

**The Republic of South Sudan**

**Ministry of Agriculture and Food Security**

**Ministry of Livestock and Fisheries**

**Ministry of Environment and Forestry**



## **Comprehensive Agriculture Master Plan**



# **CAMP**

## **Annex VI**

## **State Profile 2013**

**October 2016**



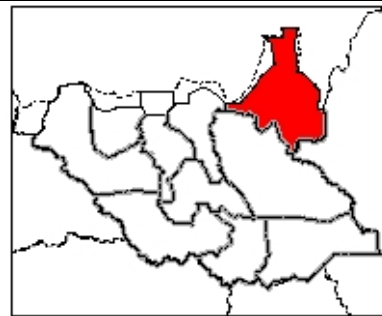
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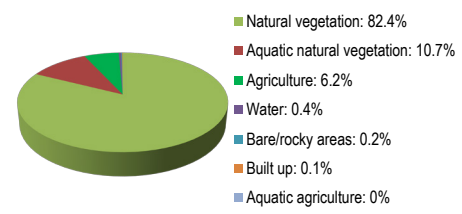
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# 1 Upper Nile State (Capital: Malakal)

1.1 Basic Information	
<b>Population (2008)<sup>a</sup></b>	964,353 (3 <sup>rd</sup> ) Male: 525,430 Female: 438,923
<b>Projected population (2013)<sup>b</sup></b>	1,160,458 (4 <sup>th</sup> )
<b>Area<sup>c</sup></b>	78,347 km <sup>2</sup> (4 <sup>th</sup> )
<b>No. of Counties, Payams and Bomas (2009)<sup>d</sup></b>	12 Counties 70 Payams 289 Bomas
<b>Food secure population (2013)<sup>b</sup></b>	50% (8 <sup>th</sup> )
<b>Access to improved drinking water (2009)<sup>e</sup></b>	35% (10 <sup>th</sup> )
<b>Literacy rate (15-24 years old) (2009)<sup>e</sup></b>	65% (1 <sup>st</sup> )
<b>Primary school gross enrolment rate (GER) (2010)<sup>f</sup></b>	79% (3 <sup>rd</sup> )

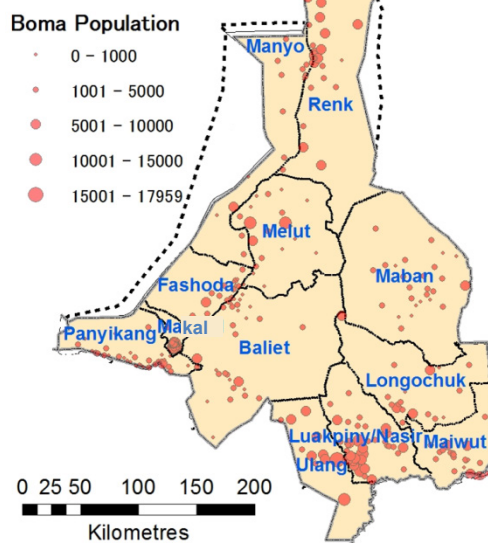


Land cover <sup>g</sup>



Source: <sup>a</sup> SSCSE. 2010. Southern Sudan Counts: Tables from the 5th Sudan Population and Housing Census, 2008; <sup>b</sup> WFP. 2013. ANLA; <sup>c</sup> FAO. 2011. Land Cover Atlas of the Republic of South Sudan; <sup>d</sup> Original data source of NBS. 2012. NBHS 2009; <sup>e</sup> NBS. 2012. NBHS 2009; <sup>f</sup> MoE. 2010. EMIS; <sup>g</sup> NBS. 2011. South Sudan Statistical Yearbook 2011.

## Administrative districts (counties)

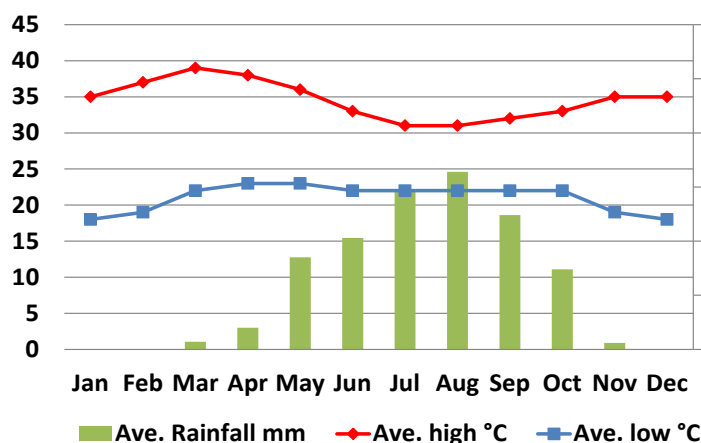


County	Estimated Population (2013) <sup>a</sup>	Pop. density (ppl/km <sup>2</sup> ) <sup>b</sup>
Luakpiny /Nasir	239,528	45.7
Makal	161,955	215.7
Renk	157,157	15.5
Panyi-kang	144,557	27.7
Ulang	100,190	20.5
Melut	97,197	13.9
Manyo	90,817	13.5
Maiwut	89,409	22.6
Longo-chuk	78,375	11.1
Maban	72,192	6.0
Baliet	56,279	4.8
Fashoda	51,919	14.5

Source: (Map) NBS; (Table)<sup>a</sup> WFP. 2013. ANLA; <sup>b</sup> Land scale data applied from FAO.2011. Land Cover Atlas of the Republic of South Sudan.

\*Data of Akoka County not available.

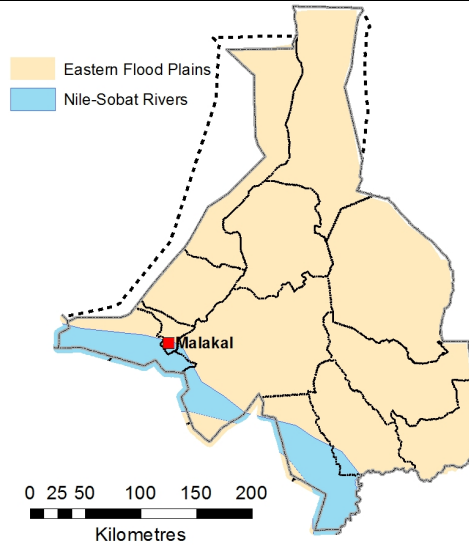
## Climate chart (Malakal)



Annual ave. high temp.	34.4°C
Annual ave. low temp.	21.0°C
Average temperature	27.7°C
Ave. annual precipitation	729mm

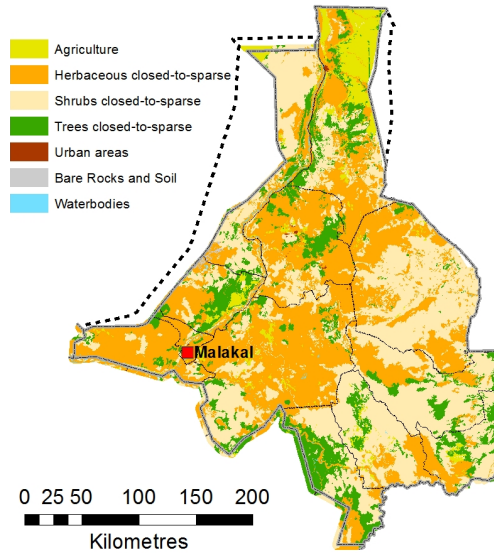
Source: Climatedata.eu. 2013. Climate Malakal.  
<http://www.climatedata.eu/climate.php?loc=suxx0008&lang=en> (accessed on 25<sup>th</sup> August 2013).

### Livelihood zones



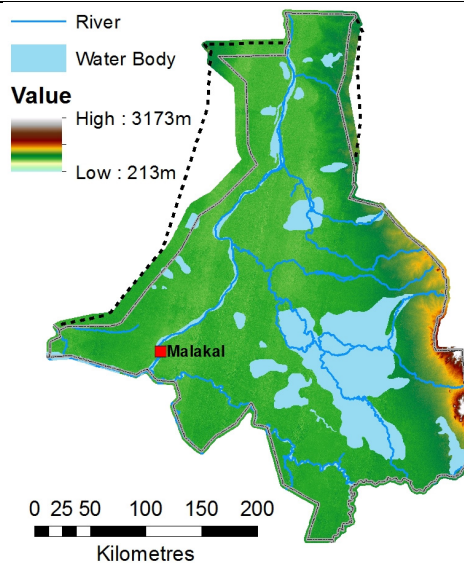
Source: NBS.

### Land cover



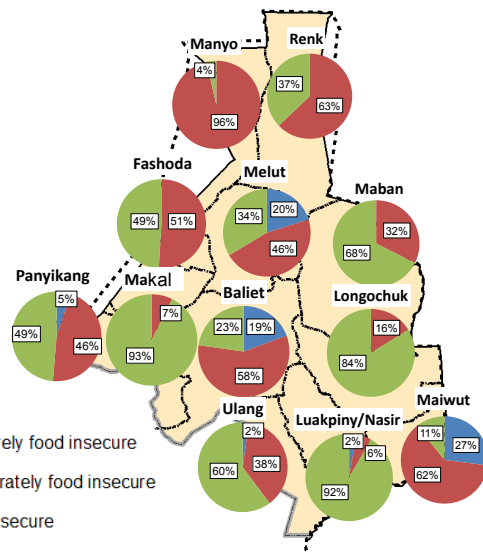
Source: FAO. 2011.

### Topography



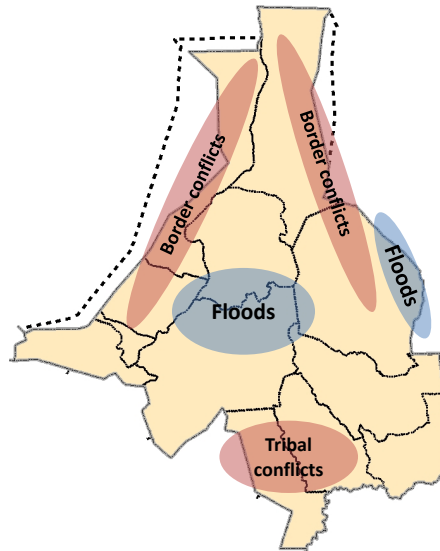
Source: NBS.

### Estimated food security status by county (2013)



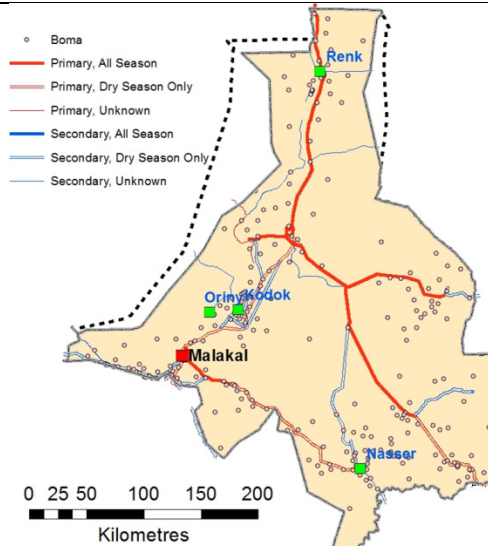
Source: WFP. 2013. ANLA.

### Insecurity and natural disaster



Source: CAMP survey team 2013.

### Road and Boma location



Source: Road (WFP. 2013), Boma location (NBS).

1.2 State Ministry of Agriculture and Forestry (MAF)																																											
<b>Organogram</b>		<b>Staff</b>																																									
<pre> graph TD     Minister --&gt; DG[Director General]     DG --&gt; DF[Directorate of Forestry]     DG --&gt; DA[Directorate of Agriculture]     DG --&gt; DAF[Directorate of Administration and Finance]     DG --&gt; DRT[Directorate of Research and Training]     DG --&gt; DPB[Directorate of Planning and Budgeting]           </pre>		Breakdown of information not available <table border="1"> <thead> <tr> <th>Section</th> <th>Number of staff</th> </tr> </thead> <tbody> <tr> <td><b>Directorate of Forestry</b></td> <td>-</td> </tr> <tr> <td>Department of Afforestation</td> <td>(-)</td> </tr> <tr> <td>Department of Extension and Nursery</td> <td>(-)</td> </tr> <tr> <td>Department of Seeds Collection</td> <td></td> </tr> <tr> <td>Department of Non-wood Products</td> <td>(-)</td> </tr> <tr> <td>Department of Administration and Finance</td> <td>(-)</td> </tr> <tr> <td><b>Directorate of Agriculture</b></td> <td>-</td> </tr> <tr> <td>Department of Plant Protection</td> <td>(-)</td> </tr> <tr> <td>Department of Horticulture</td> <td>(-)</td> </tr> <tr> <td>Department of Mechanization</td> <td>(-)</td> </tr> <tr> <td>Department of Extension</td> <td>(-)</td> </tr> <tr> <td><b>Directorate of Administration and Finance</b></td> <td>-</td> </tr> <tr> <td><b>Directorate of Research and Training</b></td> <td>-</td> </tr> <tr> <td>Department of Research</td> <td>(-)</td> </tr> <tr> <td>Department of Training</td> <td>(-)</td> </tr> <tr> <td><b>Directorate of Planning and Budgeting</b></td> <td>-</td> </tr> <tr> <td>Department of Accounting</td> <td>(-)</td> </tr> <tr> <td>Department of Administration</td> <td>(-)</td> </tr> <tr> <td><b>Total</b></td> <td><b>84</b></td> </tr> </tbody> </table>		Section	Number of staff	<b>Directorate of Forestry</b>	-	Department of Afforestation	(-)	Department of Extension and Nursery	(-)	Department of Seeds Collection		Department of Non-wood Products	(-)	Department of Administration and Finance	(-)	<b>Directorate of Agriculture</b>	-	Department of Plant Protection	(-)	Department of Horticulture	(-)	Department of Mechanization	(-)	Department of Extension	(-)	<b>Directorate of Administration and Finance</b>	-	<b>Directorate of Research and Training</b>	-	Department of Research	(-)	Department of Training	(-)	<b>Directorate of Planning and Budgeting</b>	-	Department of Accounting	(-)	Department of Administration	(-)	<b>Total</b>	<b>84</b>
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<p><b>(Technical advice)</b></p> <ul style="list-style-type: none"> <li>• Provide training to extension workers</li> </ul> <p><b>(Seeds and tools provision)</b></p> <ul style="list-style-type: none"> <li>• Occasionally seeds and tools are provided for farmers.</li> </ul> <p><b>(Demo farm and field day= visit field to share best agriculture practice)</b></p> <ul style="list-style-type: none"> <li>• (Information not available)</li> </ul>																																											



<b>(Tractor hiring service)</b>			
<ul style="list-style-type: none"> <li>(Information not available)</li> </ul>			
<b>1.3 Crop</b>			
<b>Services provided by DPs and NGOs</b>			
<b>Organisation</b>	<b>Activities</b>	<b>Area</b>	<b>Target</b>
Upper Nile Youth Development Association (Local NGO)	Following activities are conducted: Agriculture <ul style="list-style-type: none"> <li>Training famers in demo plots</li> <li>Provision of seeds, tools and water pumps.</li> <li>Planting trees</li> </ul> Other <ul style="list-style-type: none"> <li>Fund raising and micro financing</li> </ul>	Makal and Maiwut Counties	Farmers in the pilot areas
*There are a number of DPs and NGOs in the state. The above information collected by CAMP team is shown as an example.			
<b>Services provided by private sector</b>			
<b>(Tractor hiring service)</b>			
<ul style="list-style-type: none"> <li>Some private tractor hiring services are provided.</li> </ul>			
<b>(Agro-dealer)</b>			
<ul style="list-style-type: none"> <li>(Information not available)</li> </ul>			
<b>(Financial institution)</b>			
<ul style="list-style-type: none"> <li>Agricultural Bank of South Sudan offers cash loan especially for agricultural inputs.</li> <li>Ivory Bank offers cash loans.</li> </ul>			

<b>Market</b>						
<b>Major agricultural products and their origin (Malakal, May-June 2013)</b>						
<b>(Crop)</b>			<b>(Others)</b>			
<b>Item</b>	<b>Type</b>	<b>Origin</b>	<b>Item</b>	<b>Type</b>	<b>Origin</b>	
Sorghum	Import	-	Tomato	Import	-	
	Domestic	Renk County		Domestic	Malakal	
Maize flour	Import	Uganda	Onion	Import	Sudan	
	Domestic	-		Domestic	-	
			Irish Potato	Import	Ethiopia	
				Domestic	-	
			Lime	Import	-	
				Domestic	Malakal	
			Rocket	Import	-	
				Domestic	Malakal	
Source: CAMP survey team 2013. *This is not a representative sample.			Source: CAMP survey team 2013. *This is not a representative sample.			
<b>Market price (Retail price, Malakal, May-June 2013)</b>						
<b>Item</b>	<b>Unit</b>	<b>Price (SSP) (range)</b>				
		<b>Low season</b>				<b>High season</b>
Sorghum (Domestic)	Sack (100 kg)	Dec-Mar	250	-	400	Jun-Nov
Maize flour (Import)	Sack (50 kg)	Dry season	300	-	350	Rainy season
Wheat flour (Import)	Sack (50 kg)	Dry season	290	-	400	Rainy season
Tomato (Domestic)	4 pieces	Rainy season	3-5	-	5-10	Dry season
Onion (Import)	4 pieces	Dry season	2-3	-	5-10	Rainy season
Irish potato (Import)	1 kg	Dry season	20	-	30	Rainy season
Lime (Domestic)	4 pieces	Rainy season	2	-	5	Dry season
Rocket (Domestic)	Bundle	All year round	1	-	1	All year round
Sugar (Import)	Sack (50 kg)	Dry season	340	-	450	Rainy season
Cooking Oil (Import)	18 litres	Dry season	165	-	200	Rainy season
Source: CAMP survey team 2013. *This is not a representative sample.						

Transportation cost (Malakal, May-June 2013)			
Type	Unit	Currency	Cost (range)
River transport (Juba-Malakal)	Bag (100 kg)	SSP	40-120
River transport (Malakal-Renk)	Bag (100 kg)	SSP	40
Porterage (on/off load)	Bag (100 kg)	SSP	5-10

Source: CAMP survey team 2013.  
 \*<sup>1</sup>Canal transport charges vary depending on type of commodity carried, boat, private or government.  
 (e.g. Juba-Malakal: Private rate SSP1,200/ton, Government rate SSP 650/ton)  
 \*<sup>2</sup>Most goods from Juba transported by boat to Malakal.  
 \*<sup>3</sup>This is not a representative sample.

Taxes and charges (Malakal, May-June 2013)		
(Wholesaler, size 4mx4m)		
Type	Cost (SSP) (range)	Frequency
Licence	650	Annually
Rent (from government)	1,000	Monthly
Profit tax (development tax)	75	Monthly
Chamber of Commerce membership	60	Annually
Garbage collection fee	20-50	Monthly

(Retailer, Malakal)		
Type	Cost (SSP) (range)	Frequency
Licence	300	Annually
Rent	220	Monthly
Chamber of Commerce	60	Annually
Security fee	30	Monthly
Garbage collection fee	15	Monthly
National government tax (per bag)	5	Each transportation

Source: CAMP survey team 2013.  
 \*This is not a representative sample.

Crop production	
Farming household (%) (2012)	66
Farming household (No.) (2012)	110,257
Total cereal area (ha) (2012)	80,083 (8 <sup>th</sup> )
Cereal gross yield (t/ha) (2012)	0.59 (9 <sup>th</sup> )
Gross cereal production (t) (2012)	47,057 (9 <sup>th</sup> )
Average cereal area per household (ha/hh) (2012)	0.73 (8 <sup>th</sup> )

**Survey area**

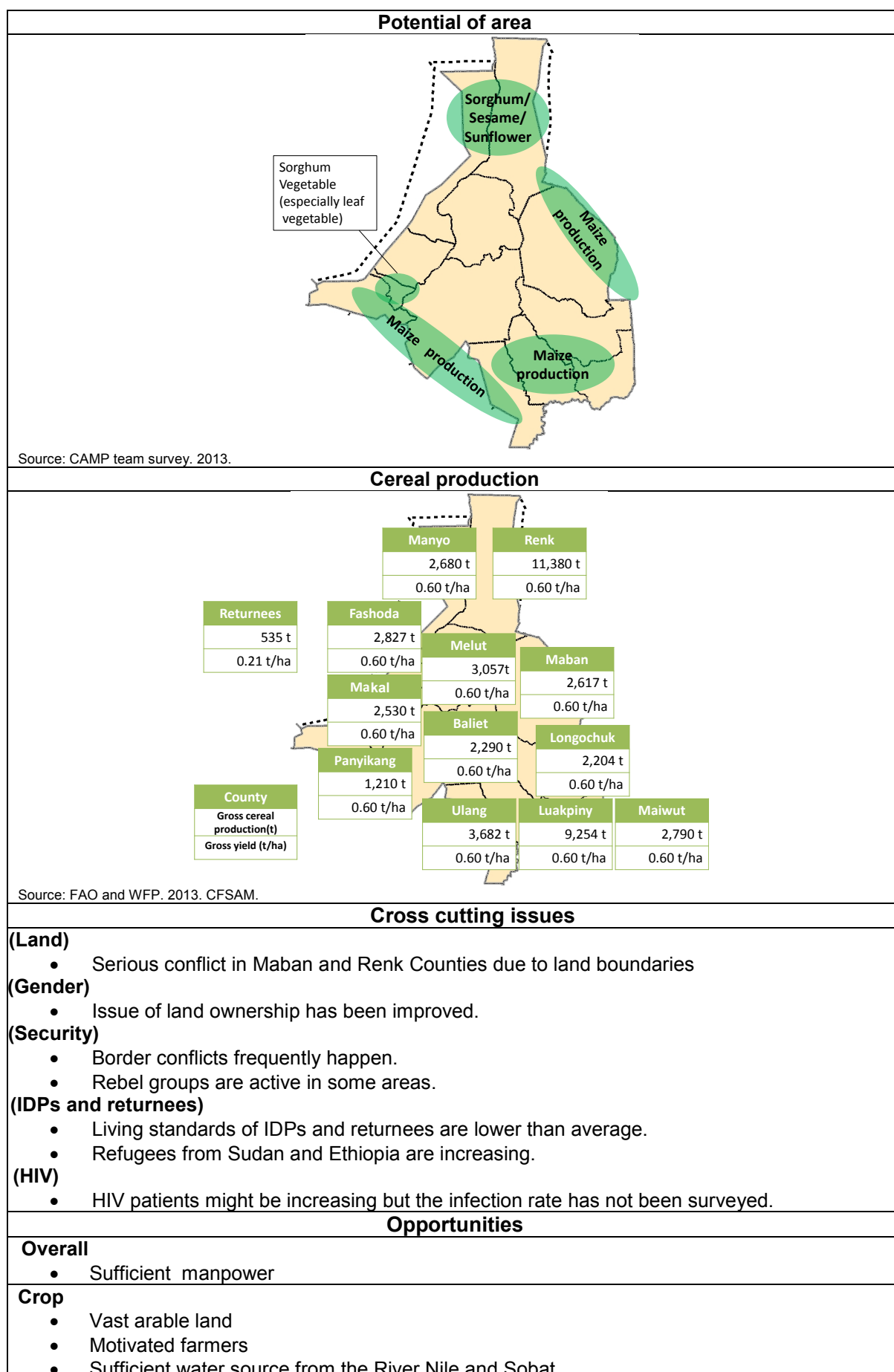
Malakal  
Renk  
Baliet

Source: FAO and WFP. 2013 CFSAM.

Cereal production (2009-2012)																															
<p><b>Total cereal harvested area (ha) and average cereal area per household (ha/hh)</b></p> <table border="1"> <caption>Data for Cereal Area and Average Cereal Area (2009-2012)</caption> <thead> <tr> <th>Year</th> <th>Cereal Area (ha)</th> <th>Average cereal area (ha/hh)</th> </tr> </thead> <tbody> <tr> <td>2009</td> <td>75,000</td> <td>0.68</td> </tr> <tr> <td>2010</td> <td>75,000</td> <td>0.78</td> </tr> <tr> <td>2011</td> <td>68,000</td> <td>0.65</td> </tr> <tr> <td>2012</td> <td>80,083</td> <td>0.73</td> </tr> </tbody> </table>	Year	Cereal Area (ha)	Average cereal area (ha/hh)	2009	75,000	0.68	2010	75,000	0.78	2011	68,000	0.65	2012	80,083	0.73	<p><b>Total gross cereal production (t) and average cereal yield (t/ha)</b></p> <table border="1"> <caption>Data for Cereal Production and Yield (2009-2012)</caption> <thead> <tr> <th>Year</th> <th>Production (t)</th> <th>Yield (t/ha)</th> </tr> </thead> <tbody> <tr> <td>2009</td> <td>45,000</td> <td>0.57</td> </tr> <tr> <td>2010</td> <td>60,000</td> <td>0.80</td> </tr> <tr> <td>2011</td> <td>35,000</td> <td>0.51</td> </tr> <tr> <td>2012</td> <td>47,057</td> <td>0.59</td> </tr> </tbody> </table>	Year	Production (t)	Yield (t/ha)	2009	45,000	0.57	2010	60,000	0.80	2011	35,000	0.51	2012	47,057	0.59
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Source: Aggregate from CFSAM 2010, 2011, 2012 and 2013.

Crop production by livelihood zone																																																																																																																																																																																																																																																								
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<ul style="list-style-type: none"> <li>• Mass transport by rivers</li> <li>• Favourable climatic conditions for agricultural production</li> <li>• High consumption demand in urban areas</li> </ul>
<b>Challenges</b>
<p><b>Overall</b></p> <ul style="list-style-type: none"> <li>• Feeder roads are not well established.</li> <li>• Limited access to financial institutions</li> <li>• High tax rates</li> <li>• High transport costs</li> <li>• High labour costs</li> <li>• Floods occur occasionally.</li> </ul>
<p><b>Crop</b></p> <ul style="list-style-type: none"> <li>• Limited manpower in agricultural production</li> <li>• Agricultural input is insufficient. (e.g. tractors, improved seeds)</li> <li>• Crop damaged by flood every year</li> <li>• No effective pest and disease control methods</li> <li>• Pests (birds) move from Sudan causing severe crop damage</li> <li>• Tree locust outbreak happens occasionally.</li> <li>• Environmental degradation mainly by deforestation due to charcoal production</li> <li>• Uneven rainfall distribution</li> <li>• Few capacity development opportunities for farmers</li> </ul>

## 1.4 Forestry

### On-going and proposed projects

#### List of on-going projects

Project name	Objectives/activities	Duration	Annual cost
Agricultural and forestry development	Introduce effective land use	(Information not available)	(Information not available)
Norwegian People's Aid (funding ended)	Propagate seedlings for plantation development	(Information not available)	(Information not available)

Source: CAMP team survey, 2013.

#### List of proposed projects

Project name	Objectives/activities	Duration	Annual cost
Central nursery	Propagate seedlings for plantation in Tofigya and school nursery in Panyikang County	(Information not available)	(Information not available)
Afforestation	Develop plantation	(Information not available)	(Information not available)
Agro-forestry	Introduce agro-forestry management to farmers	(Information not available)	(Information not available)
Forest management school	Enlighten children about tree value	(Information not available)	(Information not available)
Gum Africa production	Develop gum Africa production, processing and marketing	(Information not available)	(Information not available)
Eucalyptus development	Plant eucalyptus for greening and pole production	(Information not available)	(Information not available)
Forestry resource rehabilitation	Rehabilitate forestry resources	(Information not available)	(Information not available)

Source: CAMP team survey, 2013.

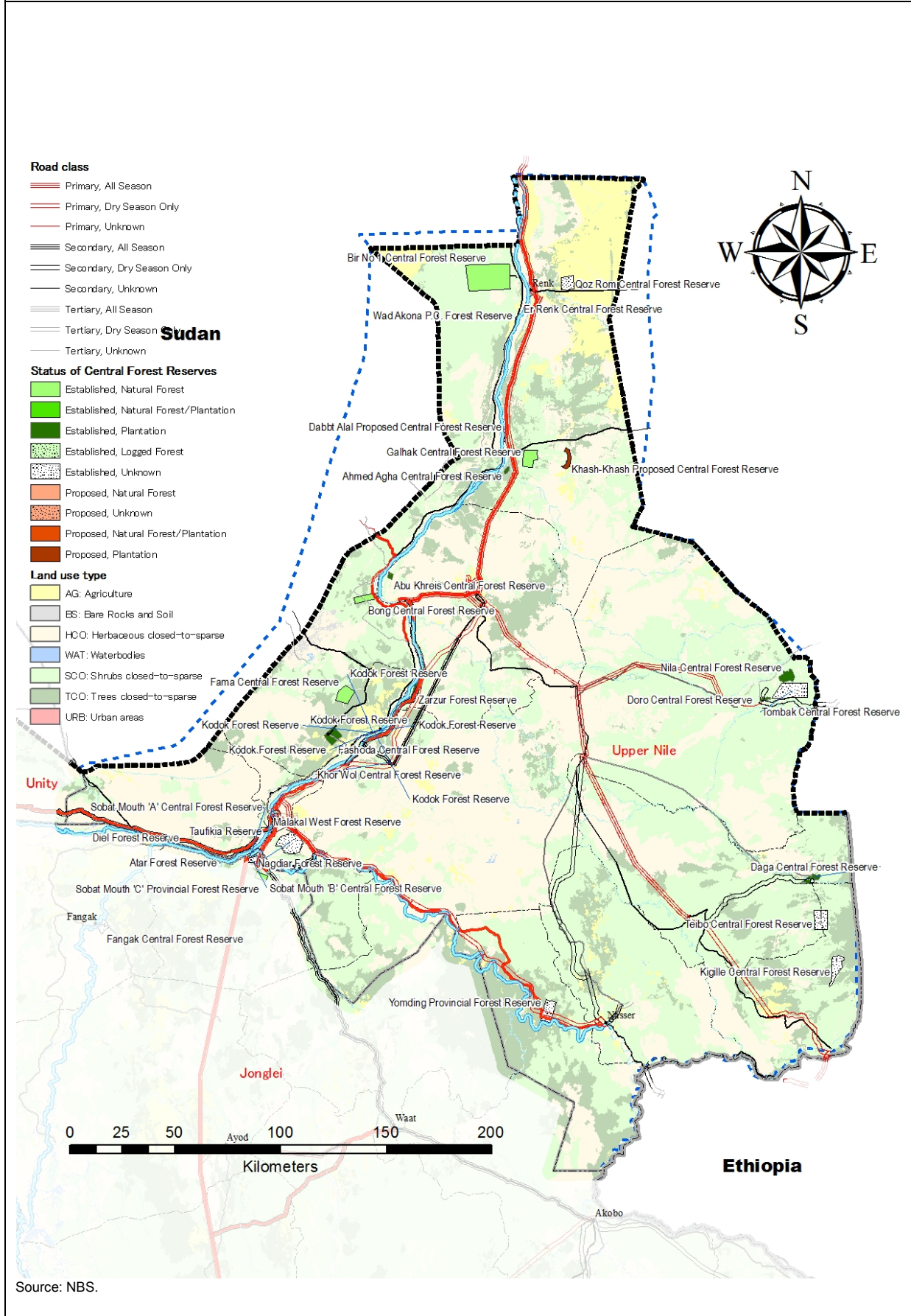
#### Land cover percentage to total area

County	AG	TCO	SCO	HCO	URB	BS	WAT	Total area	Total area (ha)
Baliet	3.3%	6.3%	22.0%	68.0%	0.0%		0.3%	100.0%	1,178,230
Fashoda	10.4%	28.6%	19.7%	39.4%		1.3%	0.6%	100.0%	357,786
Longochuk	1.0%	12.2%	62.3%	24.5%				100.0%	705,442
Luakpiny/Nasir	5.5%	9.6%	61.5%	23.1%			0.3%	100.0%	523,719
Maban	1.6%	1.5%	57.6%	39.3%	0.0%		0.0%	100.0%	1,201,429
Maiwut	3.9%	25.8%	49.8%	20.4%			0.0%	100.0%	396,294
Makal	7.6%	12.9%	6.7%	69.0%	1.5%		2.2%	100.0%	75,081
Manyo	4.8%	10.4%	60.1%	22.5%		1.0%	1.2%	100.0%	672,653
Melut	2.3%	15.4%	18.9%	62.2%	0.5%		0.7%	100.0%	700,932
Panyikang	1.9%	9.7%	28.6%	59.0%			0.8%	100.0%	521,815
Renk	26.0%	15.1%	19.1%	38.8%	0.2%	0.2%	0.6%	100.0%	1,012,134
Ulang	2.3%	35.6%	37.0%	24.5%		0.0%	0.6%	100.0%	489,198
<b>Total</b>	<b>6.2%</b>	<b>12.7%</b>	<b>38.9%</b>	<b>41.5%</b>	<b>0.1%</b>	<b>0.2%</b>	<b>0.4%</b>	<b>100.0%</b>	<b>7,834,713</b>

Source: FAO, 2011. *Land cover atlas of South Sudan*. Rome: FAO.

Legend: AG=Agriculture, TCO=Tree closed-to-sparse, SCO=Shrubs closed-to-sparse, HCO=Herbaceous closed-to-sparse, URB=Urban areas, BS=Bare Rocks and Soil, and WAT=Waterbodies.

**Location of Central Forest Reserves and land cover in 2009**



1.5 State Ministry of Animal Resources and Fisheries (MARF)																																											
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<b>(Animal production services)</b> <ul style="list-style-type: none"> <li>• Technical advice provided for livestock keepers</li> <li>• Management of demo-poultry farm collaboration with VSF (Vétérinaires Sans Frontières) - Germany</li> </ul> <b>(Animal health services)</b> <ul style="list-style-type: none"> <li>• Coordination and overall supervision</li> <li>• Conduct field survey for monitoring and evaluation</li> <li>• Treatment, vaccination and surveillance</li> <li>• Provide technical information to livestock keepers</li> </ul>																																											



## 1.6 Livestock

### Services provided by National government institutions

Organisation	Activities	Area	Period
Upper Nile University	<ul style="list-style-type: none"> <li>Undergraduate course (Bachelor degree/honour)</li> <li>Short courses</li> </ul>	Animal Health and Production	<ul style="list-style-type: none"> <li>5 years</li> <li>3-4 months</li> </ul>

Source: CAMP survey team. 2013.

### Services provided by DPs and NGOs

Organisation	Activities	Area	Period
UNMISS (United Nations Mission in the Republic of South Sudan), Indian Vet. Clinic	<ul style="list-style-type: none"> <li>Deliver training to CAHWs, Upper Nile University students and cattle keepers</li> <li>Provide treatments for animals owned by cattle keepers</li> </ul>	Makal County	2013
VSF Germany (Vétérinaires Sans Frontières)	<ul style="list-style-type: none"> <li>Deliver training to CAHWs</li> <li>Promote poultry farming in the communities.</li> </ul>	Makal County	2005-2009
BRAC (Bangladesh Rural Advancement Committee)	<ul style="list-style-type: none"> <li>Provide loan service</li> </ul>	Makal County	2010
FAO	<ul style="list-style-type: none"> <li>Import day old chicks from Kenya and support the poultry farm run by state MARF</li> </ul>	Makal County	2013-ongoing

Source: CAMP survey team. 2013.

\*CAHW: Community Animal Health Worker

### Services provided by private sector

#### (Agro-dealer)

- Some agro-dealers provide veterinary drugs and technical information.

#### (Slaughter house and auction yard)

- The slaughter house and auction yards are run by the state government.

#### (Milk processing)

- An individual milk processor produces yoghurt from imported powder milk.

#### (Fodder selling)

- Fodder from riverside is sold by mainly returnees at the markets.

### Livestock population

Type of Animal	Population in the state
Cattle	2,4 million head
Sheep	1,8 million head
Goat	2,8 million head
Local chicken	200,000
Camel	10,000 in Renk County
Horse	700 seen in Makal County
Pig	35,000 in Maban County

Source: State MARF; FAO. 2010. Livestock livelihood based assessment.

Livestock diseases				
Type of Animal	Type of disease	Outbreak area in last 2 years		
Cattle	Liver fluke, Contagious bovine pleuropneumonia, Helminths, External and internal parasites	There was no outbreak in the last 2 years.		
Poultry	Newcastle disease, Infectious bronchitis, External and internal parasites, Eye infection, Coccidia, Salmonella	There was no outbreak in the last 2 years.		
Goat	Contagious bovine pleuropneumonia, Peste des petits ruminants, Mange, External and internal parasites	There was no outbreak in the last 2 years.		
Sheep	Peste des petits ruminants, Babesiosis, Foot rot, External and internal parasites	There was no outbreak in the last 2 years.		
Equine (horse and donkey)	Mange, Strangles, Babesiosis, External and internal parasites	There was no outbreak in the last 2 years.		
Source: CAMP survey team. 2013.				
Animal health issues				
<ul style="list-style-type: none"> <li>• Insufficient water for washing carcasses and cleaning of the slaughter slab</li> <li>• Transportation means for meat is very poor.</li> <li>• Insufficient veterinary drugs for animals</li> <li>• Regulations for meat inspection and hygiene are underdeveloped.</li> </ul>				
Market				
Type of livestock and livestock product	Market			
Cow with calf	Domestic market			
Sheep	Domestic market			
Goat	Domestic market			
Chicken	Domestic market			
Cock	Domestic market			
Hide and skin	Exported to Khartoum			
Source: CAMP survey team. 2013.				
Market price				
Item	Unit	Price (SSP)		
		Low season		High season
Meat (beef)	1 kg	(Data not available)	20 -	20 (Data not available)
Meat (mutton)	1 kg	(Data not available)	40 -	40 (Data not available)
Cow and calf	Pair	(Data not available)	1,500 -	3,000 (Data not available)
Sheep or goat	Head	(Data not available)	130 -	200 (Data not available)
Chicken	Each	(Data not available)	15 -	30 (Data not available)
Cock	Each	(Data not available)	40 -	50 (Data not available)
Hide (unprocessed)	Hide	(Data not available)	5 -	5 (Data not available)
Milk tea	Cup	(Data not available)	2 -	2 (Data not available)
Egg (import)	Each	(Data not available)	2 -	2 (Data not available)
Source CAMP survey team. 2013. *This is not a representative sample.				

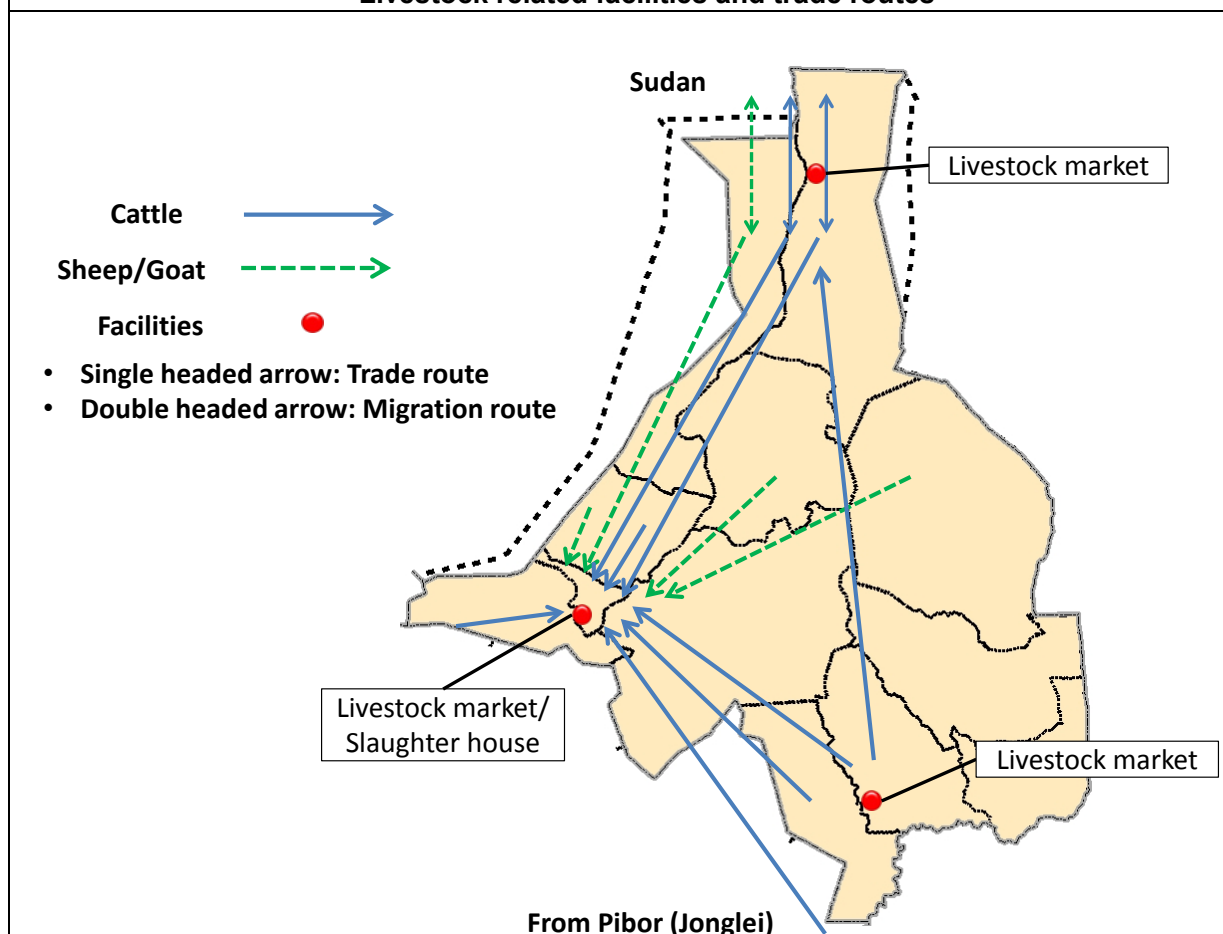
Taxes and charges		
Type	Cost (SSP)	Frequency
Licence for traders in the market for wholesale milk	1,500	Annually
Health certificate (butcher)	200	Every 6 months
Garbage collection fee	20	Monthly
Taxation chamber in the auction yard (cattle keeper)	10	Per head
Council Authority fee for certificates and services at auction yards	10	For every sale

Source CAMP survey team. 2013.  
\*This is not a representative sample.

Major livestock species and products by livelihood zone			
Eastern Floods Plains		Nile–Sobat Rivers	
Type of Animal	Breed	Type of Animal	Breed
Cattle	Local	Cattle	Local
Sheep and goat	Local	Sheep and goat	Local
Pig	Local	Pig	Local
Poultry	Local	Poultry	Local
Donkey	Local	Donkey	Local
Horse	Local	Horse	Local
Livestock products		Livestock products	
<ul style="list-style-type: none"> <li>• Fresh meat</li> <li>• Milk (fresh)</li> <li>• Milk (sour)</li> <li>• Ghee (butter)</li> <li>• Hide</li> </ul>		<ul style="list-style-type: none"> <li>• Fresh meat</li> <li>• Milk (fresh)</li> <li>• Milk (sour)</li> <li>• Ghee (butter)</li> <li>• Hide</li> </ul>	

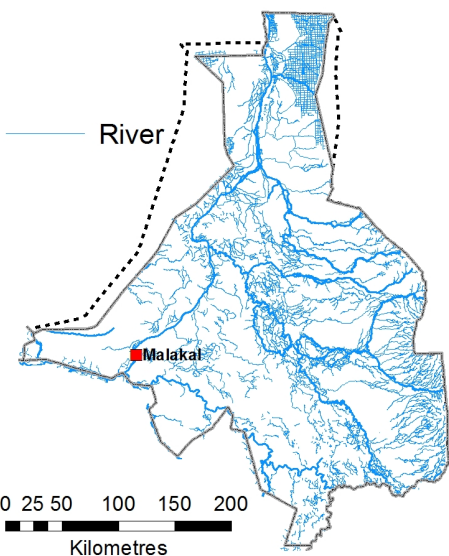

Source CAMP survey team. 2013.

### Livestock related facilities and trade routes



Source: CAMP Survey team. 2013, SNV. 2010. *The Livestock Sector in Southern Sudan: Result of Value Chain Study for Livestock Sector in Five States of Southern Sudan covered by MDTF with a focus on Red Meat.* Juba: SNV.

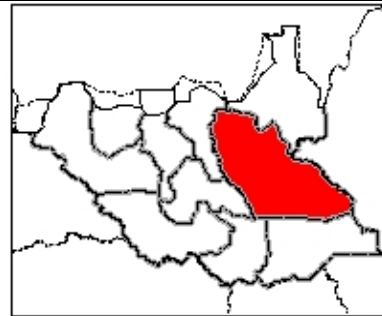
<b>Cross-cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• No serious land issues are found in the state in the field of livestock production.</li> </ul> <p><b>(Migration)</b></p> <ul style="list-style-type: none"> <li>• During cattle migration, occasionally conflicts happen between pastoralists and sedentary farmers.</li> <li>• Cattle migration from Sudan in dry season cause tension in the local communities.</li> <li>• In rainy season, the Seleim (Arab nomads) from Kordofan steal cattle from the local communities on the way back to their home settlements in Kordofan.</li> </ul> <p><b>(Conflict and insecurity)</b></p> <ul style="list-style-type: none"> <li>• Occasionally conflicts occur along the state border with Jonglei State and international border with Sudan.</li> </ul> <p><b>(Gender disparities)</b></p> <ul style="list-style-type: none"> <li>• Women are not allowed to own livestock in some communities.</li> <li>• Some women can own goats and chickens but they are required to have consultations with the head of the family when they sell them.</li> <li>• In general, men take decisions on trading (purchase and selling) animals.</li> <li>• Women are not allowed to come close to cattle when men are milking in some communities.</li> </ul> <p><b>(Drought and floods)</b></p> <ul style="list-style-type: none"> <li>• Flood damages are confirmed in Ulang, Nasir and Maiwut Counties.</li> </ul>
<b>Opportunities</b>
<ul style="list-style-type: none"> <li>• Vast unutilised and fertile land</li> <li>• High potential of hides and skins production (But they end up in storage due to lack of market since the boarder closure with Sudan.)</li> <li>• High demand of fodder crop in the market</li> </ul>
<b>Challenges</b>
<ul style="list-style-type: none"> <li>• Hunger in livestock in the cattle camps during the dry season</li> <li>• Insecurity caused by cattle raiders in the cattle camps</li> <li>• Epidemic diseases killing the cattle in the cattle camps</li> <li>• Using inappropriate technologies in the university</li> <li>• The number of educational materials is insufficient.</li> <li>• Capacity development of the staffs</li> <li>• In sufficient funds for effective extension services</li> <li>• In wet season, no livestock comes to the slab due to inaccessibility.</li> </ul>

1.7 Fisheries					
<b>Numbers of fishing households (ANLA 2012)</b>		45,890			
<b>Fish production</b>	Unknown. Upper Nile State is the second highest producer of fish in South Sudan, after Jonglei State. Ice machine in Malakal makes ice but ice is expensive due to high price of diesel.				
<b>Fish exports</b>	Prior to border closure up to 16,000 tonnes were sent north to Khartoum from areas inside Upper Nile, Jonglei and Unity States. This trade much reduced now though some dried fish still goes north. Some fish moving to Ethiopia.				
<b>Fish imports</b>	None				
<b>Seasonality</b>	During the dry season the fishing is restricted to the large rivers. In the wet season the fishery extends out over the floodplain.				
<b>Landing sites</b>	Exist all along the Nile and Sobat rivers in Panyikang, Nasir, Baiet, Ulang and 3 in Malakal.				
<b>Vessels</b>	Planked and dugout canoes. (Steel canoes used mainly for transport). Rafts used for transport downstream.				
<b>Informal taxation</b>	Widespread, both on fish transport and marketing in towns. Somewhat iniquitous. Proceeds do not appear to be deposited with Treasury.				
<b>Investment</b>	Ice machine in Malakal serves mainly the cold drinks industry.				
Aquaculture					
Almost not existent. Two research ponds in Malakal with tilapia stocked from local resources. One pond reported under development in Longochuk Country. Major problem is a skills shortage both in the public and private sector in Aquaculture, and very little push from national or state government in Upper Nile State.					
Post-harvest and marketing					
<p>Processing: Fish not sold fresh to market is dried. Near to Malakal fresh fish predominates and has a ready market. Much is sun dried (split and dried) though most is plaited and dried or cut into strips and dried. No ice is used for fish preservation, though there is a small ice machine in Malakal. Several traders buying fresh fish and bringing daily to Malakal by truck, but not using ice. Ice for fresh fish export to Khartoum came from Sudan (Khartoum or Kosti). (Photo: CAMP team weighing dried fish in Malakal) Prices of fish in Dolieb Hill and Malakal markets.</p>					
Species	Presentation	SSP/kg	Species	Presentation	SSP/kg
Gymnarchus niloticus	Dried plaits	64.37	Heterotus niloticus	Dried plaits	33.78
Lates Niloticus	Dried plaits	54.06	Tilapia	Dried plaits	61.68
Alestes	Fresh	2.92	Distichotus spp	Fresh	9.60
Heterotus niloticus	Fresh	5.84	Hydrocyon sp	Fresh	8.13
Hyperopisus bebe	Fresh	5.00	Lates niloticus	Fresh	7.11
Oreochromis niloticus	Fresh	4.71	Protoperus spp	Fresh	4.54

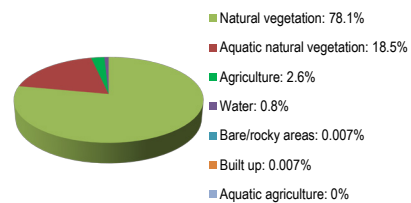


## 2 Jonglei State (Capital: Bor)

2.1 Basic Information	
<b>Population (2008)<sup>a</sup></b>	1,358,602 (1 <sup>st</sup> ) Male: 734,327 Female: 624,275
<b>Projected population (2013)<sup>b</sup></b>	1,659,070 (1 <sup>st</sup> )
<b>Area <sup>c</sup></b>	123,600 km <sup>2</sup> (1 <sup>st</sup> )
<b>No. of Counties, Payams and Bomas (2009)<sup>d</sup></b>	11 Counties 72 Payams 343 Bomas
<b>Food secure population (2012)<sup>b</sup></b>	64% (4 <sup>th</sup> )
<b>Access to improved drinking water (2009)<sup>e</sup></b>	67% (2 <sup>nd</sup> )
<b>Literacy rate (15-24 years old) (2009)<sup>e</sup></b>	25% (10 <sup>th</sup> )
<b>Primary school gross enrolment rate (GER) (2010)<sup>f</sup></b>	75% (4 <sup>th</sup> )



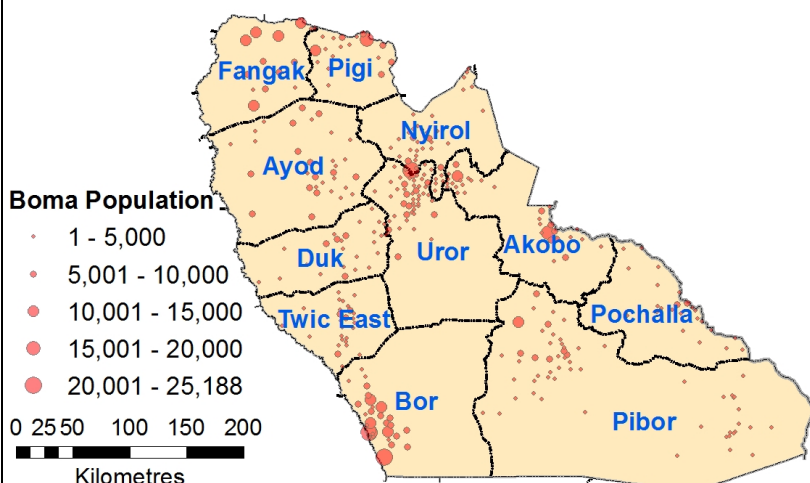
Land cover <sup>g</sup>



Source: <sup>a</sup> SSCSE. 2010. Southern Sudan Counts: Tables from the 5th Sudan Population and Housing Census, 2008; <sup>b</sup> WFP. 2013. ANLA; <sup>c</sup> FAO. 2011. Land Cover Atlas of the Republic of South Sudan; <sup>d</sup> Original data source of NBS. 2012. NBHS 2009; <sup>e</sup> NBS. 2012. NBHS 2009; <sup>f</sup> MoE. 2010. EMIS; <sup>g</sup> NBS. 2011. South Sudan Statistical Yearbook 2011.

### Administrative districts (counties)

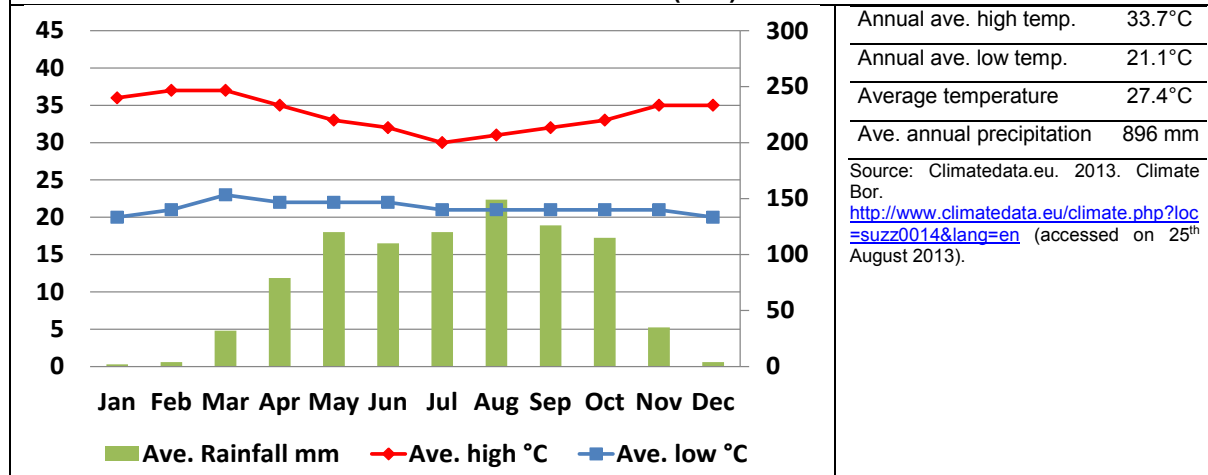
County	Estimated Population (2013) <sup>a</sup>	Pop. density (ppl/km <sup>2</sup> ) <sup>b</sup>
Bor	252,659	17.8
Uror	199,096	16.3
Pibor	165,384	4.9
Fangak	159,185	20.8
Ayod	154,849	11.5
Akobo	153,220	16.8
Twic East	124,203	20.3
Nyirrol	121,798	16.9
Duk	113,225	16.3
Pigi	107,913	24.4
Pochalla	73,610	8.7



\* Khorflus and Bor South Counties are renamed as Pigi and Bor respectively based on information from the State Focal Point.

