

LIVELIHOODS ZONE MAP AND DESCRIPTIONS FOR THE REPUBLIC OF SOUTH SUDAN (UPDATED)

A REPORT OF THE FAMINE EARLY WARNING SYSTEMS NETWORK (FEWS NET) August 2018

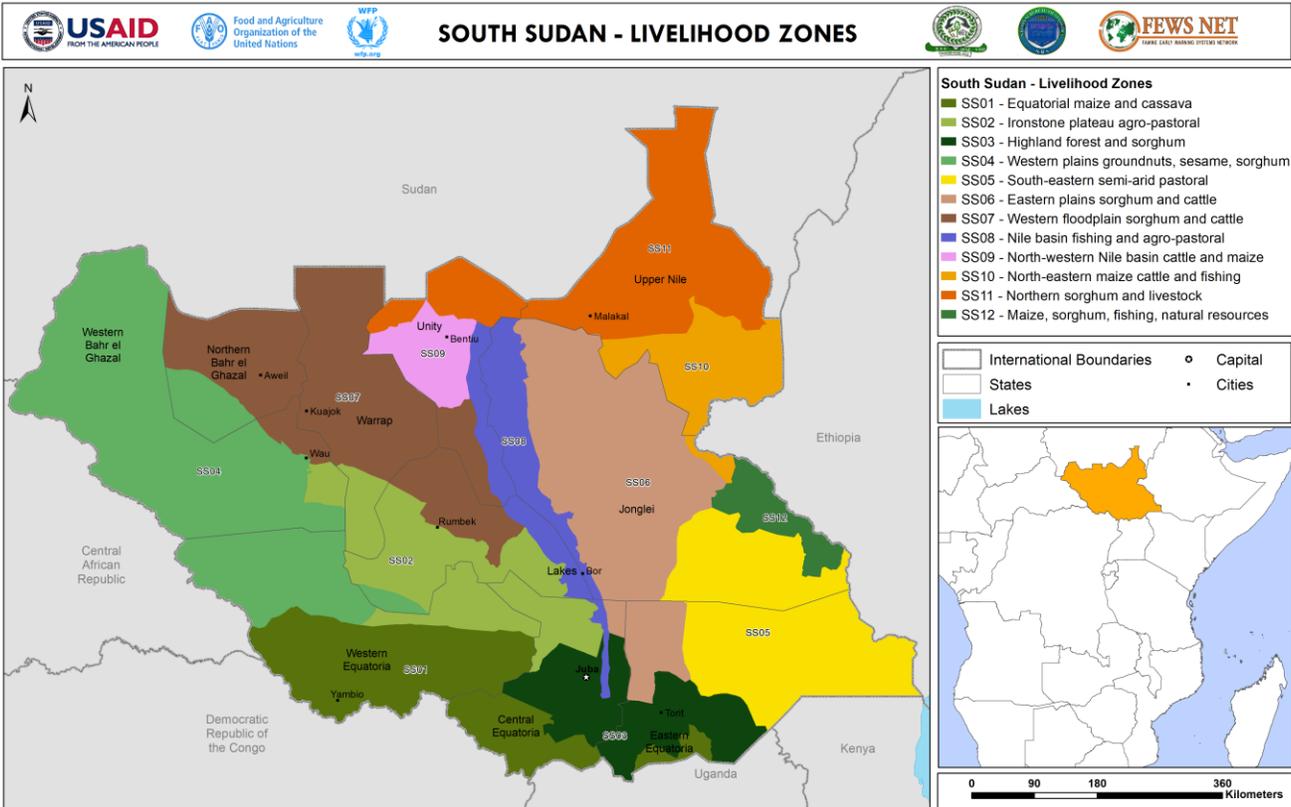


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Acronyms and abbreviations

CAR	Central African Republic
CPA	Comprehensive Peace Agreement
DRC	Democratic Republic of Congo
FAO	Food and Agricultural Organization
FEG	Food Economy Group
FEWS NET	Famine Early Warning Systems Network
FMA	Federal Ministry of Agriculture
FSTS	Food Security Technical Secretariat
G	Gathering
GoSS	Government of South Sudan
HEA	Household Economy Analysis
IDP	Internally Displaced People
IK	In Kind (payment)
IPC	Integrated Food Security Phase Classification
Kin	Kinship
m	meters
MARS	Ministry of Agriculture and Rural Services
mm	millimeters
MP	Market purchase
NBS	National Bureau of Statistics
NMAF	National Ministry of Agriculture and Forestry
OP	Own production
P4P	Purchase for Progress Initiative
PoC	Protection of Civilians
SMAF	State Ministry of Agriculture and Forestry
SMARF	State Ministry of Animal Resources and Fisheries
SS	South Sudan
SSD	South Sudanese Pound
USD	United States Dollar
USG	United States Government
USAID	United States Agency for International Development
UN	United Nations
VAM	Vulnerability Analysis and Mapping
WFP	World Food Programme

Introduction

This product aims to identify and define livelihood patterns to provide a starting point for early warning assessments in the Republic of South Sudan. The Livelihoods Zoning activity was designed to establish food security reference points and indicate whether the conditions reported at any given time justify more in-depth assessment. This Livelihood Zoning product does not in itself constitute a full food-security analysis; but the results presented in this report provide a reference point for estimating how households in different parts of the country could be affected by various hazards. The findings provide a systematic framework and geographic context for interpreting existing monitoring data on production, prices, and other indicators to identify potential problems. Assessment teams may wish to use the livelihood zones as a basis for geographical sampling in their surveys.

Note to the Reader:

Understanding livelihoods in any context is a complex matter. Factors of physical geography such as climate, soils, water bodies and vegetation, as well factors of human geography such as socioeconomic class, culture, trade and markets, settlement history and political boundaries must all be carefully considered and woven together into a coherent analysis. These aspects are all relevant to South Sudan, with the additional complicating factor of multi-faceted conflict and war. At this moment in time, when conflict and war affect many parts of the country, there is a desire to understand more deeply the ways in which households are affected and to what degree. This Livelihood Zoning provides a comprehensive overview of underlying livelihood systems; however, it does not provide a comprehensive analysis of the new, and often dynamic, ways in which many households now access food and income in coping with the persist conflict. Readers should consider and make use of this product bearing in mind this limitation, while supporting further analyses that have the mandate to investigate livelihoods in greater depth and the trends that are occurring over time.

Methodology

Household Economy Analysis (HEA) is a framework for analyzing the comprehensive set of means by which households of varying socioeconomic status access everything they need to survive, maintain productivity, and live what is considered a locally-acceptable way of life. The framework coherently organizes and makes practical use of a vast array of information sourced from many levels, such as local knowledge and micro-details at the household level, national census data, official crop production data, price monitoring data from local and regional markets, and so on.

As can be seen in the summary table below, the systematic organization of information and data starts with the definition of what HEA refers to as livelihood zones. This is the first of three major steps of HEA. A livelihood zone is a geographic area in which most households have a relatively similar pattern of production. This means that were one to move from one livelihood zone to the next, one would expect to see different means of production as determined by factors such as geography, markets, and trade opportunities. Socio-economic groups within a single livelihood zone tend to have similarities in their asset base, as well as relatively similar consumption patterns and coping strategies in response to shocks. The national zoning exercise that this report describes defined twelve livelihood zones in South Sudan.

From the overarching understanding of livelihood systems that a national livelihood zoning exercise develops, there are two additional steps in the HEA process. The second step is referred to as the baseline stage, in which an in-depth field investigation of each livelihood zone is conducted. A complete set of data is collected on food consumption, cash incomes and expenditures, as well as effects of shocks and the ability to cope. This data is all quantified and disaggregated by both socio-economic group and livelihood zone. The third and final stage of HEA is the modeling of monitoring data from shock events such as market disruptions, floods, etc. to determine the specific impact on food and cash income at household level. This third stage is referred to as outcome analysis. It

can be repeated annually, seasonally, or at any frequency as required. The outcome analysis stage is used to determine what would be an appropriate means and level of assistance in the case of a short-term emergency, a longer-term development program, or a need for adjustment in policy.

Livelihood Zoning	Baselines	Outcome Analysis
<i>Typically conducted once every several decades.</i>	Conducted once every 5-10 years, dependent on fluidity of context, one baseline for each zone.	Conducted seasonally, annually, or once off.
<i>Provides an overview of the system.</i>	Provides comprehensive and in-depth information on food and cash income, and expenditures for all types of households in the system, for a fixed 12-month period. Conducting two sets of baselines in the same zone ten years apart enables a trend analysis.	Uses the baseline information and up-to-date monitoring information to provide a quantified statement of food and cash deficits and the degree to which external assistance may be needed.

Although there has been a precedent of conducting multiple national zoning exercises for South Sudan, with the most recent in 2013, it is not necessary to repeat these exercises regularly. Unless there is a major climatic or geographic change, or a structural change in trade and market opportunities, it is very not likely that Pibor county would suddenly or gradually start to look like Leer or Yambio counties, regardless of the degree of conflict that takes place.

What may change within Pibor in the case of five to ten years of *repeated* shocks; however, is the level of production and the ability of households of different socioeconomic levels to meet food and cash needs. The level of detail needed to understand this accurately can be achieved by the HEA process of baselines, which requires fieldwork. For example, supposing a baseline had been conducted for that area in 2011, it would provide detailed information on food and cash incomes across twelve months, disaggregated by socioeconomic group. With a similar baseline process repeated in 2018, it would be possible to understand the trend of asset losses, changes in production, and food security changes at the household level. If updates were required throughout the period 2011 to 2018 (e.g. every six months), key monitoring data can be inputted into the outcome analysis modeling tool to determine real time deficits. As for the livelihood zoning status of the area, this would normally be expected to be valid for decades.

Each livelihood zone description, of which there are twelve in this document corresponding to the twelve livelihood zones, includes overview information on food sources and income sources for two generic socioeconomic groups, meaning relatively poorer and relatively better-off households. A brief description of each zone's main geographical and climatic features is included, as well as the seasonal and food access calendars of the zone.

Livelihood zone maps and descriptions form part of the knowledge base for FEWS NET's food security monitoring activities. These tools, however, are not intended to be a comprehensive analysis of food security or a complete monitoring tool, but rather to provide points of reference and indicate whether the conditions reported at a given time justify a more in-depth study.

The steps taken for this zoning exercise were as follows:

1. Collection of secondary information on geographic and climatic parameters, demographics, markets, livelihoods and food security. These were both in report and map formats and included regular and up-to-date reports as well as longer-term documents.
2. Approximately 37 representatives from 30 counties, 10 former states, and 17 representatives from the national level came together at a national-level workshop to build on the previous zoning of the country completed in 2013, with the aim of refining the work and updating the map and zone descriptions. The workshop took place in Juba, from May 8th to 12th 2018 and was followed by a one-day consolidation

workshop on 14th May with key stakeholders. A list of participants is provided in Annex 2.

3. Participants discussed the existing 2013 map at great length. This led to the definition of one additional zone, from eleven (in 2013) to twelve, as well as the minor adjustment of boundaries between several zones. From this point, participants documented the key characteristics of livelihoods, produced seasonal calendars, and set out market characteristics for their respective zones, providing the basic information presented in the livelihood zone descriptions of this report.
4. A comprehensive list of the currently official 32 states, with all counties, was developed. An initial version of the report was circulated to workshop participants between June-July 2018. This final version incorporates their comments.

Information on the HEA methodology, including the specifics on how a zoning is conducted, can be found in the HEA Practitioners Guide available [here](#). Information related to FEWS NET and its use of the HEA methodology can be found at <http://www.fews.net/>¹

Changes to the Livelihood Zones Map

In the present 2018 revision workshop, the participants examined the 2013 livelihoods zone map carefully, zone by zone, county by county, in plenary and in working-groups. They arrived at certain changes while nevertheless retaining the basic logic of the 2013 map, including the division into 12 livelihood zones (see the maps on the following page). This change from eleven to twelve zones is reflective of a re-assessment of the differences between certain localities, rather than an indication of any major economic changes in the 5 years since the original map was devised.

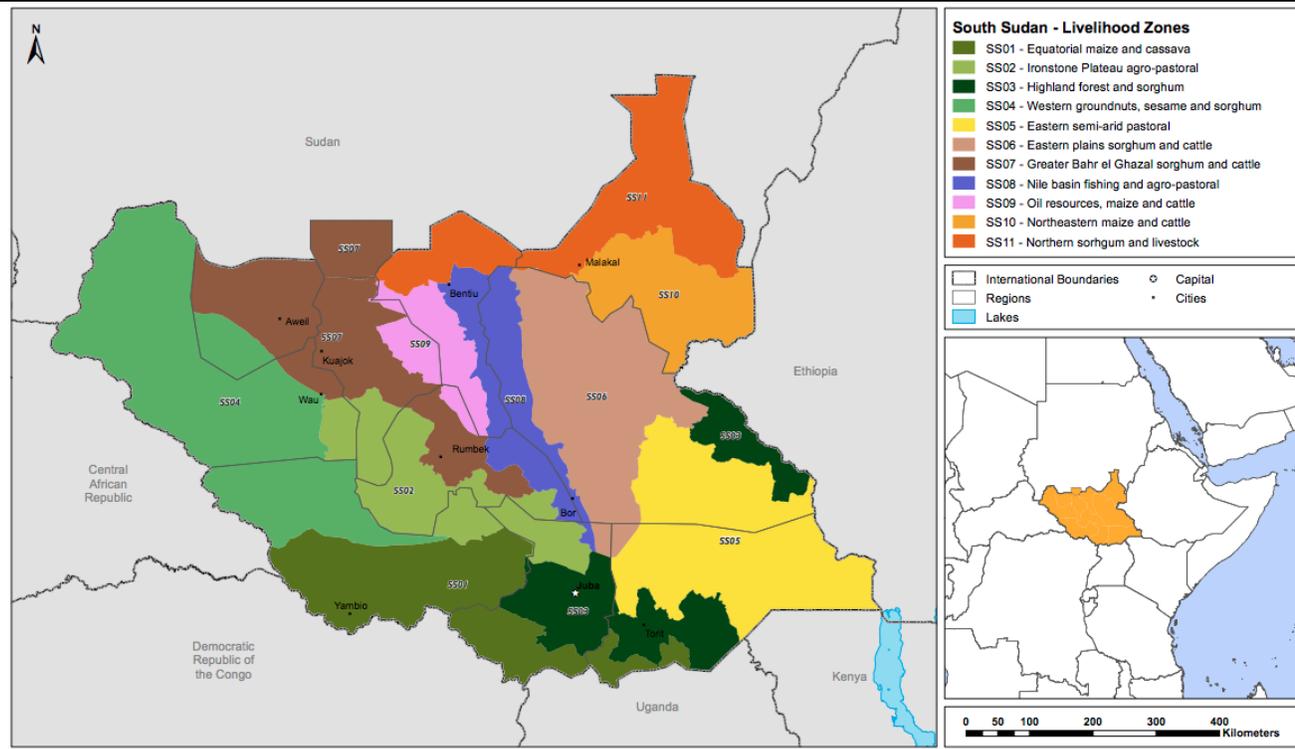
Changes to the zones are summarized as follows:

Zone SS01	Some adjustment to southern and north-eastern border with areas lost to zones SS02 and SS03.
Zone SS02	Some adjustment to borders; small expansion into zones SS01, SS03, SS04, SS07 and SS08.
Zone SS03	Some adjustment to borders to allow SS08 to continue south past Juba, expansion of southern border up to Uganda and reduction of eastern border in Eastern Equatoria.
Zone SS04	Minor refinement of south-eastern border only.
Zone SS05	Some adjustment to borders; expansion into zone SS09 but cutting back of the southern section of the zone.
Zone SS06	Minor refinement of south-eastern border.
Zone SS07	Some adjustment to border with parts of zone SS09 now part of this zone.
Zone SS08	Minor refinement of borders only.
Zone SS09	Significant reduction in size of zone. Partially related to change in oil production, but mostly considered incorrectly delineated in previous round of zoning.
Zone SS10	Minor refinement of borders only.
Zone SS11	Minor refinement of borders only.
Zone SS12	New characterization of zone SS12 different to zone SS03.

¹ http://v4.fews.net/docs/Publications/Guidance_Application%20of%20Livelihood%20Zone%20Maps%20and%20Profiles_final_en.pdf

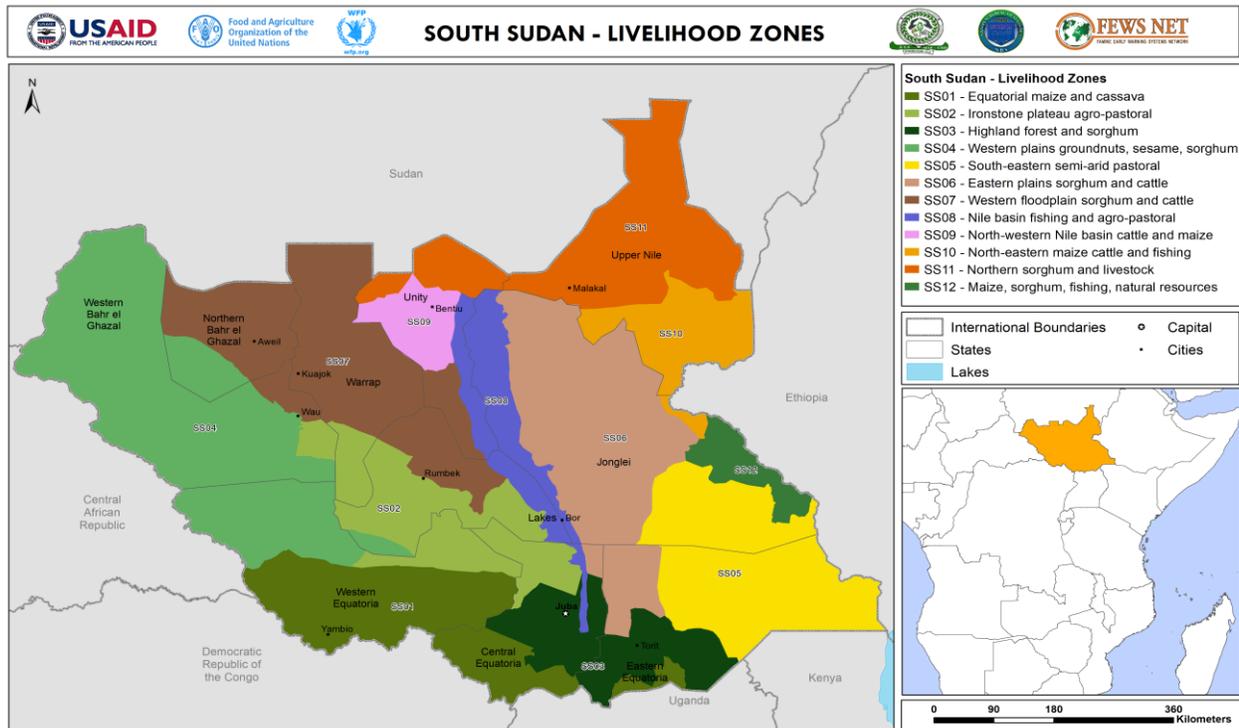
Map 1. National zoning map for 2013

Source: FEWS NET



Map 2. National zoning map for 2018

Source: FEWS NET



The National Context

Despite abundant natural resources, including arable and grazing land, water resources, oil, and timber, South Sudan is among the poorest and least-developed countries in the world, in part due to persistent conflict since December 2013 in northern areas and the emergence of more widespread conflict in southern areas since July 2016. There are few asphalt roads and limited electronic communications. Over wide areas, communications and trade rely on river transport on the White Nile, particularly between the ports of Juba, Bor, Malakal and with the Republic of Sudan.

The national economy is overwhelmingly dependent on oil exports which account for nearly all of the country's exports and around 60 percent of gross domestic product, and more than 95 percent of government revenues, although oil production has declined steadily.² Livestock and timber are exported and there is informal trade particularly in agricultural produce across the country's borders with Central African Republic, Democratic Republic of Congo, Uganda, Ethiopia, Kenya, and Sudan. Staple foods, including food aid, account for the bulk of imports due to low production in some areas and limited internal transport, which restricts the transport of food from surplus to deficit areas, or to Juba and other urban areas within South Sudan.

The most recent national census of 2008 estimated the population at 8.26 million; however, FEWS NET estimates for late 2017 indicate a population of nearly 11.6 million. Populations are overwhelmingly rural and primarily dependent on subsistence farming (often shifting) and animal husbandry. The risk of food insecurity varies with the degree of conflict and scale of its impact and can deteriorate sharply when conflict persists in an area. Other factors that influence food security in South Sudan include rainfall, soil types, topography, drainage, access to markets, access to wild plant foods, hunting and fishing, timber, gum Arabic and other natural resources. Larger-scale mechanized farming is limited to parts of Upper Nile, Unity, and Northern Bahr el Ghazal states. While some rural populations do not have consistent market access, they tend to sell wild foods, fish, livestock, or labor for extra income to purchase staple foods, and can therefore be affected by high market prices.

South Sudan has a tropical climate with wet and dry seasons. Most of the country receives 750-1,000mm of rain annually although the south and west receive slightly more (1,000-1,500mm), areas of the north and southeastern regions less (500-750mm) falling to less than 500 mm in the extreme southeast. Seven broad agro-ecological zones are recognized, from northwest to southeast:

- (i) the Ironstone Plateau (most of Bahr el Ghazal, west of the River Nile) with lateritic soils,
- (ii) the Central Hills, along the Nile to the north of the Green Belt,
- (iii) the Green Belt, (southern parts of Eastern Equatoria, Central Equatoria and the western parts of Western Equatoria), which has two rainy seasons and the most fertile arable land in South Sudan,
- (iv) the Imatong mountains along the Uganda border,
- (v) the Flood Plains, including the Sudd, a vast area of swamp,
- (vi) the Nile–Sobat Corridor along the banks of the River Sobat which flows from Ethiopia and receives numerous tributaries before draining into the Nile,
- (vii) the semi desert area in the extreme southeast.

