



**A Desktop Study on Food
Security to Identify Priority Areas
for Title II Food Aid for MYAP
Southern Sudan and the Three
Areas**

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Food and Nutrition Technical Assistance II Project (FANTA-2)

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Table of Contents

Acronyms and Abbreviations	i
Executive Summary	ii
1. Introduction	1
2. Methodology.....	2
3. Findings.....	4
3.1 Southern Sudan.....	4
3.1.1 <i>How many</i> people are likely to be food insecure in 2010?	4
3.1.2 <i>When</i> are people food insecure?.....	4
3.1.3 <i>Who</i> is food insecure?	7
3.1.4 <i>Where</i> are food insecure people?.....	15
3.1.5 Conclusions: Where to target food aid in 2010?.....	18
3.2 The Three Areas – Abyei, Blue Nile and Southern Kordofan	19
References.....	22
Annex A. Population Estimates Based on 2.6 Percent Annual Increase.....	24
Annex B. Spontaneous Returnees from Place of Displacement to Final Destination (Tracked in Area of Return).....	26
Annex C. Estimates of Numbers of Displaced and Returnees for 2010 by State Based on the Assumption that Same Percentages of Table 9 Are Applicable to Population Estimates for 2010	27

List of Tables

Table 1. Overview of States of Southern Sudan by Grades of Food Insecurity*	ii
Table 2. Estimate of Food Insecure Population for 10 States in SoSu.....	4
Table 3. Seasonal Calendar for All States except Greenbelt, Hills and Mountains Areas*	6
Table 4. Malnutrition Rates (Percentage of Children Under 5 Years of Age) by State	8
Table 5. FS Related Features of IDPs/Refugees, Returnees (Defined Here as Returned within Previous 12 Months) and Residents	11
Table 6. Overview of Returnees Influx by State and Counties	12
Table 7. Overview of Current IDPs and Refugees Numbers (IDMC09b)	12
Table 8. Current Estimates of Displaced People in 6 States* (IDMC09a).....	13
Table 9. Overview of Resident, Returnee and Displacement Status by State (Percent of Total Population)	13
Table 10. Percent of Widows and/or Female headed HHs.....	14
Table 11. Primary School Attendance and Completion per State (SHHS07*)	15
Table 12. Overview of food insecurity (indicators) by state	16
Table 13. Food Insecure States and Counties by Different Grades of Food Insecurity	17
Table 14. Overview of the States of Southern Sudan by Grades of Food Insecurity (the Darker the Area, the More Food Insecure the State)	18
Table 15. Primary School Attendance and Completion per State (SHHS07).....	19
Table 16. Overview per State on Malnutrition Rates (Percentage) (Children Under 5 Years of Age).....	20

Acronyms and Abbreviations

ANLA	Annual Needs and Livelihood Assessment
AWD	Acute Watery Diarrhea
CES	Central Equatoria State
CFSAM	Crop and Food Security Assessment Mission
CPA	Comprehensive Peace Agreement
EBF	Exclusive breastfeeding
EES	Eastern Equatoria State
FA	Food Aid
FAO	Food and Agriculture Organization
FFE	Food for Education
FFT	Food for Training
FFW	Food for Work
FS	Food Security
GAM	Global Acute Malnutrition
HH	Household
HPG	Humanitarian Policy Group
IDMC	Internal Displacement Monitoring Centre
IOM	International Organization for Migration
LRA	Lords Resistance Army
MCHN	Maternal Child Health and Nutrition
MYAP	Multi-year Assistance Project
NBG	Northern Bahr el Ghazal
NES	Northern Equatoria State
NGO	Non-Governmental Organization
OCHA	Office for the Coordination of Humanitarian Affairs
SHHS	Sudan Household Health Survey
SoSu	Southern Sudan
SSCSE	Southern Sudan Commission for Census, Statistics and Evaluation
UNHCR	United Nations High Commission for Refugees
UNMIS	United Nations Mission in Sudan
USAID	US Agency for International Development
VAM	Vulnerability Assessment Mapping
WES	West Equatoria State
WBG	Western Bahr el Ghazal
WFP	World Food Programme

Executive Summary

This desktop study was conducted in April 2009 to identify priority geographic areas for conditional food aid (FA) projects within the context of the new Title II multi-year assistance projects (MYAPs). The study focused on Southern Sudan (SoSu) and the Three Areas Abyei, Southern Kordofan and Blue Nile and aimed to:

1. Identify populations, states and counties vulnerable to food insecurity
2. Compile available data on food security (FS) indicators, and to take into account numbers of displaced persons and returnees, access to education and primary school enrolment.
3. Provide a variety of options for geographic targeting of FS interventions, in particular Title II projects

The study looked at common FS trends throughout SoSu and the Three States, taking into account recurrent but transient food insecurity, as well as chronic food insecurity. In addition, it looked at malnutrition rates, disease burden and other indicators linked to food insecurity. The study drew heavily on information from the Southern Sudan Commission for Census, Statistics and Evaluation (SSCSE), Food and Agriculture Organization, (FAO), World Food Programme (WFP), Famine Early Warning System (FEWSNET), relevant non-governmental organization (NGO) reports, as well as International Organization for Migration (IOM) and United Nations Mission in Sudan (UNMIS) data.

In SoSu, food insecure areas are widespread. Reasons for food insecurity vary by state and by county. **Table 1** shows where FA could reduce food insecurity on the basis of where most at-risk groups can be found. Taking into account risk factors¹ and the geographical locations of the specific groups at high risk for food insecurity, four groups of states were identified. All states marked in a color are food insecure; the darker the area, the more food insecure the state. Especially Warap, Northern Bahr el Ghazal (NBG), Jonglei and East Equatoria State (EES) appear to be the states that could most benefit from appropriate, conditional FA.

Table 1. Overview of States of Southern Sudan by Grades of Food Insecurity*

	Poor HHs	High Stunting	High GAM	Poor hygiene	Poor care/health	High returnees	High IDPs/refugees	Many female headed HHs	Food insecure
Warap	x		x	x	x	x	x		x
NBG	x		x	x	x	x	x		x
Jonglei	x		x	x	x			x	x
EES	x	x		x		x	x		x
Upper Nile		x	x		x			x	x
Unity	x	x		x	x	x			
WBG	x	x			x	x	x	x	x
Lakes				x	x	x		x	
WES		x?			x	x			
CES							x	x	

*The darker the area, the more food insecure the State

Data for the Three Areas were limited. However, many risk factors are similar and it makes sense to target the same vulnerable groups as were identified for the states of SoSu. Unfortunately, specific data were lacking for where these groups are located, making more specific geographic targeting recommendations impossible.

¹ In this table, only risk factors were included that showed geographical differences between States; high casual labor/petty trade, recurrent shocks and low school attendance were not sufficiently distinctive among States.