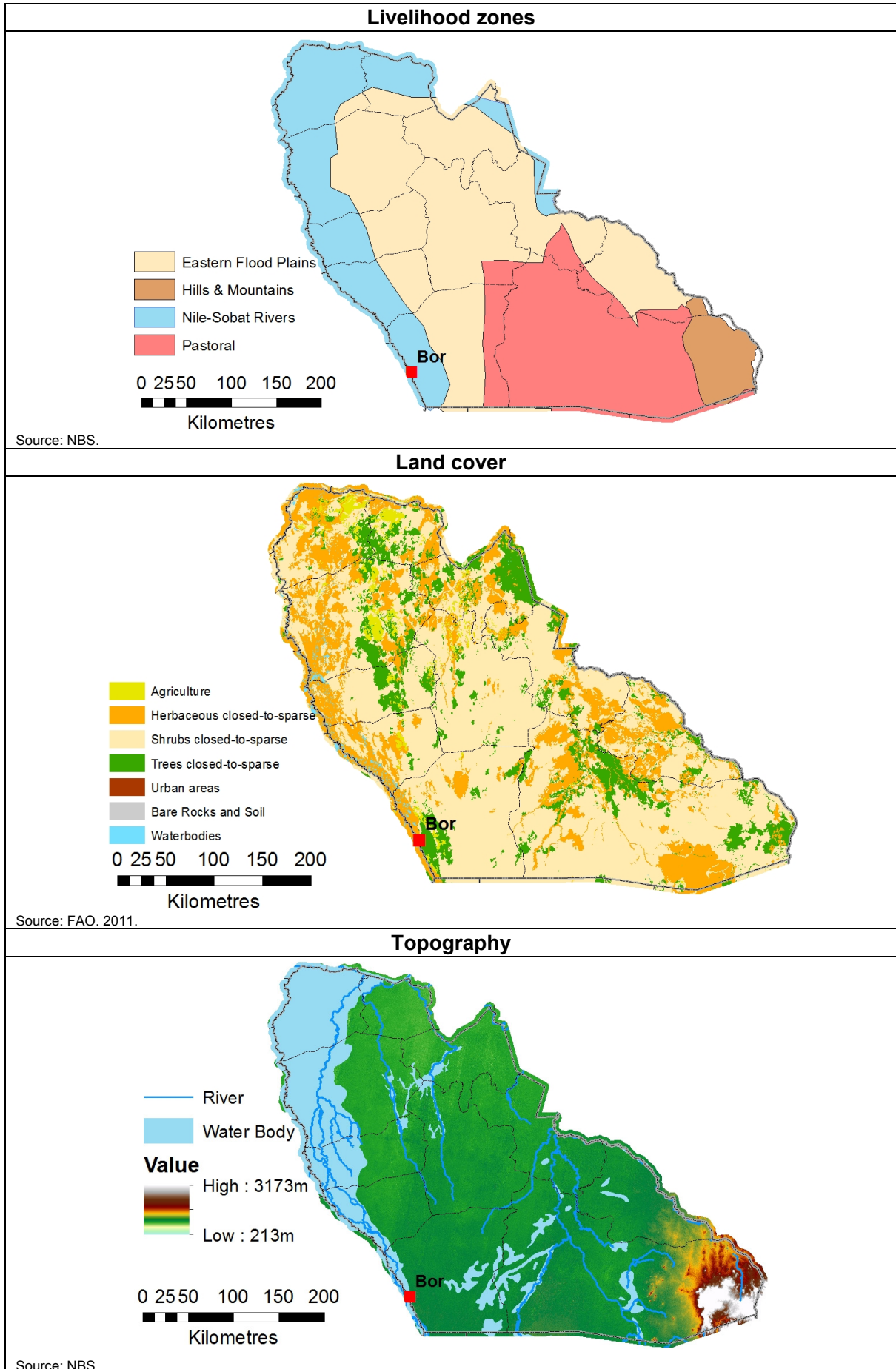
Source: (Map) NBS; (Table)<sup>a</sup> WFP. 2013. ANLA; <sup>b</sup> Land scale data applied from FAO. 2011. Land Cover Atlas of the Republic of South Sudan.

### Climate chart (Bor)



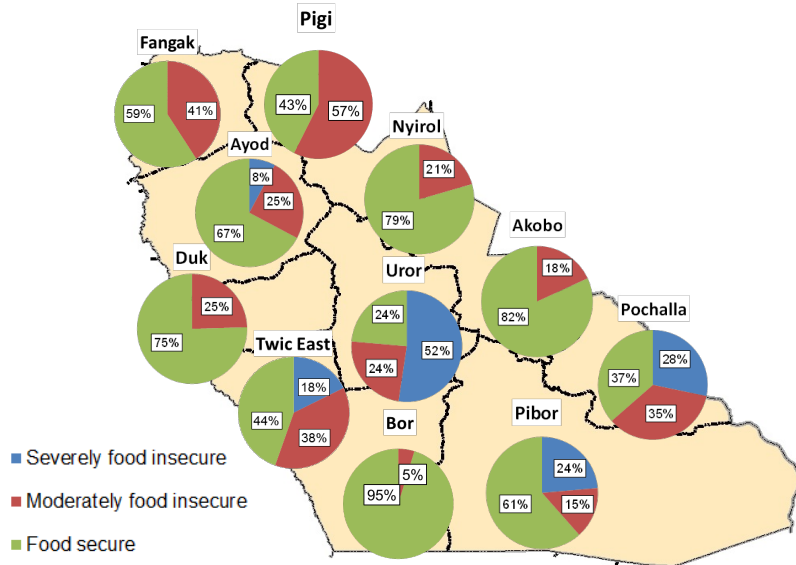
Annual ave. high temp.	33.7°C
Annual ave. low temp.	21.1°C
Average temperature	27.4°C
Ave. annual precipitation	896 mm

Source: Climatedata.eu. 2013. Climate Bor.  
<http://www.climatedata.eu/climate.php?loc=suzz0014&lang=en> (accessed on 25<sup>th</sup> August 2013).



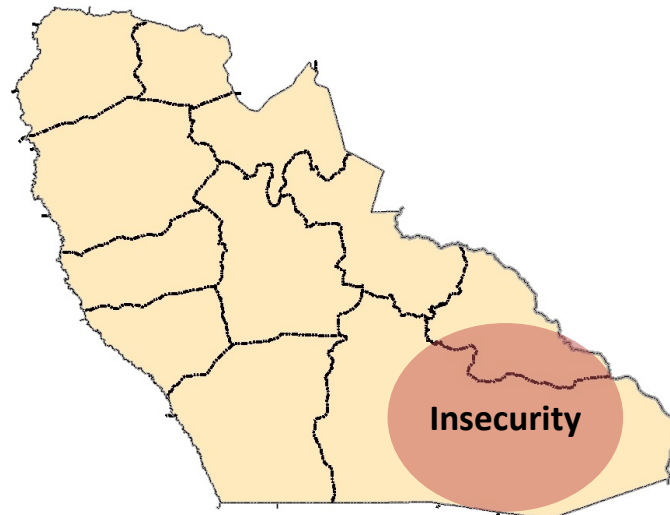


### Estimated food security status by county (2013)



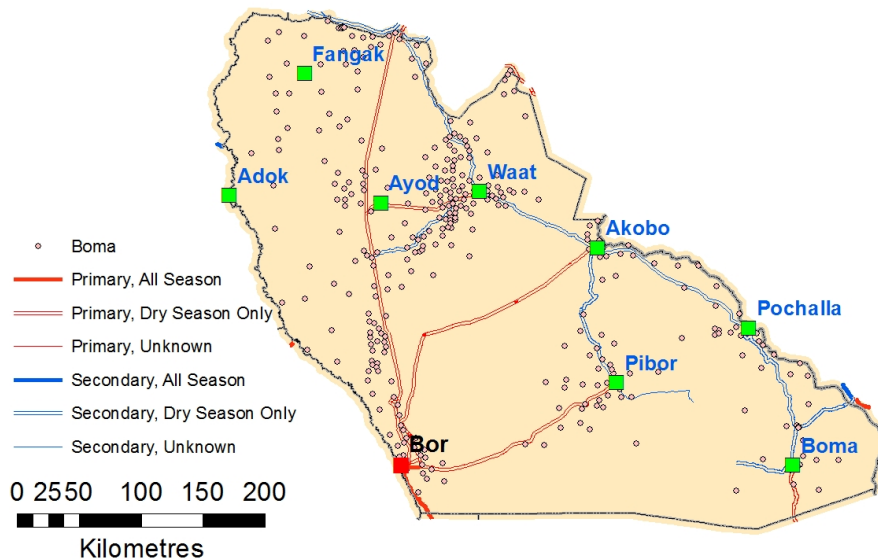
Source: WFP.2013.ANLA.

### Insecurity and natural disaster



Source: CAMP survey team 2013.

### Road and Boma location



Source: Road (WFP. 2013), Boma location (NBS).

<b>2.2 State Ministry of Agriculture and Forestry (MAF)</b>																													
<b>Organogram</b>			<b>Staff</b>																										
<pre> graph TD     Minister --&gt; DirectorGeneral[Director General]     DirectorGeneral --&gt; DirectorateForestry[Directorate of Forestry]     DirectorGeneral --&gt; DirectorateAgriculture[Directorate of Agriculture]     DirectorGeneral --&gt; DirectorateAdminFinance[Directorate of Administration and Finance]           </pre>			<table border="1"> <thead> <tr> <th style="text-align: left;">Section</th> <th style="text-align: right;">Number of staff</th> </tr> </thead> <tbody> <tr> <td><b>Directorate of Forestry</b></td> <td style="text-align: right;"><b>77</b></td> </tr> <tr> <td>Department of Utilization</td> <td style="text-align: right;">(55)</td> </tr> <tr> <td>Department of Central Nursery</td> <td style="text-align: right;">(11)</td> </tr> <tr> <td>Department of Agro-forestry</td> <td style="text-align: right;">(11)</td> </tr> <tr> <td><b>Directorate of Agriculture</b></td> <td style="text-align: right;"><b>279</b></td> </tr> <tr> <td>Department of Extension</td> <td style="text-align: right;">(231)</td> </tr> <tr> <td>Department of Crop Production</td> <td style="text-align: right;">(18)</td> </tr> <tr> <td>Department of Horticulture</td> <td style="text-align: right;">(30)</td> </tr> <tr> <td><b>Directorate of Administration and Finance</b></td> <td style="text-align: right;"><b>26</b></td> </tr> <tr> <td>Department of Administration</td> <td style="text-align: right;">(20)</td> </tr> <tr> <td>Department of Finance</td> <td style="text-align: right;">(6)</td> </tr> <tr> <td><b>Total</b></td> <td style="text-align: right;"><b>382</b></td> </tr> </tbody> </table>	Section	Number of staff	<b>Directorate of Forestry</b>	<b>77</b>	Department of Utilization	(55)	Department of Central Nursery	(11)	Department of Agro-forestry	(11)	<b>Directorate of Agriculture</b>	<b>279</b>	Department of Extension	(231)	Department of Crop Production	(18)	Department of Horticulture	(30)	<b>Directorate of Administration and Finance</b>	<b>26</b>	Department of Administration	(20)	Department of Finance	(6)	<b>Total</b>	<b>382</b>
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<b>Category</b>	<b>2011/12 Budget</b>	<b>2011/12 Outturn</b>	<b>2012/13 Budget</b>																										
<b>Salaries</b>	1,213,846	760,854	1,401,903																										
<b>Operating</b>	277,238	177,548	1,274,000																										
<b>Transfers</b>	1,548,558	1,316,671	1,577,713																										
<b>Others</b>	0	3,540	0																										
<b>Capital</b>	4,008,000	4,116,840	4,008,000																										
<b>Overall total</b>	7,047,642	6,375,453	8,261,616																										
Source: State MAF. Unit: SSP			<p><b>Jonglei Strategic plan (2012-15)</b></p> <p><b>Mandate</b> The Jonglei MAF mandate is to achieve 100% food security by supporting crop and forest producers to produce more than enough to cover food security needs, so to create market opportunities for trade, investment, business growth, and employment.</p> <p><b>Budget</b> 8,164,859 (SSP) (Year 2012/2013)</p> <p><b>Strategic Goals 1</b> Strengthen institutional capacity to guide, supervise, coordinate, and monitor all activities in the agricultural and forestry sectors</p> <p><b>Strategic Goals 2</b> Improve agricultural and forestry production and productivity through technology transfers and sustainable use of natural resources</p> <p><b>Strategic Goals 3</b> Promote farm and forestry market chain business in domestic and regional markets</p> <p><b>Major Activities</b></p> <ul style="list-style-type: none"> <li>• Mapping of arable land throughout the State</li> <li>• Form and legalize farm coops, producer groups, and trade associations</li> <li>• Recruit and train MAF officers in extension, forestry, plant/tree nurseries, park rangers and Guards</li> <li>• Carry out forest inventory, species ID, density, distribution and habitat</li> <li>• Carry out forest inventory, species ID, density, distribution and habitat</li> <li>• Sales market support for wood and non-wood forest products in new markets (e.g., gum arabica, shea butter nut oil)</li> <li>• Replicate central nurseries in all the counties, payams and bomas</li> </ul>																										
Source: State MAF.			Source: State MAF.																										
<b>Services provided by State MAF and local government</b>																													
<p><b>(Technical Advice)</b></p> <ul style="list-style-type: none"> <li>• Technical advice, training and workshop are provided occasionally to farmers.</li> </ul> <p><b>(Seeds and tools provision)</b></p> <ul style="list-style-type: none"> <li>• With NGO supports, seeds and tools are provided to farmers.</li> </ul> <p><b>(Cooperative development)</b></p> <ul style="list-style-type: none"> <li>• Cooperative officers attempt to organise farmers groups and support the registration process.</li> </ul> <p><b>(Demo farm)</b></p> <ul style="list-style-type: none"> <li>• Some demo farms are installed for technical knowledge transfer. The total areas are 60 feddan.</li> </ul> <p><b>(Tractor hiring service)</b></p> <ul style="list-style-type: none"> <li>• 18 tractors are provided for the service. The charge is SSP 270/feddan for plough and harrow.</li> </ul>																													

<b>2.3 Crop</b>			
<b>Services provided by DPs and NGOs</b>			
<b>Organisation</b>	<b>Activities</b>	<b>Area</b>	<b>Target</b>
Church and Development	Agriculture <ul style="list-style-type: none"> <li>• Ploughing support</li> <li>• Provide fencing material, seeds and tools</li> </ul> Extension worker training <ul style="list-style-type: none"> <li>• Annually 5 days training is provided to 20 state and county extension workers</li> </ul> Fisheries <ul style="list-style-type: none"> <li>• Training fish preservation method and marketing</li> <li>• Providing fish lines and hooks</li> </ul> Others <ul style="list-style-type: none"> <li>• Deliver natural resource management education</li> <li>• Teacher training</li> </ul>	Bor County (6 payams)	Mainly vulnerable groups (e.g. IDPs, HIV patients, female headed households)
Canadian Hunger Foundation	Agriculture <ul style="list-style-type: none"> <li>• Seeds provision</li> <li>• Fencing and ploughing support</li> </ul> Training <ul style="list-style-type: none"> <li>• Annually 5 days training are provided to 22 farmers on agricultural techniques and fish processing methods.</li> </ul>	Bor County (2 payams)	Mainly vulnerable groups
Catholic Relief Service	<ul style="list-style-type: none"> <li>• Assist farming household with State MAF</li> </ul>	Bor, Twic East, Ayod, Uror, Pigi, Akobo, Nyirol and Pocalla Counties	Target farmers
USAID	<ul style="list-style-type: none"> <li>• Support John Garang Memorial University of Science</li> </ul>	Bor County	University staff
Care International	<ul style="list-style-type: none"> <li>• Deliver training for farmers</li> <li>• Provide seeds and tools</li> </ul>	Twic East and Duk Counties	Target farmers
Lutheran World Foundation	<ul style="list-style-type: none"> <li>• Introduction of new crops</li> <li>• Deliver trainings for farmers</li> </ul>	Twic East and Duk Counties	Target farmers
World Vision	<ul style="list-style-type: none"> <li>• Train 100 farmers annually on agricultural techniques, fish processing methods and marketing</li> </ul>	Fangak and Pigi Counties	Target farmers
WFP	<ul style="list-style-type: none"> <li>• Food assistance</li> </ul>	(Information not available)	(Information not available)
FAO	<ul style="list-style-type: none"> <li>• Greenhouse provision</li> </ul>	(Information not available)	(Information not available)
*There are a number of DPs and NGOs in the state. The above information collected by CAMP team is shown as examples.			
<b>Services provided by private sector</b>			
<b>(Tractor hiring service)</b>			
<ul style="list-style-type: none"> <li>• Some private tractor hiring services are provided in Bor area.</li> <li>• The service charges are plough (SSP 300/feddan) and harrow (SSP 150/feddan).</li> </ul>			
<b>(Agro-dealer)</b>			
<ul style="list-style-type: none"> <li>• Improved seeds from Kenya are provided in the area. The prices are shown below:               <ol style="list-style-type: none"> <li>1. Tomato: SSP 50/50 g (tin)</li> <li>2. Onion: SSP 50/50 g (tin)</li> <li>3. Okra: SSP 50/100 g (tin)</li> <li>4. Cabbage: SSP 40/50 g (tin)</li> <li>5. Eggplant: SSP 40/50 g (tin)</li> </ol> </li> <li>• The dealer also provides technical advices. (e.g. land preparation, grass mulching, raising seedling)</li> </ul>			
<b>(Financial institution)</b>			
<ul style="list-style-type: none"> <li>• Kenya Commercial Bank and Equity Bank provide financial support services.</li> </ul>			

<b>Market</b>					
<b>Major agricultural products and their origin (Bor, May 2013)</b>					
<b>(Crop)</b>			<b>(Others)</b>		
<b>Item</b>	<b>Type</b>	<b>Origin</b>	<b>Item</b>	<b>Type</b>	<b>Origin</b>
Sorghum	Import	-	Tomato	Import	Uganda
	Domestic	Jonglei State		Domestic	-
Maize flour	Import	Uganda	Jew's mallow	Import	-
	Domestic	-		Domestic	Jonglei State
Rice	Import	Uganda	Okra	Import	-
	Domestic	-		Domestic	Jonglei State
Bean (Janjaro)	Import	Uganda	Eggplant	Import	Uganda
	Domestic	-		Domestic	Jonglei State
			Cabbage	Import	Uganda
				Domestic	Jonglei State
			Coffee	Import	Uganda
				Domestic	-
			Sugar	Import	Thailand
				Domestic	-

Source: CAMP survey team 2013.  
\*This is not a representative sample.

Source: CAMP survey team 2013.  
\*This is not a representative sample.

<b>Market price (Retail price, Bor, May 2013)</b>					
<b>Item</b>	<b>Unit</b>	<b>Price (SSP) (range)</b>			
		<b>Low season</b>			<b>High season</b>
Maize flour (Import)	Sack (50 kg)	Dry season	95-100	- 110-115	Rainy season
Rice (Import)	Sack (50 kg)	Dry season	90	- 110-115	Rainy season
Rice (Import)	1 kg	Dry season	5	- 6	Rainy season
Janjaro bean (Import)	1 kg	Dry season	4	- 6	Rainy season
Sugar (Import)	50 kg	Dry season	210-215	- 270-280	Rainy season
Sugar (Import)	1 kg	Dry season	4	- 6	Rainy season
Cooking oil (Import)	18 litres	Dry season	110	- 140	Rainy season
Coffee	1 kg	Dry season	10	- 13	Rainy season


Source: CAMP survey team 2013.  
\*This is not a representative sample.

<b>Transportation cost (Bor, May 2013)</b>			
<b>Type</b>	<b>Unit</b>	<b>Currency</b>	<b>Cost</b>
Porterage (on/off load)	Wheel barrow (50 kg)	SSP	1.5

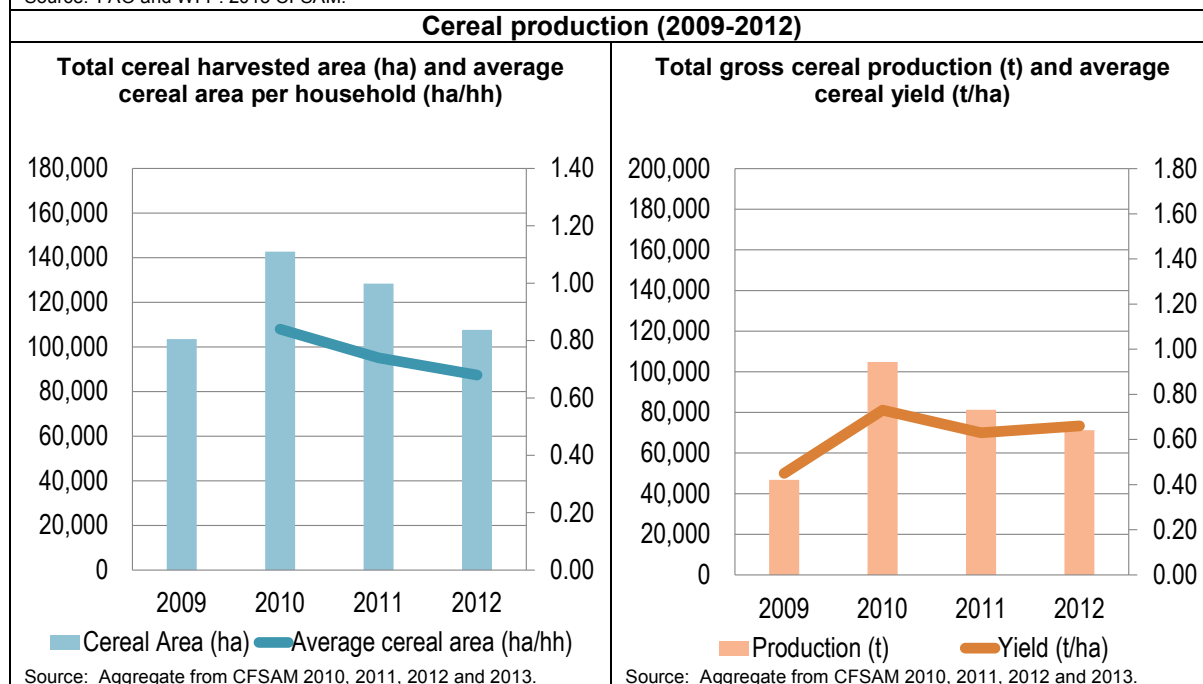
Source: CAMP survey team 2013.  
\*This is not a representative sample.

<b>Taxes and charges (Bor, April 2013)</b>		
<b>(Wholesaler size 4mx4m)</b>		
<b>Type</b>	<b>Cost (SSP) (range)</b>	<b>Frequency</b>
Licence	350	Annually
Chamber of Commerce membership	100-150	Monthly
Garbage collection charge	100	Monthly
Security personnel fee	10	Monthly
Health licence	110	Monthly
Road maintenance	100	Every 6 months
<b>(Retailer)</b>		
<b>Type</b>	<b>Cost (SSP)</b>	<b>Frequency</b>
Chamber of Commerce membership	10	Monthly
Garbage collection charge	10	Monthly
Security personnel fee	5	Monthly
Town council tax	2	Daily

Source: CAMP survey team 2013.  
\*This is not a representative sample.

Crop production		<b>Survey area</b> Bor Twic-East 
Farming household (%) (2012)	68	
Farming household (No.) (2012)	157,582	
Total cereal area (ha) (2012)	107,623 (5 <sup>th</sup> )	
Cereal gross yield (t/ha) (2012)	0.66 (8 <sup>th</sup> )	
Gross cereal production (t) (2012)	71,281 (7 <sup>th</sup> )	
<b>Average cereal area per household (ha/hh) (2012)</b>	0.68 (9 <sup>th</sup> )	

Source: FAO and WFP. 2013 CFSAM.



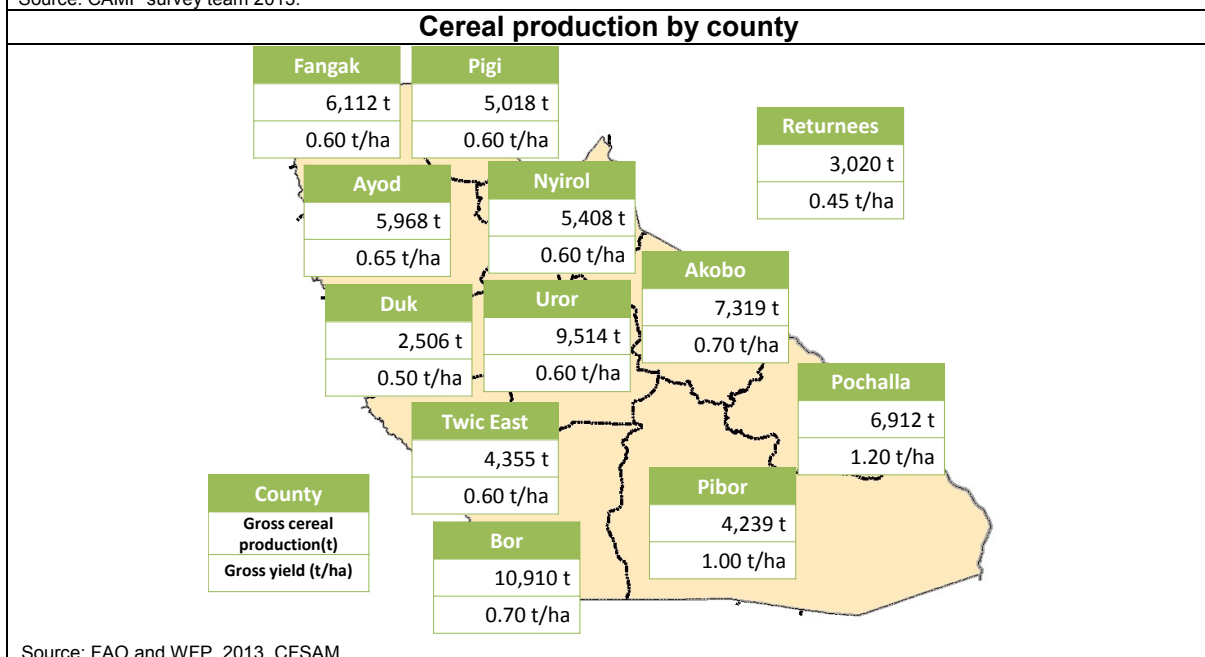
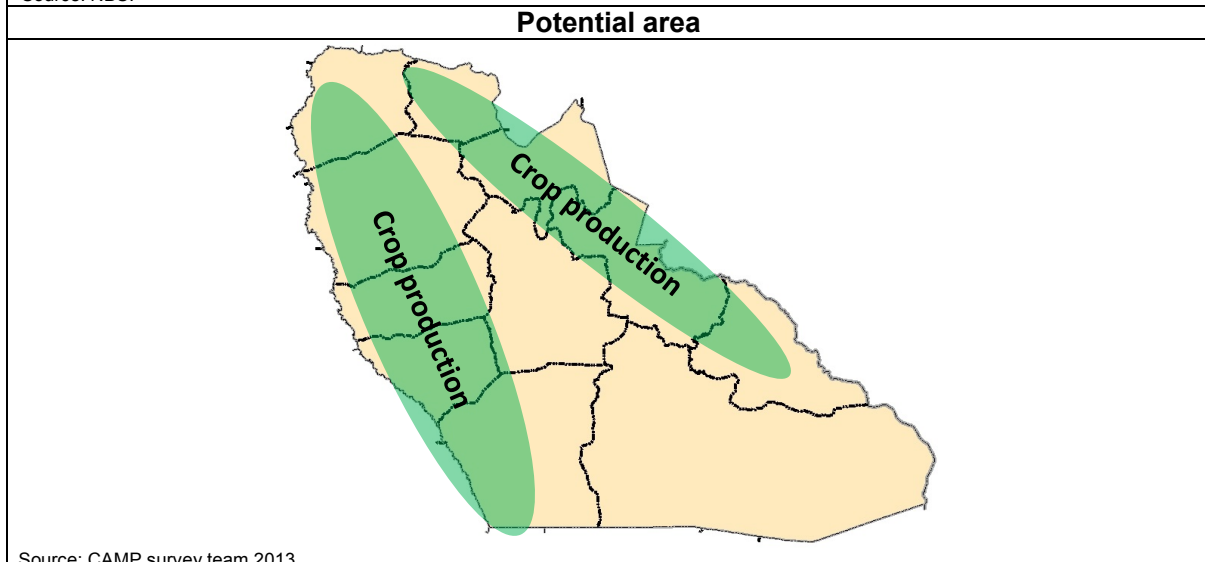
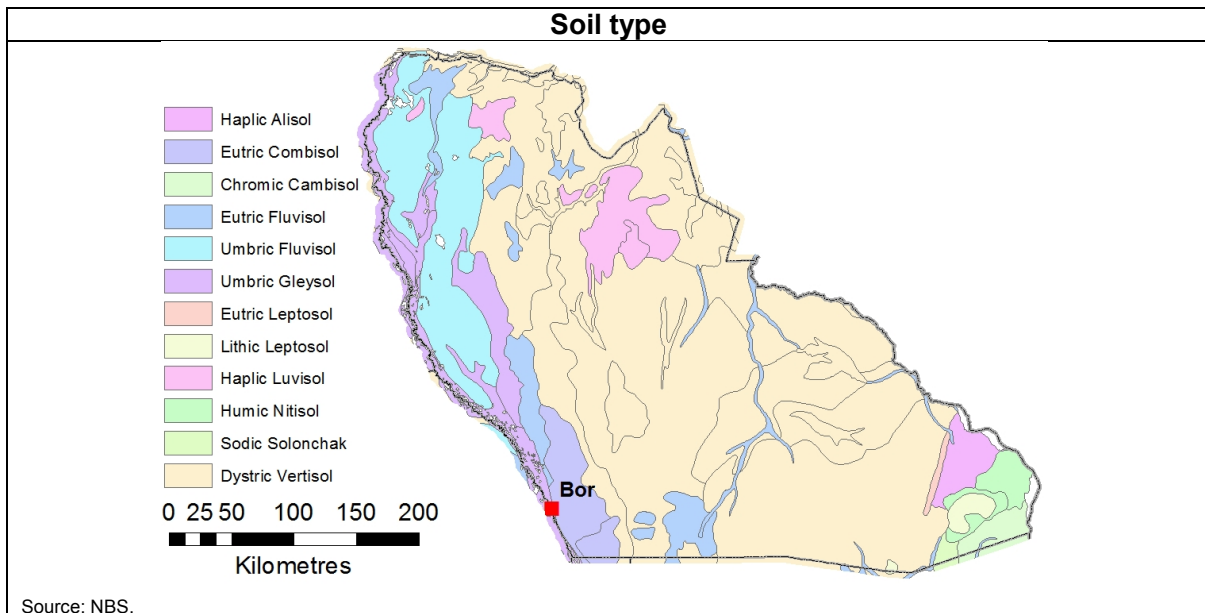
Crop production by livelihood zone					
Eastern Flood Plains		Nile-Sobat Rivers		Pastoral	
Major agricultural products					
<b>Crop</b>	<b>Vegetable</b>	<b>Crop</b>	<b>Vegetable</b>	<b>Crop</b>	<b>Vegetable</b>
Maize	Okra	Maize	Okra	Maize	Okra
Sorghum	Pumpkin	Sorghum	Eggplant	Sorghum	Pumpkin
Bean		Bean	Tomato	Bean	
<b>Cash Crop</b>		<b>Cash Crop</b>	Pumpkin	<b>Cash Crop</b>	
Groundnut		Groundnut	Jew's mallow	Groundnut	
Sesame		Sesame		Sesame	
Tobacco		Cowpea		Tobacco	

Cropping calendar												
Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sorghum				L	S					H	H	
Maize				L	S					H	H	
Groundnut				L	S					H	H	
Sesame				L	S					H	H	
Bean				L	S					H	H	H
Pumpkin				L	S					H	H	
Okra				L	S					H	H	H
Tabacco				L	S						H	H
	L	S	T	H								
	L	S	T	H								
	L	S	T	H								

Source: CAMP survey team. 2013.

Source: CAMP survey team. 2013.

Source: CAMP survey team. 2013.



<b>Cross cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• Land boundary issues among pastoralists and between pastoralists and sedentary farmers</li> </ul> <p><b>(Gender)</b></p> <ul style="list-style-type: none"> <li>• Land tenure of widows</li> </ul> <p><b>(Security)</b></p> <ul style="list-style-type: none"> <li>• Rebel-attacks and cattle raids often happen especially in Pibor County.</li> </ul> <p><b>(IDPs and returnees)</b></p> <ul style="list-style-type: none"> <li>• A number of farmers are displaced due to the insecurity.</li> </ul> <p><b>(HIV)</b></p> <ul style="list-style-type: none"> <li>• The infection rate is not surveyed. The rate might be high in youth.</li> </ul>
<b>Opportunities</b>
<p><b>Crop</b></p> <ul style="list-style-type: none"> <li>• Vast unused land</li> <li>• Fertile land</li> <li>• Sufficient rainfall</li> <li>• Favourable climatic conditions for agricultural production</li> </ul>
<b>Challenges</b>
<p><b>Overall</b></p> <ul style="list-style-type: none"> <li>• Feeder roads are not well established.</li> <li>• Poor access to financial institutions</li> <li>• High tax rates</li> <li>• High transport costs</li> <li>• High labour costs</li> </ul>
<p><b>Crop</b></p> <ul style="list-style-type: none"> <li>• Crop damaged by roaming cattle</li> <li>• Insecurity negatively influences farming activities.</li> <li>• Fences have to be installed to prevent cattle entering farmland.</li> <li>• Improved seeds are hardly available in many counties.</li> <li>• Tractors are not available for many farmers.</li> <li>• In rainy season, some areas become inaccessible.</li> <li>• Insufficient number of extension workers to implement agricultural development</li> <li>• Dykes are necessary to prevent crop damaged by flood.</li> </ul>

**2.4 Forestry****On-going and proposed projects****List of on-going projects**

Project name	Objectives/activities	Duration	Annual cost
State Central Nursery	Promote beautification and conservation by FAO, USAID, Dr. John Garang Memorial University	On-going	(Information not available)

Source: CAMP survey team 2013.

**List of proposed projects**

Project name	Objectives/activities	Duration	Annual cost
Afforestation	Program in 4 gazetted forestry reserves in Bor town, Panjak, Malal chat, and Boma	(Information not available)	(Information not available)
Agro-forestry	Promote agro-forestry in Bor, Twic East, Duk and Ayod counties	(Information not available)	(Information not available)
Capacity development	Train forest rangers, forest/guards and extension workers	(Information not available)	(Information not available)
Gum Africa cooperative development	Build gum Africa value chain through cooperative development	(Information not available)	(Information not available)
Capacity development	Organise workshop for capacity training with complete carpentry tools	(Information not available)	(Information not available)

Source: CAMP survey team 2013.

**Land cover percentage to total area**

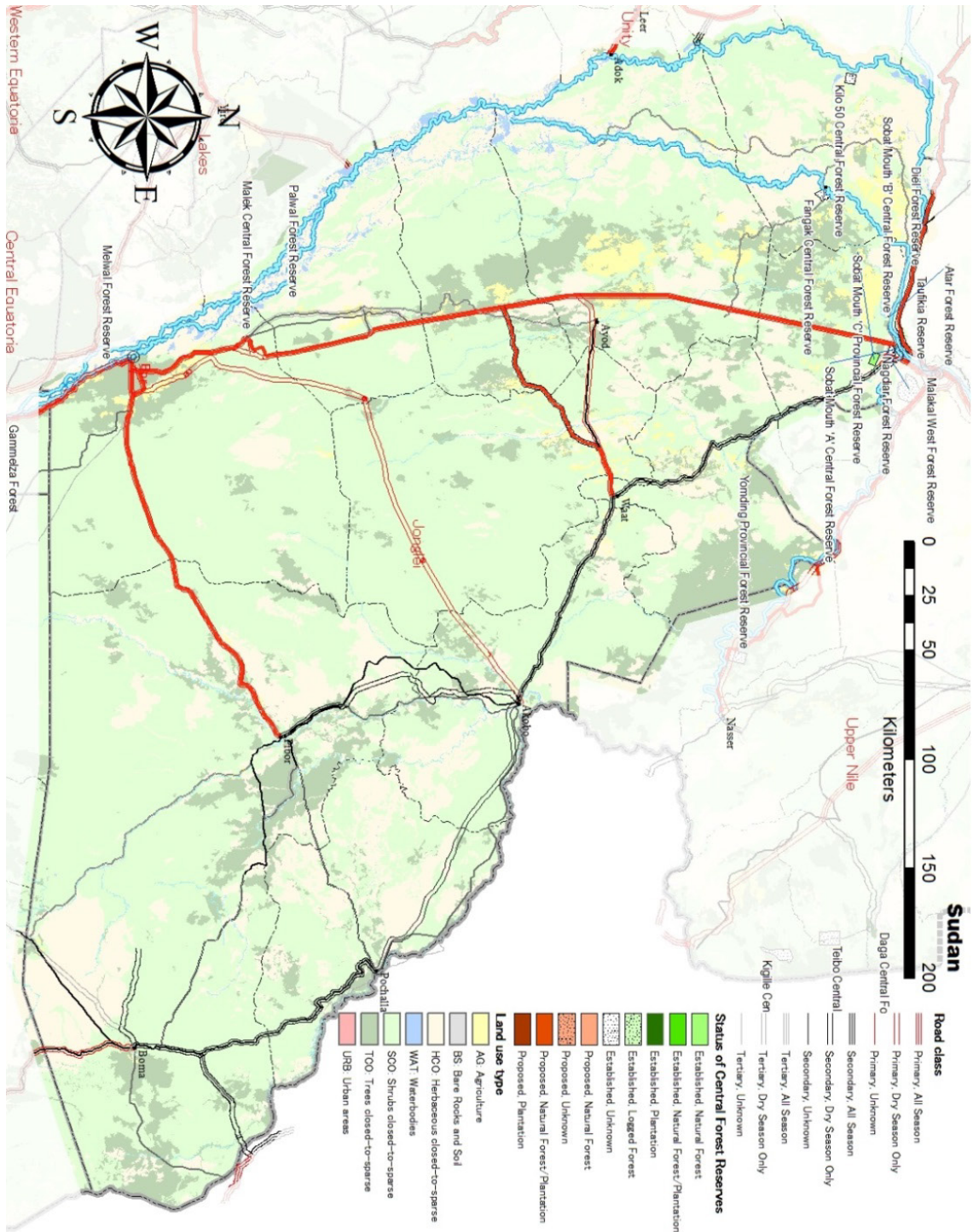
County	AG	TCO	SCO	HCO	URB	BS	WAT	Total area	Total area (ha)
Akobo	1.2%	13.9%	60.9%	23.9%		0.1%	0.1%	100.0%	914,674
Ayod	4.4%	13.0%	43.7%	35.5%	0.0%		3.4%	100.0%	1,351,732
Bor	2.0%	9.8%	78.7%	8.9%			0.7%	100.0%	1,420,710
Duk	2.2%	18.0%	60.2%	17.9%	0.0%		1.6%	100.0%	694,280
Fangak	8.4%	9.0%	39.8%	41.5%	0.0%		1.2%	100.0%	763,533
Pigi	6.2%	23.4%	45.3%	24.7%			0.4%	100.0%	442,110
Nyirol	4.0%	32.3%	38.5%	25.0%	0.0%	0.0%	0.1%	100.0%	718,832
Pibor	0.7%	12.6%	65.3%	21.5%	0.0%		0.0%	100.0%	3,369,282
Pochalla	0.0%	10.6%	52.5%	36.8%	0.0%	0.0%	0.1%	100.0%	849,294
Twic East	5.2%	2.5%	60.8%	28.3%	0.0%		3.2%	100.0%	612,771
Uror	2.3%	4.5%	87.1%	6.0%	0.0%		0.0%	100.0%	1,222,829
<b>Total</b>	<b>2.6%</b>	<b>12.6%</b>	<b>61.1%</b>	<b>23.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.8%</b>	<b>100.0%</b>	<b>12,360,047</b>

Source: FAO. 2011. *Land cover atlas of South Sudan*. Rome: FAO.

Legend: AG=Agriculture, TCO=Tree closed-to-sparse, SCO=Shrubs closed-to-sparse, HCO=Herbaceous closed-to sparse, URB=Urban areas, BS=Bare Rocks and Soil, and WAT=Waterbodies.



Location of Central Forest Reserves and land cover in 2009



Source: NBS.

<b>2.5 State Ministry of Livestock and Fisheries (MLF)</b>				
<b>Organogram</b>			<b>Staff</b>	
Minister	Director General	Directorate of Finance and Administration	<b>Section</b>	<b>Number of staff</b>
		Directorate of Livestock Development	<b>Directorate of Finance and Administration</b>	17
		Directorate of Fisheries	<b>Directorate of Livestock Development</b>	24
		Directorate of Extension Research and Training	<b>Directorate of Fisheries</b>	24
			<b>Directorate of Extension, Research and Training</b>	7
			<b>Total</b>	<b>72</b>
Source: State MLF.			Source: State MLF.	
<b>Budget</b>			<b>Strategic plan</b>	
<b>Category</b>	<b>2011/12 Budget</b>	<b>2011/12 Outturn</b>	<b>Jonglei State Strategic plan (2012-17)</b>	
			<b>Mission</b>	
<b>Salaries</b>	(Data not available)	(Data not available)	To make Jonglei the leading state in the facilitation of sustainable wealth creation and economic growth from livestock and fisheries resources by creating the enabling environment required for improved production and productivity through support to public and private investments in infrastructure, technology transfer, capacity building and market access	
<b>Operating</b>	(Data not available)	(Data not available)	<b>Strategic Goal 1</b>	
<b>Transfers</b>	(Data not available)	(Data not available)	Strengthen institutional capacity to guide, supervise, coordinate and monitor all activities in the livestock and fisheries sectors	
<b>Others</b>	(Data not available)	(Data not available)	<b>Strategic Goal 2</b>	
<b>Capital</b>	(Data not available)	(Data not available)	Improved livestock production and productivity through improved technologies and sustainable use of natural resources	
<b>Overall total</b>	(Data not available)	(Data not available)	<b>Strategic Goal 3</b>	
			Facilitate the sustainable management of the fisheries resource for equitable development of the local communities	
			<b>Strategic Goal 4</b>	
			Promote the integration of livestock and fish market chain actors into the domestic and regional market	
Source: State MLF. Unit: SSP			<b>Budget</b>	
			(Information not available)	
			<b>Major Activities</b>	
			(Information not available)	
			Source: State MLF.	
<b>Services provided by State MLF and local government</b>				
<b>(Animal production services )</b>				
<ul style="list-style-type: none"> <li>• Animal production services are provided in cooperation with DPs and NGOs.</li> <li>• Provide foreign study opportunities to the staff</li> <li>• Provide veterinary training on CAHWs (Community Animal Health Workers) and sending to Marial Lou and Yei Agricultural Training Centre</li> </ul>				
<b>(Animal health services)</b>				
<ul style="list-style-type: none"> <li>• Provide vaccination and treatment for livestock</li> <li>• Deliver animal health education by the CAHWs (Community Animal Health Workers) to livestock keepers</li> </ul>				

**2.6 Livestock****Service provided National government institutions**

- John Garang Memorial University provides degree courses at the Faculty of Agriculture such as animal production, veterinary science, natural resources and conflict management in the field of animal husbandry.
- The university also provides short courses. (e.g. animal health and production)

**Service provided by DPs and NGOs**

Organisation	Activities	Area	Period
FAO	<ul style="list-style-type: none"> <li>• East Coast Fever campaign was conducted in May 2012.</li> <li>• Provided 50,000 doses of animal drugs</li> <li>• Train CAHWs.</li> </ul>	Jonglei State	2012
VSF Germany and Belgium (Vétérinaires Sans Frontières)	<ul style="list-style-type: none"> <li>• Annual vaccination calendar</li> <li>• Regular cattle treatment</li> <li>• Train stock persons and CAHWs</li> <li>• Deliver poultry and goat restocking programme</li> </ul>	Jonglei State	(Information not available)
John Garang consortium (Catholic Relief Services and Save the children)	<ul style="list-style-type: none"> <li>• Train the State MLF staff on livestock development</li> </ul>	Jonglei State	(Information not available)
USAID	<ul style="list-style-type: none"> <li>• Deliver training for the State MLF staff on animal husbandry.</li> </ul>	(Information not available)	(Information not available)
UN Indian battalion	<ul style="list-style-type: none"> <li>• Provide veterinary services with small charge.</li> </ul>	(Information not available)	(Information not available)

Source: CAMP survey team. 2013.

\*CAHW: Community Animal Health Worker

**Services provided by private sector****(Agro-dealer)**

- There are some private veterinary pharmacies which provide veterinary drugs and technical advice.

**(Slaughter house and auction yard)**

- One private slaughter facility is in Bor town.
- More than 20 private slabs are available in the state.

**Livestock population**

Type of animal	Nyiröl	Pibor	Fanjak	Bor	Twich East	Uror	Ayot	Akobo	Pigi	Duk	Pochalla	Total
<b>Cattle</b>	886,228	600,500	550,650	222,000	95,000	95,000	66,200	52,000	50,000	48,000	8,277	2,673,855
<b>Sheep</b>	309,413	38,000	22,026	500,000	99,000	12,000	6,620	77,567	41,550	300,000	5,918	1,412,094
<b>Goat</b>	87,312	37,000	22,026	50,380	1,550	8,900	73,070	8,783	32,500	25,000	3,411	349,932

Source: State MLF.

**Livestock diseases**

Type of Animal	Type of disease	Outbreak area in last 2 years
Cattle	Haemorrhagic septicaemia	Twic East County (Year information not available)
	Trypanosomiasis, Contagious bovine pleuropneumonia, East Coast fever, Haemorrhagic Septicaemia, Internal and external parasites, Tick-borne disease, Brucellosis, Foot and mouse disease	There was no outbreak in the last 2 years.
Sheep and goat	Contagious caprine pleuropneumonia	Bor County (2013)
	Peste des petits ruminants	Yilol County (2013)
	Clostridium, Internal and external parasites	There was no outbreak in the last 2 years.
Poultry	Newcastle disease	May 2012, May 2013 (Onset of rain season) (County name not available)
	Salmonella, Fowl typhoid, Coccidia, External parasites	There was no outbreak in the last 2 years.
Equine	Wounds, Tetanus	There was no outbreak in the last 2 years.
Canine	Mange, Rabies, External parasites	There was no outbreak in the last 2 years.
Zoonosis	Tuberculosis, Rabies, Brucellosis	There was no outbreak in the last 2 years.

Source: State MLF.

#### Animal health issues

- High morbidity and high mortality rate posed by East Coast fever in Bor County
- Lack of veterinary drugs
- The number of qualified veterinarian is not sufficient for effective animal health services.
- Shortage of veterinary physicians at county levels
- Shortage of means of transport for state MLF staff for providing veterinary services
- Lack of a larger cold chain system for pooling vaccines
- Lack of suitable slaughter slabs at county levels

#### Market

Type of livestock and livestock product	Market
Milk (fresh and sour)	Domestic
Ghee	Domestic
Egg	Domestic
Hide and skin	Neighbouring countries
Cattle, sheep and goat	Domestic

Source: CAMP survey team. 2013.

#### Market price

Item	Unit	Price (SSP) (range)		
		Low season		High season
Milk (fresh)	600 ml	(Data not available)	5 - 5	(Data not available)
Milk (sour)	600 ml	(Data not available)	5 - 5	(Data not available)
Ghee	1 litre	(Data not available)	20 - 20	(Data not available)
Egg	3 pieces	(Data not available)	2 - 2	(Data not available)
Bull (big)	Head	(Data not available)	3,000 - 4,000	(Data not available)
Bull (medium)	Head	(Data not available)	1,000 - 2,000	(Data not available)
Bull (small)	Head	(Data not available)	500 - 1,000	(Data not available)
Bull (castrated)	Head	(Data not available)	3,500 - 4,000	(Data not available)
Heifer	Head	(Data not available)	3,000 - 4,000	(Data not available)
Cow (pregnant)	Head	(Data not available)	4,500 - 6,000	(Data not available)
Goat	Head	(Data not available)	300 - 500	(Data not available)
Sheep	Head	(Data not available)	150 - 300	(Data not available)
Hide	Each	(Data not available)	5 - 5	(Data not available)
Skin	Each	(Data not available)	2 - 2	(Data not available)

Source: CAMP survey team. 2013.

\*This is not a representative sample

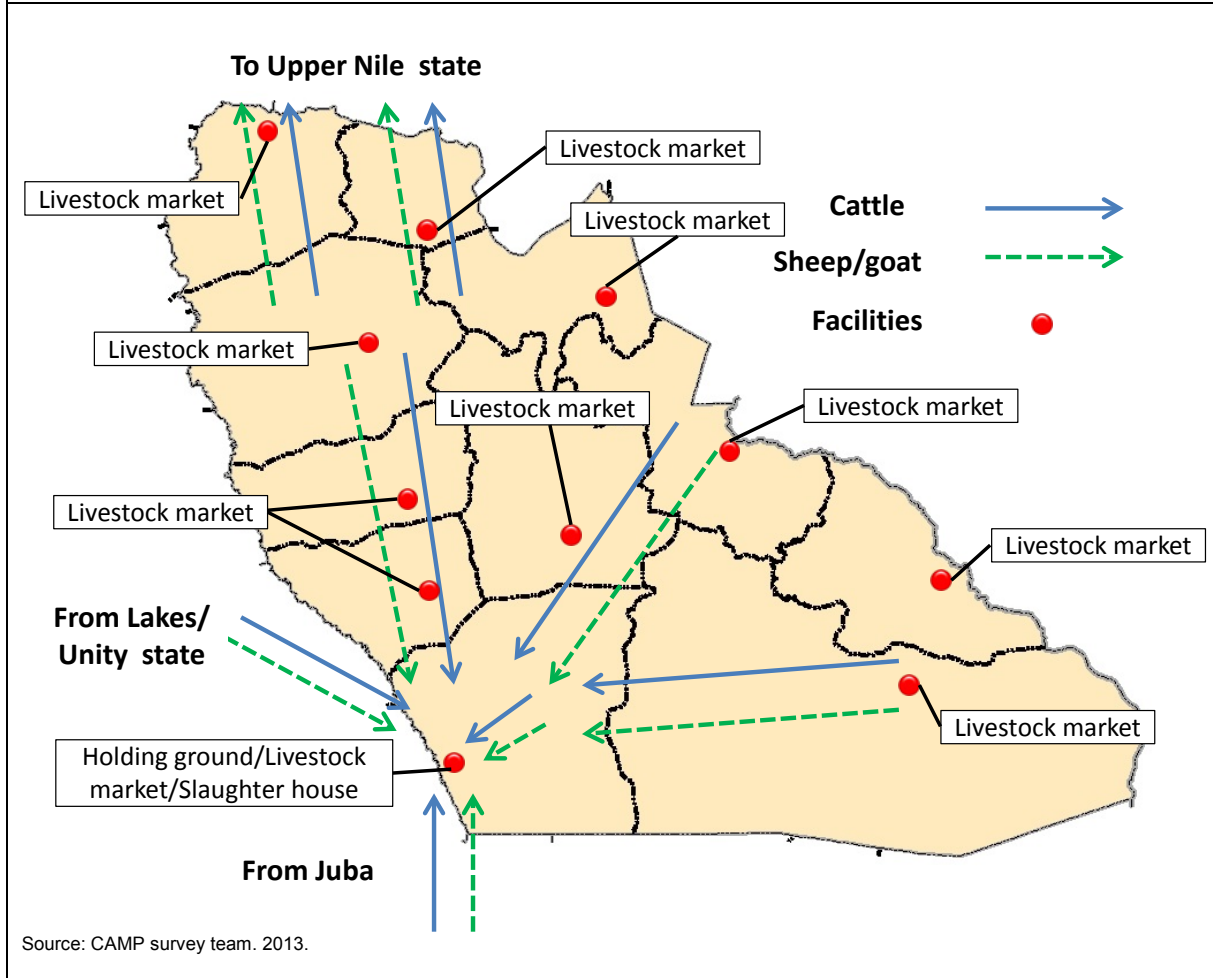
Taxes and charges		
Type	Cost (SSP) (range)	Frequency
Transportation (sheep or goat) per day	40-45	One trip
Transportation (cattle) per day	150	One trip
Slaughtering slab (paid by butchery) per cattle	50	Every slaughtering
Slaughtering slab (paid by butchery) per sheep or goat	5	Every slaughtering

Source: CAMP survey team. 2013.  
\*This is not a representative sample

Major livestock species and products by livelihood zone					
Eastern Flood Plains		Nile-Sobat Rivers		Hills and Mountains	
Type of Animal	Breed	Type of Animal	Breed	Type of Animal	Breed
Cattle	Local	Cattle	Local	Cattle	Local
Sheep and goat	Local	Sheep and goat	Local	Sheep and goat	Local
Poultry	Local	Poultry	Local	Poultry	Local
Donkey	Local	Donkey	Local	Donkey	Local
Pig	Local	Pig	Local	Pig	Local
Livestock products		Livestock products		Livestock products	
<ul style="list-style-type: none"> <li>Meat</li> <li>Hide and skin</li> <li>Egg</li> <li>Milk (Fresh and sour)</li> <li>Ghee</li> </ul>		<ul style="list-style-type: none"> <li>Meat</li> <li>Hide and skin</li> <li>Egg</li> <li>Milk (Fresh and sour)</li> <li>Ghee</li> </ul>		<ul style="list-style-type: none"> <li>Meat</li> <li>Hide and skin</li> <li>Egg</li> <li>Milk (Fresh and sour)</li> <li>Ghee</li> </ul>	

Source: CAMP survey team. 2013.

**Livestock related facilities and trade routes**



<b>Cross-cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• Land boundary issues are found between some pastoralist communities.</li> </ul> <p><b>(Migration)</b></p> <ul style="list-style-type: none"> <li>• Migration is caused by floods, drought and tribal conflicts.</li> </ul> <p><b>(Conflict and insecurity)</b></p> <ul style="list-style-type: none"> <li>• Conflicts, insecurity and raiding are the major cause of migration.</li> <li>• Some raiders have become militarized and politicized, thereby making resolution more difficult.</li> </ul> <p><b>(Gender disparities)</b></p> <ul style="list-style-type: none"> <li>• Gender disparity is enshrined in a lot of issues.</li> <li>• Cultural mind set of Jonglei tribes prohibits girls to attend school to acquire some enlightenment.</li> <li>• Continuous tribal conflicts cause disparity between female and male societies.</li> <li>• Religious and traditional beliefs advocate female inferiority to male.</li> </ul> <p><b>(Drought and floods)</b></p> <ul style="list-style-type: none"> <li>• Natural calamities occur in the Eastern Flood Plains.</li> <li>• More diseases are caused by floods.</li> </ul>
<b>Opportunities</b>
<ul style="list-style-type: none"> <li>• Vast unutilised land</li> </ul>
<b>Challenges</b>
<ul style="list-style-type: none"> <li>• Insufficient capacity of staff</li> <li>• Inadequate funds for providing drugs, vaccines, etc. to livestock keepers</li> <li>• Low livestock production caused by insecurity</li> <li>• Insufficient number of staff for effective extension services</li> <li>• Absence of laws and regulations</li> <li>• Ineffective coordination system between the state and local governments</li> <li>• Unclear roles and responsibilities among the staff</li> <li>• Underdeveloped commercialisation in livestock sector</li> <li>• Feeder roads are not well established for effective livestock trade.</li> </ul>

## 2.7 Fisheries

<b>Numbers of fishing households (ANLA 2012)</b>	62,796	
<b>Fish production</b>	Probably at least 30,000 tonnes. Major fish producing state in South Sudan. Most of the Sudd, a vast wetland is in Jonglei, and is a source of fish. Many of the states' population depend in some way on fish for nutrition, livelihood or income.	
<b>Fish exports</b>	Fish from Jonglei travels to Khartoum when the border is open. Dried and fresh fish also moves to Ethiopia. Dried fish also leaves the state to Juba, Wau, and Western Areas. Transport by boat of fresh fish from Bor to Juba on ice (200 t/yr). Dried fish to Juba fish port at least 400t/yr. Jonglei dried fish is found in markets in every state of the country. Major income earner.	
<b>Fish imports</b>	None	
<b>Seasonality</b>	All year but increases in the wet season, particularly floodplain fisheries	
<b>Landing sites</b>	Bor and small settlements and fishing camps up the Nile, and Akobo and dispersed fishing camps on the Sobat River. Large floodplain fisheries for subsistence to supplement diets.	
<b>Gears</b>	Gill nets, long lines, cast nets, mosquito nets	
<b>Vessels</b>	Planked and dugout canoes, steel canoes and transport vessels	
<b>Marketing</b>	Fish sold fresh if possible but usually dried (plaited). Some smoked but very little firewood in western areas of the state. Problems with drying fish in the wet season leads to losses, as does beetle.	
<b>Informal taxation</b>	The tax is a problem for importers.	