² World Bank Country Overview, <http://www.worldbank.org/en/country/southsudan/overview>

Recent events affecting food security and livelihoods³

Year	Major events and trends
2018 (through September)	Conflict results in restricted livelihoods activities, as prolonged displacement and extreme food insecurity persist despite ongoing humanitarian assistance. Crop production is affected by outbreak of fall armyworm and stalk borers even though rainfall is generally good. The outbreak of rift valley fever among livestock results in excess mortality in cattle. Commodity prices rise due to inflation and depreciation of SSP against USD exchange rates. A power sharing agreement is signed between political parties in August in a bid to end the civil war, and a Peace Agreement was signed on September 12 th .
2017	Severe food insecurity is widespread as over half of the total population in need of humanitarian assistance, and famine is declared in central Unity at the start of the year. Conflict continues to displace large portions of the population to IDP camps and other areas. Crop production is also affected by stalk borer pest and a prolonged dry spell, leading to declining output. High inflation due to economic instability leads to a rise in prices, especially in urban areas. Cumulative effects of frequent inter-ethnic conflict prompt the government to declare a state of emergency.
2016	Conflict intensifies, including in the southern part of the country, due to rising political disputes that result in mass displacement to Uganda and Sudan and border closures with Sudan. There is a crop production deficit due to conflict-related disruptions to agricultural activities and a prolonged dry spell (2-3 weeks) and infestation by stalk borer pest. Livestock diseases increase due to lack of vaccine and inaccessibility of some areas. Food prices spike as major trade routes are cut off and local markets are disrupted due to conflict.
2015	Political disputes cause conflict events to intensify across the country resulting in disruption of livelihoods activities and a rise in displacement. Livestock disease increases due to lack of vaccine and inaccessibility of some areas. There is heightened food security risk among the local population and particularly IDPs.
2014	Inter-communal and civil conflicts cause displacement of people and disruption of crop production activities, though it was an average year for food security in much of the country. Jonglei, Unity, and Upper Nile states are most affected by civil war, and face severe food insecurity, cereal deficits, high food prices, and high dependency on markets for staple food purchases. Cases of crop pests and livestock diseases are reported across the country, leading to reduced crop harvests and lower availability of food mainly in crop-producing areas. Frequent cattle raids reduce livestock sales and households' ability to buy food in pastoral and agro-pastoral areas.
2013	Despite flooding and insecurity, favorable rains and limited disease outbreaks permit higher levels of national cereal production as compared to the five-year average, although cereal production is low in Upper Nile State due to reduced planting area and late onset of rains. By October, levels of food insecurity reach a 5-year minimum; however, the outbreak of civil war in December and ongoing communal conflict bring higher levels of displacement and food insecurity at the end of the year. Cross-border political conflicts with Sudan lead to a trade embargo and the abrupt exit of traders from Sudan while insecurity affects trade routes from Uganda and causes restrictions in food supply. The Government of South Sudan (GoSS) responds to low oil revenues and scarcity of staple foods with stringent austerity measures which culminated in a lack of essential social services including healthcare among the rural population.
2012	Widespread multi-cause conflict, including cattle raiding, inter- and intra-communal conflict, and militia activity lead to continued displacement of people and livestock and disruption of crop production. Large-scale riverine and localized flooding, especially in areas such as Upper Nile State, affected food production and limited physical access to markets, and was exacerbated by poor infrastructure in Lake and Unity States. Localized disease outbreaks following the flooding, including East Coast fever and anthrax, killed large herds of cattle, leading to low livestock sales, loss of income and reduced household ability to buy food. The overall food security situation worsens due to political insurgency and moderate drought conditions in other parts of the country.
2011	Ethnic clashes and conflict between security forces and rebels persist in Jonglei state. Independence from Sudan is declared on July 9 th .

³ Based on information provided by workshop participants and verified by secondary sources for national-level trends.

Special notes on the South Sudan context

Conflict

The generic terms “the conflict” and “insecurity” are widely used both in secondary literature and conversations in South Sudan. Due to the complexity of the multi-faceted conflict, it is ambiguous to use the term conflict without breaking it down into its various types, impacts and historical patterns. A map of South Sudan reflecting conflict over time can easily lead a viewer to imagine that conflict is everywhere, which in a sense it is. However, at any moment in time it is not everywhere. The table below summarizes the various types of conflict relevant to South Sudan. The categories represented in the table below are only for simplicity, as in reality the nature of the types of conflict are interrelated and murky.

Category of conflict	Description
Livelihoods resources conflict	<ul style="list-style-type: none"> - Intra-ethnic, inter-ethnic. Particularly problematic in drier parts of the country. Related to water, pastures, migratory routes, etc. Also includes nomadic peoples originating within South Sudan (SS) and from other countries. Usually localized but occurs in many parts of the country. Often reciprocal and ongoing. Low intensity. - Ongoing for at least centuries, throughout the two Sudanese civil wars, the Comprehensive Peace Agreement (CPA), to present. Generally seasonal. - Affects production for short periods of time (unless repeated) in specific areas. - Deeply engrained cultural and “mindset/perceptions” of “the other.” Livelihood systems have developed over time with and through this conflict.
Ethnic and tribal conflict	<ul style="list-style-type: none"> - Relates to problems between different ethnicities and tribes who have similar livelihood systems (and therefore need to access similar resources), as well as across ethnicities who range from herders, to farmers, to hunter-gatherers. Most likely historically determined by above mentioned category of livelihoods resource conflict. Often reciprocal and ongoing. Livelihood impacts similar to above. - Ongoing for at least centuries, throughout the two Sudanese civil wars, the CPA, to present.
Cattle raiding	<ul style="list-style-type: none"> - Opportunistic theft. Often has inter-ethnic dynamic but also wider than that. Reciprocal and ongoing. Violent but limited in scale. Cultural and political drivers. Impacts related to the above. - Ongoing for at least centuries, throughout the two Sudanese civil wars, the CPA, to present.
Second Sudanese Civil War	<ul style="list-style-type: none"> - Active 1983 to 2005. Political power and resource conflict, with religious and meta-ethnic (“African” – “Arab”) narrative. Complex, non-binary conflict, included many cases of meta-ethnic and inter-ethnic conflict and atrocities. Mostly low sophisticated, low intensity militarily, but considered highly destructive to human life - between 1-2 million deaths from conflict, starvation and disease including the Bahr el Ghazal famine of 1998. High degree of aid pilfering by armed groups. Followed what is often called the “First Civil War” of 1955-1972.
Inter-war period	<ul style="list-style-type: none"> - Comprehensive Peace Agreement, 2005. Formation of new nation, 2011 - Inter-war years included other forms of disruption – unprecedented volumes of cash flowing within as well as out of the country with insufficient accountability, corruption and misappropriation of aid, social networks and kinship mechanisms affected by introduction of cash and return of long-term refugees, increased military spending on sophisticated weaponry. - Increase in availability of jobs, especially in urban areas. Minimal disruption to rural production. Cross-border trade mostly strong.
Post-Independence War with Sudan	<ul style="list-style-type: none"> - Oil war, active briefly in 2012. Ongoing tension regarding disputed Abyei. No significant impact on rural livelihoods.
South Sudan Civil war	<ul style="list-style-type: none"> - Commenced 2013 – current. Active, increasing-decreasing intensity over time. Non-binary, inter-ethnic political power struggle, military, national and local level. Guerrilla and traditional battlefield with more sophisticated weaponry (e.g. helicopter gunships), but also scorched earth techniques, rape as weapon, etc. A new generation of soldiers who “know only war”. The political nature of this war heavily underpinned by long-term ethnic dimensions described above. Deeper fragmentation has continued - rogue paramilitaries, intra-communal clan conflict, opportunistic banditry and raiding. Government services (e.g. vaccination) curtailed.

South Sudan is a context in which a certain degree of conflict and violence has been part of the fabric and culture of life given the presence of war for much of the last 60+ years and low-level resource and ethnic conflict over centuries. The country gained independence in 2011 and the recent iteration of conflict began in 2013, but the context and the fundamental characteristics of culture and livelihoods have persisted much longer. At a general level there is a certain type of “flexible stability” in the livelihoods of the country, but with high variation in impact at the micro level. At one time or another everyone has been affected by the conflict, but not all the time, and with different degrees of intensity.

Certain of the above-mentioned forms of conflict that occur in a localized area will reduce access to and utilization of key assets such as grazing land, fields, forests, water bodies, and markets. This can be direct – when access to assets is physically blocked. It can also be indirect – where either mistrust between peoples causes long-standing arrangements over shared resources to break down, or fear prevents people from undertaking normal production activities such as planting, harvesting, seeking pasture, trading, etc. Depending on the intensity and duration of disruption, household food security is often affected to some degree. Access and utilization will return to a “normal” level once the population of the area assesses that it is sufficiently safe to re-engage in livelihood activities. The more intense the disruption, or the longer it persists, the higher the likelihood of food insecurity.

It is important to bear in mind that the nutritional status of a population in an area affected by conflict is not solely determined by the food security situation. With the increase in intensity of war since 2013, increasing numbers of women have been abandoned by husbands and sons either joining the conflict, or fleeing to avoid being forced to join the conflict. The decrease in the availability of male labor for production activities can have an impact on the food and cash earned by a household in a very short period. Over a period of several years such a household could move down the wealth spectrum from poor to very poor⁴. This kind of dynamic, combined with the already high-level risk related to poor hygiene, has critical impacts on the nutritional status of children and vulnerable adults. Increased fragmentation caused by the current civil war, and interrupted social hierarchy, reciprocity and kinship networks caused by long-term displacement and scattered populations, are compounding factors that make matters even worse⁵. Failure to understand and consider these fundamental consequences and impacts of war often results in analysts defaulting to an over-focus on food security (at best), or the easier task of estimating cereal production deficits and over emphasizing its importance as an indicator of pending crisis (at worst).

Gender Landscape

Although there are many different cultures and social norms that exist, the reality remains that in much of South Sudan the position of women and girls is in no way equal to men, and this is inter-generational. Female and maternal education is low. Women are responsible for most child raising tasks, home duties such as gathering, cooking, water fetching, etc., as well as production tasks such as cultivation, milking, etc. They have little to no role in decision making of matters that affect them. Although only reluctantly discussed, it is not uncommon for daughters to be exchanged for livestock in marriage arrangements often made whilst they are still children. This is especially the case when cattle are lost through raiding or bad year droughts as this is the quickest recovery strategy. As a result, women often have minimal to no asset level, leaving them and their children particularly vulnerable to natural and man-made shocks. Furthermore, the practice of rape is widespread, especially so in times of civil war.

⁴ The socioeconomic composition of men joining the conflict is unknown, but it would not be surprising if they were disproportionately from poorer households.

⁵ Key informants in Juba quoted the high rates of malnutrition in northern Bahr el Ghazal as an example of the kind of complex impact of conflict, with the area having high numbers of returnees of long-term displacement in Sudan.

Internally Displaced People (IDPs)

The scope of this zoning did not include an investigation into urban livelihoods, nor the dynamic situation of conflict-related population displacement, i.e. IDPs. This would require a separate, in-depth analysis specifically on this matter. The map to the right provides an indication of the location of displaced populations as of June 2018 overlaid on the updated livelihood zone map. IDPs are in both urban and rural settings. The situation of IDPs is highly dynamic and likely to vary significantly over time. A discussion of the livelihoods of IDPs is included in Annex 1 to this report.

To some degree the presence of a proportionally large population of IDPs (to host population) in a location will have an influence on the prevailing pattern of livelihoods. Rarely, however, would it result in a change to the underlying livelihood system, or a

change in the zoning. It is also important to note that the “IDP situation” is not monolithic, in that displaced households will have very different livelihood options available to them depending on where they are displaced. It is important to note that references to internally displaced people in the twelve livelihood zone descriptions that follow does not imply that people are from the zone being described, only that they are internally displaced within the country, and could be coming from other zones. More information on IDP livelihoods can be found in Annex 1.

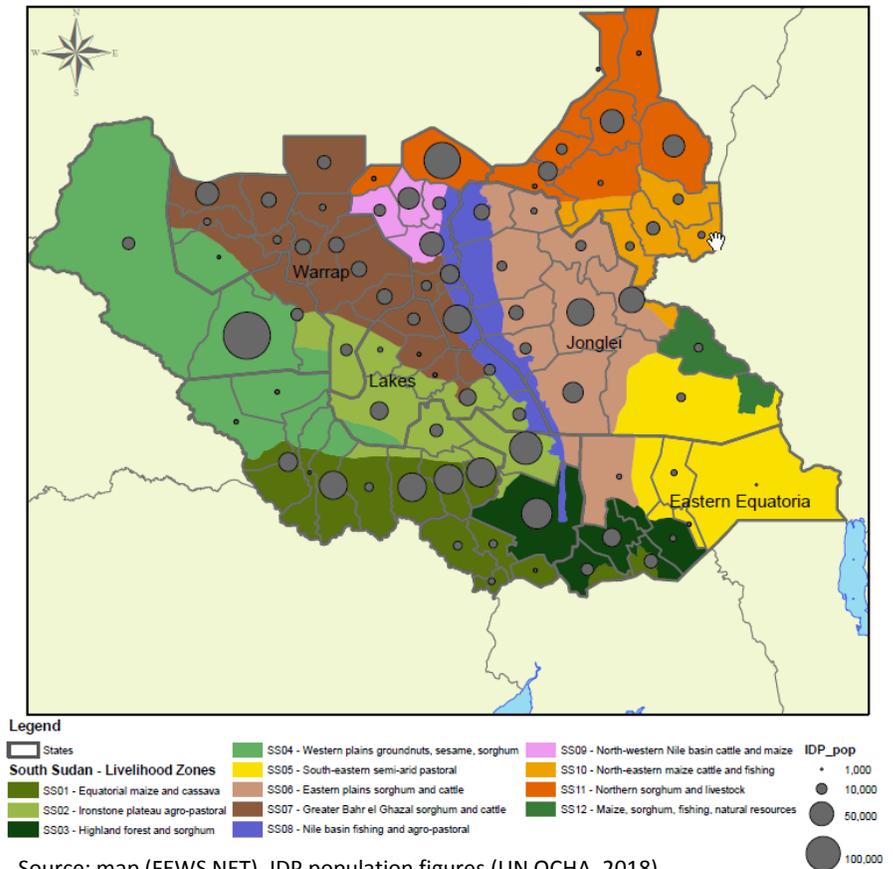
Humanitarian Assistance

While humanitarian assistance has been an important part of local livelihoods for many years in South Sudan, it has increased more notably over the past three to four years. Since 2015, between two and three million people, or up to 25 percent of the total estimated population of the country, have received food assistance on a monthly basis. The assistance provided meets between 50 and 100 percent of total food needs among the beneficiaries reached – with the greatest contribution in areas of high need and limited alternative food sources such as United Nations (UN) Protection of Civilian (PoC) sites. Food assistance is also distributed to local populations throughout the country but is heavily concentrated in certain areas. For example, of the nearly three million total beneficiaries reached by World Food Programme (WFP) food assistance in June 2018, 26 percent were in Unity State, 18 percent in Northern Bahr el Ghazal, and 15 percent in Upper Nile State. As a result, the proportion of the population that receives humanitarian assistance throughout the country varies widely between less than 10 percent in some areas (such as Western Equatoria) to nearly 90 percent in others (such as Unity).

Naturally-Occurring, Uncultivated Foods

The utilization of natural food sources including fish, roots and tubers, water lilies, fruits, leaf vegetables, shea

IDP Population by County



butter, honey, game meat, grains, and seeds in the South Sudan context is widely known. However, there seems to be a general perception in the language present in much of the secondary literature that wild foods are mostly a “coping strategy” or an “emergency food”. While it is true that wild foods are a critical component of a package of coping options, they are indisputably part of the normal diet for a very significant proportion of the population – desired, nutritious, sustainable, and resilient options. In addition, the contribution of wild foods to the total annual caloric needs of households is likely underestimated.

Livestock

As for the naturally-occurring uncultivated foods described above, the contribution of livestock to household food needs does not seem to be well researched or well understood. Most actors are aware of the cultural and social value of livestock, the role of livestock in conflict, and to some degree of the contribution of livestock to cash incomes of households. Especially for transhumant pastoralists, but to some degree also for sedentary livestock rearers, the caloric contribution of milk and meat (in some cases also blood) is likely to be very significant in the overall scheme of things. Livestock are also an important factor in in-kind and kin-relationship interactions between poorer and better-off households, and not well understood or researched.

Nomadic Peoples

There are seasonal movements of nomadic pastoralists in and out of South Sudan, which have been taking place for generations. These were not discussed at any length during the zoning process; however, they would need to be investigated in any subsequent baseline activities.

Macroeconomic Context

Exports of oil have fallen drastically in the last five years, leading to significant changes in the availability of foreign exchange flowing into the country. The value of the South Sudanese Pound, and the purchase power of households (especially urban households), have dropped significantly in recent years. These factors, combined with the large percentage of the population that has left the country as refugees since 2013, are yet another complicating factor in the overall macro-economic context.

Changes in Administrative Boundaries

In October 2015 and again in January 2017, the GoSS made changes to the administrative boundaries within the nation. Historically there were 10 states and 79 counties, whereas there are currently 32 states under the Government’s recent changes. This will inevitably lead to challenges for determining populations within each zone. Future changes in this structure seem possible and need to be borne in mind.

Notes on Secondary Information

In conducting the desk review in preparation for this zoning workshop, it was challenging to find comprehensive secondary information. It is expected that this is due to the dynamic nature of the conflict and ways in which limited access prevents consistent and rigorous data collection on all aspects of livelihoods that would be useful for this activity. Participants from partner organizations, who work across the ten former states of South Sudan, were invaluable in providing field information, though given limited access to some areas for these participants, there was limited ability to triangulate some field information. Emphasis should be placed on regularly updating this information.

Livelihood Zone Descriptions

EQUATORIAL MAIZE AND CASSAVA (SS01)

Main productive assets	
Poor	Better-off
Land cultivated (fewer hectares) Bicycles Hand tools Chickens	Land cultivated (more hectares) Motorcycles Hand tools Goats
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Sorghum (OP/MP) Groundnuts (OP/MP) Soya beans (OP) Cassava/Sweet potatoes (OP) Vegetables (OP) Wild foods (G)	Maize (OP) Sorghum (OP) Groundnuts (OP) Soya beans (OP) Cassava/Sweet potatoes (OP) Rice (OP/MP) Vegetables (OP)
Main income sources	
Poor	Better-off
Bush product sales Labor sales Brewing	Food crop sales Cash crop sales Retail trade
Main markets	
Nabiapai and Bazi (bordering Democratic Republic of Congo (DRC), Kenya and Uganda). Yambio, Yei, Ikotos, Nimule, Namaku, and Koliko (Internal and local markets)	
Main hazards and approximate frequency	
Prolonged dry spells from May to July, generally every two years. Crop pests and diseases during the rainy season on an annual basis. Seasonal flooding of rivers and streams from August to October, generally every four years. Conflict between armed actors related to the current civil war Sporadic political insurgency due to the presence of Lord's Resistance Army (LRA)	
Main coping strategies	
Increased wild foods consumption Increased sale of bush products including charcoal/firewood Increased labor migration Increased reliance on cash remittances Increased sale of livestock Increased self-employment	

Summary

This livelihood zone is bordered by Uganda, the Democratic Republic of Congo (DRC) and Central African Republic (CAR). It covers the former counties of Tambura, Ezo, Nzara, Yambio, Ibba, Maridi, Yei, Lainya, and parts of Mundri, Kajo-Keji, Magwi, and Ikotos. Livelihood patterns are agriculture focused but supplemented by livestock, fishing, hunting, and gathering of a range of wild foods and bush products. In a normal year, the zone is highly productive and considered a surplus area due to good soils and reliable rainfall, and market access, both local and cross-border, is relatively good.

The zone is largely found in the Greenbelt agro-ecological zone. With fertile soils, it is considered one of South Sudan's highest potential cereal producing areas. The zone's topography is mostly a mix of mountains, hills and valleys which form the plateau in the southern reaches along the border. The area further inland is primarily flat plainlands with an estimated altitude between 800 – 1200 meters (m) above sea level. Soil types vary from the lowland to highland areas with a mixture of fertile loamy clay and sandy soils that are most suitable for agricultural production.

The zone has a bi-modal rainfall pattern with two reliable seasons and average annual precipitation of 1100-1600 millimeters (mm); although the seasonal averages range 600-900 mm each season. Rains typically start in March to June with a break in late June then restart in July to November. The temperatures are relatively warm throughout the year, especially in lowlands, and cooler in highlands averaging between 27-30° Celsius in January to February and 30-35° Celsius from December to March.

This zone is one of the most naturally endowed areas in the country with diverse vegetation cover including dense deciduous equatorial rain forests to the south that become less dense bushes towards the north. The major forests *Nabanga*, *Sakure*, *Kpatuo*, *Bangangayi*, *Gilo*, *Hatire*, *Imilai*, *Kalisoni*, *Upper Talanga*, and *Lumarati* are found in this zone and provide a source of hunting, plentiful timber materials for housing and fuel, and a broad variety of naturally occurring uncultivated foods and fruits such as wild yams, shea butter, tamarind, wild lemon, and wild vegetables (*Luge and Lugutalang*). Major rivers such as

the *Yei, Meridi, Ibba, Sue, Nile, and Kaya* flow through the zone providing a source of fish and water lilies. Other natural resources include minerals such as gold in Nzara, diamonds in Ezo, and cement in Kajo-Keji, which are not currently being exploited. Potential of tourism in game reserves exists but is largely infeasible due to insecurity.

Since 2013, the zone has experienced a rise in political and cattle-related conflict related incidences which has forcefully displaced populations, particularly women and children, to refugee camps in Uganda or internally to local towns or IDP camps. Cattle raiding and conflict over pasture and watering points between migrating pastoralists and farmers occurs often, especially during the dry season (February to May). Such conflicts are long-term, reciprocal in nature, and as much intra-ethnic as they are inter-ethnic. Due to these various forms of conflict, agriculture and livestock rearing are disrupted, leading to low productivity.

The primary determinants of wealth within the livelihood zone are the size of land cultivated per household, the types of crops grown in both seasons, and the level of access to productive assets. Combined, these determinants dictate the variation in the food and income access between wealth groups. Settlements are concentrated in and around major towns, along river banks and lowlands, and along major roads. The population density is relatively higher than other places in South Sudan.

The main economic activities consist of rain-fed mixed farming with some animal husbandry and exploitation of forest products. A wide variety of crops are grown. Coffee (*Robusta*) is the only cash crop grown, mostly in Mundri, Yei, and Yambio former counties of Western and Central Equatoria. All crops are grown in both seasons except for coffee, sesame, and rice which are only harvested once a year. In some unique areas such as Yambio, maize harvests are done three times a year, with the first harvest in June and July, the second harvest in September and October, and the last harvest in December and January.

Land reserved for cultivation is generally available and commonly held by the local community and managed within traditional social structures. Most cultivation is performed by hand. For poor households, land holdings are limited, averaging around 0.8 hectares. The poor primarily use their own labor to cultivate their land which hinders their ability to cultivate more land and sometimes results in untimely sowing. Middle and better-off households have the capacity to cultivate between 2 to 4 hectares. They can employ labor and hire tractors for larger landholding.

Cattle, sheep, goats and pigs are kept both under an extensive husbandry system, grazing in communal lands, and intensive systems, i.e. fed by grains, concentrates and crops residues. Fewer cattle are kept as are goats, sheep, pigs, and poultry (*chickens and duck*) which are used for consumption (*milk and meat*) and sale. The lowland areas of Mundri, Kajo-Keji, Magwi, and Maridi tend to have more livestock than the rest of the zone, particularly goats. In addition to growing crops and keeping of livestock, households also rely on natural resources both consumed and sold for cash. The common forest products collected and sold include timber, charcoal, and firewood. Households collect naturally occurring foods such as yams, palms, shea butter, mushrooms, tamarind, termites, wild honey and wild game⁶ and fish (*Nile perch and Tilapia*) for household consumption and sale. Other livelihood activities include construction-related work such as brick making, handicrafts and cross-border trade with the DRC and Uganda.