1. Introduction

The objective of this desktop study is to identify priority geographic areas for food security projects, particularly within the context of new Title II MYAPs. The study focused on SoSu and the Three Areas Abyei, Southern Kordofan and Blue Nile, and aimed to:

1. Identify populations, states and counties vulnerable to food insecurity
2. Compile available data on FS indicators and to take into account numbers of displaced persons and returnees, access to education and primary school enrolment
3. Provide a variety of options for geographic targeting of FS interventions, in particular Title II projects

This desktop study looks at to whom and where conditional FA should be provided. The conditions of FA are 'work,' through the provision of physical labor (adults; food-for-work, FFW) and/or 'capacity-building,' through: 1) attending primary school (children; food-for-education, FFE), 2) learning new skills (adolescents, adults; food-for-training, FFT), and/or 3) participation in nutrition/health/hygiene behavior change promotion and use of health services (women, children; food-assisted Maternal Child Health and Nutrition (MCHN)). With the exception of attendance in primary school, the work, capacity building and nutrition/health promotion/service participation should directly contribute to:

- Producing food and otherwise increasing its availability
- Producing income, controlling food prices and promoting food access
- Adequately utilizing foods (in terms of consumption and/or in terms of physiological utilization of nutrients); this includes behavior change related to food utilization (general) and infant and young child feeding and caring practices in particular (USAID04)
- Creating a healthier and cleaner living environment with safe water and sanitation, and adequate health care

This report is divided in two main sections: SoSu and the Three Areas. The report first describes potential numbers of FA recipients. Subsequently, it looks at timing issues (when people become more food insecure on top of a chronic food insecurity baseline such as seasonal and transient), specific food insecure groups and their features, and where these groups can be found geographically. It then provides final recommendations on geographical FA targeting.

2. Methodology

The Title II MYAPs for SoSu will be implemented starting in mid-2010. To anticipate the likely distribution of food insecurity in 2010, this desktop study looks at common food insecurity trends throughout SoSu and the Three Areas, taking into account recurrent but transient food insecurity, as well as chronic food insecurity. In addition, it looks at malnutrition trends (which may be only partially related to food availability and access) and disease burden in order to link FA programs with child survival goals.

The desktop study took place over 15 days in April 2009, and only secondary information sources were used, mostly from 2007-2009. As requested by USAID, the study heavily drew on data provided by SSCSE, FAO, WFP, FEWSNET/Livelihood Analysis Forum, relevant NGO reports, as well as IOM and UNMIS data.

The study purposefully did not take into account the state-specific recommendations and conclusions from some of the reports (the ANLA09March-version and Crop and Food Security Assessment Mission (CFSAM09) in particular). This is because these reports were aimed only at a specific year, and findings often could not be extrapolated to trends over longer time frames. Findings and recommendations were often presented in great detail and were specific to transient causes that may no longer be an issue. Because they were so specific, it was often not possible to extrapolate these conclusions and recommendations and apply them to this report. However, their data were used to gain a greater understanding of the context, and were matched with other sources for triangulation purposes.

The analysis was conducted taking administrative areas (states and counties) as the starting point rather than physiographic characteristics (flood plain, ironstone plateau, greenbelt, etc.). This was for practical reasons since most relevant sources used for this study present data using administrative boundaries rather than livelihood zones.

Limitations of this desktop study

- Only very limited data were available for the Three Areas. The analysis could be strengthened with soon-to-be available reports such as from the WFP Vulnerability Assessment Mapping (VAM) for South Kordofan to be released possibly May 2009. The recent NGO expulsions from some of these areas also limited access to information from some locations (see Part II).
- The Census 2008 data were unavailable at the time of the study and population figures therefore would benefit from renewed scrutiny in 2010.
- Limited data on FS were available for Western Equatoria State (WES) and Central Equatoria State (CES) as these areas usually have few problems with food availability since they are surplus areas. The ANLA09 report states that WES and CES are considered food secure. However, statistics concerning health, childcare practice and drinking water/hygiene are not as complete in WES (SHHS07). CES is also a large recipient state for refugees from the DRC, putting it at risk for elevated food insecurity.
- The data on IDPs/refugees and returnees were scattered among many sources, and more information is available on assisted than on spontaneous returns (the latter being the largest group). It was easier to find cumulative data on IDPs, refugees and returnees since the CPA than on annual trends per county. In addition, different sources provided different information on different categories of displaced persons. For example, information was available alternately on refugees only, returnees only or IDPs only. Other times, information was only available on UN-assisted returns, and sometimes on both spontaneous and assisted returns (UNMIS, UN High Commission for Refugees (UNHCR), IOM, Office for the Coordination of Humanitarian Affairs (OCHA)). To complicate matters further, some returnees became displaced or displaced people became doubly displaced as a result of the previous war and subsequent, tribal conflicts, which continue to be a serious problem. This study analyzed mostly data from UNMIS, the Internal Displacement Monitoring Center (IDMC) and IOM for numbers of IDPs, refugees and returnees because they were the most recent and comprehensive sources of information.

The desktop study aimed to be indicative for targeting conditional FA for 2010 (and beyond) in a more developmental context. Any decision on the provision of FA for humanitarian purposes should be refined closer to the start of new MYAPs, taking into account projections of FEWSNET and other sources that track returns and disasters.

3. Findings

Note: In all tables with states listed, data marked in grey deserve special attention because of particularly high or low values.

3.1 SOUTHERN SUDAN

3.1.1 How many people are likely to be food insecure in 2010?

Based on previous calculations and projections from 2008 and 2009, an estimation was made for 2010 for the total population of SoSu. Assuming that in 2010 the annual trend of 2.6% population increase is correct (previously used by CFSAM09, ANLA09), approximately 9.9 million people will inhabit SoSu (**Table 2**). From those people approximately 1.3-1.9 million (13–19%) will be food insecure. This is based on data from 2006-2009.

Table 2. Estimate of Food Insecure Population for 10 States in SoSu

Year	Food insecure (million)	Total population (million)	Source
1998	1.4	4.0	a
1999	1.9	5.0	a
2000	1.7	6.4	a
2001	1.8	6.4	a
2002	1.4	4.9	a
2003	1.6	6-7.0	a
2004	1.5	6-7.0	a
2005	1.7	8.0	a
2006	1.9	8.7	a
2007	1.7	9.0	a
2008	< 1.7, 1.3	10.12	b, e, f
2009	1.3	9.7	c, d
2010	1.3 – 1.9	9.9	See Annex A

a=WFP, NID, SSCSE, MICS

b= <http://www.fews.net/ml/en/info/Pages/fmwkfactors.aspx?gb=sd&l=en&fmwk=pop>

c=Fewsnet 2009

d=CFSAM09

e=CFSA

f=ANLA08

Ideally Household (HH) ration planning in SoSu should be based on numbers of individual beneficiaries within the targeted HHs as HH size varies substantially through SoSu: from six in Western Bahr el Ghazal (WBG) and EES to nine to 10 in Lakes and Unity nine to 10 (an average HH size in SoSu was estimated 7.5.) (ANLA09). However, IOM reports that the average HHs of returnees was 4.5 (IOM08).

3.1.2 When are people food insecure?

Many people are chronically food insecure throughout the year in SoSu. However, many people experience seasonal aggravations due to particular events. Planning of FA should take into account the seasonal or transient worsening of food insecurity. The 'generic' seasonal calendar in **Table 3** provides guidance for FA planning taking into account both chronic and transient food insecurity due to shocks (floods, droughts, tribal conflicts).

