signing of the United States LRA Disarmament and Northern Ugandan Recovery Act and the November 2010 release of the LRA Disarmament Strategy has increased international attention to the problem, which has also helped to reduce the frequency of LRA attacks in South Sudan, which over the years have undermined local agricultural production and slowed economic development prospects in the Western Equatoria region.

#### 9.6 Timing of conflict

The ANLA 2011 report found a statistically significant relationship between conflict and seasonality. Seasonal analysis of the incidents shows that most conflicts, especially armed skirmishes and cattle raiding occur between March and May, mainly in the dry period preceding the June/July lean season (**Figure 18**). This is when households are facing depleted food stocks and have to rely on the market to meet their food needs. It is also when competition for water and pasture is highest, which act as a trigger for unresolved inter-communal conflicts.

**Figure 18:** Seasonality trends of conflicts: Average number of conflicts by type (Jan 2009-June 2011)



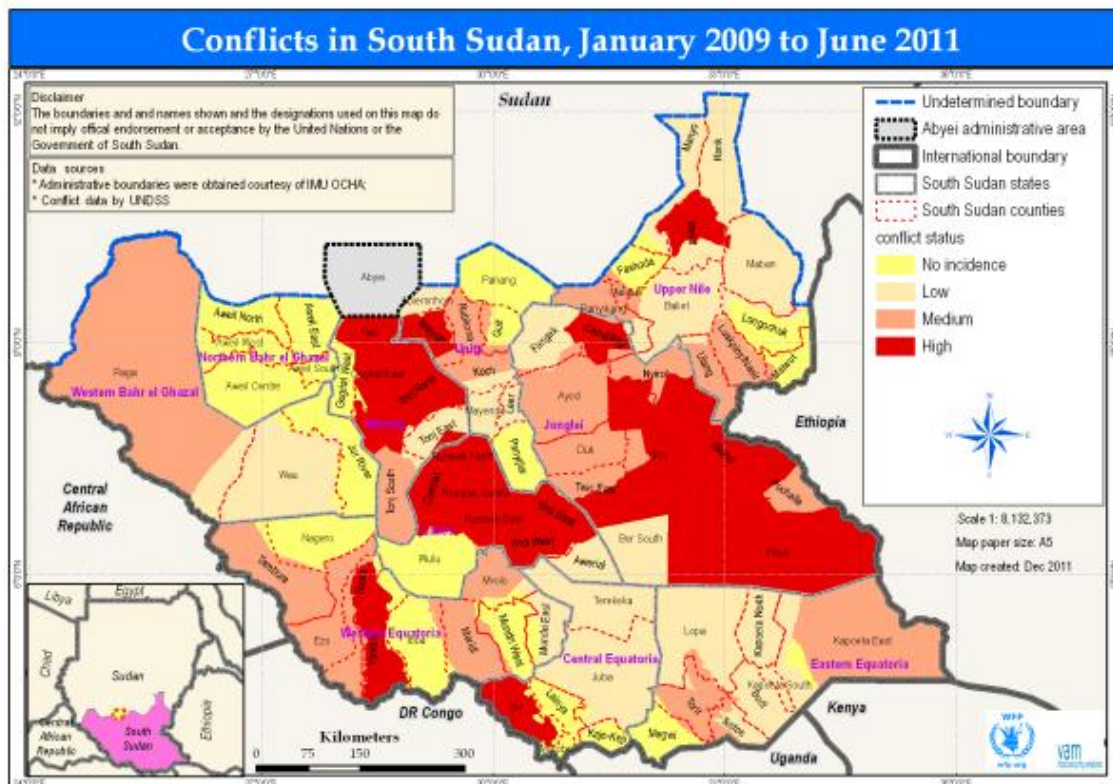
<sup>29</sup> See details in ANLA 2010/11.

### 9.7 Geographical distribution of conflicts

A weighted composite index was created by combining three parameters<sup>30</sup> (frequency, intensity and weighted severity) from the UNDSS security incidence database to determine the geographic distribution of conflicts (**Figure 19**). In terms of ranking, based on the index the top five states most affected by conflicts are Lakes, Jonglei, Warrap, Unity and WES.

The main counties affected in Lakes State include Rumbek East, Cuiebet, Rumbek Centre and Yirol East and Yirol West. The main cause of conflict is inter-communal fighting based on perennial rivalries between *Agar* and *Atuot* sub-clan of *Dinka* tribe as well as pastoral livelihood conflicts with the agro-pastoralists and cattle rustling. In Jonglei main affected areas include: Pibor, Pochalla, Urur and Khorflus and the main causes of conflicts include militia attacks, cattle rustling and inter-communal fighting. In Warrap, most affected areas Twic, Tonj East, North and Gogrial East motivated mainly by inter-communal fights. In Unity, the most of the conflicts are localized mostly in the northern counties of Abiemnom, Mayom mainly due to militia activity. In WES, the counties to the west are mostly affected namely, Tambura, Ezo and Nagero as well as Yambio due to LRA activity.

**Figure 19:** Geographic distribution of conflicts (2009-2011)



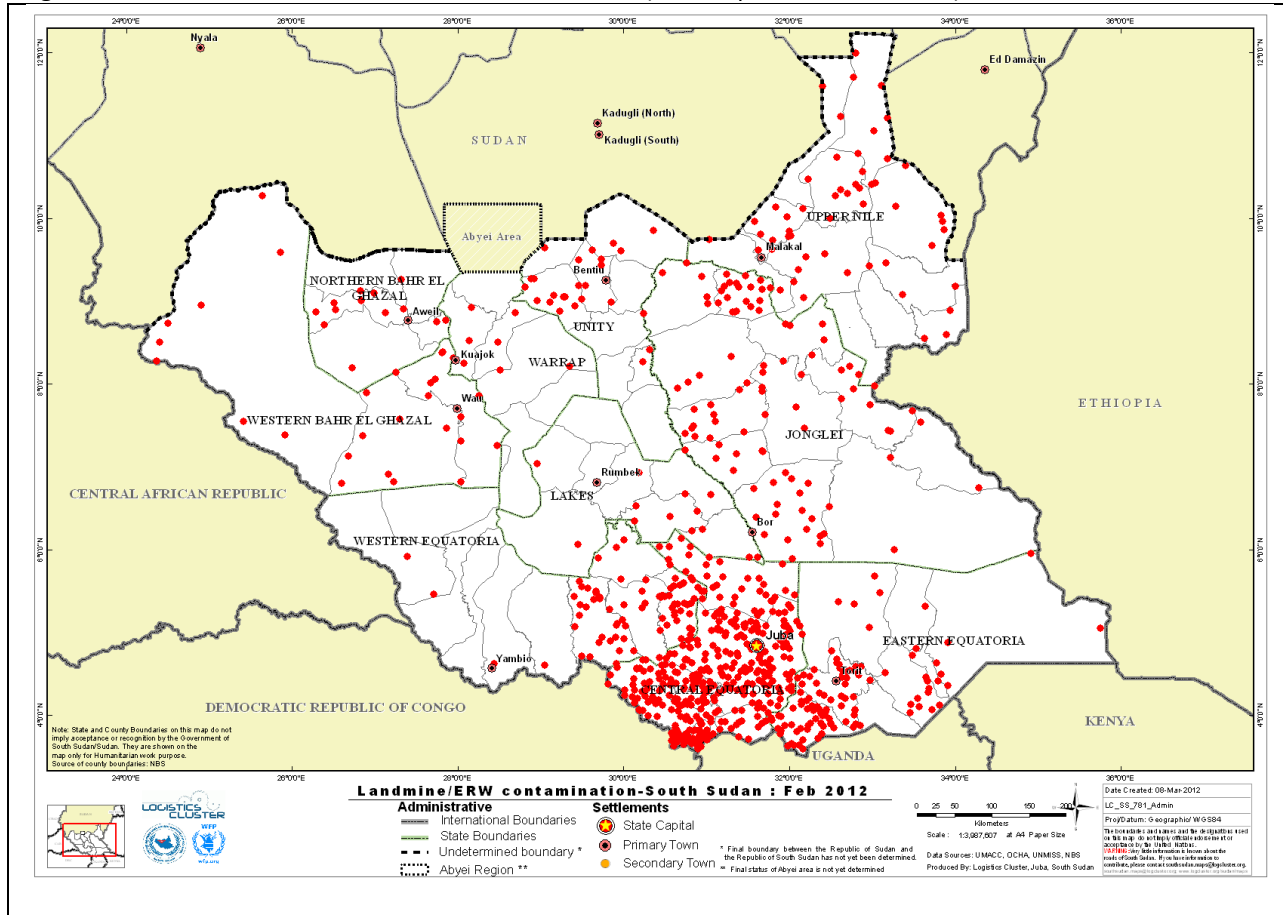
Source: UNDSS Security Incident Database

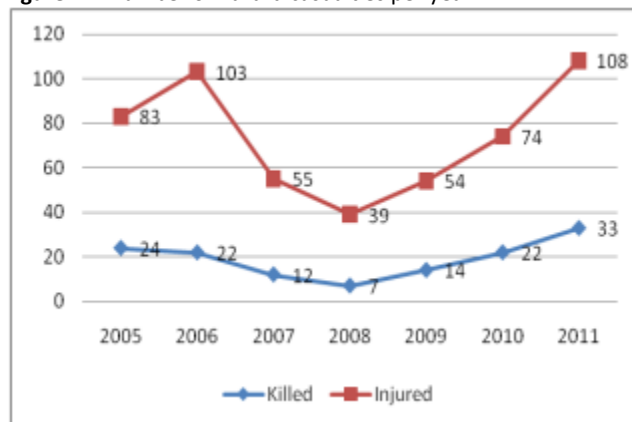
- <sup>30</sup> *Frequency* (total number of incidences reported by county divided by time period of 30 months). This estimates the probability of the occurrence of conflict in a given area.
- *Intensity* (Number of conflicts divided by the number of months over which the conflicts occurred).
- *Weighted severity* (a weighted index of average casualties per month). In the index death is multiplied by a coefficient of 0.8 and injuries multiplied by 0.2 and these are added up to give the severity index.
- *Overall Weighted Index* was composited as follows:  $\text{Frequency} \times 0.05 + \text{Intensity} \times 0.15 + \text{Severity} \times 0.80$ .
-

### 9.8 Landmines

The past civil war has left South Sudan with several mine fields and other unexploded ordinances (UXOs), weapons which have impact on lives and livelihoods. Concentration of these hazards is very high in CES and it is a threat to expansion of agriculture. De-mining has taken place but in some locations in Unity, Jonglei and Central Equatoria cleared areas are being re-mined.

**Figure 20: Landmine/ERW contamination in South Sudan (1 dot represents 10 hazards)**



**Figure 21:** Number of hazard casualties per year

Based on United Nations Mine Action Coordination Centre (UNMACC) as of November 2011, total of 134 people have been killed and 382 injured from hazards since 2005. The incidents reduced after 2006 but both injuries and deaths have increased steadily from 2008 onwards, 2011 having the highest numbers since 2005 (**Figure 21**). All but 3 deaths in 2011 have taken place in Unity which had also the highest numbers of injuries (76), followed by Central Equatoria (18).

### 9.9 Implications for programming

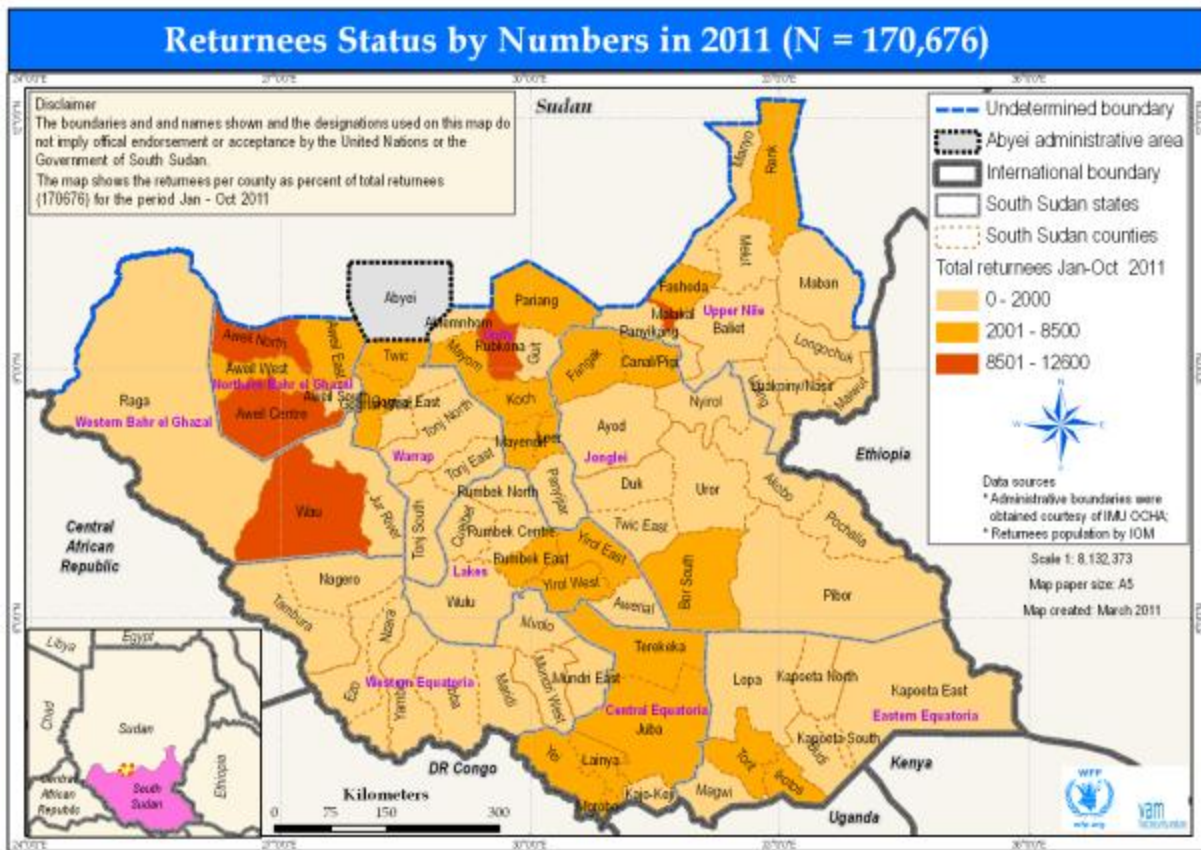
- Conflict is both a cause and effect of under-development which affects food insecurity. There is a need to incorporate conflict interventions in livelihood programmes and vice versa. This should include provision of basic infrastructure such as water for livestock, which is a trigger of conflicts.
- Physical security is a pre-requisite for societal transformation. Therefore, all communities need to be engaged in grass-roots peace-building activities.
- Peace-building should be backed up with monitoring activities to detect and contain security threats. This requires conflict early warning systems as well as security mechanisms to deal with impending events.
- Presence of landmines limits the use of arable land for expansion of agriculture. Therefore, it is worthwhile to maximize land productivity in existing safe areas considering that demining large areas for agriculture will take a long time to materialize.