Chronic hazards have led to the decline in agricultural and livestock production in the zone. The main chronic hazards include: insecurity, inflation (high prices), resource-based conflicts (farmers versus pastoralists), localized seasonal floods, crop pests⁷, and livestock diseases.⁸ However, shocks such as inflation, widespread conflict, and massive displacement have become more acute since 2015 and 2016. Long-term displacement due to conflict reduces labor supply and the ability of households to work on their land, thereby reducing production potential. Human diseases such as malaria, typhoid, pneumonia, tuberculosis, measles and whooping cough are common during the rainy season and reduce the quality of labor and working days for household members affected.

The zone has essential trade links with neighboring countries (Uganda, CAR, and DRC), which provide strategic access to external markets. Major road networks pass through the zone to Juba, including Juba-Yambio, Juba -Yei, Juba-

⁶ dik-diks, bush bug, gazelles, buffalo, and monkeys

⁷ fall armyworm, termites, rodents, stalk borers, and monkeys

⁸ trypanosomiasis, black quarter, food and mouth, contagious bovine plural pneumonia, lump skin

Torit, and Juba-Nimule roads. Additional feeder roads connect rural areas to the major road network, allowing for the flow of goods and people. Poor maintenance of the zone’s road network and seasonal flooding renders some roads impassable during rainy seasons. Other limitations exist due to insecurity and long distances traveled to key markets. These constraints often increase the price of goods and cereals in the high demand areas to the north.

Trade is conducted at border markets and rural trading centers. In recent years surplus maize produced in this zone has been purchased by the World Food Program (WFP) through the purchase for progress (P4P) initiative. Due to inflation there are several currencies used in the zone, including the Sudanese pound, the Uganda shilling, the US dollar, and Congolese franc (DRC).

Farmers sell portions of their harvest either individually or in cooperatives or farmer associations to traders mostly at lower wholesale prices. Traders take the products from local or urban centers that are well distributed across the zone. Most of the crop traded by farmers travel through these routes to Juba and other local towns. Some of these crops have in the past been exported to Uganda. Labor and livestock markets are localized within the zone.

Seasonal Calendar (SS01)

The zone’s two rainy seasons are normally adequate for crop production. The first season occurs from March to June. The second season, with heavier rainfall, is from August to November. Agricultural activities start with land preparation from January to March, followed by planting in mid-March to May, weeding in May and harvesting of

	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Rainy season												
Crops												
Maize												
Cassava												
Long Sorghum												
Medium Sorghum												
Short Sorghum												
Groundnuts												
Sesame												
Mangoes and oranges												
Livestock												
Cattle milk peak												
Cattle sales peak												
Livestock sales peak												
Livestock diseases												
Other												
Agricultural labor peak												
Firewood sales												
Fishing (along the river)												
Fishing (seasonal streams)												
Stress & High Expenditure Periods												
High staple prices												
Human diseases												
Festival season												
Lean season												
Legend												

IRONSTONE PLATEAU AGROPASTORAL (SS02)

Main productive assets	
Poor	Better-off
Land cultivated (fewer hectares)	Land cultivated (more hectares)
Goats and sheep	Cattle
Bicycles	Goats and sheep
Beehives	Motor vehicles/ cycles
Hand tools	Beehives
	Power-driven saws
Main foods consumed and sources	
Poor	Better-off
Sorghum (OP/MP)	Sorghum (OP)
Millet (OP/MP)	Millet (OP)
Maize (OP/MP)	Maize (OP/MP)
Groundnut (OP)	Groundnut (OP)
Sesame (OP)	Sesame(OP)
Vegetables (OP)	Vegetables(OP)
Cassava (OP)	Cassava (OP)
Sweet potatoes (OP)	Sweet potatoes (OP)
Dried fish (OP)	Dried fish (OP)
Wild foods (G)	Wild foods (G)
Main income sources	
Poor	Better-off
Sale of natural products (firewood, charcoal, grass, mats, poles, shear butternut oil, etc.)	Sale of sorghum
Sale of wild foods	Sale of millet
Sale of labor	Sale of vegetables
	Sale of tobacco
	Sale of cattle
	Sale of honey
Main markets	
Local commodities are sold, and non-local household items purchased in key external markets: Rumbek, Yirol, Cueibet, Wulu, and Juba.	
Main hazards and approximate frequency	
Drought conditions normally occur every twelve years	
Crop pest and diseases occur on annual basis during the rainy season	
Livestock diseases occur on annual basis in the dry and rainy/wet seasons	
Inter-communal conflicts and cattle raiding occur annually in dry season	
Ongoing civil conflict, increasing in recent years	
Floods occur on annually in September and October	
Main coping strategies	
Increased goat and sheep sales	Increased sale of cattle.
Increased consumption of wild foods	Increased reliance on natural products, e.g. bamboo and honey
Increased labor migration	
Increased sale of natural products	

Summary

This livelihood zone is administratively located in parts of the former states of Western Bahr el Ghazal, Lakes, Warrap, Western Equatoria, and Central Equatoria, specifically in parts of the former counties of Mundri, Terekeka, Rumbek, Cueibet, Tonj South, Yirol West, Jur River. The zone is predominantly agro-pastoral. Cereal and legume crop production and cattle and small livestock drive the local economy. It is a moderately productive zone.

The zone is concentrated within the great Iron Stone plateau agroecology and characterized by a mix of mountains/plateau in southern parts and valleys and riverine along major rivers. The altitude ranges from 800 to 1000 meters above sea level. The zone has sandy clay soils with clay soils in low-lying areas and river valleys known locally as *Hor*. The soils are moderately fertile and tend to be shallower towards the north of the zone with low water retention capacity, contributing to some of the most acute water problems in South Sudan. The agro-climatic conditions are most suitable for growing sorghum, although other crop varieties can do well.

A single rainy season runs from April to October with an average annual rainfall of 950-1300 mm. The maximum temperature reaches 40° Celsius in March (summer) and falls to about 19° Celsius in July (winter).

Vegetation includes forests, bush and savannah. The zone is predominantly covered by acacia forests and scrub and deciduous broad-leaved woodlands. The Southern National Park and Chuol Akol forest fall within the zone and provide opportunities for hunting (antelopes, bush rats, warthogs, porcupines, gazelles and buffalo) normally done during the dry season and natural products including timber, firewood for fuel, and a broad variety of naturally occurring uncultivated foods¹⁰ gathered for consumption and sale in April and July.

The zone is sparsely populated. Since 2013, the zone has experienced a rise in conflict especially in areas around

¹⁰ Honey, wild tubers, shea butter (*lulu*), tamarind, mushroom, African fan palm, Jackal berry, black plum, and rubber vine fruit

Lakes and Wau towns and along the road that links the two. As a result, population displacements to relatively safer locations have occurred, as well as the loss of livestock assets and disruptions to agriculture activities further reducing already low production in the zone. Cattle rustling is widespread in the northern part of the zone, especially among Dinka sub-clans which increases the cumulative negative effects on community stability and peace.

The main economic activity in the zone is rain-fed agriculture supported by the rearing of livestock and exploitation of natural products from the forest. Shifting cultivation is used for crop production, which helps maintain soil fertility. The most important food crops are sorghum, groundnut, sesame, pearl millet, cowpeas, green gram, sweet potatoes, and vegetables such as okra. Maize, cassava, and other crops including pumpkins are grown on a small scale in certain areas. Cattle, goats, and a few sheep are the main livestock reared in this zone. Some poultry is kept by very small numbers of households for consumption. Cultivation occurs on the plateau in the wet season with the transhumant movement of livestock in the dry season to the wetter areas of the Greater Bahr el Ghazal region, particularly the Bahr el-Jebel areas of Lake Nyubor and the Toch River.

Land is generally held communally and managed through traditional mechanisms. Agricultural production equipment is largely limited to traditional hand tools for land preparation and weeding among poor households, while the better-off use animal traction. Production is subsistence-based for most households with occasional surpluses among the better-off. The average area of land cultivated per household is approximately 1.8 hectares. Poor households cultivate 0.42-0.84 hectares per household whereas better off cultivate to 1 to 2.1 hectares.

Livestock is an important source of food and cash although the contribution to income is relatively low compared to crops. The common livestock kept under free grazing and tethering include long-horned cattle, goats, and sheep as well as poultry which are stall fed. Almost all households keep livestock as a source of food (milk and meat) and cash income. Hunting, fishing, and collection of native products and plants supplement crop and livestock production.

In this agro-pastoral zone, wealth is determined by the land size cultivated and the number of livestock owned. The poor are only able to cultivate a few hectares as they cannot hire extra labor, do not own cattle for draught power, and cannot hire tractors to cultivate larger tracts of land as better-off households can. Poorer households' own sheep and goats (*less than 5*), basic hand tools, fishing nets, spears, and bicycles, while the better-off own more livestock (*more than 20 goats/sheep and cattle*) and farming implements (*ox-plows, power saws*). The difference in asset ownership influences how different wealth categories access food and cash to support the household economy.

Crops are largely grown for consumption, although the better-off group have a saleable surplus (sorghum, millet, and vegetables). Additional food sources among poor households include kinship support from the better-off and loans from traders, especially during the lean season. Poorer households get most of their income from the sale of natural products (firewood, charcoal, grass, mats, poles, shea butternut oil) and from agricultural and casual labor within and outside the zone.

Crop production is affected by periodic hazards including floods along rivers and low-lying areas, prolonged dry spells, pests (*rodents, stem borer, birds, termites, and fall armyworm*) and diseases (*smut, Striga, and sorghum midge*). Insecurity and clan conflict are common hazards and the frequency of interclan conflicts has increased in recent years, culminating in the declaration of a state of emergency and disarmament in Lakes State in 2017. These hazards affect households' ability to pursue normal livelihoods and significantly reduce the production in the zone. Livestock, and particularly cattle, have been affected by tsetse fly infestations and trypanosomiasis. Other diseases that affect cattle include rift valley fever, anthrax, foot and mouth, contagious bovine plural pneumonia, goat pox, mange, and new castle disease.

The main markets are Rumbek, Yirol, Terekeka, Cueibet, Wulu, Mvolo and Tonj, Wau and Juba. The main road corridors, *Juba-Rumbek-Wau, Maridi-Mvolo-Rumbek, Abyei-Kuajok-Wau, and Aweil-Wau-Rumbek*, are used to transport goods and people within and outside the zone. Roads are not paved, which makes movement difficult during the rainy season. However, recent improvements in the road network since the comprehensive peace agreement, particularly to the Rumbek, Juba and Uganda highways, have made it possible for people to travel long distances to regional markets of Yambio and into Uganda to purchase grain. At the same time, main markets such

as Rumbek have seen extremely high levels of inflation for various goods since 2013. The prices of certain goods including vegetable oil, maize grain, sorghum, and cassava have increased exorbitantly – in some cases, up to 10 or 20 times higher than prices seen in the beginning of 2016.

Surplus cereal is an important trade item, especially for better-off households, and is increasingly used to obtain cash. Traders come to farmers and buy their produce, although some farmers hire vehicles and sell their produce to Juba and other market towns. Livestock is driven to auctions in the major markets in the zone. Poor people walk to markets while better-off people use motorbikes and vehicles. In both labor and commodity markets, payment in-kind has been the most common form of exchange. The introduction of cash through humanitarian interventions has seen the increase in the use of cash as a medium of exchange. Most commodities sold into the zone are sourced from Juba and Uganda and distributed through the main towns.

Seasonal Calendar (SS02)

The rainy season starts in April and ends in early November and is mostly adequate for single season crop production. The growing season starts with land preparation in February and March, followed by planting in April and May, and weeding in June and July. The lean season is normally from June to July, before the main green crops are ready for consumption by August to September. The harvest of crops starts in August for groundnuts and sesame while the main staple sorghum is harvested starting in October. Agricultural work opportunities coincide with various activities from land preparation to harvest. The harvest season ends with threshing of grain and sesame in early January.

	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Rainy season												
Crops												
Sorghum												
Cassava												
Ground nut												
Sesame												
Millet												
Green grams												
Cow peas												
Livestock												
Cattle milk peak												
Cattle sales peak												
Goat sales peak												
Livestock diseases												
Other												
Agricultural labor peak												
Fishing												
Stress & High Expenditure Periods												
High staple prices												
Human diseases												
Festival season												
Lean season												
Legend												
		Land prep		Sowing		Weeding		Green Cons.		Harvest/Thresh.		

HIGH LAND FOREST AND SORGHUM (SS03)

Main productive assets	
Poor	Better-off
Land cultivated (less than 1ha) Goats and sheep Hand tools	Land cultivated (more than 1ha) Cattle Goats and sheep Ox plows, Hand tools
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Sorghum (OP/MP) Millet (OP/MP) Groundnuts(OP/MP) Cow peas (OP) Sweet potatoes (OP) Vegetables (OP/MP) Fish (MP) Wild foods (G)	Maize (OP) Sorghum (OP) Millet (OP/MP) Maize (OP/MP) Cow peas (OP) Sweet potatoes (OP) Vegetables (OP/MP) Fish and meat (MP) Wild foods (G)
Main income sources	
Poor	Better-off
Sale of natural products (charcoal, bamboo, grass, wild game, honey, shea butternut oil, etc.) Gold extraction Sale of agricultural labor Sale of local brew	Sale of maize, sorghum, and millet Sale of timber Retail trade
Main markets	
Lafon, Kapoeta, Juba and Torit markets Cross-border markets: Didinga, Langi, Toposa, Nimule, Tseretenya	
Main hazards and approximate frequency	
Crop pests and diseases occur annually during the rainy season Floods occur at least once every two years during the rainy season (Apr – Nov) Prolonged mid-season dry spells (May-Jun) Conflict and insecurity can occur at any time of the year Mining accidents occur mainly during the rainy season (Apr – Nov)	
Main coping strategies	
Scarecrows (to deter birds) Sale of goats Migration to urban areas Consumption of wild foods	Sale of cattle Increased gold extraction Increased trade reliance

Summary

This zone is located along the mountain ranges of the Greater Equatorial region and administratively extends across Juba, Magwi, Torit, Budi, and parts of Ikotos. The southeastern part of the zone shares a border with Uganda. This is an agricultural zone with minor dependence on livestock. The zone is a cereal deficit area characterized by low production output due to low rainfall and dependence on one growing season. The presence of Kidepo National Reserve, and parts of Bandingilo National Park provide access to a range of naturally-occurring foods and bush products that are exploited by the inhabitants for consumption and cash income.

The zone's topography is characterized by highlands and foothills along border areas with Uganda where altitude ranges from 1200 – 2000 m above sea level, while the valley and floodplains in the northeast and northern parts range 600 – 900 m above sea level. Soils vary in type and include lateritic soil in the mountainous areas, sandy soils in the foothills, and clays and loam soils in the valley plains. Soils are relatively fertile and suitable for crop production as compared to the neighboring South-Eastern Semiarid Pastoral zone.

The zone has a unimodal rainfall pattern with an average annual precipitation of 900 – 1000 mm. There are two distinct seasons: a rainy season from April to November and a short dry season from December to March. There is one major growing season from April to July although localized areas in the highlands have a second growing season for groundnuts and sesame from September to December. Average temperatures reach a maximum of about 42° Celsius in February and minimum of 30° Celsius in December and January.

Land cover is a mixture of forest, bush shrubs and grasslands punctuated by agricultural land. Kidepo National reserve, parts of Bandingilo National park, Imatong and Nimule forests are found in this zone and provide a source of natural resources such as wild honey, game meat, wild foods, and fruits, especially shea butternut trees. Inhabitants exploit

natural resources as part of their normal livelihoods as well as to cope with limited access to food and cash income. The forests and national parks present the potential for tourism, but this is not active due to insecurity.

The population in this zone is moderately dense for South Sudan. Conflict has been on the rise since mid-December

2013, with an increase in frequency and spread of attacks particularly in areas around the major towns of Juba and Torit urban areas. The conflict has seen the movement of populations into IDP camps and refugee camps in Uganda. Cattle raiding and conflict over pasture and watering points is especially prevalent with the Murle tribe in parts of the highlands. The displacements disrupt agriculture activities and increase inter-tribal tensions as households move with livestock into new areas for grazing, which further exposes households to loss of assets through raiding.

The local economy is dependent on rainfed agriculture cultivation with less reliance on livestock. A complementary source of livelihoods includes exploitation of forest products, labor and trade activities. Crops grown on a smaller scale include sweet potatoes, vegetables, millet, and cassava. In a typical year, all wealth groups depend chiefly on own crop production, supplemented by wild foods, dry fish, and market purchase for the poor. Most cultivation is done by hand and cultivated areas are small, averaging 1.25 hectare, although better off households can employ labor and hire tractors for larger landholdings (1.4 – 2 hectares per household). The poor on average cultivate less land (less than one hectare) due to the limited availability of labor and resources.

Livestock kept include goats, sheep, and poultry with relatively few cattle owned by the better-off group. Livestock is used mainly for consumption (goats, sheep, and poultry) of milk and meat, and cash income to meet household needs. Extensive systems (free grazing) is the most common feeding method although tethering is practiced for sheep while chickens are kept in the backyard and fed with grains. A wide variety of wild food plants are available in the hills and mountains including roots, fruits, berries and leafy vegetables gathered by both wealth groups to supplement household food needs. Hunting and collection of wild honey are practiced mainly during the dry season. Other livelihood activities include cross-border trade with Uganda in agricultural products through Nimule and Tseretenya border points. Self-employment activities include handicrafts and brick-making near urban centers.

Wealth in this livelihood zone is measured by the size of land cultivated and the number of livestock owned by each household, especially cattle. Other differences are in ownership of productive assets and economic activities pursued by households. The poor typically do not own any livestock except chickens while the better-off own at least 5 cattle. Poor own basic hand tools while the better-off own farming tool and better hand tools (ox-plows, tractors).

Crops are the main food source for all wealth groups, followed by wild foods and game, and then purchase and exchange. The poor rely on own production for seven months of the year and turn to market purchase for five months of the year using cash and barter trade/exchange with other wealth groups. However, given the current conflict, the average household can only rely on own cereal production for three to four months of the year and are reliant on markets to meet the remainder of their food needs¹¹. Better-off households are relatively self-sufficient with own production and consumption of milk and meat from their livestock.

For the better-off group, the chief source of income is from the sale of crops (*sorghum, cassava, groundnuts, and sesame*), followed by petty trade and sale of livestock. Some income is also obtained from retail sales and the sale of timber outside the zone. The poor group mainly depends on cash income from labor and bush products such as charcoal and bamboo. Complementary sources of livelihood include hunting and seasonal fishing. There is also some artisanal gold mining done by the poor although at a low level because of the lack of tools.

Livelihood constraints facing household in this zone are consistent with risks associated with agro-climatic shocks affecting agro-pastoral areas elsewhere in South Sudan. Chronic hazards include insecurity (*insurgencies and clan related looting*), inflation over the past three years (*high prices*), cattle raiding and presence of migratory cattle during growing season, as well as, pests (*rodents, termites, armyworm, monkeys, birds*), diseases and weeds (*striga*) which limit agricultural productivity in the zone. Periodic prolonged mid-season dry spells (2-4 weeks) in May-June reduce crop yields significantly. Livestock diseases such as trypanosomiasis, black quarter, foot and mouth, contagious bovine plural pneumonia, and lumpy skin affect livestock production.

The main markets are Juba, Torit and neighboring Lafon and Kapoeta trading centers. Additionally, trade and exchange routes between Uganda and Kenya continue to thrive, facilitating movement of goods in and out of the

¹¹ South Sudan FSNMS Round 20, 2017

zone and mostly done by the Didinga, Langi and Toposa people. The road networks that connect main towns are generally poor and consist of main roads *Juba- Torit, Juba-Nimule, Torit-Ikotos, Torit-Immehejeck, and Torit-Chukudum*, which connect to numerous feeder roads as the main transportation routes. Farmers sell their produce through cooperatives, farmers associations, and individually to local traders, who buy at low prices and sell to bigger traders who then take produce to local towns both within and outside the zone such as Magwi, Kapoeta, Torit, and Juba. Livestock are sold locally to traders and local abattoirs, and across the border through links with traders in Uganda and Kenya. The labor market is largely localized and includes agricultural work, construction opportunities in local towns, and some labor migration to neighboring zones and countries.

The main market challenges are poor road conditions, insecurity, long distances to markets, and seasonal access problems in the lowlands due to flooding. The hilly and mountainous terrain lacks a good road network, which limits access to markets. The prices of staple foods have increased significantly between 2016 and 2018 – seven-fold for maize and sorghum in Torit, and eight-fold for maize in Juba. At the same time, agricultural and casual labor wages in Torit and Juba have increased, but to a lesser degree – by two to three-fold, on average. The use of cash has improved due to the presence of humanitarian interventions; however, barter trade remains a major form of exchange. For example, tobacco is used as a mode of exchange for cereal and goats.

Seasonal Calendar (SS03)

The unimodal rainy season starts in April and ends in November and is normally adequate for crop production. Although April marks the onset of the rains, agriculture activities start in March with dry planting, followed by

	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Rainy season												
Crops												
Long Sorghum												
Short/medium Sorghum												
Groundnuts												
Maize												
Sesame												
Cassava												
Livestock												
Cattle milk peak												
Cattle sales peak												
Livestock sales peak												
Livestock diseases												
Other												
Agricultural labor peak												
Firewood sales												
Fishing (Along the Nile)												
Fishing (Streams)												
Stress & High Expenditure Periods												
High staple prices												
Human diseases												
Festival season												
Lean season												
Legend												

WESTERN PLAINS GROUNDNUTS, SESAME AND SORGHUM (SS04)

Main productive assets	
Poor	Better-off
Land cultivated (fewer hectares) Agricultural hand-held tools	Land cultivated (more hectares) Ox plows, bicycles Goats and sheep
Main foods consumed and sources	
Poor	Better-off
Sorghum (OP/MP) Maize (OP/MP) Cassava (OP) Groundnut (OP) Cowpeas (OP) Pumpkins (OP) Vegetables (OP) Fish (G/MP) Sorghum (In-kind payment)	Sorghum (OP) Maize (OP) Cassava (OP) Groundnut (OP) Cowpeas(OP) Pumpkins (OP) Vegetables (OP) Meat (MP/OP) Fish (G/MP)
Main income sources	
Poor	Better-off
Groundnut sales Natural products sales (e.g. charcoal, grass, bamboo poles, honey or shea butter)	Crop sales (groundnut, sesame, cassava, sorghum, tobacco) Bamboo sales Timber sales
Main markets	
Local: Raja, Aroyo, Kuarjena, Mapel, Kangi, Bar Mayen, Aweil, Namatina, Duma and Nagero External: Wau in western Equatoria and South Darfur in Sudan	
Main hazards and approximate frequency	
Prolonged dry spells/delayed start of season (2-4 weeks), every 2 years between May-June Cross-border conflict due to presence of the LRA Price spikes due to lack of market access particularly in crisis periods Endemic HIV and AIDS ¹² Crop pests/diseases (rodents, ball worms, birds, striga), annual Jun-Dec Livestock diseases (CBP) Annual dry spells, particularly in June Rising insecurity and political tension	
Main coping strategies	
Increased reliance on remittances Increased wild food consumption Increased sale of natural products Labor migration	Increased goat sales Increased reliance on remittances Increased reliance on the sale of natural resources such as timber

Summary

This livelihood zone is mainly located in the former states of Western Bahr el Ghazal and some parts of Western Equatoria, Lakes, and Northern Bahr el Ghazal, covering Raga, parts of Jur River, Wau, Nagero, the northern parts of Ezo, Tambura, Nzara and Yambio, as well as the southern part of Aweil Center, and Wulu counties. It borders CAR to the west and Sudan to the north. Livelihoods in this zone are chiefly based on subsistence rain-fed agriculture and supplemented by forest products and seasonal fishing in shallow rivers using fishing nets and traps as well as animal sales (poultry, goats and sheep). The zone was well known for its agricultural surplus before the conflict reduced access to farms and, in turn, production.