The different components of food insecurity (availability, access and utilization) are more prominent in different months of the year. In the following months there will be particular problems concerning:

Availability

- In May-August or earlier resulting from drought or floods during the previous year

Access

- In January-April in case of increased tribal fighting (which is recurrent due to animal movements following seasonal grazing areas)
- In May-August due to seasonal food price increases (prior to harvesting) or earlier in case of limited harvest during previous year
- In July-October due to physical access constraints (roads) in case of floods

Utilization

- In February-May (dry season) due to diarrheal disease outbreaks
- In July – September (wet season) due to malaria

Table 3. Seasonal Calendar for All States except Greenbelt, Hills and Mountains Areas*

Description	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Source
Rain	Dry season					Wet season						b,c	
Planting				+	+	+							c
Cropping season						+	+	+	+	+	+		b
Harvesting										For Jun/Sep crops			b
											For Jun/Nov crops		
Lean period ('Hunger' season)					++	++	++	++					b
Acute Malnutrition		+	+	+	+	+							b,f
Floods	Fishing (in the following year)						Early Flooding			Food Shortage			b
									Late Flooding				b
Cattle raiding (simultaneous with livestock movements)	+	+	+	+	+	+							b
Recurrent insecurity	+	+	+	+							+	+	e
Population returns (IDPs, returnees)	+	+	+	+	+								b
Labor opportunities (dependent on area)	+	+	+	+	+	+	+	+	+	+	+	+	c
Fever						+	++	++	++	+	+		a
Malaria							++	++	++				a
Diarrhea AWD, Bloody and non-bloody diarrhea, gastritis, intestinal parasites	+	++	++	++	+	+							a
Cholera/shigellosis				+	+								a,d
Respiratory infections (pneumonia and other)	Throughout the year constant												a
Measles	Unrelated to season (related to crowding,, vaccination coverage)												d

a=POP07

b=Fewsnet 2009

c= SSLP04

d=personal communication Michelle Gayer, WHO

e=OCHA09

f=ACF07, CARE06, Concdrn05

*WES, CES, West of EES

3.1.3 Who is food insecure?

FA can be targeted in various ways using:

- Physiological vulnerability (e.g. young children, pregnant and lactating women, older people, the disabled and people living with chronic illness)
- Geographical vulnerability (e.g. people living in areas with high food insecurity)
- Political vulnerability (e.g. marginalized populations)
- Internal displacement and refugee status (e.g. those who have fled with few resources)

Taking into account the above, the desktop study analyses who was actually food insecure in SoSu and the specific features of their vulnerability.

The following groups or HHs were found to be food insecure:

- Poor HHs
- Children under-five years of age
- IDPs/refugees, returnees
- Female headed HHs
- HHs that heavily depend on casual labor and petty trade
- HHs affected regularly by shocks

The reason these groups are identified is explained below. In addition, a paragraph on education is included to map out areas for possible FFE.

Poor HHs

The ANLA09 survey found that 92% of people with few assets were severely food insecure². The SHHS07 also found that in SoSu wealth was the strongest predictor of FS status. Limited data were available for the states where the majority of poor people live in SoSu, but the ANLA09 reported that EES, NBG, Jonglei, Unity, WBG and Warap have particularly high numbers of poor households.

Children Under Five Years Old

SoSu has a relatively long history with high malnutrition rates often above or just below emergency thresholds. In **Table 4**, an overview is given of malnutrition rates for children under-five years over the last few years by State. The (global acute malnutrition) GAM data is to a certain extent comparable (as most were calculated with NCHS as reference). However, many surveys were done in different months and varied in sample size. These figures give an indication of how many children are malnourished each year.

As will be discussed below, feeding and caring practices are inadequate in SoSu, and this is known to be a significant underlying cause of malnutrition among the youngest children at around the age of weaning. These factors are known to contribute to high rates of malnutrition regardless of food access and availability. We can therefore assume that children under-two make up a significant proportion of malnourished children even though most data were only disaggregated to show the level of malnutrition among children under-five. Since a primary target of MYAPs is usually the reduction of chronic malnutrition, it is worth noting that children under-two are particularly vulnerable to permanent damage such as stunting and mental impairment due to malnutrition, and are thus able to benefit most from preventative interventions. This is further supported by results of a recent USAID-funded study conducted in Haiti, which confirm that because the prenatal period and the first two years of life are the critical period for a child's physical and cognitive development, malnutrition must be addressed within that window of time (Ruel et al. 2009).

² This desktop study assumes asset refers in the SoSu context mainly to livestock and productive assets.

Table 4. Malnutrition Rates (Percentage of Children Under 5 Years of Age) by State

State	Underweight (mod+sev)		Stunting (mod+sev)		Global Acute Malnutrition (GAM) (defined by weight-for-height <-2 standard deviations from the median (2006 WHO growth standards), wasting and/or edema)				
	SHHS 07*	ANLA 08* cf o.c. ANLA 2009 p31	Shhs 07*	ANLA 08 cf o.c. ANLA 2009 p31	SHHS 07*	ANLA 09* (2008 data in ANLA2009 p31)	NGO data per State	NGOs Counties	
Jonglei	39.5	25.1	32.5	16.8	28.0	19.6	22.4	18.7 – 20.8 ('03-'07; j)	Khorfulus/Atar 23.9 (f), 24.1 (g), 31.6 (j) Wuror 20.3 (j), 22.2, 26.6, 22.9 (p) South Bor 27.7 (j), 39.3 (p) Baliet 20.8 (j) Nyirrol 17.3 (j) Old Fangak 14.0, 11.6 (p) Duk 22.7 (p) Zeraf 20.6 (p)
Upper Nile	35.6	29.9	31.1	23.0	30.3	13.7	14.2	19-24 (c)	Malut 21.0 (j), 28.1 (p) Malakal 22.2 (j) 18.0, 21.3, 26.7, 27.3, 21.9 (k) Renk IDP 17.7(j) Renk payams 13.9 (j) Mayiandit 20.4 (p)
Unity	42.9	17.2	38.6	18.0	30.9	16.9	17.7		Rubkuona 18.4, 20.5 (j) Rub Kuona and Bentiu towns 18.8 (m), 18.2 (n) Mayom 15.6 (j)
Warap	33.6	25.6	28.9	12.6	24.6	25.4	27.0		Gogrial West 14.5 (d), 14.3 (e), 19.0 (j), 25.2 (p) Gogrial east 13.5 (d), 14.6 (e), 20.5 (p) Twic 25.4 (j), 21.0 (p) Twic/Abyei 30.0 (p). 21.3, 30.7, 28.7, 25.4, 22.6 (t) Tonj N 6.2 (j) Tonj 21.5, 10.6, 16.7, 20.9 (p)
NBG	41.6	24.8	37.8	18.7	30.9	11.8	12.4	16-23 (c)	Aweil 17.8 (a), 16.4 (b) 12.9 (p) Aweil N&E 13.6, 14.5, 21.2, 14.8. 15.9 (p) Aweil East 16.9 (h), 19.9 (i) 12.7 (j), 13.0, 23.3, 26.3 (p) Aweil S 13.2, 18.4, 15.2, 20.5 (p) Aweil N&W 19.6. 23.8, 20.3, 18.3 (p)
WBG	37.2	25.6	41.3	24.2	23.7	11.7	12.0		

Lakes	19.0	13.2	29.8	10.6	13.0	9.3	9.9		Awerial 11.6 (p)
WES	21.6		38.0		10.4	Not measured			
CES	25.2		32.8		9.8	Not measured			Kajokeji 8.3 (p)
EES	33.6	28.1	33.6	29.4	18.7	7.2	8.9		Kapoeta 19.1, 10.1 (p)

a=MSF08 WHO ref
 b= MSF08 NCHS ref
 c= CARE06
 d= ACF/WVI08 NCHS ref
 e=ACF/WVI08 WHO ref
 f=AC08Jonglei NCHS ref
 g= AC08Jonglei WHO ref
 h= AC08NBG NCHS ref

i= AC08NBG WHO ref
 j=ACF07
 k=GoSS/MoH/ACF08
 m=ACF08Unity NCHS ref
 n= ACF08Unity WHO ref
 p= CONCERN05
 t= GOAL08Twic
 *calculated using NCHS reference

Underweight: rates were high in all states except Lakes, WES and CES.