**10 IDPs, returnee resettlement and reintegration**

**10.1 Returnee resettlement and reintegration**

As of November 2011, South Sudan had received about 841,000 returnees following the successful referendum and subsequent declaration of independence in July according to OCHA. In 2012, some estimated 500,000 returnees could be expected back to South Sudan after the expiry of the nine-month moratorium period on 8<sup>th</sup> of April. The main returnee concentration areas include: NBS, Unity, WBS which received high percentage of returnees while other states received between low to medium proportions (**Figure 22**).

**Figure 22:** Cumulative number of returnees Jan-October 2011



The Returnee Emergency Food Security Assessment (EFSA) of February 2011, observed a high food insecurity level among returnee households throughout South Sudan. About 18 percent at that time were severely food insecure while 43 percent were moderately food insecure.

About 15 percent of returnees had poor food consumption although; it is possible to improve food consumption through encouraging own production through small-scale vegetable gardening. However, this was quite challenging since returnees access to land for cultivation was a problems as only 27 percent had access to land. In addition, since majority of returnees were from Sudan cities, they lack skills to engage in farming and may thus require some training on what types of crops to cultivate.

With the drastic shift of returnee income sources mostly from skilled/salaried labour, casual labour and sale of alcohol to more unreliable and unsustainable income sources such as sale of natural resources like firewood and sale of household assets. Only 35 percent of returnees received non-food items and 3 percent received seeds and

tools which are essential for resettlement and integration. A number of returnees expressed interest in learning new skills and improve their skills in areas such as carpentry and sewing, handicrafts, bee keeping and metal work.

### **10.2 Internal displacements**

According to UNOCHA report on the status of Internally Displaced Persons (IDPs) for 2011, about 423 incidents which occurred in South Sudan and resulted into displacements were reported. These also resulted into loss of lives in some cases. At least 3,138 deaths were recorded with mass displacement of up to 329,167 persons across the Country. Jonglei State accounted for 41 percent of total incidents in South Sudan, Lakes for 17 percent, Unity for 14 percent, UNS for 8 percent, WES for 6 percent and Warrap for 5 percent. However a higher number of IDPs caseloads were mainly recorded in Warrap State, Jonglei and Unity States.

With the exception of WES, most of the conflicts were attributed to inter-communal fighting (See section 9 on conflicts for more details). This also confirms the findings on the conflicts and security section of the main report. Furthermore, some 116,000 people from Abyei Administrative area and nearly 80,000 refugees have been displaced from Southern Blue Nile and South Kordofan.

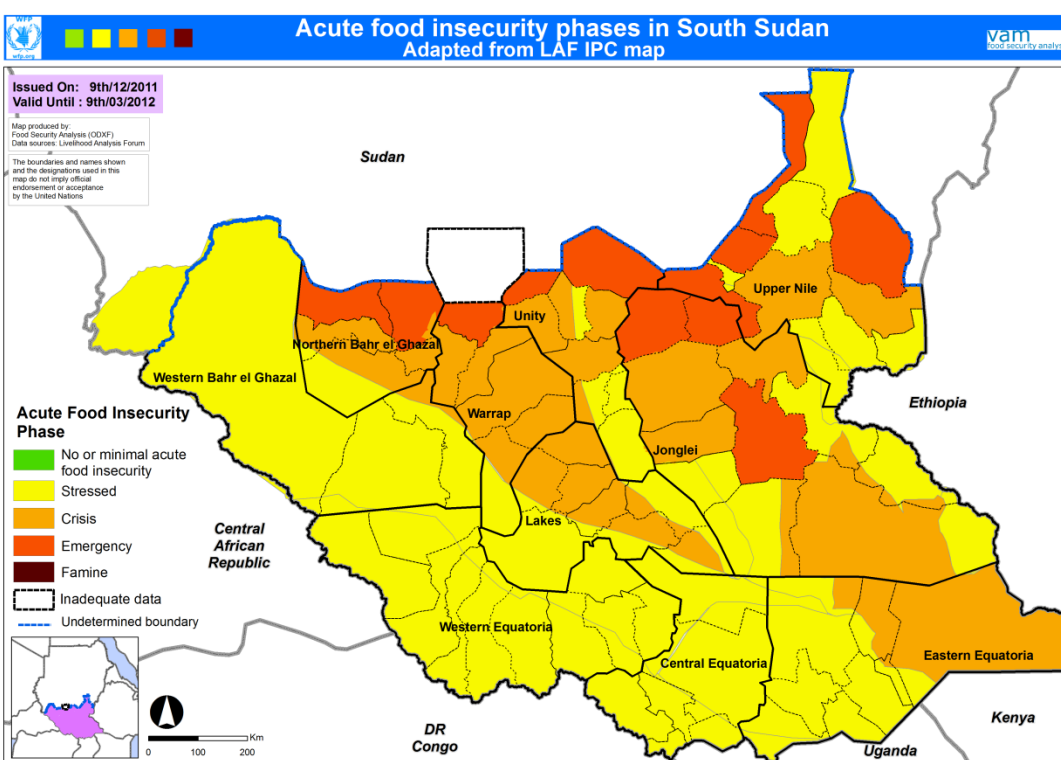
### **10.3 Programmatic implications**

- There is evidence of an increasing caseload of returnees and IDPs. Most of these categories of the population are food insecure compared to resident households owing to poor access to land, lack of tangible income sources and high vulnerability to shocks.
- Returnees should be supported to settle down and re-enter the production cycle. Livestock restocking could play an important role in areas where livestock is a dominant source of livelihood.
- Access to land should be enhanced at state level for returnee households. The lack of access to land would hinder household engagement into meaning farming activities for own crop production.
- Training in agricultural production and vocational skills would hasten the re-integration process of returnees.
- Provision of security and peace building programmes is required to make it attractive for IDPs to return to areas of origin. This should be extended also to the provision of initial inputs and basic services in the areas of origin.

## 11 Food security outlook: December 2011 to March 2012

The Livelihoods Analysis Forum (LAF) met in Bor in December 2011 and reviewed the food security outlook for December-March 2012 based on the Integrated Phase Classification (IPC) (**Figure 23**). Over the next quarter food insecurity will reach crisis levels in border areas due to insecurity related to military activities along the border, large presence of returnees and refugees in these areas and trade blockage. This covers Western Flood Plain (NBS and Warrap) as well as Eastern Flood Plain (UNS and Unity) and WBS in the Ironstone Plateau. Northern Jonglei which is in the Eastern Flood Plain will continue to experience the effects of insecurity connected with militia activities and inter-communal clashes. In the pastoral areas of EES, drastic decline of water and pasture for livestock is expected to tighten the food security as a consequence of erratic rainfall and less-than-normal regeneration of water and pasture.

**Figure 23:** Food security outlook (December 2011 to March 2012)



### 11.1 Expected scenarios and estimation of food and non-food assistance requirements in 2012

Food aid requirements and estimates were based on two scenarios incorporating the declining agricultural production, high food prices, trade disruptions and unresolved political issues related to the statehood of South Sudan.

#### 11.1.1 Best-case/probable scenario:

An earlier than normal onset of lean season in 2012 (from February) leads to increased reliance on markets at a time when lower crop production, reduced market flows from Sudan and influx of returnees are expected to drive prices in 2012 beyond the high 2011 price levels. The prospect of improved trade flows from Sudan are low, even if the borders were to re-open in 2012, given the very poor production from the large scale farming areas of White Nile, Sennar, Gedaref and Kassala. Increased dependence on alternative sources of food and other commercial



supplies are likely to escalate food prices further considering high fuel and transportation costs. The early signs of declining food security observed in NBS, UNS, EES, Jonglei and WBS and are likely to become more pronounced and extend to other states bordering Sudan especially Warrap and Unity.

Continuing conflicts in South Kordofan and Blue Nile will cause displacements into the bordering states of UNS and Unity while inter-ethnic and inter-communal fights are likely to intensify following the poor harvest and decreased dry season pasture and water resources in 2012. Under this scenario, the severely food insecure households as well as those 12 percent of moderately food insecure households that are already showing poor food consumption in rural areas, are targeted for assistance.

In these conditions, about 860,000 severely food insecure<sup>31</sup> rural people will be assisted. About 350,000 socially vulnerable people will be assisted with unconditional general food distribution and the remaining 510,000 will be supported through community-based recovery activities. In addition, about 360,000 (12 percent) of moderately food insecure will be supported through food for asset activities to cushion them from the effects of high food prices. This assistance will be provided for a maximum of 150 days during the lean season from February-July.

An emergency assistance will be provided to the conflict affected population consisting of 100,000 refugees, 260,000 returnees, 320,000 IDPs and 115,000 displaced residents from Abyei. IDPs and returnees will be assisted for 90 days while refugees will be supported for 360 days. A school meals programme will be implemented for about 440,000 pupils for 176 days during the school-term, blanket supplementary feeding for 200,000 children age 6-24 months for 150 days and targeted supplementary feeding for 300,000 moderately acute malnourished children and pregnant and lactating women for 60 days. An institutional feeding programme will support about 192,000 TB, HIV, Kalazar patients and their caretakers for 30 days for in-patients and 180 days for outpatients. The total food needs for these activities will amount to 152,000 tonne for a total of 2.7 million beneficiaries.

### 11.1.2 Contingency scenario

In the **contingency scenario**, the best case scenario is increased with the addition of 27 percent moderately food insecure people who have borderline food consumption score due to the devaluation of the SSP along with other factors such as increased internal conflicts, aggravated food scarcity and high food prices that will erode their purchasing power. It is estimated that additional 32,560 MT will be required to cushion these population groups from slipping into the severely food insecure category during the hunger season, bringing the total food requirements to 184,803 MT for an estimated 3.3 million unique beneficiaries (**Table 8**).

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<sup>31</sup> Due to the revised CFSAM population project has increased from 9.5 million to 9.6 million, the overall estimates of severely population will increase to 870,000 and number of moderately food insecure households poor food consumption remains the same at 360,000.

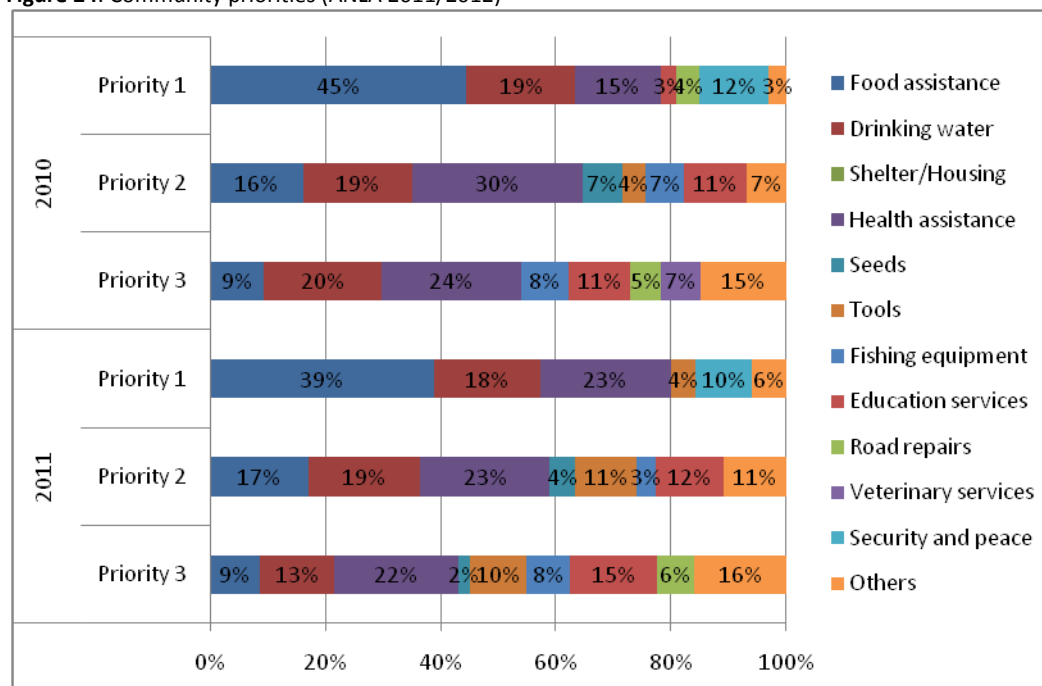
**Table 8:** Estimated food assistance requirement in 2012

State	Best case scenario		Contingency Scenario	
	Beneficiaries	Tonnes	Total Beneficiaries	Total (tonnes)
Jonglei	402,545	21,843	537,424	28,758
EES	287,998	15,634	423,218	22,567
WES	129,219	7,823	144,277	8,595
CES	123,654	7,687	203,786	11,795
Warrap	408,719	19,231	458,373	21,777
WBS	187,740	9,455	214,939	10,849
NBS	212,579	13,078	286,987	16,893
Lakes	244,839	12,394	289,046	14,661
Upper ☐ Nile	541,184	31,536	607,640	34,942
Unity	171,455	13,562	179,353	13,967
<b>Total</b>	<b>2,709,932</b>	<b>152,243</b>	<b>3,345,044</b>	<b>184,803</b>

## 12 Community priorities, conclusions and recommendations

Community priorities in 2011, based on 94 community questionnaires are comparable with those identified in 2010 (**Figure 24**), the first priorities include food, water, health assistance and security which are inter-linked therefore reinforce the need for multi-sectoral interventions.

**Figure 24:** Community priorities (ANLA 2011/2012)



Source: FSMS October 2010 & 2011

### 12.1 Priority areas

Based on statistical and qualitative ranking, the following 30 counties were identified as priority areas for food security interventions. These are presented in Table 9 and Figure 25. Detailed description of the priority areas is provided in the state summaries section.