The zone is characterized by a mix of highlands and foothills in the western half of the zone and undulating and flat plains in the eastern part. Altitudes range from 300-500 meters above sea level in the floodplains and 800-1200 meters above in the highlands. Soils are relatively fertile with high porosity and varying from sandy loam to sandy clays, which are suitable for farming.

The zone has a unimodal rainfall pattern, with annual average precipitation of about 1100-1300mm. There are two main seasons: the rainy season from April to October and the dry season from November to March. Temperatures are a maximum of 30-40° Celsius in March and a minimum of 22-30° Celsius around August.

Vegetation cover includes a mixture of forest, bush and grasslands interspersed with agricultural land. Forest resources include mahogany, teak, bamboo, wild animals, honey, shea tree ('*lulu*') and wild foods. The

majority of households exploit these resources year-round. Rivers (the Lol river *and others*) originate in the plateau and drain towards the low lands, also providing a source of fish.

The zone is sparsely populated with settlements mainly clustered in towns, along roads and in the lowlands. Population density is among the lowest in South Sudan with approximately three persons per square kilometer. Parts

¹² some areas especially Western Equatoria state.

of Negero, Raja, parts of Wulu, northern part of Nzara and Yambio, southern part of Wau, are all affected by the ongoing conflict and repeated displacements.

The primary economic activity is rain-fed subsistence agriculture, supplemented by gathering of wild foods and forest products, as well as livestock (goats and sheep) and poultry sales. The main food crops cultivated are sorghum, groundnut, and sesame. Other crops commonly grown include cowpeas, sweet potatoes, cassava, and vegetables. Sesame and groundnuts are mainly grown along the Lol River and are the main cash crops in the zone. All crops are grown over a single season from April to October. Small numbers of animals, mainly goats and poultry, are kept for household consumption (milk and meat) and occasional sales.

Income sources within the zone are limited. Crop sales are dominated by the better-off group who have surplus production and sell high-value natural products including timber and bamboo. The poor mainly rely on agricultural labor and the sale of lower value natural products such as charcoal, thatching grass, wild honey, and shea butternuts during the dry season. They are unable to engage in timber and other high-value production because they lack the resources to purchase power saws. Other typical economic activities carried out in the zone include processing and sale of natural products such as timber, poles, bamboo, charcoal, thatching grass, wild honey, and shea butternuts, in addition to brick making and handicraft sales.

The size of land cultivated, ownership of productive assets, and availability of labor are major determinants of wealth in the zone. The better-off are self-sufficient in food from crop production, livestock products (milk and meat), and fish. Land preparation methods vary by wealth group. The poor predominantly use hand tools for cultivation and depend on family labor, which limits their ability to cultivate larger amounts of land, while better-off households use animal traction and tractors and hire extra labor. The poor depend chiefly on crop production and fish for food but on the purchase of staple sorghum grain during the lean months (June to August), and practice hunting with some in-kind payment of labor to increase access to food. In years of poor rainfall, local inhabitants cope by bartering natural products (wild foods, charcoal) with grain. In a normal year, cassava is available throughout the year, however re-planting is currently limited given the ongoing conflict. In-kind agricultural labor payments provide a cushion for poor households during vulnerable periods.

Access to markets varies seasonally due to flooding and is limited by the poor state of the local roads. Market access can also be constrained by insecurity due to the presence of the Lord's Resistance Army (LRA) in neighboring CAR. Poor households take their goods directly to market on bicycles and motorbikes while better-off households hire trucks to transport their farm produce. As in other areas, prices in nearby main markets have increased significantly in recent years. For example, prices of staple foods for poor households such as sorghum, cassava, and groundnuts have increased six- to ten-fold at the Wau market. At the same time, wages for agricultural labor have increased two-fold between early 2016 and mid-2017.

Seasonal Calendar (SS04)

The rainy season starts in April and ends in October. These rains are normally adequate for crop production. The main crops grown are groundnuts and sesame for cash income and sorghum mainly for household consumption. Agricultural work starts with land preparation in February to April, followed by sowing or planting in May until mid-June and weeding in mid-June to July. Harvesting of all crops starts with green consumption in September, while long-term maturity sorghum and sesame are harvested in March the following year.

Lambing and kidding peak in the dry season from November to February. Wild foods such as wild game meat, mangoes, shea butternut, and honey provide a critical source of food and income during the dry and lean seasons. They are also part of coping strategies employed to preserve staple foods for consumption during the lean period. Shea butternut oil production is mainly available in the month of May.

	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Rainy season												
Crops												
Sorghum												
Groundnuts												
Cassava												
Sesame												
Cowpeas												
Okra												
Pumpkin												
Sweet potatos												
Livestock												
Cattle milk peak												
Cattle sales peak												
Goat sales peak												
Livestock diseases												
Other												
Agricultural labor peak												
Firewood sales												
Petty trade												
Fishing												
Fishing												
Stress & High Expenditure Periods												
High staple prices												
Human diseases												
Festival season												
Lean season												
Legend												

SOUTH-EASTERN SEMI-ARID PASTORAL (SS05)

Main productive assets	
Poor	Better-off
Small herds of cattle Fewer goats Fewer sheep Agricultural hand-held tools	Large herds of cattle More goats More sheep Camels and donkeys Agricultural hand-held tools
Main foods consumed and sources	
Poor	Better-off
Sorghum (MP/OP) Milk & blood (OP) Meat (OP/MP) Vegetables (OP/MP) Wild foods (G)	Sorghum (MP/OP) Milk, meat & blood (OP) Vegetables (OP/MP) Wild foods (G)
Main income sources	
Poor	Better-off
Livestock sales Herding labor Domestic labor Gold mining Natural products sales (charcoal and wild foods)	Livestock sales Gold sales Livestock products sales (milk, ghee, and yogurt)
Main markets	
Local: Nadapal, Kapoeta, and Pibor External: Torit, Juba, Lokichoggio in Kenya, Nakua in Ethiopia Informal channels of exchange with the Buya, Didinga, Dinka, and Nuer of the former Bieh State	
Main hazards and approximate frequency	
Inter-communal conflict and cattle raiding (dry season; Nov – Feb) Flooding (Jul – Oct); Livestock diseases; Drought	
Main coping strategies	
Increased consumption of wild foods Increased labor migration Increased reliance on in-kind remittances	Increased bartering of livestock for grain Increased livestock sales Increased reliance on cash remittances

Summary

This semi-arid livelihood zone lies at the south-eastern tip of southern Sudan within former Eastern Equatoria and Jonglei States, covers many parts of Pibor and Greater Kapoeta and is bordered by Kenya and Ethiopia. Local livelihoods are typically pastoral with very limited crop production but supplemented with wild food consumption and sales. Access to food is predominantly through market purchase and exchange with other zones and grains from Kenya and Ethiopia.

The zone is characterized by vast plains which stretch towards the foothills of the mountain ranges near the Ethiopian border. Altitude ranges between 400-1100 m above sea level. The soils are predominantly sandy loam with presence black cotton clay tending to be higher in the north, west, and east of the zone. Though soils are suitable for crop farming, semi-arid conditions severely limit crop production. The zone is typically a dry Sahelian savannah, with rainfall that averages 200 -600 mm per annum. The rains start in June and end in October. Average temperatures are 38-40° Celsius, with a minimum of 20° Celsius in December and January and a maximum of 42° Celsius in March.

Vegetation is characterized by dense thickets, bush shrubs, and savanna grasslands, which is more suitable to rearing livestock than growing crops. The zone is also home to Boma National Park, a source of natural products. Wild animals mostly inhabit the bush scrub landscape, which doubles as livestock migratory routes for agro-pastoral people and pastoral keepers. There are a few permanent rivers or water points found in the zone along the highlands on the Ethiopian border, which offer good grazing and livestock watering points. The zone's mineral deposits include gold, diamonds and marble, but mining remains artisanal and small-scale.

The zone is sparsely populated and mainly occupied by the Toposa, Didinga, Murle, and Jie tribes. Population density is 6 to 26.5 people per square kilometer. Most of the zone has not been directly affected by the current

conflict and population displacement has been minimal. The zone is commonly affected by cattle raiding and conflict over pasture and watering spots for livestock, most often in the dry season from February to May.

Livestock rearing drives the zone's economy. The zone is inhabited by almost pure pastoralists who survive in a very harsh, drought-prone environment. Livestock kept include cattle, camels, goats, and sheep and, to lesser extent, poultry (mainly for household consumption). In the dry season, herders usually move into Ethiopia and Kenya in search of water and pasture. There is limited crop production, including sorghum and small-scale vegetable

production (e.g. okra). The average size of land cultivated per household is only about 0.4 hectares. Crop failure is not unusual, but it is not considered a significant threat. Livelihoods are also reliant on wild foods such as balanite (*Lalop*), tamarind, nabak, and gum africana, as well as wild game meat, which is hunted in the dry season from December to May.

The primary determinant of wealth is the number and type of livestock owned per household. Poor households cover approximately two months of their staple food needs from own crop production and better-off households only slightly more. All households depend on the market to access staple foods, which are supplemented by milk, meat and animal blood from their herds, especially during the rainy season. Milk consumption continues throughout the year, although the quantities consumed are higher during the rainy season. Most of the animal products consumed by poor households are obtained through in-kind labor payments for herding the livestock of better-off households. There is also some hunting of small animals and gathering of wild foods and honey, although these do not contribute much to the annual diet.

Livestock sales are the most critical source of cash income. Better off households also obtain income from the sale of milk and milk products. Much of the milk is sold during seasonal movements in search of water and pasture. Poor households generate income from the sale of livestock, charcoal making, firewood sales, and wild food sales. Most households take part in gold mining to complement annual incomes.

The heavy dependence of livelihoods on livestock and trade for staple food leaves households very vulnerable to interruptions in market access, particularly during the seasonal livestock migration when there is less milk and animal blood for consumption for members of the household who do not move with the herd, and in drought years when livestock prices fall. The zone experiences frequent food shortages.

Market access is limited by poor road conditions both within and outside the zone, cattle raiding and poor relations with neighboring zones, civil insecurity, and the unreliability of markets. External traders travel into the zone to sell maize grain and vegetables and in turn trade livestock in Ethiopia and Uganda. Households barter livestock for grain and other household items with Murle cultivators in SS03 (Highland Forest and Sorghum) with whom they have strong economic links.

Seasonal Calendar (SS05)

The livelihood patterns in this arid zone follow the seasonal migration that allows livestock to access grazing and water, while also visiting places where there are opportunities to trade livestock for grain and other basic commodities. The specific timing of these events means that the nomadic lifestyle is easily disrupted if natural hazards or insecurity prevent these essential movements and opportunities for trade.

The rainy season starts in June and ends in October. Although this area is mainly suitable for rearing livestock, small quantities of sorghum and some vegetables are grown. Cultivation starts with land preparation in February to March, followed by wet sowing in April and weeding in June. Crops are harvested green for consumption starting in September, and the main dry harvest is between September and October.

Livestock are moved out of the zone between November and December and return around the end of April/May. Lambing, kidding, and calving take place from March to June. Milk production peaks during the rainy season.

	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May			
Rainy season	[Light Blue]														
Crops															
Sorghum	[Orange]	[Orange]	[Light Green]	[Dark Green]	[Dark Green]				[Light Brown]	[Light Brown]	[Light Green]	[Light Green]			
Vegetables	[Dark Green]	[Dark Green]				[Light Green]	[Dark Green]	[Dark Green]							
Livestock															
Camel/cattle milk peak	[Dark Purple]							[Dark Purple]							
Cattle sales peak		[Blue]	[Blue]	[Blue]	[Blue]		[Blue]		[Blue]		[Blue]	[Blue]			
Goat sales peak											[Blue]	[Blue]			
Livestock diseases	[Pink]	[Pink]	[Pink]	[Pink]	[Pink]	[Pink]	[Pink]								
Livestock migration						[Orange]	[Orange]	[Orange]	[Orange]	[Orange]					
Other															
Herding/artisanal mining	[Blue]	[Blue]	[Blue]	[Blue]	[Blue]							[Blue]			
Firewood/charcoal peak sales						[Grey]	[Grey]	[Grey]	[Grey]	[Grey]	[Grey]				
Wild food sales	[Blue]	[Blue]	[Blue]	[Blue]	[Blue]	[Blue]	[Blue]	[Blue]	[Blue]	[Blue]	[Blue]	[Blue]			
Hunting						[Grey]	[Grey]	[Grey]	[Grey]						
Stress & High Expenditure Periods															
High staple prices	[Red]	[Red]										[Red]			
Human diseases	[Purple]	[Purple]	[Purple]	[Purple]								[Purple]			
Festival season					[Light Orange]	[Light Orange]	[Light Orange]	[Light Orange]							
Lean season	[Orange]	[Orange]								[Orange]	[Orange]	[Orange]			
Legend	[Light Brown]	Land prep		[Light Green]	Sowing		[Orange]	Weeding		[Light Green]	Green Cons.		[Dark Green]	Harvest/Thresh.	

Consumption Calendar for Poor Households (SS05)

Poor households purchase sorghum for most of the year except August and September, when their own sorghum harvest is available. The most vulnerable period for poor households is the peak of the lean season (March to July) and the months during which the only source of income available is the sale of charcoal (January to April). Other expenditures include health care services (especially during the rainy season when malaria peaks) and school fees, paid at the beginning of the school year between March and April.

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May		
Staple foods														
Sorghum	[Light Red]	[Light Red]	[Light Green]	[Light Green]	[Light Red]	[Light Red]	[Light Red]	[Light Red]	[Light Red]	[Light Red]	[Light Red]	[Light Red]		
Blood for consumption	[Grey]	[Grey]	[Grey]	[Grey]	[Grey]							[Grey]		
Milk consumption	[Dark Purple]	[Dark Purple]	[Dark Purple]	[Dark Purple]	[Dark Purple]	[Dark Purple]	[Dark Purple]	[Dark Purple]	[Dark Purple]	[Dark Purple]	[Dark Purple]	[Dark Purple]		
Income														
Herding/gold/domestic work	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]							[Light Blue]		
Sale of charcoal						[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]			
Sale of milk	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]		
Expenditures														
Healthcare	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]		
Livestock drugs	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]	[Light Blue]		
Legend	[Light Green]	Own production			[Light Red]	Market purchase			[Dark Purple]	In-kind		[Light Orange]	Gathering	

EASTERN PLAIN SORGHUM AND CATTLE (SS06)

Main productive assets	
Poor	Better-off
Goats Land cultivated (fewer Hectares) Agricultural hand-held tools	Land cultivated (more Hectares) Cattle Goats Agricultural hand-held tools
Main foods consumed and sources	
Poor	Better-off
Sorghum (OP/MP) Millet (OP/ MP) Groundnut (OP) Sesame (OP) Pumpkins (OP) Wild foods (G) Milk & meat (OP/ MP) Gifts & Food Assistance	Sorghum (OP) Millet (OP/ MP) Groundnut (OP) Sesame (OP) Pumpkins (OP) Wild foods (G) Milk & meat (OP/ MP)
Main income sources	
Poor	Better-off
Agricultural labor Goat sales Brewing Natural product sales (e.g. firewood, charcoal, poles)	Crop sales (sorghum and millet) Cattle sales Milk sales
Main markets	
Local: Bor Marol, Panyagor, Akobo and Langkien External: border markets in Uganda and Kenya	
Main hazards and approximate frequency	
Inter-communal conflicts and cattle rustling (year-round) Flooding (annually from July to October) Livestock diseases (annually from May to November) Crop pests and diseases (annually from June to September) Drought (once in every three years) Health problems (greatest from August to November)	
Main coping strategies	
Labor migration Increased wild food collection	Increased reliance on the market for food purchases

Summary

Located in the central parts of former Jonglei State and the northern parts of former Eastern Equatorial State, this zone includes vast eastern floodplains. Local livelihoods are agro-pastoral and depend on rain-fed cultivation and livestock rearing, supplemented by fishing, hunting, and gathering of a large range of wild foods and bush products. It is a known deficit production area but is abundant in fish and livestock products.

The zone is characterized by flat, low-lying terrain with black cotton soils and sandy clay soils, which are relatively more fertile than those in neighboring zones such as zone SS05. Altitude is less than 450 meters above sea level.

With a unimodal rainfall pattern, precipitation is 800-900 mm per annum. There are two distinct seasons: the rainy season from May to November and the dry season from December to April. During years with sufficient rain, most agro-pastoralists remain along the main watercourses which intersect their territory, but in dry years the lack of water makes pastures unusable. Average temperatures range between 28-40° Celsius, with a minimum of 34° Celsius in December-January and a maximum of 42° Celsius in March.

The vegetation cover is characterized by dense acacia tree thickets, bush shrubs and savanna grasslands, marshland and semi-deserts. The two main rivers, the Sobat, originating in Ethiopia, and the Nile, are central to the seasonal livestock migration that is the hallmark of this zone. The main cattle grazing areas are located along the two main rivers and are generally shared among the different Nuer groups. The rivers are a source of fish throughout the year. During the dry season, from December to May, wild game meat is available in the forests found in and around the zone, including the Boma, Bandingilo and Zefa National parks.

The zone is mainly occupied by the sparsely settled Dinka and Nuer tribe, with approximately 12 people per sq. km. A rise in conflict has increased population displacement,

particularly of women and children to refugee camps in Ethiopia, and internal displacement to local towns or IDP camps. Cattle raiding and conflict over pasture and watering spots with migrating pastoralists often occurs during the dry season (February to May). Due to these forms of conflict and clashes, agriculture and livestock rearing are disrupted, leading to declining productivity.

The local economy is agro-pastoral. Crop farming and livestock rearing are important sources of livelihood. However, frequent floods and other hazards make crop cultivation a precarious activity. Crop performance tends to be unreliable due to poor agricultural practices, the difficulty of cultivating heavy black cotton soils, and unpredictable weather patterns. The main crops grown are sorghum, millet, groundnut, sesame, pumpkins, and some vegetables.

Local traditional hand hoes (*moloda*) are used for cultivation and machetes and *pangas* are used for clearing bushes. Bush burning cultivation (*hariq*) is common. The livestock reared in this zone are cattle, goats, sheep, and, to lesser extent, poultry, especially chicken (mainly for household consumption). The Nuer have more cattle than the Dinka. Cattle are mainly kept on grasslands and woodlands and on cultivated areas during the wet and early dry season. In the dry season, cattle (particularly belonging to the Nuer) migrate towards the south-east bank of the Sobat river. The Jonglei canal, although now dysfunctional, restricts the seasonal movement of livestock. Sheep and goats are kept close to homes. Goats far outnumber sheep in this area and are vitally important to household food security.

Determinants of wealth are the type and number of livestock owned, area cultivated per household, and access to productive assets such as canoes and fishing equipment. Households depend on own crop and livestock products for food, although poor households own fewer livestock and have less access to animal products which increases their reliance on the purchase of staples. All households supplement food supplies with wild foods such as desert dates (*Balanites*), water lily, tamarind, and other wild fruits, roots, and leaves.

The main income sources for poor households are the sale of firewood, charcoal, construction poles, goats, and home brew. Better-off households depend on the sale of surplus crops, cattle, and milk. Poor households have more irregular and unpredictable sources of income, in part due to reliance on natural products with limited markets.

Market access in this zone is relatively good due to improvements in road communication with Bor and Juba, yet a lack of feeder roads persists in rural areas. Access to markets from the rural areas is dependent on road conditions during the rainy season. Periodic conflict, either political or between local groups, hamper market accessibility. Local markets are mainly supplied from Malakal. Some markets such as Akobo have seasonal trade with Ethiopia via the Sobat/Pibor rivers. Bor market, which supplies Panyagor, is well linked to Juba and other external markets along the Uganda and Kenya border. However, as in other areas, prices of many goods in Bor market have increased significantly since 2016.

Seasonal Calendar (SS06)

The rainy season starts in March and ends in October. The lean season is normally from May to July before green crops are ready for consumption. Sorghum is the main staple cereal. Agricultural work starts with land preparation in January and February, followed by sowing/planting between April to June. Weeding takes place from June to August and is mainly carried out by poor households. Harvesting of all crops happens between August and November. Seasonal livestock migration starts in December to return around April at the onset of rainy season.

	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Rainy season	[Rainy season bar]											
Crops												
Sorghum	[Land prep]	[Land prep]	[Sowing]	[Weeding]	[Green Cons.]	[Green Cons.]			[Harvest/Thresh.]	[Harvest/Thresh.]	[Harvest/Thresh.]	[Harvest/Thresh.]
Millet	[Land prep]	[Sowing]	[Weeding]	[Green Cons.]	[Green Cons.]				[Harvest/Thresh.]	[Harvest/Thresh.]	[Harvest/Thresh.]	[Harvest/Thresh.]
Sesame	[Land prep]											
Vegetables	[Land prep]											
Livestock												
Cattle milk peak	[Livestock diseases]					[Livestock diseases]						
Cattle sales peak		[Livestock diseases]										
Goat sales peak											[Livestock diseases]	[Livestock diseases]
Livestock diseases	[Livestock diseases]											
Other												
Agricultural labor peak									[Petty trade]	[Petty trade]	[Petty trade]	[Petty trade]
Bush product sales												
Petty trade												
Stress & High Expenditure Periods												
High staple prices	[High staple prices]	[High staple prices]										[High staple prices]
Human diseases	[Livestock diseases]	[Livestock diseases]	[Livestock diseases]	[Livestock diseases]								[Livestock diseases]
Festival season												
Lean season	[Lean season]	[Lean season]									[Lean season]	[Lean season]
Legend	[Land prep]	[Land prep]	[Sowing]	[Sowing]	[Weeding]	[Weeding]	[Green Cons.]	[Green Cons.]	[Green Cons.]	[Green Cons.]	[Harvest/Thresh.]	[Harvest/Thresh.]

Consumption Calendar for Poor Households (SS06)

In a normal year, the sorghum harvest, including green consumption, lasts for nine months from August until April. However, due to the ongoing conflict, own cereal production currently only lasts the average household between two and four months¹⁴. Market purchases of sorghum peak during the lean period. Main sources of income available during the lean months are agricultural labor (sowing, planting, and weeding) and the sale of charcoal and livestock. Poor households sell livestock during the lean season, while better-off households sell from November to May. Priority expenditures include livestock drugs and health care services, which peak during the rainy season when livestock and human diseases are common.

