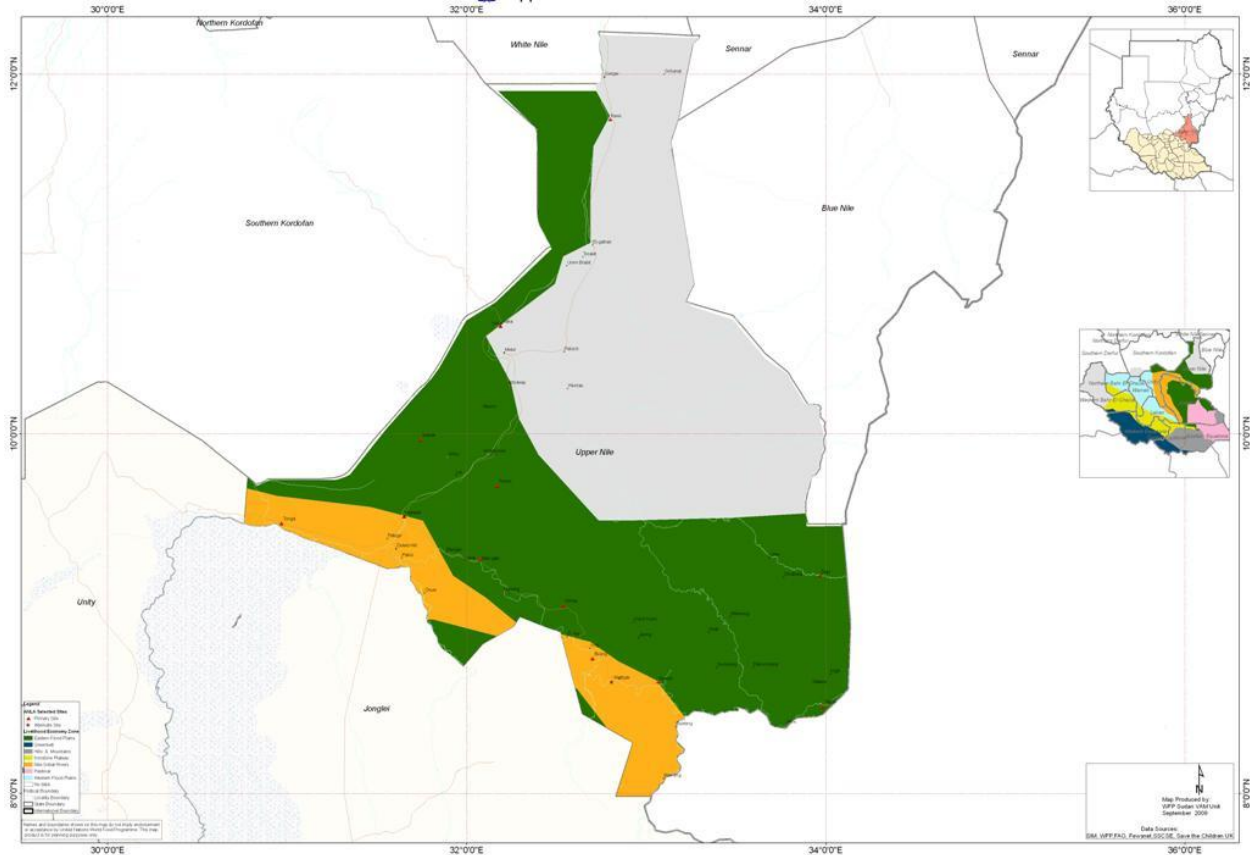


South Sudan Annual Needs and Livelihoods Assessment, 2009/2010

Uppernile State Report



**A collaborative assessment by the Southern Sudan Relief and Rehabilitation Commission (SSRRC),
Ministry of Agriculture and Forestry (MOAF),
South Sudan Commission for Census, Statistics and Evaluation (SSCSE)
World Food Programme (WFP),
United Nations High Commission for Refugees (UNHCR),
Food and Agriculture Organization (FAO),**

February 2010



World food Programme



Ministry of Agriculture
Rehabilitation and Forestry



Food & Agriculture
Organization



South Sudan Commission
for Census, Statistics and
Evaluation



South Sudan Relief &
Rehabilitation Commission

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Acknowledgements

WFP Malakal sub-office would like to thank the government partners and line ministries including MOA, MOH, SSCCSE and SSRRC for the active participation in the Annual Needs & Livelihoods Assessment (ANLA 09/10), without which the exercise wouldn't have been achieved, also our thanks are extended to the INGOs and local NGOs who took part in the process.

Acronyms

ACF	ACF – Action Against Hunger
ANLA	ANLA – Annual Needs & Livelihoods Assessment
CSI	CSI – Coping Strategy Index
FAO	FAO- Food & Agriculture Organization
FHI	FHI- Food for Hunger International
FYF	FYF – Fashouda Youth Forum
GAA	GAA – German Agro-action
GAM	GAM – Global Acute Malnutrition
GOSS	GOSS – Government Of Southern Sudan
IFP	IFP – Institutional Feeding Program
IRD	IRD – International Relief & Development
NCDA	NCDA – Nasir Community Development Agency
RI	RI – Relief International
SAM	SAM – Severe Acute Malnutrition
SFP	SFP – Supplementary Feeding Program
SSCCSE	SSCCSE – Southern Sudan Commission for Census, Statistics, and Evaluation
SSRRC	SSRRC- South Sudan Relief & Rehabilitation commission
TFC	TFC – Therapeutic Feeding Center
UNDP	UNDP- United nation Development Program
UNICEF	UNICEF- United Nations Fund for Children
UNMIS	UNMIS – United Nations Mission In Sudan
VAM	VAM - Vulnerability Analysis & Mapping
WFP	WFP- World food Program
WHO	WHO- World Health organization
WVI	WVI – World Vision International

I Executive Summary

The 2009/2010 Annual Needs & Livelihoods Assessment was carried out to assess the food security situation in Upper Nile, establish the likely impact and extent of different shocks in regard to food availability, access and utilization, and identify vulnerable sub-groups within the state in order to gauge assistance needs, response options, and targeting. To this end, a household survey, focus group discussions and key informant interviews were conducted in nine (9) locations that were purposively selected on the basis that they collectively 'represented' the food security situation of the various livelihood zones and counties in the state. Secondary data – including findings from the 2009 CFSAM – were used to complement and triangulate the primary data collected.

The findings of the assessment suggest that 19% of households in the state are severely food insecure with an additional 34% moderately food insecure and at risk of becoming severely food insecure. They also suggest that the food security situation differs significantly by livelihood zone with the proportion of severely food insecure households in the Eastern Flood Plains (31%) more than triple that in the Nile and Sobat zone (9%). This disparity is largely attributable to the combination of access to fishing and comparatively better (and year-round) access to main markets and food areas via road and river networks in the Nile and Sobat zone and erratic and inadequate rainfall in the Eastern Flood Plains which led to widespread crop failure for short-term varieties normally harvested in August, increasing cereal prices in response to low supply and high demand, distress sales of livestock, and declining livestock prices and livestock-to-cereal terms of trade. In the case of the latter, this combination of factors has seriously eroded the ability of households to meet their food needs through 'market purchases' and 'own production' as they do in a normal year. Insecurity in the form of cattle raiding and inter-tribal conflicts over pasture and land ownership have further exacerbated the situation by causing large-scale displacement and loss of livelihood assets. Indeed, insecurity may best be understood as both a cause and result of the deteriorating food security situation in the state and in the Eastern Flood Plains in particular.

In the light of the above - and coupled with the predicted below average harvest of medium and long-term variety crops - the food security situation for households in the Eastern Flood Plains is likely to continue to deteriorate between now and the August 2010 harvest. Households that are already severely food insecure are the most vulnerable during this period and in need of assistance to bridge the extended hunger season. However, those who are moderately food insecure are also vulnerable and likely to become severely food insecure themselves if their livelihoods continue to erode. By comparison, the situation in the Nile and Sobat zone is less dire - at least in magnitude - owing to relatively good (and year round) market access and diverse food and income sources found there. However, the forthcoming elections in April 2010 and the tense political environment associated with it does pose a significant threat to lives and livelihoods in both livelihood zones in that it holds the potential to re-ignite latent inter-tribal conflicts and cause widespread displacement across the state and in neighboring states.

2 Background and Context

Upper Nile State is comprised of twelve counties namely, Renk, Manyo, Melut, Maban, Fashouda, Baliet, Malakal, Ulang, Panyikang, Nasir, Longochock and Maiwut and lies at the intersection of Northern and Southern Sudan - bordering White Nile State to the north, Blue Nile state and Ethiopia to the east, South Kordofan and Unity to the west and Jonglei to the south. In terms of livelihoods, it is characterized by both large cattle herds and vast land with agricultural potential owing to the heavy

black cotton and clay soils that extend from the extreme eastern part of Sudan to the extreme west. The latter is somewhat of a mixed blessing as during the wet season the fertile black cotton soil turns to thick mud and - combined with flooding from the extensive swamplands in the eastern portion of the state – severely limits mobility, making some areas inaccessible. In Maiwut, Longochock and Maban, the soils are deep, fertile clay plains and loamy. The length of growing season is about 120 days (May to August). In addition to traditional rain-fed farming, highly adaptive recessional agricultural is practiced in seasonally flooded areas. Livestock and fish production also contributes significantly to the food economy of households in the state.

Like most states in Southern Sudan, the people of Upper Nile are in the process of rebuilding their livelihoods in the wake of Sudan's two decade long civil war. As such, most areas still lack the basic services and physical infrastructure and have limited accessibility. Erratic and delayed rainfall in the state in 2009 had a significant (and negative) impact on agricultural and livestock production due to the delay in commencing agricultural activities and poor availability of pastures associated with it. Failed crops and poor yields among crops that did not fail have extended the hunger season by reducing the ability of households to meet their food needs through both 'own production' and market purchases – the latter owing to decreased supply and increased demand for cereals throughout the state. At the same time, distress sales induced by the extended hunger season have also driven livestock prices downward bring about a precipitous drop in the livestock-to-cereals terms of trade. Insecurity as a result of inter-clan conflict over pasture and land ownership and recurrent cattle rustling has further exacerbated the already tenuous food security situation in the state and could well result in displacement and disruption to livelihoods in 2010. In September and October flash floods also destroyed farms in Maban county, making households there particularly vulnerable in 2010.