Stunting: The differences between data of SHHS07 and data quoted in ANLA09 (p31) are noteworthy – the data from SHHS07 were, overall, one third to twice as high as more recent data. It is not possible with the information available to determine whether this difference is due to a different methodology or due to an improvement overall in SoSu. It is clear though, that stunting is particularly high in WBG, EES, Upper Nile, Unity and possibly WES.

GAM: The SHHS07 GAM rates are also substantially higher in each state except Warap than the ANLA08 rates. Acute malnutrition (wasting + edema) is particularly high in Warap, Jonglei, Upper Nile and NBG. More specifically, NGO surveys show counties such as Twic/Abyei, Gogrial (Warap), Khorfulus/Atar, South Bor, Wuror and Duk (Jonglei), Malakal (Upper Nile), and all Aweil counties (NBG) have high GAM rates. If SHHS07 is disregarded as an outlier among reports, these States have constant GAM rates between 15-25%.

Conclusion: High rates of all forms of malnutrition are found in Unity, WBG, NBG, Jonglei, Warab, Upper Nile, EES and possibly WES.

Many children are malnourished because of recurrent ill-health and inadequate feeding and caring practices. This is confirmed by numerous reports from NGOs. Malnutrition due to lack of access to and possibly lack of availability of food exists, but this relationship is complex and not straightforward with each form of malnutrition in every state (ANLA09). It seems that acute malnutrition is more related to dry season conditions when water resources deplete significantly: water becomes scarce resulting in congested water points, with an increased risk of contamination and reduced quantity of water for hygiene measures. Diarrheal disease outbreaks thus coincide with the dry season, and the GAM peaks. Furthermore, many NGO surveys and analyses have described that health environment and behavioral practices are more likely to influence the GAM and that especially water and hygiene issues in the dry season were felt to be prime factors affecting nutritional status (CARE06). Chronic malnutrition (stunting) seems particularly linked to recurrent illness (diarrhea, malaria, respiratory tract infections) and lack of adequate food intake (quality, quantity).

The ANLA09 showed a relationship between FS and acute malnutrition: 28% of the severely food insecure, but only 17% of the food secure, were acutely malnourished.

Due to the links among inadequate hygiene, feeding and care practices, disease burden and malnutrition, this desktop study also considers the distribution of poor hygiene and sanitary environment, and health and feeding and care practices among the states.

WASH - Water Hygiene and Sanitation

A very poor sanitary environment for families was found in Warap, EES, Jonglei, NBG, Unity and Lakes (SHHS07). Overall in SoSu, 85% of the people use open air defecation (ANLA09). Jonglei in particular had limited access to adequate drinking water sources. (SHHS). Generally, in SoSu, over 20% of the HHs were found to use rivers/ponds as their source of water (ANLA09). In Jonglei, WES, CES, and Lakes, over 50% of the households took more than one hour to fetch drinking water, which has an impact on the quantity of water used at home. Water is fetched by adult women in 60% of HHs. The time they spend fetching water could have a negative impact on feeding and care practices (SHHS07).

Child care practice

The rate of exclusive breastfeeding (EBF) for infants below six months is low in all States: around 15-20%, except CES and Warap, where up to 30% of mothers practice EBF (SHHS07). Unity and NBG are particularly low in EBF. Statistics for Sudan show that malnutrition in any form is most common around and beyond the age of 12 months. Starting at six months of age, adequate, complementary feeding practices are crucial (SHHS07). The frequency of providing complementary food to six-to-11 month-olds was inadequate in all SoSu States except WES and CES, but was particularly bad in Unity, WBG, Lakes, NBG, Jonglei, Warap and Upper Nile (SHHS07).

Health Services

With the exception of CES, the vaccination coverage of children aged 12-23 months is extremely poor in all States with NBG, WBG, Lakes and WES being particularly poor. Of all children aged 12-23 months in these States, 5.5-8.2% received all vaccinations (DPT1-3, OPV-1-3, BCG, measles vaccinations). In Jonglei and Warap, this percentage ranged from 12-14% (SHHS07).

In NBG, WBG, EES and Jonglei, very few HHs have insecticide treated bed nets available; only five percent of the people had one in 2006 (SHHS07). Data from the ANLA09 showed that EES had a very low proportion of children six-to-59 months old using bed nets. However, all the other States showed above 70% use of bed nets for children under-five years. It is important to note that the survey respondents were not asked if the children were using insecticide treated bed nets (ANLA09), which makes the aforementioned data not comparable.

Morbidity among children under-five was high with on average 41%, 46% and 60% of children suffering from watery diarrhea, cough and fever, respectively in all States (ANLA09). As the survey was done in the wet season, these averages are not representative for each month. There was little difference among the states, however morbidity was slightly lower in EES and Upper Nile.

IDPs/Refugees and Returnees

IDPs/refugees and returnees are a specific group that proved to be particularly food insecure. **Table 5** provides some FS related features. IDPs and refugees came out as the highest risk group in terms of food insecurity, followed by returnees.

Table 5. FS Related Features of IDPs/Refugees, Returnees (Defined Here as Returned within Previous 12 Months) and Residents

	IDPs/refugees	Returnees	Residents
From all surveyed food insecure people ANLA09	60% (of which over half were severely food insecure)	49% (of which almost half were severely food insecure)	34% (of which one third were severely food insecure)
Not cultivating* ANLA09	74%	53%	21%
Poor food consumption pattern ANLA09**	28%	23%	17%
Assets status ANLA09	56% are asset poor	33% are asset poor	34% are asset poor
Food assistance recipients ANLA09	1% of the total food resources comes from FA 3% of the total food sources comes from FFW	4% of the total food resources comes from FA 3% of the total food sources comes from FFW	1% of the total food resources comes from FA 2% of the total food sources comes from FFW
Casual labor and petty trade as main livelihood strategy ANLA09	53% from all IDPs/refugees	54% from all returnees	20% from all residents

*Various reasons given, not one that came out strongly according to ANLA09: drought, floods, pests, insecurity and human sickness.

**In terms of frequency, nutritional value and dietary diversity

Most statistics are available only for assisted returns of IDPs and refugees. However, the majority of returns, on average, 71% do so without organized assistance from IOM/State/UNHCR (UNMIS09). **Table 6** shows that, in 2008, the majority of the *returnees* in SoSu went to Jonglei, EES and NBG. Many returnees are relatively food insecure, as was demonstrated in the previous table. This means that, in 2008, these states therefore had many food insecure people.

Spontaneous return seems particularly high in Unity, WBG, Lakes and WES. These states are of concern given this high level of spontaneous (and therefore possibly unassisted) returns. IOM08 showed a higher overall burden of returnees in NBG, WBG, Lakes, Warap and Unity during the entire period *post CPA to June 2008*.