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Staple foods												
Sorghum	[Market purchase]	[Market purchase]	[Own production]	[Own production]	[Own production]	[Own production]	[Own production]	[Own production]	[Own production]	[Own production]	[Own production]	[Market purchase]
Income												
Agricultural labor												
Sale of charcoal												
Sale of livestock												
Expenditures												
Healthcare												
Livestock drugs												
Legend	[Own production]	[Own production]	[Own production]	[Own production]	[Market purchase]							

¹⁴ South Sudan FSNMS, 2017.

NORTHWESTERN FLOOD PLAIN SORGHUM AND CATTLE (SS07)

Main productive assets	
Poor	Better-off
0.5 Ha cultivated Cattle Goats/ sheep Chickens	>2 Ha cultivated Cattle Goats/ sheep Chickens
Main foods and sources	
Poor	Better-off
Sorghum (OP/MP) Maize (OP/MP) Pearl millet (OP/MP) Legumes (OP/MP) Fish (OP) Wild foods (G) Milk, meat (IK, OP)	Sorghum (OP/MP) Maize (OP/MP) Pearl millet (OP/MP) Legumes (OP/MP) Sesame/groundnuts (OP) Milk, meat (OP) Fish (OP/MP) Wild foods (MP)
Main income sources	
Poor	Better-off
Sale of labor Sale of fish and wild foods Sale of natural products Sale of small livestock	Sale of livestock Sale of crops Retail trade
Main markets	
Border markets: Amiet, Majok and Chanwandit Other: Kuajok Gogrial, Wunrok, Turalei, Annet, Warrap, Luonyaker, Lietnhom, Wanyjok, Warawar, Aweil town, Gokmachar, Nyamlel, Marialbai, Ariath, Malekalel, Tieraleit	
Main hazards	
Rainfall variability Flash-floods in low-lying areas (July-Aug) Crop pests/diseases: striga (parasitic weed affecting sorghum), fall armyworm (affecting sorghum and maize), grasshoppers, caterpillars, birds and other animals Livestock diseases: CBP, Anthrax, Hemorrhagic Septicaemia, Black Quarter, Trypanosomiasis, Brucellosis, Foot and Mouth, PPR, CCP, Newcastle disease. Cattle raiding (localized)	
Coping strategies for poor households	
Increase in labor migration Increased consumption of wild foods Increased sale of bush products Increased sale of livestock Kinship support	

Summary

Livelihoods in this zone depend on a combination of crop production (sorghum is the staple), rearing of cattle and other livestock, fishing and hunting, and gathering of a range of wild foods and bush products, with the exact combination depending on the geography across the zone. The zone has a large population of cattle owned by an estimated 80% of households. For cereal, the zone is deficit producing, and imports a significant proportion of its staple foods from Sudan. In return, large volumes of cattle and other livestock are sold to Sudan.

The zone is characterized by expansive flood plains located in the lowlands of Greater Bahr el Ghazal region to the west of the Nile River. A single rainy season occurs from May to October (sometimes into November), with an average annual precipitation of 800 to 1100 mm. The dry period peaks from January to April when competition for water and pasture is critical. Natural vegetation varies from grasslands and swamps with papyrus reeds, to bush scrub and patches of forests. Population density is relatively high by South Sudan standards, and there are relatively high numbers of internally displaced people in the zone, spread across most of the districts (as of 2018).

The zone is a classic mixed, agro-pastoral production system. Almost all households, from poorer to better-off, are involved in cropping (exclusively rain fed) and rearing of livestock, and both components play a fundamental role in meeting food and cash income requirements. These two components are supplemented to a significant degree by fishing, hunting, and the collection of uncultivated native products and plants.

The main crop is sorghum, which, in addition to groundnuts and sesame, is the key cash crop grown. Maize, pearl millet, legumes, and vegetables are also grown (in order of importance). Livestock are very important assets in the zone and the main types are cattle, goats, sheep, and poultry (in order of importance).

Fishing is practiced by all households during the rainy season when the flood plain is inundated. A large array of

wild foods¹⁵ that are available at different times throughout the year and which, like fishing, constitute a normal component of the diet.

¹⁵ including honey, wild shea butter, game meat (e.g. antelope, gazelle, wild pig, warthog, impala, rabbit, and *peer*), grains and seeds (e.g. *akuadha*, *goor*, *kuel*), tubers and other roots (e.g. *kei*, *acuech*, *leeth*, *athon*), tamarind, mushrooms, leafy greens (e.g. *nguit*, *annet*, *abyei*, *akuar*, *yinthou*, *apoor-monydit*, *abuthguk*, *alongkoi*) and coconut and other fruits (e.g. *apam*, *lang*, *milat*, *thou*, *apor*, *gumeel*, *coom*, *kurnyuk*, *kuec*, *ngap*, *lulu* and *akondok*).

While livestock sales and crop sales, complemented by petty trade, are the main sources of income for better off households, poorer households rely on the sale of labor for cropping and livestock rearing, natural materials (grass, charcoal, etc.), fish and wild foods, sheep and goats, locally-brewed alcohol, and water to better off households. The poorest households with no cattle are often supported by better-off relatives, for example, in the form of gifts of sorghum, shared rearing of livestock, or access to a milking cow.

Seasonal migration within and outside the zone is common between January and June. Destinations include Sudan, Amiet, Wau, and Juba, and activities include on-farm and off-farm work (brick making, masonry).

Overall, the level of agricultural production is low. Possibly the largest single factor is that household labour needs to be shared between agriculture and livestock rearing, reducing the efforts allocated to growing crops. Additional factors include unreliable rainfall, long-term conflict and displacement, urban pull factors, limited access to fields that are located far away, and a lack of inputs.

Labor within the household, or the ability to rent labor through cash or in-kind payment, is the primary determinant of land size cultivated (large areas of land are not cultivated in the zone). Poor households cultivate up to 0.5 ha and provide labor for better-off households. They cultivate using hand tools only, and the harvest lasts for about six months during a normal year – but only between two and five months for the average household in the current context.¹⁶ Better-off households cultivate 2 ha or more, meaning they almost always hire the labor of poorer households. Cultivation is done manually for the most part, but also with ploughs and some machinery.

Cross border trade with Sudan is economically important. Sorghum constitutes one of the primary import commodities, along with other foods and fuel. Local livestock, tamarind and gum Arabic are sold to Sudanese traders. Primary market-linking roads within the zone are fully accessible during the dry season, but only partially accessible during the rainy season. Prices in key local markets including Kuajok and Aweil have seen large increases since 2016, including for key staples such as maize, sorghum, and groundnuts. For example, prices of sorghum have increased nearly five-fold. At the same time, agricultural labor is an important source of income for poorer households, and wage rates have increased at a comparable rate.

Most of the zone has not been directly affected by the current conflict to a large degree. This means that the displacement of populations has been minimal, with better-off households remaining in place and able to employ poorer households. The exception is the south-eastern section of the zone (parts of Unity and Lakes States) where the levels of conflict and displacement have been notable. Some areas of the livelihood zone are affected by cattle raiding and conflict over pasture and watering points for livestock, most often in the dry season (February to May). Such conflicts are long-term, reciprocal in nature, and as much intra-ethnic as they are inter-ethnic. The result of these types of conflicts is that agriculture and livestock rearing is disrupted, leading to lower productivity. It is possible that the elevated level of conflict over and above the long-term level of conflict has put an additional strain on labour availability, with men involved directly or avoiding involvement by moving to urban centres, neighbouring areas within the country and to other countries.

Seasonal Calendar (SS07)

Land preparation for all crops is done in March and April, followed by planting in May to July, depending on the type and variety of crop. The main harvests are in October and November, although maize is often harvested green in August and September. The most dominant type of sorghum (the medium maturing variety) is mostly harvested in November. Limited quantities of early maturing sorghum and maize are also grown near homesteads and harvested green in August and September to take households through to the major harvest in October/November. To a lesser degree, long duration sorghum is cultivated and harvested in December and January.

The peak period of milk production coincides with the onset of the rains, July through to October, an important supplement to diets in the leanest time of year. June and July are also the period of peak sales of all livestock types, coinciding with the time when all but the better-off households need to purchase food needs. Seasonal livestock

¹⁶ South Sudan FSNMS, 2017

migration starts around February, with younger male members of households taking animals from their home area towards swampy, low land grazing areas. These are generally areas still within the general proximity of the home village (i.e. there is no long-distance migration), and which are understood and agreed between communities. Other household members remain in place to do land preparation, planting and selling of labor, with the younger males returning in May/June once the rains have started.

	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Rainy season												
Crops												
Maize												
Sorghum												
Sesame												
Groundnuts												
Mango Fruits												
Wild foods												
Livestock												
Cattle milk peak												
Cattle sales peak												
Goat sales peak												
Livestock diseases												
Other												
Agricultural labor peak												
Fishing												
Fishing												
Fishing												
Stress & High Expenditure Periods												
High staple prices												
Human diseases												
Festival season												
Lean season												
Legend												

Consumption Calendar for Poor Households (SS07)

Own harvested foods normally last poorer households around six months, October/November to March/April (with some green crop consumption in August and September), compared to three months given the current conflict. The period March-April is typified by a combination of purchased sorghum and other foods and sorghum earned through labor exchange. The consumption of wild foods occurs throughout the year; however, it peaks in the rainy season when own stocks of foods are exhausted. This can lead to competition in collection in parts of the zone. Employment

of poorer households through agricultural labor becomes significant in April and May with land preparation, continuing through the months of planting and weeding, through to November when most of the harvesting is done.

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Staple foods												
Maize												
Sorghum												
Groundnuts												
Income												
Sale of grass												
Sale of firewood/charcoal												
Agricultural/other labor												
Fishing												
Sale of wild foods												
Expenditures												
Food												
Healthcare												
Education												
Legend		Own prod.		Market purchase				In-kind		Gathering		

NILE BASIN FISHING AND AGRO-PASTORAL (SS08)

Main productive assets	
Poor	Better-off
0.5 ha cultivated Fishing equipment Cattle, goats, sheep	>1 ha cultivated Fishing equipment Cattle, goats, sheep
Main foods and sources	
Poor	Better-off
Sorghum (OP/MP) Maize (OP) Groundnuts (OP) Cowpeas (OP) Fish (G) Water lilies (G) Other wild foods (G) Vegetables (OP) Milk, meat (Kin, IK, OP)	Sorghum (OP/MP) Maize (OP) Groundnuts (OP) Cowpeas (OP) Milk, meat (OP) Fish (G/MP) Water lilies (MP) Other wild foods (MP) Vegetables (OP)
Main income sources	
Poor	Better-off
Sale of fish, river products, wild foods, and bush products Sale of vegetables Labor sales Sale of beer Sale of goats	Sale of milk and milk products Sale of fish Sale of sorghum, maize, vegetables Sale of cattle, goats, sheep Retail trade
Main markets	
Malakal (outside the zone) – main fish market Gut Thom – livestock, cereal, fresh and dry fish Panyijiar, Awerial, Ayod – livestock River ports (critical for trade)	
Main hazards	
Flooding every 3-5 years (and annual rise of river levels) Crop pests (arthropods, arachnids, crustaceans, and fungi, treated by application of ash) Livestock diseases (CBP, PPR, Trypanosomiasis, East Coast Fever, CCP, Foot and Mouth disease and internal worms and parasites) Cattle raiding (localized)	
Coping strategies	
Poor	Better-off
Increase fishing Increase labor sales & migration Increase wild food consumption Sale of small livestock Kinship support	Increase sale of livestock Increase formal employment Reduce number of employees or casual laborers

Summary

This livelihood zone transects south to north almost the length of the country. It is located on and primarily defined by the Nile river. As in other zones, a combination of livelihood strategies is used, including fishing, cropping, livestock rearing, and harvesting of wild products. However, as a wetland defined by the Nile River, there is greater focus on fishing and river-based production than in neighboring zones located on the expansive flood plains to the east and west of the river.

The zone is a narrow band of swampy flood plain on either side of the river. Tall reeds and grasses such as papyrus, as well as bush scrub dominate the landscape. The soils immediately adjacent to the river tend to be high in clay, becoming more sandy loam further away from the river. Rainfall ranges between 700 and 1300 mm per year, falling in a single season from May to October.

Naturally-occurring resources are diverse: papyrus grasses (for making mats), fish, crustaceans, wild animals and birds, water lilies, foods including fruits, tubers, leaves, and honey, and gum Arabic, wood, etc. Reserves of crude oil are present in the zone. A diverse range of fish species exist, and fishing is an important component of livelihoods, especially for poorer households. Fishing remains artisanal for the most part involves the use of canoes, spears, and nets. The introduction of refrigerated carriers indicates a potential for increased exploitation. In addition to fishing, other common naturally-occurring foods fundamental to the food security of households include water lily and *lalop* (desert dates), as well as roots and tubers, vines, berries and fruits, leafy greens, honey, and game meat (e.g. *dik-dik*, antelope). Many of these can be processed for sale or later consumption and are considered an intrinsic part of normal livelihoods.

Rain-fed farming is practiced by most households. Sorghum is the primary staple grown. Other crops include maize, cowpeas, groundnuts, and vegetables such as okra and pumpkins. Most cultivation is done manually, although some better-off household use ploughs and machines. Cattle, goats, and sheep are commonly held by poor and better-off households. Livestock from other zones are brought in towards the end of the dry season for water from the Nile.

Production in the last four years has been disrupted due to the influx of displaced people (as of 2018) and the general effect of the conflict. The geography of the zone is challenging, meaning that households likely already have a high level of resilience and diversity of options, and disruption of one option might lead to an increased reliance on

another. Normal vaccination campaigns by government are not currently active meaning an increase in incidence of livestock disease. There is a reluctance to cultivate crops, and fishing is periodically affected by conflict.

The zone is not known for an active trade and market system due largely to the logistical challenges of a wetland environment. Canoes and motor boats are the most common means of transport as road access to areas beyond the river is difficult and seasonally unreliable. Despite this, the zone is known as a thoroughfare, with five river ports (Malakal, Adok, Shambe, Bor, and Juba) critical for trade, and important for the lower levels of conflict typical in the area. Prices of key staples at Bor market have increased at a comparable level to other areas of the country, for example between five and seven times since 2016 for sorghum and maize. Livestock and milk products, fish, wild products such as desert dates, and cereals are sold here by local producers, while other commodities such as clothes and soap come into the area. Cattle, goats, and sheep are sold by farmers at Panyijiar, Awerial, and Ayod local markets for onward sale at the main livestock market in Bor.

Seasonal Calendar (SS08)

Fishing is practiced throughout the year. Availability is lowest during the rains when the river carries high volumes of water and swamps and lakes are fished instead. The agricultural season starts in February/March with land preparation. Labor opportunities continue throughout the growing season until staple crops are harvested from September to November. Vegetables are harvested in the dry season. Milk production peaks during the rainy season and early part of the dry season. Livestock sales mostly take place from February to July.

	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Rainy season												
Crops												
Maize												
Sorghum												
Vegetable												
Livestock												
Lambing /kidding/calving												
Milking												
Livestock sales peak												
Livestock diseases												
Hazard												
Flood												
Conflicts /cattle raiding												
Other												
Agricultural labor peak												
Firewood sales												
Petty trade												
Beer sales												
Stress & High Expenditure Periods												
High staple prices												
Human diseases												
Festival season												
Lean season												
Legend												

Consumption Calendar for Poor Households (SS08)

Poorer households' sorghum harvest normally lasts between six and seven months, or from mid-August until the February of the following calendar year, however this has been reduced to between two and four months for the average household due to the current conflict.¹⁷ As sorghum stocks decrease, poor households start relying on purchasing sorghum and maize from the market, March and January respectively. During the lean season, poor households earn cash from the sale of firewood, papyrus mats, local brew, and in some cases a few goats. Fish sales, a more profitable income source for the poor, take place during the months of January to April and August to November. In addition to the purchase of staple foods, health care services and school fees are the primary expenditures for the poor. The latter is normally paid in three installments over the course of the year: April, July, and October.

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Staple foods												
Sorghum												
Maize												
Wild foods												
Income												
Sale of firewood												
Sale of papyrus mats												
Sale of fish												
Sale of goats												
Sale of local brew												
Sale of wild foods												
Expenditures												
Healthcare												
Education												
Legend												

¹⁷ South Sudan FSNMS, 2017.

NORTH-WESTERN NILE BASIN CATTLE AND MAIZE (SS09)

Main productive assets	
Poor	Better-off
Few livestock (mostly goats) < 1 ha cultivated	Cattle Goats/sheep More than 1ha cultivated Fishing equipment
Main foods and sources	
Poor	Better-off
Maize (OP/MP) Sorghum (OP/MP) Other crops (OP/MP) Fish (G) Milk, meat (OP, Kin) Wild foods (G) Humanitarian assistance	Maize (OP/MP) Sorghum (OP/MP) Other crops (OP/MP) Fish (G) Milk, meat (OP, Kin) Wild foods (G)
Main income sources	
Poor	Better-off
Goats and sheep sales Bush products sales Domestic work (water) Local labor Wild foods, bush products sales Brewing	Cattle, small livestock sales Milk sales Surplus maize sales Retail trade Fishing Timber sales
Main markets	
Rubkona (Bentiu), Mayom	
Main hazards	
Floods – July/August Dry spell – May/June Bird plagues Crop pests and diseases: Striga (affecting maize) fall army worm, grasshoppers and caterpillars (affecting both maize and sorghum minimized by ash). Livestock diseases: CBP, Anthrax, Hemorrhagic Septicaemia, Black Quarter, Trypanosomiasis, Brucellosis, Foot and Mouth, PPR, CCP, Newcastle disease (all peak between Feb and Apr)	
Coping strategies for poor households	
Poor	Better-off
Increase sale of goats and sheep Increase sale of labor and migration Increased consumption and sale of wild foods and bush products	Increased sale of cattle Seek employment in urban area Increased consumption and sale of wild foods and bush products

Summary

This zone is similar to SS07 in terms of landscape typology, with an overall agro-pastoral livelihood production system. However, this zone has a greater focus on livestock rearing than cropping, and maize is the main staple cultivated, rather than sorghum. Fishing and collection of naturally-occurring foods and products are also widely practiced. The zone was previously known for commercial oil extraction; however, this has significantly declined with the onset of conflict. The zone is a deficit cereal producer, relying on trade with Sudan for import of staple cereals and other foods. In return, cattle and other products are exported out of the zone.

Like in zone SS07, flat flood plains are the typical landscape of the zone, with extensive savannah, bush and patches of forest, and a network of permanent swamps, seasonally flooded grasslands, rivers, and lakes. Significant reserves of natural resources include oil, zinc sulfate, timber, gum Arabic and grasses. The zone receives average precipitation of about 800-900 mm per annum with a unimodal rainfall pattern; generally, from May to November. Temperatures range between a minimum of 20 to 25° Celsius from May to November and a maximum of 25 to 30° Celsius from February to April. Soils vary progressively from predominantly clay near the rivers, to sandy loams on the plains.

The sale of cattle and small livestock, hides, milk and other products are the most important sources of cash for the zone's economy. All households' rear livestock. Cattle are the most populous, followed by goats and sheep. Livestock are free-grazed throughout the year, following availability of pastures at varying distances from the village of origin.

Maize is the main crop cultivated, rather than sorghum in nearby zones. This relates to the uniquely high population of birds in the zone. Sorghum is cultivated as a secondary cereal, in addition to beans, groundnuts, and various types of vegetables. Seed for all crop types is mostly sourced from previous harvest; however, some is purchased on the market or provided by NGOs. Some better-off households in times past used ploughs and other machinery; however, most production has reverted to fully manual in the last five years. The use of chemical inputs is almost non-existent.

Naturally-occurring uncultivated foods include many varieties of fish, leafy greens, grains, seeds and nuts (e.g. *leau*, *lalop* and *dolieb*), tubers and other roots (e.g. water lily), honey, game meat, and fruits. Fishing is done in a traditional manner, using canoes, nets, spears and traps, normally in the dry season.

There are three main trade routes out of the zone: i) to the west, via Rubkhona-Mayom-Abiemhnom, ii) towards the

north, via Rubkona-Pariang-South Kordofan (Sudan) and iii) towards the south by river, via Rubkona-Adok-Panyijiar-Juba. Rubkona (Bentiu) is the primary market where most imported and exported commodities pass through. Prices at Bentiu market have also increased – ten-fold for maize and three-fold for sorghum since 2016.

The communities in this zone are prone to inter- and intra-communal attacks and cattle-rustling, especially during the dry season, when pastoralists come from various directions to access the pastures. This tends to significantly reduce agricultural production in the areas affected. Losses of livestock are often balanced by revenge attacks. The high background level of conflict related specifically to livelihood resources, makes it difficult to know to what extent the additional layer of wider political conflict causes additional strains on production.

Milk, crops, and fish are the main foods produced and consumed in the zone, supplemented to a large extent by wild foods. In the current situation, poorer households might be purchasing as much as nine months of their staple food needs, whereas in normal times own crop production would last them six to seven months. Poorer households pursue work opportunities mostly in their villages, however also in distant locations as far as Juba and Sudan.

Seasonal Calendar (SS09)

The rainy season runs from May to October, and the dry period reaches its most critical period from January to April when competition for water and pasture increases. Land preparation for all crops is done in March and April, followed by planting in May to July, depending on the type and variety of crop. Maize is harvested green in August and September, while the main harvests of all crops are in October and November. The peak period of milk production is during the rains from July to October. June and July are also the period of peak sales of goats and cattle.

	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Rainy season												
Crops												
Maize												
Sorghum												
Sesame												
Groundnuts												
Mango Fruits												
Sale of bush products												
Livestock												
Cattle milk peak												
Cattle sales peak												
Goat sales peak												
Livestock diseases												
Other												
Agricultural labor peak												
Sale of local beer												
Stress & High Expenditure Periods												
High staple prices												
Human diseases												
Festival season												
Lean season												
Legend												

April and May mark the start of the agricultural season, which continues through harvest in November. Activities such as firewood collection and fishing take place throughout the year.

Consumption Calendar for Poor Households (SS09)

Poor households’ maize harvest normally lasts from mid-August until February of the following year. In March, and through September, households start to rely more on market purchases, especially maize and vegetables. These purchases also cover the lean months of June until July. During the lean season, households depend on the sale of firewood, elephant grass, and domestic work to help finance food purchases. As in neighboring livelihood zones, the main expenditures of poor households include staple foods, health care services (more expenditure during the rainy season due to malaria), and three school fee payments.