**Table 9:** High priority counties per state

State	Prioritised Counties
Eastern Equatoria	Kapoeta East, Kapoeta North, Kapoeta South & Lopa/Lafon
Western Equatoria	Nagero, Mundri East, Mundri West, Mvolo
Lakes	Rumbek North, Yirol East & Awerial
Warrap	Twic, Tonj North & Tonj East
Jonglei	Uror, Fangak, Canal/Pigi and Pibor
Western Bahr el Ghazal	Jur River & Wau
Northern Bahr el Ghazal	Aweil North, Aweil Centre & Aweil West
Upper Nile	Maiwut, Maban, Luakpiny/Nasir & Longochuk
Unity	Mayom, Abiemnhom & Rubkona



### 12.3 Recommendations

Agriculture	<ul style="list-style-type: none"> <li>• Develop micro-irrigation and cultivation of short-cycle crops</li> <li>• Diversify food production to increase food consumption especially pulses and vegetables</li> <li>• Increase farmer training opportunities through farmer field schools (FFS) and training of community-based extension cadre</li> <li>• Explore market-based opportunities to increase agricultural production</li> <li>• Conduct training on formal systematic collection of agricultural statistics</li> <li>• Increase coverage of social facilities</li> </ul>
Livestock	<ul style="list-style-type: none"> <li>• Increase consumption of livestock products through expansion of poultry and rearing of small animals</li> <li>• Provide basic veterinary care to improve milk productivity and herd dynamics</li> <li>• Promote farmer field schools for livestock keeping communities</li> </ul>
Fisheries	<ul style="list-style-type: none"> <li>• Improve skills in fishing methods and post harvest management</li> <li>• Provide infrastructure required to develop fishing as a business</li> </ul>
Nutrition	<ul style="list-style-type: none"> <li>• Strengthen the provision of WASH and health to reduce risk of malnutrition</li> <li>• Expand blanket supplementary feeding in high priority counties in March to July</li> </ul>
Conflict and security	<ul style="list-style-type: none"> <li>• Integrate peace-building with livelihood activities and provision of basic social services</li> <li>• Demining is very expensive therefore there is need to maximize land productivity in the existing safe areas.</li> </ul>
Markets	<ul style="list-style-type: none"> <li>• Basic information on commodity value chains needed to understand how markets work.</li> <li>• Create market incentive to respond to the high market prices. This includes expansion of local purchase initiatives and gross margin analysis of agricultural enterprises.</li> </ul>
Returnees and reintegration	<ul style="list-style-type: none"> <li>• Allocate returnees with land to hasten re-integration</li> <li>• Develop returnee skills which is an important input for rural transformation</li> </ul>
Vulnerability	<ul style="list-style-type: none"> <li>• A multi-sectoral approach required to reduce exposure to shocks. The creation of a Food Security Council (FSC) will promote this approach and improve food security monitoring, early warning and preparedness</li> </ul>

## 13 State level analysis and summary matrix

### Western Equatoria

#### Overview:

WES lies in Greenbelt livelihood zone. It borders WBS and Lakes states to the North, CES to the East, and it has an international border with Chad and DRC to the West. The state has generally been a surplus over the past years in South Sudan until the advent of LRA insurgents in early 2007. There are two planting and harvesting seasons. Land is fertile and the local population practices crop diversification. In a normal year sale of crops dominates the main income source for majority of HHs.

#### Security situation:

Until recently, WES had an unpredictable security situation due to LRA threats in the far western counties of the state. Constant LRA threats of attack have resulted in displacement of local residents in neighboring communities. Analysis of security incidents for the last 3 years shows that Nzara and Yambio have a high incidents of conflicts mainly attributed to LRA and inter tribal fighting. The rest of the state has medium to low incidents.

#### Rainfall:

In a normal year, rainfall starts in early March and last until November. This enables planting for the first and second season. In 2011 rains started in April and are expected to continue at least until late November. Slight reduction on rainfall was observed in May-June but without significant impact. Maridi and Mundri East and West received late and more erratic rains compared to other counties.

#### Main findings of the FSMS (October 2011) and CFSAM (2010/2011):

#### Demographics:

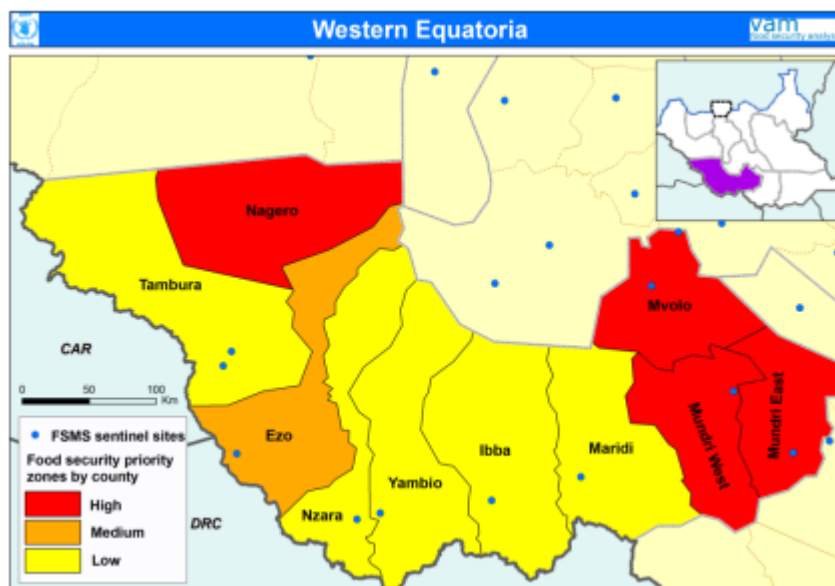
The average HH has 9.3 members and 77% of the HHs were male-headed. A large proportion (93%) of the population were residents, 4% were returnees while 3% were IDPs. 8% of the resident HHs were hosting IDP and/or returnee.

#### Food production:

98% of HHs cultivated crops in 2011 and the most cultivated crops were groundnuts (82%), maize (51%), sorghum (46%) and sesame (41%). Despite the delayed start of the season, 89% of HH think crop performance was good. Based on the CFSAM 2011, the state's net cereal production increased 7 percent from 2010 production to 120,262mt. This equals to 30,380mt surplus and covers 135% of state's requirements.

#### Livestock:

FAO estimates that the state has some 703,000 cattle in 2011. CFSAM mission observed the livestock condition as generally very good and there is plenty of pasture and water for the animals. Based on FSMS, 57% of HHs own livestock; 48% poultry, 31% goats, 3% cattle, and 1% sheep.



**Fishing:**

Access to fishing grounds was reported to have increased (33%) and 9% of HHs were involved in fishing activities. Fish was consumed on average 0.3 days per week while fishing HHs consumed it once a week.

**Main income sources:**

The main income sources were agriculture (21%), sale of natural resources (17%), casual labour (16%), and salaried work (15%).

**Income reliability and sustainability:**

Currently 14% rely on poor income sources, 28% medium sources while 58% are categorized to have good and reliable income source.

**Expenditure on food:**

Currently only 12% of the HHs allocate more than 65% of their expenditures on food, 67% spend <50% and 21% 50-65% on food. On average the expenditures allocated to food was 39%, more specifically 9% on cereals.

**Food access:**

Food access was generally good (68% of HHs) while 9% of the population had poor and 22% had medium food access. This is mainly attributed to multiple income options and low expenditures on food as the food access indicator is a composite indicator derived from food expenditures and income sources.

**Food consumption:**

8% of HHs had poor and 33% had borderline food consumption while 59% consumed acceptable diet. Food consumption has not much been assessed in the state but based on FSMS it seems to be the worst in February. On average HHs consumed staple foods 6.7 and protein sources 4.8 day per week. Adults consume 1.7 and children 2.3 meals per day.

**Main food sources:**

Own production followed by market were the main food sources. 57% of sorghum, 82% of maize and 75% of pulses were own produce while the remaining HHs obtained the items from the market.

**Shocks:**

The main shocks reported in the state were delayed rains (64%), human sickness (55%), expensive food (46%) and insecurity (34%).

**Coping strategies:**

42% of the HHs have adopted coping strategies to bridge food access gaps. The main coping strategies used were reducing number of meals eaten (31%), limit portion size at meals (26%), eating less preferred and less expensive foods (25%), and restricting adults' consumption in order for children to eat (19%).

**Food security:**

HH food insecurity level remained low compared to the rest of South Sudan. In 2011, the severely food insecure HHs constitute for 3% and moderately food insecure for 12% of the HHs. The proportion of moderately food insecure has reduced from 2010 when ANLA estimated 18% prevalence. No drastic changes in severely food insecure were found.

**Community priorities:**

The main community priorities identified were health assistance (44%), drinking water (22%), and education (22%).

Indicator	Specific indicators	Change	Oct-2010	Oct-2011
<b>Food security</b>	Severely food insecure	( )	3%	3%
	Moderately food insecure	( - )	18%	12%
	Food secure	( + )	79%	85%
<b>Food consumption</b>	Poor	( )	-	8%
	Borderline	( )	-	33%
	Acceptable	( )	-	59%
<b>Relative expenditures on food</b>	Medium	( )	-	21%
	High	( )	-	12%
<b>Relative expenditure on cereal</b>		( )	-	9%
<b>Income reliability</b>	Poor	( )	-	14%
	Medium	( )	-	28%
	Good	( )	-	58%
<b>Coping (Medium &amp; High)</b>		( )	-	2%



**Table 10:** County summary for Western Equatoria State

Priority	County	Population numbers			IDP/refugee/ returnee	Trends		Other information	
		Estimated population in 2012*	Food insecure**			Food security (annual)	Food insecurity (seasonal)		% of cereal consumption covered by production***
			Severe	Moderate					
High	Mundri West	37,200	1,648	7,954	Ret: 160		Worst in Feb	71% (0)	Late/erratic rains
High	Mundri East	52,741	4,672	11,841	Ret: 65		Worst in Feb	85% (0)	Late/erratic rains
High	Mvolo	52,569	5,588	11,241	Ret: 93			102% (+)	
High	Nagero	10,986	1,460	1,879	Ret: 0			152% (+)	
Medium	Ezo	88,170	3,124	11,312	Ret:14		Worst in Feb	191% (+)	
Low	Tambura	60,524	2,145	5,824	Ret: 164		Best in June	143% (-)	
Low	Nzara	71,644	1,269	3,064	Ret: 5		Worst in Feb	163% (-)	LRA and inter-tribal conflicts
Low	Yambio	166,663	0	14,255	Ret: 671		Worst in Feb	135% (+)	LRA and inter-tribal conflicts
Low	Ibba	45,663	809	5,858	Ret: 17		Worst in Feb	195% (0)	
Low	Maridi	90,045	0	9,627	Ret: 145		Worst in Feb	99% (-)	Late/erratic rains

\*based on 2.052% growth rate and returnee data (OCHA, Oct 2010-Oct 2011)

\*\*FSMS Round 5 data disaggregated by counties

\*\*\*CFSAM 2011 production coverage for the state with trend compared to 2010 production

## Eastern Equatoria

### Overview:

The state has five livelihood zones; Pastoral, Hills and Mountains, Greenbelt, Eastern Flood Plains and Ironstone Plateau. The eastern portion of the state is semi arid and inhabited by pastorals that predominantly depend on livestock rearing for food and income generation. The western part receives enough rainfall to support agricultural production and the inhabitants rely mostly on crop production.

### Security situation:

Poor road conditions and insecurity due to cattle raiding and banditry were the main impediment for trade and access in the eastern part of the state last year. This year has been generally stable and peaceful with less insecurity reported in the state.

### Rainfall:

Rains started in March followed by a relatively dry four weeks up to late April. Based on CFSAM, impact on crop production is estimated minimal.

### Main findings of the FSMS and CFSAM:

#### Demographics:

The average HH size was 7.3 people and about 76% of the HHs were female-headed. Majority (98%) of the population were residents and 3% were returnees. 5% of the resident HHs were hosting IDP and/or returnee.

#### Food production:

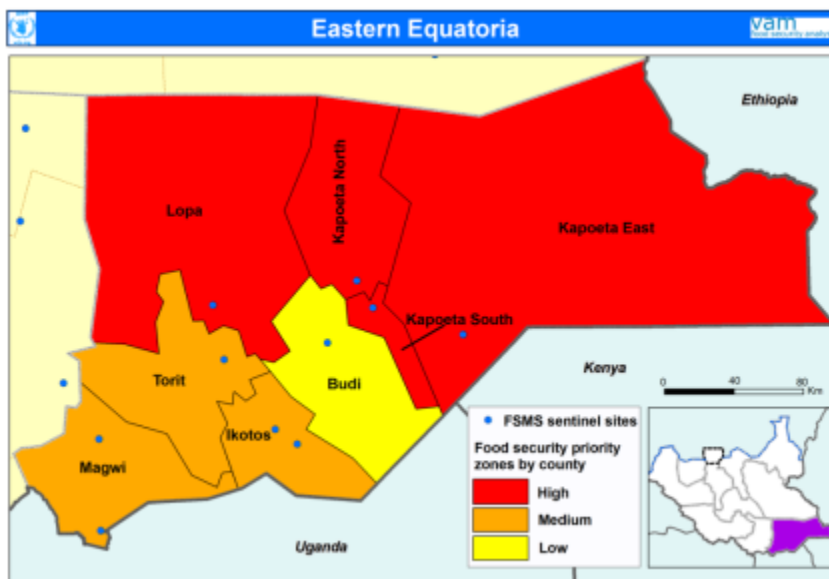
92% of the HHs cultivated in 2010 and the main crops cultivated were sorghum (86%), groundnuts (26%) and sesame (26%). There was a slight increase in overall HHs who cultivated and among those who cultivated sorghum and groundnuts. The CFSAM 2011 estimated the state net cereal production at 99,277mt, a 25% increase from 2010. The production equals to 26,701mt deficit and covers 79% of the state's needs.

#### Livestock:

FAO estimates that the state has 915,000 cattle in 2011. CFSAM observed livestock body condition being very good and the numbers are expected to increase with increasing security. Also, pasture and water availability is expected to be satisfactory. Based on FSMS, 56% of HH own some kind of livestock; 41% goats, 36% own cattle, 27% sheep, and 19% own poultry.

#### Fishing:

Access to fishing grounds was reported to have increased (33%) but only 2% of HHs were involved in fishing activities. On average fish was consumed only 0.2 days per week and the consumption was only slightly higher among those who go fishing (0.8 days per week).



**Main income sources:**

The main income sources were sale of natural resources (37%), brewing (19%), livestock (17%) and agriculture (11%).

**Income reliability and sustainability:**

The proportion of HHs grouped based on their income sources changed slightly from 2010 with the proportion of HHs with poor income sources increasing by 5 and medium sources by 9 percent points. Currently 36% rely in poor, 44% in medium and 20% in good main income sources.

**Expenditure on food:**

On average, HHs allocated 65% of their expenditures on food, more specifically 49% was for cereals alone. The proportion of HHs spending highly (>65% of expenditures) on food has increased from 39% to 55% whereas the proportion of HHs allocating 50-65% on food has remained somewhat stable at 21%. Only 23% allocate less than 50% of expenditures for food.

**Food access:**

Over half of the HHs (58%) have poor access, 18% medium access while 24% have good access. This shows a sharp deterioration from 2010 where 42% had poor access, 23% medium access and 35% good access. Food access is a composite indicator derived from HH expenditure on food and reliability of income sources.

**Food consumption:**

Food consumption deteriorated in 2011 as compared to 2010. Poor food consumption increased from 15% to 25% while borderline consumption decreased slightly from 38% to 33%. As a result acceptable food consumption declined from 56% to 42%. On average HHs consume staple cereals 6.5 days and protein sources 2.5 days per week. Adults consume 1.5 and children 1.9 meals per day.

**Main food sources:**

Market was the main food source in the state; 71% of sorghum, 95% of maize and 70% of pulses were bought from the market while the rest relied on own produce. Compared to 2010, currently some 10 percent points more of HHs rely on markets instead of own production.