Table 6. Overview of Returnees Influx by State and Counties

	Total <i>returns</i> IDPs/refugees in 2008 (both organized and spontaneous)(a)	Percentage of total IDPs/Refugees that <i>returned in 2008</i> in SoSu (b)	Percentage of spontaneous IDPs/Refugees that <i>returned</i> (without IOM/UNHCR/ State organization) (b)	Returnee case load over time <u>since CPA to June'08</u> (tracked in area of return) IOM08 (c, D)	Counties where most people returned to – i.e. highest case load for that state over time since CPA to June'08 (tracked in area of return) (IOM08) (D)
Jonglei	54,408	13.3	79.3		N+S Bor
Upper Nile	38,686	9.5	56.6		Manyo, Nasir
Unity	42,052	10.3	80.3	High (esp. from NoSu)	Koch, Leer
Warap	21,078	5.1	64.9	High (from NoSu)	Gogrial W, Twic
NBG	72,318	17.7	69.5	High (esp. from Darfur and NoSu)	Aweil N+E
WBG	31,729	7.8	90.7	High (esp. from Darfur)	Jur River
Lakes	41,109	10.0	96.8	High (from NoSu)	Rumbek Central
WES	13,322	3.3	99.0		Mundri, Yambio
CES	32,933	8.0	74.4		Lainya
EES	61,588	15.0	34.5		Ikoto
	409,223	100%			

a= UNMIS09

b=calculated on base of data UNMIS under A

c=IOM08

d= The returnees as classified in the last two columns of Table 6 would not have the definition of 'returnee' according to ANLA09, since they returned over 12 months ago (it represents cumulative data).

There was a notable increase in the number of returnees in March/April 2008 due to people returning to be counted in the 2008 Census. As a result, there were increased organized returns by states, as well as more spontaneous returns (IOM08 tracking). More information on the final destinations of spontaneous returnees over time can be found in Annex B. This map illustrates the complexity of population movements within Sudan and the constraints of making projections. According to IDMC, 'There are no comprehensive surveys available of the total number of IDPs in Southern Sudan' (IDMC09b). IDMC advises that a rough distinction be made among the various causes of displacement as shown in **Table 7**.

Table 7. Overview of Current IDPs and Refugees Numbers (IDMC09b)

1) IDPs/refugees who were displaced by the war between the government in Khartoum and the SPLA	4 million IDPs, 600,000 refugees (in total since the war, however many have returned) Based on IOM data from 2008, currently approx. 4% of people are IDPs (based on data from NBG, Warap, Unity and WBG)
2) IDPs who have been displaced more recently by numerous inter-communal conflicts	Since January 2008 until January 2009 approx. 187,000 – this changes week by week
3) IDPs/refugees in the south of SoSu who have been displaced by attacks by the Ugandan Lord's Resistance Army (LRA).	18 Feb 2009: approx. 35,500 IDPs in CES and WES and approx. 16,100 refugees who fled DRC.

Source: [http://www.nrc.ch/idmc/website/countries.nsf/\(httpEnvelopes\)/DF8FB4EE85B267D7C125755C00612F53?OpenDocument](http://www.nrc.ch/idmc/website/countries.nsf/(httpEnvelopes)/DF8FB4EE85B267D7C125755C00612F53?OpenDocument)

Table 8 shows absolute numbers of IDPs based on current knowledge. The limited data show high numbers in CES, EES and NBG.

Table 8. Current Estimates of Displaced People in 6 States* (IDMC09a)

State	Number of IDPs	Source
Central Equatoria	39,405	UNMIS/RRR
Eastern Equatoria	23,713	UNMIS/RRR
NBG	29,516	IOM, based on an assessment of 188 villages, with IDPs 4.5 per cent of the population
WBG	7,323	IOM, based on an assessment of 20 villages, with IDPs 8.1 per cent of the population)
Unity	3,834	IOM, based on an assessment of 62 villages, with IDPs 2.0 per cent of the population
Warap	11,709	IOM, based on an assessment of 167 villages, with IDPs 2.6 per cent of the population

Source: [http://www.nrc.ch/idmc/website/countries.nsf/\(httpEnvelopes\)/0026B2F86813855FC1257570006185A0?OpenDocument](http://www.nrc.ch/idmc/website/countries.nsf/(httpEnvelopes)/0026B2F86813855FC1257570006185A0?OpenDocument)

In the ANLA09 report, resident, returnee and IDP status were recorded (**Table 9**). *Returnees* make up five percent of the total population in the SoSu population, while four-to-five percent of the population seems to have been constantly *displaced* over last three years. Data from four states (NBG, Warap, Unity and WBG) by IDMC confirms that four percent of the population is displaced (by the previous civil war).³

Table 9. Overview of Resident, Returnee and Displacement Status by State (Percent of Total Population)

	Resident	Returnee	Displaced
Jonglei	97	2	2
Upper Nile	97	2	1
Unity	93	4	3
Warap	81	5	15*
NBG	95	4	1
WBG	86	7	8
Lakes	94	5	1
WES	not recorded		
CES	not recorded		
EES	88	10	2

*exceptional, due to recent conflict in Abyei
Source: (ANLA09)

For obvious reasons, extrapolations and trends for the future are difficult to make concerning returnees and displaced as these groups are constantly changing. However, Annex C provides some estimates for 2010 by state based on the assumption that the same percentages as in **Table 9** are applicable to population estimates for 2010 (Annex C). EES, NBG and Warap could be of concern in this scenario. This extrapolation forecasts at least 600,000 displaced and returnees in SoSu. This extrapolation does not include data from CES and WES.

Female-Headed HHs

The ANLA09 showed that female headed HHs were particularly food insecure when women were either widowed or separated from their husband. The SHHS07 also found this to be the case.

³ <http://www.nrc.ch/idmc/website/countries.nsf/>.

Table 10. Percent of Widows and/or Female headed HHs

State	Widow*	Female headed HHs**
	ANLA09	ANLA09
Jonglei	11	12
Upper Nile	15	14
Unity	6	11
Warap	4	6
NBG	7	8
WBG	13	19
Lakes	7	15
WES	Not recorded	
CES	Not recorded	
EES	13	14

*Most widows reside in female headed HHs. Figure in table represents what % of all individuals interviewed were widows.

**The % of all HHs that are female headed.

Table 10 shows that Jonglei, Upper Nile, WBG and Lakes have a particularly high prevalence of female headed HHs.

HHs that Heavily Depend on Casual Labor and Petty Trade

Those HHs that are dependent on casual labor and petty trading are food insecure: 51% and 38% of food insecure HHs engaged in casual labor or petty trading, respectively (ANLA09). No data were available on which states have relatively larger numbers of people with these livelihood strategies.

HHs Affected Regularly by Shocks

According to SHHS07, people who recurrently experience shocks, either natural disasters or conflict-related, were food insecure. Different areas are hit by floods in different years, such as Upper Nile (2007); NBG, Warap and Upper Nile (2008), and Jonglei (2009). People living in these areas are subject to the impact of floods on crops, assets and health. A shock such as drought conditions primarily in certain states will also have an impact throughout SoSu by affecting livestock grazing areas, as herds move to better pasture in non-drought areas, or increased food staple prices resulting from lower country-wide harvest levels. Internal conflicts, LRA attacks, cattle raiding attacks, etc. flare up in different States at different times. However, currently the biggest contributing factor to displacement in SoSu states (except WES and CES) is inter-communal fighting (IDMC09).