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Staple foods												
Maize												
Vegetables												
Wild foods												
Income												
Sale of firewood												
Sale of elephant grass												
Domestic work												
Expenditures												
Healthcare												
Education												
Legend		Own prod.		Market purchase				In-kind		Gathering		

NORTHEASTERN MAIZE, CATTLE & FISHING (SS10)

Summary

Main productive assets	
Poor	Better-off
0.25-0.5 ha cultivated Goats Sheep Chickens Fishing equipment	1+ ha cultivated Cattle Goats Sheep
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Sorghum (OP/MP) Cowpeas (OP/MP) Fish (G) Wild foods (G) Milk, meat (Kin, IK)	Maize (OP/MP) Sorghum (OP/MP) Cowpeas (OP/MP) Vegetables (OP) Milk, meat (OP) Fish (MP) Wild foods (MP)
Main income sources	
Poor	Better-off
Natural products sales (e.g. thatching grass, rope) Local labor Brewing Goat sales Dried fish and wild foods sales	Cattle sales Small livestock sales Retail trade Crop sales
Main markets	
Jikmir, Jekow and Mathiang	
Main hazards and approximate frequency	
Interruptions in rainfall in early cropping season (June and July) Sudden swing from reduced rainfall to heavy rains in early part of season, maize plants not ready Crop pests: birds, sorghum rust, grasshopper and stem borer Livestock diseases: CBP Haemorrhagic Septicaemia, Trypanosomiasis, Black Quarter, Mange, Brucellosis, Foot and Mouth, and liver fluke (affecting cattle) and CCP and Goatpox	
Main coping strategies	
Poor	Better-off
Increased labor migration Increased consumption of wild foods; sale of bush products Increased sale of livestock	Increased reliance on formal employment Increased reliance on cash remittances Increased sale of livestock

Livelihoods in this zone are largely determined by the characteristics of the dominant Sobat River and its tributaries, which inundates the expansive flood plains every rainy season, providing opportunities for agriculture, livestock rearing and fishing; all equally important options. Maize is the primary staple crop cultivated, although the zone is a net importer of cereal. Cattle are the primary livestock reared. The zone is relatively isolated in the north-eastern corner of the country, bordering with Ethiopia, which results in fewer trading opportunities.

The zone is dominated by flood plains due to the Sobat River and its tributaries that flow down from Ethiopia and westward towards Malakal, where it converges with the Nile River. An annual inundation results in an extensive network of swamps in lower lying areas of the flood plains once the rainy season has concluded, between August and September. This is not classified as a flood; it is a predictable and expected part of the production system. Vegetation is mostly savanna grasslands with scattered patches of forest. Wild game, fish, and many types of naturally-occurring plants are important natural resources to the people of the zone. Black cotton soils are predominant, providing a fertile base for pastures and cropping. A single rainy season runs from May to October, with an average annual rainfall of 500 to 700 mm.

Population density is historically low with an estimated 12 people per square kilometer. The current population density is unknown but is likely to be lower due to conflict. The total number of internally displaced people (as of 2018) is not high compared to other zones; however, the ratio compared with the host population is likely to be high.

Maize is the most important crop in the zone. It is produced in two growing seasons on different types of land. Sorghum, a minor cereal, and cowpeas are also cultivated in the zone. Vegetables include pumpkins, okra, cucumber, Jew's mallow, watermelon, egg plants, and beans. Cattle are grazed freely on

extensive pastures and grasslands. Goats are the second most common livestock with sheep and poultry also raised.

Traditional methods of fishing are practiced in rivers and in large swamps that remain after the plains are inundated. The abundance of wild plants and animals offer opportunities for hunting and collecting of foods such as game meat, honey, tubers, wild fruits, and leafy greens, in addition to bush products for construction and fuels.

As with most other zones in the country, the intensive use of crop inputs is not typical, and seeds are kept by farmers from year to year. Most labor done by poorer households is carried out locally, in agriculture, livestock rearing, and

the construction sector. For those leaving the zone, the most common destination is Ethiopia, especially during the dry season. The main road linking the zone to Malakal is rarely open due to insecurity. Most commodities are sourced from Gambella, Ethiopia, but such trade is limited and often illegal. Trade is usually carried out in foreign currencies.

Conflict has affected the zone in several ways: it has reduced the area under cultivation, disrupted access to pasture, led to population displacement, border closure, and cut off market linkages with other zones. These do not all occur at the same time but take place at different times in different places. The extent to which the combined effects of conflict reduce the overall livelihood security of households is not known.

Market access is poor due to security problems, poor infrastructure, and general geographic isolation. The most common commodities imported into the zone are sorghum, salt, soap, and beer. From the three main markets, commodities are transported by boat or by head-load to a network of local markets. Cattle, goats, dried and fresh fish, bush products, and wild foods are the main commodities sold at local markets and for export out of the zone.

Seasonal Calendar (SS10)

The zone has two cropping seasons. The primary rain-fed cropping season (from May to October) is a slightly shorter cycle than in neighboring zones. Most of maize is cultivated in this season. An additional cycle of flood-recession maize cultivation (i.e. not rain-dependent) commences in November, with harvest in late February and March. These are practiced in different places as determined by elevation and proximity to the Sobat River or one of its tributaries. Sorghum and cowpeas are also cultivated during the primary cropping season. Vegetables tend to be cultivated in the second season, with the flood-recession maize.

	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Rainy season	[Rainy season bar]											
Crops	[Crops section header]											
Maize	[Land prep]	[Weeding]	[Weeding]	[Sowing]	[Sowing]					[Harvest/Thresh.]	[Harvest/Thresh.]	[Harvest/Thresh.]
Beans	[Land prep]	[Weeding]	[Weeding]		[Sowing]	[Sowing]				[Harvest/Thresh.]	[Harvest/Thresh.]	[Harvest/Thresh.]
Vegetables				[Sowing]	[Sowing]	[Sowing]	[Green Cons.]	[Green Cons.]				
Flood recess-maize					[Sowing]	[Sowing]	[Weeding]	[Weeding]	[Weeding]	[Harvest/Thresh.]		
Livestock	[Livestock section header]											
Cattle milk peak	[Cattle milk peak bar]											
Cattle sales peak											[Cattle sales peak bar]	[Cattle sales peak bar]
Goat sales peak								[Goat sales peak bar]	[Goat sales peak bar]			
Livestock diseases	[Livestock diseases bar]	[Livestock diseases bar]				[Livestock diseases bar]	[Livestock diseases bar]					
Other	[Other section header]											
Agricultural labor peak											[Agricultural labor peak bar]	[Agricultural labor peak bar]
Firewood sales	[Firewood sales bar]							[Firewood sales bar]	[Firewood sales bar]	[Firewood sales bar]	[Firewood sales bar]	[Firewood sales bar]
Petty trade												[Petty trade bar]
Fishing				[Fishing bar]	[Fishing bar]	[Fishing bar]	[Fishing bar]	[Fishing bar]	[Fishing bar]	[Fishing bar]	[Fishing bar]	[Fishing bar]
Stress & High Expenditure Periods	[Stress & High Expenditure Periods section header]											
High staple prices	[High staple prices bar]	[High staple prices bar]										[High staple prices bar]
Human diseases	[Human diseases bar]	[Human diseases bar]	[Human diseases bar]	[Human diseases bar]	[Human diseases bar]							
Festival season					[Festival season bar]	[Festival season bar]	[Festival season bar]	[Festival season bar]				
Lean season	[Lean season bar]	[Lean season bar]										[Lean season bar]
Legend	[Land prep]	[Weeding]	[Sowing]	[Green Cons.]	[Harvest/Thresh.]							

Fishing is a prominent activity in the months of October to December, with a gradual drop off from January to April. From May to August fishing opportunities are limited. Game hunting takes places mostly in the latter part of the dry season, from January to April, once animals are searching for water and pasture. Wild honey is harvested from December to March.

Consumption Calendar for Poor Households (SS10)

The maize harvest of poor households typically covers about six and a half months from mid-August until February of the following year. As in other zones, due to the current conflict, own cereal production only lasts approximately two months for the average household. Households rely on own vegetable production from March until August. Once the harvest is exhausted, they rely on purchasing maize and vegetables for the rest of the year and to cover the lean months from May to July. Households also collect wild foods for own consumption from December to April, which is supplemented by market purchase of wild foods in March and April before the beginning of the lean season. Households depend on the sale of firewood and domestic work to finance food, healthcare, and education expenditures year-round. This is supplemented by the sale of elephant grass during high expenditure periods. As in neighboring livelihood zones, the poor's main expenditures include staple foods, health care services (more expenditure during the rainy season due to malaria), and three school fee payments in July, October, and April.

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Staple foods												
Maize												
Vegetables												
Wild foods												
Income												
Sale of firewood												
Sale of elephant grass												
Domestic work												
Expenditures												
Healthcare												
Education												
Legend												

NORTHERN SORGHUM AND LIVESTOCK (SS11)

Main productive assets	
Poor	Better-off
0.5 ha cultivated Goats Pigs Chickens Fishing equipment	1-2 ha cultivated Cattle Goats, sheep Pigs
Main foods consumed and sources	
Poor	Better-off
Sorghum (OP/MP) Maize (OP/MP) Cowpeas (OP/MP) Sesame (OP) Fish (G) Wild foods (G) Milk, meat (Kin, IK) Humanitarian assistance	Sorghum (OP/MP) Maize (OP/MP) Cowpeas (OP/MP) Sesame (OP) Vegetables (OP) Milk, meat (OP) Fish (MP) Wild foods (MP)
Main income sources	
Poor	Better-off
Local labor Seasonal labor migration Sale of small livestock Fish and wild foods sales Natural products sales Brewing	Livestock sales Crops sales Retail trade
Main markets	
Renk, Malakal, Pariang, Melut, Bunj and Abiemnhom	
Main hazards and approximate frequency	
Floods (every 2-3 years, between August and October) Delays in the onset of rains, or interruptions in rains after planting (every 3-5 years, around June-July) Crop pests and diseases: sorghum rust, grasshoppers and birds. Livestock diseases: CBP, Haemorrhagic Septicaemia, Trypanosomiasis, Black Quarter, Foot and Mouth, liver fluke and mange (affecting cattle) and CCP. Persist conflict	
Main coping strategies	
Poor	Better off
Increased labor migration Increased consumption of wild foods	Increased labor migration Increased bush products sales Increased livestock sales

Summary

The zone is characterized by vast, low lying, flat plains, an extensive international border with the Republic of Sudan, and a discrete riverine area surrounding the Nile River. It is climatically semi-arid and has a classic agro-pastoral system of production, with both cropping and livestock rearing being crucial components to livelihoods. These are supplemented by fishing and other livelihood activities such as labor migration and petty trade. Cereal surpluses are produced in specific areas of the zone, where mechanized commercial farming is near the Nile river. Most of the zone has a subsistence-level of production, however, with an overall cereal deficit.

Vegetation is mostly open savannah and grasslands. Hardy trees and shrubs, such as *Balanites aegyptiaca*, are typical. A single rainy season occurs from May to October, with an average annual rainfall of around 500mm. Temperatures average 30 to 32° Celsius during this period. The dry season is typified by very hot and arid conditions, with average temperatures of 35 to 37° Celsius. Soils tends to be relatively fertile, sandy loams. Soil fertility is not as high as neighboring zones. The riverine area of zone SS11 is distinct from the riverine area of zone SS08, which is more expansive in reach beyond the limits of the river itself.

As of the FEWS NET livelihood zoning from 2013, the population density of the zone was around 400 people per square kilometer. Recent estimates show that the population in certain parts of the zone, notably the former county of Baliet (in former Upper Nile state), has decreased by approximately half due to the scale of conflict. Displacement of people out of the zone has been significant in the last five years. The number of internally displaced people within the zone, and from other zones into this zone, is also relatively high.

Cropping and livestock rearing are the basis of the economy of the zone. The most important crop is sorghum, followed by maize, cowpeas, sesame, and vegetables (including pumpkin, okra, eggplant, cucumber, tomato and watermelon), and sweet potatoes. Livestock of all types are reared for sale and consumption, including cattle, goats, sheep, pigs, and chickens. The most common commodities produced and sold in the zone are milk, fish, firewood, game meat, and honey.

The primary factor determining size of cultivated land is availability of labor. Land itself, as a natural resource, is in abundance. Poorer households are unable to cultivate as much as they are often busy during the land preparation, planting, and weeding period earning daily cash and food needs through laboring for better-off households. Better-

off households can cultivate 1 to 2 hectares, as they are able to contract in labor from poorer households.

Traditional, rain fed, manual cultivation is the most common means of agricultural production in the zone. This includes all stages, from land preparation to harvest and processing, for all crop types. The use of crop inputs is not common. Seeds are mostly kept by farmers year to year. Ploughs and threshing machines are not common, except for some better-off farmers, and tractors are rare. The only exception to this is for the large commercial farms in Renk, Manyo, and Melut, where production is both mechanized and irrigated. Poorer households mostly raise small livestock including goats, pigs, sheep, and poultry, whilst better-off households raise both small livestock and cattle.

Fishing makes a significant contribution to local livelihoods, both as a food and a cash source. In general, poorer and middle households are involved in fishing, selling their catch to better-off households, as well as to clients outside the zone after the fish has been dried. Collection of wild foods and products is also significant in the zone. This includes various types of tubers, leaf vegetables, game meat, gum Arabic, etc.

There is an annual migration of ethnic Arab, nomadic, *Falata* pastoralists into parts of the zone. Their herds, which include camels, cattle, goats, and sheep, are vaccinated and there are long-standing agreements between the nomads and the various host communities with whom they interact.

Conflict has significantly affected production in the zone, particularly for the mechanized farms of Renk, Manyo, and Melut. Climatic factors have been average in this zone since 2013; however, a reduction in area under cultivation, as well as disruption in the patterns of seasonal livestock migration, both directly associated with conflict, have resulted in significant declines in overall productivity. The 2015 border closures led to sudden and severe price increases, complicating an already difficult situation. Levels of production in 2013, particularly for sorghum, were above average.

Being so close to the border with Sudan results in very strong market interactions in both directions. Significant volumes of cereals enter from Sudan, while cattle, goats, and sheep are traded out of the zone into Sudan (from this, and neighboring, zones). Dried fish and bush products are also exported to Sudan and household items are imported. In recent years, the flow of livestock and dried fish coming from other zones through this zone, for export to Sudan, has significantly declined. Transport of commodities is via river and road between main market towns, and by road from these markets to smaller markets. Rainy season transport within the zone is very limited due to poor quality roads. Conflict and opportunistic banditry have also become problematic for trade.

Given the zone's position as a very important trade point, with the Nile River for domestic trade and export/import with Sudan, populations in this zone would likely have (or had) more engagement with markets than many parts of the country. While Malakal is a key market, prices for staple foods for poorer households have increased since 2016, for example by up to six times for the price of sorghum. Given the high level of conflict in parts of the zone and the associated border closures and price rises, this could possibly have led to a significantly altered pattern of reliance in terms of livelihood options. The degree of this shift is not known.

Seasonal Calendar (SS11)

The agricultural cycle commences with land preparation which is mostly done from late March to early May. This is followed by planting, which occupies the rest of May as well as June. The harvest of the main crop, sorghum, is mostly in October and November, however some varieties are harvested in late September and others in December. The peak milk production period starts with the onset of the rains, and continues through to December, coinciding to a large extent with the period when most households' own crops have been exhausted, between May and August. This is also the period when most households sell cattle to generate cash to purchase food. Goat sales are more common throughout the year, except for during the rainy season. Agricultural laboring opportunities are available from April to December, a period when many poorer households can earn food in return for labor, or cash which can be used to purchase food. Firewood sales are primarily a dry season activity for poorer households. For communities living near the Nile River, fishing can be practiced throughout the year. For communities living further away, fishing is only available during the rainy season when local rivers flow and inundation of the flood plain brings fish within close proximity to villages.

	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Rainy season												
Crops												
Sorghum												
Maize												
Sesame												
Beans												
Vegetables												
Livestock												
Cattle milk peak												
Cattle sales peak												
Goat sales peak												
Livestock diseases												
Other												
Agricultural labor peak												
Firewood sales												
Petty trade												
Fishing												
Stress & High Expenditure Periods												
High staple prices												
Human diseases												
Festival season												
Lean season												
Legend												

Consumption Calendar for Poor Households (SS11)

The largest contribution of food needs for poorer households is met from the consumption of their own crops. Until 2013, it was typical for the sorghum harvests of poorer households to last six to seven months. For reasons explained above, this period has decreased to between two and four months for the average household. Once stocks are exhausted, these households rely on a combination of other options at any given time including food earned in exchange for labor, food purchases and consumption of fish and wild foods.

MAIZE, SORGHUM, FISH AND NATURAL RESOURCES (SS12)

Main productive assets	
Poor	Better-off
Less land cultivated (ha) Goats and sheep Agricultural hand tools Bicycles	More land cultivated (ha) Cattle Agricultural hand tools Bicycles Motorcycles and vehicles
Main foods consumed and sources	
Poor	Better-off
Maize (OP/MP) Sorghum (OP/MP) Ground nuts (OP/MP) Wild foods (C)	Maize (OP) Sorghum (OP/MP) Ground nuts (OP) Milk (OP) Fish (OP/MP) Meat (OP/MP)
Main income sources	
Poor	Better-off
Labor Natural products sales (grass, firewood, charcoal) Livestock sales (goats/sheep) Wild foods/fish sales	Livestock sales Crop sales (sorghum, maize) Timber sales Fish sales Petty trade
Main markets	
Pochalla, Boma, and Pibor; Puniyido and Dima in Ethiopia	
Main hazards and approximate frequency	
Floods occur annually during the wet season Livestock diseases annually during the dry season Dry spells, every two-three year in the middle of the wet season Inter-communal conflicts and cattle rustling, annual dry season Human diseases peak every year during the wet season Insecurity Crop pests and diseases	
Main coping strategies	
Poor	Better-off
Increased search for work in neighboring zones, urban areas, or other countries Increased consumption of wild foods Increased sale of natural products (e.g. charcoal)	Increased sale of cattle Increased barter trade, especially grain for livestock Purchase of livestock drugs Placing livestock in quarantine for disease control Migration to urban centers

Summary

This zone is in the south-eastern part of Jonglei along the border with Ethiopia and covers Pochalla and the highland part of eastern Pibor. Livelihoods in the zone are based on agriculture supplemented by livestock and exploitation of natural resources.

This zone is dominated by mountains and hill ranges to the south on the border with Ethiopia, and by lowlands and riverine areas from the foothills and north into the plains. The altitude ranges considerably, from 420-700 meters in the lowlands and foothills and between 800 to 1200 meters in the highlands. Soils are generally fertile although they vary and include sandy, clays and loam soils suitable for growing a wide variety of crops.

The zone has a unimodal rainfall pattern with average precipitation of about 900-1100mm per annum. There are two harvesting seasons. The first harvest is from July to August and the second harvest starts in September and ends in November. The dry season is short, only two months from January to February. Average temperatures in this area reach a maximum of about 42° Celsius in February and minimum of 30° Celsius in December to January.

The vegetation is a mixture of forest, bush shrubs, and marshlands punctuated by agricultural land. The zone is home to Badingilo National Park which has a rich endowment of natural resources such as honey, shea butternut trees, and wild animals, although animal populations have been depleted due to the civil war. Other resources include gold deposits. The Oboth, Pibor, and Gilo rivers that flow into the Sobat River along the mountains on the Ethiopian border provide a source of fish.

Population density is moderately dense, and local inhabitants are mainly of the Murle and Kachipo tribe. The zone is affected by cattle raiding and conflict over pasture and watering spots for livestock, especially during the dry season from December to April. The ongoing fighting has also resulted in child abductions in

the zone. The cumulative effect of the conflict has disrupted agriculture and livestock production which has seen livestock numbers and crop production decline.

The main economic activity is rain-fed agriculture supplemented by livestock and exploitation of wild foods. The main difference between this zone and zone SS03 *Highland forest and sorghum* is that SS12 has two harvest seasons for the two main crops – maize and sorghum – and that cassava (typically a reserve crop) is a dominant crop. Other common crops such as pumpkins, millet, sesame, cowpeas and green gram are only harvested in one season.

All wealth groups depend chiefly on own crop production supplemented by wild foods and dry fish, and for the poor by market purchases. While during a normal year, own cereal production lasts poorer households five months, this period has reduced to approximately three months due to the ongoing conflict.¹⁸ The better-off hire labor and can cultivate more land and have surplus production for sale. Poor households depend on the sale of labor and natural products such as charcoal and bamboo. Better-off households generate most of their income from the sale of maize, sorghum, and millet. Some income is also obtained from petty trade and the sale of bamboo, both within and outside the zone. All households go game hunting and gathering wild foods year-round, but especially during the dry season when access inside the forests increases.

Land for cultivation and settlement is managed through traditional mechanisms but is generally open. The method for land preparation is by hand using local hand tools '*Moloda*' which is commonly used by poor households. The better-off use animal traction and hired labor to cultivate their bigger pieces of land. The livestock kept are mainly goats, a few sheep, and poultry with relatively few cattle mainly owned by better-off households.

Complementary sources of food and cash include hunting and seasonal fishing. A wide variety of wild food plants are available in the hills and mountains including roots, fruits, berries and leafy vegetables, commonly gathered by all households. There is also some artisanal gold mining in the zone, but levels of extraction are low due to the lack of appropriate tools and knowledge.

Market access is constrained by the hilly terrain and the poor state of the roads. The main markets are easily accessible during the short dry season (January – February) but access worsens during the rainy season. Cross-border trade with Ethiopia also increases during the dry season when road access improves. Supplies also enter the zone from Kenya through Narus and sometimes via Juba. Market access is mostly by foot, bicycle, or public transport, although some better off households have their own vehicles. Seasonal migration in search for labor normally occurs during the dry season with people moving to Kapoeta and Juba, as well as Gambella and Dima in Ethiopia. Cereals are exported outside the zone, but livestock is mostly sold within the zone.

Seasonal Calendar (SS12)

Although the zone only has one rainy season which starts in March and ends in December, there are two distinct harvest seasons for the main staple crops (maize and sorghum). The main harvest is from July to August and the second harvest starts in December. Land preparation for the first season starts in February followed by planting/sowing in March and weeding in April. The first season green consumption runs from May until the dry harvest in July. Second season activities start in September. All other crops are only grown during the first season. Cassava is critical in bridging shortfalls arising from the poor performance of maize and sorghum and is mostly consumed between January and July.

The lean season is normally from March to July, when green crops are still not ready for consumption. Opportunities for agricultural labor exist throughout the year although the peak period is March to May. Lambing, kidding, and calving take place in the dry season from November to February the following year. The peak milk production is during the rainy season. There is no seasonal livestock movement in this highland zone.

¹⁸ South Sudan FSNMS, 2017

	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Rainy season												
Crops												
Maize												
Sorghum												
Okra												
Sesame												
Vegetables												
Livestock												
Cattle milk peak												
Cattle sales peak												
Goat sales peak												
Livestock diseases												
Other												
Ag. labor peak												
Firewood sales												
Stress & High Expenditure Periods												
High staple prices												
Human diseases												
Festival season												
Lean season												
Legend												

Consumption Calendar for Poor Households (SS12)

Poor households purchase sorghum grain during the lean months (March to June). During the lean season, the main sources of income are the sale of agricultural labor, the sale of wild foods and bush products and the sale of goats and sheep. Main expenditures include food, health care, and school fees, due in a single payment in March and April.