### Aquaculture

There is no aquaculture in the state, though it is being prioritised by both the Padak Training Centre and the State government. Much of the state appears unsuitable due to flooding.

### Post-harvest and marketing



A large proportion of the fish produced in Jonglei is dried. This is a robust product, made by drying and plaiting strips of fish (head off and backbone removed). The photo on the left shows this fish displayed in Juba market. It is transported by boat from Bor, having been consolidated from various landing sites and fishermen by a fish trader. From Juba the fish goes on to retail markets in Juba, and throughout Greater Equatoria. The fish also goes throughout western South Sudan, to WBG and NBG States.

Fresh fish is taken in large fibreglass and foam insulated boxes from Bor to Juba using ice taken from Juba. The Jonglei State Government has attempted to enter into a joint venture using a barge funded by the state but leased to the private sector to enter the fish trading business. Retail fresh fish prices are relatively cheap in Jonglei/Bor. Dried fish prices reflect the prices that can be obtained elsewhere.

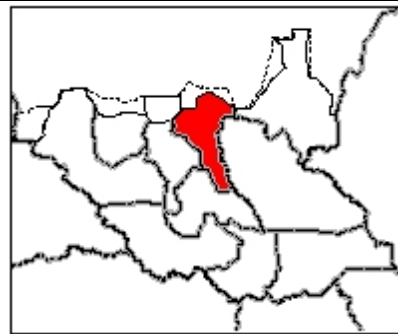
Species	Presentation	SSP/kg	Species	Presentation	SSP/kg
Clarius spp	Dried plaits	41.46	Protopterus spp	Fresh	4.37
Tilapia (unidentified)	Dried plaits	47.64	Tilapia (unidentified)	Fresh	8.92
Clarius spp	Fresh	6.02	Clarius spp	Sun dried	37.40
Distichotus sp	Fresh	3.88	Distichotus sp	Sun dried	27.08
Heterotus niloticus	Fresh	8.08			



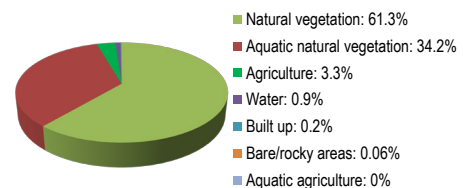


### 3 Unity State (Capital: Bentiu)

3.1 Basic Information	
<b>Population (2008)<sup>a</sup></b>	585,801 (9 <sup>th</sup> ) Male: 300,247 Female: 285,554
<b>Projected population (2013)<sup>b</sup></b>	872,734 (8 <sup>th</sup> )
<b>Area <sup>c</sup></b>	37,890 km <sup>2</sup> (8 <sup>th</sup> )
<b>No. of Counties, Payams and Bomas (2009)<sup>d</sup></b>	9 Counties 74 Payams 269 Bomas
<b>Food secure population (2012)<sup>b</sup></b>	70% (3 <sup>rd</sup> )
<b>Access to improved drinking water (2009)<sup>e</sup></b>	54% (5 <sup>th</sup> )
<b>Literacy rate (15-24 years old) (2009)<sup>e</sup></b>	44% (4 <sup>th</sup> )
<b>Primary school gross enrolment rate (GER) (2010)<sup>f</sup></b>	99% (1 <sup>st</sup> )



Land cover <sup>g</sup>

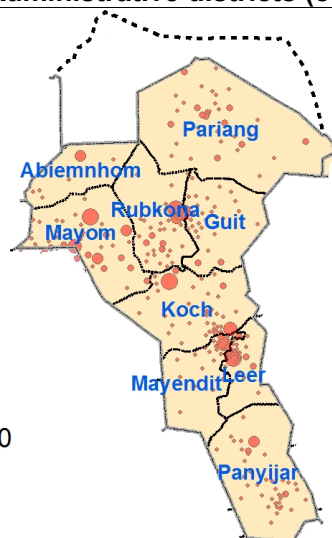
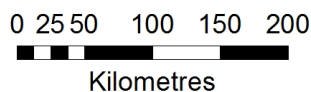


Source: <sup>a</sup> SSCSE. 2010. Southern Sudan Counts: Tables from the 5th Sudan Population and Housing Census, 2008; <sup>b</sup> WFP. 2013. ANLA; <sup>c</sup> FAO. 2011. Land Cover Atlas of the Republic of South Sudan; <sup>d</sup> Original data source of NBS. 2012. NBHS 2009; <sup>e</sup> NBS. 2012. NBHS 2009; <sup>f</sup> MoE. 2010. EMIS; <sup>g</sup> NBS. 2011. South Sudan Statistical Yearbook 2011.

#### Administrative districts (counties)

##### Boma Population

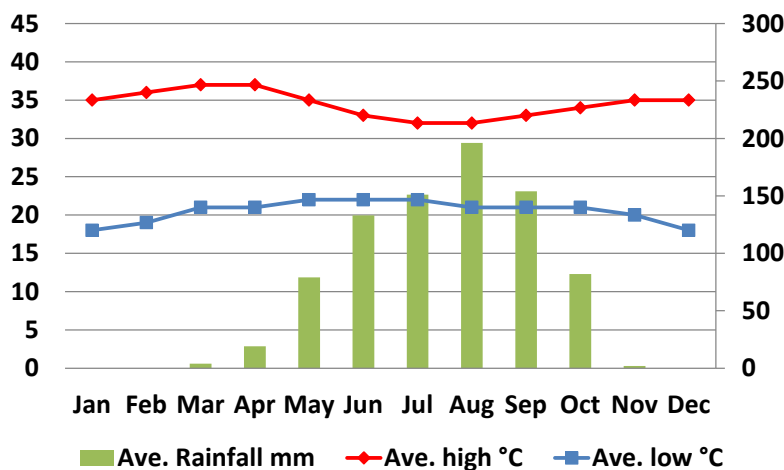
- 1 - 3,000
- 3,001 - 6,000
- 6,001 - 9,000
- 9,001 - 12,000
- 12,001 - 15,762



County	Estimated Population (2013) <sup>a</sup>	Pop. density (ppl/km <sup>2</sup> ) <sup>b</sup>
Mayom	151,287	30.2
Rubkona	131,926	36.6
Pariang	96,474	10.8
Koch	93,050	21.0
Mayendit	75,341	24.5
Panyijar	59,409	11.0
Leer	57,755	35.7
Guit	39,374	11.4
Abiemnhom	28,020	11.7

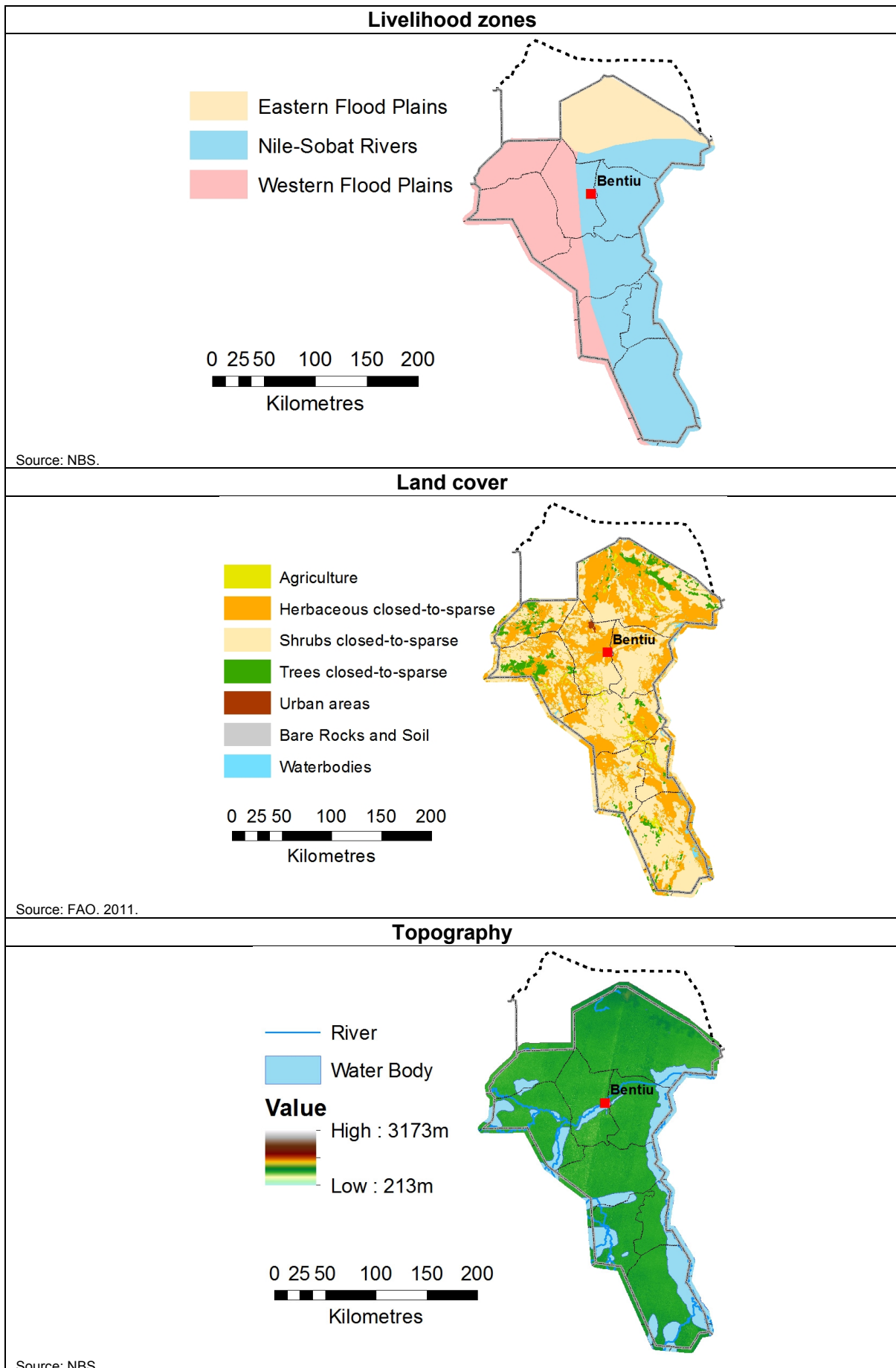
Source: (Map) NBS; (Table) <sup>a</sup> WFP. 2013. ANLA; <sup>b</sup> Land scale data applied from FAO. 2011. Land Cover Atlas of the Republic of South Sudan.

#### Climate chart (Bentiu)

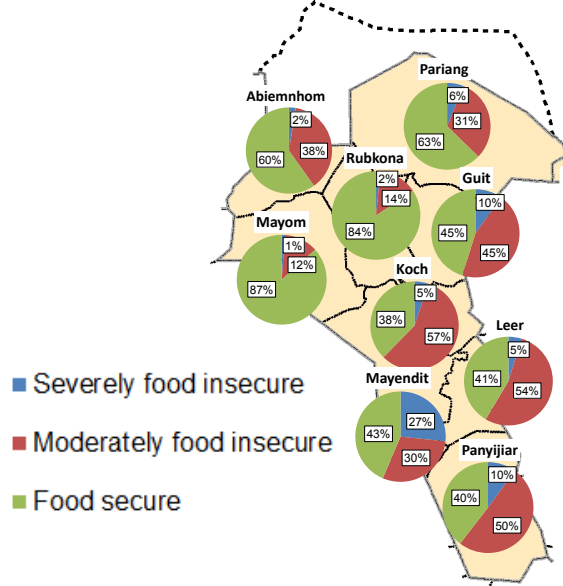


Annual ave. high temp.	34.4°C
Annual ave. low temp.	20.3°C
Average temperature	27.4°C
Ave. annual precipitation	820mm

Source: Climatedata.eu. 2013. Climate Bentiu.  
<http://www.climatedata.eu/climate.php?loc=suzz0021&lang=en> (accessed on 25<sup>th</sup> August 2013).

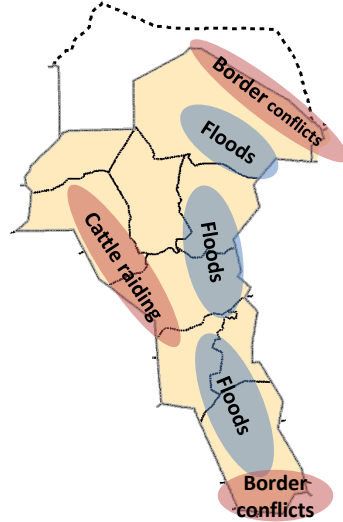


### Estimated food security status by county (2013)



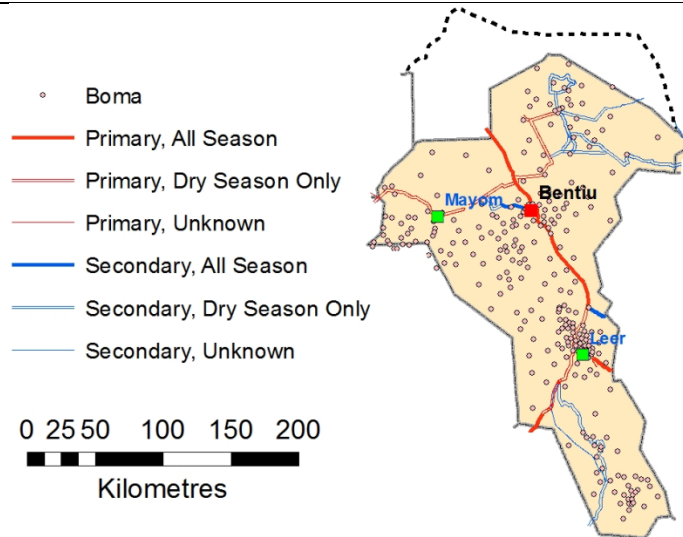
Source: WFP. 2013 .ANLA.

### Insecurity and natural disaster



Source: CAMP survey team 2013.

### Road and Boma location



Source: Road (WFP. 2013), Boma location (NBS).

<b>3.2 State Ministry of Agriculture and Forestry (MAF)</b>																																																					
<b>Organogram</b>		<b>Staff</b>																																																			
<pre> graph TD     Minister --&gt; DG[Director General]     DG --&gt; DF[Directorate of Forestry]     DG --&gt; DA[Directorate of Agriculture]     DG --&gt; DPB[Directorate of Planning and Budgeting]     DG --&gt; DAF[Directorate of Administration and Finance]           </pre>		Breakdown of information not fully available <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Section</th> <th style="text-align: center;">Number of staff</th> </tr> </thead> <tbody> <tr> <td><b>Directorate of Forestry</b></td> <td style="text-align: right;"><b>38</b></td> </tr> <tr> <td>Department of Community Forest</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Forestation and Natural Forest</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Plant Research</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Forest Utilization and Saw</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Survey and Inventory</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Directorate of Agriculture</b></td> <td style="text-align: right;"><b>13</b></td> </tr> <tr> <td>Department of Mechanization</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Horticulture</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Extension</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Plant Protection</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Crops Production</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Directorate of Planning and Budgeting</b></td> <td style="text-align: right;"><b>5</b></td> </tr> <tr> <td>Department of Monitoring and Evaluation</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of IT</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Statistics</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Research</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Training</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Directorate of Administration and Finance</b></td> <td style="text-align: right;"><b>13</b></td> </tr> <tr> <td>Department of Procurement</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Human Resources</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Finance</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Personnel</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Total</b></td> <td style="text-align: right;"><b>69</b></td> </tr> </tbody> </table>		Section	Number of staff	<b>Directorate of Forestry</b>	<b>38</b>	Department of Community Forest	(-)	Department of Forestation and Natural Forest	(-)	Department of Plant Research	(-)	Department of Forest Utilization and Saw	(-)	Department of Survey and Inventory	(-)	<b>Directorate of Agriculture</b>	<b>13</b>	Department of Mechanization	(-)	Department of Horticulture	(-)	Department of Extension	(-)	Department of Plant Protection	(-)	Department of Crops Production	(-)	<b>Directorate of Planning and Budgeting</b>	<b>5</b>	Department of Monitoring and Evaluation	(-)	Department of IT	(-)	Department of Statistics	(-)	Department of Research	(-)	Department of Training	(-)	<b>Directorate of Administration and Finance</b>	<b>13</b>	Department of Procurement	(-)	Department of Human Resources	(-)	Department of Finance	(-)	Department of Personnel	(-)	<b>Total</b>	<b>69</b>
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<b>Budget</b>		<b>Strategic plan</b>																																																			
<b>Category</b>	<b>2011/12 Budget</b>	<b>2011/12 Outturn</b>	<b>2012/13 Budget</b>																																																		
<b>Salaries</b>	(Data not available)	(Data not available)	80,300																																																		
<b>Operating</b>	(Data not available)	(Data not available)	18,000																																																		
<b>Transfers</b>	(Data not available)	(Data not available)	14,162																																																		
<b>Others</b>	(Data not available)	(Data not available)	-																																																		
<b>Capital</b>	(Data not available)	(Data not available)	-																																																		
<b>Overall total</b>	(Data not available)	(Data not available)	112,462																																																		
Source: State MAF. Unit: SSP		<b>Unity State Strategic plan (2012-15)</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 15%;">Objective</td> <td>To increase crop production and land/vegetation to ensure food security and improve livelihoods and income generation for the people of Unity State.</td> </tr> <tr> <td>Budget</td> <td>131,000 (SSP)</td> </tr> <tr> <td>Plan</td> <td>(Information not available)</td> </tr> <tr> <td>Activities</td> <td> <ul style="list-style-type: none"> <li>• Protect the homeland from desertification</li> <li>• Provide shade, shelter and fruit production in Bentiu town</li> <li>• Promote vegetable and fruit production</li> <li>• Promotion of peace among farmers</li> </ul> </td> </tr> </tbody> </table>		Objective	To increase crop production and land/vegetation to ensure food security and improve livelihoods and income generation for the people of Unity State.	Budget	131,000 (SSP)	Plan	(Information not available)	Activities	<ul style="list-style-type: none"> <li>• Protect the homeland from desertification</li> <li>• Provide shade, shelter and fruit production in Bentiu town</li> <li>• Promote vegetable and fruit production</li> <li>• Promotion of peace among farmers</li> </ul>																																										
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<b>Services provided by State MAF and local government</b>																																																					
<p><b>(Technical Advice)</b></p> <ul style="list-style-type: none"> <li>• Technical advice is delivered to farmers but the extension officers are able to cover only limited areas due to insufficient numbers of deployed staff.</li> </ul> <p><b>(Seeds and tools provision)</b></p> <ul style="list-style-type: none"> <li>• Seeds and tools are rarely provided due to the insufficient budget. Instead, the National MAFCRD and NGOs support the provision services.</li> </ul> <p><b>(Demo farms and field day= visit to field to share best agricultural practice)</b></p> <ul style="list-style-type: none"> <li>• Demo farms are installed mostly urban areas. Therefore, most farmers are not able to access the demo plots.</li> </ul> <p><b>(Tractor hiring service)</b></p> <ul style="list-style-type: none"> <li>• Some tractors provided by the national ministry are in operation in the state. The charge is SSP 120-200/feddan. The most tractors are not well maintained because the spare parts are not available.</li> <li>• The tractors do not meet farmers' needs and are able to cover only limited areas.</li> </ul>																																																					

### 3.3 Crop

#### Services provided by DPs and NGOs

It is estimated that a limited number of NGOs works in the field of agricultural development. The majority of the DPs and NGOs in the state focus on relief activities for vulnerable groups.

The summary of the activities are shown below:

- World Relief provides seeds, tools and training to extension workers.
- FAO provides seeds and tools.
- UNDP provided one tractor allocated to 10 farmers groups.
- CARE International provides technical advice, seeds and tools to farmers.
- ACTED (Agency for Technical Cooperation and Development) provides seeds and tools to farmers groups and deliver trainings.
- Mercy provides seeds and tools to farmers groups and delivers trainings.
- WFP conducts food for work program.
- World Vision conducts Food for Asset (FFA) program.

\*There are a number of DPs and NGOs in the state. The above information collected by CAMP team is shown as examples.

#### Services provided by private sector

##### (Tractor hiring service)

- Some progressive farmers own tractors which are also used for other farmers after cultivating their own fields.
- Land preparation is often late for the majority of farmers because they have to wait until the progressive farmers complete their land preparation.
- Tractor hiring charge is about SSP 200-300/feddan.

##### (Agro-dealer)

- Seeds and tools suppliers are not found.

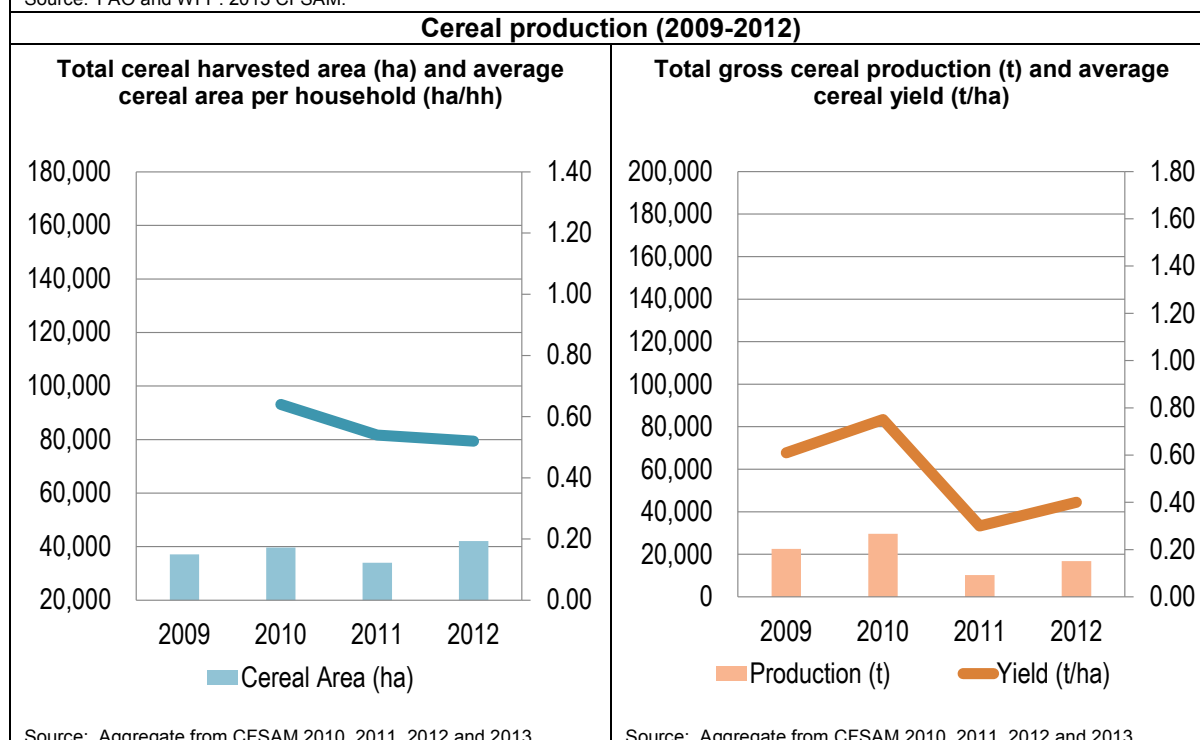
##### (Financial institution)

- No financial services for farmers exist in the state.

Market					
Major agricultural products and their origin (Guit, June 2013)					
<b>(Cereal)</b>			<b>(Others)</b>		
Item	Type	Origin	Item	Type	Origin
Sorghum	Import	Sudan	Onion	Import	Sudan
	Domestic	Unity State		Domestic	-
Maize flour	Import	Uganda			
	Domestic	-			
Rice	Import	India			
	Domestic	-			
Cowpea	Import	Sudan			
	Domestic	-			
Lentil	Import	Turkey			
	Domestic	-			
Source: CAMP survey team 2013. *This not a representative sample.			Source: CAMP survey team 2013. *This not a representative sample.		
Market price (Retail price, Guit, June 2013)					
Item	Unit	Price (SSP) (range)			
		Low season			High season
Sorghum (Domestic)	Sack	Feb-Apr	50 -	80	June-Oct
Maize flour (Import)	1 kg	Year-round	8 -	8	Year-round
Wheat flour (Import)	1 kg	Feb-May	6-7 -	8	June-Dec
Rice (Import)	Sack (50 kg)	Year-round	175 -	175	Year-round
Onion (Import)	Heap	Fab-May	10 -	15	June-Jan
Source: CAMP survey team 2013. *This not a representative sample.					
Transportation cost (Guit, June 2013)					
Type	Unit	Currency	Cost		
From Juba to Bentiu (maize and sorghum)	115 tons	SSP	45,000		
From Renk to Bentiu (maize and sorghum)	185 tons	SSP	40,000		
Source: CAMP survey team 2013. *This not a representative sample.					
Taxes and charges (Guit, June 2013)					
<b>(Wholesaler size 4mx4m)</b>					
Type	Cost (SSP)	Frequency			
(Information not available)	(Information not available)	(Information not available)			
<b>(Retailer)</b>					
Type	Cost (SSP)	Frequency			
Local Tax (per bag)	120-150	Every purchase			
Health card	30	Monthly			
Security fee	3	Weekly			
Cleaning fee	3	Weekly			
Profit tax (Tariff information not available)	250	Every 2 months			
Source: CAMP survey team 2013. *This not a representative sample.					

Crop production		<b>Survey area</b> 
<b>Farming household (%) (2012)</b>	72	
<b>Farming household (No.) (2012)</b>	80,823	
<b>Total cereal area (ha) (2012)</b>	42,092 (10 <sup>th</sup> )	
<b>Cereal gross yield (t/ha) (2012)</b>	0.40 (10 <sup>th</sup> )	
<b>Gross cereal production (t) (2012)</b>	16,837 (10 <sup>th</sup> )	
<b>Average cereal area per household (ha/hh) (2012)</b>	0.52 (10 <sup>th</sup> )	

Source: FAO and WFP. 2013 CFSAM.



Source: Aggregate from CFSAM 2010, 2011, 2012 and 2013.

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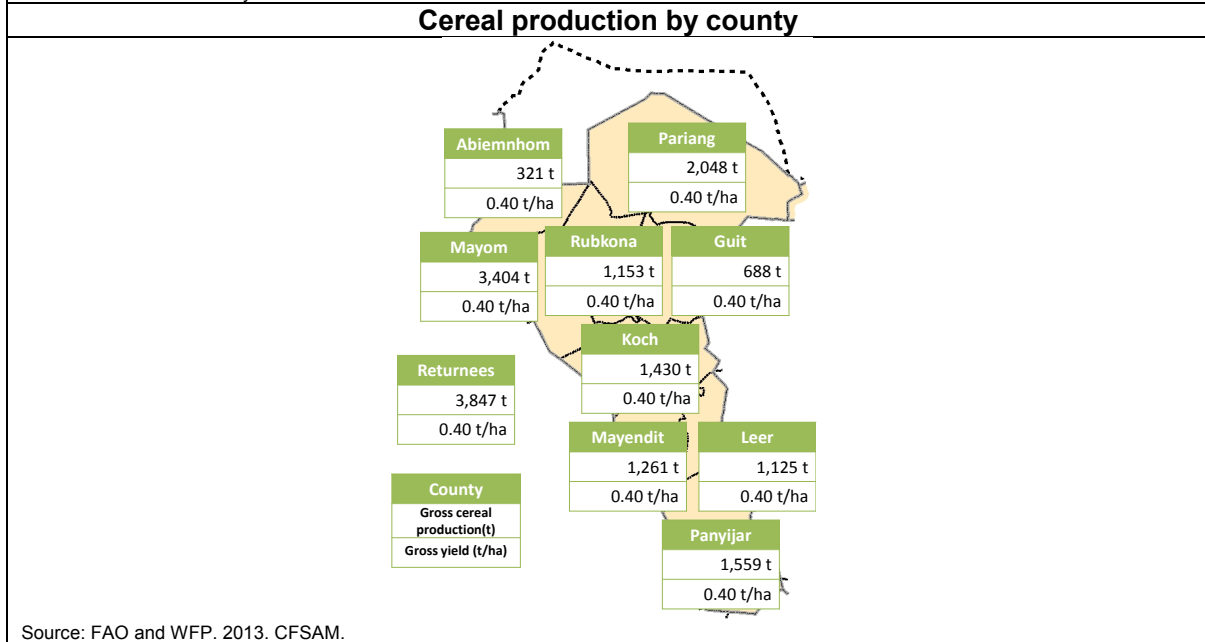
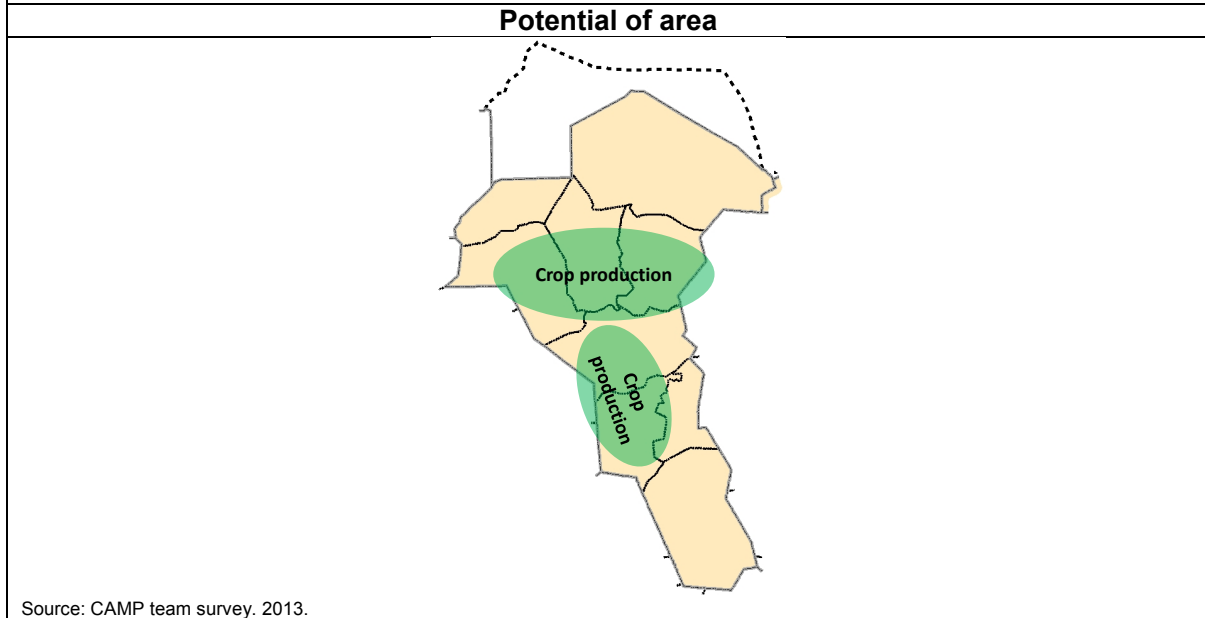
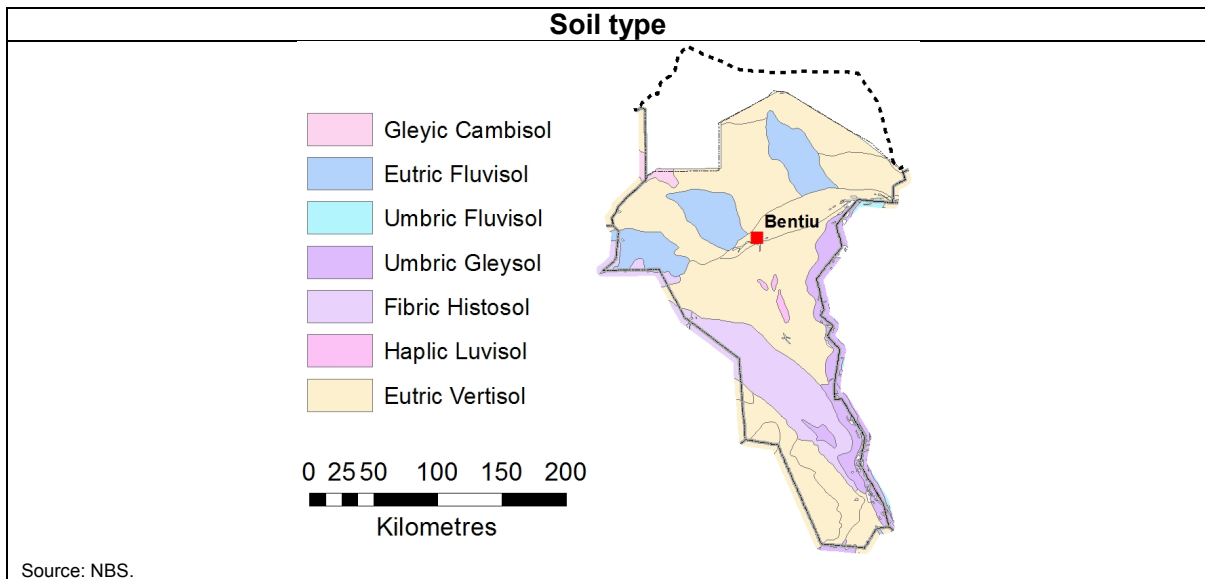
Crop production by livelihood zone					
Western Flood Plains		Nile-Sobat Rivers		Eastern Flood Plains	
Major agricultural products					
<b>Crop</b>	<b>Vegetable</b>	<b>Crop</b>	<b>Vegetable</b>	<b>Crop</b>	<b>Vegetable</b>
Sorghum	Pumpkin	Sorghum	Tomato	Maize	Okra
Maize	Okra	Maize	Pumpkin	Sorghum	Pumpkin
<b>Cash Crop</b>	Jew's mallow	<b>Cash Crop</b>	Okra	<b>Cash Crop</b>	Jew's mallow
Groundnut	Cucumber	Groundnut	Cucumber	Groundnut	Spider plant
Sesame	Tomato	Tobacco		Sesame	
Tobacco		Cowpea		Cowpea	
Cowpea				Tobacco	

Cropping calendar												
Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sorghum			L	L	S	S				H	H	
Maize			L	L	S	S		H	H			
Groundnut			L	L	S	S				H	H	
Sesame			L	L	S	S			H			
Tomato	H		L	S		H	S		H	S		S
Pumpkin			L	S				H	H			
Cowpea			L	S	S		H	H	H	H		
Pumpkin (long)			L	S						H	S	
Rice (NERICA)			L	S			H	H	S			H
Groundnut			L	S			H	S				H
Cassava			L	S							H	H
Sesame			L	S					H			H
Bean			L	S					H			
Tomato	T	L	L	S	T			H	S	T		H
Cabbage			L	S	T				H			

Source: CAMP survey team. 2013.

Source: CAMP survey team. 2013.

**Data not available**





<b>Cross cutting issues</b>	
<b>(Land)</b>	<ul style="list-style-type: none"> <li>• Border conflicts occur along the national border with Sudan.</li> <li>• Land issues at village level are normally solved by the elders.</li> </ul>
<b>(Gender)</b>	<ul style="list-style-type: none"> <li>• Women have equal access to land.</li> <li>• Women tend not to be involved in decision making process at village and household levels.</li> </ul>
<b>(Security)</b>	<ul style="list-style-type: none"> <li>• Cattle-raiding occurs occasionally.</li> <li>• The cattle-raiding is inter-state issue with Warrap, Lakes and Jonglei States.</li> <li>• Border conflicts along the national border with Sudan</li> </ul>
<b>(IDPs and returnees)</b>	<ul style="list-style-type: none"> <li>• The number of returnees is considerable in comparison to the number in other states.</li> <li>• A number of farmers are displaced due to conflicts in Mayom County.</li> </ul>
<b>(HIV)</b>	<ul style="list-style-type: none"> <li>• The State Ministry of Health and NGOs deliver education about sexual transmitted disease to prevent the infection.</li> </ul>
<b>Opportunities</b>	
<b>Overall</b>	<ul style="list-style-type: none"> <li>• Sufficient water resource</li> <li>• Abundant human resources</li> </ul>
<b>Crop</b>	<ul style="list-style-type: none"> <li>• Vast unutilized land</li> <li>• Large low land good for rice production</li> <li>• Flat topography suitable for irrigation</li> </ul>
<b>Challenges</b>	
<b>Overall</b>	<ul style="list-style-type: none"> <li>• Flood and drought occur frequently.</li> <li>• Poor access to financial institutions</li> <li>• High tax rates</li> <li>• High transport costs</li> <li>• High labour costs</li> <li>• Poor infrastructure especially feeder roads</li> <li>• Few financial provider available</li> </ul>
<b>Crop</b>	<ul style="list-style-type: none"> <li>• Low agricultural techniques to produce surplus</li> <li>• Underdeveloped agricultural extension system</li> <li>• Poor access to agricultural inputs (e.g. seeds and tools)</li> </ul>

### 3.4 Forestry

#### On-going and proposed projects

##### List of on-going projects

Project name	Objectives/activities	Duration	Annual cost
Bentiu greening	<ul style="list-style-type: none"> <li>• Protect land from desertification</li> <li>• Increase shade, shelter and fruits by tree plantation</li> </ul>	2 years	SSP 131, 000
Nursery development	Propagate seedlings by Norwegian Peoples' Aid	(Information not available)	(Information not available)

Source: CAMP team survey, 2013.

##### List of proposed projects

Project name	Objectives/activities	Duration	Annual cost
Fruits and vegetable development	Establish tree seedling nursery for tree plantation among communities	(Information not available)	(Information not available)

Source: CAMP team survey, 2013.

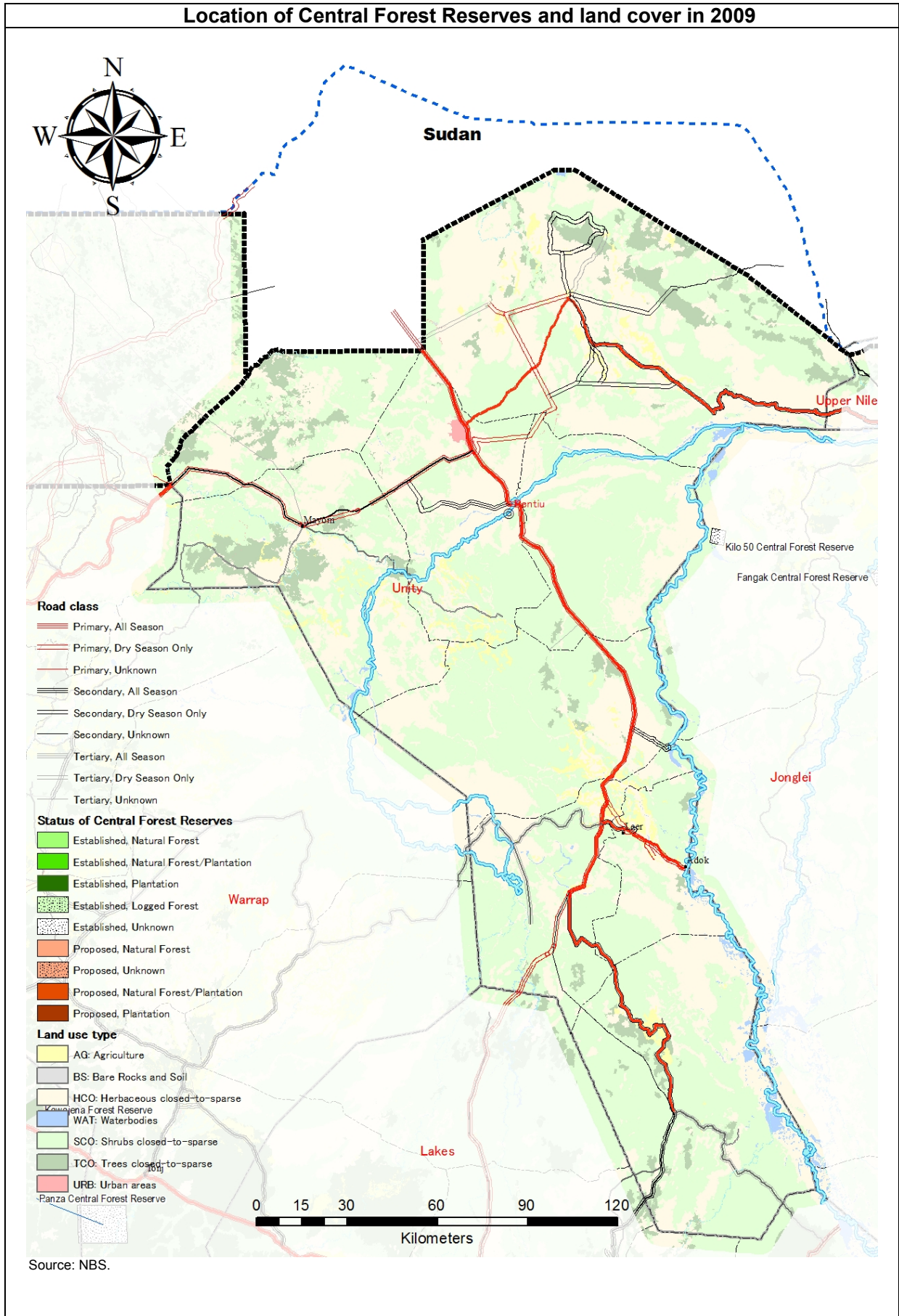
#### Land cover percentage to total area

County	AG	TCO	SCO	HCO	URB	BS	WAT	Total area	Total area (ha)
Abiemnhom	0.9%	15.7%	44.6%	38.8%			0.0%	100.0%	240,003
Guit		0.4%	65.3%	33.9%	0.0%		0.4%	100.0%	343,909
Koch	3.9%	2.6%	60.1%	33.0%			0.3%	100.0%	442,696
Leer	6.6%	1.9%	48.7%	41.8%		0.0%	1.0%	100.0%	161,622
Mayendit	3.4%	1.3%	65.5%	28.9%		0.1%	0.8%	100.0%	307,516
Mayom	6.4%	9.2%	38.9%	44.7%	0.1%	0.0%	0.8%	100.0%	501,600
Panyijar	1.6%	3.7%	65.4%	26.0%	0.0%		3.2%	100.0%	537,675
Pariang	3.9%	7.9%	36.6%	50.9%	0.1%	0.0%	0.7%	100.0%	893,667
Rubkona	3.0%	0.4%	50.8%	43.6%	1.5%	0.5%	0.2%	100.0%	360,317
<b>Total</b>	<b>3.3%</b>	<b>5.2%</b>	<b>51.1%</b>	<b>39.3%</b>	<b>0.2%</b>	<b>0.1%</b>	<b>0.9%</b>	<b>100.0%</b>	<b>3,789,005</b>

Source: FAO, 2011. *Land cover atlas of South Sudan*. Rome: FAO.

Legend: AG=Agriculture, TCO=Tree closed-to-sparse, SCO=Shrubs closed-to-sparse, HCO=Herbaceous closed-to sparse, URB=Urban areas, BS=Bare Rocks and Soil, and WAT=Waterbodies.

Location of Central Forest Reserves and land cover in 2009



<b>3.5 State Ministry of Animal Resources and Fisheries (MARF)</b>																					
<b>Organogram</b>			<b>Staff</b>																		
<pre> graph TD     Minister --&gt; DG[Director General]     DG --&gt; DF[Directorate Fisheries]     DG --&gt; DAP[Directorate of Animal Production]     DG --&gt; DAH[Directorate of Animal Health]     DG --&gt; DAF[Directorate of Administration and Finance]     DG --&gt; DI[Directorate of Information]     DG --&gt; DPB[Directorate of Planning and Budgeting]           </pre> <p>Source: State MARF.</p>			<p>Breakdown of information not fully available</p> <table border="1"> <thead> <tr> <th style="text-align: left;">Section</th> <th style="text-align: right;">Number of staff</th> </tr> </thead> <tbody> <tr> <td><b>Directorate of Fisheries</b></td> <td style="text-align: right;"><b>10</b></td> </tr> <tr> <td><b>Directorate of Animal Production</b></td> <td style="text-align: right;"><b>16</b></td> </tr> <tr> <td><b>Directorate of Animal Health</b></td> <td style="text-align: right;"><b>155</b></td> </tr> <tr> <td><b>Directorate of Administration and Finance</b></td> <td style="text-align: right;">-</td> </tr> <tr> <td><b>Directorate of Information</b></td> <td style="text-align: right;">-</td> </tr> <tr> <td><b>Directorate of Planning and Budgeting</b></td> <td style="text-align: right;">-</td> </tr> <tr> <td><b>Unclassified staff</b></td> <td style="text-align: right;"><b>28</b></td> </tr> <tr> <td><b>Total</b></td> <td style="text-align: right;"><b>209</b></td> </tr> </tbody> </table> <p>Source: State MARF.</p>	Section	Number of staff	<b>Directorate of Fisheries</b>	<b>10</b>	<b>Directorate of Animal Production</b>	<b>16</b>	<b>Directorate of Animal Health</b>	<b>155</b>	<b>Directorate of Administration and Finance</b>	-	<b>Directorate of Information</b>	-	<b>Directorate of Planning and Budgeting</b>	-	<b>Unclassified staff</b>	<b>28</b>	<b>Total</b>	<b>209</b>
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<b>Unclassified staff</b>	<b>28</b>																				
<b>Total</b>	<b>209</b>																				
<b>Budget</b>			<b>Strategic plan</b>																		
<b>Category</b>	<b>2011/12 Budget</b>	<b>2011/12 Outturn</b>	<b>2012/13 Budget</b>																		
<b>Salaries</b>	1,215,968	(Data not available)	(Data not available)																		
<b>Operating</b>	320,620	(Data not available)	(Data not available)																		
<b>Transfers</b>	0	(Data not available)	(Data not available)																		
<b>Others</b>	0	(Data not available)	(Data not available)																		
<b>Capital</b>	751,850	(Data not available)	(Data not available)																		
<b>Overall total</b>	2,288,438	(Data not available)	(Data not available)																		
<p>Source: State MARF. Unit: SSP</p>																					
<b>Unity State Strategic plan (2012-15)</b>																					
<b>Objective</b> (Information not available)																					
<b>Budget</b> (Information not available)																					
<b>Plan</b> (Information not available)																					
<b>Activities</b>																					
<ul style="list-style-type: none"> <li>• Mass vaccination campaign</li> <li>• Conduct Livestock Census</li> <li>• Prevention of diseases through surveillance</li> <li>• Facilitation to increase production</li> <li>• Provision of quality vaccines</li> </ul>																					
Source: State MARF.																					
<b>Services provided by State MARF and local government</b>																					
<p><b>(Animal production services)</b></p> <ul style="list-style-type: none"> <li>• Extension services through radio</li> </ul> <p><b>(Animal health services)</b></p> <ul style="list-style-type: none"> <li>• Vaccination service to livestock keepers</li> <li>• Treatment and animal health advice to livestock keepers</li> <li>• Public Health awareness</li> <li>• Drugs on cost recovery program to livestock keepers</li> <li>• Disease inspection and control</li> <li>• Deliver training of CAHWs (Community Animal Health Workers)</li> </ul>																					

**3.6 Livestock****Services provided by National government institutions**

No national government institutions are in the state.

**Services provided by DPs and NGOs**

Organisation	Activities	Area	Period
VSF-Suisse (Vétérinaires Sans Frontières)	<ul style="list-style-type: none"> <li>Capacity building (training of CAHWs and meat inspectors)</li> <li>Provide vaccination and treatment of animals</li> <li>Restock livestock to returnees (most vulnerable)</li> <li>Construction of slaughter facilities, milk collection centres and butcheries in Leer and provision of cold chain</li> <li>Child protection programs</li> </ul>	All counties	17 years since established
FAO	Vaccines supply through the State MARF	All counties	(information not available)
AECOM	<ul style="list-style-type: none"> <li>Vaccination</li> <li>Community awareness on animal health programs</li> </ul>	Rubkona County	(information not available)

Source: CAMP survey team. 2013.

\*CAHW: Community Animal Health Worker

**Services provided by private sector****(Agro-dealer and local private veterinarian)**

- Provide veterinary drugs
- Technical advice
- Awareness
- Animal treatment

**(Slaughter house)**

- (Information not available)

**Livestock population**

Type of Animal	County								
	Rubkona	Koch	Leer	Guit	Mayendit	Mayom	Abiemnhom	Panyijar	Pariang
Cattle	264,800	N/A	48,000	N/A	N/A	N/A	N/A	N/A	N/A
Sheep	65,300	N/A	120,000	N/A	N/A	N/A	N/A	N/A	N/A
Goat	4,500	N/A	150,000	N/A	N/A	N/A	N/A	N/A	N/A
Pig	150	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Donkey	200	N/A	15	N/A	N/A	N/A	N/A	N/A	N/A
Poultry	5,900	N/A	15,000	N/A	N/A	N/A	N/A	N/A	N/A

Source: State MARF.

N/A: Information not available

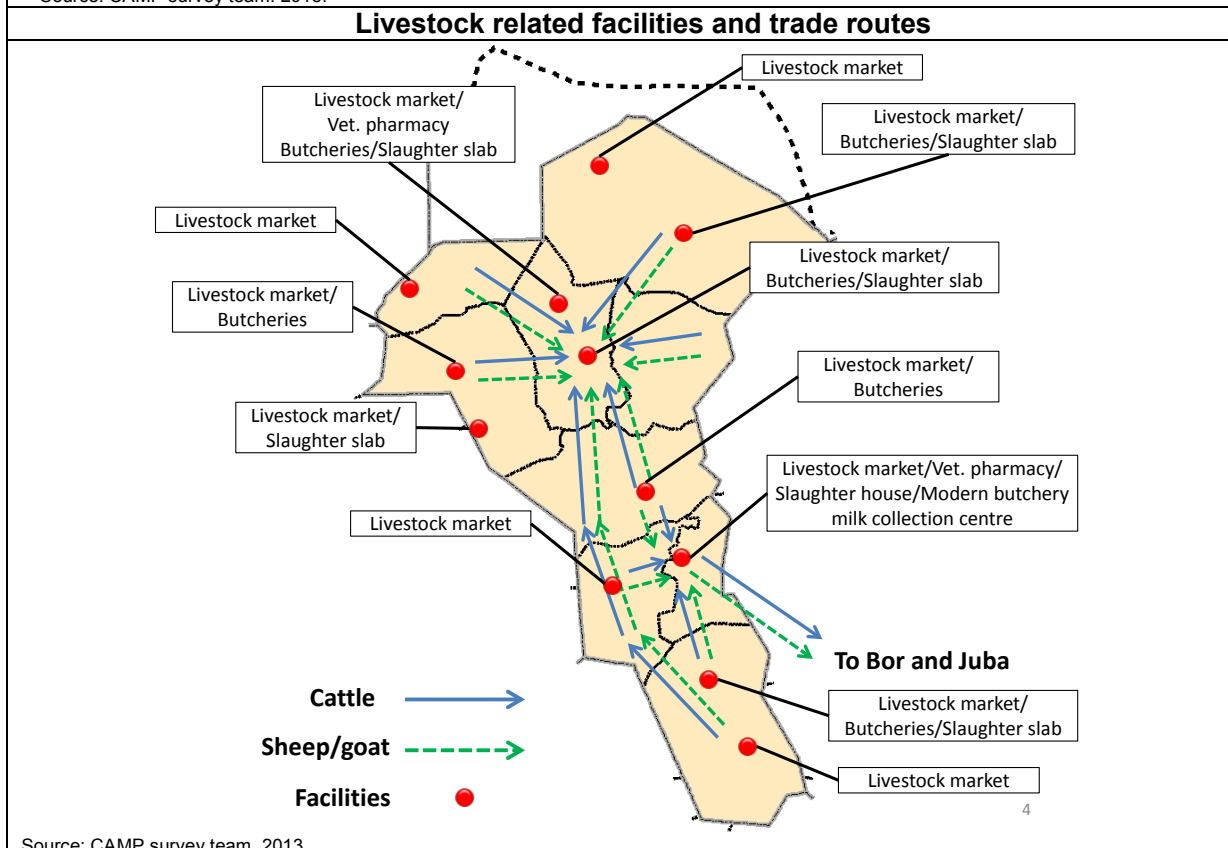
Livestock diseases				
Type of Animal	Type of disease	Outbreak area in last 2 years (2011-2012)		
Cattle	Contagious bovine pleuropneumonia	Panyijar and Leer Counties		
	Haemorrhagic septicaemia	Leer, Koch and Mayom Counties		
	Trypanosomiasis	Pariang and Panyijar Counties		
	Brucellosis	Panyijar and Mayendit Counties		
	Foot and mouth disease	Koch and Leer Counties		
Sheep and goat	Foot rot	There was no outbreak in the last 2 years.		
	Contagious caprine pleuropneumonia	Guit, Mayendit, Rubkona and Mayom Counties		
Poultry	Mange, External and internal parasites	There was no outbreak in the last 2 years.		
	Fowl pox	Abiemnhom, Koch and Panyijar Counties		
	Gumboro disease	Abiemnhom, Leer and Panyijar Counties		
	Newcastle disease, Internal and external parasites	There was no outbreak in the last 2 years.		
Source: State MARF.				
Animal health issues				
<ul style="list-style-type: none"> <li>• Lack of drugs and equipment</li> <li>• Lack of animal health regulations and laws</li> <li>• Insufficient qualified animal health personnel</li> <li>• Lack of offices at the counties</li> <li>• Lack of laboratories for diseases diagnosis</li> <li>• Lack of mobility to deliver services to affected groups</li> </ul>				
Market				
Type of livestock and livestock product	Market			
Cattle	Leer, Rubkona, Mayom (secondary market) Bentiu town (primary market)			
Sheep	Leer, Rubkona (secondary market) Bentiu town (primary market)			
Goat	Leer, Rubkona (secondary market) Bentiu town (primary market)			
Poultry	Bentiu town (primary market)			
Hide and skin	Export to Sudan			
Source: CAMP survey team. 2013.				
Market price				
Item	Unit	Price (SSP)		
		Low season		High season
Bull (big)	Head	(Data not available)	1,500 - 2,000	(Data not available)
Bull (medium)			1,200 - 1,500	
Dry cow			1,500 - 1,700	
Pregnant cow			2,000 - 2,000	
Heifer			600 - 700	
Calf			300 - 300	
Sheep	Head	(Data not available)	80 - 100	(Data not available)
Goat	Head	(Data not available)	150 - 200	(Data not available)
Hen	Each	(Data not available)	20 - 20	(Data not available)
Cock			30 - 30	
Duck (male)			30 - 30	
Duck (female)			50 - 50	
Fresh milk	500 ml	(Data not available)	5 - 5	(Data not available)
Powdered milk	2.5 kg (big can)		90 - 90	
Powdered milk	1.5 kg (small can)		25 - 25	
Powdered milk	sachet		2 - 2	
Meat	1 kg	(Data not available)	20 - 20	(Data not available)
Pile of offal			1 - 1	
Head parts			2 - 2	
Leg			10 - 10	
Meat (Mutton)	1 kg	(Data not available)	40 - 40	(Data not available)
Head parts			5 - 5	
Egg	Each	(Data not available)	2 - 2	(Data not available)
Source: CAMP survey team. 2013.				
*This not a representative sample.				