**Shocks:**

The main shocks reported in the state were delay of rains (75%), expensive food (63%), and human sickness (60%). Compared to 2010, delay of rains was a serious shock as then only 18% reported that a shock.

**Coping strategies:**

Currently 53% of the HHs had adopted coping strategies to bridge the gap to access food. This is over 20 percent point higher compared to the situation a year ago. The main coping strategies used were reducing number of meals eaten (43%), eating less preferred and less expensive foods (41%), limiting portion size at meals (34%) and borrowing (31%).

**Food security:**

HH food insecurity levels in the state have increased. The percentage of severe food insecurity has increased from 15% to 24%, and moderate food insecurity from 34% to 41%. Currently 35% are food insecure compared to 51% in 2010. When looking at the prevalences, the situation is almost at ANLA 2009 levels. The CFSAM 2011 predicts HH food security to deteriorate from the first quarter of 2012 due to reduced food access because of low food stocks from own production and high food prices.

**Community priorities**

The main community priorities identified are food assistance, water, health, and education services.

Indicator	Specific indicators	Change	Oct-2010	Oct-2011
<b>Food security</b>	<b>Severely food insecure</b>	(+)	15%	24%
	<b>Moderately food insecure</b>	(+)	34%	41%
	<b>Food secure</b>	( - )	51%	35%
<b>Food consumption</b>	<b>Poor</b>	(+)	15%	25%
	<b>Borderline</b>	(+)	29%	33%
	<b>Acceptable</b>	(-)	56%	42%
<b>Relative expenditures on food</b>	<b>Medium</b>	( - )	22%	21%
	<b>High</b>	(+)	39%	55%
<b>Relative expenditure on cereal</b>		(+)	36%	49%
<b>Income reliability</b>	<b>Poor</b>	(+)	31%	36%
	<b>Medium</b>	(-)	53%	44%
	<b>Good</b>	(+)	16%	20%
<b>Coping (Medium &amp; High)</b>		(+)	6%	17%

**Table 11:** County summary for Eastern Equatoria State

Priority	County	Population numbers			IDP/refugee/ returnee	Trends			Other information
		Estimated population in 2012*	Food insecure**			Food security (annual)	Food insecurity (seasonal)	% of cereal consumption covered by production***	
			Severe	Moderate					
<b>High</b>	Kapoeta North	112,287	32,959	51,601	Ret: 0	Stable	SFI highest in Feb	58% (+)	
<b>High</b>	Kapoeta South	86,690	33,542	34,405	Ret: 125	SFI increased, MFI decreased	Minor peak in June	54% (+)	
<b>High</b>	Kapoeta East	178,638	66,735	89,555	Ret: 0	Deteriorated	SFI peaks in Feb, MFI high in Oct	68% (+)	
<b>High</b>	Lafon/Lopa	116,289	41,892	43,724	Ret: 650		SFI peaks in June	72% (-)	
<b>Medium</b>	Ikotos	95,443	16,554	38,876	Ret: 3,237	Slightly improved	High SFI in June & Oct	117% (+)	
<b>Medium</b>	Magwi	185,585	19,809	73,655	Ret: 597	Deteriorated	Stable deterioration during 2011	82% (+)	
<b>Medium</b>	Torit	114,327	12,203	44,180	Ret: 5,682	Deteriorated	Highest SFI in Feb	113% (+)	
<b>Low</b>	Budi	108,069	20,186	40,633	Ret: 13	Deteriorated	SFI high in Oct, MFI in June	76% (+)	

\*based on 2.052% growth rate and returnee data (OCHA, Oct 2010-Oct 2011)

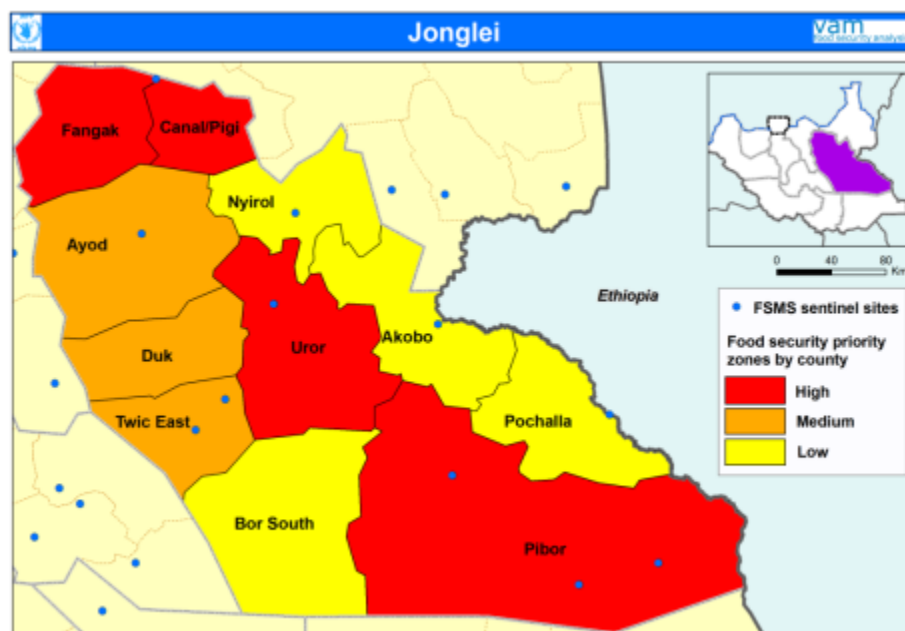
\*\*FSMS Round 5 data disaggregated by counties

\*\*\*CFSAM 2011 production coverage for the state with trend compared to 2010 production

## Jonglei

### Overview:

Jonglei state lies in the East of South Sudan. It borders Ethiopia to the East, EES and CES to the South, UNS to the North and Lakes and Unity states to the East. It comprises of eleven counties. The state has four livelihood zones: Nile Sobat River, Eastern Flood Plain, Pastoral, and Hills and Mountains. The population is a mixture of agro-pastoralists and sedentary agricultural communities. Livestock keeping and crop growing are the main livelihood activities for the resident population.



The state faces challenges of poor physical access. Road network is very limited and the existing roads get muddy during rainy season and some payams may be inaccessible for months.

### Security situation:

The security situation in 2011 has been unpredictable and tense due to inter tribal conflicts related to cattle raiding. RMG of George Athor has been active in Pigi, Fangak and parts of Ayod county resulting in deaths and displacement of residents in the affected Bomas. Between January and September 75,803 persons were displaced due to insecurity (OCHA). Inter tribal conflicts have taken place from the 2<sup>nd</sup> quarter of the year. The counties mainly affected were Uror, Pibor, Akobo, Nyirol, Bor and Twic East.

### Rainfall:

Rains were delayed by approximately one month, starting in May, in most parts of the state. Dry spell was experienced in June and in the north dry spell was extended into July, forcing many farmers to re-plant maize. Heavy rainfall in July and August resulted localized flooding in riverine areas.

### Main findings of the FSMS and CFSAM

#### Demographics:

The average HH size was 7.3 members. 61% were male-headed. The majority (97%) of the HHs were residents, 1% IDPs and 1% returnees. 11% of the resident HHs were hosting IDP and/or returnee.

#### Food production:

78% of the HHs cultivated during 2011; 68% cultivated sorghum, 64% maize and 8% groundnuts. Based on CFSAM 2011, the state net cereal production reduced 22% from 2010 level to 65,032mt which covers only 40% of the state's requirements.

#### Livestock:

FAO estimates that the state has 1,526,000 cattle in 2011. CFSAM observed generally good livestock condition and estimates adequate pasture and water availability for the animals. Based on FSMS, 66% of the HHs own livestock; 47% cattle, 30% goats, 20% poultry, and 11% sheep. Incidents of cattle raiding and continuation of inter-communal fighting and tension in 2011 has resulted in an increase in livestock migration to areas in close proximity to main settlement centres. Counties affected include Pibor, Duk, Ayod and Akobo.

**Fishing:**

About 30% of the HHs were involved in fishing activity. 0.5% of the house hold reported fishing as main source of income. Fish was consumed 1.2 days per week.

**Main income sources:**

The main income sources were sale of natural resources firewood, grass and charcoal (30%), agriculture (sale of cereals and other crops (19%), salaried labour (14%), and livestock and livestock products (12%).

**Income reliability and sustainability:**

27% of the HH rely on poor income sources compared 21% in 2010, mainly sale of nature resources. The medium and good reliable income sources each account for 35% and 39% respectively.

**Expenditure on food:**

44% of the HHs allocate more than 65% of its monthly expenditure on food; this is higher compared to 32% in 2010, while 39% and 17% spend less than 50% and 50-65% on food respectively.

**Food access:**

35% of the HHs had poor food access, up from 29% in 2010. 27% had medium and 39% had good food access. Food access is a combination of income reliability and food expenditure indicators.

**Food consumption:**

18% of the HHs had poor and 30% borderline consumption which is a slight decline compared to the 2010 findings (18% and 24%, respectively). 51% of the HHs had acceptable food consumption. Cereals were consumed on average 6.3 days per week and protein (meat, fish, eggs) 3.2 per week.

**Main food sources:**

Generally, the main food source was own production and market. 57% of sorghum and 75% of maize was from own production while the rest was purchased. Conversely, 63% of pulses were from the market and 33% used own stocks.

**Coping strategies:**

54% of the HHs in the state have adopted coping mechanisms to secure food. The most often adopted strategies were relying on less preferred food (44%), limit portion size (37%), borrowing (33%), reducing the numbers of meals consumed (32%), and reducing adults' consumption for children to eat (22%).

**Food security:**

12% the HHs were severely food insecure down from 15% in 2010. Adversely, the proportion of moderately food insecure has increased from 24% to 33%. 55% were food secure.

**Shocks experienced:**

The main shocks reported were human sickness (61%), expensive food (61%), insecurity (54%), and delay of rains (24%).

**Community priorities:**

Community priorities identified were food and health assistance.

Indicator	Specific indicators	Change	Oct-2010	Oct-2011
<b>Food security</b>	Severely food insecure	(-)	15%	12%
	Moderately food insecure	(+)	24%	33%
	Food secure	(-)	61%	55%
<b>Food consumption</b>	Poor	( )	18%	18%
	Borderline	(+ )	24%	30%
	Acceptable	(-)	59%	51%
<b>Relative expenditures on food</b>	Medium	(-)	22%	17%
	High	(+)	32%	44%
<b>Relative expenditure on cereal</b>		( - )	25%	23%
<b>Income reliability</b>	Poor	(+)	21%	27%
	Medium	(-)	37%	35%
	Good	(-)	42%	39%
<b>Coping (Medium &amp; High)</b>		(-)	13%	10%



**Table 12:** County summary for Jonglei State

Priority	County	Population numbers			IDP/refugee/ returnee	Trends			Other information
		Estimated population in 2012*	Estimated food insecure residents**			Food security (annual)	Food insecurity (seasonal)	% of cereal consumption covered by production***	
			Severe	Moderate					
<b>High</b>	<b>Pibor</b>	162,059	27,499	80,984	Ret: 328	Slightly improved	High SFI in Feb, high MFI in June	41% (+)	Inter-communal conflict, dry spell
<b>High</b>	Uror	195,093	33,104	107,003	Ret: 636		High SFI in Feb, high MFI in Oct	48% (-)	Inter-communal conflict, dry spell
<b>High</b>	Fangak	126,237	19,278	50,774	Ret: 6,275			38% (-)	Inter-communal conflict, cattle raids, dry spell, localized flooding
<b>High</b>	Canal/Pigi	112,572	17,191	45,278	Ret: 4,659			35% (-)	Insecurity
<b>Medium</b>	Ayod	151,736	20,598	53,633	Ret: 19		High MFI in June	40% (-)	Insecurity, dry spell
<b>Medium</b>	Duk	71,514	9,708	36,608	Ret: 70			39% (-)	40% reduced cereal production, localized flooding
<b>Medium</b>	Twic East	93,686	9,538	35,398	Ret: 718	SFI increased, MFI decreased	High SFI in Feb, MFI in Jun	48% (-)	Inter-communal conflict, cattle raids, dry spell, localized flooding
<b>Low</b>	Bor South	245,248	27,049	98,642	Ret: 4,402			28% (-)	Inter-communal conflict, dry spell, localized flooding, 40% reduced cereal production
<b>Low</b>	Nyrol	119,349	12,151	56,732	Ret: 973			40% (-)	Inter-communal conflict, cattle raids, dry spell
<b>Low</b>	Akobo	150,108	28,018	51,228	Ret: 1,738	Improved	Improves Feb-Jun-Oct	38% (-)	Inter-communal conflict, dry spell
<b>Low</b>	Pochalla	72,130	9,791	25,495	Ret: 19	Deteriorated	Best in Feb, deteriorates by Oct	70% (+)	Cattle raids, dry spell, localized flooding

\*based on 2.052% growth rate and returnee data (OCHA, Oct 2010-Oct 2011)

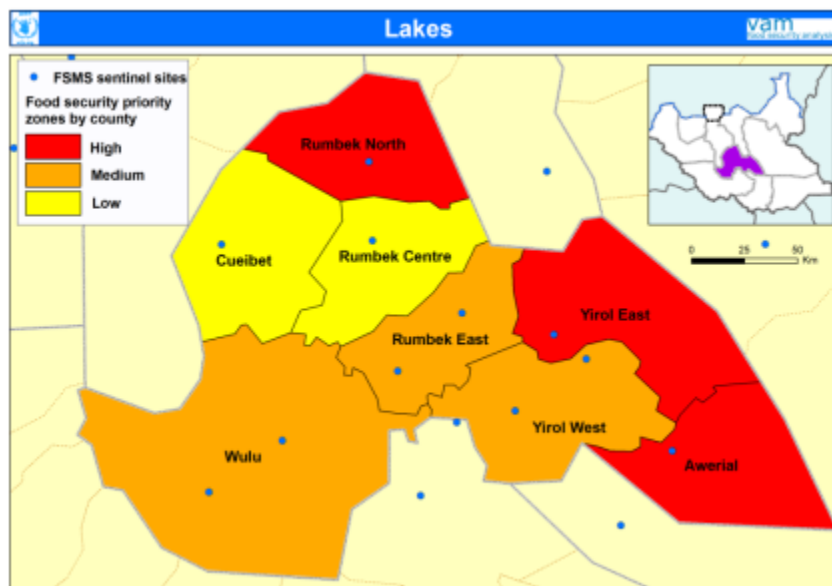
\*\*FSMS Round 5 data disaggregated by counties

\*\*\*CFSAM 2011 production coverage for the state with trend compared to 2010 production

## Lakes

### Overview:

The state has three livelihood zones: Ironstone Plateau, Western Flood Plains, and Nile Sobat Rivers. The western flood plain consists mainly of agro pastoralists who are farmers and also keep livestock, mainly cattle and goats. The main crops grown are sorghum, ground nuts, maize, pumpkin, beans and other legumes. They also use varieties of wild foods including Shea butter, nuts, and seeds of water lily etc. For Ironstone, the main livelihood activity is agriculture and the main crops grown are sorghum and some maize varieties. On Nile Sobat Rivers the main livelihood activities are fishing, cattle keeping, and agriculture.