It is important to note here that food insecure people spend as much as 70% of their income on food (ANLA09). Cereal prices (sorghum) have increased since early 2008 and those HHs that are dependent on purchasing cereals from the market (the so-called net buyers) are at risk if the trends in 2009 and 2010 do not change.

Education

Primary school enrollment is generally low in SoSu. Enrolment of 'mothers of the future,' i.e. girls today, could have a future nutritional impact as education of women is related to the wellbeing of their children. In SoSu, poorer HHs tend to have fewer children enrolled in primary school (SHHS07). The poorer the HH the worse the school attendance record (SHHS07). In particular, fewer girls will be enrolled if families are poor. There is a low rate of primary school completion amongst poor HHs in SoSu; however, middle income, as well as the richest families, have only slightly more than half their children finishing primary school. **Table 11** shows that the primary completion rate is low in every state. The main source of data, the SHHS, did not give interpretations or explanations for this low enrollment, making it difficult to give specific recommendations on whether FFE would be an appropriate response. It is important to determine the underlying causes of the low enrolment rates before planning FFE interventions. Perhaps thought

could be given to using FFE to boost enrollment if poverty and food insecurity are the underlying causes. FFE could perhaps also build on existing momentum for enrolment where rates are already somewhat higher. FFW could complement FFE where schools are not currently available. However, if inadequate income, food insecurity or lack of schools is not the primary factor, FFE may not have a significant impact on increasing enrolment.

Table 11. Primary School Attendance and Completion per State (SHHS07*)

States	% children of primary school entry age attending grade 1	% children of primary school age attending primary or secondary school	ratio girls to boys attendance (1=equal attendance girls and boys, <1=fewer girls attending)	Primary school completion rate
Jonglei	6.6	9.7	0.8	2.7
Upper Nile	8.1	22.8	0.9	4.2
Unity	1.9	4.3	0.9	0.4
Warap	2.0	7.7	0.7	0.4
NBG	1.0	5.7	0.4	1.7
WBG	4.8	8.7	0.6	1.0
Lakes	3.9	11.3	0.6	0.4
WES	15.4	44.9	0.9	5.0
CES	20.0	43.0	0.9	2.3
EES	5.6	13.9	0.9	1.6

* based on Figure ED5, *not* Table 8.7 SHHS as it contains illogical figures.

3.1.4 Where are food insecure people?

The study looked at general food insecurity analyses from various sources and reports from the last three years with the emphasis on data from 2008 and 2009 (**Table 12**). From the aggregated data, EES, NBG, Warap, and Jonglei reflect particularly high food insecurity, taking into account access to adequate food, availability, coping strategies and wealth.

Table 12. Overview of food insecurity (indicators) by state

State	Food consumption		Food Access	Coping	Food insecure			Food availability			Food insecurity	Households
	poor and borderline food consumption	poor food consumption pattern (a)	poor food access (c)	use of severe coping mechanisms (e)	severe	moderate	food insecure sum of severe and moderate	cereal crop projections			estimates and projections (x marked: food insecure)	% of Poor households of total
	SHHS07	ANLA09	ANLA09	ANLA09	ANLA09	ANLA09	previous columns total	CFSAM09	CFSAM08	CFSAM07	FEWSNET'08,'09	ANLA09
Jonglei	40.2	15.0	17.0	6.0	13.0	18	31.0	deficit	deficit	small deficit	x	50-55
Upper Nile	36.6	Unknown(b)	15 (b)	?	4 (b)	21 (b)	25 (b)	deficit	deficit	surplus	x	45-50
Unity	26.1	8.0	13.0	7.0	4.0	21	25.0	deficit	deficit	equal		50-55
Warap	41.8	22.0	41.0	8.0	20.0	34	54.0	surplus	small deficit	small deficit	x	50-55
NBG	40.5	18.0	24.0	3.0	14.0	24	38.0	large deficit	large deficit	deficit	x	60-65
WBG	27.6	18.0	27 (d)	6.0	14.0	29	43.0	equal	surplus	small deficit		50-55
Lakes	31.7	24.0	3.0	4.0	7.0	22	29.0	surplus	surplus	surplus		45-50
WES	21.8							large surplus	large surplus	large surplus		
CES	15.4							surplus	surplus	small deficit		
EES	31.0	20.0	22.0	3.0	13.0	23	36.0	deficit	deficit	large deficit	x	60-65

a=in terms of frequency, nutritional value and dietary diversity

b=ANLA09/data on Upper Nile possibly underestimated but similar figures might be comparable to Unity as similar livelihood zone.

c=composite indicator: a poor food access – HH spends high proportion of food while depending on poor and unreliable income sources

d=esp in Jur River County

e=sale of assets, consumption of seed stocks, taking children out of school

Table 13 shows the states classified by different grades of food insecurity. Based on FEWSNET and ANLA, most recent data from 2008 and 2009, the following counties have either been moderately to highly food insecure in 2008 and/or are forecast to be moderately-to-highly food insecure in 2009, and need specific attention on food insecurity for 2010.

- Warap** - Gogrial E/W, Twic, Tonj
- NBG** - Aweil N/E/S
- Jonglei** - Wuror, Nyirol, Pochalla, Akobo, (Waat)
- Upper Nile** - Mabaan, Wanding, Maiwut, Ulang, Luakpiny
- EES** - Torit, Kapoeta

Table 13. Food Insecure States and Counties by Different Grades of Food Insecurity

State	Extremely Food insecure counties				Highly Food Insecure counties				Moderately Food Insecure counties			
	a	b	c	d	a	b	c	d	a	b	c	d
Jonglei								Nyirol, Diror, Wuror, Akobo, Pochalla	South Bor, Pibor, Twic E, Duk, Ayod, Old Fangak, Khorfulus, Nyirol, Wuror, Akobo, Pochalla	Nyirol, Waat, Wuror, Akobo	Nyirol, Waat, Wuror, Akobo	
Upper Nile						Mabaan	Mabaan			Wanding, Maiwut, Ulang, Luakpiny	Wanding	Ulang, Maiwut, Luakpiny
Unity												
Warap	Gogrial E/W				Tonj N/S/E, Gogrial E/W				Twic	Twic, Gogrial	Gogrial	
NBG	Aweil E								Aweil N/S	Aweil N/W/E		Aweil N/W/E
WBG					Jur River							
Lakes									Awerial, Yirol W, Rumbek E/N, Cueibet			
WES												
CES									Terekeka			
EES					Torit, Lopa				Magwi, Ikotos, Kapoeta N/S/E	Kapoeta, Torit		Torit

a=projections for 2009: source ANLA09

b=projections for Feb/Jun2009: source FEWSNET09

c=estimates Oct/Dec08: source FEWSNET 2008

d=estimates Jan08: source FEWSNET 2008

3.1.5 Conclusions: Where to target food aid in 2010?

Food insecure areas are widespread over SoSu. Reasons of food insecurity, however, vary among food insecure people per state and per county. The greatest impact of FFW, FFT or food-assisted MCHN will be in different areas, and on different groups. FFW for poor HHS might not have an impact on the malnutrition rates of their children in the dry season while it might have an impact on their overall quality of life over time. FFT can be meaningful for returnees and IDPs in urban areas but less so for female-headed HHS with young children. Poor resident HHS in river areas would benefit from certain interventions, such as FFW to support boat-construction more than the displaced.