Taxes and charges			
Type	Cost (SSP)	Frequency	
Warranty	140/cattle sold	Every auction	
County council tax at auction yard	40/cattle sold	Daily	
County council tax at slaughter slab	20/cattle 23/sheep or goat		
Bidder at auction yard	30	Daily	
Inspection fee at slaughter slab collected by veterinary department of the State MARF.	15/sheep or goat 25/cattle	Daily	
At Butcheries:			
• Health certificate	200	Monthly	
• Council tax	15	Daily	
• Operating License by the Chamber of Commerce	600	Annually	

Source: CAMP survey team. 2013.  
\*This is not a representative sample.

Major livestock species and products by livelihood zone			
Western Flood Plains		Ironstone Plateau	
Type of Animal	Breed	Type of Animal	Breed
Cattle	Local	Cattle	Local
Sheep	Local	Sheep	Local
Goat	Local	Goat	Local
Poultry	Local	Poultry	Local
Pig	Local	Pig	Local
Equine (horse and donkey)	Local	Equine (horse and donkey)	Local
Livestock products		Livestock products	
• Meat (beef, mutton, pork and poultry meat)		• Meat (beef, mutton, pork and poultry meat)	
• Milk		• Milk	
• Egg		• Egg	
• Hide and skin		• Hide and skin	

Source: CAMP survey team. 2013.

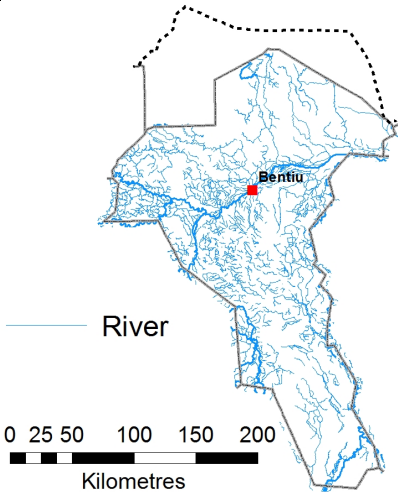


Source: CAMP survey team. 2013.

<b>Cross-cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• With the absence of clear land tenure policy, land issues for livestock infrastructure are recognised.</li> <li>• There is no land for putting up livestock infrastructure.</li> <li>• Some slaughter slabs found on people's land</li> </ul> <p><b>(Migration)</b></p> <ul style="list-style-type: none"> <li>• Seasonal migration in search for pasture and water occur.</li> <li>• Migration routes change depending on pasture and water availability as well as conflict incidence and security threats.</li> </ul> <p><b>(Conflict and insecurity)</b></p> <ul style="list-style-type: none"> <li>• Major conflicts and insecurity in the state in relation to the livestock section are caused by cattle rustling within the state (inter-counties) and across the state border with other communities from neighbouring states.</li> <li>• Other conflicts may arise due to other natural resources-based disputes. (e.g. over pasture and water for livestock)</li> </ul> <p><b>(Gender disparities)</b></p> <ul style="list-style-type: none"> <li>• In Unity State, no gender disparities, but like in many other states where majority are pastoral communities, traditional belief plays an important role in women's rights of participation in keeping and possession of livestock.</li> <li>• According to the traditional norms and belief of communities in Unity State, women participate effectively in daily livestock keeping activities and have great roles.</li> <li>• The tradition does not recognize women having full ownership of livestock. They may keep livestock but it still belongs to their husbands who are the head of the families. Women cannot act or take decision on the utilisation of those resources unless agreed by their husbands.</li> <li>• It is believed that women have rights to do with poultry or sometimes small ruminants. Women can also possess livestock and have full right of decisions only if the husband is dead.</li> <li>• This custom changes recently. With an increase in the number of widows, women tend to own livestock.</li> </ul> <p><b>(Drought and floods)</b></p> <ul style="list-style-type: none"> <li>• Some areas are water scarce during dry season.</li> <li>• The state often has flood damage because it lies between the Western Flood Plains and the Nile-Sobat corridor with most part lying in the world's largest swamps.</li> </ul>
<b>Opportunities</b>
<ul style="list-style-type: none"> <li>• High population of livestock</li> <li>• Emerging livestock potentials (piggery)</li> <li>• High demands for livestock products due to growing human population in the urban areas</li> <li>• Unexploited hides and skins potentials</li> <li>• Vast land with abundant rangelands resources</li> <li>• Fodder crop production (community willing to participate if necessary support given)</li> </ul>
<b>Challenges</b>
<ul style="list-style-type: none"> <li>• Lack of livestock infrastructure, poor roads and other facilities especially at county level (i.e. slaughter house, demonstration farms, processing facilities, organised auctions yards, holding grounds and watering points along the routes)</li> <li>• Lack of capital for livestock improvement</li> <li>• Inadequate qualified staff in the veterinarians and the animal health personnel</li> <li>• Lack of means of mobility</li> <li>• No regular drugs are supplied from the National MARF.</li> <li>• Capacity building for the staff (few training and scholarships opportunities)</li> <li>• Multiple and illegal taxation along the stock trade routes</li> <li>• Natural resources based conflicts and insecurity (cattle rustling)</li> <li>• Water scarcity during dry season (especially in areas far from the River Nile)</li> <li>• Damages by predators (wild animals)</li> </ul>



### 3.7 Fisheries

<b>Numbers of fishing households (ANLA 2012)</b>		23,486	
<b>Fish production</b>	<p>Unknown. Third largest fish producing state after Upper Nile and Jonglei States. Main Nile, Bahr el Ghazal river, other permanent rivers and extensive flood plains. There is no ice availability in the state, limiting the movement of fresh fish.</p>		
<b>Fish exports</b>	<p>Previously fresh and dried north to Sudan by boat and road. Dried fish from Unity goes all over South Sudan, West to WBGS and NBGS by road, and south to Juba by boat and from there on to Greater Equatoria. Small fishes dried also go to WBGS and NBGS particularly for mandesha production.</p>		
<b>Fish imports</b>	<p>A very small amount of Daga'a from Lake Victoria and some Ugandan small pelagics for production of mandesha</p>		
<b>Seasonality</b>	<p>All year but increases in the wet season in the Nile and flood plains, but the river and lake fishery is most active in the dry season.</p>		
<b>Landing sites</b>	<p>26 main landing sites. Cooperatives and fishermen's associations set up by GIZ project.</p>		
<b>Gears</b>	<p>Gill nets, in the Nile, long lines, cast nets. Mosquito nets as scoop nets (Particularly in the floodplain fishery). Lakes and rivers, cover pots, spears and long lines predominate. Poisons reportedly used.</p>		
<b>Vessels</b>	<p>Planked and dugout canoes. (steel canoes used mainly for transport )</p>		
<b>Informal taxation</b>	<p>Miscellaneous levies on transported fish.</p>		
<b>Formal taxation</b>	<p>Done through Fisheries Department. 40% is for the county. 60% goes to the MARF and 20% is for paying volunteers (fisheries officers).</p>		
<b>Investment</b>	<p>Various plans have been made for large investment but they have all come to nothing. Largest investors currently are private traders in dried fish.</p>		

#### Aquaculture

There is no aquaculture in the state.

#### Post-harvest and marketing

Bentiu Town is supplied with fresh fish from Manga and Koch. Dried fish comes from Nile landing sites. Uganda origin fish does not come to Bentiu in any large amounts.

(Photo: Fish from the Nile in Bentiu Libya Market)

Quality locally is good as there is not much storage time, but the dried fish sent to Juba can be affected by beetles and damp; and so deteriorate.

Prices in Bentiu Market (2013) are given below.

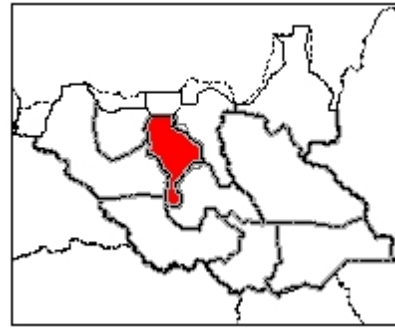


Species	Presentation	SSP/kg	Species	Presentation	SSP/kg
Clarius anguillaris	Dried plaits	48.39	Heterotus niloticus	Dried plaits	38.71
Lates niloticus	Dried plaits	36.52	Tilapia (unidentified)	Dried plaits	48.19
Heterotus niloticus	Fresh	11.69	Mormyrids (other)	Fresh	13.99
Oreochromis niloticus	Fresh	22.68	Tilapia (unidentified)	Fresh	18.43

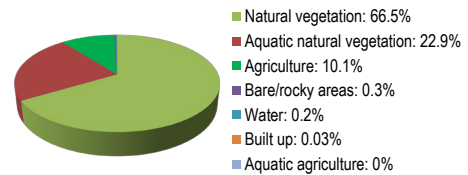


## 4 Warrap State (Capital: Kuajok)

4.1 Basic Information	
Population (2008) <sup>a</sup>	920,045 (4 <sup>th</sup> )* Male: 443,665 Female: 476,380
Projected population (2013) <sup>b</sup>	1,193,365 (3 <sup>rd</sup> )
Area <sup>c</sup>	33,962 km <sup>2</sup> (9 <sup>th</sup> )*
No. of Counties, Payams and Bomas (2009) <sup>d</sup>	6 Counties 47 Payams 139 Bomas
Food secure population (2012) <sup>b</sup>	63% (5 <sup>th</sup> )
Access to improved drinking water (2009) <sup>e</sup>	52% (6 <sup>th</sup> )
Literacy rate (15-24 years old) (2009) <sup>e</sup>	27% (8 <sup>th</sup> )
Primary school gross enrolment rate (GER) (2010) <sup>f</sup>	68% (6 <sup>th</sup> )

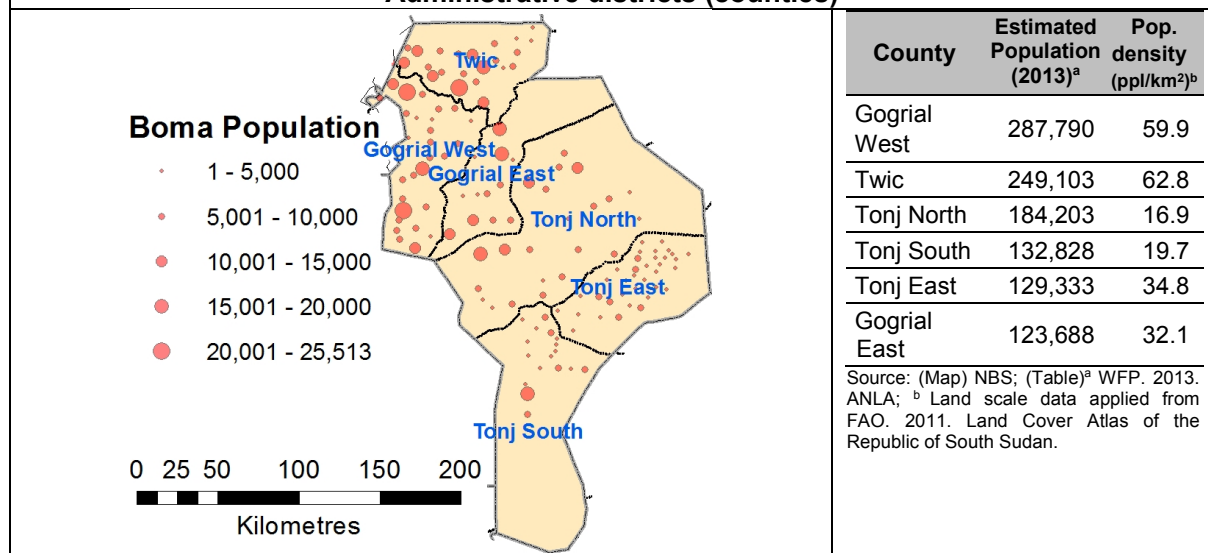


Land cover<sup>g</sup>

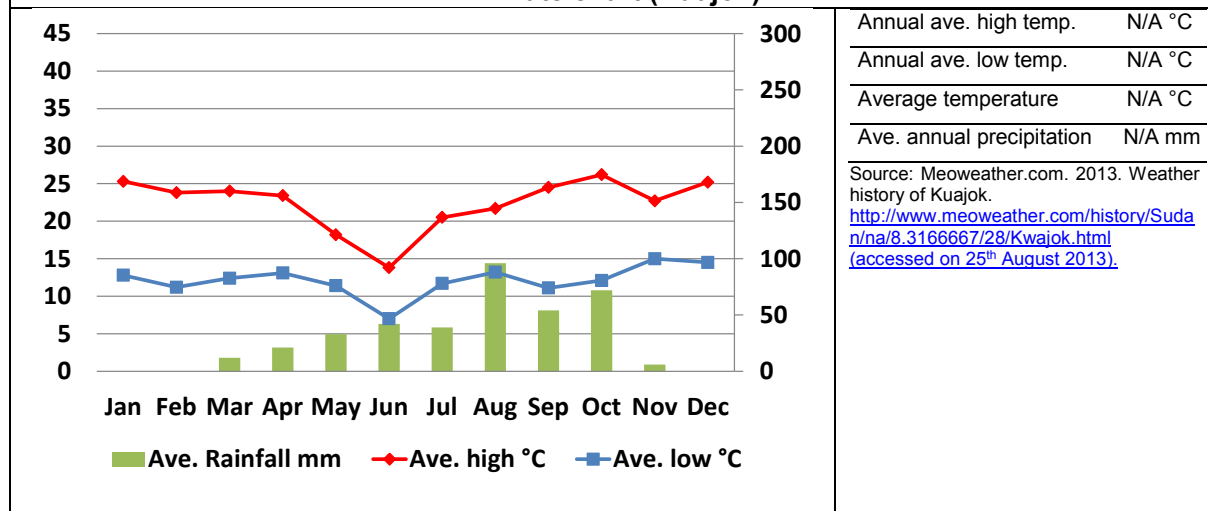


Source: <sup>a</sup> SSCSE. 2010. Southern Sudan Counts: Tables from the 5th Sudan Population and Housing Census, 2008; <sup>b</sup> WFP. 2013. ANLA; <sup>c</sup> FAO. 2011. Land Cover Atlas of the Republic of South Sudan; <sup>d</sup> Original data source of NBS. 2012. NBHS 2009; <sup>e</sup> NBS. 2012. NBHS 2009; <sup>f</sup> MoE. 2010. EMIS; <sup>g</sup> NBS. 2011. South Sudan Statistical Yearbook 2011. \*Data of Abyei excluded.

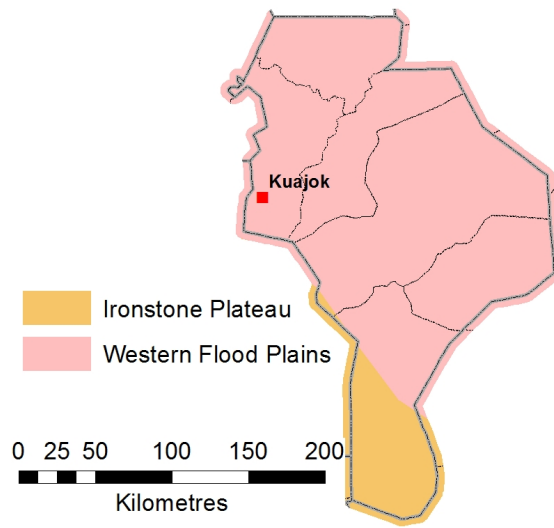
### Administrative districts (counties)



### Climate chart (Kuajok)

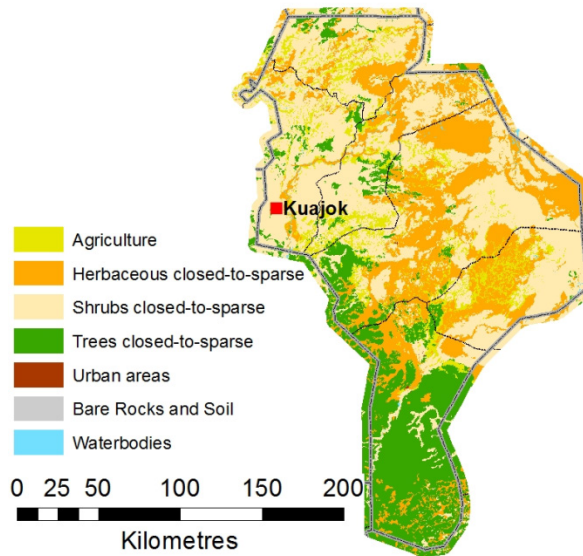


**Livelihood zones**



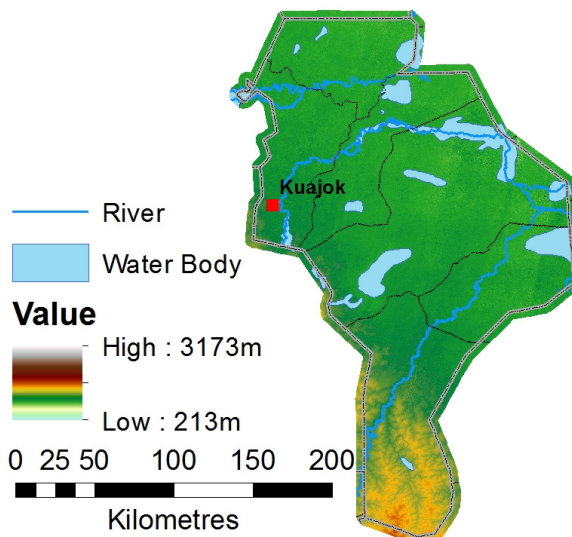
Source: NBS.

**Land cover**



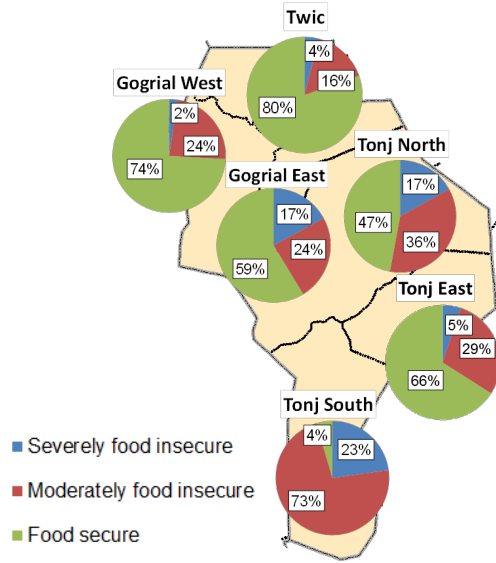
Source: FAO. 2011.

**Topography**



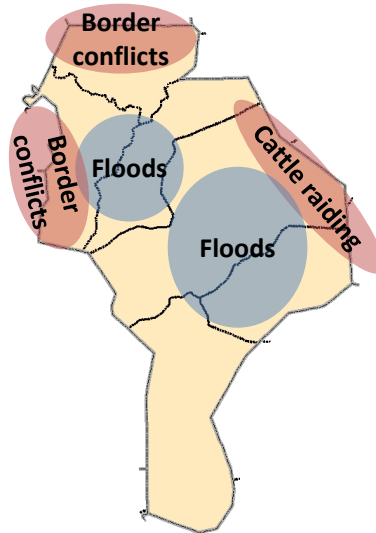
Source: NBS.

### Estimated food security status by county (2013)



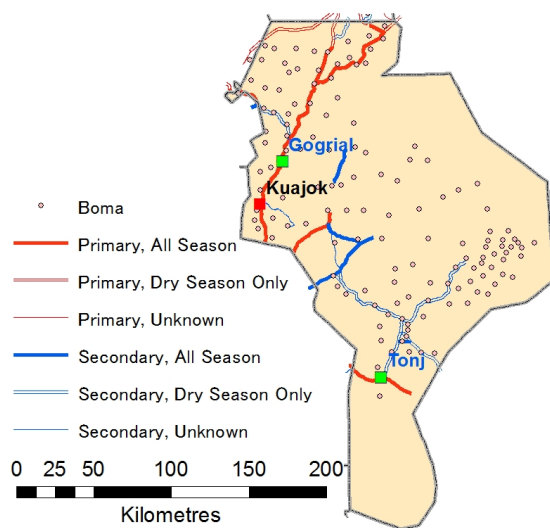
Source: WFP.2013.ANLA.

### Insecurity and natural disaster



Source: CAMP survey team 2013.

### Road and Boma location



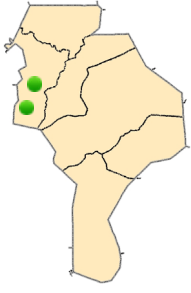
Source: Road (WFP. 2013), Boma location (NBS).

<b>4.2 State Ministry of Agriculture and Forestry (MAF)</b>																																																	
<b>Organogram</b>			<b>Staff</b>																																														
<pre> graph TD     Minister --&gt; DG[Director General]     Minister --&gt; MO[Minister's office]     Minister --&gt; MA[Minister's Advisor]     DG --&gt; DAP[Directorate of Agriculture and Production]     DG --&gt; DF[Directorate of Forestry]     DG --&gt; DPT[Directorate of Planning, Research and Training]     DG --&gt; DAF[Directorate of Administration and Finance]           </pre>			<p>Breakdown of information not fully available</p> <table border="1"> <thead> <tr> <th style="text-align: center;">Section</th> <th style="text-align: center;">Number of staff</th> </tr> </thead> <tbody> <tr> <td><b>Minister's office</b></td> <td style="text-align: center;"><b>8</b></td> </tr> <tr> <td><b>Directorate of Agriculture and Production</b></td> <td style="text-align: center;"><b>54</b></td> </tr> <tr> <td>Department of Agriculture</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Plant Production</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Extension</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Soil Development</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Mechanization</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Horticulture</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Food Security and Inventory</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Directorate of Forestry</b></td> <td style="text-align: center;"><b>30</b></td> </tr> <tr> <td>Department of Afforestation</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Utilisation</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Directorate of Planning, Research and Training</b></td> <td style="text-align: center;"><b>20</b></td> </tr> <tr> <td>Department of Planning</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Research and Training</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Monitoring and Evaluation</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Directorate of Administration and Finance</b></td> <td style="text-align: center;"><b>74</b></td> </tr> <tr> <td>Department of Administration and Finance</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Establishment</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Account</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Procurement</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Total</b></td> <td style="text-align: center;"><b>186</b></td> </tr> </tbody> </table> <p>Source: State MAF.</p>	Section	Number of staff	<b>Minister's office</b>	<b>8</b>	<b>Directorate of Agriculture and Production</b>	<b>54</b>	Department of Agriculture	(-)	Department of Plant Production	(-)	Department of Extension	(-)	Department of Soil Development	(-)	Department of Mechanization	(-)	Department of Horticulture	(-)	Department of Food Security and Inventory	(-)	<b>Directorate of Forestry</b>	<b>30</b>	Department of Afforestation	(-)	Department of Utilisation	(-)	<b>Directorate of Planning, Research and Training</b>	<b>20</b>	Department of Planning	(-)	Department of Research and Training	(-)	Department of Monitoring and Evaluation	(-)	<b>Directorate of Administration and Finance</b>	<b>74</b>	Department of Administration and Finance	(-)	Department of Establishment	(-)	Department of Account	(-)	Department of Procurement	(-)	<b>Total</b>	<b>186</b>
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<p><b>(Technical advice)</b></p> <ul style="list-style-type: none"> <li>• Technical advice is provided mainly by extension officers at county and payam level.</li> </ul> <p><b>(Seed and tool provision)</b></p> <ul style="list-style-type: none"> <li>• Seeds and tools are provided in cooperation with NGOs. (The majority of the farmers use local seeds and traditional tools.)</li> </ul> <p><b>(Demo farm and field day= visit to field to share best agricultural practices)</b></p> <ul style="list-style-type: none"> <li>• Demo farm is installed in some areas.</li> </ul> <p><b>(Tractor hiring)</b></p> <ul style="list-style-type: none"> <li>• State ministries do not provide tractor hiring service.</li> </ul>																																																	

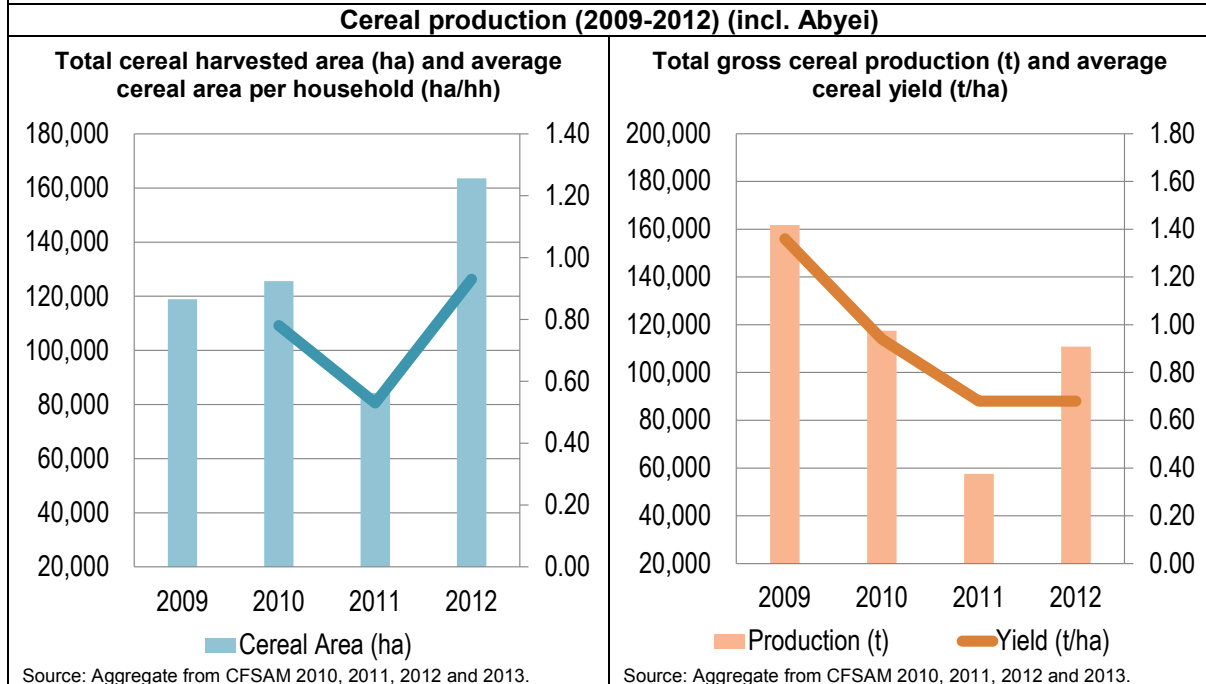
<b>4.3 Crop</b>			
<b>Services provided by DPs and NGOs</b>			
<b>Organisation</b>	<b>Activities</b>	<b>Area</b>	<b>Target</b>
FAO	<ul style="list-style-type: none"> <li>• Agricultural development</li> <li>• Seed and tool provision</li> <li>• IDPs and returnees support</li> </ul>	All counties	Vulnerable groups
World Concern project	<ul style="list-style-type: none"> <li>• Food security</li> <li>• Provision of seeds and tools</li> <li>• Training for farmers</li> <li>• Provision of ox-plough attachment and training</li> </ul>	Gogrial West and East Counties	Vulnerable groups
World Vision	<ul style="list-style-type: none"> <li>• Implement nutrition improvement program</li> </ul>	All counties	Children
International Relief Development	<ul style="list-style-type: none"> <li>• Support agricultural development</li> </ul>	All counties	Farmers union
*There are a number of DPs and NGOs in the state. The above information collected by CAMP team is shown as examples.			
<b>Services provided by private sector</b>			
<p><b>(Tractor hiring service)</b></p> <ul style="list-style-type: none"> <li>• There are few tractor hiring service providers. (SSP 200/feddan for ploughing.)</li> </ul> <p><b>(Agro-dealers)</b></p> <ul style="list-style-type: none"> <li>• Agro-dealers are not found in the state.</li> </ul> <p><b>(Financial institution)</b></p> <ul style="list-style-type: none"> <li>• Financial providers for farmers are not found in the state.</li> </ul>			

<b>Market</b>						
<b>Agricultural products and their origin (Kuajok, May-June 2013)</b>						
<b>(Crop)</b>			<b>(Others)</b>			
<b>Item</b>	<b>Type</b>	<b>Origin</b>	<b>Item</b>	<b>Type</b>	<b>Origin</b>	
Sorghum	Import	Uganda	Tomato	Import	-	
	Domestic	Warrap State		Domestic	Warrap State	
Maize	Import	Uganda	Okra	Import	-	
	Domestic	-		Domestic	Warrap State	
Maize flour	Import	Uganda	Jew's mallow	Import	-	
	Domestic	-		Domestic	Warrap State	
Groundnut	Import	-	Onion	Import	Sudan	
	Domestic	Warrap State		Domestic	-	
Sesame	Import	-				
	Domestic	Warrap State				
Millet	Import	Sudan				
	Domestic	-				
Source: CAMP survey team 2013. *This is not a representative sample.			Source: CAMP survey team 2013. *his is not a representative sample.			
<b>Market price (Retail price, Kuajok, May-June 2013)</b>						
<b>Item</b>	<b>Unit</b>	<b>Price (SSP)</b>				
		<b>Low season</b>				<b>High season</b>
Sorghum (Import)	Sack (50kg)	Dry season	170	-	270	Rainy season
Maize (Import)	Sack (100kg)	Dry season	150	-	300	Rainy season
Maize flour (Import)	Sack (50kg)	Dry season	180	-	250	Rainy season
Tomato (Domestic)	Piece	Rainy season	5	-	5	Dry season
			10 pieces	-	6 pieces	
Okra (Domestic)	Basket	Dry season	45	-	50	Rainy season
Jew's mallow (Domestic)	Basin	Rainy season	15	-	30	Dry season
Source: CAMP survey team 2013. *This is not a representative sample.						
<b>Transportation cost (Kuajok, May-June 2013)</b>						
<b>Type</b>	<b>Unit</b>	<b>Currency</b>	<b>Cost</b>			
Transport cost (Uganda-Kuajok)	Truck	Ush	30,000			
Porterage (on/off loading)	Truck	SSP	1,000			
Source: CAMP survey team 2013. *This is not a representative sample.						
<b>Taxes and charges (Kuajok, May-June 2013)</b>						
<b>(Trader/ retailer)</b>						
<b>Type</b>	<b>Cost (SSP)</b>		<b>Frequency</b>			
Licence	1,000		Annually			
Rent	1,700		Monthly			
Market cleaning fee	30		Monthly			
Police service	30		Monthly			
<b>(Retailer)</b>						
<b>Type</b>	<b>Cost (SSP)</b>		<b>Frequency</b>			
Rent table	40		Monthly			
Market cleaning fee	10-30		Monthly			
Police service	10		Monthly			
Source: CAMP survey team 2013. *This is not a representative sample.						



Crop production		
Farming household (%) (2012) (incl. Abyei)	87	
Farming household (No.) (2012) (incl. Abyei)	175,114	
Total cereal area (ha) (2012) (incl. Abyei)	163,603 (1 <sup>st</sup> )	
Cereal gross yield (t/ha) (2012) (incl. Abyei)	0.68 (7 <sup>th</sup> )	
Gross cereal production (t) (2012) (incl. Abyei)	110,886 (4 <sup>th</sup> )	
Average cereal area per household (ha/hh) (2012) (incl. Abyei)	0.93 (6 <sup>th</sup> )	

Source: FAO and WFP. 2013 CFSAM.

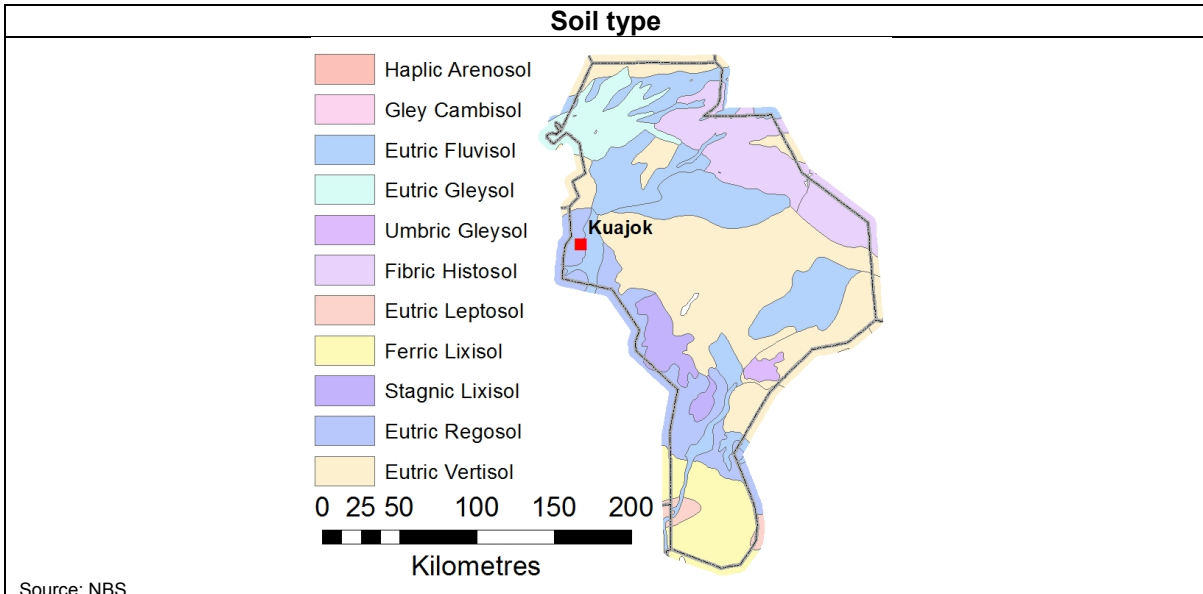


Crop production by livelihood zone																																	
Ironstone Plateau	Western Flood Plains																																
<b>Major agricultural products</b>																																	
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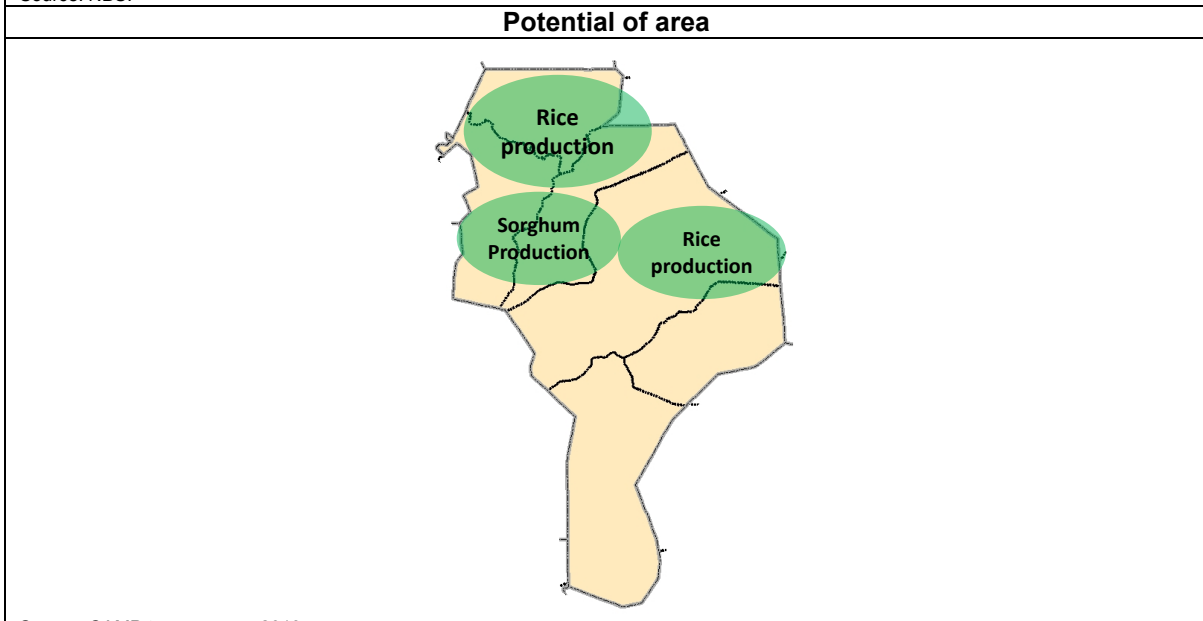
Cropping calendar												
Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maize	H		L	S			H	H	S	S		H
Sorghum (long)	H			L	L	S						
Rice (NERICA)	H		L	S			H	H	S	S		H
Groundnut			L	S			H	S				H
Cassava			L	S							H	H
Sesame				L	S		S	S	H		H	
Bean				L	S		H					
Tomato	T	L	L	S	T		H	S	T			H
Cabbage			L	S	T			H				
	L	L	S	S	T	T	H	H	H	H		

L Land preparation  
 S Sowing  
 T Tansplanting  
 H Harvesting

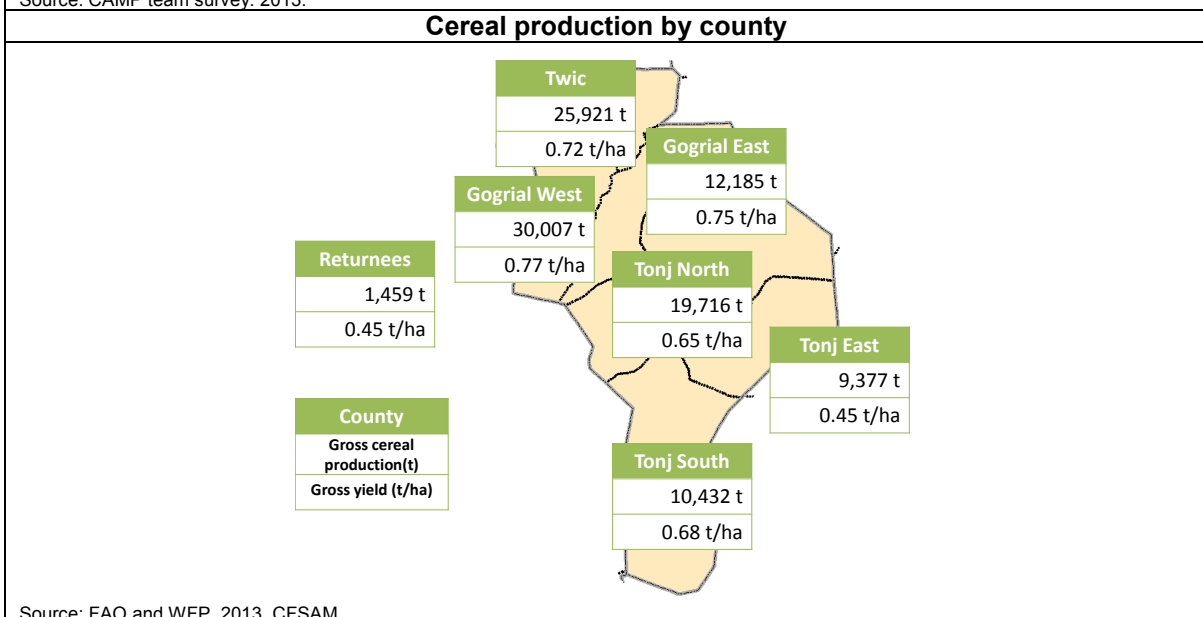
Source: CAMP survey team. 2013.



Source: NBS.



Source: CAMP team survey. 2013.



Source: FAO and WFP. 2013. CFSAM.

<b>Cross cutting issues</b>	
<b>(Land)</b>	<ul style="list-style-type: none"> <li>• Land boundary issues among pastoralists</li> <li>• Conflict along the state borders</li> </ul>
<b>(Gender)</b>	<ul style="list-style-type: none"> <li>• Gender disparities are confirmed in terms of property ownership.</li> </ul>
<b>(Security)</b>	<ul style="list-style-type: none"> <li>• Cattle raiding and tribal conflict occur occasionally.</li> </ul>
<b>(IDPs and returnees)</b>	<ul style="list-style-type: none"> <li>• In general, land is allocated for IDPs and returnees but their living standard is relatively lower than the state average.</li> </ul>
<b>(HIV)</b>	<ul style="list-style-type: none"> <li>• The infection rate has not surveyed.</li> </ul>
<b>Opportunities</b>	
<b>Crop</b>	<ul style="list-style-type: none"> <li>• Vast unutilized land</li> <li>• Suitable soil for cultivation</li> <li>• Abundant labour force</li> </ul>
<b>Challenges</b>	
<b>Overall</b>	<ul style="list-style-type: none"> <li>• Feeder roads are not well established.</li> <li>• Poor access to financial institutions</li> <li>• High tax rates</li> <li>• High transport costs</li> <li>• High labour costs</li> </ul>
<b>Crop</b>	<ul style="list-style-type: none"> <li>• Poor access to agricultural inputs especially improved seeds</li> <li>• Underdeveloped agricultural extension system</li> <li>• No effective pest and disease control methods</li> <li>• Inadequate post-harvest facilities lowers profit of farmers</li> </ul>

#### 4.4 Forestry

##### On-going and proposed projects

##### List of on-going projects

Project name	Objectives/activities	Duration	Annual cost
Bee keeping (funded by GIZ)	Improve framers' livelihood through introduction of bee keeping	Ended in 2013	(Information not available)
Agro-forestry	Introduce and train agro-forestry to famers	(Information not available)	(Information not available)
Afforestation	Develop plantation	(Information not available)	(Information not available)
Central seedling	Propagate seedling for plantation	(Information not available)	(Information not available)

Source: CAMP team survey, 2013.

##### List of proposed projects

Project name	Objectives/activities	Duration	Annual cost
Afforestation	Develop plantation	(Information not available)	(Information not available)
Bee keeping	Generate income for farmers through honey production	(Information not available)	(Information not available)
Agro-forestry	Train farmers on sustainable land use	(Information not available)	(Information not available)

Source: CAMP team survey, 2013.

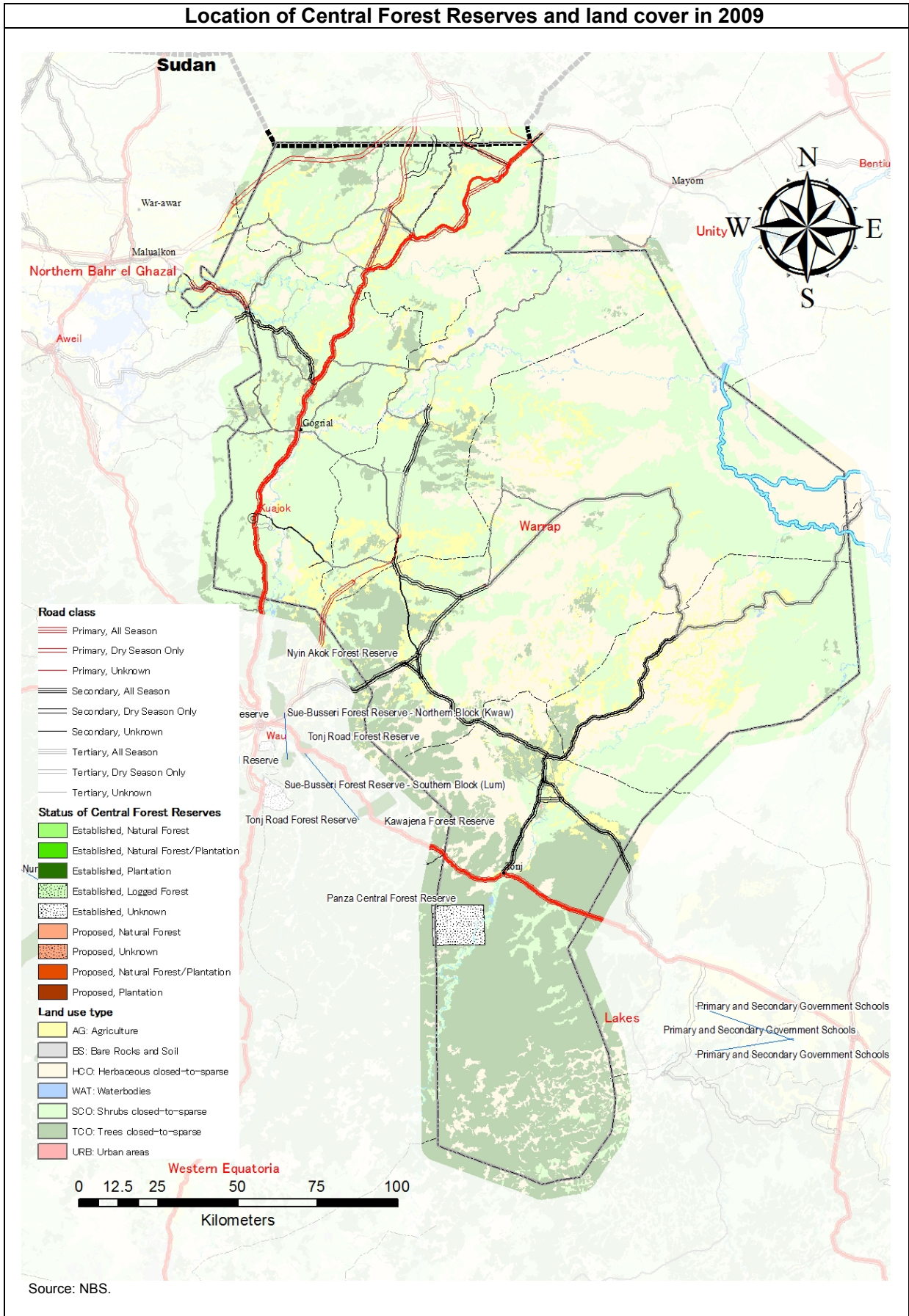
##### Land cover percentage to total area

County	AG	TCO	SCO	HCO	URB	BS	WAT	Total area	Total area (ha)
Gogrial East	23.5%	7.4%	45.1%	23.6%	0.1%		0.4%	100.0%	385,666
Gogrial West	17.3%	8.5%	63.0%	10.6%			0.6%	100.0%	480,375
Tonj East	17.5%	2.0%	47.0%	33.3%			0.2%	100.0%	372,103
Tonj North	9.9%	8.3%	39.4%	42.2%	0.0%	0.0%	0.2%	100.0%	1,088,644
Tonj South	4.5%	64.2%	13.0%	17.9%	0.1%	0.2%	0.2%	100.0%	672,967
Twic	14.1%	5.4%	58.0%	22.5%			0.0%	100.0%	396,444
<b>Total</b>	<b>12.7%</b>	<b>18.3%</b>	<b>41.1%</b>	<b>27.5%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.2%</b>	<b>100.0%</b>	<b>3,396,199</b>

Source: FAO, 2011. *Land cover atlas of South Sudan*. Rome: FAO.

Legend: AG=Agriculture, TCO=Tree closed-to-sparse, SCO=Shrubs closed-to-sparse, HCO=Herbaceous closed-to-sparse, URB=Urban areas, BS=Bare Rocks and Soil, and WAT=Waterbodies.

Location of Central Forest Reserves and land cover in 2009



Source: NBS.

<b>4.5 State Ministry of Animal Resources and Fisheries (MARF)</b>																																		
<b>Organogram</b>			<b>Staff</b>																															
<pre> graph TD     Minister --&gt; DG[Director General]     DG --&gt; D1[Directorate of Finance and Administration]     DG --&gt; D2[Directorate of Livestock Development]     DG --&gt; D3[Directorate of Fisheries]     DG --&gt; D4[Directorate of Extension, Research and Training]                     </pre>			<b>Breakdown of information not fully available</b>																															
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<b>Salaries</b>	2,757,398	(Data not available)	2,757,398																															
<b>Operating</b>	295,158	(Data not available)	41,319																															
<b>Transfers</b>	0	(Data not available)	0																															
<b>Others</b>	10,000	(Data not available)	0																															
<b>Capital</b>	974,335	(Data not available)	409,937																															
<b>Overall total</b>	4,136,891	(Data not available)	3,208,654																															
Source: State MARF. Unit: SSP			<p style="text-align: center;"><b>Warrap State Strategic plan (2012-15)</b></p> <p><b>Objective</b></p> <ul style="list-style-type: none"> <li>• Ensure efficient and effective use of available resources in the achievement of rapid growth of the Sector</li> <li>• Align objectives and initiatives of the State MARF with national policies and strategies</li> <li>• Provide the basis for increased synergies among all actors in the development of the Sector</li> <li>• Provide a basis for monitoring and evaluation</li> </ul> <p><b>Budget</b> (Information not available)</p> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>• Increase livestock production and productivity</li> <li>• Strengthen control of livestock diseases through effective disease surveillance</li> <li>• Improve milk and meat hygiene</li> <li>• Improved diagnosis, treatment, vaccinations, and control of livestock movements</li> <li>• Enhance the empowerment of fisher folk and traders with awareness, skills and organisation in fish production, preservation and marketing</li> <li>• Increase the capacity of fisheries and staff to provide services</li> </ul> <p><b>Activities</b></p> <ul style="list-style-type: none"> <li>• Promote dairy and poultry farming and also hide and skin</li> <li>• Inspect meat at slaughter houses and slabs</li> <li>• Establish diagnostic lab facilities (including the purchase of equipment and consumables)</li> <li>• Carry out vaccination campaigns</li> <li>• Procure and maintain adequate stocks of drugs, vaccines, materials and equipment</li> <li>• Mobilize fishermen and traders into groups and build their capacity</li> <li>• Train fisher folk in the use of new technology in fish production and preservation</li> <li>• Recruit and train fisheries staff (long and short term)</li> </ul>																															
			Source: State MARF.																															
<b>4.6 Livestock</b>																																		
<b>Services provided by State MARF and local government</b>																																		
<p><b>(Animal production services)</b></p> <ul style="list-style-type: none"> <li>• Provide technical advice</li> <li>• Operating slaughter house</li> <li>• Supervise auction yard, butcheries and milk associations</li> <li>• Provide training for extension workers</li> </ul> <p><b>(Animal health services)</b></p> <ul style="list-style-type: none"> <li>• Provide treatment and vaccination to livestock keepers</li> <li>• Provide community dialogues and awareness</li> </ul>																																		

- Deliver training for CAHWs (Community Animal Health Workers)

#### Services provided by National government institutions

Organisation	Activities	Target	Period
Marial Lou Livestock Training Centre	Training	Animal Health Auxiliary	5 months
	Training	Stock Persons	4 months

\*Certificate courses also exist in subjects of animal health auxiliary, animal husbandry, livestock extension, and outreach.

Source: CAMP survey team. 2013.

#### Service provided by DPs and NGOs

Organisation	Activities	Area	Period
CONCERN International	<ul style="list-style-type: none"> <li>• Silage making for livestock keepers</li> </ul>	Warrap	1 week
VSF (Vétérinaires Sans Frontières) - Belgium	<ul style="list-style-type: none"> <li>• Install restocking programme for vulnerable groups</li> </ul>	Marial Lou	(Information not available)
VSF (Vétérinaires Sans Frontières) - Germany	<ul style="list-style-type: none"> <li>• Provide veterinary drugs</li> <li>• Deliver trainings to CAHWs</li> <li>• Organise poultry groups</li> </ul>	(Information not available)	(Information not available)

Source: CAMP survey team. 2013.

\*1 There are a number of DPs and NGOs in the State. The above information collected by CAMP team is shown as examples.

\*2 CAHW: Community Animal Health Worker

#### Services provided by private sector

##### (Agro-Vet. dealer)

- Provide veterinary drugs and technical and practical information

##### (Slaughter house)

- Manage slaughter house

##### (Auction yard)

- Provide quality control for slaughtering animals in cooperation with veterinary personnel

##### (Milk association)

- The association is mainly managed by women.
- Provide milk collection and processing (filtering and boiling) services

#### Livestock population

Type of Animal	Population in the state
Cattle	3 million (estimate)
Sheep and goat	2 million (estimate)
Poultry	4 million (estimate)
Duck	2,000 (estimate)
Donkey	900 (estimate)
Pig	144 (estimate)

Source: CAMP survey team. 2013.

Livestock diseases		
Type of Animal	Type of disease	Outbreak area in last 2 years
Cattle	Black quarter	Tonj North County (Year information not available)
	Haemorrhagic septicaemia, Anthrax, Contagious bovine pleuropneumonia, Ticks	There was no outbreak in the last 2 years.
Goat	Peste des petits ruminants, Mange, Internal and external parasites, Ticks	There was no outbreak in the last 2 years.
Sheep	Contagious caprine pleuropneumonia, Internal and external parasites, Ticks	There was no outbreak in the last 2 years.
Poultry	Newcastle disease, Gumboro disease, Foul pox, Internal and external parasites	There was no outbreak in the last 2 years.
Zoonosis	Rabies	Gogrial West County (Year information not available)
	Tuberculosis, Brucelosis	There was no outbreak in the last 2 years.

Source: CAMP survey team. 2013.

Animal health issues
<ul style="list-style-type: none"> <li>Limited drugs, vaccines and equipment</li> <li>Low numbers of CAHWs</li> <li>CAHWs are not well equipped and not active.</li> <li>Delay in vaccines provision due to poor communication</li> <li>Services are not provided on time due to poor infrastructure especially roads.</li> </ul> <p>*CAHW: Community Animal Health Worker</p>

Market	
Type of livestock and livestock product	Market
Cattle	All counties
Sheep and goat	All counties
Poultry	All counties

Source: CAMP survey team. 2013.

Market price						
Item	Unit	Price (SSP) (range)				
		Low season				High season
Cattle	Head	Rainy season	700-1,000	-	1,500-3,000	Dry season
Calf	Head	Rainy season	200	-	300	Dry season
Sheep or goat	Head	Rainy season	200-250	-	300-500	Dry season
Meat (beef)	1 kg	Rainy season	15	-	20	Dry season
Meat (sheep and goat)	1 kg	Rainy season	20	-	30	Dry season
Chicken	Chicken	Rainy season	30-40	-	40-60	Dry season
Milk (fresh)	600ml	Rainy season	10	-	15	Dry season
Egg	Each	Rainy season	1	-	2	Dry season

Source: CAMP survey team. 2013.  
\*This is not a representative sample.