### Security situation:

No major security incidents have been reported. However, cattle thefts have increased drastically. Dry season has always been controversial and chaotic with pastoralists' and Subsistence communities' competing over pasture in lowlands, water sources, communities boundaries and fishing grounds. The disarmament exercise declared in September 2011 has been marred by uneven collection of arms and to large extend, some powerful sections members have influenced military ability, due to excess of arms.

A recent rumor (unverified) has that South Sudan rebel groups have moved along Rumbek North areas (especially Madol payam) closely bordering western UNS and Unity states. In case being true, it is likely to affect Madol and the entire Rumbek North county.

### Rainfall:

Rains started late, during second half of May and rains were followed immediately with dry spells lasting until late June.

### Main findings of the FSMS and CFSAM:

#### Demographics:

The average HH size was 8.24 members. 79% were male-headed HHs. Majority (96%) of the HHs were residents, 4% were IDPs and 1% returnees. 29% of the HHs were hosting IDP and/or returnee.

#### Food production:

Based on FSMS, 88% of the HHs cultivated in 2011, a slight reduction from 92% in 2010. The main crops cultivated were sorghum (85%), groundnuts (65%), and sesame (32%). Based on CFSAM 2011, the estimated net cereal production has decreased by 31% to 45,467mt which covers 52% of the state's requirements.

#### Livestock:

FAO estimates that the state has 1,365,000 cattle in 2011. CFSAM rates livestock body condition being fair and pasture and water should be satisfactory. Based on FSMS 80% of HHs own livestock; 54% own cattle, 53% goats, 40% poultry, and 27% sheep.

**Fishing:**

About 24% of the HHs were involved fishing activity which is an increase from 13% a year ago. None of the HHs reported sale of fish as their income source, so the landings are likely to be caught for HHs consumption. On average, fish was consumed once per week while these fishing HHs consumed it twice per week.

**Main income sources:**

The main income sources remains agriculture (38%) and livestock (17%). In 2010, 13% got income from casual labour but in October 2011 this was practically nil whereas 12% got income from salaried work.

**Income reliability and sustainability:**

11% of the HHs continue to rely on poor income sources, such as sale of natural resources. The proportion of HHs relying on medium income sources has increased 20 % point to 37% and the proportion of those with good income sources has reduced from 72% to 52%.

**Expenditure on food:**

Food expenditure has remained somewhat stable for last year. 38% of the HHs allocate more than 65% of their expenditures on food, 44% spend <50% and 18% 50-65% on food. The percentage spent on cereals has decreased from 40% to 33%.

**Food access:**

The number of HHs with poor food access has doubled over the year; currently 24% had poor access compared to 12% a year ago. Good food access was constant at 51% whereas the HHs with medium access had reduced from 38% to 25%. Food access is a combination of income reliability and food expenditure indicators.

**Food consumption:**

Lakes state saw improvement in food consumption in 2011. In October, 27% had poor food consumption compared to 31% a year ago. Also, the proportion of HHs with borderline consumption has reduced from 36% to 23% indicating that 50% had acceptable consumption. The 2011 measured consumption levels have remained stable in June and now in October.

Cereals were consumed on average 4.9 days per week while the average protein (meat, fish, eggs, pulses) consumption was 4.5 days per week. Adults had 1.7 and children 2.3 meals per day.

**Main food sources:**

The main food sources for sorghum were own production (53%) and market (42%); an opposite finding from 2010. Like in 2010, maize was mostly bought from the market (80%) and pulses came from own production (88%).

**Coping strategies:**

47% of the HHs have adopted coping mechanisms to secure food; unchanged from 50% a year ago. The proportion of HHs using coping strategies was the highest in June (86%) in 2011. The most often adopted strategies were skipping days without eating (41%), reducing the number of meals (40%), reducing meal serving size (36%), consumption of cheaper, less preferred food (32%), and limiting adults' consumption for children to eat (32%).

**Food security:**

15% of the HHs were severely food insecure which is slightly increased from October 2010 (13%). 28% were moderately food insecure and 57% were food secure.

**Shocks experienced:**

The main shocks reported in October 2011 were human sickness (71%), expensive food (54%) and floods (35%). There was some 10 percent point increase on the first two shocks while less people felt insecurity as a shock (76% in 2010).

**Community priorities:**

The main community priorities identified were food, health and drinking water.

Indicator	Specific indicators	Change	Oct-2010	Oct-2011
<b>Food security</b>	Severely food insecure	(+)	13%	15%
	Moderately food insecure	( )	28%	28%
	Food secure	(-)	59%	57%
<b>Food consumption</b>	Poor	(-)	31%	27%
	Borderline	(-)	36%	23%
	Acceptable	(+)	34%	50%
<b>Relative expenditures on food</b>	Medium	(+)	15%	18%
	High	(-)	42%	38%
<b>Relative expenditure on cereal</b>		(-)	40%	33%
<b>Income reliability</b>	Poor	( )	11%	11%
	Medium	(+)	17%	37%
	Good	(-)	72%	52%
<b>Coping (Medium &amp; High)</b>		(+)	5%	7%

**Table 13:** County summary for Lakes State

Priority	County	Estimated population in 2012*	Population numbers		IDP/refugee/returnee	Trends			Other information
			Food insecure** Severe	Moderate		Food security (annual)	Food insecurity (seasonal)	% of cereal consumption covered by production***	
<b>High</b>	Rumbek North	47,289	12,105	13,109	Ret: 3	Deteriorated.	Slight reduction in June but significant increase in Oct.	35% (-)	45% reduced cereal production
<b>High</b>	Rumbek East	137,719	24,120	44,540	Ret: 3,921	Deteriorated.	Reduction in June but increase in October.	72% (-)	
<b>High</b>	Yirol East	78,317	15,827	21,710	Ret: 4,898	Slightly improved.	Increase in MFI in June.	62% (-)	
<b>High</b>	Awerial	51,249	11,738	11,839	Ret: 9	Increase of moderate FIS	Highest prevalence in June	57% (-)	
<b>Medium</b>	Yirol West	116,297	14,101	24,717	Ret: 3,895	Improved.	Highest prevalence in June	69% (-)	
<b>Medium</b>	Wulu	44,661	6,017	7,841	Ret: 491	Improved.	Higher prevalence of FI in June than in Oct.	81% (-)	2010 production covered 101% of requirements
<b>Medium</b>	Cueibet	129,890	26,249	42,008	Ret: 1,622			39% (-)	53% reduced cereal production, early cessation of rains and late dry spells
<b>Medium</b>	Rumbek Centre	169,752	16,009	67,449	Ret: 2,493	Stable.	Highest prevalence in October.	35% (-)	45% reduced cereal production

\*based on 2.052% growth rate and returnee data (OCHA, Oct 2010-Oct 2011)

\*\*FSMS Round 5 data disaggregated by counties

\*\*\*CFSAM 2011 production coverage for the state with trend compared to 2010 production

## Upper Nile

### Overview:

UNS is located at the north eastern parts of the country and it has two livelihood zones; Eastern Flood Plain and Nile Sobat River. The state is swampy and has dense network of rivers which creates fishing opportunities.

### Security situation:

Insecurity is one of the challenges in Upper Nile. In November 2011, Yabos Payam in Maban County faced series of bombardments from Sudan Armed Forces (SAF) following the clashes between SPLM-North with Khartoum government in the North neighboring state, Blue Nile. 80,950 people were displaced. Minor insecurity incidents were experienced at the counties bordering Jonglei state and farming activity was affected.

### Rainfall:

Rains started on time but followed extended dry period through June and July. The prolonged dry spell affected the planted crops leading to re-planting when rains resumed in August. Overflow of Sobat Rivers as the result of excessive rains received in Ethiopian Highland has caused flooding in eastern parts of Upper Nile which should improve fishing activity.

### Main findings of the FSMS and CFSAM:

#### Demographics:

Average HH size was 8.5 members. 79% of the HHs were residents, 20% returnees and 1% IDPs. The proportion of returnee HHs has increased by 9 percent points from 2010. 55% of the sampled HHs were headed by female. 29% of the resident HHs were hosting IDPs and/or returnees.

#### Food production:

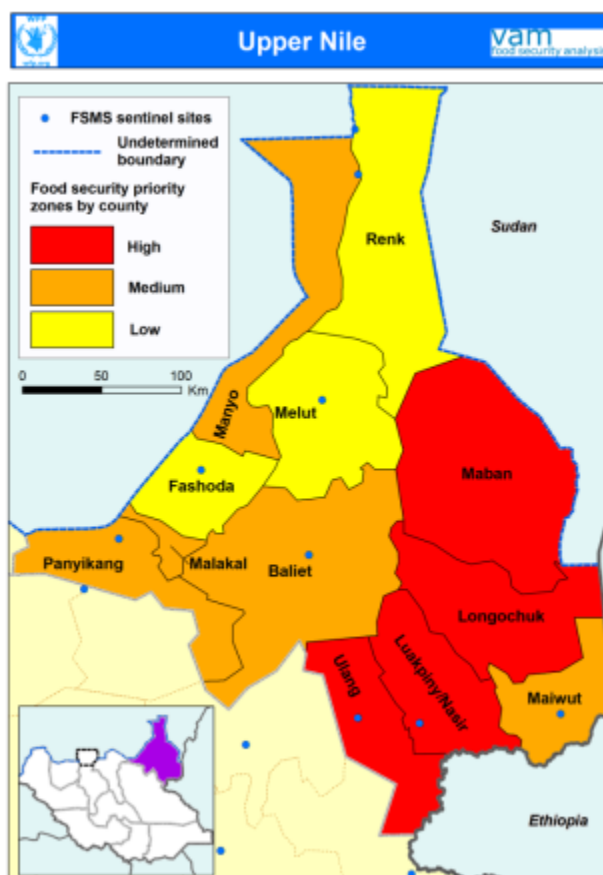
CFSAM 2011 found the estimated net cereal production being reduced by 47% to 25,966mt, which covers only 28% of the state's requirements. Based on FSMS, only 30% of the HHs cultivated in 2011; a decrease of 22 percent points from 2010. The main crops cultivated were sorghum (30%) and maize (26%).

#### Livestock:

FAO estimates that the state has 1,024,000 cattle in 2011. CFSAM found livestock condition generally good and the prospects for pasture and water should be available. Based on FSMS 64% of HHs own livestock; 32% poultry, 29% cattle, 27% goats, and 14% sheep.

#### Fishing:

About 35% of the HHs were involved fishing activity. Fish was consumed 2.2 days per week for the whole sample while fishing HHs consumed fish 2.7 days per week.



**Main income sources:**

The main sources of income are salaried work (25%), sale of natural resources (16%), brewing (10%), and agriculture (10%). A year ago 40% received their main income from agriculture and the change may be due to delayed harvest in 2011.

**Income reliability and sustainability:**

HHs' income sources have become less reliable in the state as currently only 16% were classified to have good income source instead on 78% in 2010. The proportion of HHs with poor income source has increased to 57% from 8% while 27% rely on medium income sources.

**Expenditure on food:**

Like income sustainability, also HH expenditure on food has increased drastically. The proportion of HHs spending highly (>65% of total expenditure) has increased from 7% to 50% and also the ones spending 50-65% has increased from 14% to 24%. Currently only 26% allocated less than 50% of their expenditures on food.

**Food access:**

As a result from high food expenditure and poor income sources, there are only 17% of HHs who have good food access; a drastic drop from 84% in 2010. The proportion of HHs with poor food access has increased more than 50 % point to 59% whereas currently 24% had medium food access.

**Main food sources:**

The state relies mostly on markets as a food source. 92% of sorghum, 61% of maize and 84% of pulses were purchased from the markets. Own production was the main source for sorghum and maize for 2% and 26% of the HHs.

**Food consumption:**

HH food consumption has remained somewhat stable compared to the situation a year ago. The proportion of those with poor consumption has reduced to 21% from 26% whereas those with borderline consumption has increased to 15% from 7%. The remaining 64% had acceptable food consumption.

Cereals were consumed on average 6.7 days per week while the average protein consumption was 4.6 days per week. Adults had 1.7 and children 2.3 meals per day.

**Coping strategies:**

56% of the HHs have adopted coping mechanisms to secure food; a 10 % point increase from 2010. The most often adopted strategies were consumption of cheaper, less preferred food (32%), borrowing/relying on kinship support (30%), reducing number of meals (20%) and reducing meal serving size (18%).

**Food security:**

Food security situation in the state is worrying as 14% are severely and additional 57% are moderately food insecure. These percentages have increased drastically from 2010: 7% severe and 31% moderate. Only 29% were food secure. The CFSAM 2011 predicts HH food security to deteriorate from the first quarter of 2012 due to reduced food access because of low food stocks from own production and high food prices.

**Shocks experienced:**

The main shocks reported were expensive food (89%), human sickness (49%), delay of rains (23%), and insecurity (19%).

**Community priorities:**

The main community priorities identified in Upper Nile State include: food aid, agricultural and fishing tools, drinking water, and health services.