FA alone is unlikely to be sufficient if directed only at children with high acute malnutrition rates; those children would benefit more if their parents engaged in FFW programs, such as boreholes construction, latrines construction (if appropriate), as well as food-assisted MCHN programs that include nutrition/health/hygiene promotion, such as sessions on hygiene and sanitation, Oral Rehydration Salts use, EBF, appropriate infant and young child feeding and drinking water treatment. Many of these activities are likely to lower the incidence of malnutrition by addressing underlying causes.

In conclusion, although this study did not aim for programmatic recommendations, it recognizes that careful consideration is needed to map out which types of FA interventions could have the greatest impact on different vulnerable groups in different locations.

The following overview maps out where FA could reduce food insecurity on the basis of where most at-risk groups can be found. Taking into account risk factors⁴ and the geographical locations of the specific groups at high risk for food insecurity, four groups of states were identified. The darker the area, the more FS needs should be targeted as a priority.

Note: The ANLA09 survey revealed that despite some states receiving substantial FA (esp EES, WBG, and Jonglei, Upper Nile, where 35-40% and 20% of the HHS received FA respectively), many people remain food insecure. The report did not give clear reasons for this. Displaced people seemed to have received very little as they reported that FA (both conditional and unconditional) makes up only 4% of their total food sources (ANLA09).

Table 14. Overview of the States of Southern Sudan by Grades of Food Insecurity (the Darker the Area, the More Food Insecure the State)

	Poor HHS	High Stunting	High GAM	Poor hygiene	Poor care/health	High returnees	High IDPs/refugees	Many female headed HHS	Food insecure
Warap	x		x	x	x	x	x		x
NBG	x		x	x	x	x	x		x
Jonglei	x		x	x	x			x	x
EES	x	x		x		x	x		x
Upper Nile		x	x		x			x	x
Unity	x	x		x	x	x			
WBG	x	x			x	x	x	x	x
Lakes				x	x	x		x	
WES		x?			x	x			
CES							x	x	

⁴ In this table, only risk factors were included that showed geographical differences between states. High casual labor/petty trade, recurrent shocks and low school attendance were not sufficiently distinctive between states to disaggregate the data here.

3.2 THE THREE AREAS – ABYEI, BLUE NILE AND SOUTHERN KORDOFAN

The main limitations for this study:

- Data from the Three Areas do not always clearly distinguish between South Kordofan and Abyei and sometimes South Kordofan data include Abyei statistics. It is difficult to disaggregate data per area.
- Key-informants were contacted but essential reports were not shared or are not yet available.

Data that should be analyzed further are:

- South Kordofan - a rapid FS assessment was done in March 2009; data are soon to be released by the WFP/VAM unit.
- Abyei - WFP did a rapid emergency FS assessment in July in 2008. This study was only able to review the findings but not the raw data. The findings recommended continued FA in Abyei, especially FFW and FFE.
- Blue Nile – A FS assessment was done amongst returnees by WFP in April 2008. This study was only able to review the findings, not the raw data. Findings recommended continuous and extended (at least one year beyond the returnee date) support to returnees. FFW and possibly FFE should be considered. It advised monitoring malnutrition rates amongst children under-five years (Personal communication: Selamawit Ogbachristos, Programme Officer, WFP Sudan).

Matus07 and the Humanitarian Policy Group (HPG09) made FA recommendations for the Three Areas. Matus07 pointed out that, in peripheral urban areas, the poorest displaced could be targeted. It also emphasized that access to food in the Three Areas is more an issue than food availability (both South Kordofan and Blue Nile were seen as surplus crop areas) (Matus07).

HPG09 stated that a number of interventions could be promoted in the region of South Kordofan and Abyei to help address the crisis in Misseriyya livelihoods and lessen the likelihood of further conflict. The HPG09 report contained numerous livelihoods recommendations for Misseriyya that can be used for programmatic planning for conditional FA.

It is unlikely that characteristics of vulnerable people in the Three Areas are very dissimilar to the SoSu states. Poor HHs in the Three Areas are also heavily dependent on casual labor (Matus09), and investment is needed in HH recovery beyond basic subsistence. Matus raised a caution about FA purchase policies by the UN and donors: it recommended purchasing locally from farmers and not from the few big traders or elite large scale farmers as local purchase might have a meaningful impact on food production. This issue may be particularly relevant to Abyei.

Like in SoSu, primary school completion is low but school attendance and completion rates in South Kordofan and Blue Nile are much better than in any State in SoSu.

Table 15. Primary School Attendance and Completion per State (SHHS07)

States	% children of primary school entry age attending grade 1	% children of primary school age attending primary or secondary school	ratio girls to boys attendance (1=equal attendance girls and boys, <1=less girls attending)	Primary school completion rate
Blue Nile	26.1	52.9	0.8	22.1
S. Kordofan	25.9	53.3	0.8	26.4

Malnutrition rates are comparable to other States in SoSu. Most malnourished children are younger than 30 months (GOAL08Kurmuk, GOAL07).

Table 16. Overview per State on Malnutrition Rates (Percentage) (Children Under 5 Years of Age)

State	Underweight (mod+sev)	Stunting (mod+sev)		GAM		
		SHHS 07*	GOAL	SHHS07*	MICS2000	NGOs Counties
Blue Nile	36.5	40.2	31.5 (q)	11.8	10.1	Kurmuk 9.1, 11.3, 9.4, 10.2 (q)
S. Kordofan	28.1	30.1		12.4	8.1	
Abyei/Twic						30.0 (p)
Abyei			17.6 (s)			8% severe malnutrition (r) 20.0, 21.0 (s)

P=CONCERN05

Q=GOAL08Kurmuk NCHS ref

R=(personal communication Meredoc McMinn, Resident Coordinators Office #, Return, Reintegration and Recovery [RRR], Sector VI- Abyei, UNMIS.

S=GOAL07

*Calculated using NCHS reference

Morbidity patterns and feeding and care practice problems as shown by data from Kurmuk in Blue Nile and Abyei are also comparable *within* the Three Areas, as well as *with* SoSu States. ARI/Cough, Diarrhea and Malaria/Fever account for 90% of the total disease burden for children under-five years of age (GOAL08Kurmuk, GOAL07).

In both Kurmuk and Abyei EBF is very low; seven percent of all children under-six months. Only 22% and 35% of all mothers initiated breastfeeding within the first day after birth in Abyei and Kurmuk in Blue Nile, respectively. In Abyei, absence of parents during the day was seen as major problem linked to malnutrition.

However, SHHS07 showed both for South Kordofan and Blue Nile relatively better results for EBF; both areas recorded 34% of the infants under-six months were exclusively breastfed. These statistics were also much higher than recorded in the same study for the SoSu States.

SHHS07 reported poor and borderline food consumption in Blue Nile (14% of the people) and South Kordofan (32%). These data are comparable to the more food secure States CES and WES in SoSu.