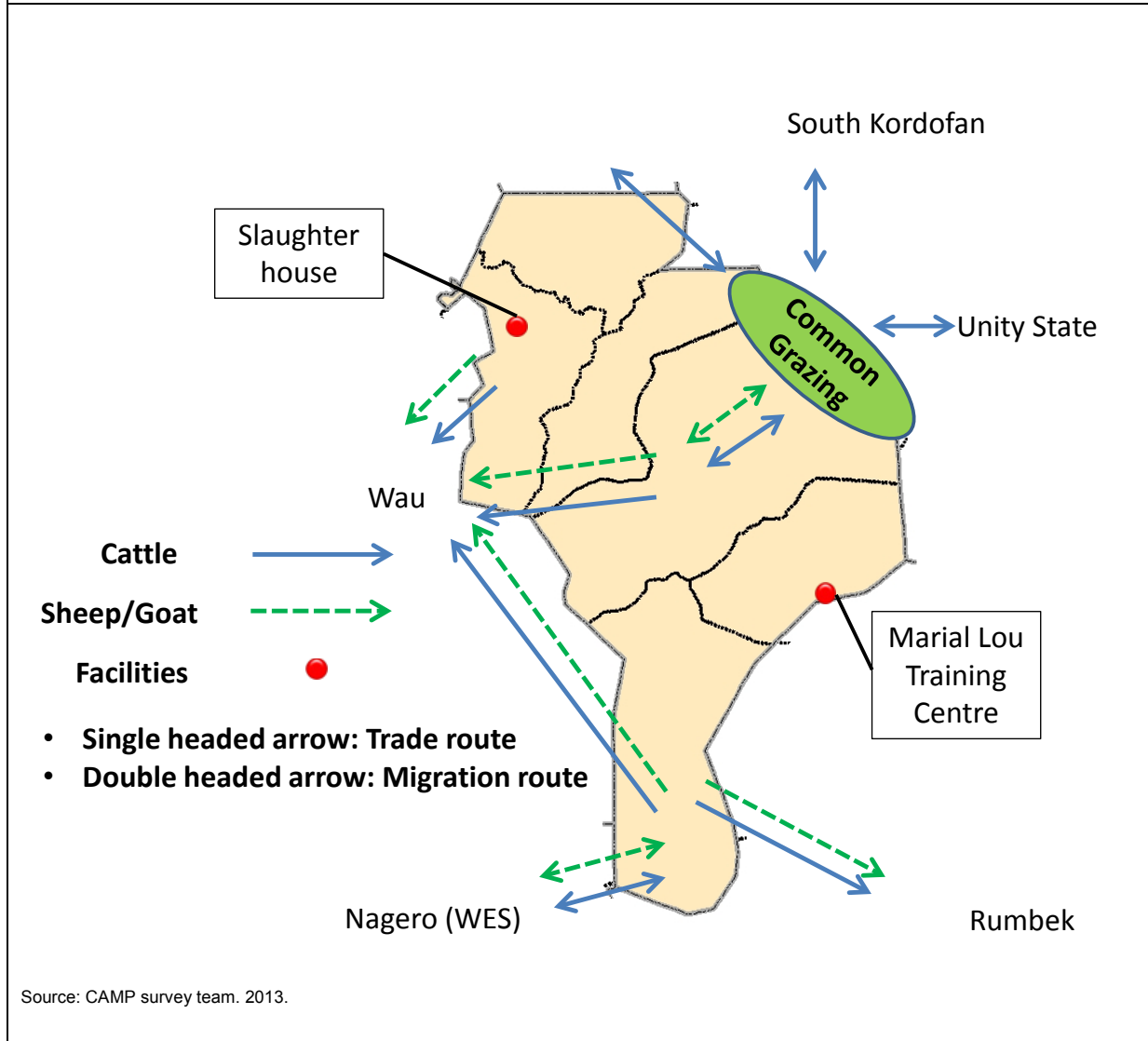


Taxes and charges		
Type	Cost (SSP)	Frequency
(Information not available)	(Information not available)	(Information not available)

Major livestock species and products by livelihood zone			
Ironstone Plateau		Western Flood Plains	
Type of Animal	Breed	Type of Animal	Breed
Bull	Local zebu	Bull	Local zebu
Cow	Local zebu	Cow	Local zebu
Heifer and calf	Local zebu	Heifer and calf	Local zebu
Goat	Local	Goat	Local
Sheep	Local	Sheep	Local
Livestock products		Livestock products	
<ul style="list-style-type: none"> <li>Meat</li> <li>Hide and skin</li> <li>Egg</li> <li>Milk and yoghurt</li> </ul>		<ul style="list-style-type: none"> <li>Meat</li> <li>Hide and skin</li> <li>Egg</li> <li>Milk and yoghurt</li> </ul>	

Source: CAMP survey team. 2013.

**Livestock related facilities and trade routes**

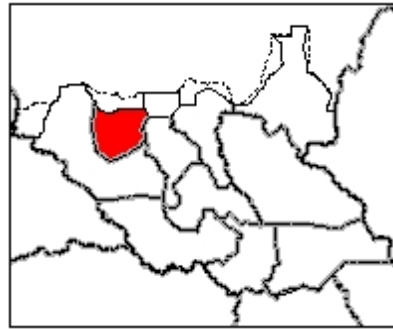


Source: CAMP survey team. 2013.

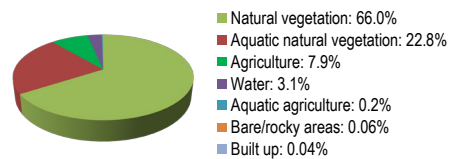
<b>Cross-cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• Competition over common grazing area along state border with Unity State and international border</li> </ul> <p><b>(Migration)</b></p> <p>Following cattle movements are confirmed.</p> <ul style="list-style-type: none"> <li>• Misseriya people from Sudan entering Warrap State with their cattle</li> <li>• Dry season grazing/watering areas in Akop Payam in North East Warrap</li> <li>• Dry season migration at River Tonj, towards Western Equatoria State</li> <li>• Trade animals are taken to Wau and Rumbek.</li> <li>• During the movement, sometimes conflicts occur with other livestock keepers.</li> </ul> <p><b>(Conflict and insecurity)</b></p> <ul style="list-style-type: none"> <li>• Conflicts occur along the state border with Unity and Lakes States mainly in dry season for grazing and water.</li> <li>• Cattle-raiding occurs at common grazing areas especially when cattle keepers go back to their home villages.</li> </ul> <p><b>(Gender disparities)</b></p> <ul style="list-style-type: none"> <li>• Low women participation in decision making</li> <li>• Unequal ownership rights</li> </ul> <p><b>(Drought and floods)</b></p> <ul style="list-style-type: none"> <li>• During flood, cattle move to higher grounds in Gok areas.</li> <li>• During drought, cattle move to wet land where water and pasture are available.</li> </ul>
<b>Opportunities</b>
<ul style="list-style-type: none"> <li>• Land availability for livestock development</li> <li>• Huge livestock population enabling export</li> <li>• The large number of cattle attracts investors.</li> </ul>
<b>Challenges</b>
<ul style="list-style-type: none"> <li>• Limited drugs and vaccines</li> <li>• Slaughter house is located in remote area. (The slaughter house is about 6 km from Kuajok which makes meat inspectors difficult to conduct their duties.)</li> <li>• Road infrastructure is very poor especially during rain seasons.</li> <li>• Poor pasture and water during dry season</li> </ul>

## 5 Northern Bahr el Ghazal State (Capital: Aweil)

5.1 Basic Information	
Population (2008) <sup>a</sup>	720,898 (6 <sup>th</sup> )
	Male: 348,290 Female: 372,608
Projected population (2013) <sup>b</sup>	971,243 (6 <sup>th</sup> )
Area <sup>c</sup>	29,819 km <sup>2</sup> (10 <sup>th</sup> )
No. of Counties, Payams and Bomas (2009) <sup>d</sup>	5 Counties
	38 Payams
	168 Bomas
Food secure population (2012) <sup>b</sup>	49% (9 <sup>th</sup> )
Access to improved drinking water (2009) <sup>e</sup>	66% (3 <sup>rd</sup> )
Literacy rate (15-24 years old) (2009) <sup>e</sup>	40% (6 <sup>th</sup> )
Primary school gross enrolment rate (GER) (2010) <sup>f</sup>	74% (5 <sup>th</sup> )

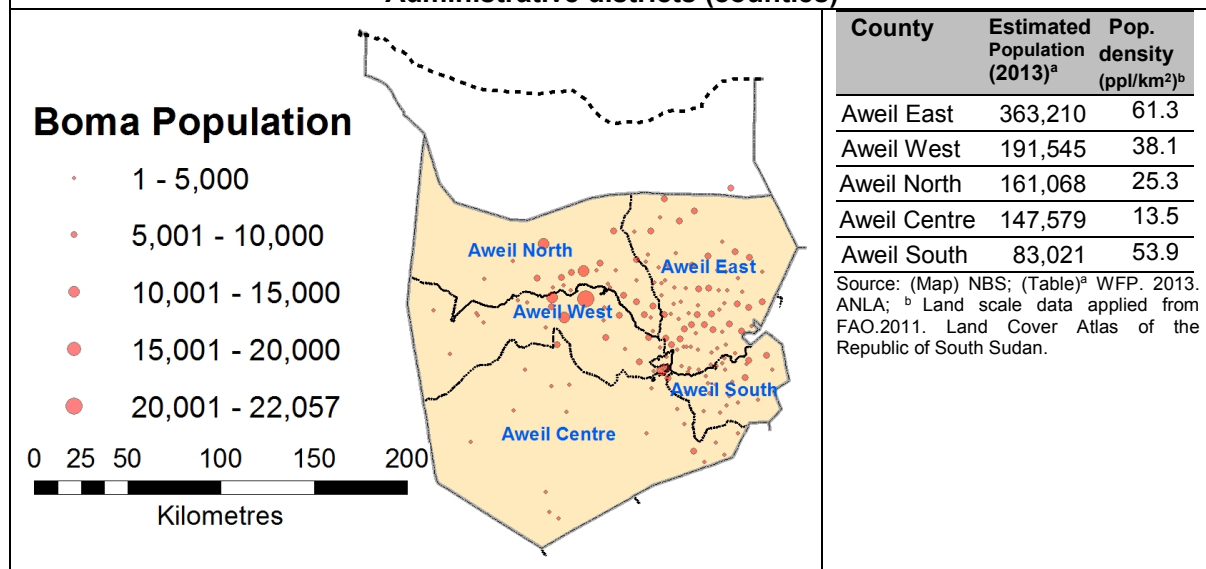


Land cover <sup>g</sup>

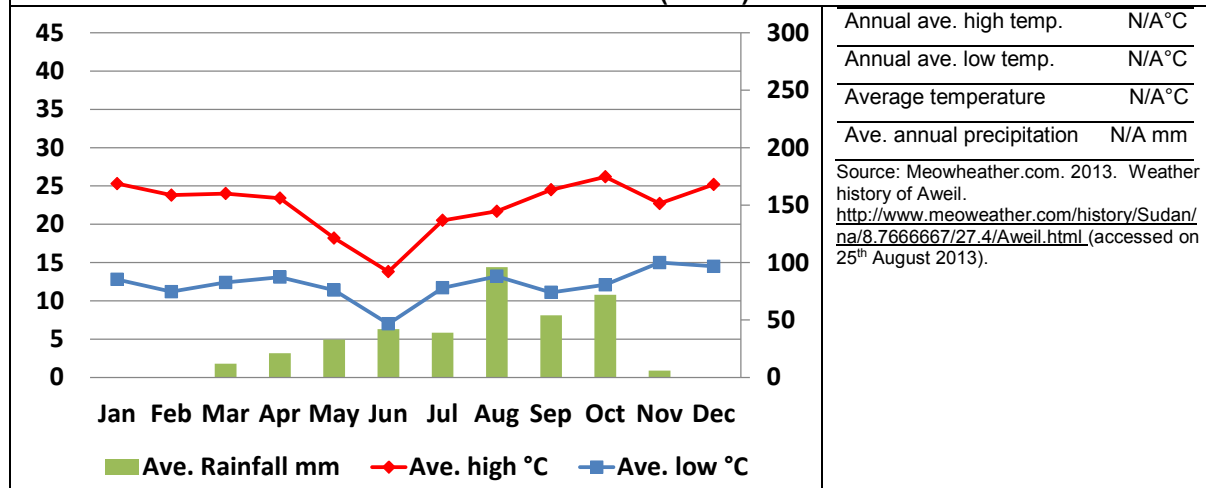


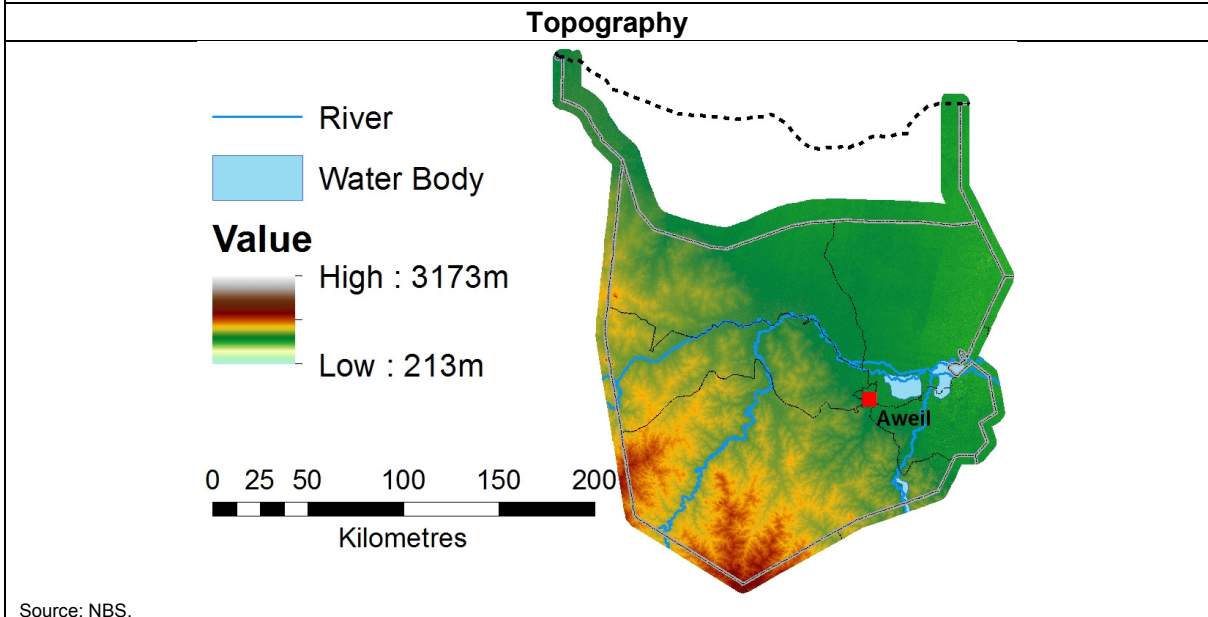
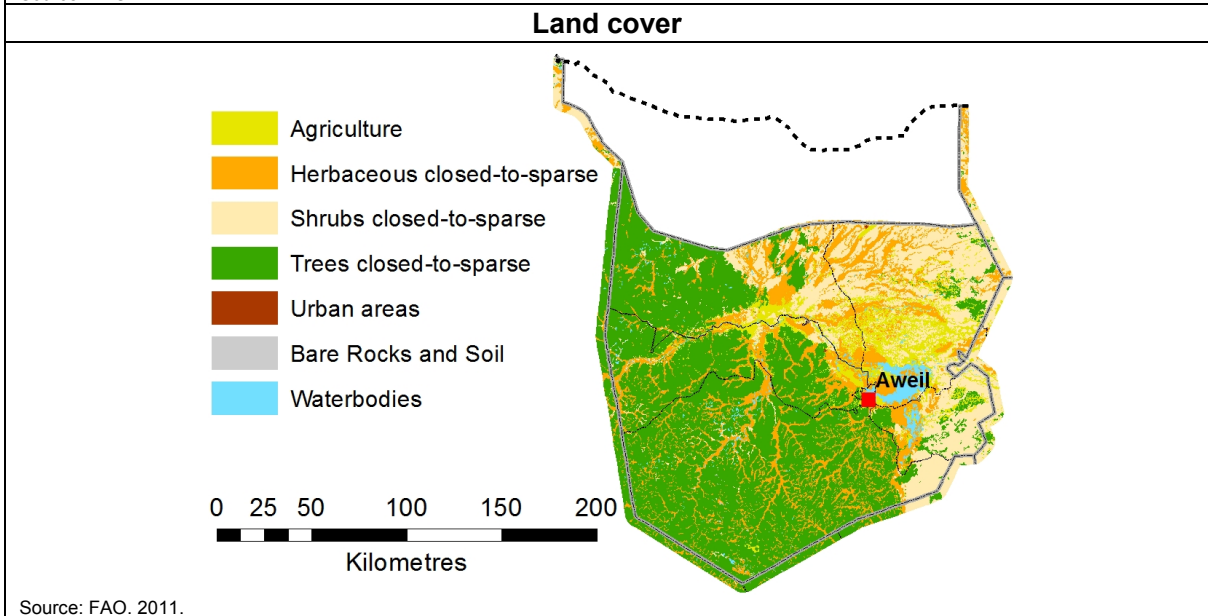
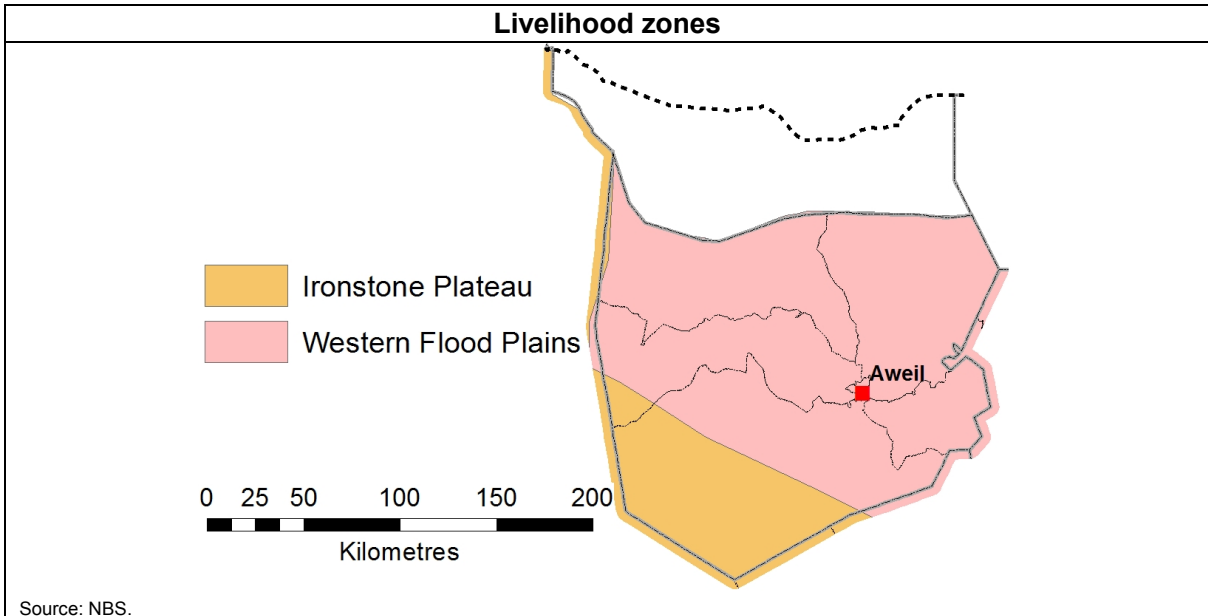
Source: <sup>a</sup> SSCSE. 2010. Southern Sudan Counts: Tables from the 5th Sudan Population and Housing Census, 2008; <sup>b</sup> WFP. 2013. ANLA; <sup>c</sup> FAO. 2011. Land Cover Atlas of the Republic of South Sudan; <sup>d</sup> Original data source of NBS. 2012. NBHS 2009; <sup>e</sup> NBS. 2012. NBHS 2009; <sup>f</sup> MoE. 2010. EMIS; <sup>g</sup> NBS. 2011. South Sudan Statistical Yearbook 2011.

### Administrative districts (counties)

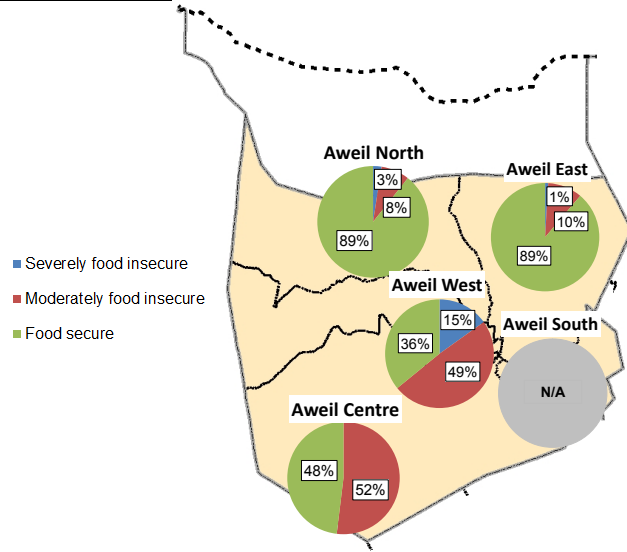


### Climate chart (Aweil)



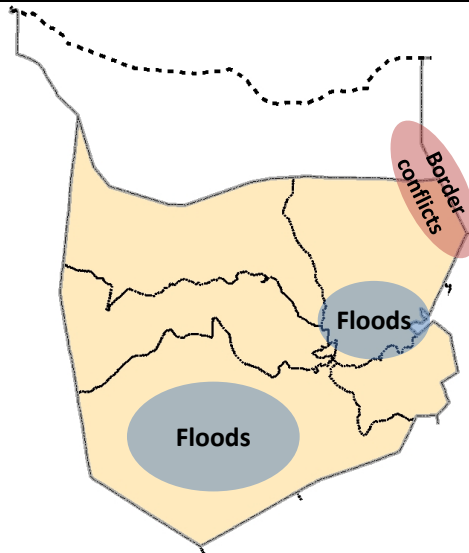


**Estimated food security status by county (2013)**



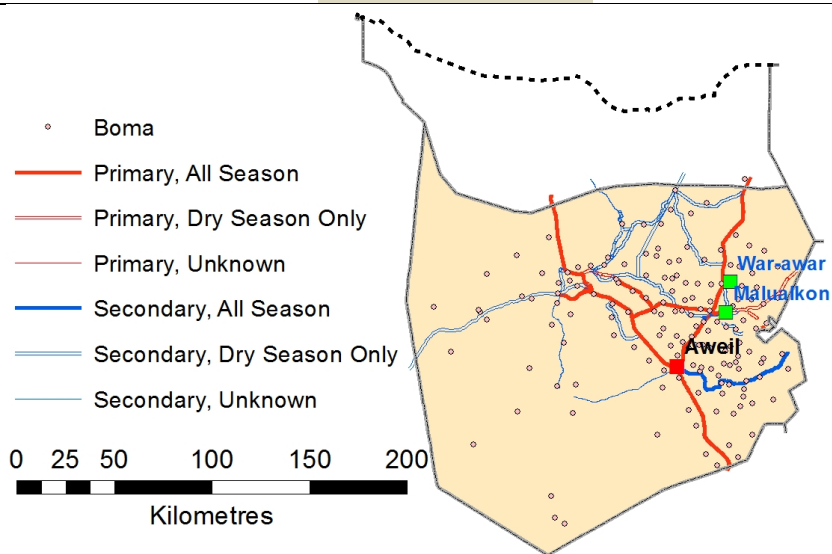
Source: WFP.2013.ANLA.

**Insecurity and natural disaster**



Source: CAMP survey team 2013.

**Road and Boma location**



Source: Road (WFP. 2013), Boma location (NBS).

<b>5.2 State Ministry of Agriculture and Forestry (MAF)</b>																																													
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<p><b>(Technical advice)</b></p> <ul style="list-style-type: none"> <li>• Technical advice and training are provided to farmers in cooperation with NGOs.</li> </ul> <p><b>(Seeds and tools provision)</b></p> <ul style="list-style-type: none"> <li>• Seeds and tools are provided to farmers in cooperation with NGOs.</li> </ul> <p><b>(Demo farm/Field day= visit to field to share best agricultural practices)</b></p> <ul style="list-style-type: none"> <li>• Demo farms are installed in some areas.</li> </ul> <p><b>(Tractor hiring service)</b></p> <ul style="list-style-type: none"> <li>• Tractor hiring services are provided to farmers but the services do not meet the farmers' need since the number of tractors is not enough.</li> <li>• Animal traction is widely introduced in the state.</li> </ul>																																													

### 5.3 Crop

#### Services provided by DPs and NGOs

Organisation	Activities	Area	Target
NRC (Norwegian Refugee Council)	<p>Following supports are provided to farmers especially IDPs and returnees.</p> <ul style="list-style-type: none"> <li>• Farmers' school</li> <li>• Land preparation</li> <li>• Seeds and tools provision</li> <li>• Pests and diseases control</li> <li>• Water pump (foot and motor) provision</li> <li>• Ox-plough attachment provision</li> </ul> <p>In addition, a voucher system is installed to develop local black smiths and agro-dealers when seeds and tools are provided to farmers. The voucher is only available in local agro-dealers and black smith stalls at Agro-fairs organised by NRC.</p>	Pilot areas in NBG State	Vulnerable groups (especially, IDPs and returnees)
DRC (Danish Refugee Council)	<p>Following supports are provided to farmers especially IDPs and returnees.</p> <ul style="list-style-type: none"> <li>• Farmers' school</li> <li>• Seeds and tools provision</li> <li>• Soil and water conservation</li> <li>• Animal traction (ox-plough)</li> </ul>	Aweil North and Centre Counties	Venerable groups (especially, IDPs and returnees)

\*There are a number of DPs and NGOs such as FAO and ADESO (African Development Solution) in the State. The above information collected by CAMP team is shown as examples.

#### Services provided by private sector

##### (Tractor hiring service)

- There are some private tractor hiring services.
- The charge for ploughing service is SSP200/feddan.

##### (Agro-dealer)

- Improved seeds, liquid fertilizer and pesticides are available in specialised shop which also sells veterinary drugs. The prices are shown below.

Name	Origin	Price (SSP)
Tomato	Kenya	50 (small can)
Okra	Kenya	50 (small can)
Cabbage	Kenya	50 (small can)
Sprayer (2 litre)	China	10
Sprayer (16 litre)	China	30

- Tools (e.g. hoe and maloda) made by local black smiths are available in the market.
- The prices are between SSP 15 to 40.
- Fruit tree seedlings, improved seeds (including seeds in FAO package) and fertilizer (Urea) are also available at the local vendors.

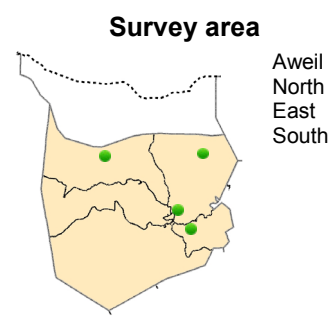
##### (Financial institution)

- (Information not available)

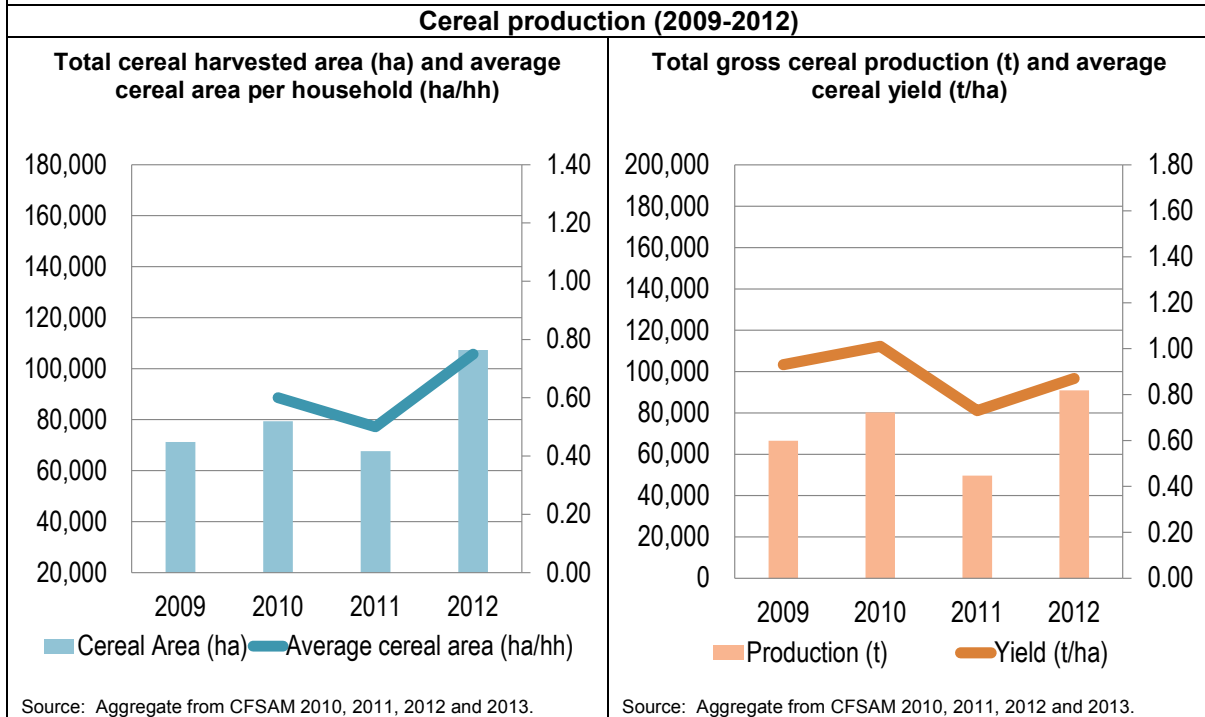
<b>Market</b>						
<b>Agricultural products and their origin (Aweil, May, 2013)</b>						
<b>(Crop)</b>			<b>(Others)</b>			
<b>Item</b>	<b>Type</b>	<b>Origin</b>	<b>Item</b>	<b>Type</b>	<b>Origin</b>	
Sorghum	Import	Sudan	Tomato	Import	Sudan	
	Domestic	-		Domestic	NBG State	
Maize flour	Import	Uganda	Onion	Import	Sudan	
	Domestic	-		Domestic	-	
Rice	Import	Sudan, Thailand, India	Okra (Dried)	Import	Sudan	
	Domestic	NBG State		Domestic	-	
Wheat flour	Import	Sudan	Eggplant	Import	-	
	Domestic	-		Domestic	NBG State	
Groundnut	Import	-	Green pepper	Import	-	
	Domestic	NBG State		Domestic	NBG State	
Irish potato	Import	Sudan	Jew's mallow	Import	-	
	Domestic	-		Domestic	NBG State	
			Pumpkin	Import	-	
				Domestic	NBG State	
Source: CAMP survey team 2013. *1 This is not a representative sample. *2 NBG: Northern Bahr el Ghazal			Source: CAMP survey team 2013. *1 This is not a representative sample. *2 NBG: Northern Bahr el Ghazal			
<b>Market price (Retail price, Aweil, May 2013)</b>						
<b>Item</b>	<b>Unit</b>	<b>Price (SSP) (range)</b>				
		<b>Low season</b>				<b>High season</b>
Sorghum (Import)	Sack (50 kg)	June-Oct	90	-	130	May-Sep
Rice (Import)	Sack (25 kg)	Dec-May	120	-	150	July-Nov
Maize (Import)	Sack (50 kg)	Dec-May	180	-	200	July-Nov
Wheat flour (Import)	Sack (25 kg)	Dec-May	80	-	150	July-Nov
Tomato (Import)	Box	Nov-Apr	450	-	500	May-Oct
Eggplant (Domestic)	1kg	May-Oct	7	-	10	Nov-May
Irish potato (Import)	Sack (100 kg)	Nov-Apr	600	-	700	May-Oct
Onion (Import)	Sack (100 kg)	Nov-Apr	350	-	400	May-Oct
Green pepper (Domestic)	1kg	Aug-Oct	25	-	30	May-Aug
Source: CAMP survey team 2013. * This is not a representative sample.						
<b>Transportation cost (Aweil, May 2013)</b>						
<b>Type</b>	<b>Unit</b>	<b>Currency</b>	<b>Cost (range)</b>			
Porterage (On/off loading)	Sack (100kg)	SSP	2-3			
Transport cost for Groundnut (Aweil North to Aweil Centre)	Sack (50kg)	SSP	20			
Transport cost for Sorghum (Aweil North to Aweil Centre)	Sack (50kg)	SSP	30			
Source: CAMP survey team 2013. * This is not a representative sample.						
<b>Taxes and charges (Aweil, May 2013)</b>						
<b>(Trader/retailer)</b>						
<b>Type</b>	<b>Cost (SSP) (range)</b>		<b>Frequency</b>			
Licence	850		Annually			
Rent	950		Monthly			
Development tax (Tax rate not available)	700		Monthly			
Market cleaning fee	30		Monthly			
Police service	10		Monthly			
<b>(Retailer)</b>						
<b>Type</b>	<b>Cost (SSP)</b>		<b>Frequency</b>			
Rent	400		Monthly			
Development tax (Tax rate not available)	600		Every 3 months			
Market Cleaning fee	30		Monthly			
Police service	10		Monthly			
Source: CAMP survey team 2013. * This is not a representative sample.						



Crop production	
Farming household (%) (2012)	83
Farming household (No.) (2012)	143,553
Total cereal area (ha) (2012)	107,274 (6 <sup>th</sup> )
Cereal gross yield (t/ha) (2012)	0.87 (6 <sup>th</sup> )
Gross cereal production (t) (2012)	90,911 (5 <sup>th</sup> )
Average cereal area per household (ha/hh) (2012)	0.75 (7 <sup>th</sup> )



Source: FAO and WFP. 2013 CFSAM.



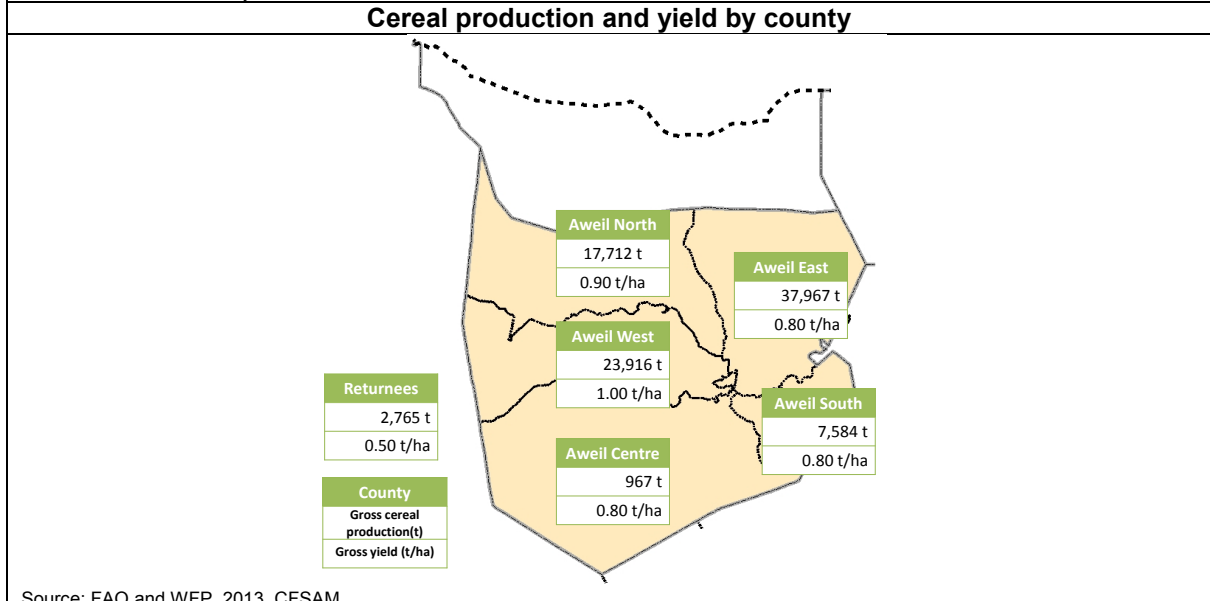
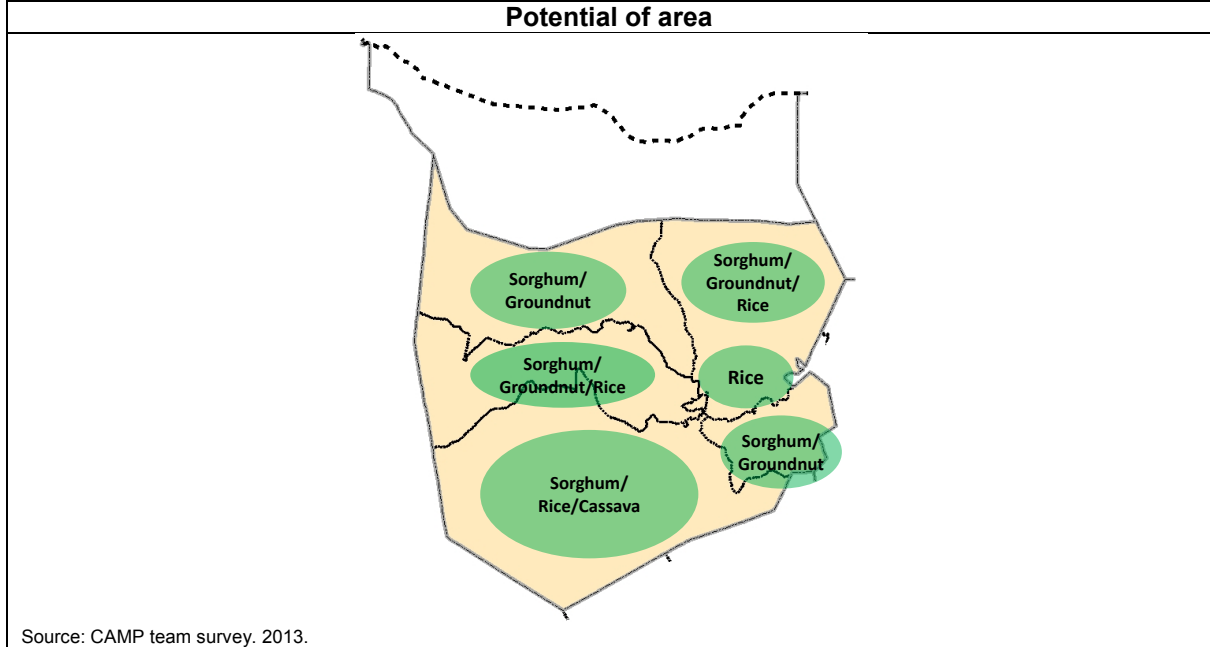
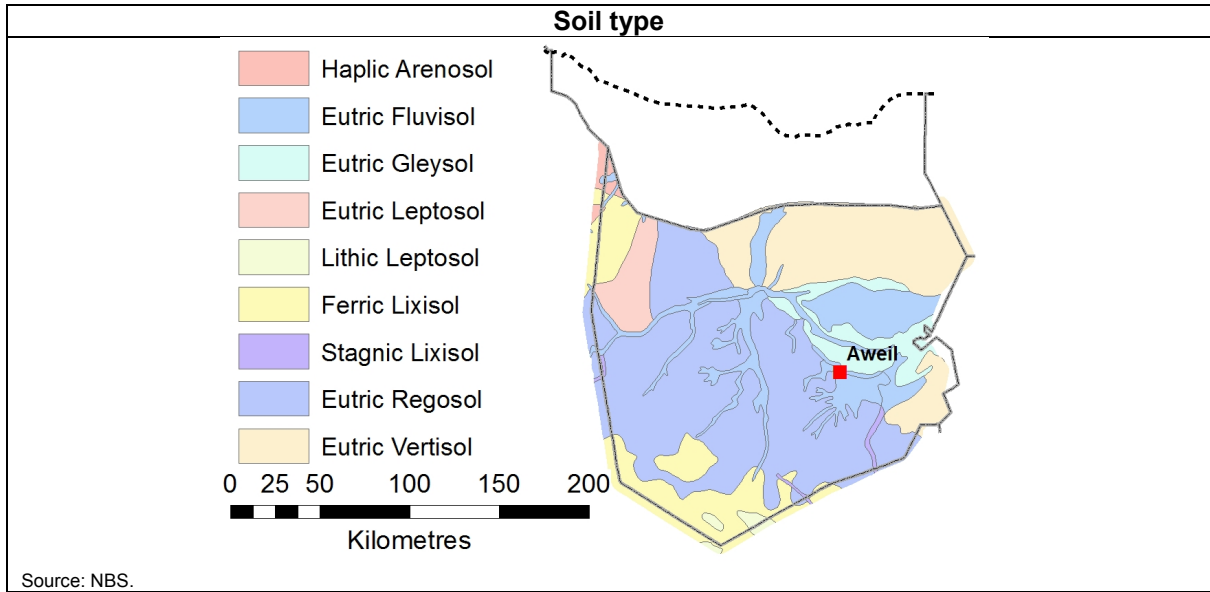
Source: Aggregate from CFSAM 2010, 2011, 2012 and 2013.

Source: Aggregate from CFSAM 2010, 2011, 2012 and 2013.

Crop production by livelihood zone	
Western Flood Plains	Ironstone Plateau
<b>Major agricultural products</b>	
<p><b>Crop</b></p> <p>Sorghum</p> <p>Maize</p> <p>Rice</p> <p>Bean</p> <p><b>Cash crop</b></p> <p>Groundnut</p> <p>Sesame</p> <p>Cowpea</p>	<p><b>Cash Crop</b></p> <p>Groundnut</p> <p>Sesame</p> <p><b>Vegetable</b></p> <p>Tomato</p> <p>Okra</p> <p>Eggplant</p> <p>Jew's mallow</p>

Cropping calendar												
Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sorghum		L	L	L	S	S	S			H	H	H
Rice		L	L	L	S	S	S			H	H	
Sesame		L	L	L	S	S	S	H	H	H		
Groundnut			L	L	S	S	S		H	H	H	H
	L	S	S	T	H							
	L Land preparation    S Sowing    T Transplanting    H Harvesting											
Source: CAMP survey team. 2013.												

Source: CAMP survey team. 2013.



<b>Cross cutting issues</b>	
<p><b>(Land )</b></p> <ul style="list-style-type: none"> <li>• Border conflict occurs occasionally.</li> </ul> <p><b>(Gender)</b></p> <ul style="list-style-type: none"> <li>• Women take important roles in agricultural production.</li> <li>• They have a voice in village meeting but decision making is done by men in many cases.</li> </ul> <p><b>(Security)</b></p> <ul style="list-style-type: none"> <li>• There are few security issues except the border conflict.</li> </ul> <p><b>(IDPs and returnees)</b></p> <ul style="list-style-type: none"> <li>• Reintegration process is successfully conducted but more support is required to improve their living standards.</li> </ul> <p><b>(HIV)</b></p> <ul style="list-style-type: none"> <li>• The infection rate is not surveyed.</li> </ul>	
<b>Opportunities</b>	
<p><b>Crop</b></p> <ul style="list-style-type: none"> <li>• Vast unutilized land</li> <li>• Suitable soil for cultivation</li> <li>• Abundant labour force</li> </ul>	
<b>Challenges</b>	
<p><b>Overall</b></p> <ul style="list-style-type: none"> <li>• Feeder roads are not well established.</li> <li>• Financial services are not available for many farmers.</li> <li>• High tax rates</li> <li>• High transport costs</li> <li>• High labour costs</li> <li>• Heavy rain</li> </ul>	
<p><b>Crop</b></p> <ul style="list-style-type: none"> <li>• The number of the State MAF staff is limited due to financial constraint.</li> <li>• Training opportunities for the state staff are limited.</li> <li>• Poor access to agricultural inputs</li> <li>• Underdeveloped marketing system</li> <li>• Underdeveloped agricultural extension system</li> <li>• Means of transport for extension services are insufficient.</li> <li>• Drought and flood occur frequently.</li> <li>• No effective pest and disease control methods</li> <li>• Inadequate post-harvest facilities lowers agricultural product.</li> </ul>	

## 5.4 Forestry

### On-going and proposed projects

#### List of on-going projects

Project name	Objectives/activities	Duration	Annual cost
(Information not available)	(Information not available)	(Information not available)	(Information not available)
(Information not available)	(Information not available)	(Information not available)	(Information not available)

#### List of proposed projects

Project name	Objectives/activities	Duration	Annual cost
Gum acacia production	Develop gum acacia production and the market system	(Information not available)	(Information not available)
Lulu oil processing	Generate income from lulu oil production	(Information not available)	(Information not available)
Plantation development	Develop timber production by plantation	(Information not available)	(Information not available)
Saw mil building	Increase timber production	(Information not available)	(Information not available)
Non-forest production development	Increase non-forest production (e.g. Tamarinds and lulu)	(Information not available)	(Information not available)

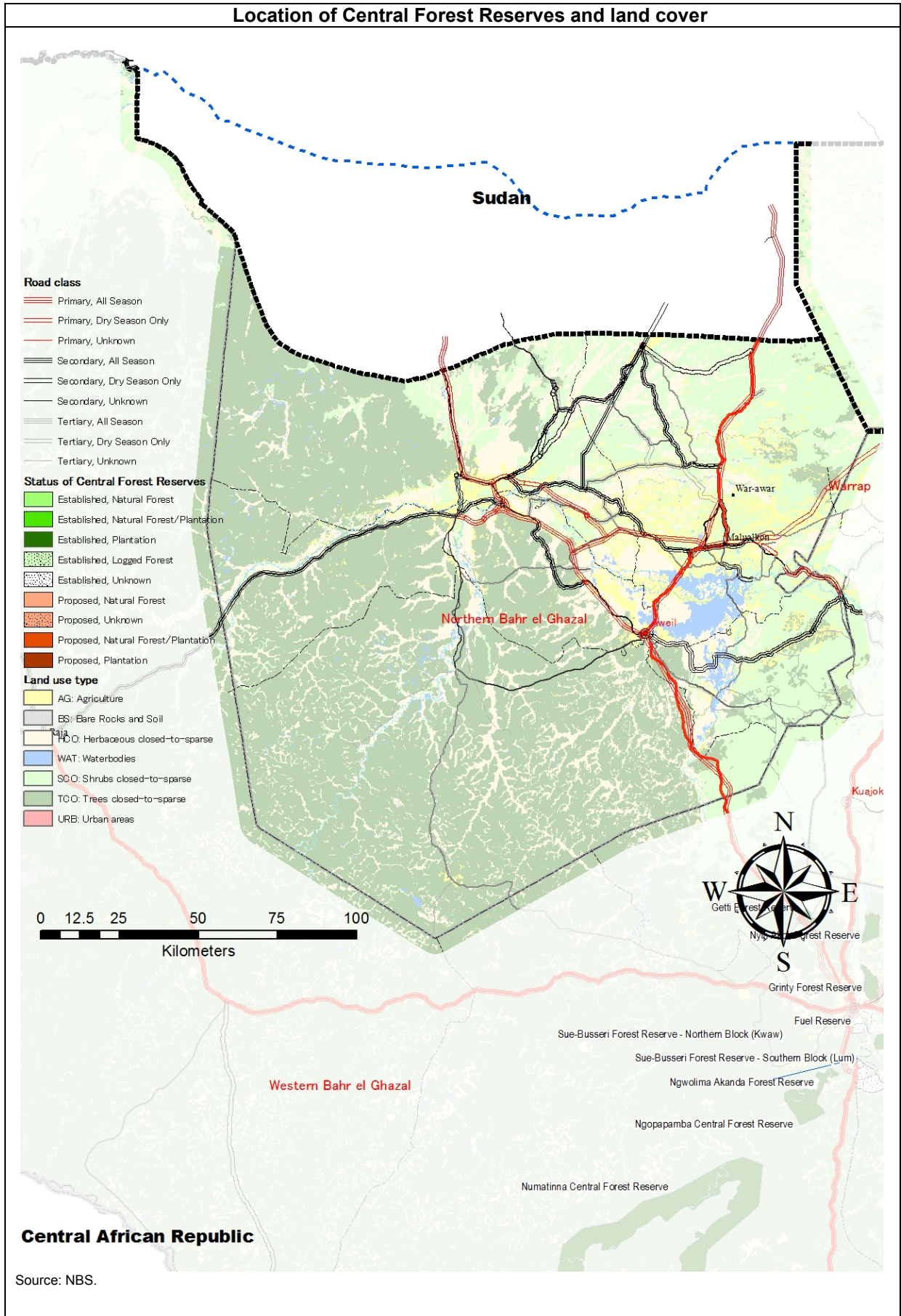
Source: CAMP team survey, 2013.

#### Land cover percentage to total area

County	AG	TCO	SCO	HCO	URB	BS	WAT	Total area	Total area (ha)
Aweil Centre	0.6%	77.8%	2.8%	17.0%		0.2%	1.7%	100.0%	1,094,999
Aweil East	21.2%	2.9%	47.0%	21.1%	0.0%		7.8%	100.0%	592,928
Aweil North	8.0%	53.8%	18.7%	18.1%	0.0%		1.3%	100.0%	637,184
Aweil South	13.9%	22.8%	35.7%	22.1%	0.0%		5.5%	100.0%	154,130
Aweil West	7.5%	65.7%	3.4%	21.4%	0.2%	0.0%	1.9%	100.0%	502,638
<b>Total</b>	<b>8.1%</b>	<b>52.9%</b>	<b>16.8%</b>	<b>19.0%</b>	<b>0.0%</b>	<b>0.1%</b>	<b>3.1%</b>	<b>100.0%</b>	<b>2,981,879</b>

Source: FAO, 2011. *Land cover atlas of South Sudan*. Rome: FAO.

Legend: AG=Agriculture, TCO=Tree closed-to-sparse, SCO=Shrubs closed-to-sparse, HCO=Herbaceous closed-to sparse, URB=Urban areas, BS=Bare Rocks and Soil, and WAT=Waterbodies.



<b>5.5 State Ministry of Animal Resources and Fisheries (MARF)</b>			
<b>Organogram</b>		<b>Staff</b>	
Minister	Director General	Directorate of Finance and Administration	Directorate of Planning and Budgeting
		Directorate of Animal Health	Directorate of Animal Production
		Directorate of Fisheries	Directorate of Extension
		<b>Section</b>	<b>Number of staff</b>
		Classified staff	31
		<b>Directorate of Finance and Administration</b>	<b>(5)</b>
		<b>Directorate of Planning and Budgeting</b>	<b>(2)</b>
		<b>Directorate of Animal Health</b>	<b>(14)</b>
		<b>Directorate of Animal Production</b>	<b>(1)</b>
		<b>Directorate of Fisheries</b>	<b>(9)</b>
		<b>Directorate of Extension</b>	<b>(-)</b>
		Unclassified staff	25
		<b>Grand total</b>	<b>56</b>
Source: State MARF.			
<b>Budget</b>		<b>Strategic plan</b>	
<b>Category</b>	<b>2011/12 Budget</b>	<b>2011/12 Outturn</b>	<b>2012/13 Budget</b>
<b>Salary</b>	(Data not available)	(Data not available)	(Data not available)
<b>Operating</b>	(Data not available)	(Data not available)	(Data not available)
<b>Transfers</b>	(Data not available)	(Data not available)	(Data not available)
<b>Others</b>	(Data not available)	(Data not available)	(Data not available)
<b>Capital</b>	(Data not available)	(Data not available)	(Data not available)
<b>Overall total</b>	(Data not available)	(Data not available)	(Data not available)
<b>NBG State Strategic plan (2012-16)</b>			
<b>Objective</b>			
<ul style="list-style-type: none"> <li>• Ensure efficient and effective use of available resources in the achievement of rapid growth of the sector</li> <li>• Provide the basis for increased synergies among all actors in the development of the sector</li> <li>• Provide a basis for monitoring and evaluation</li> </ul>			
<b>Budget</b>			
(Information not available)			
<b>Plan</b>			
<ul style="list-style-type: none"> <li>• Increase awareness of the investment in livestock and fisheries in NBG State</li> <li>• Increase the capacity of the staff to provide services</li> <li>• Enhance availability of appropriate infrastructure facilities and equipment</li> <li>• Increase livestock production and productivity</li> <li>• Strengthen control of livestock disease, effective disease surveillance and reporting, improve diagnosis, treatment, vaccination and control of livestock movement</li> <li>• Empower farmers and livestock traders, awareness and skills in managing livestock disease and in milk and meat hygiene</li> <li>• Improve knowledge and skills in livestock and fisheries management</li> <li>• Enhance rate of acceptance of new livestock and fisheries technologies through awareness campaigns, training and better organisation</li> </ul>			
<b>Activities</b>			
<ul style="list-style-type: none"> <li>• Implement livestock disease surveillance and reporting system</li> <li>• Carry out vaccination campaign and maintain adequate stocks of drugs, vaccines, materials and equipment</li> <li>• Establish diagnostic laboratory facility (including the purchase of equipment and consumable)</li> <li>• Train livestock officers on dairy, poultry, range land, hides and skins and bee keeping</li> <li>• Train fisheries in modern technology of fish production, preservation and marketing</li> </ul>			
Source: State MARF.			
<b>5.6 Livestock</b>			
<b>Services provided by State MARF and local government</b>			
<b>(Animal production services)</b>			
<ul style="list-style-type: none"> <li>• Provide extension services on animal production</li> <li>• Deliver useful technical advice at livestock market</li> <li>• Train farmers regarding poultry management</li> </ul>			
<b>(Animal health services)</b>			
<ul style="list-style-type: none"> <li>• Conduct education activities to livestock keepers and butchers on animal health</li> <li>• Provide vaccination and treatment to livestock keepers</li> <li>• Support drugs cost for livestock keepers</li> <li>• Disease inspection and control</li> </ul>			

<ul style="list-style-type: none"> <li>• Training of CAHWs (Community Animal Health Workers)</li> </ul>			
<b>Services provided by National government institutions</b>			
No national government institutions are in the state.			
<b>Services provided by DPs and NGOs</b>			
Organisation	Activities	Area	Target/ (Period)
VSF (Vétérinaires Sans Frontières) - Swiss	<ul style="list-style-type: none"> <li>• Training to CAHWs</li> <li>• Supply of drugs</li> <li>• Restocking programme</li> </ul>	<ul style="list-style-type: none"> <li>• Aweil East and West Counties</li> <li>• Aweil town and Nyamlel Counties</li> </ul>	1989-2013
Concern	<ul style="list-style-type: none"> <li>• Training to CAHWs</li> <li>• Technical advice</li> <li>• Organise field school</li> </ul>	<ul style="list-style-type: none"> <li>• Aweil West and North Counties</li> </ul>	2001-2013
Tearfund	<ul style="list-style-type: none"> <li>• Technical advice</li> <li>• Goat restocking programme</li> </ul>	<ul style="list-style-type: none"> <li>• Aweil Centre Counties</li> </ul>	2000-2013
ADESO (Africa Development Solution)	<ul style="list-style-type: none"> <li>• Restocking programme</li> <li>• Technical training</li> </ul>	<ul style="list-style-type: none"> <li>• Aweil West, North and Centre Counties</li> </ul>	2005-2013
GIZ	<ul style="list-style-type: none"> <li>• Training in auction management</li> <li>• Build butcheries</li> <li>• Establishment of slaughter house</li> </ul>	<ul style="list-style-type: none"> <li>• Aweil East and South Counties</li> </ul>	2009-2012
UMCOR (United Methodist Committee on Relief)	<ul style="list-style-type: none"> <li>• Goat restocking programme for cattle keepers especially returnees</li> </ul>	<ul style="list-style-type: none"> <li>• Aweil West and North Counties</li> </ul>	2013-2013
FAO	<ul style="list-style-type: none"> <li>• Support the community</li> </ul>	<ul style="list-style-type: none"> <li>• Maduny and Maper</li> </ul>	(Data not available)
AECOM	<ul style="list-style-type: none"> <li>• Support in livestock water by constructing water points.</li> <li>• Construct three offices</li> </ul>	<ul style="list-style-type: none"> <li>• Jaach</li> <li>• Majok Yithiou, Rum-aker and Jaac</li> </ul>	(Data not available)
Source: CAMP survey team. 2013. *CAHW: Community Animal Health Worker			
<b>Services provided by private sector</b>			
<p><b>(Agro-dealer)</b> Following services are provided by an agro-dealers:</p> <ul style="list-style-type: none"> <li>• Technical advice</li> <li>• Awareness of livestock diseases and importance of vaccination</li> <li>• Animal treatment</li> </ul>			
<p><b>(Slaughter house)</b> Slaughter house in Aweil town is outsourced to private company by State government.</p> <ul style="list-style-type: none"> <li>• Provide transport services for butchers</li> <li>• Provide security at livestock market</li> <li>• Operate slaughter house</li> </ul>			
<p><b>(Livestock association/Traders)</b></p> <ul style="list-style-type: none"> <li>• The association operates the livestock market.</li> <li>• Provide feed crops</li> </ul>			
<b>Livestock population</b>			
Type of Animal	Population in the state		
Cattle	1,500,000		
Goat	1,800,000		
Sheep	1,300,000		
Poultry	2,500,000		
Horse	300		
Donkey	500-600		
Source: GIZ. 2009. LPMP Baseline assessment, CAMP survey team. 2013.			