3 Methodology

The Annual Needs and Livelihood Assessment (ANLA) process and exercise was conducted from September 16th - October 12th, 2009 and constitutes a collaborative effort of the Government of Southern Sudan (SSRRC, MOA, County Authorities), United Nations World Food Programme (WFP) and Joint Humanitarian Coordination Forum operating in Upper Nile state. The principal aim was to assess the food security situation in Upper Nile, establish the likely impact and extent of different shocks on food security with regard to availability, access and utilization, and identify vulnerable sub-groups within the state in order to inform stakeholders and decision makers on assistance needs, response options, and targeting.

To this end, multiple and complementary data collection methods were employed, including a household survey, focus group discussions and key informant interviews. The purpose in doing so was to allow for the triangulation of findings from these different methods - that is, to allow for more in-depth and meaningful interpretation of quantitative household survey data and to substantiate the qualitative (and anecdotal) findings gleaned from focus groups and key informants. These primary data sources were supplemented by secondary (or existing) data sources, including the 2009 CFSAM.

3.1 Sampling Stage I – Selecting Sites

At the first stage of sample selection, 10 locations (villages and their surrounds) were purposively selected for inclusion in the assessment based on a combination of a) their accessibility and b) the extent to which they collectively ‘represented’ the food security situation of the various livelihood zones (see section 3.3) and counties in the state. Although this imposes some limitations in terms of interpreting the findings (see 3.4), it was a pragmatic necessity owing to the inaccessibility in some locations. One of the selected counties - Renk - was not visited due to logistical constraints. As such, 9 locations from 9 counties were ultimately included in the sample as indicated in table I.

Table 1 - Sample Locations by County/Liveilhood Zone

Livelihood Zone	County	Location
Eastern Flood Plains	Bailiet	Green Market
	Longochuk	Dhajo
	Maiwut	Pagak
	Manyo	Hai Market
Nile and Sobat	Fashoda	Luakat
	Malakal	Wakjur
	Nasir	Wunkir
	Panyikang	Ayidhajo
	Ulang	Jioke

3.1.1 Sampling Stage II – Selecting Key Informants and Focus Group Participants

Within each of these locations, focus group discussion participants and key informants were selected purposively – the former as representative of the community (and various sub-groups within in it) and the latter as uniquely positioned to provide insights about the community. Interview/discussion guides were then used to capture information on livelihood patterns, economic differentiation of households, food access and hazards/shocks affecting food security.

3.1.2 Sampling Stage II – Selecting Households

Within each selected location, 30 households were selected for participation in a household survey for a total sample size of 270 households overall in the state. The selection of households was done randomly in an effort to balance out the risk and potential sources of bias inherent in relying on purposive selection of respondents through community leaders with randomization achieved using a variation of the pencil spin method popularized by UNICEF for use with the Expanded Program for Immunization (EPI) surveys (box I). A structured questionnaire was then used to capture information on various aspects of food security. The primary aim of the survey and questionnaire was to generate an estimate of the proportion of households in the state whose lives and livelihoods are at risk. A secondary aim was to identify the characteristics of these households to inform targeting.

3.2 Partnership and Consultation Process

The assessment brought together a number of government line ministries, international non-governmental organizations (NGOs) and UN agencies under the auspices of a food security technical group. This collaborative consultation process began at the planning and data collection stages and continued through the data analysis and response option analysis phases. The SSRRC provided

consultation leadership, direction and coordination while WFP facilitated the process by providing technical financial and logistical support, including the training of enumerator teams.

Box 1 – Steps Used to Randomly Select Households for Inclusion in Survey

- Use community members to locate the approximate center of each selected site/boma
- Spin a pencil to identify the direction to walk to select sample households
- Count and number all households encountered from the center to the perimeter of the site/boma walking in the identified direction
- Divide this number (X) by the number of households desired ($n=30$) in order to determine the sampling interval ($X/30=SI$)
- Select a random starting household between 1 and the SI
- Add the SI to the starting household to select the 2nd household, the SI to the 2nd household to select the 3rd household and so on until 30 households are interviewed
- If number of households in that direction < 30 , interview all and repeat process to choosing a 2nd direction in order to identify the remaining households for inclusion

Analysis of information from the focus group discussions, interpretation of the results of quantitative data from the household survey and response option analysis were all done in the state by the food security technical group comprised of the ANLA team and the Joint Humanitarian Coordination Forum in Malakal. The composition of the ANLA team and JHCF are provided as annexes to this report.

3.3 Livelihood Zones

Upper Nile state falls within two broadly defined livelihood zones – the Nile and Sobat and the Eastern Flood Plains.

3.3.1 Nile & Sobat

Counties falling with the Nile and Sobat zone include Nasir, Ulang, Baliyet, Malakal, Panyikang, Fashouda, Renk and Manyo. The zone is characterized by a diversity and abundance of water sources and, in turn, significant potential for agriculture and fishing. Heavy black cotton and silt soils further add to the zones agricultural potential. They have also endowed the zone with good vegetation, making it well suited for livestock grazing as well. This is, however, a doubled-edged sword as, during the wet season, the black cotton soil turns to thick mud. When combined with flooding from the swamps that are interspersed throughout the zone, this severely limits mobility. The main livelihood activities in the zone are crop cultivation, fishing and livestock keeping – the latter being comparative small-scale. It is distinguished from the other zone in the state by the prominence of fishing which occurs along the two rivers found there and contributes significantly to the food economy of households in the zone. The locations within this zone included in the sample (see table 1) were selected on the basis that they collectively represent the diversity found there.

3.3.2 Eastern Flood Plains

Counties falling with the Eastern Flood Plains include Maban, Maiwut and Longochock. The zone is characterized by deep, fertile clay plains and loamy soils. It is prone to seasonal flooding owing to the large swamps that cover much of the area, particularly in the eastern counties. The main livelihood activities include crop production, but on a much smaller scale than in the Nile and Sobat zone.

Conversely, livestock keeping and trade are far more prominent here. In addition to the traditional rain-fed farming, highly adaptive recessional agricultural farming is also practiced in the seasonally flooded areas of the zone and Maban County in particular.

Fishing is also practiced in the swamp areas and during flooding season, but on a far smaller scale than in the Nile and Sobat. Communities within the zone engage in seasonal migration in search of pasture, water, and graze. As a consequence of this, insecurity in the form of recurrent cattle raiding is prominent and has resulting in significant population displacement. The locations within this zone included in the sample (see table 1) were selected on the basis that they collectively represent the diversity found there.

3.4 Limitations and Constraints

The purposive selection of sites is not to say the sites and household included are not representative, but rather that the subjective basis for their representative-ness does not adhere to the strictures required to employ statistical/probability theory as a basis for extrapolating findings from the sample (n) to the population (N). It was however done in the field through a consultative process with agencies who know the areas very well. In previous years attempt to do randomly select locations have been precluded by accessibility, which is a major factor during the time of the ANLA and falls at the end of the rainy season. This year, locations that were known to be inaccessible were not considered for inclusion and thus it is possible that the results are underestimating the extent of food insecurity.

4 Demographics

Approximately 90% of the households surveyed in the state were residents with the remaining 10% split evenly between returnee and IDP households. As shown in figures 1 and 2, the percentage of IDP households was higher in the Eastern Flood Plains than in the Nile Sobat – a finding that is consistent with perceptions that conflict and cattle raiding is more pervasive there.

FIGURE 1 - EASTERN FLOOD PLAINS ZONE

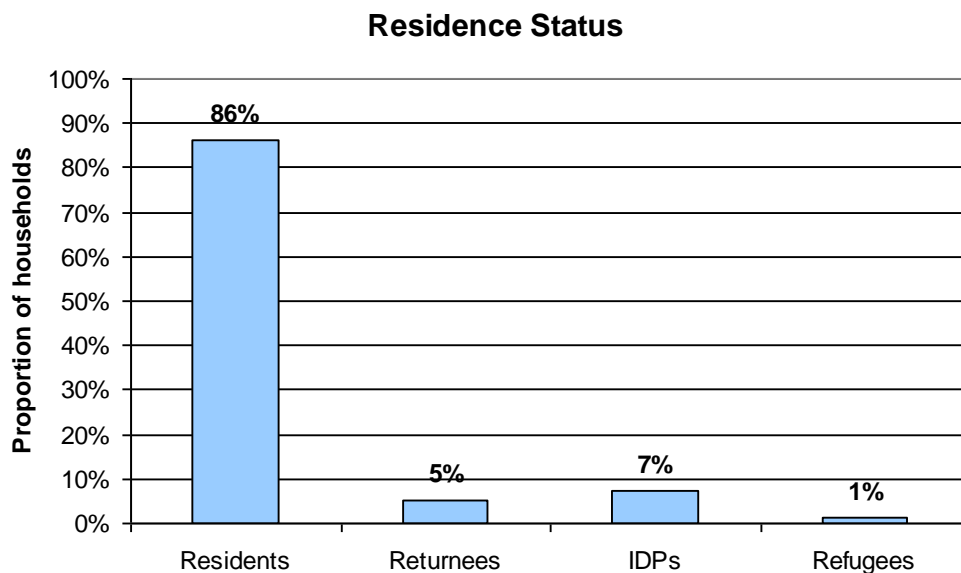
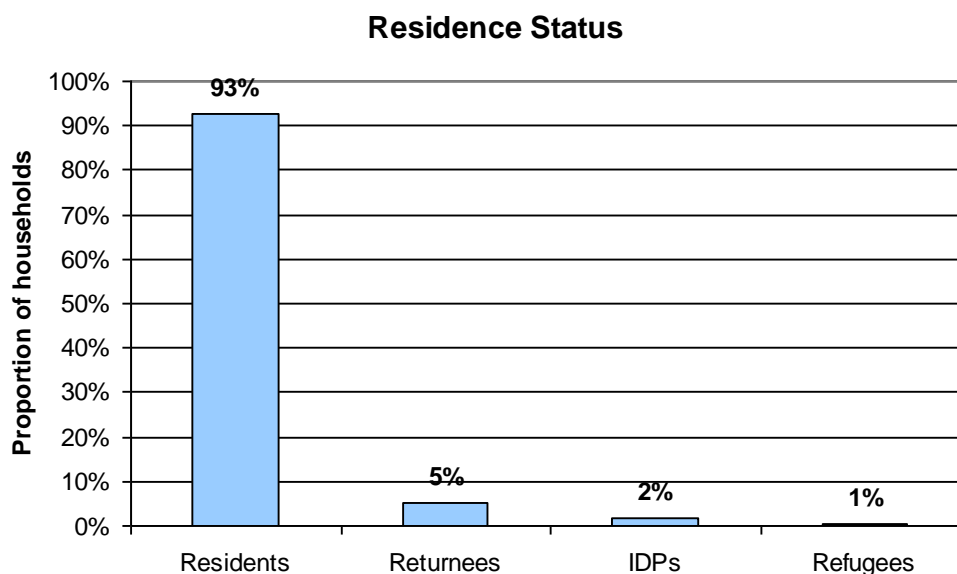