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Staple foods												
Sorghum												
Maize												
Groundnuts												
Income												
Sale of grass												
Sale of firewood/charcoal												
Agricultural/other labor												
Fishing												
Sale of wild foods												
Expenditures												
Food												
Healthcare												
Education												
Legend												

Annex 1. Summary of Displacement Trends and Livelihoods

This summary pulls from available source material describing the situation of internally displaced persons (IDPs) in South Sudan since the renewed outbreak of conflict in December 2013 through the most recently available data. The situation of displaced persons changes frequently. Therefore, it is challenging to make statements on long-term trends, and the information provided here should be reproduced and referenced only upon a review of updated facts and figures.

As of June 2018, approximately 1.88 million people were internally displaced in South Sudan, including nearly 200,000 in UNMISS Protection of Civilian (PoC) sites, 78,000 in collective centers, and 27,000 in informal settlements.¹⁹ Levels of internal displacement are highest in the former states of Greater Upper Nile: Upper Nile, Unity, and Jonglei. Most internally displaced persons (IDPs) are women and children and have been displaced repeatedly due to persistent conflict.²⁰ The constant state of displacement has resulted in an overall deterioration of livelihoods due to loss of property, productive assets, income, and access to services, and contributed to limited coping capacity and increased reliance on humanitarian assistance where available. IDPs that are unable to reach PoC sites, collective centers, or informal settlements often move to more remote locations, or live in host communities in relatively safer locations and sometimes among extended family. However, the influx of IDPs into host communities' is thought to add pressure on already strained local resources, public services, and livelihood opportunities.²¹ The return of displaced peoples to their homes is largely perceived to only be possible with the cessation of conflict and an ability to return to pre-conflict livelihoods. Return is however unlikely to be successful without external livelihoods support given the ongoing nature of conflict and instability in South Sudan even prior to December 2013, resulting in declining livelihood options over an extended period in certain areas²².

Two broad stages of stress displacement have been noted in South Sudan – first, moving to more remote or more secure areas that are closer to alternative food sources and/or social support from friends and relatives; and second, relocating to urban centers or displacement camps when all other livelihoods options have been exhausted. Initially, households might migrate to nearby wetlands, such as the Sudd wetlands for those from Ayod, Fangak, Leer, Panyijiar, and Duk counties, bushlands, or fishing camps in search of wild foods (water lilies, cassava leaves and roots, etc.) for safety and alternative food sources. Some foraged wild foods that were reportedly consumed in Jonglei State are known to cause sickness such as diarrhea.²³ In counties such as Wau and Mayendit, fleeing to bushland or wetlands is more difficult given the greater distance to these areas and high prevalence of insecurity and conflict that severely limits mobility. Throughout South Sudan, there are extreme tradeoffs in the utilization of wetlands for coping given high levels of insecurity, including ongoing competition over natural resources for livestock which existed prior to the December 2013 outbreak of civil war.²⁴ Overall, with increasing displacement and insecurity since 2013, there is a noted potential shift in reliance from agriculture to livestock, wild foods, kinship and social support networks, and humanitarian assistance to cope with the loss of livelihoods and food insecurity. When these options are unavailable or exhausted, individuals are believed to displace to urban or camp settings where more regular access to

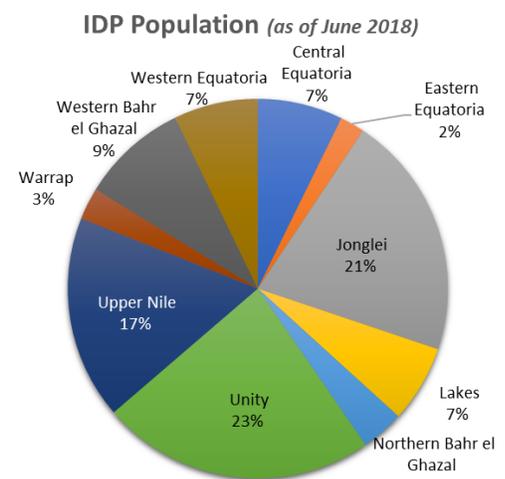


Figure 1. IDP population by state. Jonglei, Unity, and Upper Nile hold 61% of all IDPs. Source: UN OCHA.

¹⁹ Exact numbers vary on a regular basis due to constant inflows and outflows of peoples. Regular updates can be found at UNHCR and CCCM Cluster websites. The concern with the use of DISPLACED peoples is that it does not cover the people who enter the sites on days of distributions of food, educational and other non-food items.

²⁰ Norwegian Refugee Council, May 2017. "Global Report on Internal Displacement", pg. 57.

²¹ International Organization for Migration, 2016-17. "South Sudan Migration Crisis Operational Framework."

²² Secure Livelihoods Research Consortium, June 2017. "Livelihoods, conflict and recovery."

²³ REACH, July 2017. "Food Security and Livelihoods County Profiles – Jonglei State."

²⁴ REACH, March 2018. "[Now the Forest is Blocked: Shocks and Access to Food](#)"

humanitarian assistance is available.²⁵

While a shift in livelihoods due to protracted displacement and insecurity has been noted in some areas, it is likely that the historic reliance on wild foods and livestock has been underestimated by humanitarian and development actors. Therefore, any change in reliance on different livelihoods strategies (agriculture, livestock, or wild foods) due to conflict is difficult to quantify and may instead be reflective of seasonal or other regular adjustments and adaptations over time. Additionally, while the apparent shift toward reliance on kinship and social support networks has been noted in some areas as a more extreme coping strategy, it is likely that reliance on these networks has declined overall due to the rise in cash-based humanitarian assistance and increasing social fragmentation with the intensification of war since December 2013. While this is a reported coping strategy among conflict-affected and displaced populations, it is difficult to determine the extent to which individuals are able to utilize the option.

Given the difficulty in accessing remote areas, the livelihoods of displaced peoples in urban and camp settings – approximately 17 percent of the IDP population – is generally better understood. For those living in PoC sites, primarily women and youth, livelihood options are extremely limited and individuals are heavily dependent on humanitarian assistance for both food and non-food support. Their mobility is extremely limited given the high levels of hostility and insecurity in surrounding areas and independent livelihoods options are essentially nonexistent. Individuals arrive at the sites with limited assets and many are unable to leave regularly to tend to crops, fish, or earn income. Women may occasionally leave to collect firewood or trade in external markets, but any travel outside is considered dangerous and men rarely leave due to threats of abduction or killing.²⁶ It is also difficult to assess the viability of returning home, so many displaced remain in PoC sites for six months or longer. In more open sites such as collective centers and informal settlements, livelihoods are more adaptive as individuals can leave during the day to visit host communities and other nearby areas to seek out work, generate income, or buy food and other goods.

For IDPs displaced to urban areas such as Juba, income generating opportunities are limited to casual work such as housework, fetching water, petty trading, or laundry among women; and for men as porters, butchers, or other casual laborers. Common rural livelihood strategies such as the livestock keeping, crop production, or the collection of wild foods are largely unavailable. Given these limitations, the most common coping strategy among certain communities is a reliance on social support from relatives, friends, community members, or neighbors in the form of housing, food, and/or cash.²⁷ Some individuals also resort to begging as a last resort. Humanitarian assistance and social protection from international organizations (WFP, IOM, etc.) is relatively limited to displaced populations outside of the PoC in Juba.

Eighty-four percent of the 1.88 million IDPs have been displaced to remote areas or have been integrated into local host communities. The livelihood strategies of these groups are less well understood due to low levels of humanitarian access in some areas and limited information from remote areas. Displaced persons in rural areas are typically only able to engage in livelihood opportunities that exist in the areas to which they have been displaced – many of which have likely been constrained to some degree due to the compounding effects of conflict, poor climatic conditions (both dry spells and flooding), crop pests and diseases, and poor market access. However, these effects are generally poorly understood due to the difficulty in accessing rural host communities to conduct livelihoods assessments. IDPs living in rural areas exploit the livelihood options that are most available to them. While casual labor opportunities are largely nonexistent in Upper Nile State due to disrupted market access and reduced demand for agricultural and herding labor, opportunities are present in parts of Jonglei and Western Equatoria.²⁸ Given the urgent nature of displacement, displaced individuals are very often unable to bring food, tools, or other livelihoods

²⁵ Ibid.

²⁶ Norwegian Refugee Council Report, May 2017. “Protection of Civilian Sites: Lessons from South Sudan for Future Operations.” https://www.nrc.no/globalassets/pdf/reports/poc-sites_lessons-from-south-sudan-copy.pdf

²⁷ SLRC, September 2014. <https://securelivelihoods.org/wp-content/uploads/An-analysis-of-Pibor-county-South-Sudan-from-the-perspective-of-displaced-people.compressed.pdf>

²⁸ REACH, July 2017. “Food Security and Livelihoods County Profiles: South Sudan Food Security Crisis – Jonglei, Upper Nile, and Western Equatoria States.”

inputs along with them. Land, livestock, agricultural inputs, and other productive assets are abandoned, stolen, or destroyed, and IDPs have a difficult time engaging in prior livelihoods strategies in new areas, and are highly vulnerable to shocks.

Below are more detailed descriptions of counties with highest IDP figures as of June 2018²⁹:

- **Wau County** (Western Bahr el Ghazal State; Western Plain Groundnuts, Sesame and Sorghum livelihoods zone) has high levels of internal displacement and severely restricted movement. As of June 2018, there were over 89,000 IDPs in Wau County, approximately 19,000 of which were in the Wau PoC site. Those not in the PoC site are believed to be living in remote bushland areas or staying with relatives. Many IDPs fled without food or agricultural tools to areas where they are unable to cultivate. Most have relied on a cassava plant-based diet and gathering of wild foods and borrowing food and money from social networks are the primary livelihoods-based coping strategies.³⁰
- **Rubkona County** (Unity State) had a severe uptick in IDPs, exceeding 167,000 individuals by June 2018. Many were displaced to the Bentiu PoC, which hosted 114,650 individuals – approximately 40 percent of whom came from Rubkona County. The remainder of IDPs in Rubkona have fled to the bush and rely on wild foods and fishing for livelihoods. Humanitarian assistance is a significant source of food in Rubkona County; however, the majority of food assistance is oriented towards those in towns and the PoC site.³¹
- **Awerial County** (Lakes State) has a large number of IDPs, the majority of whom are fled high levels of conflict in Jonglei State and are hosted at Mingkaman spontaneous settlement. Mingkaman is located on the White Nile river and has historically been a small fishing village and the large influx of IDPs has placed strain on fishing and land resources.³²
- **Akobo County** (Jonglei State) hosts upwards of 85,000 IDPs, many of whom arrived from Uror and Nyirol counties. Most IDPs have been absorbed into local communities. Reliance on humanitarian assistance is high in Akobo County, and borrowing food from social networks and selling livestock are common livelihoods coping strategies.³³
- **Panyijiar County** (Unity State) reported nearly 75,000 IDPs as of June 2018, up from approximately 62,000 in December 2017. There has been an influx of IDPs from neighboring counties, including Mayendit and Leer, causing increased competition over resources and greater market stress. Large-scale humanitarian assistance is regularly provided to local and displaced populations in this county. Individuals who have been displaced to nearby islands in the Sudd wetlands also rely on wild foods or borrowing food from family to cope with food insecurity.³⁴
- **Counties surrounding Sudd Wetlands** (Ayod, Fangak, Leer, Panyijiar, and Duk) in Jonglei and Unity State – within the Nile Basin Fishing and Agropastoral Livelihood Zone – host approximately 247,000 IDPs, many of whom are believed to have retreated into remote areas of the wetlands for relative safety and access to fish and wild foods such as tree leaves and water lilies. The wetlands have come under increasing pressure due to competition over preferred fishing and hunting grounds, leading to violence. Access to food in the wetlands is seasonal and there is greater exposure to diseases such as malaria and cholera.³⁵

²⁹ As noted above, this information is likely to change rapidly. Therefore, any data points should be referenced directly and updated based on the time of reading. All IDP numbers are from UN OCHA data counts as of June 2018 and PoC numbers (Wau and Bentiu) are from CCCM Cluster Bi-weekly Situation Report as of July 2018.

³⁰ REACH, July 2017 “Food Security and Livelihoods County Profiles – Western Bahr el Ghazal State.”

³¹ Ibid – Unity State.

³² Ibid – Lakes State.

³³ REACH, July 2017 “Food Security and Livelihoods County Profiles – Jonglei State.”

³⁴ Ibid – Unity State.

³⁵ <https://news.nationalgeographic.com/2017/02/sudd-south-sudan/>

Humanitarian Assistance for IDPs

The availability of humanitarian assistance is highly variable throughout South Sudan. Certain geographic areas are more accessible, or have relatively higher or more severe need, and therefore receive more assistance. Within communities, distribution of assistance is uneven and inconsistent. IDPs may leave their displaced location and walk for miles to receive a food distribution before returning to a temporary home. Humanitarian assistance was reported as a main food source among certain settlements in former Unity State and parts of former Jonglei State; however, it reportedly did not reach most rural counties in former Upper Nile State.³⁶

Available data on the prevalence of humanitarian assistance and proportion of IDPs within each state in South Sudan reflects a positive correlation between the two (Figure 2).³⁷ Although it is unknown exactly the percentage of humanitarian assistance that goes towards IDPs, there is a notable relationship between the percent of the population reached by humanitarian assistance and the proportion of IDPs within that population. At the same time, many of the states with higher IDP populations are also those most affected by conflict – notably in former Unity State, but also in former Jonglei and Upper Nile states (Figure 3 below)³⁸. The prevalence of conflict has been reported to negatively affect the distribution of humanitarian assistance to more remote displaced populations, potentially resulting in a higher concentration of assistance going to urban populations or those living in IDP camps and PoC sites.

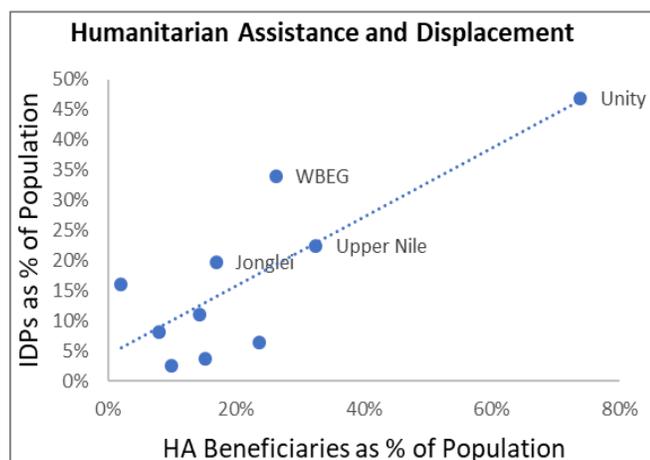


Figure 2. The relationship between the prevalence of humanitarian assistance and displaced persons, by state. Humanitarian assistance data reflects total number of beneficiaries reached by the World Food Programme. Displacement data is from UN OCHA (see footnotes 37 and 38).

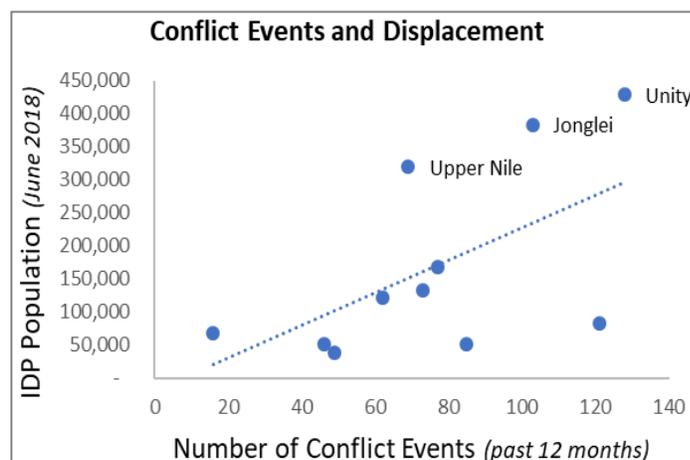


Figure 3. The positive relationship between the prevalence of conflict and the number of displaced persons, by state. Conflict events data is from ACLED and displacement data from UN OCHA (see footnote 38).

³⁶ According to REACH food security and livelihoods profiles, May-July 2017.

³⁷ Humanitarian Assistance data is an average for 2018 (January – June) based on the total number of beneficiaries who received food assistance according to monthly WFP distribution reports. The numbers may reflect double-counting of certain beneficiaries, for example children who receive supplementary feeding in addition to general food distributions provided to their household. IDP data is an average for 2018 (January – June) based on monthly UN OCHA estimates.

³⁸ IDP data is based on UN OCHA estimates for June 2018. Total number of conflict events are based on ACLED data over the 12-month period from July 2017 to June 2018.

Annex 2. List of Counties by Livelihood Zone

Livelihood Zone - SS01					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Equatoria	Central Equatoria	Yei River	Yei	Moguro	SS01
Greater Equatoria	Central Equatoria	Yei River	Yei	Tore	SS01
Greater Equatoria	Central Equatoria	Yei River	Yei	Otogo	SS01
Greater Equatoria	Central Equatoria	Yei River	Yei	Yei	SS01
Greater Equatoria	Central Equatoria	Yei River	Lainya	Mukaya	SS01
Greater Equatoria	Central Equatoria	Yei River	Lainya	Lainya	SS01
Greater Equatoria	Central Equatoria	Yei River	Lainya	Kupera	SS01
Greater Equatoria	Central Equatoria	Yei River	Morobo	Morobo	SS01
Greater Equatoria	Central Equatoria	Yei River	Morobo	Lujulo	SS01
Greater Equatoria	Central Equatoria	Yei River	Kajo Keji	Kangapo	SS01
Greater Equatoria	Central Equatoria	Yei River	Kajo Keji	Lowolo	SS01
Greater Equatoria	Central Equatoria	Yei River	Kajo Keji	Kajo-Keji	SS01
Greater Equatoria	Central Equatoria	Yei River	Kajo Keji	Nyepo	SS01
Greater Equatoria	Western Equatoria	Tambura	Ezo	Naandi	SS01
Greater Equatoria	Western Equatoria	Tambura	Ezo	Yangiri	SS01
Greater Equatoria	Western Equatoria	Gbudwe	Yambio	Nadiangere	SS01
Greater Equatoria	Western Equatoria	Gbudwe	Yambio	Bangasu	SS01
Greater Equatoria	Western Equatoria	Gbudwe	Anzara	Sakure	SS01
Greater Equatoria	Western Equatoria	Gbudwe	Anzara	Basuka ngbi	SS01
Greater Equatoria	Western Equatoria	Amadi	Mundri West	Mundri	SS01
Greater Equatoria	Western Equatoria	Amadi	Mundri West	Karika	SS01
Greater Equatoria	Western Equatoria	Amadi	Mundri West	Bangolo	SS01
Greater Equatoria	Western Equatoria	Amadi	Mundri East	Kekeri	SS01
Greater Equatoria	Western Equatoria	Amadi	Mundri East	Kadiba	SS01
Greater Equatoria	Western Equatoria	Maridi	Maridi	Mambe	SS01
Greater Equatoria	Western Equatoria	Maridi	Maridi	Ngamunde	SS01
Greater Equatoria	Western Equatoria	Maridi	Maridi	Amaki	SS01
Greater Equatoria	Western Equatoria	Maridi	Ibba	Ibba	SS01
Greater Equatoria	Western Equatoria	Maridi	Ibba	Nabanga	SS01
Greater Equatoria	Western Equatoria	Maridi	Ibba	Muruko	SS01
Greater Equatoria	Eastern Equatoria	Torit	Ikwoto	Ikwoto	SS01
Greater Equatoria	Eastern Equatoria	Torit	Ikwoto	Geria	SS01

Livelihood Zone - SS02					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Bahr El Ghazal	Warrap	Tonj	Tonj South	Tonj	SS02
Greater Bahr El Ghazal	Warrap	Tonj	Tonj South	Agogo	SS02
Greater Bahr El Ghazal	Warrap	Tonj	Tonj South	Manyangok	SS02
Greater Bahr El Ghazal	Lakes	Gok	Cueibet County	Cueibet	SS02
Greater Bahr El Ghazal	Lakes	Gok	Cueibet County	Joth Mayar	SS02
Greater Bahr El Ghazal	Lakes	Gok	Cueibet County	Abiriu	SS02
Greater Bahr El Ghazal	Lakes	Gok	Cueibet County	Ngap	SS02
Greater Bahr El Ghazal	Lakes	Gok	Cueibet County	Malou Pec	SS02
Greater Bahr El Ghazal	Lakes	Western Lakes	Wulu	Wulu	SS02
Greater Bahr El Ghazal	Lakes	Western Lakes	Wulu	Bhar Gel	SS02
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Yirol West	Yirol	SS02
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Yirol West	Abang	SS02
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Yirol West	Geng-Geng	SS02
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Yirol West	Anuol	SS02
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Yirol West	Aluakluak	SS02
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Yirol West	Ghar	SS02
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Yirol West	Ngop	SS02
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Awerial	Awerial North	SS02
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Awerial	Awerial South	SS02
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Awerial	Dor	SS02
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Awerial	Abuyong	SS02
Greater Equatoria	Central Equatoria	Terekeka	Terekeka	Tijor	SS02
Greater Equatoria	Central Equatoria	Terekeka	Terekeka	Gwor	SS02
Greater Equatoria	Central Equatoria	Terekeka	Terekeka	Tali	SS02
Greater Equatoria	Central Equatoria	Terekeka	Terekeka	Tindilo	SS02
Greater Equatoria	Central Equatoria	Terekeka	Terekeka	Nyori	SS02
Greater Equatoria	Central Equatoria	Terekeka	Terekeka	Gemeiza	SS02
Greater Equatoria	Central Equatoria	Terekeka	Terekeka	Northern Terekeka	SS02
Greater Equatoria	Central Equatoria	Terekeka	Terekeka	Terekeka	SS02
Greater Equatoria	Western Equatoria	Amadi	Mvolo	Yeri	SS02
Greater Equatoria	Western Equatoria	Amadi	Mvolo	Mvolo	SS02
Greater Equatoria	Western Equatoria	Amadi	Mvolo	Bar el Grindi	SS02