Livestock diseases						
Type of animal	Type of disease	Outbreak area in last 2 years				
Cattle	Contagious bovine pleuropneumonia	June, 2013 (Area data not available)				
	Black quarter, Haemorrhagic septicaemia, Trypanosomiasis, Anthrax	There was no outbreak in the last 2 years.				
Sheep and goat	Peste des petits ruminants	July, 2013 (Area data not available)				
	Contagious caprine pleuropneumonia, Tick borne diseases, Mange, Sheep pox	There was no outbreak in the last 2 years.				
Poultry	Newcastle disease, Gumboro disease, Infectious poultry disease	There was no outbreak in the last 2 years.				
Source: State MARF.						
Animal health issues						
<ul style="list-style-type: none"> <li>• Lack of laws and regulations</li> <li>• Livestock cross border movement</li> <li>• Limited number of staff</li> <li>• Trans-boundary disease</li> </ul>						
Market						
Type of livestock and livestock product	Market					
Cattle and small ruminant market (auction)	Majok livestock market, Warwar livestock market, Malekalel livestock market and Aweil auction yard					
Cattle, sheep and goat market border with Kordofan and Darfur	Nyamlel livestock market					
Cattle, sheep and goat market in villages	All over					
Source: State MARF.						
Market price						
Item	Unit	Price (SSP)				
		Low season		High season		
Poultry	1.5 kg	Dec-Apr	20	-	40	May-Sep
Yoghurt	500 ml	Dec-Apr	4	-	4	May-Sep
Milk (fresh) at cattle camp	600 ml	Dec-Apr	1	-	3	May-Sep
Milk (fresh) at market	600 ml	Dec-Apr	4	-	6	May-Sep
Bull (big)	400 kg	Dec-Apr	2,000	-	2,800	May-Sep
Bull (medium)	280 kg	Dec-Apr	1,200	-	1,850	May-Sep
Bull (small)	200 kg	Dec-Apr	750	-	850	May-Sep
Heifer	180 kg	Dec-Apr	1,800	-	2,300	May-Sep
Heifer (medium)	(Data not available)	Dec-Apr	1,500	-	1,500	May-Sep
Sheep and goat	75 kg	Dec-Apr	250	-	300	May-Sep
Donkey	300 kg	Dec-Apr	800	-	900	May-Nov
Horse	500 kg	Dec-Apr	1,500	-	1,600	May-Nov
Honey	600 ml	Dec-Apr	7	-	10	May-Nov
Meat (beef)	1 kg	(Data not available)	16	-	16	(Data not available)
Meat (sheep and goat)	1 kg	(Data not available)	25	-	25	(Data not available)
Egg (exotic)	Each (40 g)	(Data not available)	1	-	1	(Data not available)
Egg (local)	Each (30 g)	(Data not available)	1	-	1	(Data not available)
Milk tea	1 cup	(Data not available)	2	-	2	(Data not available)
Source: CAMP survey team. 2013.						
* This is not a representative sample.						



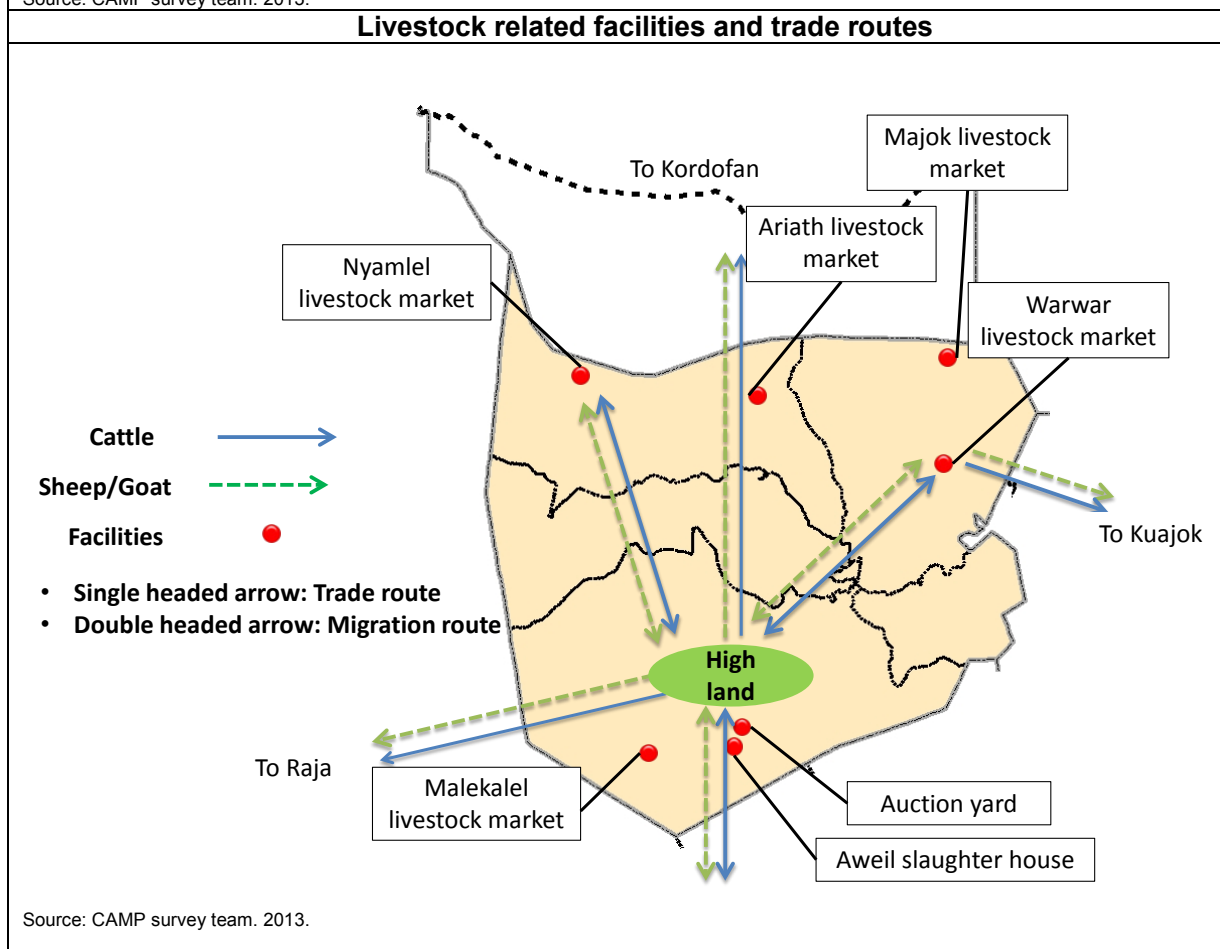
Taxes and charges		
Type	Cost (SSP)	Frequency
Inspection fees for cattle, sheep and goat (paid by buyer)	3(sheep or goat) 7(cattle)	Daily
Holding ground (cattle, sheep and goat) (paid by buyer)	1(sheep or goat) 3(cattle)	Daily
Movement permit for cattle, sheep and goat (paid by livestock keeper)	3(sheep or goat) 10(cattle)	Daily
License (trader)	1500	Annually
Health certificate (butcher)	250	Every 6 months
Keeping of animal (at auction yard paid by buyer)	10	Daily
Harding (at auction yard paid by buyer)	1	Daily

Source: CAMP survey team. 2013.

\* This is not a representative sample.

Major livestock species and products by livelihood zone			
Western Flood Plains		Ironstone Plateau	
Type of Animal	Breed	Type of Animal	Breed
Cattle	Local	Cattle	Local
Sheep and goat	Local	Sheep and goat	Local
Poultry	Local	Poultry	Local
Donkey	Exotic		
Horse	Exotic		
Livestock products		Livestock products	
<ul style="list-style-type: none"> <li>Milk</li> <li>Meat</li> <li>Egg</li> <li>Hide and skin</li> </ul>		<ul style="list-style-type: none"> <li>Milk</li> <li>Meat</li> <li>Egg</li> <li>Honey</li> </ul>	

Source: CAMP survey team. 2013.



Source: CAMP survey team. 2013.

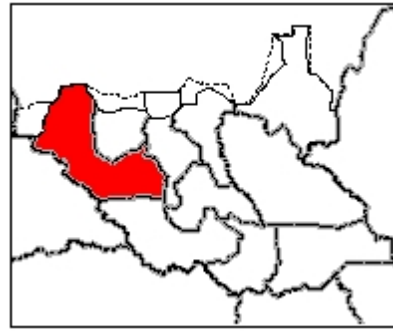
<b>Cross-cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• No conflict over the land in the field of animal husbandry</li> </ul> <p><b>(Migration)</b></p> <ul style="list-style-type: none"> <li>• Seasonal migration can be found in the state, searching pasture and water for livestock.</li> </ul> <p><b>(Conflict and insecurity)</b></p> <ul style="list-style-type: none"> <li>• Cattle raid by people from north has become a major source of insecurity in the state.</li> <li>• Causes of conflicts are mainly related with scarce natural resources.</li> </ul> <p><b>(Gender disparities)</b></p> <ul style="list-style-type: none"> <li>• Woman cannot own livestock except poultry.</li> <li>• Widows can own the cattle of late husband but cannot decide what to do with them.</li> </ul> <p><b>(Drought and floods)</b></p> <ul style="list-style-type: none"> <li>• Incidence of floods has become a recurrent disaster in Northern Bahr el Gazal State.</li> </ul>
<b>Opportunities</b>
<ul style="list-style-type: none"> <li>• Higher demand for poultry meat</li> <li>• Storage facility and stand at slaughter house</li> <li>• Improvement of meat quality to meet market demand</li> <li>• Improvement of hides and skins quality and establishment of local tannery</li> <li>• Availability of fodder crop</li> <li>• Establishment of check point for vaccination</li> </ul>
<b>Challenges</b>
<ul style="list-style-type: none"> <li>• Limited number of technical staff</li> <li>• Few capacity building opportunities</li> <li>• No laws and regulations or law enforcement for animal movement and trade</li> <li>• Lack of pasture during dry season</li> <li>• No market price control in livestock sector</li> <li>• Lack of milk market during the rainy season</li> <li>• Higher cost of taxation and revenue</li> <li>• Inadequate transport and infrastructure facilities</li> <li>• Insufficient extension service delivery</li> <li>• Low milk production from local milking cows</li> <li>• Tsetse flies infestation in pasture areas</li> <li>• Trans-boundary livestock disease due to cattle randomly entering from North</li> <li>• Inadequate vaccines and drugs</li> <li>• Conflicts among the pastoralists</li> </ul>

<b>5.7 Fisheries</b>					
<b>Numbers of fishing households (ANLA 2012)</b>	<b>9,950</b>				
<b>Fish production</b>	Unknown. NBG State fisheries are very seasonal, and there are no large permanent flowing rivers. There is no ice availability in the state.				
<b>Fish exports</b>	A large amount of “Mandesha” travels across the border to Sudan but the exact quantities are unknown. Small fish from rivers and lakes are dried and sold in towns.				
<b>Fish imports</b>	Small pelagics from Uganda and Kosti for preparation of Mandesha. Dried fish from Bentiu and Upper Nile State. Large trade up from Uganda through Yei of small pelagics.				
<b>Seasonality</b>	Mainly a late wet season and dry season fishery, with fishing households cultivating and tending livestock during the wet season. In the dry season the waters retreat to small rivers and lakes which are heavily fished by those living nearby and in fishing camps.				
<b>Landing sites</b>	Scattered near rivers and lakes. Mostly seasonal.				
<b>Gears</b>	Cast nets, long lines, cover pots, spears, gill nets (poisons reported).				
<b>Vessels</b>	Planked and dugout palm log canoes.				
<b>Informal taxation</b>	Mainly a problem for importers of pelagics from Uganda.				
<b>Investment</b>	Low. Small traders and fishing households. Larger importers of fish from Uganda and other states in South Sudan have large stocks and high investment in storage facilities.				
<b>Aquaculture</b>					
There is no aquaculture in the state though one entrepreneur is reported to be building ponds. These have not yet been stocked. Water supply, skills and seed will be a problem for large scale aquaculture in the future, and the temperatures may be too high in the hot season.					
<b>Post-harvest and marketing</b>					
<p>Fish is often offered for sale fresh and if not sold then dried. No fish smoking was observed by CAMP survey team. Much of the small fish produced is dried and then pounded to make a compressed product called “Mandesha” (various spellings). This is very popular locally. (Photo: Mandesha in Aweil market)</p> <p>Of interest is that in Aweil, for several years, the dried fish is sold by the rotl (450gms) an Arab measure of weight. (fresh fish is sold by the piece) Prices of sun dried fish in Aweil (2013) are given below.</p>					
<b>Species</b>	<b>Presentation</b>	<b>SSP/kg</b>	<b>Species</b>	<b>Presentation</b>	<b>SSP/kg</b>
Alestes	Sun dried	60.98			
Uganda pelagics	Sun dried	26.63			
Clarius anguillaris	Sun dried	53.33			

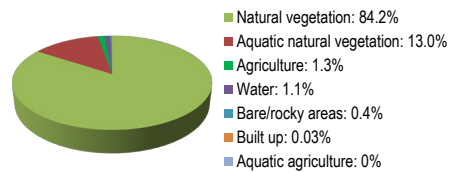


## 6 Western Bahr el Ghazal State (Capital: Wau)

6.1 Basic Information	
Population (2008) <sup>a</sup>	333,431 (10 <sup>th</sup> ) Male: 177,040 Female: 156,391
Projected population (2013) <sup>b</sup>	446,123 (10 <sup>th</sup> )
Area <sup>c</sup>	103,408 km <sup>2</sup> (2 <sup>th</sup> )
No. of Counties, Payams and Bomas (2009) <sup>b</sup>	3 Counties 15 Payams 86 Bomas
Food secure population (2012)	46% (10 <sup>th</sup> )
Access to improved drinking water (2009) <sup>e</sup>	45% (8 <sup>st</sup> )
Literacy rate (15-24 years old) (2009) <sup>e</sup>	50% (3 <sup>rd</sup> )
Primary school gross enrolment rate (GER) (2010) <sup>f</sup>	80% (2 <sup>nd</sup> )

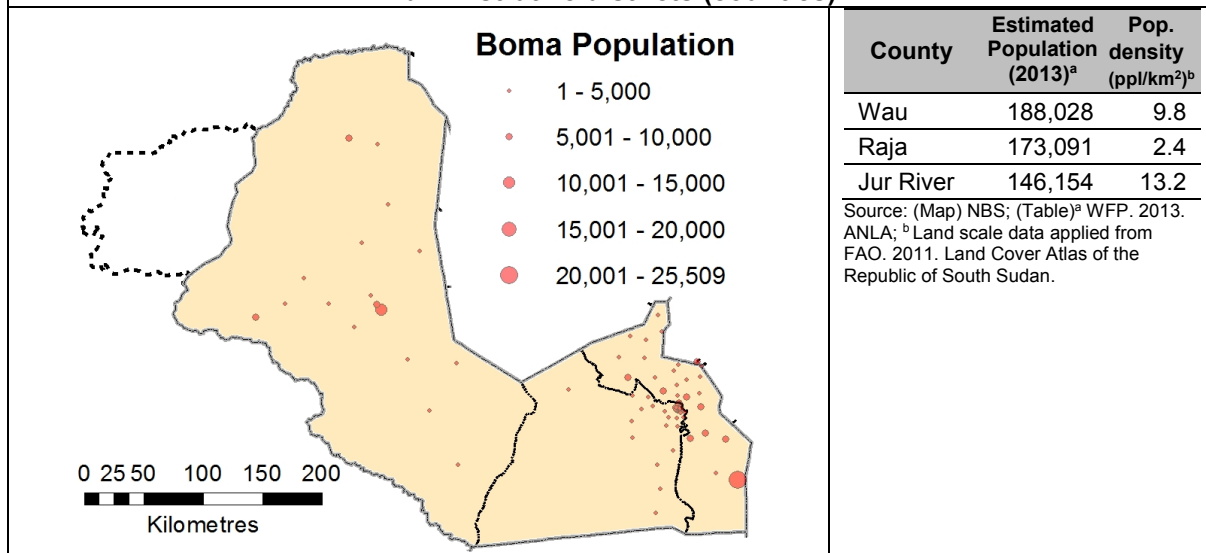


Land cover <sup>g</sup>



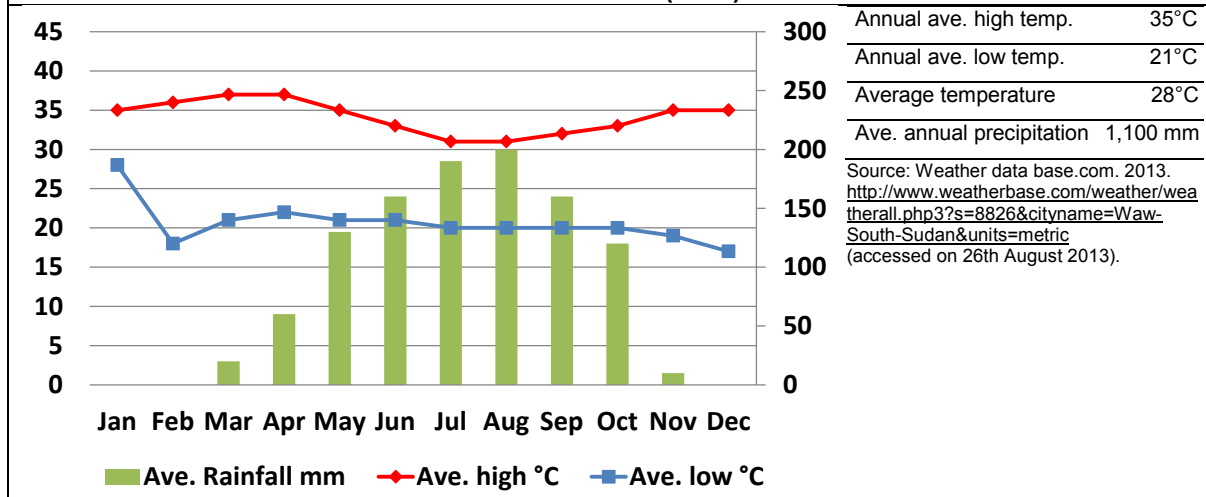
Source: <sup>a</sup> SSCSE, 2010. Southern Sudan Counts: Tables from the 5th Sudan Population and Housing Census, 2008; <sup>b</sup> WFP, 2013. ANLA; <sup>c</sup> FAO, 2011. Land Cover Atlas of the Republic of South Sudan; <sup>d</sup> Original data source of NBS, 2012. NBHS 2009; <sup>e</sup> NBS, 2012. NBHS 2009; <sup>f</sup> MoE, 2010. EMIS; <sup>g</sup> NBS, 2011. South Sudan Statistical Yearbook 2011.

### Administrative districts (counties)



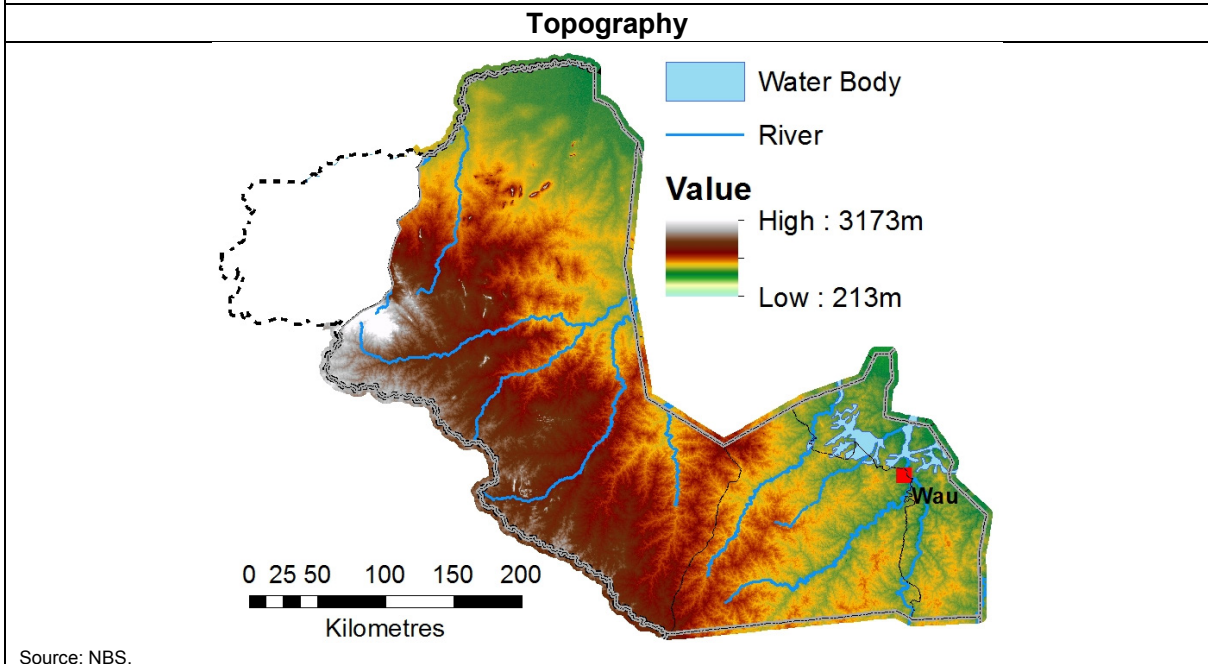
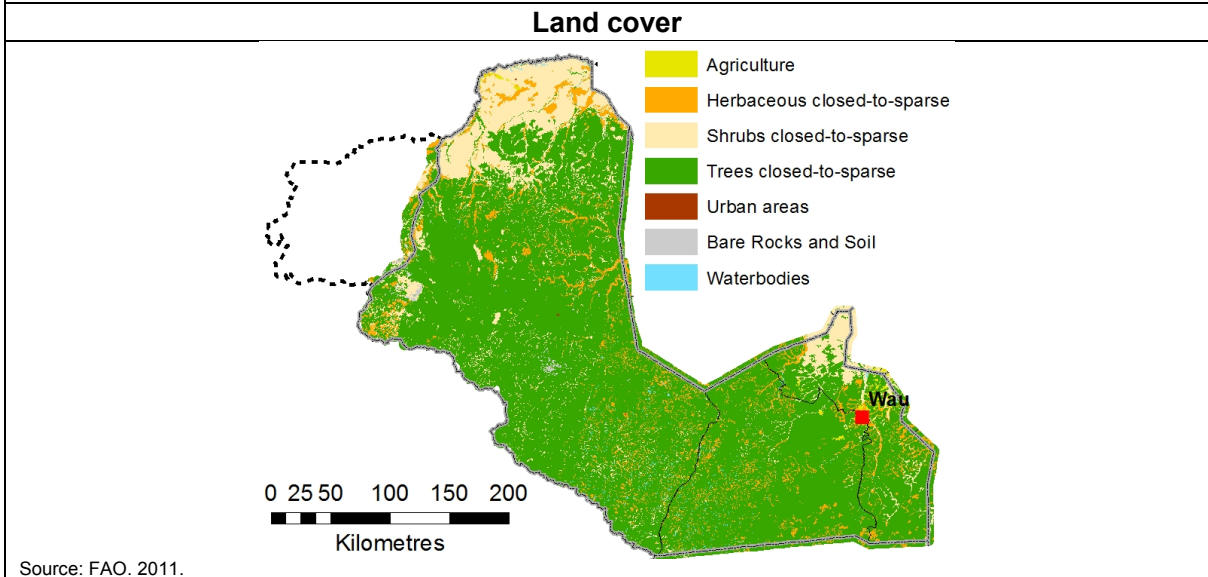
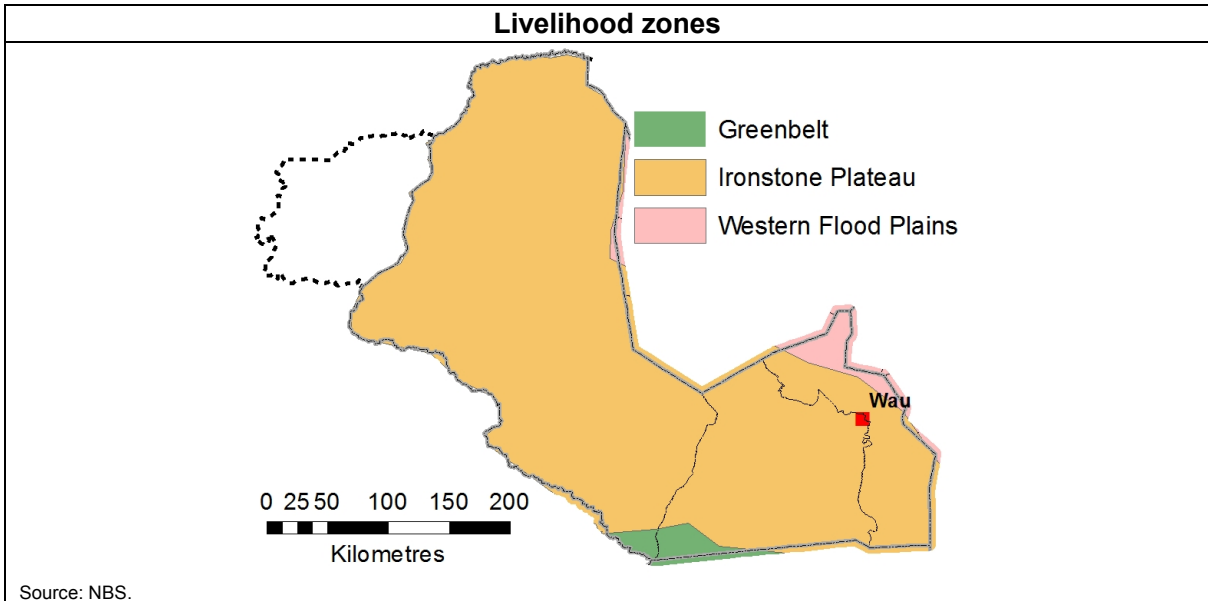
Source: (Map) NBS; (Table)<sup>a</sup> WFP, 2013. ANLA; <sup>b</sup> Land scale data applied from FAO, 2011. Land Cover Atlas of the Republic of South Sudan.

### Climate chart (Wau)

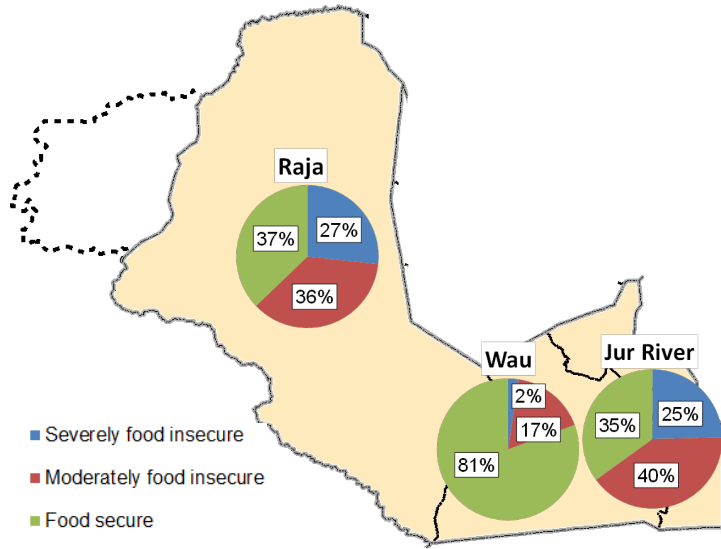


Annual ave. high temp.	35°C
Annual ave. low temp.	21°C
Average temperature	28°C
Ave. annual precipitation	1,100 mm

Source: Weather data base.com, 2013. <http://www.weatherbase.com/weather/wea-therall.php?s=8826&cityname=Wau-South-Sudan&units=metric> (accessed on 26th August 2013).

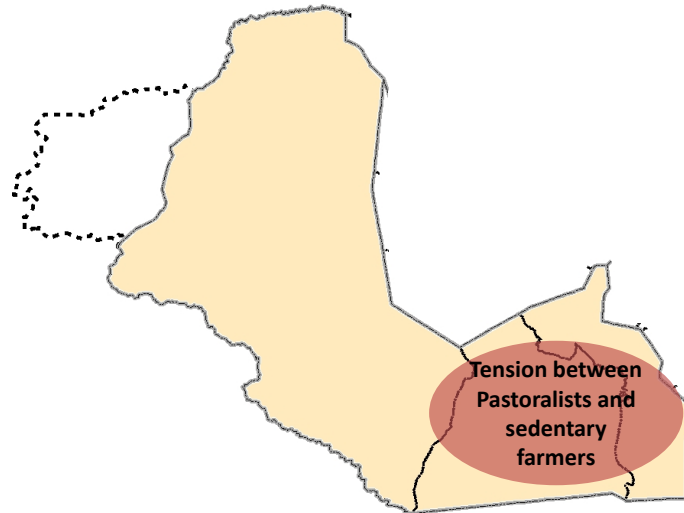


**Estimated food security status by county (2013)**



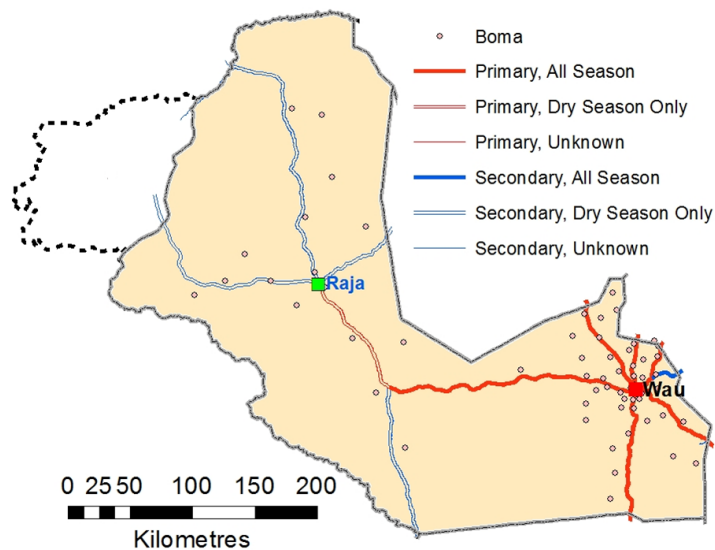
Source: WFP. 2013. ANLA.

**Insecurity and natural disaster**



Source: CAMP survey team. 2013.

**Road and Boma location**




Source: Road (WFP. 2013), Boma location (NBS).

6.2 State Ministry of Agriculture, Forestry and Irrigation (MAFI)																							
Organogram			Staff																				
			Breakdown of information not fully available <table border="1"> <thead> <tr> <th>Section</th> <th>Number of staff</th> </tr> </thead> <tbody> <tr> <td>Directorate of Administration and Finance</td> <td>72</td> </tr> <tr> <td>Directorate of Planning</td> <td>13</td> </tr> <tr> <td>Directorate of Agriculture</td> <td>113</td> </tr> <tr> <td>Directorate of Forestry</td> <td>185</td> </tr> <tr> <td>Directorate of Irrigation and Water Resources Development</td> <td>1</td> </tr> <tr> <td>Directorate of Planning and Agricultural Economics</td> <td>-</td> </tr> <tr> <td>Directorate of Environment and Soil Survey</td> <td>-</td> </tr> <tr> <td>Directorate of Extension and Rural Advisory Services</td> <td>-</td> </tr> <tr> <td><b>Total</b></td> <td><b>384</b></td> </tr> </tbody> </table> Source: State MAFI.	Section	Number of staff	Directorate of Administration and Finance	72	Directorate of Planning	13	Directorate of Agriculture	113	Directorate of Forestry	185	Directorate of Irrigation and Water Resources Development	1	Directorate of Planning and Agricultural Economics	-	Directorate of Environment and Soil Survey	-	Directorate of Extension and Rural Advisory Services	-	<b>Total</b>	<b>384</b>
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Directorate of Extension and Rural Advisory Services	-																						
<b>Total</b>	<b>384</b>																						
Source: State MAFI.																							
Budget			Strategic plan																				
Category	2011/12 Budget	2011/12 Outturn	2012/13 Budget																				
Salary	3,930,576	3,596,376	3,027,976																				
Operating Transfers	873,450	396,351	944,444																				
Others	-	-	-																				
Capital	4,006,905	1,053,204	1,569,937																				
<b>Overall total</b>	<b>8,810,931</b>	<b>5,045,931</b>	<b>5,542,357</b>																				
Source: State MAFI. Unit: SSP			<b>WBG Strategic plan (2010-12)</b> <p><b>Objective</b></p> <ul style="list-style-type: none"> <li>To contribute to the enhancement of food security for about 35% of the people of WBG State by promoting private sector development and supporting self-employment opportunities in the agriculture and forestry subsectors</li> <li>To contribute to the improvement of food security and livelihoods of the population of WBG State through sustainable and improved animal resources and fisheries production</li> </ul> <p><b>Budget</b> (Information not available)</p> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>Provide infrastructure and strengthen Institutions through capacity development and training</li> <li>Conduct technical assessment to establish current levels of agricultural production and factors limiting increased production</li> <li>Rehabilitate existing state farms and establish demonstration farms for local farmers</li> <li>Establish robust forestry advisory and extension services to encourage agroforestry and afforestation</li> </ul> <p><b>Activities</b></p> <ul style="list-style-type: none"> <li>Train farmers on agroforestry</li> <li>Organise food security and livelihood coordination meetings</li> <li>Run awareness campaign for environmental degradation and deforestation</li> <li>Promote agro enterprises activities in the rural areas</li> <li>Provide improved seeds and tools</li> </ul> Source: State MAFI.																				
<b>Services provided by State MAFI and local government</b>																							
<p><b>(Technical advice)</b></p> <ul style="list-style-type: none"> <li>Technical advice and training are provided to farmers. Some activities are conducted in cooperation with NGOs.</li> <li>Field survey for monitoring farmers' activities</li> </ul> <p><b>(Seed/Tool provision)</b></p> <ul style="list-style-type: none"> <li>Improved seeds are provided. Due to logistic issues, the provision is often late.</li> </ul> <p><b>(Demo farm and field day= visit to field to share best agricultural practices)</b></p> <ul style="list-style-type: none"> <li>Some demo farms are installed.</li> </ul> <p><b>(Tractor hiring service)</b></p> <ul style="list-style-type: none"> <li>The number of the tractors provided by the State MAFI is not enough to meet farmers' needs.</li> </ul>																							

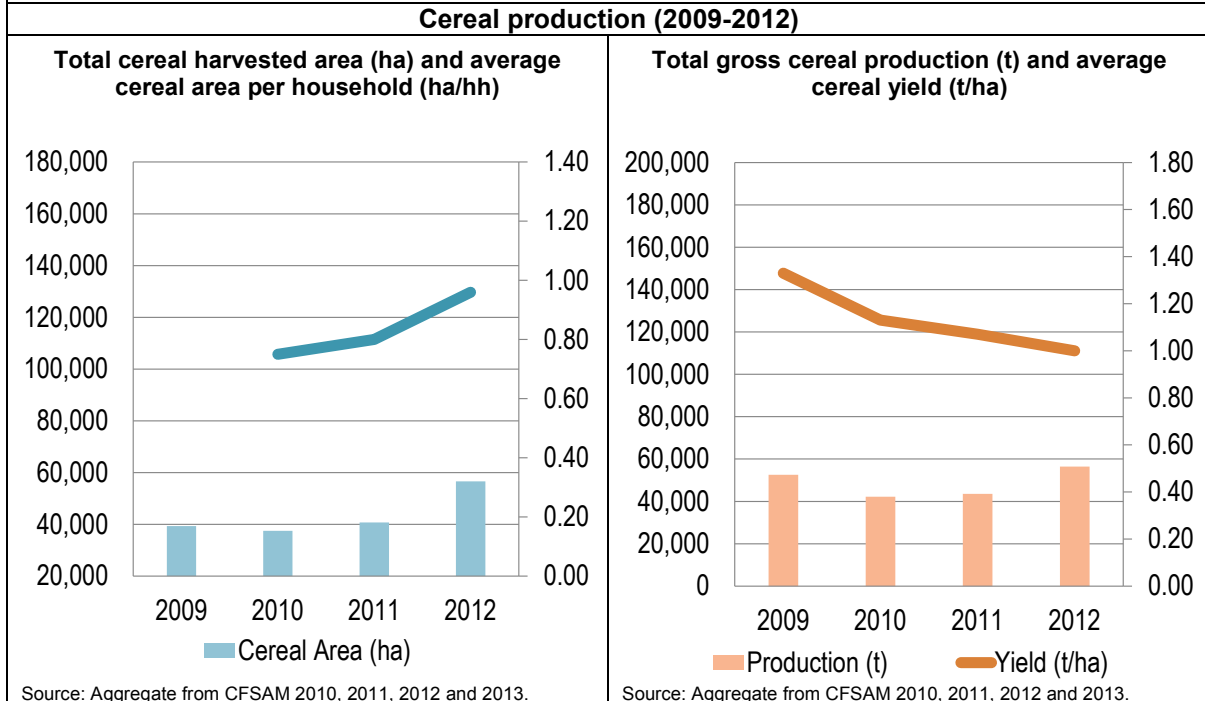


<b>6.3 Crop</b>			
<b>Services provided by DPs and NGOs</b>			
<b>Organisation</b>	<b>Activities</b>	<b>Area</b>	<b>Target</b>
ACTED (Agency for Technical Cooperation and Development)	Following technical advices are provided: <ul style="list-style-type: none"> <li>• Land preparation</li> <li>• Vegetable growing</li> <li>• Inter-cropping</li> <li>• Compost making</li> <li>• Small-scale irrigation</li> <li>• Financial management</li> <li>• Seeds and tools provision</li> </ul>	Wau and Jur river Counties	Vulnerable groups
Dorcas Aid International	Provide technical advice and training. Install demo plots for agricultural development.	Wau County	Vulnerable groups
*1 Activities of NGOs and DPs are mainly delivery of training and provision of tools and seeds. *2 There are a number of DPs and NGOs in the state. The above information collected by CAMP team is shown as an example.			
<b>Services provided by private sector</b>			
<p><b>(Tractor hiring service)</b></p> <ul style="list-style-type: none"> <li>• There are few private tractor providing hiring services.</li> <li>• The charge is SSP 250/feddan for ploughing.</li> </ul> <p><b>(Agro dealer)</b></p> <ul style="list-style-type: none"> <li>• Improved seeds, mainly imported from Sudan, are available in a hardware shop.</li> <li>• The shop owner conducts germination test and gives technical advice as well to the customers.</li> </ul> <p><b>(Financial institution)</b></p> <ul style="list-style-type: none"> <li>• Agricultural Bank of South Sudan provides a loan service to farmers groups and some individual farmers.</li> </ul>			

Market						
Agricultural products and their origin (Wau, May 2013)						
<b>(Cereal)</b>			<b>(Others)</b>			
Item	Type	Origin	Item	Type	Origin	
Sorghum	Import	Sudan	Tomato	Import	-	
	Domestic	-		Domestic	Wau	
Maize	Import	Uganda	Egg plant	Import	-	
	Domestic	Ezo (WE State)		Domestic	Wau	
Pearl Millet	Import	Sudan	Okra	Import	Uganda	
	Domestic	-		Domestic	Wau	
Maize flour	Import	Uganda	Okra (Flour)	Import	Sudan	
	Domestic	-		Domestic	-	
Wheat flour	Import	Sudan	Jew's mallow	Import	-	
	Domestic	-		Domestic	Wau	
Groundnut	Import	-	Ginger (Dried)	Import	Sudan	
	Domestic	Wau		Domestic	-	
Source: CAMP survey team 2013. *1 This is not a representative sample. *2 WE: Western Equatoria			Source: CAMP survey team 2013. * This is not a representative sample.			
Market price (Retail price, Wau, May 2013)						
Item	Unit	Price (SSP) (range)				
		Low season				High season
Sorghum (Domestic)	Sack (100 kg)	Feb-May	300	-	500	May-Aug
Sorghum (Import)	Sack (100 kg)	Feb	500	-	800	Aug
Maize (Domestic/WE State)	Sack (100 kg)	Feb	200	-	300	Aug
Maize (Import)	Sack (50 kg)	Feb-May	150	-	200-280	May-July
Maize flour (Import)	Sack (50 kg)	Aug-Dec	230	-	250	Jan-July
Wheat flour (Import)	Sack (100 kg)	Depend on market demand	360	-	380	Depend on market demand
Pearl Millet (Import)	Sack (100 kg)	Feb	350	-	400	Aug
Groundnut (Domestic)	Sack (100 kg)	Feb-May	120	-	180	May-Aug
Eggplant (Domestic)	4 pieces	Aug-Nov	5	-	10	Jan-May
Tomato (Domestic)	Piece	July-Dec	5 (4 pieces)	-	5 (3 pieces)	Jan-May
Okra (Domestic)	Piece	July-Dec	6 (5 pieces)	-	6 (4 pieces)	Jan-May
Source: CAMP survey team 2013. *1 This is not a representative sample. *2 WE: Western Equatoria						
Transportation cost (Wau, May, 2013)						
Type	Unit	Currency	Cost			
(Information not available)	(Information not available)	(Information not available)	(Information not available)			
Tax and charge (Wau, May, 2013)						
<b>(Wholesaler/trader)</b>						
Type	Cost (SSP) (range)		Frequency			
Licence	500-1,200		Annually			
Police service	30-50		Monthly			
Rent charge	300-1,200		Monthly			
<b>(Retailer)</b>						
Type	Cost (SSP) (range)		Frequency			
Rent table	60		Monthly			
Market cleaning fee	1		Daily			
Security fee	2		Daily			
Source: CAMP survey team 2013. *This is not a representative sample.						

Crop production		<b>Survey area</b> 
Farming household (%) (2012)	78	
Farming household (No.) (2012)	58,702	
Total cereal area (ha) (2012)	56,635 (9 <sup>th</sup> )	
Cereal gross yield (t/ha) (2012)	1.00 (3 <sup>rd</sup> )	
Gross cereal production (t) (2012)	56,460 (8 <sup>th</sup> )	
Average cereal area per household (ha/hh) (2012)	0.96 (4 <sup>th</sup> )	

Source: FAO and WFP. 2013 CFSAM.



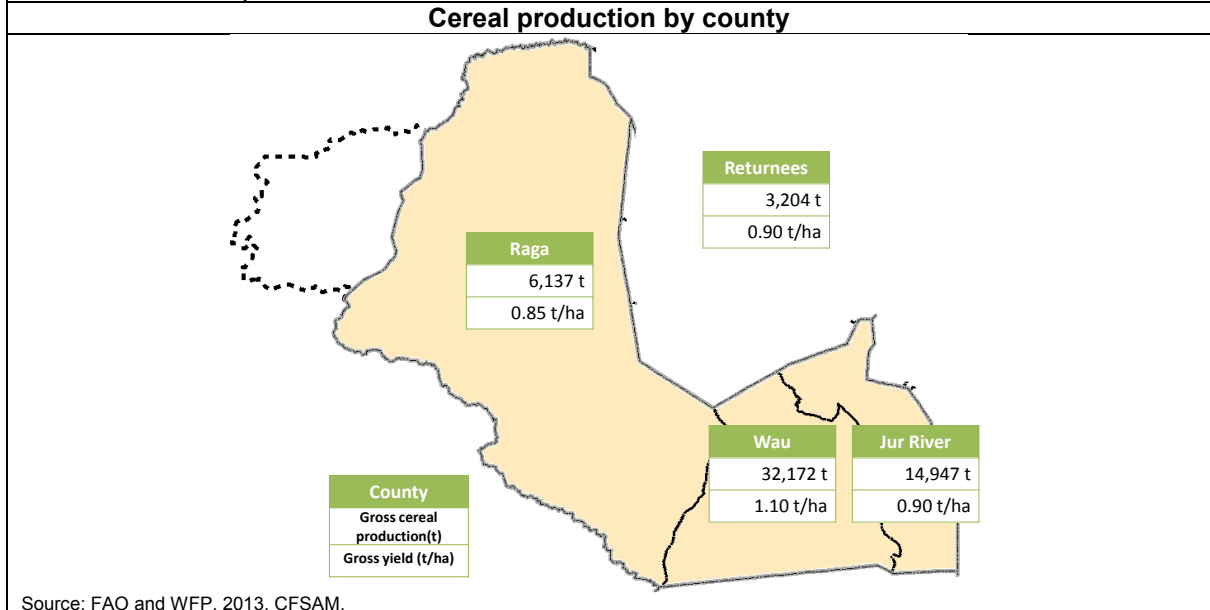
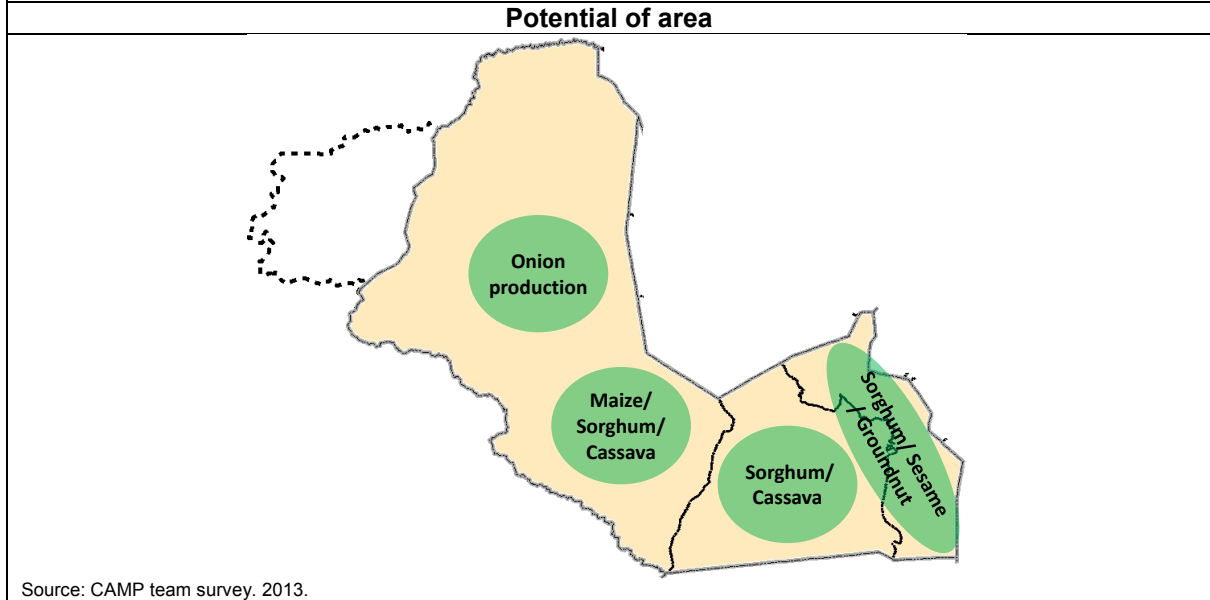
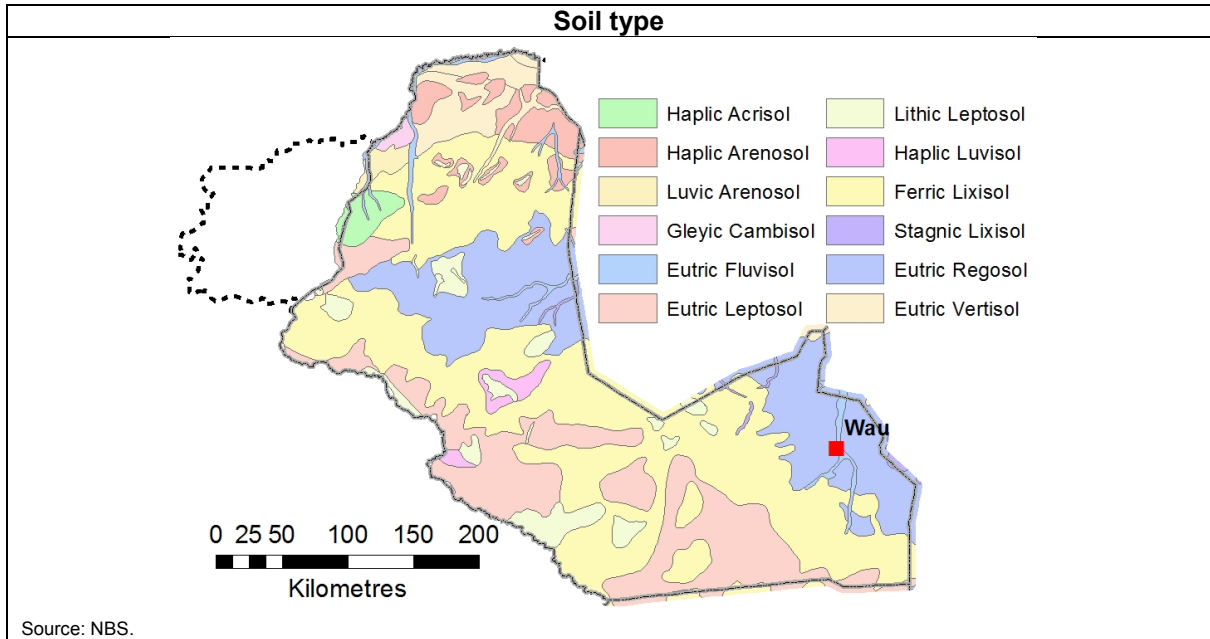
Crop production by livelihood zone			
Ironstone Plateau		Western Flood Plains	
<b>Major agricultural products</b>			
<b>Crop</b> Sorghum Maize Cassava Bean <b>Cash Crop</b> Groundnut Sesame Cowpea	<b>Vegetable</b> Onion Okra Tomato Pumpkin Watermelon Jew's mallow	<b>Crop</b> Sorghum Bean Finger millet <b>Cash Crop</b> Groundnut Sesame	<b>Vegetable</b> Tomato Onion Water melon

Cropping calendar												
Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sorghum			L	L	S	S	S		H	H	H	H
Maize				L	S				H			
Cassava (2yrs)			H	L	S	S						
Groundnut				L	S	S	S	S	S	H	H	H
Sesame	H			L	S	S	S	S	H	H	H	H
Bean				L	S				H	H	H	
Okra				L	S				H	H		

Source: CAMP survey team. 2013.

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sorghum		L	L	S	S				H (short)		H (long)	
Groundnut		L	L	S	S	S			H (short)		H (long)	
Bean		L	L	S	S				H	H	H	
Finger millet		L	L	S	S							H
Tomato	Planted all year around by small-scale irrigaiton											
Okra		L	L	S	S				H	H	H	H
Water melon		L	L	S	S				H	H	H	

Source: CAMP survey team. 2013.



<b>Cross cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• Tension between pastoralist and sedentary farmers</li> </ul> <p><b>(Gender)</b></p> <ul style="list-style-type: none"> <li>• Women take important role in agricultural production.</li> <li>• Women have a voice in village meetings. However, decision making is done by men in many cases.</li> </ul> <p><b>(Security)</b></p> <ul style="list-style-type: none"> <li>• Tribal conflicts occurred in 2012. There is still tension between two tribes.</li> </ul> <p><b>(IDPs and returnees)</b></p> <ul style="list-style-type: none"> <li>• Land is usually allocated to IDPs and returnees. However, their living standards are relatively lower than the average.</li> </ul> <p><b>(HIV)</b></p> <ul style="list-style-type: none"> <li>• The infection rate is unknown.</li> </ul>
<b>Opportunities</b>
<p><b>Crop</b></p> <ul style="list-style-type: none"> <li>• Vast unutilized land</li> <li>• Suitable soil for cultivation</li> <li>• Abundant labour force</li> </ul>
<b>Challenges</b>
<p><b>Overall</b></p> <ul style="list-style-type: none"> <li>• Feeder roads are not well established.</li> <li>• Poor access to financial institutions</li> <li>• High tax rates</li> <li>• High transport costs</li> <li>• High labour costs</li> </ul>
<p><b>Crop</b></p> <ul style="list-style-type: none"> <li>• Underdeveloped agricultural extension system</li> <li>• Financial services are not available for many farmers.</li> <li>• No effective pest and disease control methods</li> <li>• Inadequate post-harvest facilities lower net production.</li> </ul>

## 6.4 Forestry

### On-going and proposed projects

#### List of on-going projects

Project name	Objectives/activities	Duration	Annual cost
Agro-forestry (DECCOPE)	Introduce fruit seedling for sustainability management	2 years	(Information not available)
Multi-Purpose Tree Services (MPTS) Nursery Peace Corp	Propagate and distribute seedlings for forest conservation	(Information not available)	(Information not available)

Source: CAMP team survey. 2013.

#### List of proposed projects

Project name	Objectives/activities	Duration	Annual cost
Nursery development	Propagate seedlings for plantation	(Information not available)	(Information not available)
Afforestation	Develop plantation	(Information not available)	(Information not available)
Agro-forestry	Introduce agro-forestry practice	(Information not available)	(Information not available)
Rehabilitation of saw milling	Increase timber production	(Information not available)	(Information not available)
Capacity building	Train farmers on forest management	(Information not available)	(Information not available)
Coppice management	Improvement of stock	(Information not available)	(Information not available)
Rehabilitation of Forestry Development HOR office	Improve work environment for effective services provision	Oct. 2013-May 2014	1,913,171.64
Rehabilitation of Pongo Nuer Saw mill	Increase timber production	Oct. 2013-Dec. 2014	599,366
Training of staff on agro-forestry and extension service	Develop staff's capacity for effective extension services	Nov. 2013-Jan. 2014	65,000
Awareness campaign on environmental degradation and deforestation	Enlighten farmers on importance of environmental conservation	(Information not available)	10,000
Establishment of agro-forestry nurseries	Promote agro-forestry in the communities	Oct. 2013-Nov. 2013	97,838

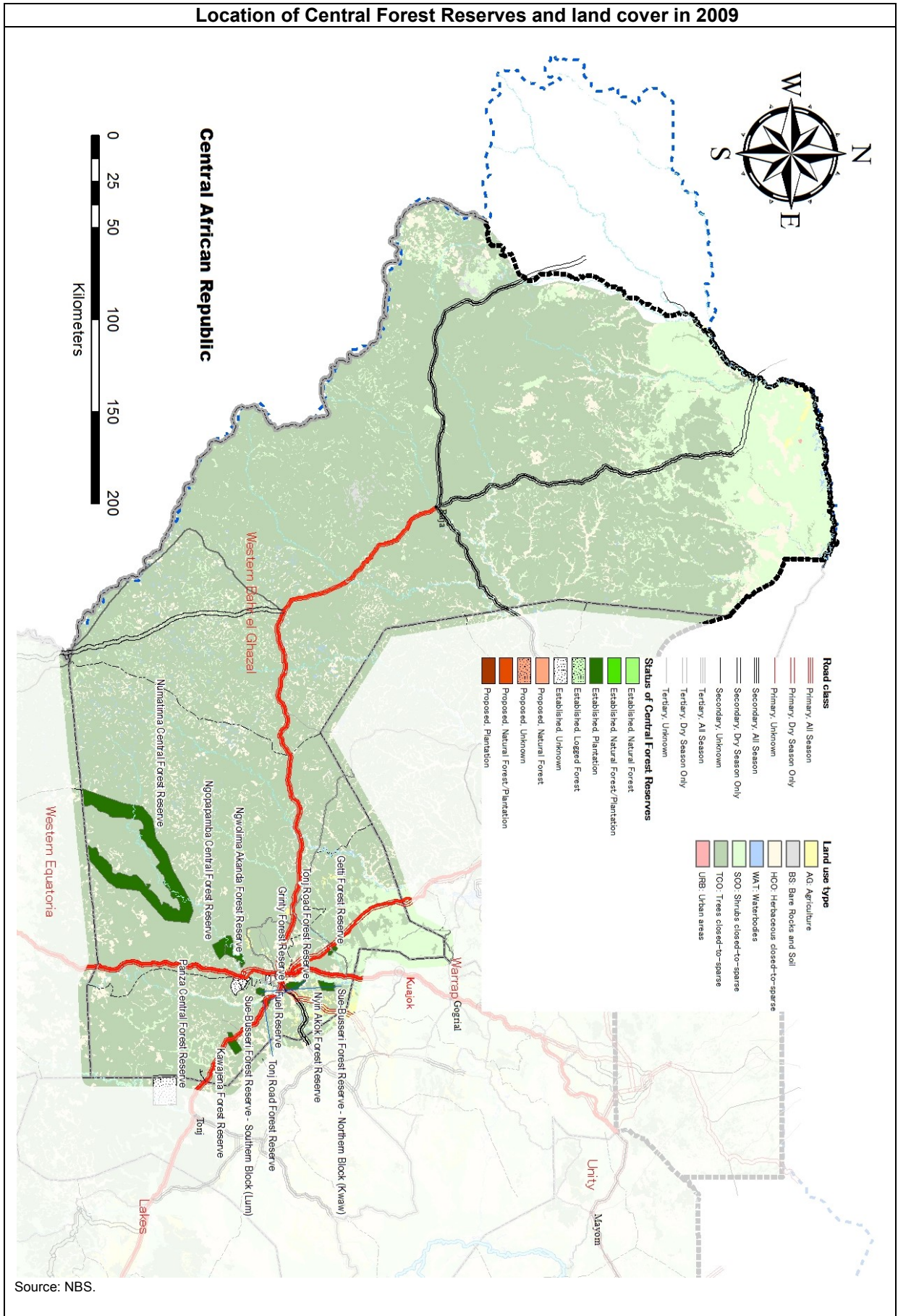
Source: CAMP team survey. 2013.