FIGURE 2 - NILE AND SOBAT ZONE



5 Food Availability

5.1 Rainfall

In a typical year, the dry season in Upper Nile extends from November to April, followed by the start of heavy rains between May and June which extend through September and begin to dissipate October marking the end of rainy season. This year (2009), far less rain was received in the months of May, June and July. The variance in rainfall across the state is plainly visible in vegetation patterns with the Nile Sobat zone appearing greener and wetter at the time of the assessment than the Eastern Flood Plains. Nevertheless, rainfall in both zones was purported to be less than in the previous year. One exception to this is Maban County where heavy rains beginning at the end of July and continuing through August and September caused flash floods. The resulting destruction of farms in the county is likely to adversely affect the household food security in 2010.

5.2 Agriculture

In a typical year, cultivation starts at the onset of rain in May and continues through June and July. Three main varieties of crops (sorghum and maize) are grown and are planted at different times in order to spread risk and ensure cereal availability at different times during the year. Short-term varieties are planted in May and harvested August. Medium-term varieties are planted in June and harvested in October and/or November. Finally, long-term varieties are planted in June and/or July and harvested in November and/or December. The annual hunger gap typically extends from the point at which stocks from the November/December harvest are exhausted until August when short-term varieties are harvested.

In 2009, short-term variety sorghum was planted with the onset of rain in early May. However, the atypical dry spell that began in May and continued until July severely impacted crops at both the

emergence and vegetative stages. As a result, short-term varieties failed, no harvest was realized, and the hunger gap was extended well beyond August when it is typically broken.

Subsistence farming remains the predominant source of food and livelihoods in most areas. It is characterized by the use of basic (local) hand-made tools and small, hand-cultivated areas farmed mostly by female-headed households who belong to larger, polygamous male-headed household aggregates. Short and long term varieties of sorghum and maize constitute the primary crops – the former being the most important staple food in the Nile and Sobat livelihood zone followed by maize, the latter being the most important the Eastern Flood Plain zone followed by sorghum.

In addition to this, varieties of quick growing vegetables are grown in small plots around the homestead. Varieties of wild foods are also available and utilized as a highly expandable food source during the hunger gap or - as in 2009 - when crop harvests are poor. Both area under cultivation and crop diversification remain low, as does the quality of seeds used. As a result, a typical farmer found in most areas of the state cultivates a mere 1 and 2 feddan with average yields of about 2 to 4 sacks of maize/sorghum. There are exceptions to this – namely, Renk, Manyo and Melut counties where agrarian communities predominate and large-scale farming is common. This includes, mechanized farming in areas of Renk and Manyo counties and - to a lesser extent - Malakal. The opportunities and constraints for crop production in the state are outlined below:

Opportunities

- Availability of market for food stuff
- Easy access to agricultural land and availability of water
- Variety of crops can be grown along the river during dry season
- Political stability in some locations
- Vast areas of fertile land

Constraints

- Prolonged dry spell and unreliable rainfall
- Inaccessibility to markets during the rainy season
- Pests, diseases and limited access to farming equipments and extension services.
- Recurrent inter-clan and intertribal conflicts.
- Lack of infra-structure (roads, market structures and other government bodies)

5.3 Livestock

The huge potential for agricultural production notwithstanding, livestock rearing remains a significant food and livelihood source in the state, particularly in the Eastern Flood Plains zone. However, the sale of livestock over the past three months is purported to be considerably higher than in the past. The various communities surveyed attribute this to extended hunger season caused by the atypical dry spell and crop failure as this has encouraged distress sales among those who hold livestock and depend on market purchases for cereals. In turn, the glut of livestock in the market has driven prices downward and had a deleterious impact on the livestock-to-cereal terms of trade. As examples of this, an average goat was sold in the past three month at 40 SDG compared to 70 SDG last year during same period, while an average bull was sold at 400 SDG compared to 700 SDG last year during same period.

Livestock condition is purported to be normal in some areas due to improved availability of water and pasture in the latter half of the year. However, in other areas where less rainfall was received, concerns

were raised about livestock diseases. Cattle rustling and localized inter-clan and intertribal conflicts over pasture and land ownership are also purported to be much higher this year than in typical years and poses and significant threat to livelihoods in the state. These and other constraints for livestock production in the state are outlined below, as are the opportunities that exist in this regard.

Opportunities

- Availability of market for livestock and livestock products
- Availability of grazing land
- Availability of water
- Enormous accumulative knowledge on livestock keeping.

Constraints

- Inaccessibility to market (poor quality roads)
- Animal diseases (especially goats)
- Low prices for livestock and livestock products.
- Recurrent cattle raiding.
- Lack of vet facilities and services.

5.4 Fishing

Fishing is practiced widely across the state – albeit to varying degrees in each livelihood zone. In the Nile Sobat, fishing constitutes a major (if not primary) food and livelihood source for many. As such, communities here have tremendous knowledge about fishing methods and marketing. By contrast, fishing constitutes a secondary food and livelihood source in the Eastern Flood Plains and is practiced on a small scale and primarily for household consumption despite the abundant fisheries available in swamps and seasonal streams. The marketing and sale of fish has improved and expanded over time, particularly in Malakal, Melut and Renk in response to a growing demand among the growing populations there. The main constraints to expanding fish production in the state are the lack of appropriate tools and equipment and insecurity along the Sobat corridor.

6 Markets and Market Prices

Well structured and well functioning markets in the state are located in Kaka, Melut, Kodok, Malakal, and Nasir towns, as well as in Renk which serves as a hub market for grain. Most commodities - and cereals in particular - are brought from Kosti and Renk by barges during rainy season and trucks during dry season. Prices for the main staple– sorghum - follow a seasonal trend; gradually rising during rainy season (May to August) due to the hunger gap and inaccessibility and then gradually dropping when households begin harvesting short-term maize and sorghum varieties in August. Prices are at their lowest in January and February due to a combination of the harvest of medium and long term varieties, good (tarmac) road access from Khartoum to Malakal, Longochok, Nasir counties and cross-border trade with neighboring Ethiopia through the eastern counties such as Nasir, Maiwut and Longochock. This is also the timeframe during which local traders and retailers build their stocks to sell later.

The main drivers of high food prices in the state in a typical year are poor road networks and inaccessibility, heavy taxes and high transpiration costs. This is particularly true for the Eastern Flood Plains zone as the Nile and Sobat enjoys better access through rivers during rainy season. Market structures and integration are also poor in the eastern counties as compared to the western counties of

the state. These disparities between the eastern and western portions of the state are reflected in the market prices.

In 2009, the supply pipelines outlined above functioned normally. However, there was a marked increase in the price of sorghum throughout the state. For example, the price of a 90 kg bag was between 130 to 150 SDG in Malakal in 2009 compared to about 90 to 120 SDG during the same time period last year. A similar disparity was exhibited in Baliet with one 90 kg bag priced at about 180 to 200 SDG this year compared to 130 to 150 SDG last year. The 2009 CFSAM report attributes this to the reluctance of big traders to release last year's stocks in anticipation of the low harvest for this season. The global increase in food prices also impacted markets at the national and regional levels.

7 Household food security situation

In this section, various dimensions of household food security are examined – namely, food consumption, food access, and coping strategies. The three are then combined within a single variable to produce 'food security groups'. These groups are then used to estimate the percentage of severely food insecure households in the state, as well as to compare the percentage of severely food insecure households in the state's two livelihood zones

7.1 Food consumption

Household food consumption data were collected using a 7 day recall period. Based on the frequency and dietary value of individual food items consumed, these data were then used to calculate a Food Consumption Score (FCS) for each household. Using established thresholds, these scores were then used to classify each household as having poor, borderline or acceptable consumption.