Indicator	Specific indicators	Change	Oct-2010	Oct-2011
<b>Food security</b>	Severely food insecure	(+)	7%	14%
	Moderately food insecure	(+)	31%	57%
	Food secure	(-)	62%	29%
<b>Food consumption</b>	Poor	(-)	26%	21%
	Borderline	(+)	7%	15%
	Acceptable	(-)	67%	64%
<b>Relative expenditures on food</b>	Medium	(+)	14%	24%
	High	(++)	7%	50%
<b>Relative expenditure on cereal</b>		(+)	14%	30%
<b>Income reliability</b>	Poor	(++)	8%	57%
	Medium	(+)	14%	27%
	Good	(--)	78%	16%
<b>Coping (Medium &amp; High)</b>		(-)	21%	12%



**Table 14:** County summary for Upper Nile State

Priority	County	Population numbers				Trends			Other information
		Estimated population in 2012*	Food insecure**		IDP/refugee/returnee	Food security (annual)	Food insecurity (seasonal)	% of cereal consumption covered by production***	
			Severe	Moderate					
High	Maban	49,515	13,064	25,426	Ret: 238			41% (-)	Insecurity, refugees from Sudan. 46% reduced cereal production
High	Longochuk	75,587	14,359	46,092	Ret: 6,782			22% (-)	46% reduced cereal production
High	Luakpiny/Nasir	233,960	44,443	95,109	Ret: 5,209	Deteriorated	High SFI in Oct No SFI in Feb	23% (-)	47% reduced cereal production
High	Maiwut	86,667	14,634	59,338	Ret: 111	Slightly improved	SFI high Feb-June, MFI low in June	33% (-)	
Medium	Manyo	44,549	9,403	29,548	Ret: 3,145			30% (-)	64% reduced cereal production
Medium	Ulang	96,270	8,128	64,883	Ret: 3,633	Deteriorated	High SFI in June High MRI in Feb	29% (-)	47% reduced cereal production
Medium	Panyikang	51,776	4,371	29,910	Ret: 2,293			12% (-)	61% reduced cereal production
Medium	Malakal	157,763	16,649	84,387	Ret: 19,988	Deteriorated	During 2011, worsening trend each round	7% (-)	No aerial spraying of quela- quela
Low	Baliet	54,809	10,411	26,972	Ret: 2,512	Deteriorated	During 2011, quite stable worsening trend each round	21% (-)	60% reduced cereal production
Low	Fashoda	44,404	9,372	26,602	Ret: 4,626		No SFI in Feb-June. Worst in Oct.	58% (-)	
Low	Melut	54,339	2,867	38,948	Ret: 700	Deteriorated	SFI highest in Feb. Situation good in June.	58% (-)	No aerial spraying of quela- quela
Low	Renk	157,794	8,326	108,036	Ret: 7,745	Deteriorated	SFI only in Feb. Good situation in June.	42% (-)	Transit station for returnees, No aerial spraying of quela- quela, 50% reduced cereal production

\*based on 2.052% growth rate and returnee data (OCHA, Oct 2010-Oct 2011)

\*\*FSMS Round 5 data disaggregated by counties

\*\*\*CFSAM 2011 production coverage for the state with trend compared to 2010 production

## Western Bahr el Ghazal

### Overview:

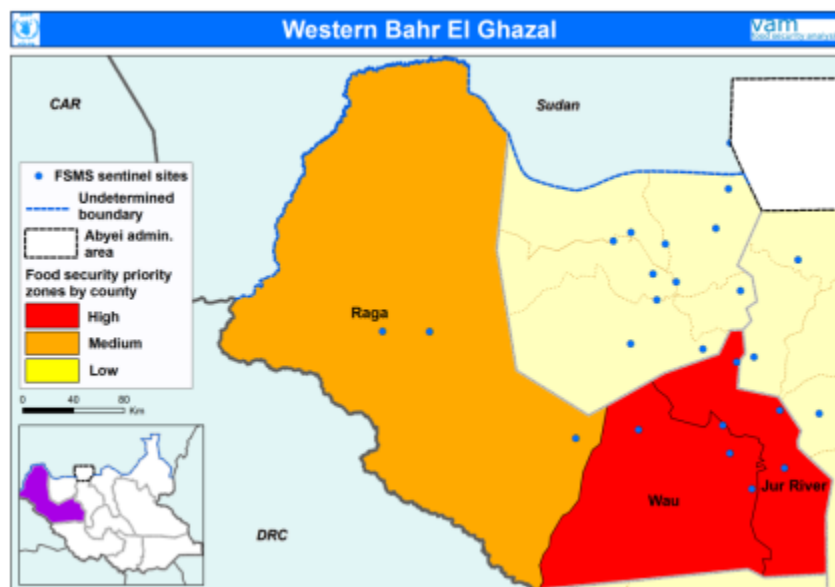
WBS has three livelihood zones: Ironstone Plateau, Greenbelt and Western Flood Plains. The state has three counties: Raja, Jur River, and Wau. WBS borders Sudan and NBS to the North, Warrap to the East, WES to the South and the CAR to the West. The most people are agriculturalists who supplement crop production with fishing, livestock production and honey collection.

### Security situation:

The security situation in the state is relatively calm.

### Rainfall:

In a normal year, rainfall begins in April/May and ends in October/November. In 2011 rains started in May, followed by an extended dry spell in June to July in most parts of the state. Rains resumed in August however the rainfall distribution varies between locations. Delayed rainfall led to late planting and the long dry spell caused crop failure and significant amounts of re-planting.



## Main findings of the FSMS October 2011 and CFSAM

### Demographics:

Average HH size was 5.9 people and slightly more than half (52%) of the HHs are male-headed. 96% were residents and 4% returnees. Some 4% of resident HHs were hosting IDP and/or returnee.

### Food production:

Based on FSMS, 88% of the HHs cultivated in 2011. The main crops cultivated were groundnuts (78%), sorghum (72%), and sesame (49%). Based on CFSAM 2011 the state cereal net production increased 3% from 2010 production and the estimated produce of 34,883mt would cover 78% of the state's requirements.

### Livestock:

FAO estimates that the state has 1,300,000 cattle in 2011. CFSAM rated livestock condition as very good and pasture and water are available. Based on FSMS, 34% of the HHs own livestock; 30% poultry, 11% goats, 4% sheep, and 2% cattle.

### Fishing:

6% of the HHs were engaged in fishing. Fish was consumed less than once per week by WBS HHs.

### Main income sources:

The main income sources were: agriculture (44%), sale of natural resources (22%) and salaried labour (9%).

**Income reliability and sustainability:**

HH income sources have changed in a year and the proportion of those relying on poor income sources has increased from 23% to 36% and for medium level sources, the increase was from 35% to 43%. Currently only 21% rely on good sources.

**Expenditure on food:**

An average HH allocate 57% of their expenditures on food. This is quite significant increase from 2010 when food allocation was 43%. The allocation on staples increased from 20% to 31% of the total monthly expenditures. Also, the proportion of HHs with high expenditure (<65%) on food has increased to 41% while 24% allocate 50-65% on food. The proportion of those with low food expenditure (<50%) has reduced to 36% from 63%.

**Food access:**

Reliance of poor income sources and increased expenditure on food reflect also on HH food access, which is derived from those 2 indicators. The proportion of poor food access HHs has increased from 15% to 43%, medium access is recorded for 27% while currently only 29% have good food access compared to 57% a year ago.

**Food consumption:**

Currently 21% of the HHs have poor food consumption compared to 13% in 2010. Additional 38% have borderline consumption while 41% have acceptable consumption. On average, staple was consumed 5.3 and protein 4.4 days per week. Adults consumed 1.5 and children 1.6 meals per day.

**Main food sources:**

Own production was the main food source for maize (86%) and pulses (83%) while sorghum was mostly bought from the market (68%) and only 24% relied on own produce.

**Shocks:**

The most reported shocks were: expensive food (94%), human sickness (66%), delayed rains (57%) and insecurity (29%).

**Coping strategies:**

38% of the HHs have adopted coping strategies to bridge the food access gap. The most adopted coping strategies were: consumption of less preferred, cheaper food (28%), reducing serving size at meals (23%), reducing the number of meals eaten per day (20%), and borrowing (19%).

**Food security:**

Based on the FSMS HH food insecurity levels are deteriorating. The level of severe food insecurity has increased from 7% to 15% and moderate food insecurity from 20% to 39%. Currently 46% were food secure. The CFSAM 2011 predicts HH food security to deteriorate from the first quarter of 2012 due to reduced food access because of low food stocks from own production and high food prices.

**Community priorities:**

The main priorities include: health assistance, food aid and drinking water.

Indicator	Specific indicators	Change	Oct-2010	Oct-2011
<b>Food security</b>	Severely food insecure	(+)	7%	15%
	Moderately food insecure	(+)	20%	39%
	Food secure	(-)	74%	46%
<b>Food consumption</b>	Poor	(+)	13%	21%
	Borderline	(+)	33%	38%
	Acceptable	(-)	54%	41%
<b>Relative expenditures on food</b>	Medium	(+)	19%	24%
	High	(+)	19%	41%
<b>Relative expenditure on cereal</b>		(+)	20%	31%
<b>Income reliability</b>	Poor	(+)	23%	36%
	Medium	(+)	35%	43%
	Good	(-)	42%	21%
<b>Coping (Medium &amp; High)</b>		(-)	1%	0%

**Table 15:** County summary for Western Bahr el Ghazal State

Priority	County	Population numbers			IDP/refugee /returnee	Trends		Other information
		Estimated population in 2012*	Estimated food insecure residents**			Food security (annual)	Food insecurity (seasonal)	
			Severe	Moderate				
<b>High</b>	Jur River	141,114	25,917	77,593	Ret: 1,817	Deteriorated	High SFI in Feb & Oct. Improvement in June	49% (-)
<b>High</b>	Wau	181,958	21,624	56,892	Ret: 16,988	Deteriorated	High MFI in June	91% (-)
<b>Medium</b>	Raja	59,719	11,613	19,316	Ret: 477	Deteriorated	Small peak in SFI in Oct. Overall somewhat stable over 2011 rounds	116% (+)

\*based on 2.052% growth rate and returnee data (OCHA, Oct 2010-Oct 2011)

\*\*FSMS Round 5 data disaggregated by counties

\*\*\*CFSAM 2011 production coverage for the state with trend compared to 2010 production

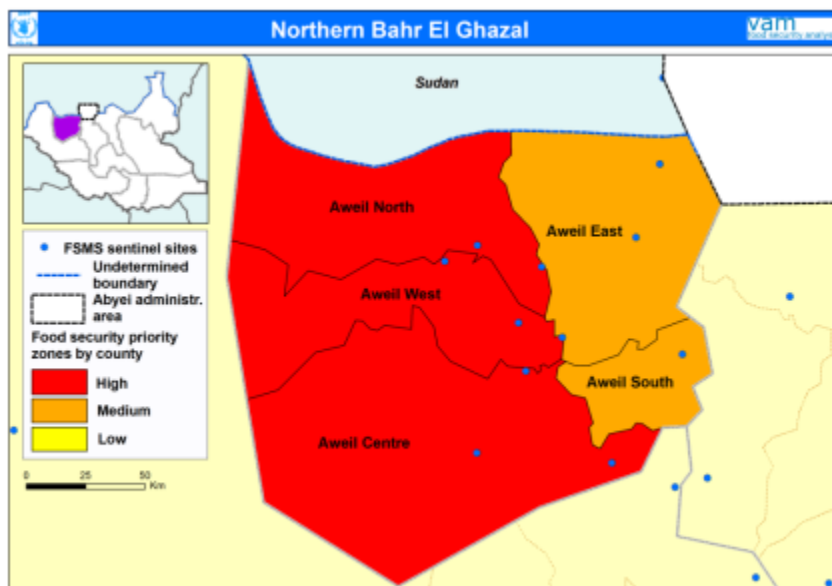
## Northern Bahr el Ghazal

### Overview:

NBS borders Southern Darfur, WBS and Warrap states. Most parts of the states lie in Western Flood Plain livelihood zone where the inhabitants are mostly agro-pastorals. The main livelihood of the population in the Ironstone plateau is agriculture producing mainly sorghum and some maize varieties. Fishing also contributes substantially as a source of income and food for some HHs in the state.

### Security situation:

The security situation in the state has been calm. However, the build up of SAF along the border is a serious threat to security in the state as earlier in the year Aweil North County was bombarded. The state hosts sizable number of returnees and IDPs.



### Rainfall:

In 2011, rainfall started on time in May but there was a dry spell throughout June and July which caused up to three re-plantings of sorghum in some northern locations and also less land was cultivated. Rains resumed in August and continued into October.

### Main findings of the FSMS October 2011 and CFSAM

#### Demographics:

The average HH size was 6.8 people. 95.5% were resident and 4.5% returnees. 63% of the HHs were female-headed. 17% of the resident HHs were hosting returnee and/or IDP.

#### Food production:

88% of the HHs cultivated crops during 2011 season; 87% cultivated sorghum, 25% groundnuts, 19% sesame, 4% maize, and 2% cultivated various crops including vegetables. Based on CFSAM the state's net cereal production has decreased 34% from 2010 with some 39,757mt production. The produce can cover 41% of the state's requirements.

#### Livestock:

NBS has the highest number of cattle in South Sudan. FAO estimates that there are some 1,644,000 cattle and CFSAM rated their condition generally excellent and water and pasture should be available. Based on FSMS about 69% of the HHs own livestock; 52% own poultry, 41% goats, 26% cattle, and 16% sheep.

#### Fishing:

7% of the HHs in the state were involved in fishing.

#### Main income sources:

The most reported main income sources were sale of natural resources (24%) and brewing (23%). Salaried work accounted for 9% while 8% rely on sale of agricultural produce and another 7% rely on livestock.

**Income reliability and sustainability:**

Based on reliability and sustainability of income, 69% of the HHs have been categorized as having poor income sources such as sale of natural resources; an increase from 55% a year ago. 25% had medium income source and only 6% had good income sources.

**Expenditure on food:**

The average expenditure on food is 63% of the total expenditures and 35% was spent on cereal purchase alone. About 56% of the HHs spent highly (over 65%) on food; a drastic increase from 31% a year ago. 20% allocated between 50 and 65% while 24% allocated less than 50% on food.

**Food access:**

Food access has significantly deteriorated as 66% were categorized with poor food access; increase from 38% a year ago. This is explained by high food expenditure and poor income sources. Further, 25% had medium and only 9% had good food access.

**Food consumption:**

HH food consumption pattern has not drastically changed from 2010 levels and currently about 10% had poor food consumption, 19% had borderline and 72% had acceptable food consumption. On average, cereals were consumed 6.5 days and protein sources 4.7 days per week. Adults consumed 1.7 and children 2.1 meals per day.

**Main food sources:**

The main source of food was market (56%) followed by own production (37%). 64% of sorghum, 63% of maize and 46% of pulses were from own production while the rest mostly relied on markets. Other food sources had minimal contribution to HHs' food.

**Shocks:**

NBS being located along the border with Sudan is one of the worst affected states in terms of food availability and prices. High food prices was the main shock (87%) followed by human sickness (82%). Other shocks included delayed rains (32%), and livestock diseases (15%).

**Coping strategies:**

The proportion of HHs adopting coping strategies increased drastically in a year from 11% to 54%. The most often reported strategies were relying on less preferred, cheaper food (51%), limiting food serving size (43%), reducing the number of daily meals (43%) and borrowing (26%).

**Food security:**

Year 2011 shows increased levels of HH food insecurity: currently 9% were severely and additional 62% moderately food insecure. The proportion of moderately food insecure has increased from 36% in a year. Only 28% of HHs were food secure. Further, CFSAM 2011 predicts HH food security to deteriorate from the first quarter of 2012 due to reduced food access because of low food stocks from own production and high food prices. Also, in case of any further shock, the currently moderately food insecure HHs may slip into being severely food insecure.

**Community priorities:**

The most main priorities of communities include food assistance, drinking water and health. Other needs identified by the communities include agricultural tools and education services.