In Matus07, it is estimated that there are 3.9 million people in all Three Areas, (of which 1.2 million are in South Kordofan) (HPG09). IDMC estimates that there are:

- 50,000 IDPs in Abyei (December 2008 OCHA)
- 206,00 IDPs in Blue Nile (December 2008 OCHA)
- 97,000 IDPs in South Kordofan (2008 IOM)

However, many people questioned the estimates of displaced Dinka and Misseriyya in Abyei in May 2008 (HPG09). GOAL07 found that almost five percent of the surveyed people in Abyei were IDPs within the last 12 months and 14% were IDPs within the last one-to-five years.

In Abyei, mean HH size was similar to the average in SoSu: 7.1.

Many features of the food insecure are similar to those in SoSu, and it probably makes sense to target the same vulnerable groups as were identified in this study within the SoSu states. However, this study lacks the data where these people geographically can be found.

Undoubtedly the expulsion of NGOs in Darfur affects people from Darfur, possibly forcing many to eventually migrate towards areas with more aid (Abyei). However, at present, it is unclear how many NGOs can remain operational in Abyei. Reliefweb predicted a large negative impact on FS in Abyei due to the NGO expulsions on March 10, 2009, because many people in Darfur will no longer receive humanitarian assistance from these NGOs, such as food aid, health care, etc. People might move to Abyei to find food. Additionally, some NGOs are unclear as to their current status in Abyei - whether they will be allowed to remain operational or not.

It is recommended that during the 2010, for FA planning for the Three Areas, and in particular for South Kordofan and Abyei, the situation in terms of numbers of returnees and IDPs be closely monitored and that FAO and VAM reports from 2009 be closely examined.

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Annex A. Population Estimates Based on 2.6 Percent Annual Increase

State/County	Population 2008 (CFSAM09)	Population 2009 (CFSAM09)	Population 2010 projection based on 2.6% growth (as was done in '08, '09)
Upper Nile	705 352	723 691	742 507
Returnee (07/08)*	15 852	16 264	16 687
Renk	21 151	21 701	22 265
Fashoda	52 947	54 324	55 736
Tonga	34 619	35 519	36 442
Sobat	44 649	45 810	47 001
Latjor/Nasir	430 456	441 648	453 131
Malakal	105 678	108 426	111 245
Jonglei	1 088 693	1 116 999	1 146 041
Returnee (07/08)*	14 972	15 361	15 760
Old Fangak	193 111	198 132	203 283
Duk	45 978	47 173	48 399
Nyirrol	19 704	20 216	20 742
Ayod	196 789	201 906	207 156
Twic East	86 700	88 954	91 267
Wuror	55 175	56 610	58 082
Diror	48 738	50 005	51 305
N.Bor	113 445	116 395	119 421
S.Bor	13 591	13 944	14 307
Bor Town	21 033	21 580	22 141
Pibor	167 708	172 068	176 542
Akobo	78 557	80 599	82 695
Pochalla	33 192	34 055	34 940
Unity	644 592	661 351	678 546
Returnee (07/08)*	38 577	39 580	40 609
Ruweng	53 397	54 785	56 209
Bentiu	63 099	64 740	66 423
Rubkona	56 094	57 552	59 048
Mayom	65 396	67 096	68 840
Guit	54 856	56 282	57 745
Koch	128 284	131 619	135 041
Leer	81 461	83 579	85 752
Panyijar	103 428	106 117	108 876
Warrap	1 842 830	1 890 774	1 939 934
Returnee (07/08)*	37 422	38 395	39 393
Twic	438 308	449 704	461 396
Gogrial	556 232	570 694	585 532
Gogrial Town	21 033	21 580	22 141
Tonj	789 835	810 371	831 441

State/County	Population 2008 (CFSAM09)	Population 2009 (CFSAM09)	Population 2010 projection based on 2.6% growth (as was done in '08, '09)
N. Bahr el Gazal	1 360 098	1 395 461	1 431 743
Returnee (07/08)*	172 522	177 008	181 610
Aweil W	300 068	307 870	315 875
Aweil N	202 492	207 757	213 159
Aweil E +Aw ak	422 184	433 161	444 423
Aweil S	238 665	244 870	251 237
Aweil Town	24 167	24 795	25 440
W. Bahr el Gazal	442 121	414 665	425 446
Returnee (07/08)*	37 964	38 951	39 964
Raja	38 164	39 156	40 174
Raja Town	58 843	60 373	61 943
Wau	223 172	228 974	234 927
Wau Town	83 978	86 161	88 401
Lakes	943 119	967 640	992 799
Returnee (07/08)*	79 728	81 801	83 928
Cuibet	101 273	103 906	106 608
Rumbek	381 866	391 795	401 982
Yirol	282 272	289 611	297 141
Awerial	97 980	100 527	103 141
West Equatoria	854 817	877 042	899 845
Returnee (07/08)*	16 882	17 321	17 771
Tambura	106 136	108 896	111 727
Yambio	256 333	262 998	269 836
Ezo	93 507	95 938	98 432
Maridi	178 121	182 752	187 504
Mundri	203 838	209 138	214 576
Central Equatoria	725 798	744 669	764 030
Returnee (07/08)*	20 182	20 707	21 245
Juba	70 610	72 446	74 330
Juba Town	105 062	107 794	110 597
Yei	293 609	301 243	309 075
Kajo-Keji	158 814	162 943	167 180
Terekeka	77 521	79 537	81 605
East Equatoria	840 496	862 349	884 770
Returnee (07/08)*	22 228	22 806	23 399
Torit	194 898	199 965	205 164
Budi	156 769	160 845	165 027
Magwi	128 021	131 350	134 765
Ikotos	153 900	157 901	162 006
Kapoeta	184 680	189 482	194 409
Total	9 447 916	9 654 611	9 905 631

*Returnees are included at the State level figures and not at the county level.

Annex C. Estimates of Numbers of Displaced and Returnees for 2010 by State Based on the Assumption that Same Percentages of Table 9 Are Applicable to Population Estimates for 2010

	Population 2010 based on 2.6% growth (as was done in '08 and '09)	Percentage displaced and returnees according to ANLA09		Total
		RETURNEE	DISPLACED	
		Returnees 2%	Displaced 1%	
Upper Nile	742 507	14,850	7,425	22,275
		Returnees 2%	Displaced 2%	
Jonglei	1 146 041	22,921	22,921	45,842
		Returnees 4%	Displaced 3%	
Unity	678 546	27,142	20,356	47,498
		Returnees 5%	Displaced 4.2%*	
Warrap	1 939 934	96,997	81,477 (1)	178,474
		Returnees 4%	Displaced 1%	
N. Bahr el Gazal	1 431 743	57,270	14,317	71,587
		Returnees 7%	Displaced 8%	
W. Bahr el Gazal	425 446	29,781	34,036	63,817
		Returnees 5%	Displaced 1%	
Lakes	992 799	49,640	9,928	59,568
West ES	899 845	Returnees Not recorded	Displaced Not recorded	
Central ES	764 030	Returnees Not recorded	Displaced Not recorded	
		Returnees 10%	Displaced 2%	
East ES	884 770	88,477	17,695	106,172
Total	9 905 631			Approx. 600,000

* This assumes that the demographic make-up of returnees and displaced is the same for 2010 as 2008 according to ANLA09 results.

** It was 15% according to ANLA09, but this was mostly because of the recent conflict in Abyei. Assuming that the situation gets better the average of 4.2% for SoSu ANLA09 was used.