As depicted in figure 3, the results of this analysis for Upper Nile suggest that 14% of households surveyed in the state have poor consumption with the remaining 19% and 67% having borderline and adequate consumption respectively. However, this state-level analysis appears to mask important differences by livelihood zone (figure 4) as the percentage of households with poor consumption in the Eastern Flood Plains zone (23%) was triple that of households in the Nile and Sobat zone (7%). Similarly the percentage of households with borderline consumption in the Eastern Flood Plains (28%) as more than double that in the Nile and Sobat zone (11%)

FIGURE 3 – PERCENTAGE OF HOUSEHOLDS BY FOOD CONSUMPTION GROUP (BASED ON FCS)

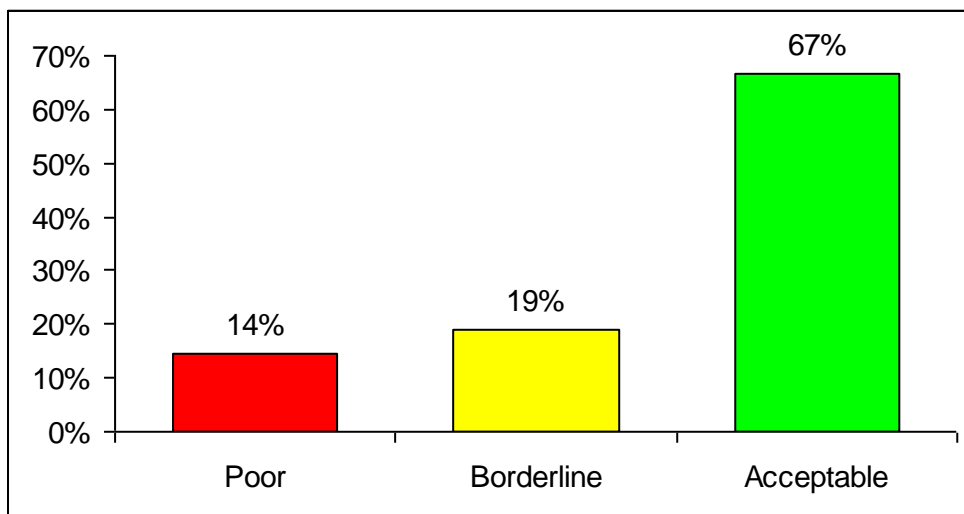
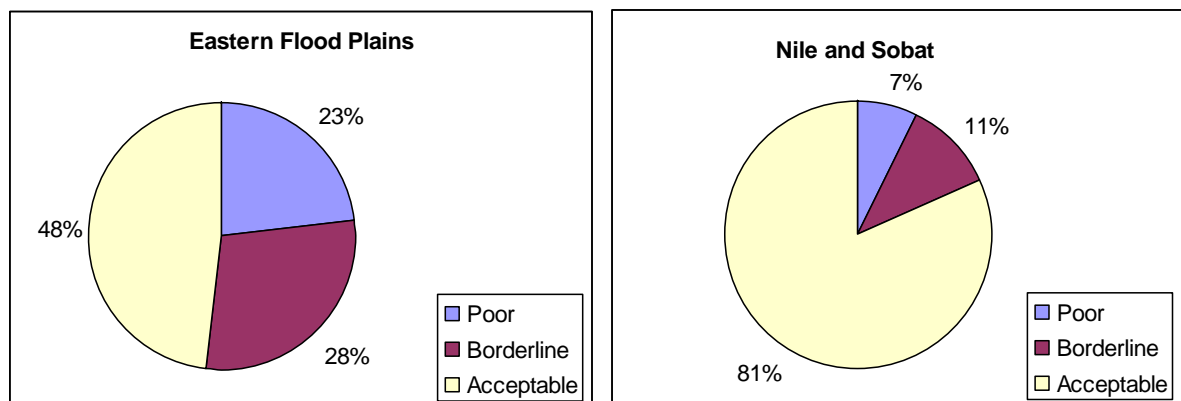


FIGURE 4 – FOOD CONSUMPTION GROUPS BY LIVELIHOOD ZONE



In terms of the frequency of individual food items consumed, sorghum figures prominently as the most frequent across the state and across food consumption groups. By comparison, maize consumption was very low, confirming the failure of the maize crop noted in the 2009 CFSAM. Pulses were consumed relatively infrequently by households in the Eastern Flood Plains in comparison to those in the Nile and Sobat, suggesting low protein intake among households there. Among those with borderline and adequate consumption, this appears to be somewhat offset by the relatively frequent consumption of fish.

7.2 Food Access

7.2.1 Food and income sources

More than 60% of foods consumed by households surveyed came from market purchases with additional 20% from 'own production'. The same disparity holds true for staple foods with over 50% and 25% coming from markets and 'own production' respectively. Both underscore the vulnerability of households to the marked increase in staple (and other) food prices this year in comparison to last.

The main income sources in the state include the sale of natural resources (including firewood, charcoal and grasses) and the sale of fish and (casual) labor. As noted earlier, the sale of livestock also figures prominently as an income source among agro-pastoralist and pastoralist households and was particularly pronounced this year due to distress sales as noted earlier. The sale of crops figures less prominently as an income source as crops are typically only sold in good years when household produce a surplus beyond what they can consume. Salaried jobs constitute a significant source of income for urban dwellers in both zones.

The rains and seasonality play a paramount role in the food and income sources in Upper Nile state as activities like fishing, agricultural production and livestock production are strictly limited to the rainy season. Conversely, less reliable income sources such as firewood and grass collection figure prominent during the dry season. Households with one or more members that receive salaries enjoy a relatively reliable and sustainable income throughout the year. The one caveat to this is delays in salary payment – a problem cited by some such households.

7.2.2 Expenditure

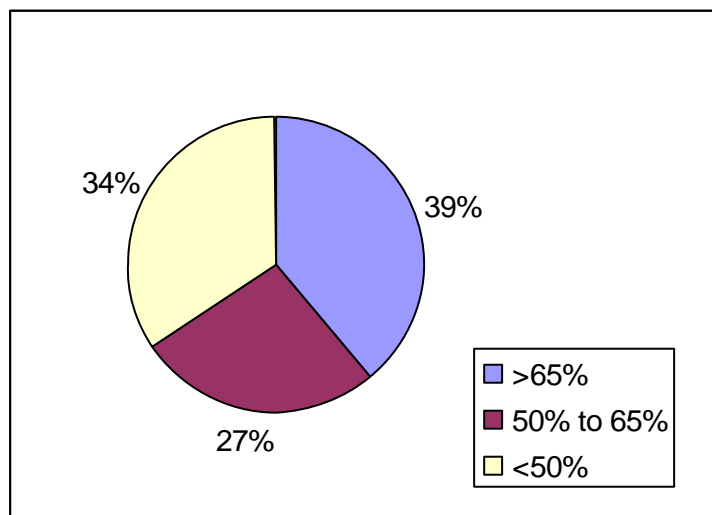
The percentage of expenditure spent on food provides a proxy indicator of food security status, as well as a measure of constraints on the ability of households to meet their food and non-food needs. Households spending in excess of 65% are clearly vulnerable in this regard as such a high percentage spent on food suggests that a household is forced to choose between meeting their food and non-food needs or reduce consumption of one or both below their needs. The analysis of data for Upper Nile state suggests that nearly 40% of households surveyed fall into this category. An additional 27% indicated that they spent between 50% and 65% of their total expenditure on food and are thus also vulnerable in terms of their ability to meet their food and non-food needs (figure 5). There was little – if any – difference exhibited between livelihood zones in this regard.

An analysis of absolute expenditure further suggests that 60% of households surveyed spend less than 1.6 SDG per day. Moreover, the expenditure of about a third (34%) of households suggests that they are incapable of purchasing more than ½ of a minimum food basket with an additional 28% only able to purchase between ½ and 1. In line with other food security indicators, the percentage of households that appear incapable of purchasing more than ½ of a minimum food basket was higher in the Eastern Flood Plains zone (43%) than in the Nile and Sobat zone (24%).

7.2.3 Food Access Groups

Using a combination of expenditure on food as a percentage of total expenditure and a subjective valuation of the reliability of income sources, households were classified as having

FIGURE 5 – FOOD EXPENDITURE AS A % OF TOTAL EXPENDITURE



either poor, average or good access to food. Based on this, 38% of households surveyed across the state have poor food access, 28% average, and 34% good. In terms of livelihood zone comparisons (figures 6 and 7), households in the Eastern Flood Plains had a higher percentage of households with poor access (44%) than households in the Nile Sobat (25%). This apparent disparity is consistent with the food consumption analysis presented earlier, as well as the livelihoods assessment conducted in 2008.

7.3 Coping Strategies

Most households included in the surveyed indicated that they had recently engaged coping strategies in order to manage food short-falls. These strategies include:

- The distress sale of household assets - especially livestock - putting their future food and livelihood security into risk.
- Reducing the number of meals eaten at household levels to preserve food stocks
- The collection and sale of natural resources such as firewood and charcoal
- Unusual collection of wild foods and hunting
- Migration to urban areas (or to the north) looking for job opportunities.
- Shifting to fishing as a primary livelihood source

This frequency with which households adjusted their consumption patterns to deal with food shortfalls (e.g. reversible consumption coping strategies) and the perceived severity of each of these strategies were combined to derive a Coping Strategies Index (CSI) score for each household. Households that employed consumption coping strategies perceived to be severe and/or employed these and other consumption coping strategies frequently have higher CSI scores than those who employ less severe consumption coping strategies and/or employed these and other consumption coping strategies infrequently. As such, CSI is a measure of food insecurity – the higher the CSI for a household, the more food insecure. Based on a combination of these scores and locally developed thresholds, approximately 7% of households included in the survey exhibiting frequent/severe consumption coping with an additional 28% exhibiting moderately frequent/severe consumption coping.