#### Land cover percentage to total area

County	AG	TCO	SCO	HCO	URB	BS	WAT	Total area	Total area (ha)
Jur River	8.2%	66.3%	15.6%	9.5%	0.0%	0.0%	0.4%	100.0%	1,111,155
Raga	0.3%	71.4%	19.3%	7.6%	0.0%	0.5%	1.0%	100.0%	7,305,684
Wau	1.1%	88.1%	1.2%	7.4%	0.1%	0.2%	2.0%	100.0%	1,923,927
<b>Total</b>	<b>1.3%</b>	<b>73.9%</b>	<b>15.5%</b>	<b>7.8%</b>	<b>0.0%</b>	<b>0.3%</b>	<b>1.1%</b>	<b>100.0%</b>	<b>10,340,766</b>

Source: FAO. 2011. *Land cover atlas of South Sudan*. Rome: FAO.

Legend: AG=Agriculture, TCO=Tree closed-to-sparse, SCO=Shrubs closed-to-sparse, HCO=Herbaceous closed-to sparse, URB=Urban areas, BS=Bare Rocks and Soil, and WAT=Waterbodies.



6.5 State Ministry of Animal Resources and Fisheries (MARF)																																			
Organogram			Staff																																
<pre> graph TD     Minister --&gt; DG[Director General]     DG --&gt; DF[Directorate of Fisheries]     DG --&gt; DAP[Directorate of Animal Production]     DG --&gt; DVS[Directorate of Veterinary Services]     DG --&gt; DHRD[Directorate of Human Resources Development]     DG --&gt; DFA[Directorate of Finance and Administration]           </pre>			Breakdown of information not available <table border="1"> <thead> <tr> <th>Section</th> <th>Number of staff</th> </tr> </thead> <tbody> <tr> <td><b>Directorate of Fisheries</b></td> <td>-</td> </tr> <tr> <td>Department of Control</td> <td>(-)</td> </tr> <tr> <td>Department of Fisheries</td> <td>(-)</td> </tr> <tr> <td><b>Directorate of Animal Production</b></td> <td>-</td> </tr> <tr> <td>Department of Animal Production</td> <td>(-)</td> </tr> <tr> <td>Department of Animal Health</td> <td>(-)</td> </tr> <tr> <td><b>Directorate of Veterinary Services</b></td> <td>-</td> </tr> <tr> <td><b>Directorate of Human Resources Development</b></td> <td>-</td> </tr> <tr> <td><b>Directorate of Finance and Administration</b></td> <td>-</td> </tr> <tr> <td>Department of Accounts</td> <td>(-)</td> </tr> <tr> <td>Department of Procurement</td> <td>(-)</td> </tr> <tr> <td>Department of Human Resource</td> <td>(-)</td> </tr> <tr> <td>Department of Planning</td> <td>(-)</td> </tr> <tr> <td>Department of Administration</td> <td>(-)</td> </tr> <tr> <td><b>Total</b></td> <td><b>249</b></td> </tr> </tbody> </table>	Section	Number of staff	<b>Directorate of Fisheries</b>	-	Department of Control	(-)	Department of Fisheries	(-)	<b>Directorate of Animal Production</b>	-	Department of Animal Production	(-)	Department of Animal Health	(-)	<b>Directorate of Veterinary Services</b>	-	<b>Directorate of Human Resources Development</b>	-	<b>Directorate of Finance and Administration</b>	-	Department of Accounts	(-)	Department of Procurement	(-)	Department of Human Resource	(-)	Department of Planning	(-)	Department of Administration	(-)	<b>Total</b>	<b>249</b>
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Source: State MARF.			Source: State MARF.																																
Budget			Strategic plan																																
Category	2011/12 Budget	2012/13 Outturn	2013/14 Budget																																
Salary	(Data not available)	136,831,804	144,021,638																																
Operating	(Data not available)	19,992,977	44,850,556																																
Transfers	(Data not available)	-	-																																
Others	(Data not available)	-	-																																
Capital	(Data not available)	9,571,841	12,606,195																																
<b>Overall total</b>	(Data not available)	166,396,622	201,478,389																																
Source: State MARF. Unit: SSP			<b>WBG State Strategic plan (2012-15)</b> <b>Objective</b> <ul style="list-style-type: none"> <li>To contribute to the enhancement of food security for about 35% of the people of WBG State by promoting private sector development and supporting self-employment opportunities in the agriculture and forestry subsectors</li> <li>To contribute to the improvement of food security and livelihoods of the population of WBG State through sustainable and improved animal resources and fisheries production</li> </ul> <b>Budget Plan</b> (Information not available) <ul style="list-style-type: none"> <li>Provide infrastructure and strengthen Institutions through capacity development and training</li> <li>Conduct technical assessment to establish current levels of animal production and factors limiting increased production</li> <li>Promote animal and poultry disease control and establish livestock marketing mechanism</li> <li>Promote establishment of fisheries marketing mechanism</li> <li>Establish poultry houses, quarantine, fence and installed electricity and water supply</li> </ul> <b>Activities</b> <ul style="list-style-type: none"> <li>Conduct different training for staff at the state and the counties</li> <li>Initiate the formation of community animal health workers associations</li> <li>Train veterinary pharmacists on basic dispensing and animal health prophylactic treatment</li> <li>Poultry houses constructed and supplied with electricity and water</li> </ul>																																
Source: State MARF.			Source: State MARF.																																
Services provided by State MARF and local government																																			
<b>(Animal production services)</b> <ul style="list-style-type: none"> <li>Provide technical advices to livestock keepers</li> <li>Provide information through radio programme run by State MARF</li> </ul> <b>(Animal health services)</b> <ul style="list-style-type: none"> <li>Provide clinical support to livestock keepers</li> <li>Technical support to livestock keepers</li> </ul>																																			



## 6.6 Livestock

### Services provided by National government institutions

Organisation	Activities	Area	Period
Marialai Dairy Farm	<ul style="list-style-type: none"> <li>• Training of smallholder dairy farmers in quality breeds, quality feeds, animal health, and milk processing techniques.</li> <li>• The target is vulnerable groups.</li> <li>• Produce milk and other dairy products by the trainees to improve their livelihoods</li> </ul>	Jur river County	(Information not available)
University of Bahr El Ghazal, college of Vet Services (Wau)	<ul style="list-style-type: none"> <li>• Undergraduate course ( Bachelor degree)</li> <li>• Postgraduate course (MSc and PhD)</li> </ul>	Veterinary science	5 years 2 years each

Source: CAMP survey team. 2013.

### Services provided by DPs and NGOs

Organisation	Activities	Area	Period
WOTAP (Women Training and Promotion)	<ul style="list-style-type: none"> <li>• Undertake goat, sheep and poultry restocking program</li> <li>• Deliver training and workshops</li> </ul>	Wau County	Throughout the year
WDG (Women Development Group)	<ul style="list-style-type: none"> <li>• Provide ox-ploughing attachments and give training.</li> <li>• Undertake goat and poultry restocking program</li> </ul>	Wau County	Throughout the year
Intermon Oxfarm	<ul style="list-style-type: none"> <li>• Undertake sheep and bull restocking program</li> </ul>	(Information not available)	(Information not available)
FAO	<ul style="list-style-type: none"> <li>• Deliver training to local CAHWs</li> <li>• Provide bicycles for extension work</li> </ul>	(Information not available)	(Information not available)
HARD (Hope Association for Relief and Development)	<ul style="list-style-type: none"> <li>• Deliver goat and poultry restocking program</li> </ul>	(Information not available)	(Information not available)

Source: CAMP survey team. 2013.

\*CAHW: Community Animal Health Worker

### Services provided by private sector

#### (Agro-dealer)

- There are some agro-dealers providing veterinary drugs and technical advices.

#### (Slaughter house)

- Only one slaughter slab is run by a private individual.

#### (Livestock market)

Livestock market is run by the state government. However, following services are provided by private sector:

- Inspect origin of animals to find out if the animals are stolen
- Provide holding grounds
- Provide security
- Provide transport service to butcheries

### Livestock population

Type of Animal	Population In the State
Cattle	1,200,000
Goat	750,000
Sheep	980,000
Poultry	800,000
Horse	2,000
Pig	163
Donkey	5,000
<b>Total</b>	<b>3,727,163</b>

Source: CAMP survey team. 2013.

Livestock diseases		
Type of Animal	Type of disease	Outbreak area in last 2 years
Cattle	Liver problems, Contagious bovine pleuropneumonia	There was no outbreak in the last 2 years.
	Anthrax	There was no outbreak in the last 2 years.
	Diarrhoea	There was no outbreak in the last 2 years.
	Haemorrhagic septicaemia, Foot and mouse disease	There was no outbreak in the last 2 years.
Goat	Contagious bovine pleuropneumonia	There was no outbreak in the last 2 years.
	Arthritis	There was no outbreak in the last 2 years.
	Diarrhoea	There was no outbreak in the last 2 years.
	Elimentisis	There was no outbreak in the last 2 years.
	Mange	There was no outbreak in the last 2 years.
Sheep	Contagious Bovine Pleura Pneumonia	There was no outbreak in the last 2 years.
	Arthritis	There was no outbreak in the last 2 years.
	Diarrhoea	There was no outbreak in the last 2 years.
	Elimentisis	There was no outbreak in the last 2 years.
	Mange	There was no outbreak in the last 2 years.
Pig	(Information not available)	(Information not available)
Horse	(Information not available)	(Information not available)
Donkey	(Information not available)	(Information not available)

Source: CAMP survey team. 2013.

#### Animal health issues

- The number of state staff and CAHWs (Community Animal Health Workers) are not enough to control animal diseases.
- There are limited grazing areas because these areas are communal lands.
- Water points are not enough to keep livestock healthy.
- Drugs supply is not sufficient to provide animal health service.

#### Market

Type of livestock and livestock product	Market
Cattle	Domestic and secondary
Sheep	Domestic and secondary
Goat	Domestic and secondary
Poultry	Domestic and secondary
Meat	Domestic and secondary
Egg	Domestic and secondary
Milk	Primary
Honey	Primary

Source: CAMP survey team. 2013.

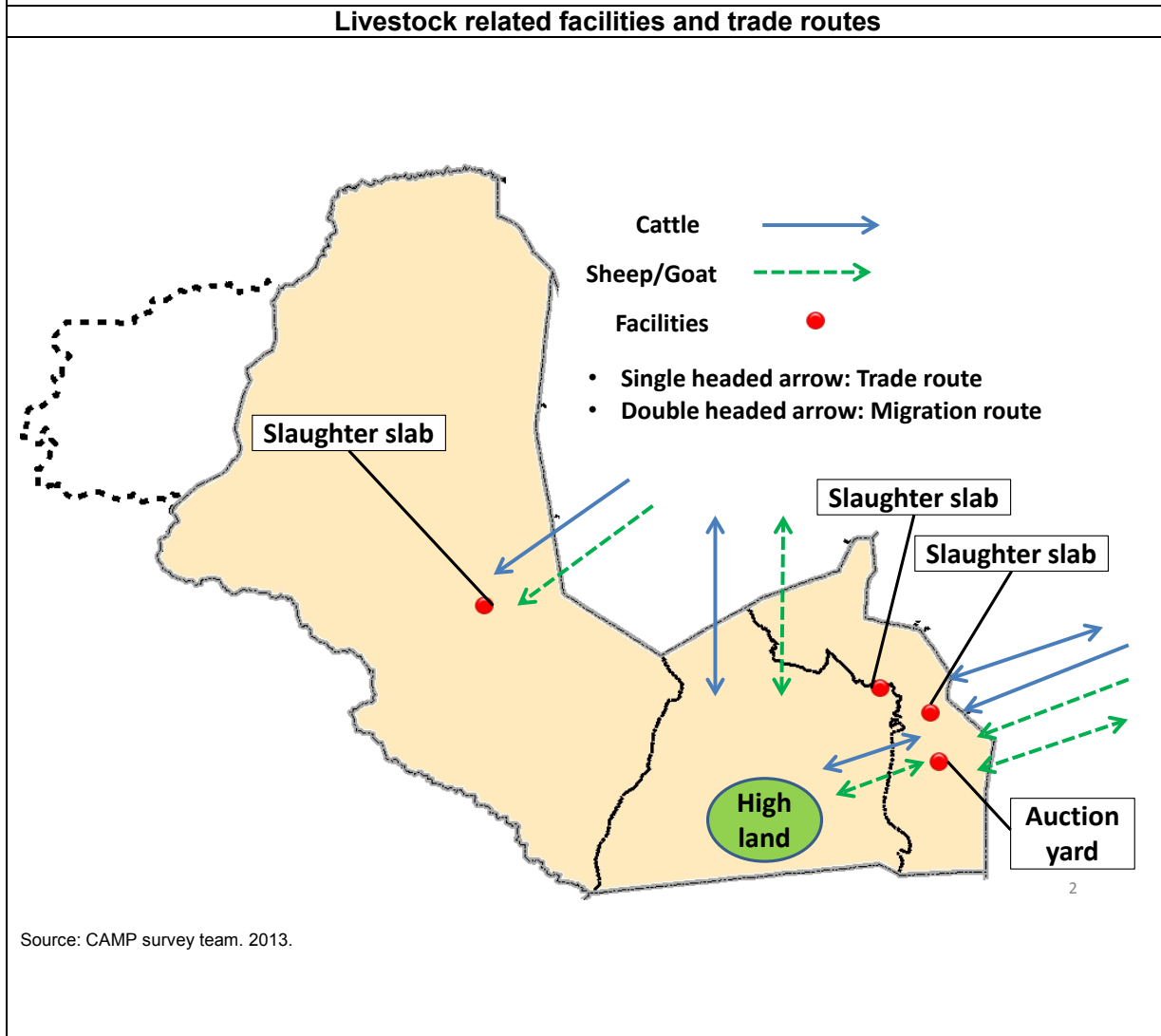
#### Market price

Item	Unit	Price (SSP) (range)		
		Low season		High season
Bull (big)	400 kg	November-April	2,000-2,500 - 3,000-3,500	May-October
Bull (medium)	280 kg	November-April	1,000-1,500 - 2,000-2,500	May-October
Heifer	180 kg	(Information not available)	1,000 - 1,000	(Information not available)
Calf	200 kg	(Information not available)	500 - 500	(Information not available)
Sheep	75-80 kg	(Information not available)	150 - 150	(Information not available)
Goat	75-80 kg	(Information not available)	200 - 200	(Information not available)
Milk	500 ml	(Information not available)	3 - 3	(Information not available)
Honey	600 ml	(Information not available)	15 - 15	(Information not available)
Meat (beef)	1 kg	(Information not available)	20 - 20	(Information not available)
Meat (sheep and goat)	1 kg	(Information not available)	30 - 30	(Information not available)
Egg (exotic)	Each	(Information not available)	1 - 1	(Information not available)
Milk tea	1 cup	(Information not available)	2 - 2	(Information not available)

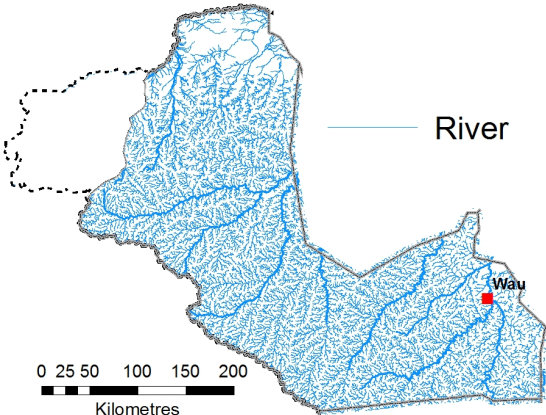


Source: CAMP survey team. 2013.

\*This is not a representative sample.

Taxes and charges			
(Butcheries)			
Type	Cost (SSP) (range)	Frequency	
Meat sales licence	200	Every 6 months	
Trade Licence	400	Annually	
Profit taxes (tax rate not available)	300-400	Annually	
Municipality fee	40	Monthly	
Security fee	40	Monthly	
Source: CAMP survey team. 2013. *This is not a representative sample.			
Major livestock species and products by livelihood zone			
Ironstone Plateau		Western Flood Plains	
Type of Animal	Breed	Type of Animal	Breed
Cattle	Local	Cattle	Local
Goat	Local	Goat	Local
Sheep	Local	Sheep	Local
Poultry	Local	Poultry	Local
Livestock products		Livestock products	
<ul style="list-style-type: none"> <li>Meat</li> <li>Milk</li> <li>Egg</li> <li>Local fat</li> </ul>		<ul style="list-style-type: none"> <li>Meat</li> <li>Milk</li> <li>Egg</li> <li>Local fat</li> </ul>	
Source: CAMP survey team. 2013			



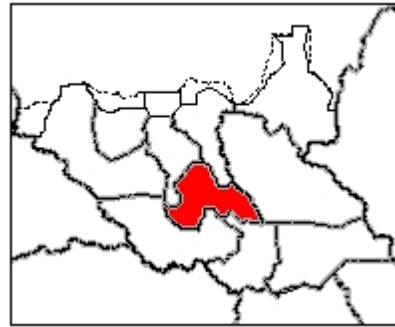
<b>Cross-cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• Tension at communal grazing areas among pastoralists</li> <li>• Land use is not effective. (e.g. land rotation)</li> <li>• Land boundary issue between sedentary farmers and pastoralists from other states</li> </ul> <p><b>(Migration)</b></p> <ul style="list-style-type: none"> <li>• Long distance migration causes low livestock and milk production.</li> </ul> <p><b>(Conflict and insecurity)</b></p> <ul style="list-style-type: none"> <li>• Tension between sedentary farmers and pastoralist results in conflicts.</li> <li>• Conflicts occur at common grazing and watering points occasionally.</li> </ul> <p><b>(Gender disparities)</b></p> <ul style="list-style-type: none"> <li>• Unequal cattle ownership</li> <li>• Decision-making is done by men.</li> <li>• Women are seen as property in some areas.</li> </ul> <p><b>(Drought and floods)</b></p> <ul style="list-style-type: none"> <li>• Unstable climate lowers livestock production and productivity.</li> </ul>
<b>Opportunities</b>
<ul style="list-style-type: none"> <li>• Vast land</li> <li>• Sufficient rain and underground water</li> <li>• Sizable livestock population</li> <li>• A number of CBOs (Community Based Organisations) and DPs/NGOs are operating in the state.</li> <li>• High supply capacity of livestock products</li> <li>• Livestock markets are well-functioning.</li> <li>• Local government institutions have strong authority.</li> </ul>
<b>Challenges</b>
<ul style="list-style-type: none"> <li>• Irregular rainfall</li> <li>• Livestock diseases</li> <li>• Livestock facilities</li> <li>• Transportation of livestock and livestock products</li> <li>• Traditional method of livestock keeping</li> <li>• Resource-based conflict (grazing and watering points)</li> <li>• Capacity of the State MARF is insufficient</li> <li>• Technological packages are not available. (e.g. information techniques)</li> <li>• Feeder roads are not well established.</li> </ul>

6.7 Fisheries					
<b>Numbers of fishing households (ANLA 2012)</b>		4,010			
<b>Fish production</b>	Unknown. There is no ice availability in the state.				
<b>Fish exports</b>	Fish from Wau and WBG State travels to NBG State for Mandesha.				
<b>Fish imports</b>	Fresh fish comes from Warrap mainly to Wau for the urban market. Small pelagics from Uganda and Kosti for preparation of Mandesha. Dried fish from Lakes, Unity and and Upper Nile States. Some daga'a and small amount of smoked fish from Uganda.				
<b>Seasonality</b>	All year in the large Jur River and similar. Elsewhere late wet season on the floodplains, dry season in the lakes and smaller rivers.				
<b>Landing sites</b>	Scattered near rivers and lakes. Mostly seasonal except in the Jur River and tributaries				
<b>Gears</b>	Cast nets, long lines, spears, gill nets. Extensive use of plant poisons in enclosed waters.				
<b>Vessels</b>	Dugout and dugout palm log canoes.				
<b>Informal taxation</b>	Mainly a problem for importers of pelagics from Uganda.				
<b>Market</b>	Fish sold fresh if near to a market, but much dried for preparation into Mandesha or sale to local markets.				
Aquaculture					
<p>There is no producing aquaculture in the state (late 2013) though one entrepreneur is building 2 ponds. These have not yet been stocked. Water supply will be a problem for large scale aquaculture in the future, and the temperatures may be too high in the hot season. State MARF has plans for the future for aquaculture but these await funding. (Photo: Half dug pond near Wau)</p>					
Post-harvest and marketing					
		<p>Fish is coming in to Wau from Warrap State fresh. Definite preference for fresh fish, though Mandesha also widely available and made in WBG State. All fish sold by the kilo in WBG State, except Mandesha and some dried fish which is sold by the rotl (450gms: an Arab measure of weight). (Photo: Fresh fish for sale in Wau)</p>			
Species	Presentation	SSP/kg	Species	Presentation	SSP/kg
Alestes	Fresh	25.77	Bagrus dogmac	Fresh	40.00
Clarius spp	Fresh	29.32	Tilapia spp	Fresh	38.00
Clarius anguillarus	Sun dreid	58.72	Distichotus spp	Sun dried	51.85
Herotus niloticus	Sun dried	50.00	Lates niloticus	Sun dried	51.85
Uganda pelagics	Sun dried	17.78	Bagrus dogmac	Fresh	40.00
Alestes	Fresh	25.77			

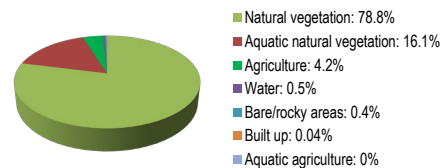


## 7 Lakes State (Capital: Rumbek)

7.1 Basic Information	
<b>Population (2008)<sup>a</sup></b>	695,730 (7 <sup>th</sup> ) Male: 365,880 Female: 329,850
<b>Projected population (2013)<sup>b</sup></b>	879,012(7 <sup>th</sup> )
<b>Area <sup>c</sup></b>	44,075 km <sup>2</sup> (6 <sup>th</sup> )
<b>No. of Countites, Payams and Bomas (2009)<sup>d</sup></b>	8 Counties 49 Payams 122 Bomas
<b>Food secure population (2012)<sup>b</sup></b>	62% (6 <sup>th</sup> )
<b>Access to improved drinking water (2009)<sup>e</sup></b>	71% (1 <sup>st</sup> )
<b>Literacy rate (15-24 years old) (2009)<sup>e</sup></b>	30% (7 <sup>th</sup> )
<b>Primary school gross enrolment rate (GER) (2010)<sup>f</sup></b>	67% (7 <sup>th</sup> )



Land cover <sup>g</sup>



Source: <sup>a</sup> SSCSE. 2010. Southern Sudan Counts: Tables from the 5th Sudan Population and Housing Census, 2008; <sup>b</sup> WFP. 2013. ANLA; <sup>c</sup> FAO. 2011. Land Cover Atlas of the Republic of South Sudan; <sup>d</sup> Original data source of NBS. 2012. NBHS 2009; <sup>e</sup> NBS. 2012. NBHS 2009; <sup>f</sup> MoE. 2010. EMIS; <sup>g</sup> NBS. 2011. South Sudan Statistical Yearbook 2011.

### Administrative districts (counties)

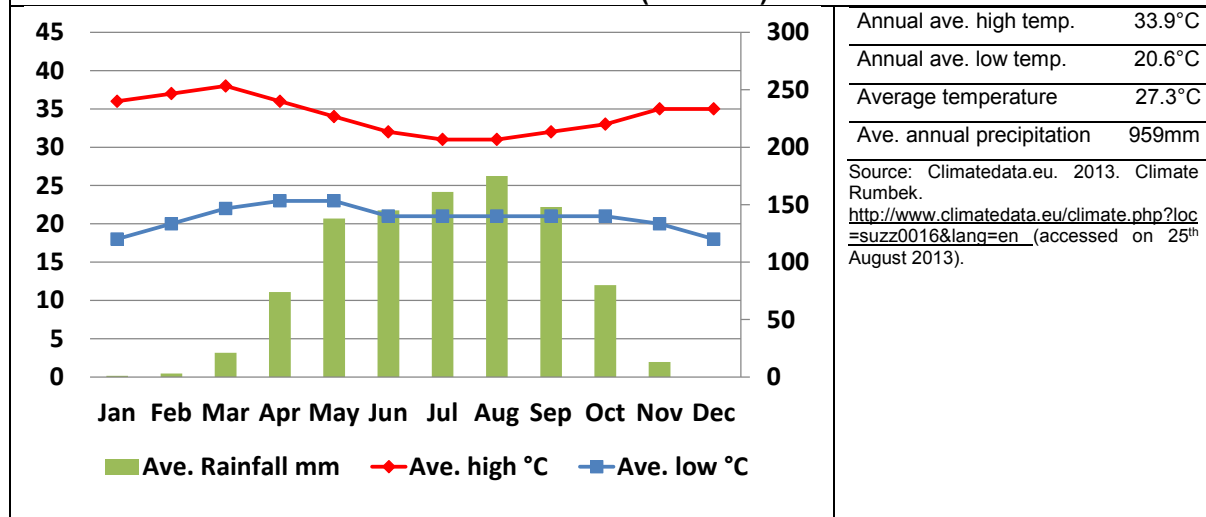
County	Boma Population	
	1 - 10,000	10,001 - 48,030
Rumbek North	10,001 - 20,000	20,001 - 30,000
Cueibet	10,001 - 20,000	20,001 - 30,000
Rumbek Centre	10,001 - 20,000	20,001 - 30,000
Rumbek East	10,001 - 20,000	20,001 - 30,000
Yirol East	10,001 - 20,000	20,001 - 30,000
Yirol West	10,001 - 20,000	20,001 - 30,000
Wulu	10,001 - 20,000	20,001 - 30,000
Awerial	10,001 - 20,000	20,001 - 30,000

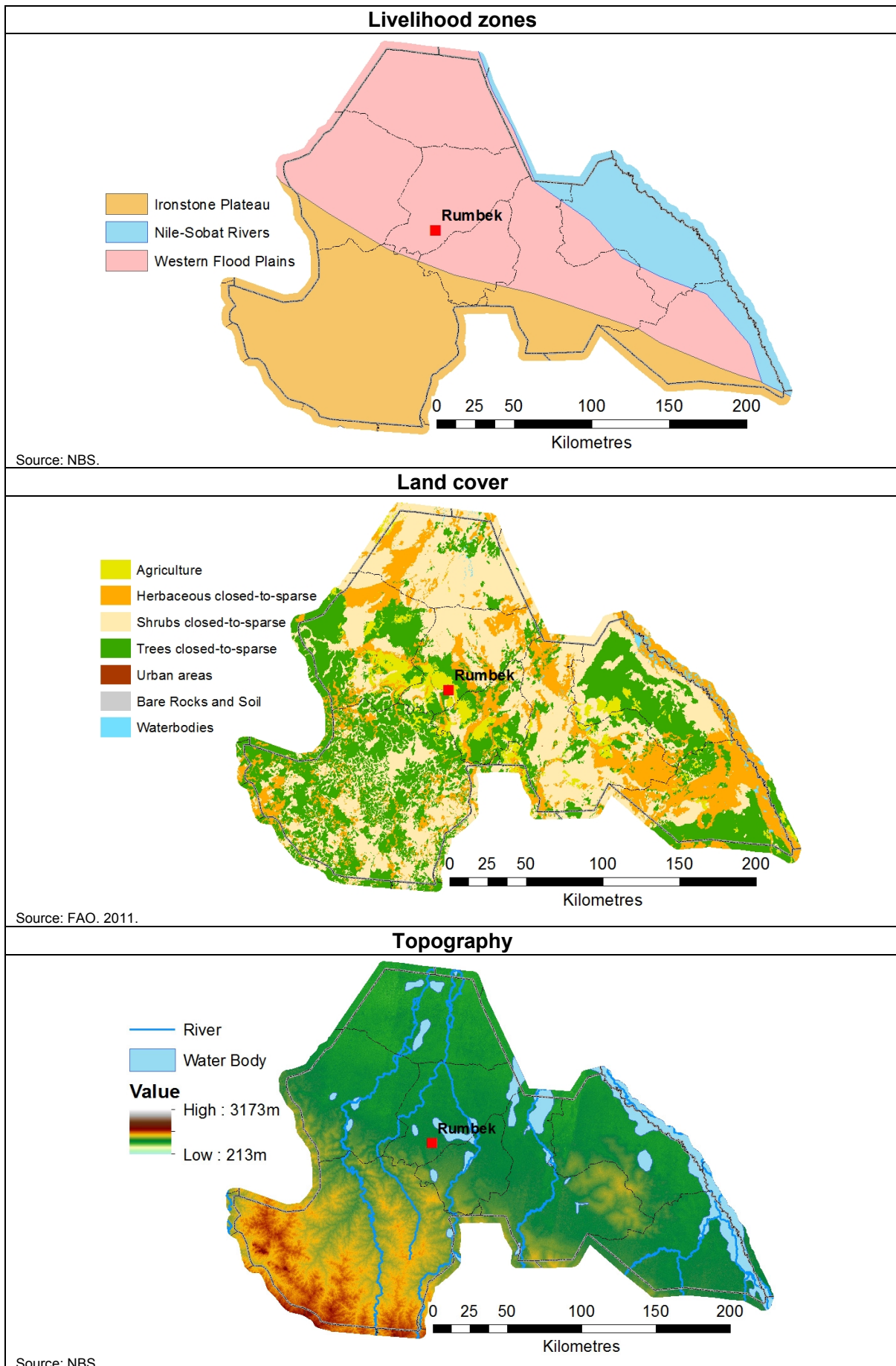
  

County	Estimated Population (2013) <sup>a</sup>	Pop. density (ppl/km <sup>2</sup> ) <sup>b</sup>
Rumbek Centre	174,469	45.0
Rumbek North	140,385	29.2
Yirol East	134,582	26.9
Cueibet	133,857	25.7
Rumbek East	133,798	55.6
Yirol West	121,218	18.8
Awerial	53,763	11.9
Wulu	46,319	3.9

Source: (Map) NBS; (Table)<sup>a</sup> WFP. 2013. ANLA; <sup>b</sup> Land scale data applied from FAO. 2011. Land Cover Atlas of the Republic of South Sudan.

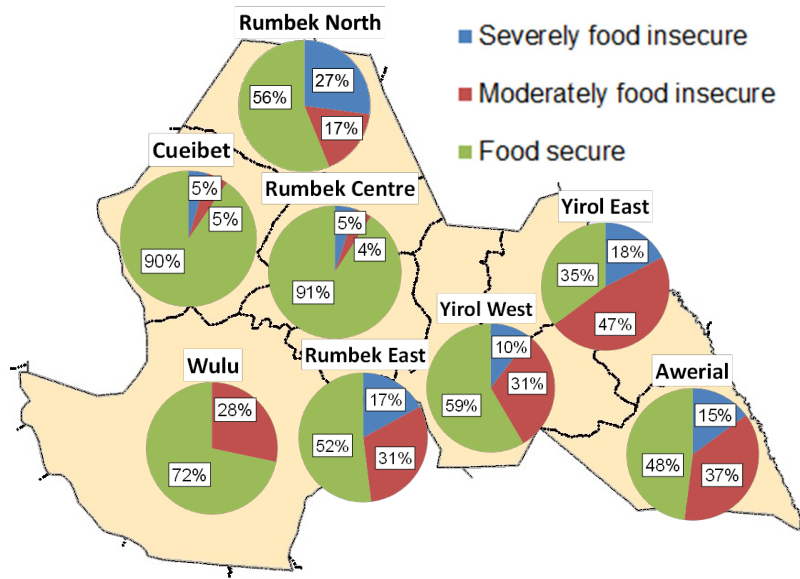
### Climate chart (Rumbek)





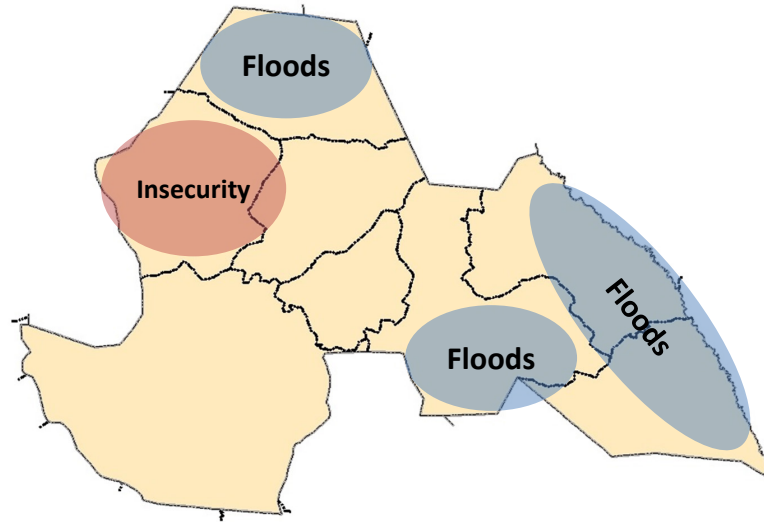


### Estimated food security status by county (2013)



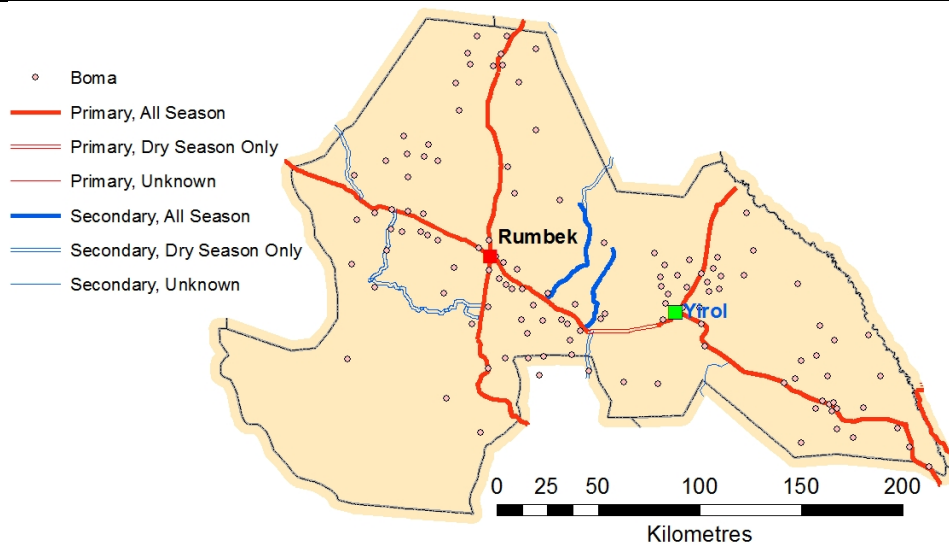
Source: WFP.2013.ANLA.

### Insecurity and natural disaster



Source: CAMP survey team 2013.

### Road and Boma location



Source: Road (WFP. 2013), Boma location (NBS).

7.2 State Ministry of Agriculture and Forestry (MAF)																																																			
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<b>Directorate of Planning and Budgeting</b>	<b>6</b>																																																		
Department of Monitoring and Evaluation	(1)																																																		
Department of Budgeting	(1)																																																		
Department of Agriculture Information System	(3)																																																		
Statistics	(1)																																																		
<b>Directorate of Finance and Administration</b>	<b>21</b>																																																		
Department of Procurement	(2)																																																		
Department of Human Resource	(5)																																																		
Department of Information Technology	(7)																																																		
Unclassified staff	(7)																																																		
<b>Total</b>	<b>149</b>																																																		
Source: State MAF.		Source: State MAF.																																																	
<b>Budget</b>		<b>Strategic plan</b>																																																	
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<b>Services provided by State MAF and local government</b>																																																			
<b>(Technical Advice)</b>																																																			
<ul style="list-style-type: none"> <li>Technical advice is delivered to farmers by the AEO (Agricultural Extension Officer) in the counties and payams and by extension workers who support farmers voluntarily at the Boma level.</li> <li>State MAF provides training to extension officers and farmers.</li> </ul>																																																			
<b>(Seeds and tools provision)</b>																																																			
<ul style="list-style-type: none"> <li>Seeds, tools, watering cans, and ox-plough attachments are provided by State MAF in some counties.</li> </ul>																																																			
<b>(Demo farm and field day= visit field to share best agricultural practice)</b>																																																			
<ul style="list-style-type: none"> <li>Demo farms, which are about 10 feddan, are established in some counties.</li> </ul>																																																			
<b>(Tractor hiring service)</b>																																																			
<ul style="list-style-type: none"> <li>The hiring charge is SSP 300/feddan in Rumbek East County</li> </ul>																																																			

<b>7.3 Crop</b>			
<b>Services provided by DPs and NGOs</b>			
<b>Organization</b>	<b>Activities</b>	<b>Area</b>	<b>Target</b>
ACROSS	<ul style="list-style-type: none"> <li>• Agriculture training for farmers</li> <li>• Provision of ox-plough attachment and training</li> <li>• Provision of vegetable seeds and fruit seedlings</li> </ul>	Rumbek East and Rumbek Centre Counties	Farmers in the pilot areas
DRDA (Diar for Rehabilitation and Development Association)	<ul style="list-style-type: none"> <li>• Provide agricultural training to farmers</li> <li>• Organise farmers' groups</li> </ul>	Yirol, Rumbek East and Rumbek Centre Counties	Farmers in the pilot areas
FAO	<ul style="list-style-type: none"> <li>• Building CAD office</li> <li>• Provision of seeds</li> </ul>	Rumbek Centre, Rumbek East, Cueibet and Yirol Counties	Farmers in the pilot areas
OXFAM	<ul style="list-style-type: none"> <li>• Training for crop production for farmers</li> <li>• Provision of seeds, tools and ox plough attachments</li> <li>• Creation of community assets</li> <li>• Building community access roads to local market</li> </ul>	Rumbek Centre County	Farmers in the pilot areas
CEFA	<ul style="list-style-type: none"> <li>• Training for crop and vegetable production</li> <li>• Training female farmers</li> <li>• Provision of seeds, tools and ox plough attachments</li> </ul>	Rumbek East and Rumbek Centre Counties	Farmers in the pilot areas
WFP	<ul style="list-style-type: none"> <li>• Provide food to vulnerable people</li> </ul>	8 Counties in Lakes State	Farmers in the pilot areas


\*There are a number of DPs and NGOs in the State. The above information collected by CAMP team is shown as examples.

**Services provided by private sector**

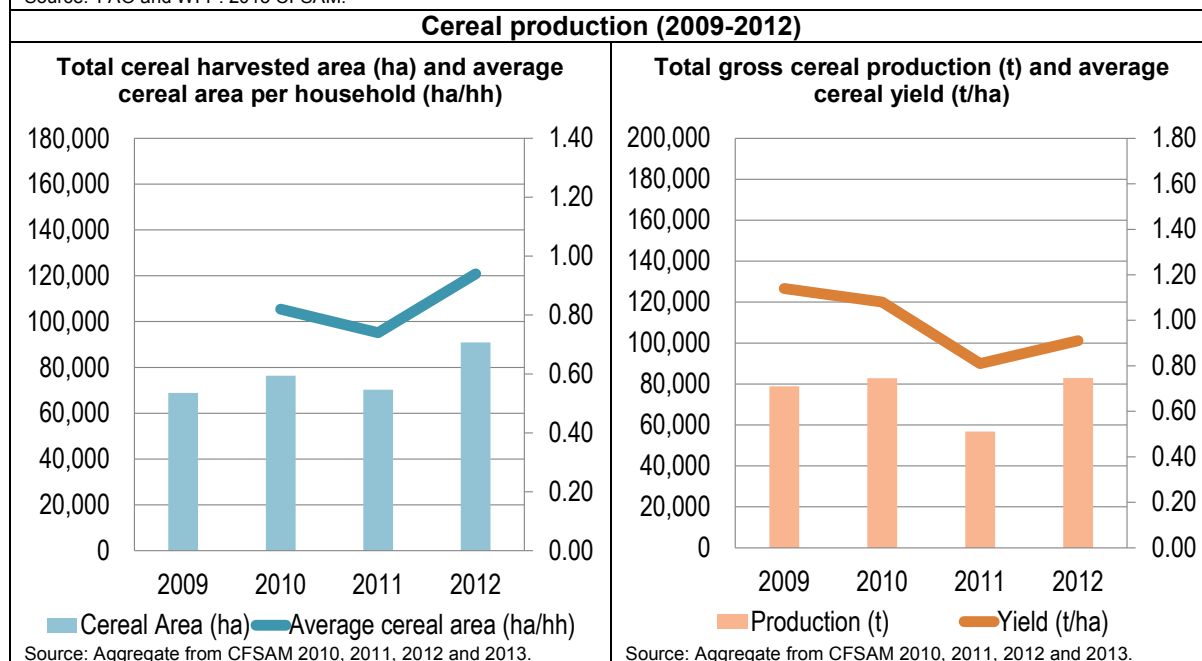
- (Tractor hiring)**
- Tractor hiring services are provided by private service provider.
  - The charge is from SSP 200 to 300/feddan for ploughing.
- (Agro-dealer)**
- Seed and tool supply system is underdeveloped.
  - Some local traders deal with local seeds, tools and some fruit tree seedlings.
- (Financial institution)**
- Some finance institutions are available mainly in Rumbek.
  - SUMI provides loans to cooperatives groups.
  - DRDA and BRAC provide financial support to women's groups.

\*1 SUMI: Sudan Micro Finance Institution  
 \*2 DRDA: Diar for Rehabilitation and Development Association  
 \*3 BRAC: Bangladesh Rural Advancement Committee

Market						
Major agricultural products and their origin (Rumbek, May 2013)						
<b>(Crop)</b>			<b>(Others)</b>			
Item	Type	Origin	Item	Type	Origin	
Sorghum	Import	-	Okra	Import	-	
	Domestic	Lakes State		Domestic	Lakes State	
Maize flour	Import	Uganda	Jew's mallow	Import	-	
	Domestic	-		Domestic	Lakes State	
Groundnut	Import	-	Tomato	Import	Uganda	
	Domestic	Lakes State		Domestic	Lakes State	
Rice	Import	Uganda	Onion	Import	Uganda, Tanzania	
	Domestic	-		Domestic	-	
			Cabbage	Import	Uganda	
				Domestic	-	
			Carrot	Import	Uganda	
				Domestic	-	
			Amaranthus	Import	-	
				Domestic	Lakes State	
Source: CAMP survey team 2013. * This is not a representative sample.			Source: CAMP survey team 2013. * This is not a representative sample.			
Market price (Retail price, Rumbek, May 2013)						
Item	Unit	Price (SSP) (range)				
		Low season			High season	
Sorghum (Domestic)	Basin (10kg)	Dec-Jan	25	-	75	Feb-May
Maize flour (Imported)	25kg	Nov-Dec	40	-	70-90	May-Sep
Groundnut (Domestic)	Basin	Aug	10	-	30	May-July
Tomato (Imported)	1kg	Nov-Mar	17	-	25	May-Sept
Onion (Imported)	1kg	Jan-June	10	-	20	July-Sep
Source: CAMP survey team 2013. * This is not a representative sample.						
Transportation cost (Rumbek, May 2013)						
Type	Unit	Currency	Cost (range)			
Hiring charge(Kampala-Rumbek)	Truck (15,000kg)	Ush	25,000			
Customs	Truck (15,000kg)	SSP	8,000			
State tax (Tax rate not available)	Truck (15,000kg)	SSP	5,000			
Source: CAMP survey team 2013. * This is not a representative sample.						
Taxes and charges (Rumbek, May 2013)						
<b>(Wholesaler size 4mx4m)</b>						
Type	Cost (SSP)	Frequency				
Licence	260	Annually				
Trade union fee	25	Monthly				
<b>(Retailer)</b>						
Type	Cost (SSP)	Frequency				
Licence	75	Annually				
Rent	200	Monthly				
Trade union fee	30	Monthly				
Source: CAMP survey team 2013. * This is not a representative sample.						

Crop production		<b>Survey area</b> 
Farming household (%) (2012)	83	
Farming household (No.) (2012)	96,581	
Total cereal area (ha) (2012)	90,880 (7 <sup>st</sup> )	
Cereal gross yield (t/ha) (2012)	0.91 (5 <sup>th</sup> )	
Gross cereal production (t) (2012)	82,948 (6 <sup>th</sup> )	
<b>Average cereal area per household (ha/hh) (2012)</b>	<b>0.94 (5<sup>th</sup>)</b>	

Source: FAO and WFP. 2013 CFSAM.



Source: Aggregate from CFSAM 2010, 2011, 2012 and 2013.

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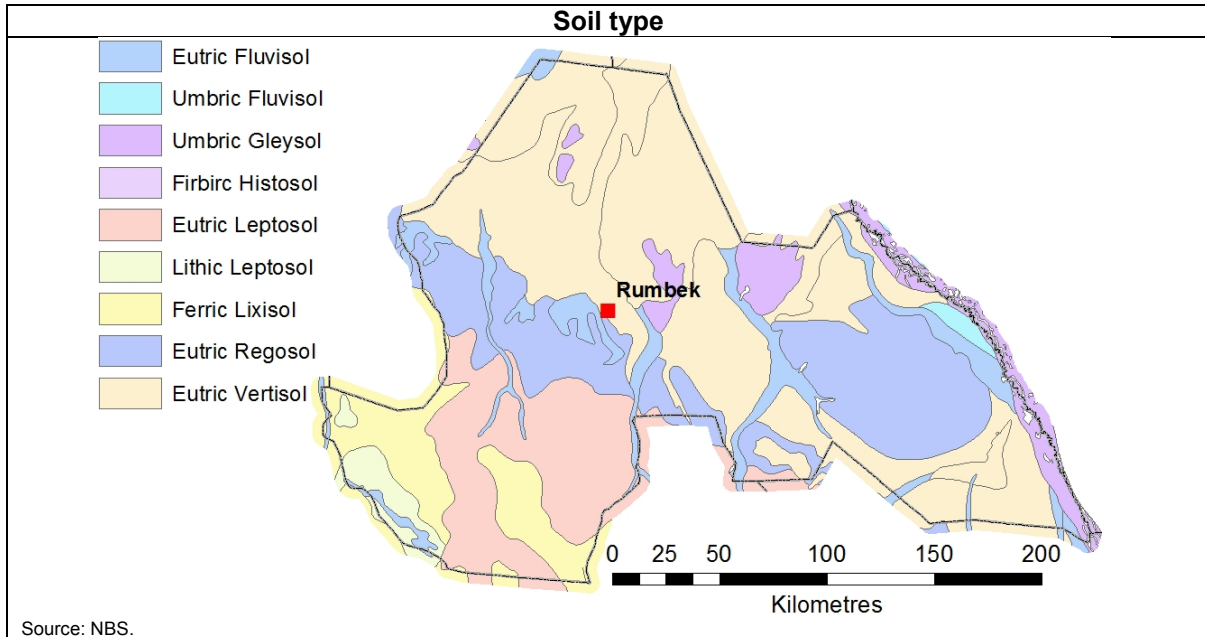
Crop production by livelihood zone					
Western Flood Plains		Ironstone Plateau		Nile-Sobat Rivers	
Major agricultural products					
Crop	Vegetable	Crop	Vegetable	Crop	Vegetable
Sorghum	Okra	Sorghum	Tomato	Sorghum	Pumpkin
Maize	Pumpkin	Pearl millet	Onion	Maize	Okra
Beans	Jew's mallow	<b>Cash Crop</b>	Sweet potato	<b>Cash Crop</b>	Spider plant
Green gram	Amaranthus	Green gram		Tobacco	
Pearl millet	Tomatoes	Sesame			
Cassava	Sweet potato	Groundnut			
<b>Cash Crop</b>	Kale (Sukuma weeki)				
Groundnut	Onion				
Green gram	Spider plant				
Sesame	(Tamalika)				
Sunflower					

Cropping calendar												
Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sorghum (long)	H		L	L	S							H
Sorghum (short)						L	S			H	H	
Maize				L	S		H	H				
Groundnut			L	L	S			H				
Pearl millet		L	L	L	S					H	H	
Green gram				L	S	S				H	H	
Okra			L	S	H	H	S	H	H	H	H	
Pumpkin			L	S	S	H	H	H				
Tomato	S	H		L	S		S	H	S	H	S	
L	L	S	T	H								

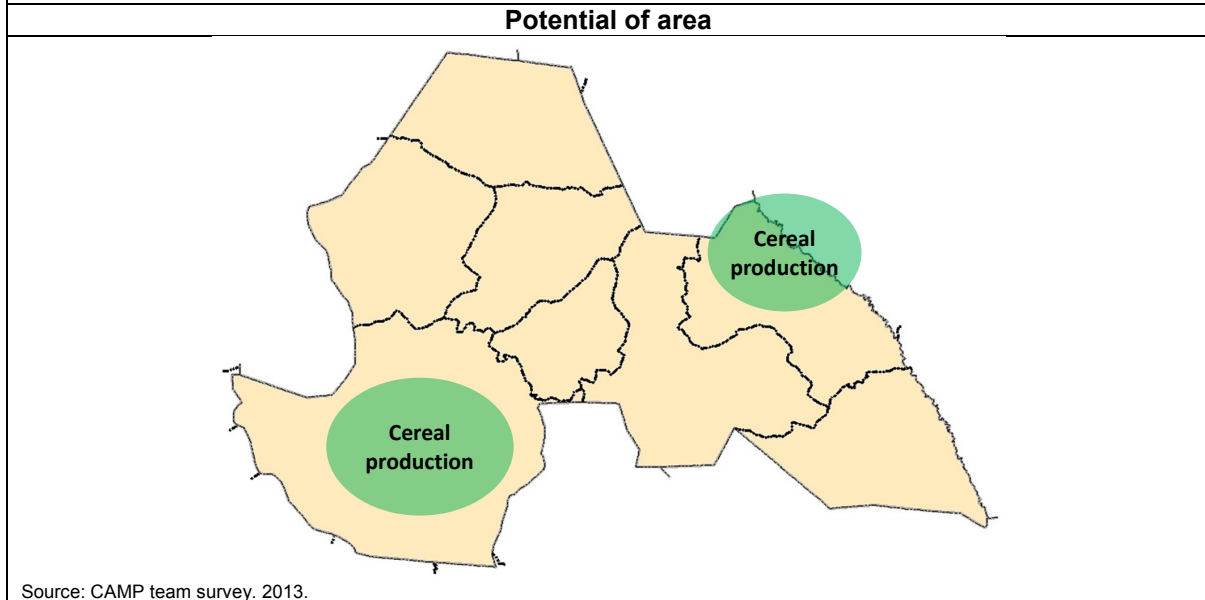
Source: CAMP survey team. 2013.

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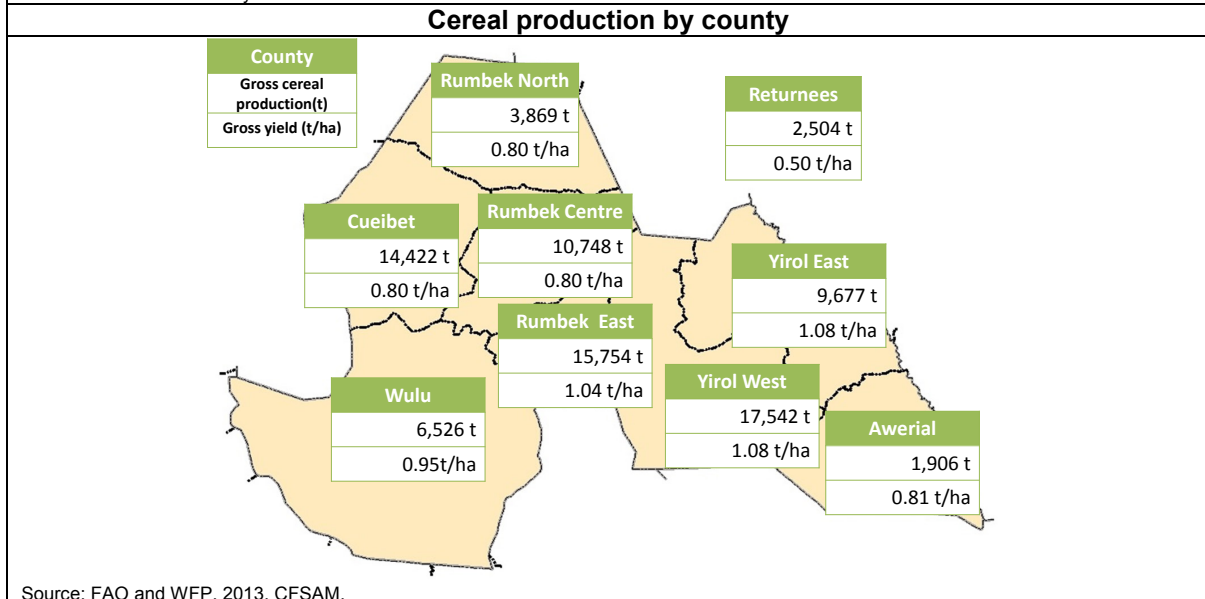
Source: CAMP survey team. 2013.



Source: NBS.



Source: CAMP team survey, 2013.



Source: FAO and WFP, 2013. CFSAM.