Livelihood Zone - SS03					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Equatoria	Central Equatoria	Jubek (includes Juba)	Juba County	Mangalla	SS03
Greater Equatoria	Central Equatoria	Jubek (includes Juba)	Juba County	Lonok	SS03
Greater Equatoria	Central Equatoria	Jubek (includes Juba)	Juba County	Rajaf	SS03
Greater Equatoria	Central Equatoria	Jubek (includes Juba)	Juba County	Gondokono	SS03
Greater Equatoria	Central Equatoria	Jubek (includes Juba)	Juba County	Lado	SS03
Greater Equatoria	Central Equatoria	Jubek (includes Juba)	Juba County	Lirya	SS03
Greater Equatoria	Central Equatoria	Jubek (includes Juba)	Juba County	Luri	SS03
Greater Equatoria	Central Equatoria	Jubek (includes Juba)	Juba County	Dokon	SS03
Greater Equatoria	Central Equatoria	Jubek (includes Juba)	Juba County	Bungu	SS03
Greater Equatoria	Central Equatoria	Jubek (includes Juba)	Juba County	Wondumba	SS03
Greater Equatoria	Central Equatoria	Jubek (includes Juba)	Juba County	Ganji	SS03
Greater Equatoria	Central Equatoria	Jubek (includes Juba)	Juba County	Katigiri	SS03
Greater Equatoria	Eastern Equatoria	Torit	Magwi	Magwi	SS03
Greater Equatoria	Eastern Equatoria	Torit	Magwi	Pageri	SS03
Greater Equatoria	Eastern Equatoria	Torit	Magwi	Ayaci	SS03
Greater Equatoria	Eastern Equatoria	Torit	Torit	Torit	SS03
Greater Equatoria	Eastern Equatoria	Torit	Torit	Torit East	SS03
Greater Equatoria	Eastern Equatoria	Torit	Torit	Torit West	SS03
Greater Equatoria	Eastern Equatoria	Torit	Ikwoto	Kidepo Valley	SS03
Greater Equatoria	Eastern Equatoria	Kapoeta	Budi/chukudum	Chukudum	SS03
Greater Equatoria	Eastern Equatoria	Kapoeta	Budi/chukudum	Kimatong	SS03
Greater Equatoria	Eastern Equatoria	Kapoeta	Budi/chukudum	Ngauro	SS03

Livelihood Zone - SS04					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Raja	Boro Madiana/Mom-Raja	SS04
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Raja	Kuru	SS04
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Raja	Ringi	SS04
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Raja	Erre	SS04
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil	Aweil Center	Aroyo	SS04
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil	Aweil Center	Bar Mayen	SS04
Greater Bahr El Ghazal	Western Bahr El Ghazal	Wau	Wau	Kpaile	SS04
Greater Bahr El Ghazal	Western Bahr El Ghazal	Wau	Wau	Baggari	SS04
Greater Bahr El Ghazal	Western Bahr El Ghazal	Wau	Wau	Besselia	SS04
Greater Bahr El Ghazal	Western Bahr El Ghazal	Wau	Wau	Kangi	SS04
Greater Equatoria	Western Equatoria	Tambura	Tambura	Source Yubu	SS04
Greater Equatoria	Western Equatoria	Tambura	Tambura	Mopoi	SS04
Greater Equatoria	Western Equatoria	Tambura	Tambura	Tambura	SS04
Greater Equatoria	Western Equatoria	Tambura	Nagero	Nagero	SS04

Livelihood Zone - SS05					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Equatoria	Eastern Equatoria	Kapoeta	Kapoeta North	Riwoto	SS05
Greater Equatoria	Eastern Equatoria	Kapoeta	Kapoeta North	Karukomuge	SS05
Greater Equatoria	Eastern Equatoria	Kapoeta	Kapoeta East	Losolia	SS05
Greater Equatoria	Eastern Equatoria	Kapoeta	Kapoeta East	Lokaleen/Mogos	SS05
Greater Equatoria	Eastern Equatoria	Kapoeta	Kapoeta East	Kauto	SS05
Greater Equatoria	Eastern Equatoria	Kapoeta	Kapoeta South	Singaita	SS05
Greater Equatoria	Eastern Equatoria	Kapoeta	Kapoeta South	Katiko	SS05
Greater Equatoria	Eastern Equatoria	Kapoeta	Kapoeta East	Jie/Jimo	SS05
Greater Upper Nile	Jonglei	Boma	Pibor	Pibor North	SS05
Greater Upper Nile	Jonglei	Boma	Pibor	Pibor South	SS05
Greater Upper Nile	Jonglei	Boma	Pibor	Lilibok	SS05
Greater Upper Nile	Jonglei	Boma	Pibor	Vertet	SS05
Greater Upper Nile	Jonglei	Boma	Pibor	Labarab	SS05
Greater Upper Nile	Jonglei	Boma	Pibor	Lothila	SS05

Livelihood Zone - SS06					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Equatoria	Eastern Equatoria	Torit	Lopa/Lafon	Lopa	SS06
Greater Equatoria	Eastern Equatoria	Torit	Lopa/Lafon	Lafon	SS06
Greater Equatoria	Eastern Equatoria	Torit	Lopa/Lafon	Lopit West	SS06
Greater Upper Nile	Jonglei	Boma	Pibor	Liloth	SS06
Greater Upper Nile	Jonglei	Boma	Pibor	Gumuruk	SS06
Greater Upper Nile	Jonglei	Bieh (formerly Eastern Bieh)	Nyirrol	Waat	SS06
Greater Upper Nile	Jonglei	Bieh (formerly Eastern Bieh)	Nyirrol	Majok	SS06
Greater Upper Nile	Jonglei	Bieh (formerly Eastern Bieh)	Nyirrol	Pulturuk	SS06
Greater Upper Nile	Jonglei	Bieh (formerly Eastern Bieh)	Nyirrol	Pading	SS06
Greater Upper Nile	Jonglei	Bieh (formerly Eastern Bieh)	Nyirrol	Chuel	SS06
Greater Upper Nile	Jonglei	Bieh (formerly Eastern Bieh)	Uror	Wechicol	SS06
Greater Upper Nile	Jonglei	Bieh (formerly Eastern Bieh)	Uror	Padiek	SS06
Greater Upper Nile	Jonglei	Bieh (formerly Eastern Bieh)	Uror	Pieri	SS06
Greater Upper Nile	Jonglei	Bieh (formerly Eastern Bieh)	Uror	Muotdit	SS06
Greater Upper Nile	Jonglei	Bieh (formerly Eastern Bieh)	Uror	Pulchuol	SS06
Greater Upper Nile	Jonglei	Bieh (formerly Eastern Bieh)	Uror	Pakher	SS06
Greater Upper Nile	Jonglei	Akobo	Akobo County	Buong	SS06
Greater Upper Nile	Jonglei	Akobo	Akobo County	Walgak	SS06
Greater Upper Nile	Jonglei	Akobo	Akobo County	Dirror	SS06
Greater Upper Nile	Jonglei	Jonglei	Bor	Bor South	SS06
Greater Upper Nile	Jonglei	Jonglei	Bor	Bor Gok	SS06
Greater Upper Nile	Jonglei	Jonglei	Bor	Bor East	SS06
Greater Upper Nile	Jonglei	Jonglei	Bor	Anyidi Makuach	SS06
Greater Upper Nile	Jonglei	Jonglei	Bor	Bor Central	SS06
Greater Upper Nile	Jonglei	Jonglei	Bor	Bor West	SS06
Greater Upper Nile	Jonglei	Jonglei	Bor	Athooch	SS06
Greater Upper Nile	Jonglei	Jonglei	Bor	Bor North	SS06
Greater Upper Nile	Jonglei	Jonglei	Twic East	Twic Central	SS06
Greater Upper Nile	Jonglei	Jonglei	Twic East	Paliau	SS06
Greater Upper Nile	Jonglei	Jonglei	Twic East	Twic South	SS06
Greater Upper Nile	Jonglei	Jonglei	Twic East	Kongor	SS06
Greater Upper Nile	Jonglei	Jonglei	Twic East	Twic North	SS06

Livelihood Zone - SS06 - Continued					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Upper Nile	Jonglei	Jonglei	Duk	Payuel	SS06
Greater Upper Nile	Jonglei	Jonglei	Duk	Padiet	SS06
Greater Upper Nile	Jonglei	Jonglei	Duk	Panyang	SS06
Greater Upper Nile	Jonglei	Jonglei	Duk	Pagak	SS06
Greater Upper Nile	Jonglei	Fangak (formerly Western Bieh)	Fangak	New Fangak	SS06
Greater Upper Nile	Jonglei	Fangak (formerly Western Bieh)	Fangak	North Fangak	SS06
Greater Upper Nile	Jonglei	Fangak (formerly Western Bieh)	Fangak	Central Fangak	SS06
Greater Upper Nile	Jonglei	Fangak (formerly Western Bieh)	Fangak	South Fangak	SS06
Greater Upper Nile	Jonglei	Fangak (formerly Western Bieh)	Ayod	Ayod	SS06
Greater Upper Nile	Jonglei	Fangak (formerly Western Bieh)	Mogok	Ayod	SS06
Greater Upper Nile	Jonglei	Fangak (formerly Western Bieh)	Wau	Ayod	SS06
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Pigi		SS06

Livelihood Zone - SS07					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial East	Ajogo	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial East	Toch	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial West	Awan Chan	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial East	Riangalei	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial West	Kuac South	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial West	Awan Pajok	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial West	Awan Riau	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial West	Aguok North	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial West	Aguok West	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial East	Apuk North	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial East	Apuk East	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial East	Apuk West	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial East	Apuk Centre	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial West	Gogrial centre	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial West	Alek	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial West	Atukuel	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial West	Maluil Ajak	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial West	Kuac East	SS07

Livelihood Zone - SS07 - Continued					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial West	Kuac North	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial West	Kuac West	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial East	Buoyar	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial East	Biong	SS07
Greater Bahr El Ghazal	Warrap	Gogrial	Gogrial East	Luonyaker	SS07
Greater Bahr El Ghazal	Warrap	Twic	Twic County	Ajakuac	SS07
Greater Bahr El Ghazal	Warrap	Twic	Twic County	Aweng	SS07
Greater Bahr El Ghazal	Warrap	Twic	Twic County	Wunrok	SS07
Greater Bahr El Ghazal	Warrap	Twic	Twic County	Turalei	SS07
Greater Bahr El Ghazal	Warrap	Twic	Twic County	Pannyok	SS07
Greater Bahr El Ghazal	Warrap	Twic	Twic County	Akoc	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj North	Alabek	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj North	Panol	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj North	Kriik	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj North	Rualbet	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj North	Monthlon	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj North	Warrap	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj North	Ahol	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj North	Akop	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj North	Marial Lou	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj North	Aliek	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj East	Luac Jang North	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj East	Luac Jang East	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj East	Luac Jang South	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj East	Luac Jang Centre	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj East	Jalwall	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj East	Ngapaigok	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj East	Palal	SS07

Livelihood Zone - SS07 - Continued					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Bahr El Ghazal	Warrap	Tonj	Tonj South	Thiet	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj South	Jak	SS07
Greater Bahr El Ghazal	Warrap	Tonj	Tonj South	Wanthalel	SS07
Greater Bahr El Ghazal	Lakes	Gok	Cueibet County	Duony	SS07
Greater Bahr El Ghazal	Lakes	Gok	Cueibet County	Anyar-nguan	SS07
Greater Bahr El Ghazal	Lakes	Gok	Cueibet County	Wat-adol	SS07
Greater Bahr El Ghazal	Lakes	Gok	Cueibet County	Citcok	SS07
Greater Bahr El Ghazal	Lakes	Western Lakes	Rumbek Center	Rumbek	SS07
Greater Bahr El Ghazal	Lakes	Western Lakes	Rumbek Center	Malek	SS07
Greater Bahr El Ghazal	Lakes	Western Lakes	Rumbek Center	Among piny	SS07
Greater Bahr El Ghazal	Lakes	Western Lakes	Rumbek East	Western Bhar Naam	SS07
Greater Bahr El Ghazal	Lakes	Western Lakes	Rumbek East	Eastern Bhar Naam	SS07
Greater Bahr El Ghazal	Lakes	Western Lakes	Rumbek East	Paloch	SS07
Greater Bahr El Ghazal	Lakes	Western Lakes	Rumbek North	Meen	SS07
Greater Bahr El Ghazal	Lakes	Western Lakes	Rumbek North	Malueth	SS07
Greater Bahr El Ghazal	Lakes	Western Lakes	Rumbek North	Aloor	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil East	Aweil East county	Warguet	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil East	Aweil East county	Mangar Tong	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil East	Aweil East county	Mangok Lou	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil East	Aweil East county	Manyeil	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil East	Aweil East county	Wunlang	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil East	Aweil East county	Yargot	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil East	Aweil East county	Mangok	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil East	Aweil East county	Madhoul	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil East	Aweil East county	Malual Bai	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil East	Aweil East county	Warlang Garm	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil East	Aweil East county	Agorpiny	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil East	Aweil East county	Lou	SS07

Livelihood Zone - SS07 - Continued					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil East	Aweil East county	Raing mal	SS07
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Aweil North	Gumjuer Centre	SS07
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Aweil North	Gumjuer East	SS07
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Aweil North	Gumjuer West	SS07
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Aweil North	Majak Bai	SS07
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Aweil North	Malual North	SS07
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Aweil North	Makem	SS07
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Aweil North	Korok East	SS07
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Aweil North	Korok Centre	SS07
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Aweil North	Korok West	SS07
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Aweil North	Malual Centre	SS07
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Aweil North	Ariath	SS07
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Aweil West	Kafia Genje	SS07
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Aweil West	Marial Bai	SS07
Greater Bahr El Ghazal	Northern/Western Bahr El Ghazal	Lol	Aweil West	Ayat West	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil	Aweil Center	Chimel	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil	Aweil Center	Ajuet	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil	Aweil Center	Pan Amath	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil	Aweil Center	Mayom Wel	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil	Aweil South	Ajak	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil	Aweil South	Kongder	SS07
Greater Bahr El Ghazal	Northern Bahr El Ghazal	Aweil	Aweil South	Bouncuei	SS07
Greater Bahr El Ghazal	Western Bahr El Ghazal	Wau	Jur River	Udici,	SS07
Greater Bahr El Ghazal	Western Bahr El Ghazal	Wau	Jur River	Marial Bai	SS07
Greater Bahr El Ghazal	Western Bahr El Ghazal	Wau	Jur River	Marial Wau	SS07
Greater Bahr El Ghazal	Western Bahr El Ghazal	Wau	Jur River	Rocrocdong	SS07
Greater Bahr El Ghazal	Western Bahr El Ghazal	Wau	Jur River	Kuzjiena	SS07
Greater Bahr El Ghazal	Western Bahr El Ghazal	Wau	Jur River	Wau Bai	SS07
Greater Upper Nile	Unity	Southern Liech	Mayendit	Rubkuay	SS07
Greater Upper Nile	Unity	Southern Liech	Mayendit	Tharjiathboor	SS07
Greater Upper Nile	Unity	Southern Liech	Mayendit	Mayiandit	SS07

Livelihood Zone - SS08					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Yirol East	Yirol North	SS08
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Yirol East	Nyang	SS08
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Yirol East	Adior	SS08
Greater Bahr El Ghazal	Lakes	Eastern Lakes	Yirol East	Malek	SS08
Greater Upper Nile	Unity	Southern Liech	Leer	Thonyor	SS08
Greater Upper Nile	Unity	Southern Liech	Leer	Bou	SS08
Greater Upper Nile	Unity	Southern Liech	Leer	Dhorwang	SS08
Greater Upper Nile	Unity	Southern Liech	Panyijiar	Ganyliel	SS08
Greater Upper Nile	Unity	Southern Liech	Panyijiar	Chuk/Payinyjiar	SS08
Greater Upper Nile	Unity	Southern Liech	Panyijiar	Nyal	SS08
Greater Upper Nile	Unity	Northern Liech	Mayom	Bul East	SS09

Livelihood Zone - SS09					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Upper Nile	Unity	Northern Liech	Mayom	Bul East	SS09
Greater Upper Nile	Unity	Northern Liech	Mayom	Bul West	SS09
Greater Upper Nile	Unity	Northern Liech	Mayom	Bul South	SS09
Greater Upper Nile	Unity	Northern Liech	Mayom	Bul North	SS09
Greater Upper Nile	Unity	Northern Liech	Rubkona	Rubkona	SS09
Greater Upper Nile	Unity	Northern Liech	Rubkona	Barkuor	SS09
Greater Upper Nile	Unity	Northern Liech	Rubkona	Nhialdiu	SS09
Greater Upper Nile	Unity	Northern Liech	Guit	Kadet	SS09
Greater Upper Nile	Unity	Northern Liech	Guit	Nemni	SS09
Greater Upper Nile	Unity	Northern Liech	Guit	Bil	SS09
Greater Upper Nile	Unity	Northern Liech	Koch	Koch	SS09
Greater Upper Nile	Unity	Northern Liech	Koch	Gany	SS09

Livelihood Zone - SS10					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Upper Nile	Jonglei	Akobo	Akobo County	Jockyier	SS10
Greater Upper Nile	Jonglei	Akobo	Akobo County	Nyandit	SS10
Greater Upper Nile	Jonglei	Akobo	Akobo County	Alali	SS10
Greater Upper Nile	Upper Nile	Maiwut	Maiwut	Jekou	SS10
Greater Upper Nile	Upper Nile	Maiwut	Maiwut	Maiwut	SS10
Greater Upper Nile	Upper Nile	Maiwut	Maiwut	Koma	SS10
Greater Upper Nile	Upper Nile	Maiwut	Longchuk	Longchuk	SS10
Greater Upper Nile	Upper Nile	Maiwut	Longchuk	Kaijak	SS10
Greater Upper Nile	Upper Nile	Latjoor	Nasir	Nasir	SS10
Greater Upper Nile	Upper Nile	Latjoor	Nasir	Malou	SS10
Greater Upper Nile	Upper Nile	Latjoor	Ulang	Ulang	SS10
Greater Upper Nile	Upper Nile	Latjoor	Nasir	Thorow	SS10

Livelihood Zone - SS11					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Upper Nile	Unity	Ruweng	Panriang	Aliny	SS11
Greater Upper Nile	Unity	Ruweng	Panriang	Biu	SS11
Greater Upper Nile	Unity	Ruweng	Panriang	Jau	SS11
Greater Upper Nile	Unity	Ruweng	Panriang	Jamjang	SS11
Greater Upper Nile	Unity	Ruweng	Panriang	Tuoch	SS11
Greater Upper Nile	Unity	Ruweng	Panriang	Wunkur	SS11
Greater Upper Nile	Unity	Ruweng	Abiemnhom	Abiemnhom East	SS11
Greater Upper Nile	Unity	Ruweng	Abiemnhom	Abiemnhom West	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Panyikang	Torza	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Panyikang	Pakang	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Panyikang	Owachi	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Baliet	Galachol	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Baliet	Whanthow	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Baliet	Abnong	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Baliet	Nyong Kwach	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Baliet	Nyong ral	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Baliet	Mijok	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Baliet	Kuel	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Baliet	Adoug	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Akoka	Wanthow	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Akoka	Akotweng	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Akoka	Rom	SS11
Greater Upper Nile	Upper Nile & Jonglei	Central Upper Nile State	Akoka	Akoka/Blenything	SS11
Greater Upper Nile	Upper Nile	Fashoda (formerly Western Nile)		Kodok and Manyo	SS11
Greater Upper Nile	Upper Nile	Northern Upper Nile State		Renk, Maban and Melut	SS11
Livelihood Zone - SS12					
Region	Former states	New State Name	Old Counties	New Counties	LZ_2018 UPDATE
Greater Upper Nile	Jonglei	Boma	Pochalla	Otogo	SS12
Greater Upper Nile	Jonglei	Boma	Pochalla	Awitaballa	SS12
Greater Upper Nile	Jonglei	Boma	Pochalla	Adongo	SS12
Greater Upper Nile	Jonglei	Boma	Pochalla	Burator	SS12
Greater Upper Nile	Jonglei	Boma	Pochalla	Pochalla South	SS12
Greater Upper Nile	Jonglei	Boma	Pibor	Jebel Boma	SS12

Annex 3 List of Livelihood Zoning Plus Participants

	Name	County	Institution	Function/post
1	Tot Janguan	Akobo	Nile Hope	Information officer
2	Chan Kuac Ngor	Aweil Centre	SMAF-NBGS	Senior Inspector
3	Alexanda Makwach	Aweil Centre	WFP	Snr. Prog. Assistant
4	Agustino Agout Lueth	Aweil North	SMARF-NBGS	Director
5	Juma Rufas	Bor	WFP	Senior Prog-VAM
6	James Ruot Riek	Fangak	Nile Hope	FSL Officer
7	Jock Tut	Fashoda	WFP	Programme Assistant
8	Joseph Ohiri	Gogrial	WFP	VAM-Assistant
9	Martin Madut	Gogrial	SMAF	Director
10	James Onek	Juba	WFP	VAM-Juba
11	James Lagale	Juba	SMARF-CES	IPC Focal Person
12	Juan Agnes	Kajokeji	TITI foundation	Women & children Affairs
13	Kakuru John Peter	Kajokeji	TITI foundation	Data and Communications officer
14	Simon Aruei	Kapoeta	WFP	VAM-Focal point
15	Koteen Losike Alfred	Kapoeta	OPRD	Exec. Director
16	Azoo Raphale	Kapoeta	SMAF Kapoeta	Director
17	Dr. Peter Gatpan	Koch	COPOD	Coordinator
18	Sarafino Okelo	Lafon/Lopa	CAD-Lafon	County Director
19	Gatkan David	Leer	UNIDOSS	FSL Prog. Officer
20	Koma John	Magwi	SMAF-Torit-EES	Planning Officer
21	Michael Injo Justin	Mundri/Mvolo	Former-NPA staff	
22	Machar Gatluak Machar	Panyijiar	Juba-POC	Officer
23	James Aleyi Zelu	Pibor	ZOA	FSL Focal point
24	Carlos Lino	Raga,	HARD	Project Officer
25	James Nhial Ruach	Rubkona	COPOD	/0929111772
26	Lazarous Nhial	Rubkona	WFP	VAM officer
27	James Mapour	Rumbek	SMAF-Lakes	Ag. Director General
28	Clement Mkorondere	Tambura/Ezo	SMAF	Director
29	Andrea Adup Akec	Tonj south,	SMOA	Director
30	Dr. Isaac Aliardo	Torit	SMOA	Director
31	Michael Chol Jok	Twic East	SMAF-Jonglei	Senior Inspector
32	Peter Kuot Madit	Uror/Duk	Duk County	FEWS NET Enumerator
33	Karlo Nuri	Wau	WFP	VAM Focal Point
34	Michael Marual Makuei	Wulu	SMAF-Lakes	Director
35	Abisai Yepeta,	Yambio	SMoH-Yambio	Director
36	Edmond Gogo	Yei	SMAF-Yei	Director
37	Philip Manding	Yirol	WFP	VAM-Assistant

List of Consolidation Workshop Participants

	Name	Institution	Function/post
1	Samson Biringi	MLFI	Deputy Director
2	Abraham Arop Ayuel	MAFS	Planning Officer
3	Philip Dau	NBS	Director M & E/LAF
4	Joice Jore	FSTS/NBS	FSTS coordinator
5	John Vuga	WFP	Programme Officer (VAM)
6	Mark Nyeko Acire	FAO	Food security Officer
7	Mathew Day	REACH	Focal point for LHZ
8	Kerebino Kuot	SSRRC	Assistant Director
9	Antazio Drabe	FEWS NET	NTM
10	James Guma	FEWS NET	ANTM
11	John Pangech	MAFS	DG
12	Samson Biringi	MLFI	Deputy Director