FIGURE 6 - EASTERN FLOOD PLAINS ZONE

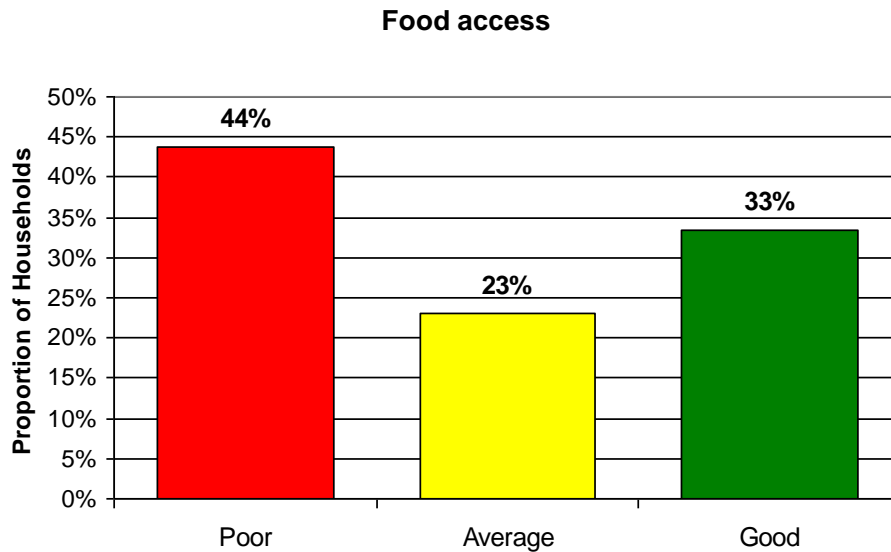
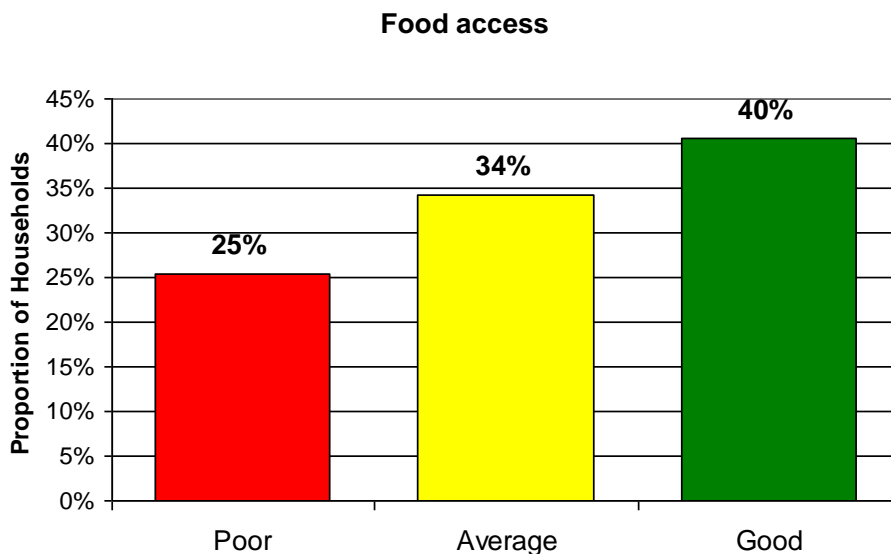


FIGURE 7 - NILE AND SOBAT ZONE



7.4 Food Security Groups

As described in box 2, this section of the report brings together the categorical indicators of food consumption, access and coping outlined in the preceding sections (7.1 to 7.3) within a single composite food security indicator – namely, food security groups. On the basis of this it is estimated that 19% of households in the state are severely food insecure, 34% moderately food insecure and the remaining 47% food secure (figure 8).

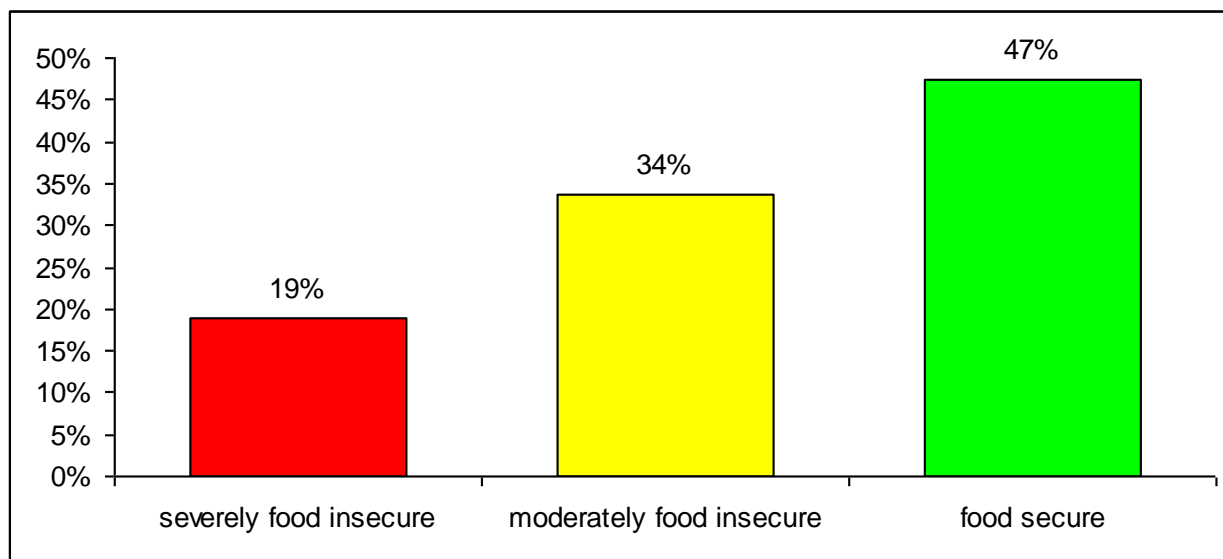
BOX 2 – DEFINING FOOD SECURITY GROUPS

The food security groups presented in this section of the report were created by combining household measures of food consumption, food access (income and expenditure) and coping strategies. For food consumption, households were categorized as having poor (0 to 21), borderline (21.5 to 35) or acceptable (>35) consumption on the basis of their Food Consumption Scores – a weighted index that takes account of both frequency of consumption and various foods contribution to dietary adequacy. For food access, a combination of the reliability of income sources (good = 4, medium = 2, poor =1) and poor (>65%), medium (50%-65%) and good (<50%) percentage of total expenditure spent on food were used and then cross-tabulated to define poor medium, and good food access groups. For coping strategies, Coping Strategies Index (CSI) scores that capture both the frequency and severity of coping were used to define high, medium and low coping based on locally-established thresholds. All three of these categorical variables were then combined to define food security groups as depicted in the example below:

				Food Consumption		
				Poor	Borderline	Acceptable
Ability to access food	Poor	Coping Strategies Index	High	0%	0%	1%
			Medium	1%	1%	1%
			Low	4%	4%	8%
	Medium	Coping Strategies Index	High	0%	0%	1%
			Medium	1%	1%	2%
			Low	3%	4%	13%
	Good	Coping Strategies Index	High	0%	0%	2%
			Medium	1%	2%	4%
			Low	5%	10%	31%

Severely Food Insecure	12%
Moderately Food Insecure	24%
Food Secure	66%

FIGURE 8 – PERCENTAGE OF HOUSEHOLDS BY FOOD SECURITY GROUP IN UPPER NILE



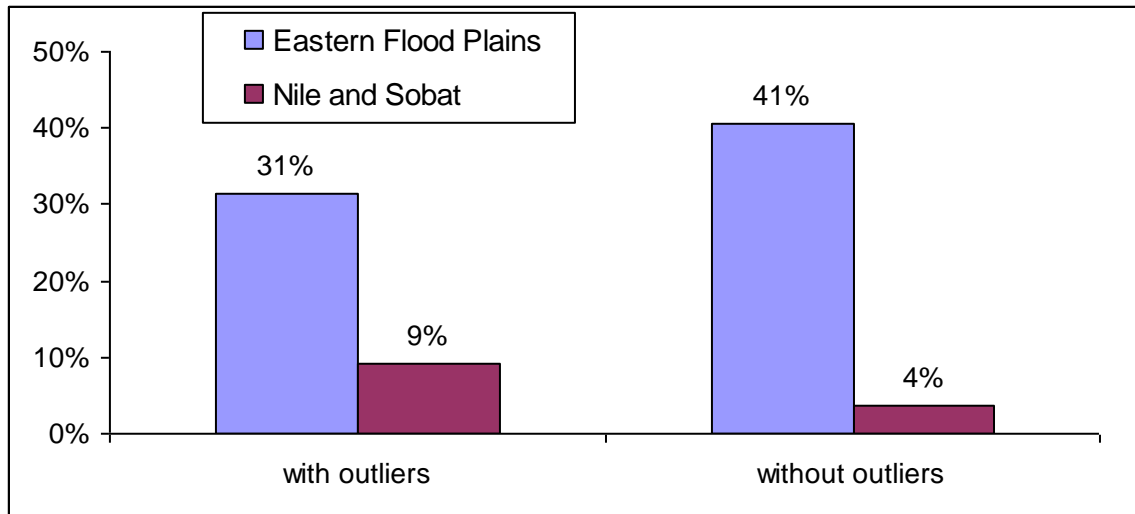
7.3.1 Food Security Groups by Gender of the Head of Household

Perhaps surprisingly, the percentage of severely food insecure households is roughly the same among female and male headed households. However, care should be taken in interpreting these findings as many households characterized as ‘female-headed’ are, in fact, satellite households connected to a polygamous male head. Given that those able to engage in polygamy are typically better-off than those that are not, female-headed satellite households connected to them are likely to be better-off than either non-polygamous male headed households or true female headed households that are not connected to a male headed, polygamous household. In turn, this suggests the need for a more refined approach to draw out these nuanced differences in household type where they are likely to have a relationship to a household’s food security status.

7.3.2 Food Security Groups by Livelihood Zone

A compelling difference does appear to exist between livelihood zones with the percentage of severely food insecure households surveyed in the Eastern Flood Plains zone (31%) more the percentage in the Nile and Sobat (9%). This disparity between livelihood zones is even more compelling if outlier locations - Wakjur in Malakal, Nile and Sobat and Hai Market in Manyo, Eastern Flood Plains – are removed from the analysis as each exhibits consumption, access, and coping that are atypical of their livelihood zone; Wakjur is notably better off and more akin to locations in the Nile and Sobat zone and Hai Market is notably worse off and more akin to locations in the Eastern Flood Plains. Figure 9 presents the percentage of severely food insecure households by livelihood zone, both with and without these outliers. The percentage of moderately food insecure households is roughly equal between the two zones at 31% and 36% in the Nile Sobat and Eastern Flood Plains zones respectively, making the percentage of food secure far higher in the Nile Sobat zone (59%) than in the Eastern Flood Plains (32%).