Indicator	Specific indicators	Change	Oct-2010	Oct-2011
<b>Food security</b>	Severely food insecure	(+)	7%	9%
	Moderately food insecure	(+)	36%	62%
	Food secure	(-)	57%	28%
<b>Food consumption</b>	Poor	(+)	8%	10%
	Borderline	(+)	18%	19%
	Acceptable	(-)	74%	72%
<b>Relative expenditures on food</b>	Medium	(-)	24%	20%
	High	(+)	31%	56%
<b>Relative expenditure on cereal</b>		(+)	16%	35%
<b>Income reliability</b>	Poor	(+)	55%	69%
	Medium	(-)	36%	25%
	Good	(-)	9%	6%
<b>Coping (Medium &amp; High)</b>		(+)	0%	5%



**Table 16:** County summary for Northern Bahr el Ghazal State

Priority	County	Population numbers			IDP/refugee/ returnee	Trends		% of cereal consumption covered by production** *	Other information
		Estimated population in 2012*	Estimated food insecure residents**			Food security (annual)	Food insecurity (seasonal)		
			Severe	Moderate					
<b>High</b>	Aweil North	153,787	21,738	104,898	Ret: 13,132	Deteriorated	Peaks in Feb and improves in June with deterioration in Oct 2011	37% (-)	51% reduced production in 2011
<b>High</b>	Aweil South	80,766	5,326	36,727	Ret: 370	Stable	Stable	88% (-)	
<b>Medium</b>	Aweil Centre	76,790	9,407	47,617	Ret: 31,229	Deteriorated	Improvement in June	11% (-)	
<b>Medium</b>	Aweil West	186,722	14,076	125,433	Ret: 5,665	Deteriorated	Peaks in Feb and improves in June with deterioration in Oct 2011	46% (-)	37% reduced production in 2011
<b>Medium</b>	Aweil East	353,351	33,297	262,932	Ret: 15,761	Improvement in severity scale	SFI peaks in June	45% (-)	32% reduced production in 2011

\*based on 2.052% growth rate and returnee data (OCHA, Oct 2010-Oct 2011)

\*\*FSMS Round 5 data disaggregated by counties

\*\*\*CFSAM 2011 production coverage for the state with trend compared to 2010 production

## Warrap

### Overview:

Warrap state has two livelihood zones; Western Flood Plains and Ironstone Plateau. Abyei borders it to the North, WBS to the West, WES to the South, and Lakes and Unity states to the East. The state is still hosting 47,592 displaced residents from Abyei. Although cattle rearing remain an important source of livelihood, the state has a huge potential for agricultural productivity as well as large opportunity for fishing which contributes HHS' food and income sources.

### Security situation:

The security situation in Warrap has been relatively stable although cattle raiding remain major threat between the communities in Warrap and Unity states. There have been also isolated incidences within the state related to inter-tribal fighting in Tonj East and South counties. Series of inter-communal clashes took place in the months of July and August. The state authorities with the help SPLA soldiers completed disarmament of civilians in Greater Tonj and Greater Gogrial areas.

The areas bordering Sudan remain tense following the occupation of Abyei by SAF and the current build up of troops along the border. Inter-state cattle raiding and ethnic clashes are some of the threats to lives and livelihoods.

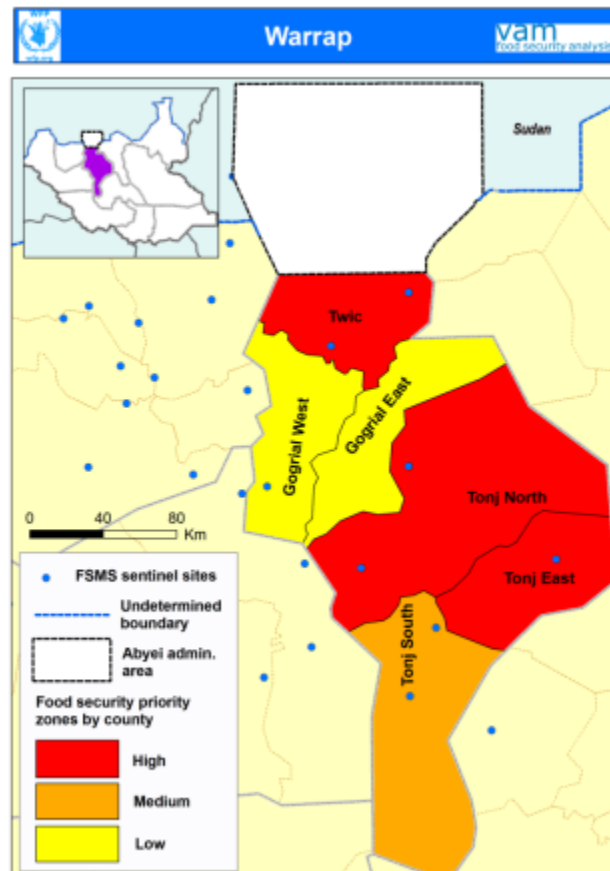
### Rainfall:

The rains started slightly late in May, followed by prolonged dry spell lasting 4 to 5 weeks until late June. Normal rainfall was received in July but it varied between counties. Heavy rains in August and September caused flooding. Tonj East county was specifically affected due to prolonged dry spell whereas parts of Twic and Gogrial West counties experienced flooding in low lying areas. The agro-climatic situation affected crop performance and less land was cultivated.

### Main findings of the FSMS October and CFSAM

### Demographics:

Average HH size was 6.7 people. 99% were residents (up from 93% in 2010) and 1% IDPs. In 2010 sample included 4% of returnee HHs. 85% of the HHs were male-headed and this is an increase from 39% in 2010. 10% of the resident HHs were hosting a returnee or IDP.



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**Food production:**

All HHs cultivated in 2011 instead of 91% in 2010, all of them sorghum, 38% groundnuts, and 32% maize. CFSAM 2011 estimates 46,033mt net cereal production which is 51% less than in 2010. The production can cover 44% of the state's cereal requirements for 2012.

**Livestock:**

FAO estimates that there are some 1,591,000 cattle in the state in 2011. CFSAM reports livestock condition as good and water and pasture being available. Based on FSMS 78% of HHs own livestock; an increase from 60% in 2010. 58% own cattle, 52% goats, 43% poultry, and 18% sheep.

**Fishing:**

About 12% of the HHs were involved fishing activity and this is an increase from 8% in 2010. As the main income, fishing was reported only by 1% of the HHs. Fish was consumed 0.9 days per week for the whole sample while fishing HHs consumed fish 2.3 days per week.

**Main income sources:**

Livestock (26%) and agriculture (21%) were the main income sources like in 2010. Brewing brought the main income to 22%, skilled/salaried work to 7% and casual labour for 6%.

**Income reliability and sustainability:**

There has been an improvement in income sources from last year. Currently only 17% rely on poor income sources compared to 34% a year ago. Medium reliable sources provide now 26% instead of 31% and the proportion of HHs with good income sources has increased to 57% from 35% in 2010.

**Expenditure on food:**

More than half (53%) the HHs' expenditure went to food and about 29% was spent on cereals. About 41% spent over 65% on food purchase and this has increased from 2010 when 27% spent this highly on food. 19% spent between 50 and 65% and 40% less than 50%.

**Food access:**

Food access is a combination of income reliability and food expenditure indicators. Therefore, the improved income sources but increased proportion of HHs spending highly on food showed somewhat steady food access compared to 2010. 26% had poor food access, 25% medium and 49% had now good food access compared to 23%, 33% and 44% respectively in 2010.

**Food consumption:**

HHs currently consume better food compared to 2010. Only 7% had poor food consumption compared to 32% a year ago. Also, the proportion of borderline consumption has increased to 15% from 28% while 78% had acceptable consumption. Cereals were consumed on average 6.6 days per week while the average protein (meat, fish, eggs, pulses) consumption was 5.3 days per week. Adults had 1.9 and children 2.6 meals per day.

**Main food sources:**

Own production was the main source of food in the state; 90% of sorghum, 84% of maize and 87% of pulses were from own stocks. Compared to 2010, the importance of own production has increased at least 10 % point for each food item.

**Shocks:**

The proportion of HHs reporting expensive food as a shock has increased from 45% to 78%. Human sickness was the second most common shock reported by 67% (increase from 43% in 2010) while late rains were reported as a shock by 54% of the HHs.

**Coping strategies:**

Increase of HHs who have adopted coping strategies has increased from 36% to 45%. The most often adopted strategies were reducing meal serving size (40%), consumption of cheaper, less preferred food (40%), reducing the number of meals (35%), and limiting adults' consumption (25%). 3% of the HHs were categorized having medium coping strategies index while the rest had low coping index.

**Food security:**

HH food insecurity levels have improved as only 5% were severely food insecure compared to 14% in 2010. Also, the proportion of moderately food insecure has reduced from 34% to 26% while currently 69% are food secure.

**Community priorities:**

The main community priorities identified are: health assistance, water, food aid and security.

Indicator	Specific indicators	Change	Oct-2010	Oct-2011
<b>Food security</b>	Severely food insecure	(-)	14%	5%
	Moderately food insecure	(-)	34%	26%
	Food secure	(+)	51%	69%
<b>Food consumption</b>	Poor	(--)	32%	7%
	Borderline	(-)	28%	15%
	Acceptable	(+)	40%	78%
<b>Relative expenditures on food</b>	Medium	(+)	17%	19%
	High	(+)	27%	41%
<b>Relative expenditure on cereal</b>		(+)	23%	29%
<b>Income reliability</b>	Poor	(-)	34%	17%
	Medium	(-)	31%	26%
	Good	(+)	35%	57%
<b>Coping (Medium &amp; High)</b>		(+)	2%	3%

**Table 17:** County summary for Warrap State

Priority	County	Population numbers			IDP/refugee/ returnee	Trends	Food security (annual)	Food insecurity (seasonal)	% of cereal consumption covered by production** *	Other information
		Estimated population in 2012*	Estimated food insecure residents**							
			Severe	Moderate						
<b>High</b>	Twic	239,921	20,179	112,404	Ret: 16,532	Stable	Drop in February but has deteriorated steadily from there on.	46% (-)	Borders Abyei. Dry spell 51% reduced production. 2010 production covered 103% of state's requirements.	
<b>High</b>	Tonj East	126,721	11,990	45,474	Ret: 124		Highest peak in June (20% severe + 32% mod)	30% (-)	Dry spell Insecurity 49% reduced cereal production	
<b>High</b>	Tonj North	180,376	7,585	32,364	Ret: 250	Improved	Highest prevalence of SFI in February (9%) in 2011	43% (-)	Dry spell 48% reduced cereal production	
<b>Medium</b>	Tonj South	95,185	3,002	18,028	Ret: 782	Improved	SFI increases in Feb (15%) but highest FI in June.	47% (-)	Dry spell 49% reduced production. 2010 production covered 94% of state's requirements.	
<b>Low</b>	Gogrial East	112,929	4,749	19,137	Ret: 329	Improved	Highest SFI in Feb. In June 96% were food secure.	53% (-)	Dry spell 46% reduced production. 2010 production covered 101% of state's requirements.	
<b>Low</b>	Gogrial West	280,022	5,888	50,243	Ret: 14,098	Stable	SFI non- existent in June but overall levels remain somewhat steady.	48% (-)	Dry spell 50% reduced production. 2010 production covered 103% of state's requirements.	

\*based on 2.052% growth rate and returnee data (OCHA, Oct 2010-Oct 2011)

\*\*FSMS Round 5 data disaggregated by counties

\*\*\*CFSAM 2011 production coverage for the state with trend compared to 2010 production

## Central Equatoria

### Overview:

CES has three livelihood zones; Ironstone Plateau, which covers Terekeka and parts of Juba county, Hills and Mountains which covers Juba county, and the Greenbelt which covers Lainya, Yei, Kajokeji, Morobo and parts of Juba. The state borders WES to the West, Lakes and Jonglei states to the North, EES to the East and also has a shared international border with Uganda and Democratic Republic of Congo to the South. Proximity to Eastern Africa has created opportunities for cross-border trade which has had significant boost to the improving food access in the state in addition to own production.

### Security situation:

The security situation is generally stable albeit criminal incidences that occur occasionally. With exception of the western county of Yei where there are LRA threats, the rest of the state has had a low to no security scale of insecurity incidences from 2009 to 2011.

### Rainfall:

Rains started in March with below-average during April to June. Increased rainfall in July and August caused some water-logging in localized areas.

### Demographics:

The average HH had 7.3 members and 62% of the HHs were male-headed. About 98% of the HHs were residents and 2% were returnees. Although there is a presence of IDPs they number less than 1% of the sampled population. 8% of the resident HHs were hosting IDP and/or returnee.

### Food production:

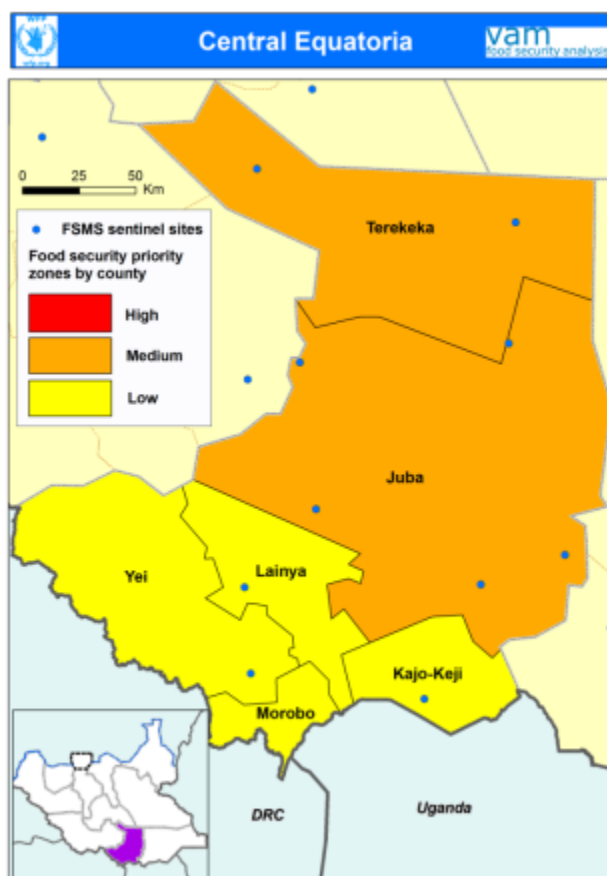
The state has two cropping season generally while the pastoral areas of Terekeka and the Hills and Mountains have one season. This has provided the state a potential for food production which starts as early as February/March and lasts until November/December. Based on FSMS, 82% of HHs cultivated in 2011; 63% cultivated sorghum, 53% groundnuts, 43% maize. The CFSAM 2011 estimates 16% reduced net cereal production at 77,771mt which covers 47% of the state's cereal needs.

### Livestock:

FAO estimates that there are some 914,000 cattle in the state in 2011. CFSAM found livestock body condition being good and pasture and water are available. Based on FSMS, 73% of HHs own livestock; 57% goats, 39% poultry, 17% cattle, and 2% sheep. About 22% of HH think that their livestock condition has improved. A proportion of 67% of HH mentioned that the number of livestock had increased, 44% better grass and availability of water remained the same (78%).

### Fishing:

13% of the HHs were engaged in fishing activities. 66% of HHs say that access to fishing grounds has remained same as in 2010. On average fish was consumed once per week whereas fishing HHs consumed it twice per week.



**Main income sources:**

The main income source in state are sale of crops (31%), salaried work (20%), sale of natural resources (16%), brewing (9%), and casual labour (8%).