FIGURE 9 – PERCENTAGE OF SEVERELY FOOD INSECURE HOUSEHOLDS BY LIVELIHOOD ZONE



8. Main Hazards and Opportunities

The main hazards during the past three months identified by the households and communities surveyed were the prolonged dry spell and erratic rainfall, high food prices and human sickness. As depicted in figures 10 and 11, this was fairly consistent across livelihood zones. The first

FIGURE 10 – PERCENTAGE OF HH IN EASTERN FLOOD PLAINS

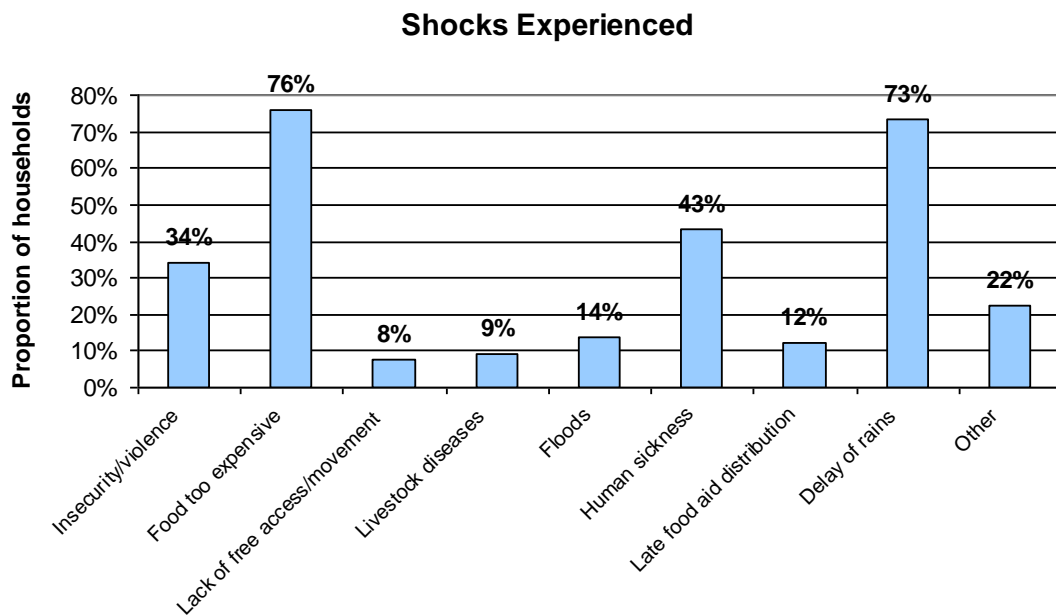
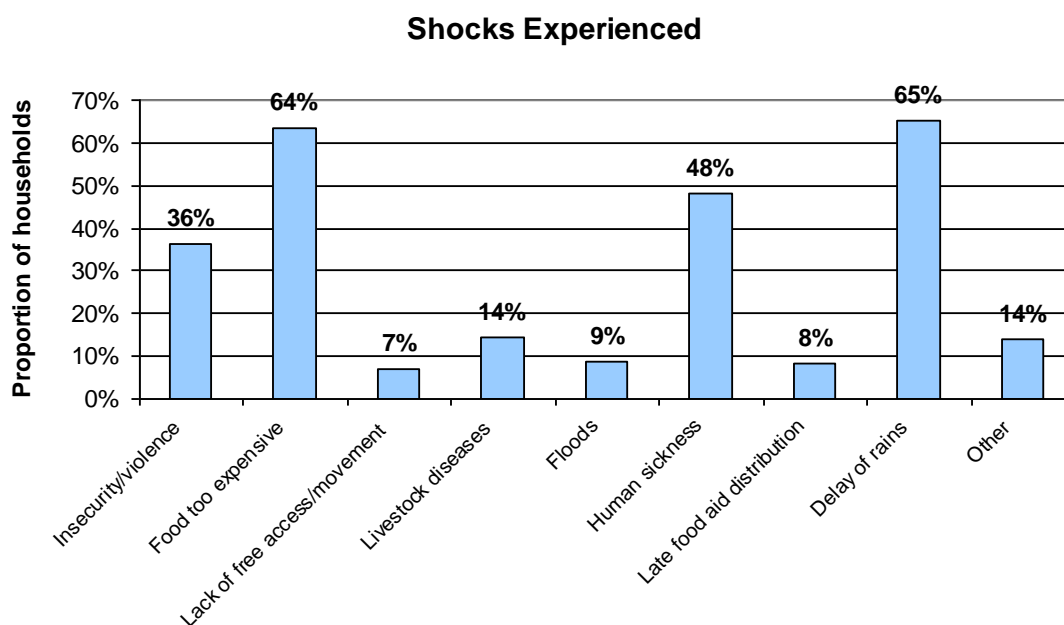


FIGURE 11 – PERCENTAGE OF HHS IN NILE AND SOBAT



two of these occurred in the months of June and July and significantly hampered the agricultural season, drastically reducing the ability of households to access food through ‘market purchases’ and ‘own production’. As further evidence of this, the vast majority of households surveyed had little in the way of food stocks. Insecurity caused by inter-clan and tribal conflicts was also identified by a significant proportion of households, particularly along the Sobat River.

In terms of opportunities, recessional farming that takes place post-flood in Maban County provides a ripe opportunity to expand food production in the state – both in terms of quantity and variety. In general, a wider array of opportunities for improving food security exists in the Nile and Sobat livelihood zone. This includes both the opportunity to expand production, as well as good road and river access and the existence of sustainable livelihood-enabling institutions such as government structures, markets, and other social services.

9. Health and Nutrition

To the extent assessment teams were able to gauge, the health and nutrition status of the communities in locations visited appears normal. However, there were a number of potentially aggravating factors observed that may result in a deterioration of health and nutrition status if left unchecked. Foremost amongst these are:

- A relatively high incidence of watery diarrhea attributable to poor hygiene and sanitation and consumption of untreated water from rivers and seasonal streams.
- Lack of basic health services in the rural areas, particularly in the eastern part of the state.
- Severe lack of health education, primary health care and child care that could contribute to malnutrition in poorer households
- Poor access to food (as highlighted in this report) – particularly in the eastern part of the state – increases susceptibility to malnutrition and disease.

10. Conclusion on the Food Security Situation

On the basis of the composition food security indicator – food security groups – some 19% of households in the state are estimated to be severely food insecure with an additional 34% moderately food insecure and at risk of becoming severely food insecure. Although a direct comparison is problematic owing to differences in the methodologies used (see methodology section), this suggests a significant deterioration in the food security status of household sin the state in comparison to the previous year (see annex). This is largely attributable to the prolonged and atypical dry spells in May, June and July which resulted in crop failure, prolonged the hunger gap, and drove food prices upward beyond their normal seasonal variation owing to both increased demand and decreased supply. Insecurity and conflict has only exacerbated this already tenuous food security situation through the displacement and disruption to livelihoods caused by it.

11. Future Developments and Scenarios

Based on this assessment and the collective knowledge (and consensus) of the technical working group, the western (Shiluk Kingdom) and northern parts of the state - where most of the population are farmers and fishermen - are likely to be comparatively better off in 2010 in regards to food security vis-à-vis other parts of the state. The reasons for this include:

- Substantial availability of fish, especially in Shiluk kingdom and along river Nile
- Vast areas of fertile and arable lands in Renk and Manyo counties that are already producing large amounts of sorghum, sesame, groundnuts and vegetables.
- Improved road access to the main markets in the north and continuous access by river vessels during the rainy season that facilitate inter and intra-state trade.
- Relative improvement of basic services such as education, health, water and sanitation, as well as security situation - especially in big towns.

The comparative vulnerability of the eastern part of the state (Eastern Flood Plains) in the coming year – which include Nasir, Ulang, Baliet Maiwut, Longochok and Maban counties - can be attributed to a potentially devastating combination of factors and threats. These include:

- Recurrent insecurity due to cattle raiding and competition over resources
- The susceptibility of the area to seasonal flash floods not only makes the area inaccessible during the lean season, but creates the potential for large-scale population displacement and/or disruption of livelihoods.
- Lack of infrastructure; roads, functioning/integrated markets and communications
- Relatively large population in relation to limited availability of basic services, government structures and livelihood enabling systems.

There is also a shared fear that is pervasive throughout the state – that is, that the volatile security situation could well deteriorate in 2010 owing to communal and tribal disputes over land ownership and political power which could lead to widespread armed conflict.

11.1 Scenarios

Various possible scenarios as to how these opportunities and threats will interact and unfold in 2010 are outlined below. The most probable is a mixture of these with significant variation likely between livelihood zones. In the Eastern Flood Plains, the opportunities that exist are likely to be overwhelmed by numerous threats and shocks. In the Nile Sobat, the opportunities available may well override threats and shocks, increasing the likelihood of the best case scenario.

Best Case Scenario

- In some locations – such as Renk, Manyo and Maban - households expand areas under cultivation and diversify crops to take advantage of the fertile lands that follow flood recession and river water overflow.
- Abundant fish supplies in both zones are capitalized upon, helping to offset food gaps and contribute substantially to the household economy.
- Households in the Nile and Sobat zone successfully cultivate alternate food crops and vegetables along the river banks

Worst Case Scenario

- Areas in the Eastern Flood Plains face a severe food shortage during the next few months as a result of the prolonged dry spell and resulting failure/inadequate yields of maize crops.
- Recurrent cattle raiding and conflicts exacerbate food insecurity, particularly during the forthcoming dry season when migratory communities begin moving their herds.
- Poor socio-economic groups and severely food insecure households are forced to resort to the sale of natural resources and the collection and utilization of wild foods during the hunger gap. They are also forced to reduce the number of meals they consume, creating the potential for prevalence of acute malnutrition to increase to alarming levels
- The forthcoming elections in April re-ignite latent tribal and intra-tribal conflicts over land ownership and grazing lands and precipitate an increase in armed conflict, displacement and disrupted livelihoods.

8 Annex A - Hazards and Opportunities

8.1 July to September 2009 (Hazards identified through focus group discussions)

Uppernile – Eastern Flood Plains and Nile Sobat Livelihood Zones

Event	Effect	Response by the community	Who affected?	Humanitarian intervention
Prolonged dry spell and erratic rainfall	Negatively affected crop performance	Shift to increase in fishing activities and consumption Resorted wild food collection Sale of livestock for purchase of food	Nile Sobat community zone Eastern flood plain zone Agro pastoral and pastoral community	Humanitarian recovery programs in a few places like Darjo, Pagak and along the Nile Sobat zone
High food prices and reducing livestock price	Reduced households food purchasing power	Increased sale of livestock and natural resources	Whole community	
Inaccessibility food markets	Interrupted food supply to the communities (Market and humanitarian services)	Rely on wild food and purchase of the high price food	Communities along the river and the eastern corridor communities	

8.2 Local Names of Seasons by Livelihood Zone

8.2.1 Eastern Flood Plain Livelihood Zone

Ulang County (Jioke Boma)				
	Season 1	Season 2	Season 3	Season 4
Months	Nov to Jan	Feb to Apr	May to July	Aug to Oct
Local Name	Jom	Maiye	Ruel	Tot

Maban County (Green Village)				
	Season 1	Season 2	Season 3	Season 4
Months	March to April	Apr to June	June to Sep	Oct to Feb
Local Name	Poli Malawn	Duong'tuke	Woka'kungo	Weanyi'wenye

Longuchuk County (Darjo Boma)				
	Season 1	Season 2	Season 3	Season 4
Months	January - April	May to August	September - December	
Local Name	Oyes	Opolo	Ogulo	

Maiwut County (Kurmuk Village Pagak Boma)				
	Season 1	Season 2	Season 3	Season 4
Months	January - March	April - June	July to September	October – December
Local Name	Mei	Rual	Tot	Jom

Manyo County, (Hai SHUK in Kaka payam)				
	Season 1	Season 2	Season 3	Season 4
Months	May to Aug	Sep to Oct	Nov to Feb	March To April
Local Name	Chwir/ Dokding	Dok Arya	Rudo	Lewo

8.2.2 Nile Sobat Livelihood Zone

Wunkiir (Nasir County)				
	Season 1	Season 2	Season 3	Season 4
Months	Feb-April	May-July	Aug-Oct	Nov-Dec-Jan
Local Name	Maiye	Ruel	Tot	Jom

Balliet County, (Wukjur)				
	Season 1	Season 2	Season 3	Season 4
Months	April-June	Jun to July	July to Oct	Nov to Mar
Local Name	Kuar	Achoum	Chock'pour	Them

Panyikang County (Avidhajo)				
	Season 1	Season 2	Season 3	Season 4
Months	Oct -Feb	March to April	May To June	July To Sep
Local Name	rudo	Lewo	Chwir	Dok Arya

Malakal County (Luakat)				
	Season 1	Season 2	Season 3	Season 4
Months	April To June	July To Sep	October to December	January to March
Local Name	Yak	Ruel	Anyach	Mei

8.3 October 2009 to December 2010 –Potential Hazards and Opportunities by Season
 (Identified through Focus Group and Key Informant Discussions)

Eastern Flood Plains and Nile Sobat Livelihood Zone					
Projected time frame (Season)	Events (Hazards and opportunities)	Effect	How will the community respond?	Who will be affected?	Indicate Livelihood Zones that mentioned this Hazard or Opportunity
Dry season January to March	Early food shortage (Hazard)	Early beginning of the hunger Season	Appeal for food aid support to the Government and other humanitarian organizations	The poor and middle socio economic group	Eastern Flood Plain and Nile Sobat
Wet Season April to August	Timely and reliable rainfall (Opportunity) Unreliable rainfall (Hazard)	Good crop production and pasture growth Poor agricultural performance	Land preparation, planting and weeding Resort to wild food, sale of livestock	Farmers	Nile Sobat and Eastern Flood Plain
September to October	Peak of the rainfall (Normal)	Flooding	Migration from the lowlands Fishing in the flood zone Replanting in the flood plain	Communities along the flood plains	Eastern Flood Plain and Nile Sobat
November to December	Harvesting (Normal / Opportunity)	Increase house hold food and improve nutritional status	Reduce sale of livestock	Majority of households that rely of farming	Eastern Flood Plain

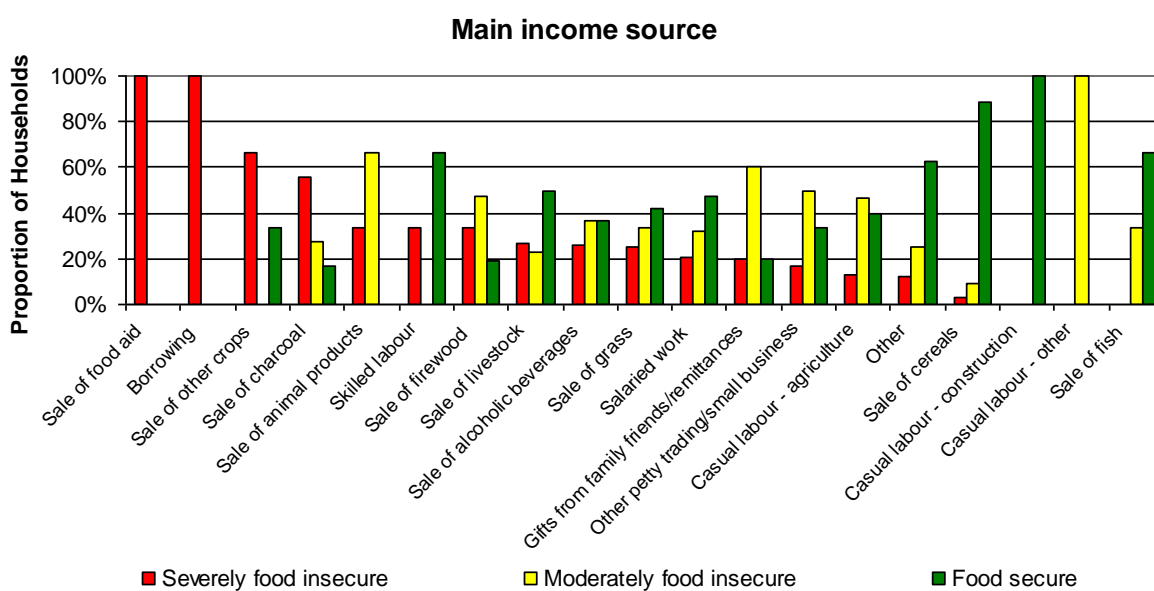
9 Annex B - Community Priorities

Eastern Flood Plains	Nile Sobat
Agricultural Equipment, Tools, Seeds and Training	Agricultural Equipment, Tools, Seeds and Training
Food *	Health Clinics
Fishing Boats, Hooks and Nets *	Fishing Boats, Hooks and Nets
Road Construction *	Road Construction
Clean Water	

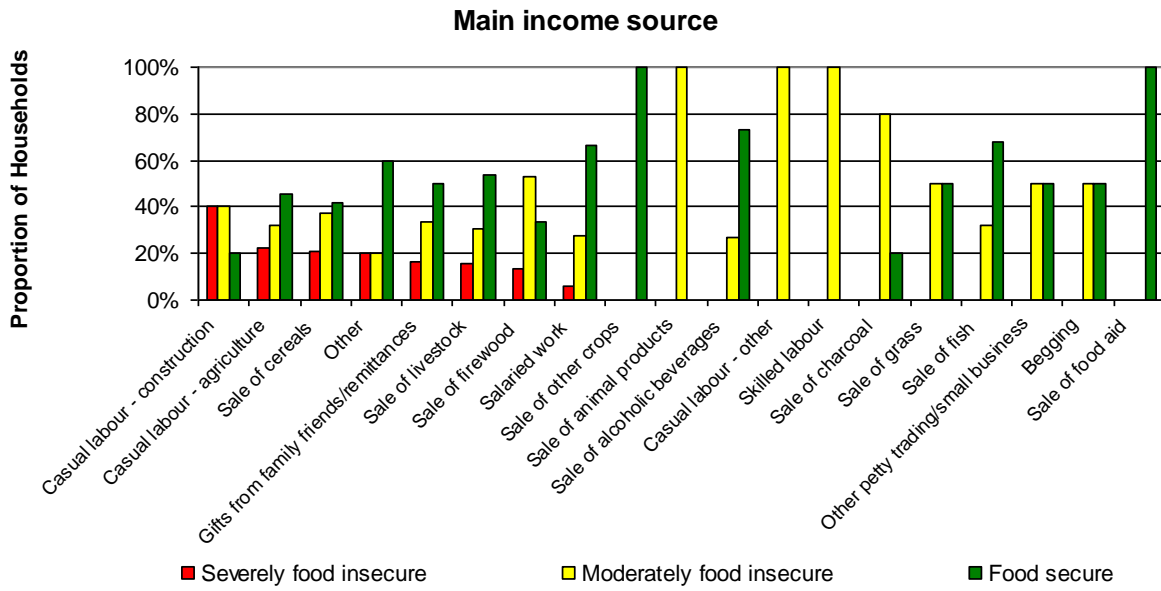
* These 3 Items ranked at the same level by focus groups