**Income reliability and sustainability:**

50% of the HHs were categorized of having poor income sources, 33% had medium sources while only 18% had good income.

**Expenditure on food:**

Currently 33% allocate >65% of their expenditures on food, 30% allocate 50-65% whereas 38% allocate less than 50% on food purchases. Relative expenditure on food was 53% and the expenditure on cereals constituted 21% of the overall food expenditure.

**Food access:**

41% of HHs had poor food access, 34% medium and 25% had good food access. Food access is a composite indicator derived from food expenditures and income reliability.

**Food consumption:**

4% of the HHs had poor food consumption, 23% borderline and 74% had acceptable consumption. FSMS data indicates that the consumption is the worst in February and improves over the months with the best consumption in October. HHs consumed staple on average 6.8 days and protein 5.3 days per week. Adults consumed 1.6 meals and children under-5 2.1 meals per day.

**Main food sources:**

Market was the main source of food: 56% of sorghum, 62% of maize and 52% of pulses were bought. Most of the HHs not relying on markets used their own produce instead.

**Shocks:**

The main shocks reported were: expensive food (71%), human sickness (38%), delay of rains (33%) and other, such as lack of water (25%).

**Coping strategies:**

73% of the HHs were using coping strategies to bridge the food access gap. The most often used coping strategies were limiting portion size at meals (45%), eating less preferred and less expensive foods (43%), reducing the number of meals eaten (36%) and borrowing (22%).

**Food security:**

Food security status of HHs is calculated by using food availability and access indicators. The proportion of severely food insecure HHs improved during the 2011 FSMS rounds. Currently 3% were severely and 41% moderately food insecure whereas 55% were food secure.

**Community priorities**

The main community priorities identified are food assistance (50%), drinking water (20%), health assistance (20%) and road repairs (20%).

Indicator	Specific indicators	Change	Oct-2010	Oct-2011
<b>Food security</b>	Severely food insecure	( + )	4%	3%
	Moderately food insecure	( + )	17%	41%
	Food secure	( - )	79%	55%
<b>Food consumption</b>	Poor	( )	-	4%
	Borderline	( )	-	23%
	Acceptable	( )	-	74%
<b>Relative expenditures on food</b>	Medium	( )	-	30%
	High	( )	-	33%
<b>Relative expenditure on cereal</b>		( )	-	21%
<b>Income reliability</b>	Poor	( )	-	50%
	Medium	( )	-	33%
	Good	( )	-	18%
<b>Coping (Medium &amp; High)</b>		( )	-	3%



**Table 19:** County summary for Central Equatoria State

Priority	County	Population numbers			IDP/refugee/ returnee	Trends Food security (annual)	Food insecurity (seasonal)	% of cereal consumption covered by production** *	Other information
		Estimated populatio n in 2012*	Estimated food insecure residents**	Severe					
Medium	Juba	418,439	15,413	225,587	Ret: 12,778		Higher SFI in Feb-June	24% (-)	
Medium	Terekeka	156,321	7,677	89,654	Ret: 3,391		Higher SFI in Feb-June	98% (+)	
Low	Lainya	102,713	2,522	38,880	Ret: 5,424		Higher SFI in June	41% (-)	31% reduction in cereal production
Low	Yei	222,151	4,091	63,705	Ret: 2,724		SFI in June but no drastic differences	53% (-)	
Low	Kajo-Keji	215,517	6,615	74,163	Ret: 1,559		Stable SFI, high MFI in Feb	68% (-)	28% reduction in cereal production. 2010 production filled 96% of the state's requirements.
Low	Morobo	124,421	2,291	35,679	Ret: 11,569			49% (-)	

\*based on 2.052% growth rate and returnee data (OCHA, Oct 2010-Oct 2011)

\*\*FSMS Round 5 data disaggregated by counties

\*\*\*CFSAM 2011 production coverage for the state with trend compared to 2010 production

## Unity

### Overview:

The state has three livelihood zones; Nile Sobat Rivers, Western Flood Plains and Eastern Flood Plains. Livelihoods in the region have traditionally been based on agro-pastoralism and fishing. Despite of vast oil deposited, the livelihood has been based mainly on agro-pastoralism and fishing to some extent. Cattle raiding, banditry and local politics continue to undermine livelihoods of the people.

### Security situation:

In 2011, security became a challenge in the state. Abiemnhom, Mayom and Mayiandit counties were affected by frequent incidences of insecurity from March through July 2011. These counties have not been accessible due to landmines and farming activity was affected. In addition there are about 17,646 refugees displaced from South Kordofan.

### Rainfall:

Rains started late in May followed by a dry spell of about six weeks. Rains improved in August but with uneven distribution.

### Main findings of the FSMS

#### Demographics:

Average HH size was 9.1 members. 90% of sampled HHs were residents while 8% were returnees and 2% IDPs. Unity had the highest proportion of female-headed HHs: 71% while 29% of the HHs were male-headed. 30% of the resident HHs were hosting IDPs or returnees; some 10 percent point reduction from 2010.

#### Food production:

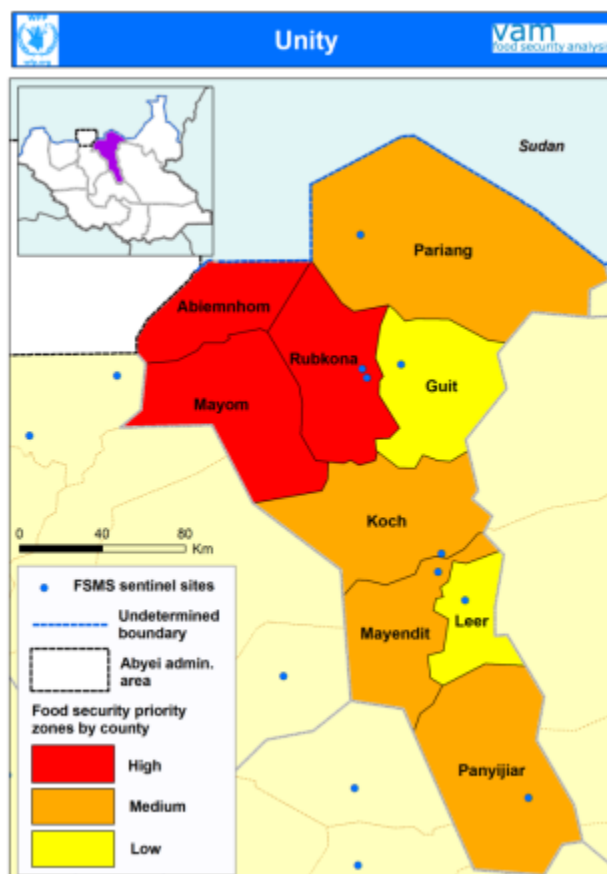
Based on CFSAM 2011, the estimated net cereal production has reduced 65% from 2010 production to 8,195mt. This is adequate to cover only 12% of the state's annual cereal requirements. Based on FSMS, 84% of the HHs cultivated in 2011 and this is a 9 percent point increase of from 2010. The most often cultivated crops were maize (72%) and sorghum (65%).

#### Livestock:

FAO estimates that there are some 1,229,000 cattle in the state in 2011. CFSAM found livestock condition being good and pasture and water is available for the animals. Based on FSMS, 85% of HHs own livestock; 75% cattle, 40% goats, 25% poultry, and 20% sheep.

#### Fishing:

About 28% of the HHs were involved fishing activity. Fish was consumed 2.2 days per week for the whole sample while fishing HHs consumed fish 2.8 days per week.



**Main income sources:**

Main income sources include agriculture (31%), casual labour (21%), sale of natural resources (13%), salaried work (13% and livestock (9%),

**Income reliability and sustainability:**

17% of the HHs rely on poor income sources such as sale of natural resources. The medium and good reliable income sources each account for 27% and 56% respectively. The proportion of HHs with good income source has increased from 37% in 2010.

**Expenditure on food:**

The number of HHs spending highly (>65% of total expenditures) on food has increased from 12% to 29% in a year. Also, currently 29% spend 50-65% on food instead of 15% in 2010. Those who spend <50% has reduced from 73% to 42%.

**Food access:**

HH food access has reduced slightly from 2010. Currently 18% have poor food access instead of 13% in 2010 and 28% have medium access and increase from 18%. The proportion of HHs with good food access has reduced to 52% from 69%. Food access is a combination of income reliability and food expenditure indicators.

**Food consumption:**

The proportion of HHs with poor food consumption has reduced to 2% from 9% in 2010. Borderline consumption has remained somewhat stable at 12% while currently 87% had acceptable consumption; in increase from 81% in 2010. Cereals were consumed on average 6.6 days per week while the average protein (meat, fish, eggs, pulses) consumption was 4.5 days per week. Adults had 2 and children 2.2 meals per day.

**Main food sources:**

The main staples, sorghum and maize were mostly obtained from own production (67% and 89% respectively) while market was the main source for the other HHs. 53% bought pulses from the market while 45% used own produce.

**Shocks experienced:**

The main shocks reported were human diseases (77%), expensive food (65%), livestock diseases (36%), insecurity (33%) and floods (18%).

**Coping strategies:**

39% of the HHs have adopted coping mechanisms to secure food. The most often adopted strategies were reducing meal serving size (33%), reducing the number of meals (32%), borrowing/relying on kinship support (32%), and consumption of cheaper, less preferred food (31%).

**Food security:**

Food security situation has slightly improved in Unity state. Currently only 1% are severely food insecure while 20% are moderately food insecure. In 2010, 6% were severely and 15% moderately food insecure. 80% were food secure. Due to security concerns during FSMS October 2011 round, the food insecurity levels are likely to be biased/too low and therefore ANLA technical team has adjusted the figures so that 4% are severely and 21% moderately food insecure while 75% are food secure.

**Community priority:**

Water, health and education were the main priorities identified in the Unity State.

Indicator	Specific indicators	Change	Oct-2010	Oct-2011
<b>Food security</b>	Severely food insecure	(-)	6%	4%
	Moderately food insecure	(+)	15%	21%
	Food secure	(-)	79%	75%
<b>Food consumption</b>	Poor	(-)	9%	2%
	Borderline	(+)	11%	12%
	Acceptable	(+)	81%	87%
<b>Relative expenditures on food</b>	Medium	(+)	15%	29%
	High	(+)	12%	29%
<b>Relative expenditure on cereal</b>		(+)	17%	26%
<b>Income reliability</b>	Poor	(+)	14%	17%
	Medium	(-)	49%	27%
	Good	(+)	37%	56%
<b>Coping (Medium &amp; High)</b>		(-)	4%	3%

**Table 20:** County summary for Unity State

Priority	County	Population numbers			IDP/refugee / returnee	Trends			Other information
		Estimated population in 2012*	Estimated food insecure residents**			Food security (annual)	Food insecurity (seasonal)	% of cereal consumption covered by production***	
			Severe	Moderate					
<b>High</b>	Abiemnhom	27,436	1,162	8,451	Ret: 8,905			8% (-)	64% reduced cereal production
<b>High</b>	Mayom	143,349	9,105	44,158	Ret: 11,857			13% (-)	69% reduced cereal production
<b>High</b>	Rubkona	127,736	5,409	26,232	Ret: 18,552	Deteriorated	Peak in Feb	9% (-)	56% reduced cereal production
<b>Medium</b>	Pariang	92,848	5,504	26,694	Ret: 3,044			24% (-)	49% reduced cereal production
<b>Medium</b>	Mayendit	73,761	2,186	9,846	Ret: 15,176	Slightly improved	Slight reduction in Feb and highest levels in Oct.	12% (-)	76% reduced cereal production
<b>Medium</b>	Panyijar	58,183	2,217	6,572	Ret: 2,932	Stable	Slight peak in Feb	13% (-)	74% reduced cereal production
<b>Low</b>	Guit	38,525	1,305	5,934	Ret: 2,574	Slightly deteriorated	Peaks in Feb	13% (-)	71% reduced cereal production
<b>Low</b>	Koch	89,472	3,031	10,106	Ret: 7,925	Stable but increased SFI	Peaks in Feb	13% (-)	53% reduced cereal production
<b>Low</b>	Leer	72,390	613	22,299	Ret: 14,635	Improved	Reduction after Oct	8% (-)	74% reduced cereal production

\*based on 2.052% growth rate and returnee data (OCHA, Oct 2010-Oct 2011)

\*\*FSMS Round 5 data disaggregated by counties

\*\*\*CFSAM 2011 production coverage for the state with trend compared to 2010 production

**Annex 1: South Sudan Nutrition Cluster: Pre-harvest surveys 2011**

No	State	County	Lead Agency	WHZ		MUAC		Crude Mortality	Under 5 Mortality
				GAM	SAM	GAM	SAM		
1	EES	Lopa Lafon	Merlin	17.8%	4.8%	21.3%	5.4%	0.43	1.2
2	EES	Magwi	Merlin	4.0%	0.3%	4.9%	1.1%	0.19	0.17
3	EES	Torit	Merlin	9.1%	2.1%	13.4%	3.2%	0.36	0.98
4	EES	Kapoeta North	Save the Children	18.3%	3.7%	16.3%	1.9%	1.53	1.54
5	EES	Kapoeta South	SMoH	19.5%	3.9%	16.2%	3.4%	0.6	2.46
6	EES	Kapoeta East	SMoH	16.2%	3.5%	10.2%	0.6%	0.74	0.26
7	Jonglei	Akobo East	Save the Children	28.6%	6.0%	17.1%	3.3%	1.94	3.92
8	Jonglei	Nyirrol and Akobo West	Save the Children	13.8%	2.1%	5.8%	0.8%	1.95	5.14
9	Jonglei	Wuror	Tearfund	14.6%	2.6%	3.5%	0.5%	0.66	0.46
10	Jonglei	Pochalla	CRADA	12.2%	0.7%	3.7%	0.8%	0.44	0.63
11	Jonglei	Bor	Samaritan's Purse	16.5%	2.3%	5.0%	0.6%	0.61	0.78
12	Lakes	Yirol East	SMoH	13.7%	3.0%	14.0%	2.9%	0.03	0.30
13	Lakes	Cueibet	SMoH	16.1%	2.4%	14.8%	1.7%	1.11	1.33
14	NBeG	Aweil East	ACF	23.5%	5.3%	13.5%	2.0%	0.10	0.00
15	Upper Nile	Maiwut	Save the Children	19.1%	6.4%	7.5%	2.4%		
16	Warrap	Gogrial West	ACF	22.4%	4.6%	9.9%	0.8%	0.33	0.39
17	Warrap	Tonj South	World Vision Int.	18.9%	3.9%	13.1%	1.6%	0.47	0.73
18	Warrap	Tonj North	World Vision Int.	19.0%	0.8%	16.4%	2.9%	0.38	1.26
19	Warrap	Gogrial East	World Vision Int.	19.9%	4.2%	12.7%	2.5%	1.05	1.8
20	Warrap	Twic	GOAL	24.9%	6.2%	4.7%	1.1%	0.35	1.32



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