10 Annex C - Additional Figures

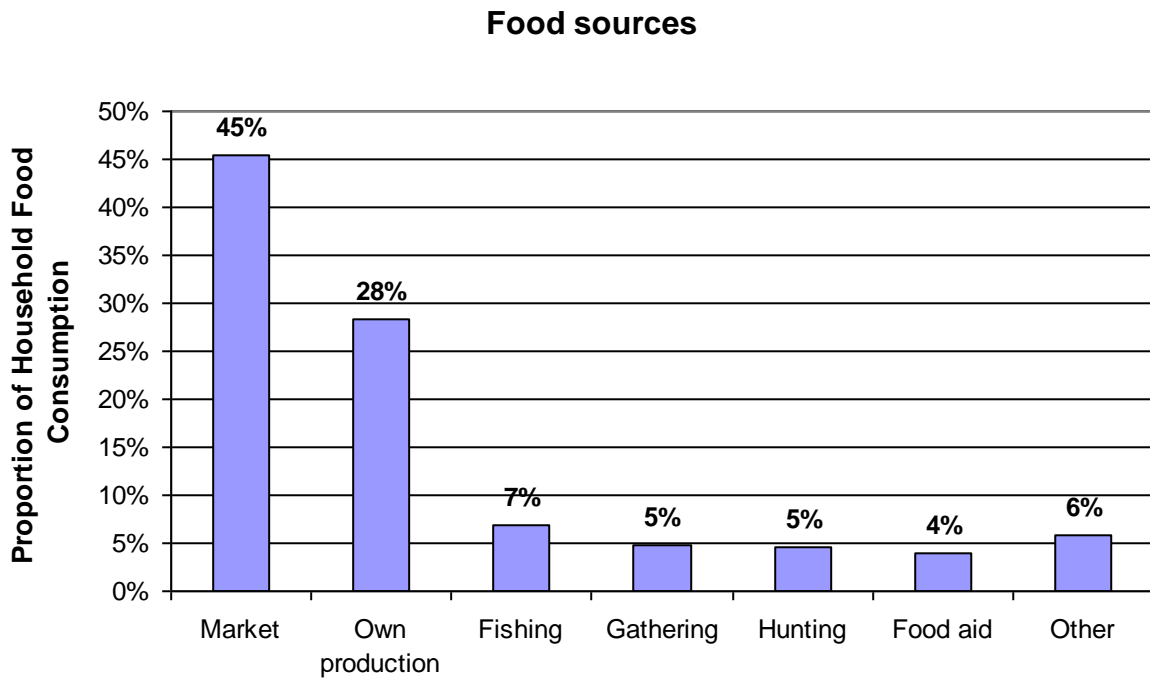
a. Income Sources by Food Security Group – Eastern Flood Plain zone



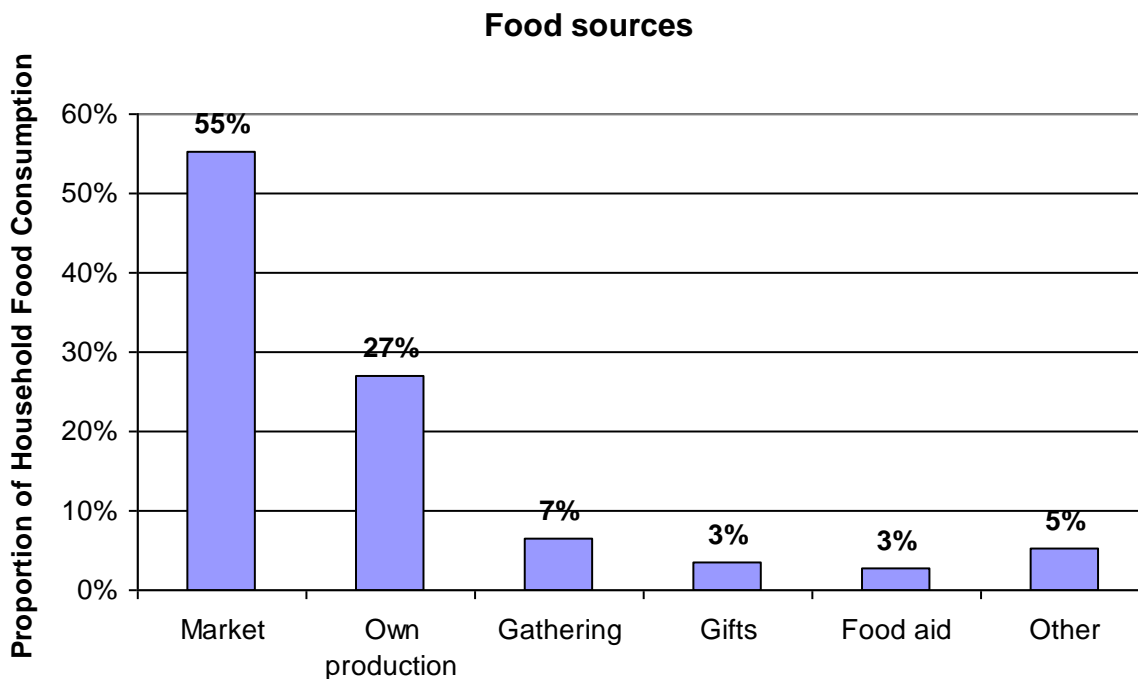
b. Income Sources by Food Security Group - Nile & Sobat zone



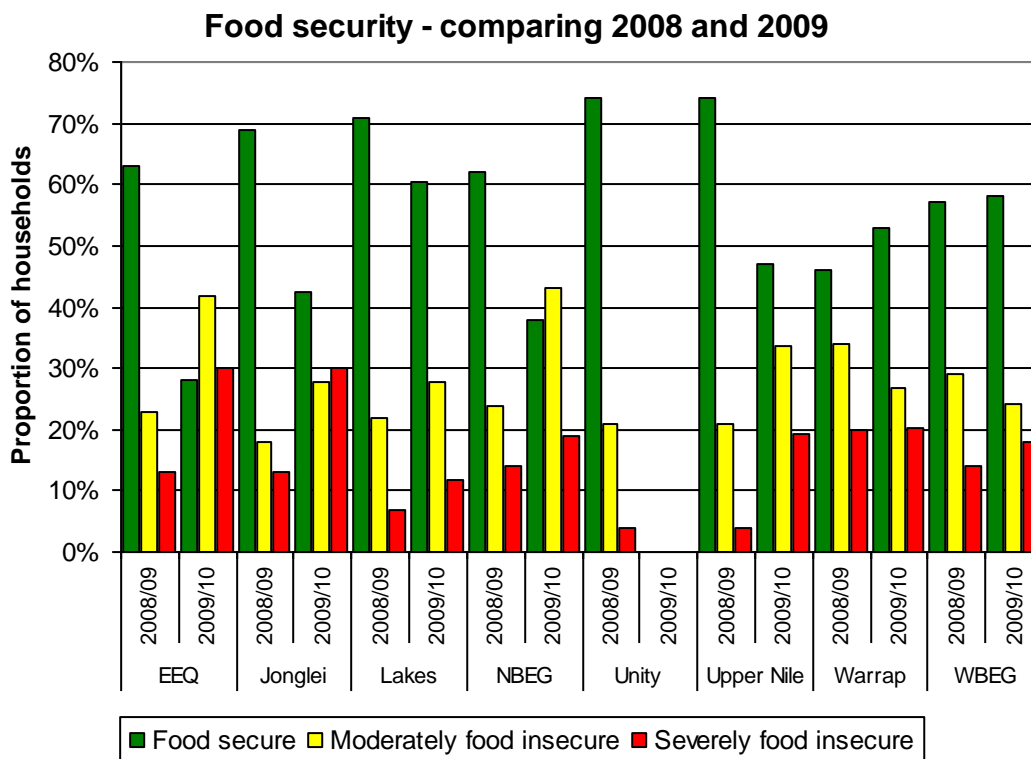
c. Food Sources - Eastern Flood Plains zone



d. Food Sources – Nile and Sobat zone



e. Food Security Groups – comparison between ANLA 08 and ANLA 09



II Annex D - Team Composition and Stakeholders

II.1 Team composition for field data collection exercise

Team	Name	Agency	County	Payam	Boma/Cluster	Number of HHs per Cluster
1	Robert Apire Mark	WFP	Nasir	Nasir	Nasir	30
	Peter Ajak Bach	WVI	Ulang	Doma	Doma	30
	Stephen Nyang Monykuch	SSRRC				
	Santino Obach Nyajwok	MOA				
2	Yomo Lawrence Miayaya	WFP	Maban	Bounj	Green Village	30
	Joseph Abdalah Sudan	MOA	Bailiet	Bailiet	Wukjur	30
	Gatwich Thot Jap	SSRRC				
3	Akuku Ap Richard	WFP	Maiwut	Pagak	Pagak	30
	Joseph Chol Dak	MOA/F	Longochuk	Darjo	Darjo	30
	Tiach Luol Turuk	SSRRC				
	Jock Tut Jock	RI				
4	Michael Idiku	WFP	Manyo,	Kaka	Hai Shuk	30
	Obach Ayuok Jak	MOA	Panyikang	Tonga	Ayidhajo	30
	Yohanis John Onak	SSRRC				
5	Joseph Ohiri Oleo	WFP	Malakal	Malaka	Luakat	30
	Manyang Agueny Manyang	MOA	Bailiet			
	Isaac Yien Puoch	SSRRC				

II.2 Composition of the technical working group

Name	Organization
Joseph Ohiri	WFP
Richard Akuku	WFP
Michael Idiku	WFP
Robert Apire Mark	WFP
Mari Ito	World Vision
Israel Chauke	Relief International
Sarah Joshua	GEE/Winrok International
Michael Maban	VSF Germany
Anthony Lodiong	SCF
Emmanuel Ogutu	MEDAIR
Charles Peter Deng	EDC-SSIRI

Zinnah Kamah	UNMIS/RRR
Nick	Solidarite's
Pajwan Ator Deng	UNMIS/POC
Koang Rambang	UNRRCO
Bol Ruach Rom	SSRRC
Mahbub Ul Alam	WFP
Else Kirk	GOAL
Ayantuu Wakjira	ARC
BekeleTadesse	IMC
Shanki Ajak	Unicef
Yomo Lawrence	WFP