<b>Cross cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• Dispute over grazing land among pastoralists</li> <li>• Dispute between urban and sub-urban communities due to the expansion of urban areas without sufficient consultation with the sub-urban communities</li> </ul> <p><b>(Gender)</b></p> <ul style="list-style-type: none"> <li>• Few gender disparity issues in the state apart from land ownership issues of women</li> </ul> <p><b>(Security)</b></p> <ul style="list-style-type: none"> <li>• Cattle raiding happens frequently between the counties and with other states.</li> <li>• Armed robbery in some areas</li> <li>• In general, security has been improved by the caretaker governor appointed by the national government.</li> </ul> <p><b>(IDPs and returnees)</b></p> <ul style="list-style-type: none"> <li>• Living standards of the returnees and IDPs are lower than the average in the rural areas.</li> </ul> <p><b>(HIV)</b></p> <ul style="list-style-type: none"> <li>• The infection rate is not surveyed but some NGOs are conducting educational activities for HIV prevention.</li> </ul> <p><b>(Others)</b></p> <ul style="list-style-type: none"> <li>• Crop damaged by wild animals has been a serious problem for farmers.</li> <li>• Revenge attacks for cattle raiding make the situation worse.</li> <li>• Short rainy season (about 5 months) lowers agricultural production.</li> </ul>
<b>Opportunities</b>
<p><b>Crop production</b></p> <ul style="list-style-type: none"> <li>• Sufficient manpower</li> <li>• Soil is relatively fertile.</li> </ul>
<b>Challenges</b>
<p><b>Overall</b></p> <ul style="list-style-type: none"> <li>• Feeder roads are not well established.</li> <li>• Poor access to financial institutions</li> <li>• High tax rates</li> <li>• High transport costs</li> <li>• High labour costs</li> </ul>
<p><b>Crop</b></p> <ul style="list-style-type: none"> <li>• Market information system is not well established for the farmers.</li> <li>• Low land is affected by floods.</li> <li>• Drought occurs frequently.</li> <li>• Crop damaged by wild animals is getting serious.</li> <li>• Farmers do not have means of controlling pests and diseases.</li> <li>• Supply chain for improved seeds and agricultural tools is underdeveloped. Improved seeds are rarely available in the state.</li> <li>• Training opportunities for farmers are not sufficient due to lack of funds.</li> <li>• In some counties, demo farm has not been installed.</li> <li>• Human resource competes between farming and livestock activities in busy period.</li> </ul>

## 7.4 Forestry

### On-going and proposed projects

#### List of on-going projects

Project name	Objectives/activities	Duration	Annual cost
Agro-forestry (FAO)	Promote agro-forestry activities	Ended 2012	(Information not available)
Agro-forestry (ACROSS)	Promote agro-forestry activities	On-going	(Information not available)

Source: CAMP team survey, 2013.

#### List of proposed projects

Project name	Objectives/activities	Duration	Annual cost
Afforestation	Develop plantation	(Information not available)	(Information not available)
Agro-forestry and extension	Awareness building for agro-forestry development	(Information not available)	(Information not available)
Nursery development	Propagate teak seedling for afforestation	(Information not available)	(Information not available)
Saw mill rehabilitation	Rehabilitate saw mill and increase timber production	(Information not available)	(Information not available)
Capacity development	Training of extension workers	(Information not available)	(Information not available)
Lulu and honey production	Develop lulu and honey production	(Information not available)	(Information not available)
Gum Acacia production	Develop gum acacia production	(Information not available)	(Information not available)

Source: CAMP team survey, 2013.

#### Land cover percentage to total area

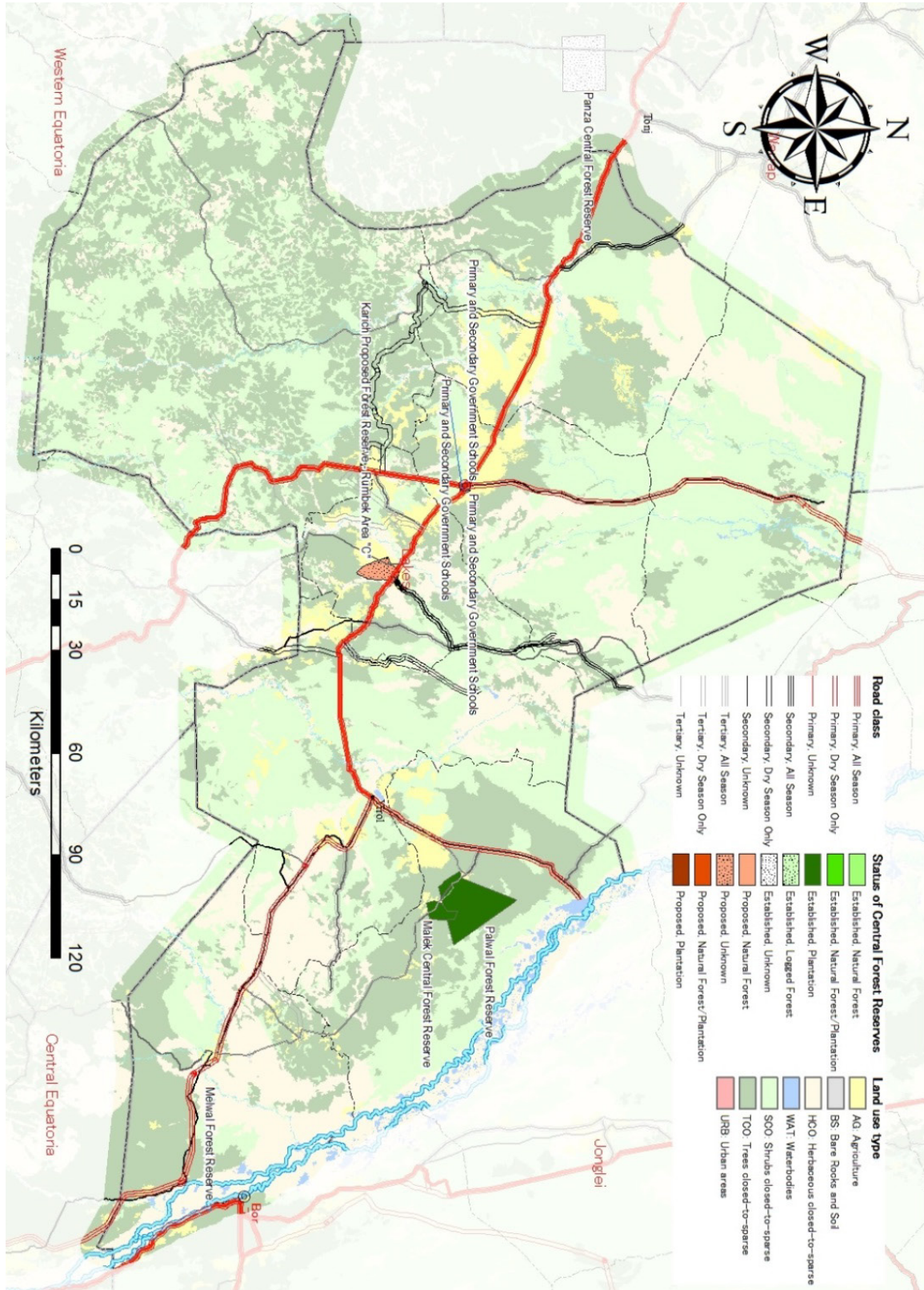
County	AG	TCO	SCO	HCO	URB	BS	WAT	Total area	Total area (ha)
Awerial	2.2%	36.6%	13.2%	46.8%	0.0%	0.3%	0.9%	100.0%	450,702
Cueibet	8.4%	46.4%	28.2%	17.0%	0.0%		0.0%	100.0%	520,582
Rumbek Centre	6.5%	22.6%	50.4%	20.3%	0.3%		0.0%	100.0%	387,259
Rumbek East	13.4%	38.2%	24.5%	23.9%	0.0%		0.0%	100.0%	240,785
Rumbek North	0.8%	8.4%	71.3%	19.0%	0.0%		0.4%	100.0%	480,511
Wulu	1.0%	51.1%	32.9%	13.3%	0.0%	1.4%	0.3%	100.0%	1,183,090
Yirol East	4.7%	47.3%	36.2%	10.1%			1.6%	100.0%	500,250
Yirol West	5.3%	15.0%	50.6%	28.7%	0.1%		0.3%	100.0%	644,329
<b>Total</b>	<b>4.2%</b>	<b>35.5%</b>	<b>38.5%</b>	<b>20.9%</b>	<b>0.0%</b>	<b>0.4%</b>	<b>0.5%</b>	<b>100.0%</b>	<b>4,407,508</b>

Source: FAO, 2011. *Land cover atlas of South Sudan*. Rome: FAO.

Legend: AG=Agriculture, TCO=Tree closed-to-sparse, SCO=Shrubs closed-to-sparse, HCO=Herbaceous closed-to-sparse, URB=Urban areas, BS=Bare Rocks and Soil, and WAT=Waterbodies.



Location of Central Forest Reserves and land cover in 2009



Source: NBS.

<b>7.5 State Ministry of Animal Resources and Fisheries (MARF)</b>																																							
<b>Organogram</b>		<b>Staff</b>																																					
<pre> graph TD     Minister --&gt; DG[Director General]     DG --&gt; D1[Directorate Finance and Administration]     DG --&gt; D2[Directorate of Livestock Development]     DG --&gt; D3[Directorate of Fisheries]     DG --&gt; D4[Directorate of Extension, Research and Training]           </pre>		Breakdown of information not available <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Section</th> <th style="text-align: center;">Number of staff</th> </tr> </thead> <tbody> <tr> <td><b>Directorate of Finance and Administration</b></td> <td style="text-align: center;">-</td> </tr> <tr> <td>Department of Finance</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Planning</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Human Resources</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Procurement</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Administration</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Directorate of Livestock Development</b></td> <td style="text-align: center;">-</td> </tr> <tr> <td>Department of Animal Health</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Animal Production and Range Management</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Directorate of Fisheries</b></td> <td style="text-align: center;">-</td> </tr> <tr> <td><b>Directorate of Extension, Research and Training</b></td> <td style="text-align: center;">-</td> </tr> <tr> <td>Department of Extension</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Research and Training</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Total</b></td> <td style="text-align: center;"><b>140</b></td> </tr> </tbody> </table>		Section	Number of staff	<b>Directorate of Finance and Administration</b>	-	Department of Finance	(-)	Department of Planning	(-)	Department of Human Resources	(-)	Department of Procurement	(-)	Department of Administration	(-)	<b>Directorate of Livestock Development</b>	-	Department of Animal Health	(-)	Department of Animal Production and Range Management	(-)	<b>Directorate of Fisheries</b>	-	<b>Directorate of Extension, Research and Training</b>	-	Department of Extension	(-)	Department of Research and Training	(-)	<b>Total</b>	<b>140</b>						
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<b>Capital</b>	505,636	(Data not available)	(Data not available)																																				
<b>Overall total</b>	2,529,135	(Data not available)	(Data not available)																																				
Lake State Strategic plan (2012-16)																																							
<b>Objective</b>	<ul style="list-style-type: none"> <li>Ensure efficient and effective use of available resources in the achievement of rapid growth of the sector</li> <li>Provide the basis for increased synergies among all actors in the development of the sector</li> <li>Provide a basis for monitoring and evaluation</li> </ul>																																						
<b>Budget Plan</b>	(Information not available) <ul style="list-style-type: none"> <li>Increase awareness of the investment in livestock and fisheries in Lakes state</li> <li>Increase the capacity of the staff to provide services</li> <li>Enhance availability of appropriate infrastructure facilities and equipment</li> <li>Increase livestock production and productivity</li> </ul>																																						
<b>Activities</b>	<ul style="list-style-type: none"> <li>Implement livestock disease surveillance and reporting system</li> <li>Carry out vaccination campaign and maintain adequate stocks of drugs, vaccines, materials and equipment</li> <li>Establish diagnostic laboratory facility (including the purchase of equipment and consumable)</li> <li>Train livestock officers on dairy, poultry, range land, hides and skins and bee keeping</li> <li>Train fisheries in modern technology of fish production, preservation and marketing</li> </ul>																																						
Source: State MARF. Unit: SSP		Source: State MARF.																																					
<b>Service provided by State MARF and local government</b>																																							
<p><b>(Animal production services)</b></p> <ul style="list-style-type: none"> <li>Technical advice is provided to livestock keepers.</li> </ul> <p><b>(Animal health services)</b></p> <ul style="list-style-type: none"> <li>Vaccination</li> <li>Drugs on cost recovery</li> <li>Disease inspection and control</li> <li>Treatment and animal health advice</li> <li>Training of CAHWs (Community Animal Health Workers)</li> </ul>																																							

7.6 Livestock								
Service provided by National government institutions								
No national government institutions are in the state.								
Service provided by DPs and NGOs								
Organisation	Activities				Area	Period		
VSF (Vétérinaires Sans Frontières) -Belgium	<ul style="list-style-type: none"> <li>Strengthening institutional capacity of MAF and MARF</li> <li>Improving productivity</li> <li>Animal health, production, food security recovery and livelihood programs</li> <li>Training of CAHWs</li> </ul>				Rumbek North and Centre Counties (constructed a slaughter house in Rumbek Centre and North Counties)	2009-2013		
Oxfam GB	<ul style="list-style-type: none"> <li>Animal health, animal production, food security and livelihood programs</li> <li>Community, public work and WASH (Water, Sanitation and Hygiene) program</li> <li>Cash transfer to returnees households</li> <li>Training of CAHWs</li> </ul>				Rumbek North, Rumbek Centre and Cueibet Counties (constructed a slaughter house in Cueibet County)	Since 1993		
FAO	<ul style="list-style-type: none"> <li>Animal health activities</li> <li>Supply and transportation of vaccines through State MARF</li> <li>Training of CAHWs</li> <li>Conduct FFS (Farmer Field Schools)</li> <li>Training of State MARF Staff</li> <li>Provided 1 hardtop and pickup land cruisers vehicles for State MARF</li> </ul>				Rumbek Centre Country	Since 2003		
NPA (Norwegian People's Aid)	<ul style="list-style-type: none"> <li>Food security programs</li> <li>Provides drugs on cost recovery basis</li> <li>Training of CAHWs</li> </ul>				Yirol East and West Counties	Since 1995		
GIZ	<ul style="list-style-type: none"> <li>Implementing fisheries project</li> <li>Capacity building</li> </ul>				Yirol East County	2008-2012		
Source: CAMP survey team. 2013. *CAHW: Community Animal Health Worker								
Services provided by private sector								
<p><b>(Agro-dealer)</b></p> <ul style="list-style-type: none"> <li>Some agro-dealers supply veterinary drugs.</li> </ul> <p><b>(Slaughter house)</b></p> <ul style="list-style-type: none"> <li>All the services in the slaughter houses are managed by the local government.</li> </ul> <p><b>(Livestock market/auction yard)</b></p> <ul style="list-style-type: none"> <li>(Information not available)</li> </ul>								
Livestock population								
Type of Animal	Population by county							
	Awerial	Cueibet	Rumbek Centre	Rumbek East	Rumbek North	Yirol East	Yirol West	Wulu
Cattle	300,000	285,000	80,000	60,000	250,000	150,000	180,000	20,000
Sheep	60,000	55,000	42,000	39,000	43,000	46,000	50,000	25,000
Goat	65,000	63,000	62,000	55,000	61,000	50,000	54,000	40,000
Poultry	5,000	20,000	10,000	7,000	2,000	6,000	3,000	15,000
Pig	N/A	N/A	N/A	N/A	20	N/A	N/A	N/A
Total	430,000	423,000	553,000	161,000	356,020	517,020	873,040	1,390,060
Source: State MARF. N/A: Data not available								

Livestock diseases		
Type of Animal	Type of disease	Outbreak area in last 2 years
Cattle	Haemorrhagic septicaemia	All counties except Rumbek East County between 2011 and 2012
	Trypanosomiasis	Cueibet County
	East Coast fever	Awerial County
	Black quarter, Contagious bovine pleuropneumonia, Foot and mouse disease, Anthrax, Brucellosis	There was no outbreak in the last 2 years.
Sheep and goat	Peste des petits ruminants, Contagious caprine pleuropneumonia, Internal parasites, Mange, Foot rot	There was no outbreak in the last 2 years.
Poultry	Newcastle disease, Fowl pox, Infectious bronchitis, Chronic respiratory disease, Salmonellosis, Internal parasites	There was no outbreak in the last 2 years.
Equine	(Information not available)	(Information not available)

Source: State MARF.

]

### Animal health issues

- Lack of drugs and equipment
- Lack of animal health regulations and laws
- Insufficient qualified animal health personnel
- Lack of offices at the counties
- Lack of laboratories for disease diagnosis

### Market

Type of livestock and livestock product	Market
Butcheries	Rumbek Centre (domestic)
Auction yard (all livestock species)	Rumbek Centre (domestic)
Butcheries and auction yard	Yirol West (Yirol Town)
Live animal market (cattle, sheep and goat)	Yirol West (Agany) Yirol East (Nyang)
Live animal market (cattle, sheep and goat)	Rumbek North (Auction yard)
Live animal market (cattle, sheep and goat)	Rumbek East (Bar-Pakeny)
Live animal market (mostly cattle)	Awerial
Live animal market	Wulu
Honey market	

Source: CAMP survey team. 2013.

### Market price

Counties Item	Price (SSP) (range)							
	Awerial	Cueibet	Rumbek Centre	Rumbek East (Bar-pakeny)	Rumbek North	Yirol East	Yirol West	Wulu
Cattle	500-2,000	400-800	500-1,000	500-800	400-700	500-800	500-1,000 450-700	N/A
Sheep	80-200	100-200	150-300	100-150	100-150	100-200	100-200	N/A
Goat	80-200	100-200	200-400	100-150	100-150	100-150	100-200	N/A
Chicken	Hen=20 Cock=40	Hen=15 Cock=30	Hen=30 Cock=50	Hen=20 Cock=40	Hen=30 Cock=40	Hen=20 Cock=40	Hen=20 Cock=40	Hen=15 Cock=30
Milk/1litre	5	5	5	5	2	5	5	N/A
Meat/1kg	10	10	15	10	10	10	10	10
Egg/each	2	2	2	2	N/A	2	2	2
Honey/1litre	N/A	20	30	20	N/A	N/A	20	10
Hide and skin	N/A	N/A	Hide=2 Skin=2	N/A	N/A	N/A	N/A	N/A

Source: CAMP survey team. 2013.

\* This is not a representative sample.

N/A: Data not available

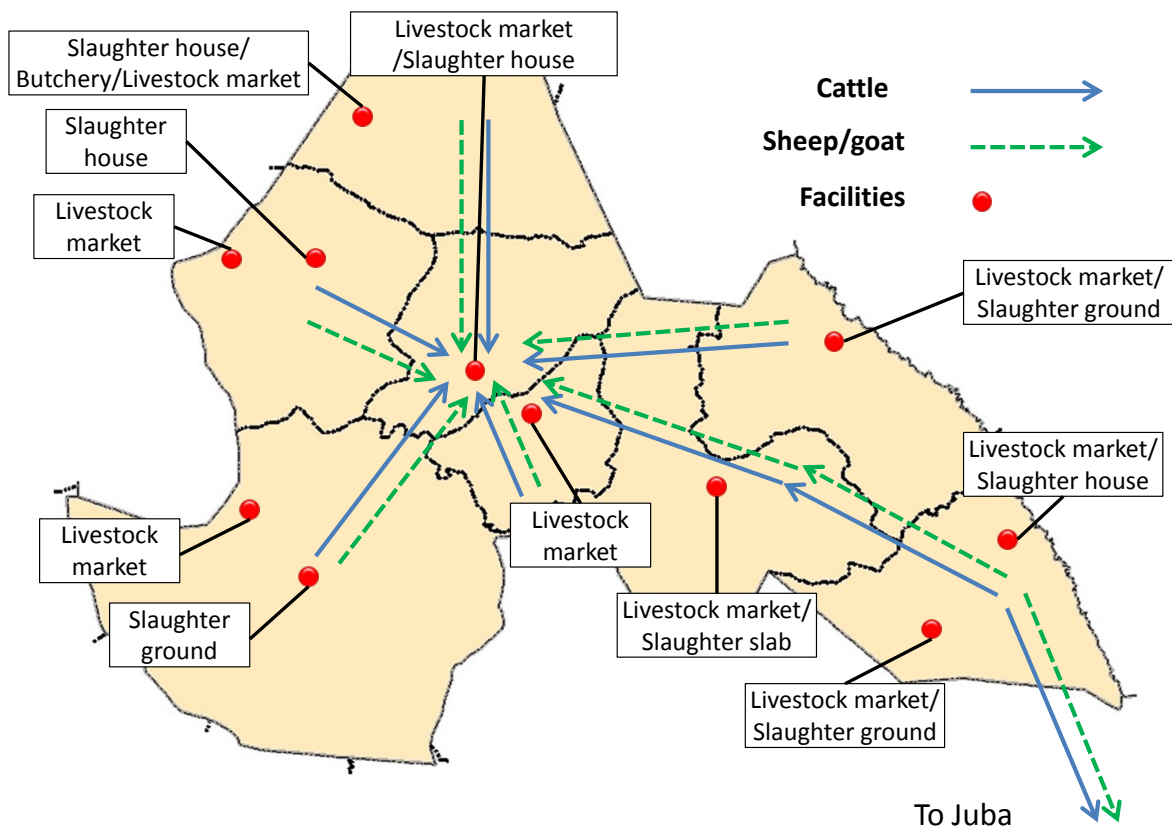
Taxes and charges		
Type	Cost (SSP)	Frequency
Live animal tax (Cattle, sheep and goat)	10% of the price for both seller and buyer	Daily in auction yard
Live bird tax	2/chicken	Daily in the market
Meat inspection fee	10/cattle	Daily at slaughter house
Hide charge at slaughter house	5/each hide	Every 2-3 months
Skin charge at slaughter house	3/each skin	Every 2-3 months

Source: CAMP survey team. 2013.  
\* This is not a representative sample.

Major livestock species and products by livelihood zone					
Western Flood Plains		Ironstone Plateau		Nile-Sobat Rivers	
Type of Animal	Breed	Type of Animal	Breed	Type of Animal	Breed
Cattle	Local Nilotic	Cattle	Local Nilotic	Cattle	Local Nilotic
Sheep	Local	Sheep	Local	Sheep	Local
Goat	Local	Goat	Local	Goat	Local
Chicken	Local	Chicken	Local	Chicken	Local
Pig (Rumbek North)	Local			Bee (Wulu)	Local
Livestock products		Livestock products		Livestock products	
<ul style="list-style-type: none"> <li>• Meat (beef, mutton, pork and poultry)</li> <li>• Milk</li> <li>• Egg</li> <li>• Hide and skin</li> </ul>		<ul style="list-style-type: none"> <li>• Meat (beef, mutton, pork and poultry)</li> <li>• Milk</li> <li>• Egg</li> <li>• Hide and skin</li> </ul>		<ul style="list-style-type: none"> <li>• Meat (beef, mutton, pork and poultry)</li> <li>• Milk</li> <li>• Egg</li> <li>• Hide and skin</li> </ul>	

Source: CAMP survey team. 2013.

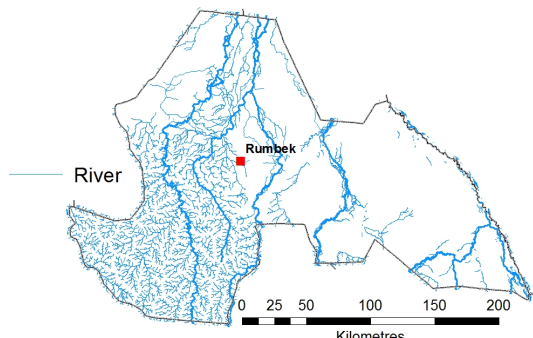
**Livestock related facilities and trade routes**



Source: CAMP survey team. 2013.

<b>Cross-cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• No clear land tenure policies</li> <li>• The repatriation of the IDPs and returnees from the North have caused tenancy inconvenience, as some of the lands allocated or meant for livestock infrastructures have been occupied by the returnees.</li> </ul> <p><b>(Migration)</b></p> <ul style="list-style-type: none"> <li>• Like any other pastoral communities, the livestock keepers in Lakes State migrate seasonally from their permanent settlements to the “Toichs” typically along the River Nile. Since it is the only permanent water source during dry season, animals accumulate leading to overgrazing, pervasive diseases transmission and conflicts over resources.</li> <li>• Seasonal migratory routes are affected by the accessible and availability of the pastures and water resources as well as the security status in the area.</li> </ul> <p><b>(Conflict and insecurity)</b></p> <ul style="list-style-type: none"> <li>• Seasonal migration of livestock keepers is occasionally accompanied with lots of challenges, conflicts over resources, youth disputes over women and cattle rustling. It sometimes results in deadly inter-communal clashes leading to death of hundreds and this in turns causes insecurity.</li> </ul> <p><b>(Gender disparities)</b></p> <ul style="list-style-type: none"> <li>• In Lakes State, few gender disparities, but traditional beliefs prohibit the involvement of women in some livestock keeping activities. (e.g. Going after the cattle or taking cattle for grazing and having full ownership of the livestock especially cattle.)</li> <li>• After the war, with an increase in the number of widows, they have started owning livestock.</li> </ul> <p><b>(Drought and floods)</b></p> <ul style="list-style-type: none"> <li>• No droughts occur since the state lies within the Western Flood Plains.</li> <li>• It is frequently affected by seasonal floods that usually happen due to heavy rain and excess flow of water from the River Nile.</li> </ul>
<b>Opportunities</b>
<ul style="list-style-type: none"> <li>• Huge potential of livestock population</li> <li>• Growing human population in the urban areas increases the demand of livestock products.</li> <li>• Huge hide and skin production</li> <li>• Vast land and abundant rangelands with good quality pastures and water sources</li> </ul>
<b>Challenges</b>
<ul style="list-style-type: none"> <li>• Lack of capital funds and budgetary constraints livestock improvement.</li> <li>• Insecurity and resource based conflicts (i.e. cattle rustling)</li> <li>• Disease outbreaks</li> <li>• Lack of drugs, vaccines and equipment</li> <li>• Lack of animal health regulations and laws</li> <li>• Inadequate qualified staff and lack of offices at the county level</li> <li>• Lack of livestock infrastructure, poor roads and other facilities at the county level</li> <li>• Lack of transport means</li> </ul>

### 7.7 Fisheries

<b>Numbers of fishing households (ANLA 2012)</b>	24,498	
<b>Fish production</b>	Unknown. Most of the volume comes from Shambe in Yirol East, but the rivers and lakes are very important in the dry season, and provide the fresh fish that is eaten in Rumbek, for which there is a very great demand. There is no ice availability in the state.	
<b>Fish exports</b>	From the eastern parts of the state, Yirol East County, next to the Nile river, fish is exported both north to Sudan and south to Juba. Before the border closed, boats would visit Shambe and buy fresh and dried fish which was taken north to Khartoum. Dry fish from Lakes is traded throughout Warrap, NBG and WBG States, and of course to Rumbek and other larger towns in the state. Small fish from rivers and lakes are dried and sold in towns.	
<b>Fish imports</b>	Uganda pelagic fish, Daga'a and salted catfish and smoked Nile perch, is in the markets at Rumbek.	
<b>Seasonality</b>	All year but increases in the wet season in the Nile and flood plains, but the river and lake fishery is most active in the dry season.	
<b>Landing sites</b>	Many permanent settlements on the Nile in Yirol East and Shambe. Fishermen there are members of a co-operative. Also temporary fishing camps near swampland near to Rumbek and elsewhere where there is permanent water in the dry season. The fresh fish trade overland sometimes stops in the wet season due to poor roads. Poor security in some Eastern parts of the state.	
<b>Vessels</b>	Planked and dugout canoes. (steel canoes used mainly for transport)	
<b>Informal taxation</b>	It is haphazard (1 in 10 fish usually) and highly resented. Transport taxes are high on fish from Uganda.	
<b>Investment</b>	A Chinese group has put forward a proposal to ship fish from Shambe down to Juba but as at September 2013 no development had occurred.	

#### Aquaculture

There is no aquaculture in the state. Much of the state appears unsuitable due to flooding.

#### Post- harvest and marketing

A large proportion of the fish produced in Lakes is dried where it is sold mainly in plaited strips. If from the inland areas in strips (catfish) or if small, whole. The small dried fish is often made into Mandesha, which is easily transported and highly popular. The demand for fresh fish is high and largely unsatisfied. Rumbek (unless noted) prices are given below. (Photo: Drying fish Shambe)



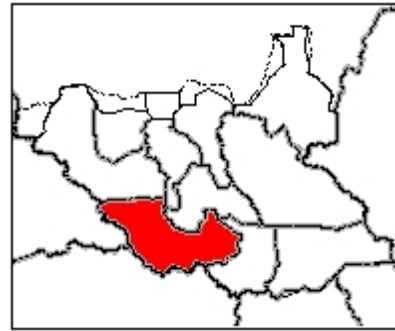
Species	Presentation	SSP/kg	Species	Presentation	SSP/kg
Clarius spp	Dried plait	42.65	Gymnarchus niloticus	Fresh	21.09
Distichotus sp	Dried plaits	10.83	Heterotus niloticus	Fresh	5.01 Shambe
Heterotus niloticus	Dried plaits	54.05	Clarius spp	Sun dried	41.67
Lates niloticus	Dried plaits	59.70	Heterotus niloticus	Sun dried	48.78
Protopterus spp	Dried plaits	49.30	Uganda pelagics	Sun dried	25.21
Clarius spp	Fresh	6.37 Shambe			



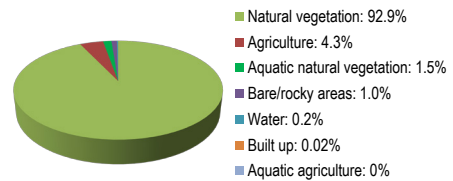


## 8 Western Equatoria State (Capital: Yambio)

8.1 Basic Information	
Population (2008) <sup>a</sup>	619,029 (8 <sup>th</sup> ) Male: 318,443 Female: 300,586
Projected population (2013) <sup>b</sup>	731,098 (9 <sup>th</sup> )
Area <sup>c</sup>	79,120 km <sup>2</sup> (3 <sup>rd</sup> )
No. of Counties, Payams and Bomas (2009) <sup>d</sup>	10 Counties 48 Payams 195 Bomas
Food secure population (2012) <sup>b</sup>	77% (1 <sup>st</sup> )
Access to improved drinking water (2009) <sup>e</sup>	40% (9 <sup>th</sup> )
Literacy rate (15-24 years old) (2009) <sup>e</sup>	43% (5 <sup>th</sup> )
Primary school gross enrolment rate (GER) (2010) <sup>f</sup>	52% (8 <sup>th</sup> )



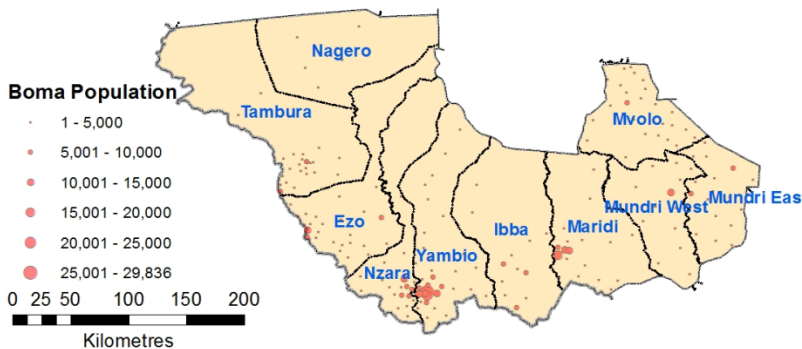
Land cover<sup>g</sup>



Source: <sup>a</sup> SSCSE. 2010. Southern Sudan Counts: Tables from the 5th Sudan Population and Housing Census, 2008; <sup>b</sup> WFP. 2013. ANLA; <sup>c</sup> FAO. 2011. Land Cover Atlas of the Republic of South Sudan; <sup>d</sup> Origina data source of NBS. 2012. NBHS 2009; <sup>e</sup> NBS. 2012. NBHS 2009; <sup>f</sup> MoE. 2010. EMIS; <sup>g</sup> NBS. 2011. South Sudan Statistical Yearbook 2011.

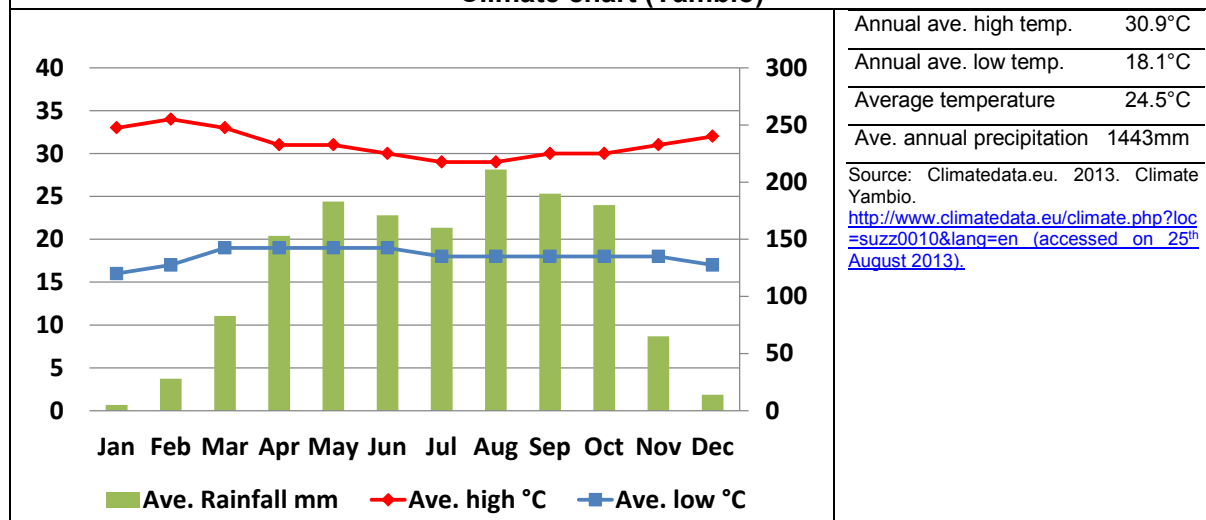
### Administrative districts (counties)

County	Estimated Population (2013) <sup>a</sup>	Pop. density (ppl/km <sup>2</sup> ) <sup>b</sup>
Yambio	174,163	19.7
Mvolo	94,325	16.4
Mundri East	92,495	19.4
Maridi	92,173	11.9
Ezo	88,863	11.0
Nzara	75,166	11.6
Tambura	63,331	5.0
Nagero	55,269	6.0
lbba	55,059	5.6
Mundri West	47,893	8.2



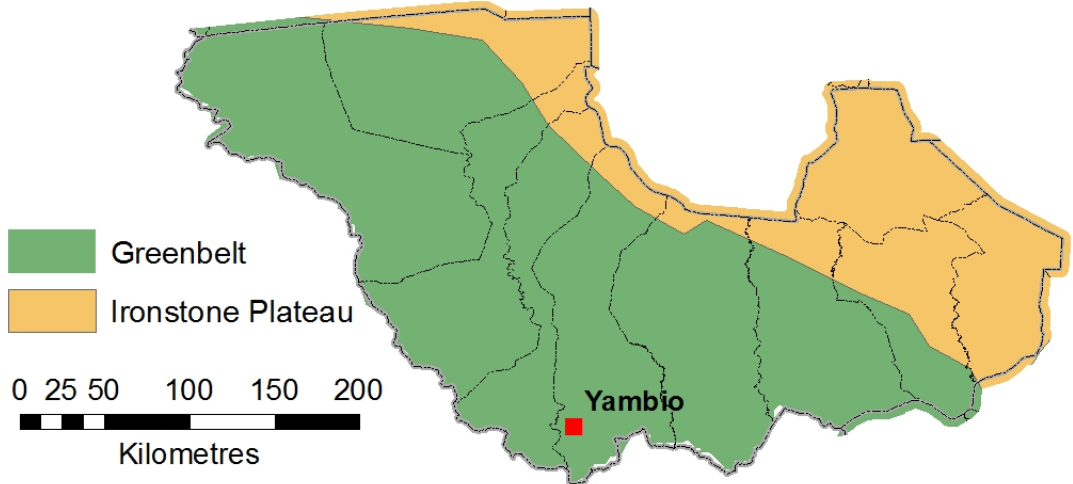
Source: (Map) NBS; (Table)<sup>a</sup> WFP. 2013. ANLA; <sup>b</sup> Land scale data applied from FAO. 2011. Land Cover Atlas of the Republic of South Sudan.

### Climate chart (Yambio)



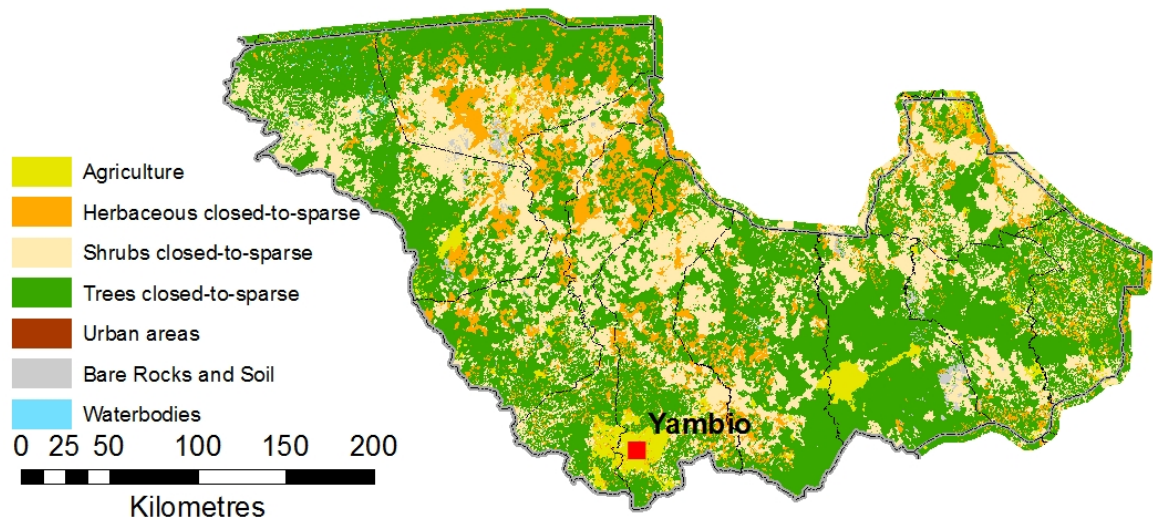
Source: Climatedata.eu. 2013. Climate Yambio.  
<http://www.climatedata.eu/climate.php?loc=suzz0010&lang=en> (accessed on 25<sup>th</sup> August 2013).

**Livelihood zones**



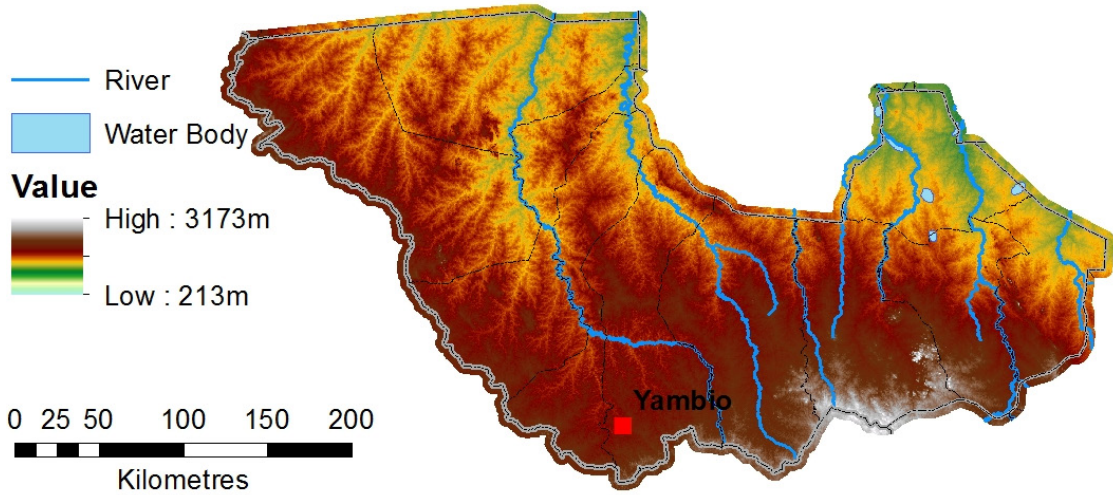
Source: NBS.

**Land cover**



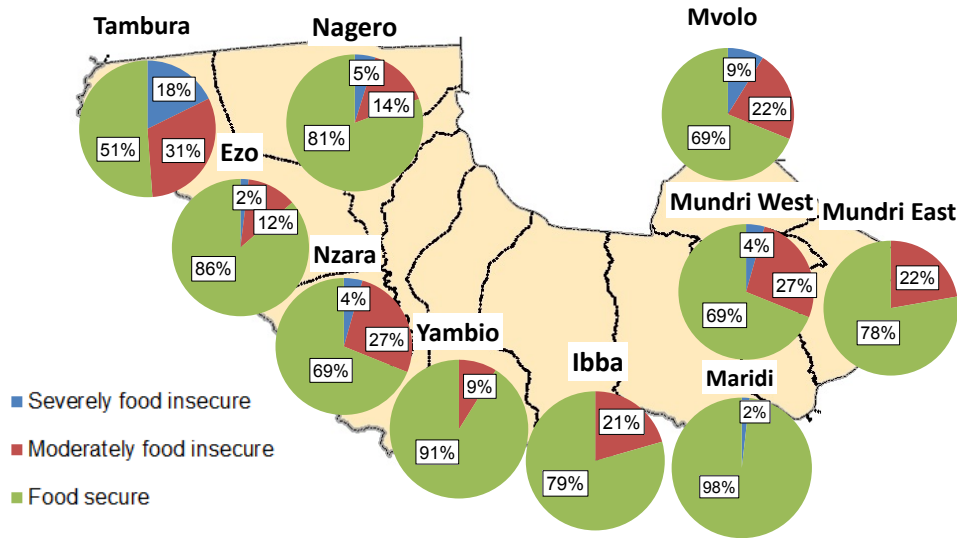
Source: FAO, 2011.

**Topography**



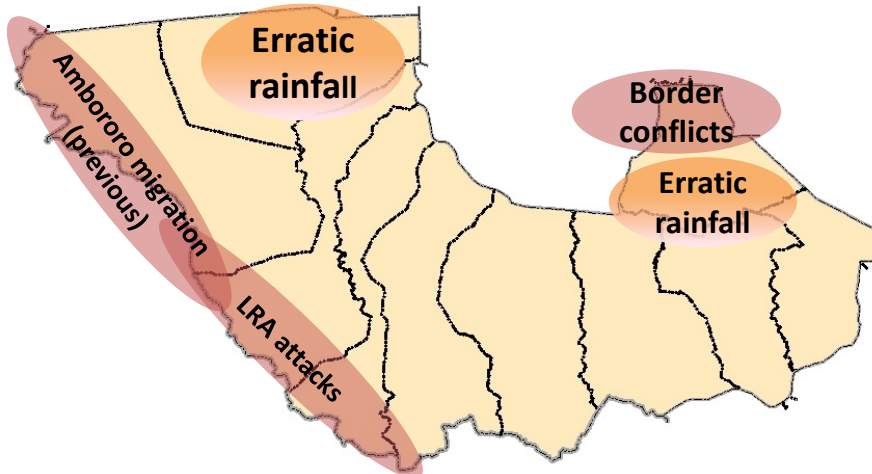
Source: NBS.

**Estimated food security status by county (2013)**



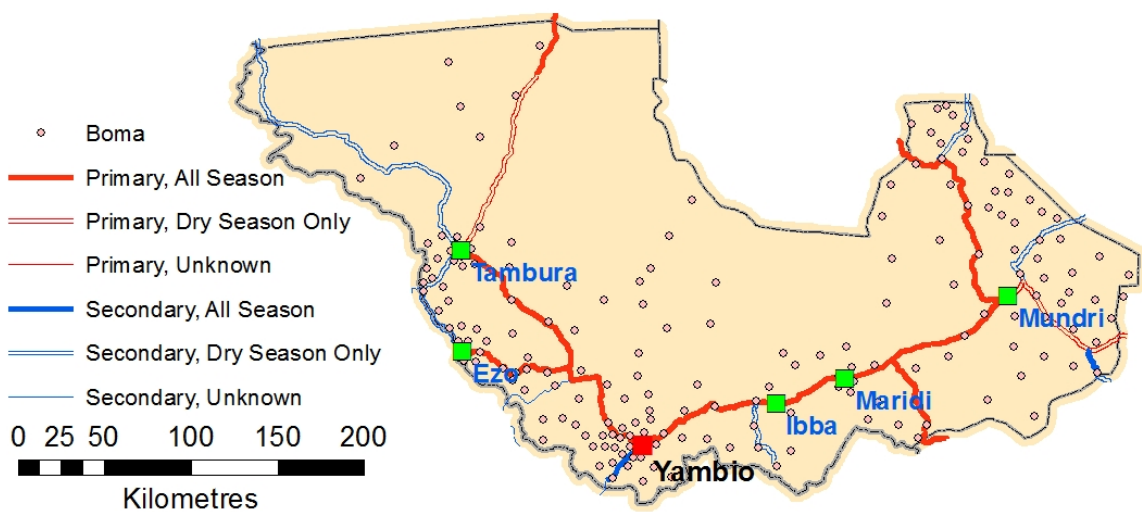
Source: WFP, 2013. ANLA.

**Insecurity and natural disaster**



Source: CAMP survey team 2013.

**Road and Boma location**



Source: Road (WFP, 2013), Boma location (NBS).

8.2 State Ministry of Agriculture, Cooperatives and Environment (MACE)																																					
<b>Organogram</b>		<b>Staff</b>																																			
<pre> graph LR     Minister --&gt; DG[Director General]     DG --&gt; DCA[Directorate of Cooperatives and Agriculture]     DG --&gt; DLF[Directorate of Livestock and Fisheries]     DG --&gt; DAF[Directorate of Administration and Finance]     DG --&gt; DFE[Directorate of Forestry and Environment]           </pre>		<table border="1"> <thead> <tr> <th>Section</th> <th>Number of staff</th> </tr> </thead> <tbody> <tr> <td><b>Directorate of Cooperatives and Agriculture</b></td> <td><b>286</b></td> </tr> <tr> <td>Department of Agriculture</td> <td>(242)</td> </tr> <tr> <td>Department of Cooperatives</td> <td>(44)</td> </tr> <tr> <td><b>Directorate of Livestock and Fisheries</b></td> <td><b>26</b></td> </tr> <tr> <td>Department of Livestock</td> <td>(19)</td> </tr> <tr> <td>Department of Fisheries</td> <td>(7)</td> </tr> <tr> <td><b>Directorate of Administration and Finance</b></td> <td><b>47</b></td> </tr> <tr> <td><b>Directorate of Forestry and Environment</b></td> <td><b>135</b></td> </tr> <tr> <td>Department of Forestry</td> <td>(134)</td> </tr> <tr> <td>Department of Environment</td> <td>(1)</td> </tr> <tr> <td><b>Total</b></td> <td><b>494</b></td> </tr> </tbody> </table>		Section	Number of staff	<b>Directorate of Cooperatives and Agriculture</b>	<b>286</b>	Department of Agriculture	(242)	Department of Cooperatives	(44)	<b>Directorate of Livestock and Fisheries</b>	<b>26</b>	Department of Livestock	(19)	Department of Fisheries	(7)	<b>Directorate of Administration and Finance</b>	<b>47</b>	<b>Directorate of Forestry and Environment</b>	<b>135</b>	Department of Forestry	(134)	Department of Environment	(1)	<b>Total</b>	<b>494</b>										
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Category	2011/12 Budget	2011/12 Outturn	2012/13 Budget																																		
<b>Salary</b>	(Data not available)	(Data not available)	3,252,168																																		
<b>Operating</b>	(Data not available)	(Data not available)	180,000																																		
<b>Transfers</b>	(Data not available)	(Data not available)	0																																		
<b>Others</b>	(Data not available)	(Data not available)	0																																		
<b>Capital</b>	(Data not available)	(Data not available)	280,000																																		
<b>Overall total</b>	(Data not available)	(Data not available)	3,712,168																																		
<b>Budget</b>	3,208,645 (SSP)																																				
<b>Plan</b>	(Information not available)																																				
<b>Activities</b>	(Information not available)																																				
Source: State MACE. Unit: SSP																																					
<b>Services provided by State MACE and local government</b>																																					
<p><b>(Technical advice)</b></p> <ul style="list-style-type: none"> <li>• Technical advice is provided through chiefs, and sub-chiefs and headmen in order to increase effectiveness of their activities.</li> <li>• Radio program is used to transfer agriculture-related information.</li> </ul> <p><b>(Seed and tool provision)</b></p> <ul style="list-style-type: none"> <li>• Seeds and tools are provided in cooperation with DPs and NGOs.</li> </ul> <p><b>(Demo farm and field day= visit to field to share best agricultural practices)</b></p> <ul style="list-style-type: none"> <li>• Demo plots and on-farm trials are installed.</li> <li>• Field day is organised annually.</li> </ul> <p><b>(Tractor hiring service)</b></p> <ul style="list-style-type: none"> <li>• (Information not available)</li> </ul>																																					

### 8.3 Crop

#### Services provided by DPs and NGOs

Organisation	Activities	Area	Target
Action Africa Help International	<ul style="list-style-type: none"> <li>• Technical support to farmers</li> <li>• Provide tools, seeds and rice mill</li> </ul>	Yambio County	Farmers in the pilot areas
FARM project/USAID	<ul style="list-style-type: none"> <li>• Seeds provision</li> <li>• Training farmers and extension workers</li> <li>• Install demo plots</li> <li>• Land preparation support (80% of the charge will be supported by the project)</li> </ul>	Yambio, Maridi and Mundri West Counties (original areas) Nzara and Mundri East Counties (newly added on 2013)	Farmers in the pilot areas (FBOs: Farmer-based organisations)
WFP	In order to develop agriculture in WES, it purchases crop from farmers through Purchase for Progress (P4P) project	Yambio, Nzara, and Ibba Counties	Farmers in the pilot areas
GIZ	<ul style="list-style-type: none"> <li>• Training farmers</li> <li>• Seeds and tools provision</li> <li>• Technical support for fish farming</li> <li>• Building ponds</li> <li>• Greenhouse (shade house) provision</li> </ul>	Yambio, Nzara and Ibba Counties	Farmers in the pilot areas
World Vision	<ul style="list-style-type: none"> <li>• Technical support (field school)</li> <li>• Provide grinding mill for value addition</li> </ul>	Yambio County	Farmers in the pilot areas
BRAC (Bangladesh Rural Advanced Committee)	<ul style="list-style-type: none"> <li>• Training farmers in demo plots especially vegetable cultivation techniques</li> <li>• Seeds and tools provision</li> <li>• Ox and ox-plough attachment provision</li> <li>• Poultry farming</li> </ul>	Yambio County	Farmers in the pilot areas (especially women)
Inter SOS	<ul style="list-style-type: none"> <li>• Provide tools and seeds to farmers</li> <li>• Deliver trainings to farmers</li> </ul>	Ezo, Yambio	IDPs and returnees
Catholic Church	<ul style="list-style-type: none"> <li>• Conduct sustainable livelihood program</li> <li>• Provide tools and seeds to farmers</li> <li>• Deliver trainings to farmers</li> </ul>	Ezo, Nzara, Yambio, Ibba and Maridi Counties	Farmers

\*There are a number of DPs and NGOs in the state. The above information collected by CAMP team is shown as examples.

#### Services provided by private sector

##### (Tractor hiring service)

- The service is provided by some service providers.
- The service charge is SSP 250/feddan for ploughing and SSP 200/feddan for harrowing.

##### (Agro-dealers)

- Some improved seeds, fertilizers and tools are available at a hardware shop. The price is shown below.

Item	Origin of products	Retail Price (SSP)
Maize seeds	Uganda	125/10kg
Okra seeds	Uganda	25/can (50-60 grams)
Eggplant seeds	Uganda	25/can (50-60 grams)
Onion seeds	Uganda	50/can
Urea	Uganda	350/50 kg bag
DAP	Uganda	525/50 kg bag
Hoe	Uganda	15 each
Panga	Uganda	10 each
Grass slasher	Uganda	10 each

\*IFDC provides fertilizers. Farmers pay 10 % of the fertilizer cost (Voucher program).

- Fertilizers (Urea and DAP) are provided through IFDC (International Fertiliser Development Centre) voucher system. IFDC supports 90% of the cost; farmers pay 10% of the cost.

##### (Financial institution)

- (Information not available)

Market						
Agricultural products and their origin (Yambio, April, 2013)						
(Crop)			(Others)			
Item	Type	Origin	Item	Type	Origin	
Maize	Import	-	Okra	Import	-	
	Domestic	Yambio		Domestic	Yambio	
Maize flour	Import	Uganda	Jew's mallow	Import	-	
	Domestic	-		Domestic	Yambio	
Sorghum	Import	-	Rocket	Import	-	
	Domestic	Yambio		Domestic	Yambio	
Rice	Import	Uganda, Pakistan, Congo	Tomato	Import	Uganda	
	Domestic	Yambio		Domestic	Yambio	
Cassava	Import	-	Eggplant	Import	-	
	Domestic	Yambio		Domestic	Yambio	
Groundnut	Import	-	Onion	Import	Uganda	
	Domestic	Yambio		Domestic	-	
Finger millet	Import	-	Cabbage	Import	Uganda	
	Domestic	Yambio		Domestic	Yambio	
			Sugar	Import	Uganda	
				Domestic	-	
			Pineapple	Import	-	
				Domestic	Yambio	
			Pumpkin	Import	-	
				Domestic	Yambio	

Source: CAMP survey team 2013.  
\*1 This is not a representative sample.  
\*2 WE: Western Equatoria

Source: CAMP survey team 2013.  
\*1 This is not a representative sample.  
\*2 WE: Western Equatoria

Market price (Retail price, Yambio, May 2013)						
Item	Unit	Price (SSP) (range)				
		Low season				High season
Maize (Domestic)	Sack (50kg)	Sep-Nov	50-60	-	150	May-June
Maize flour (Import)	Sack (25kg)	Dry season	70-75	-	100	Rainy season
Rice (Import)	Sack (25kg)	Dry season	90	-	110	Rainy season

Source: CAMP survey team 2013.  
\* This is not a representative sample.

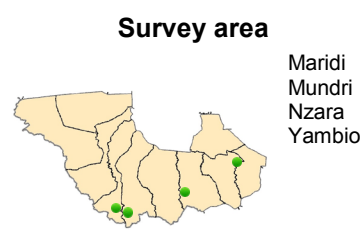
Transportation cost (Yambio, April, 2013)			
Type	Unit	Currency	Cost (range)
Transport (Motorcycle rent )	day	SSP	70
Transport (Uganda-Yambio)	50 tons (truck)	Ush	15,000,000
Porterage (uploading in Uganda)	50 tons (truck)	Ush	400,000-500,000
Porterage (unloading in Yambio)	50 tons (truck)	SSP	1,500-2,000

Source: CAMP survey team 2013.  
\* This is not a representative sample.

Taxes and charges (Yambio, April, 2013)			
(Wholesaler size 4mx4m)			
Type	Cost (SSP) (range)	Frequency	
Licence	360	Annually	
Customs (Kaya)	8,000-11,000	Every purchase	
Checking fee (Yei)	500-600	Every purchase	
County tax (Yambio)	1,000-1,500	Every purchase	
Revenue authority tax	10,000-15,000	Every purchase	
Chamber of Commerce (Registration fee)	100	Annually	
Garbage collection service	70	Monthly	
(Retailer)			
Type	Cost (SSP)	Frequency	
Garbage collection	1	Daily	
Town council tax	20	Monthly	

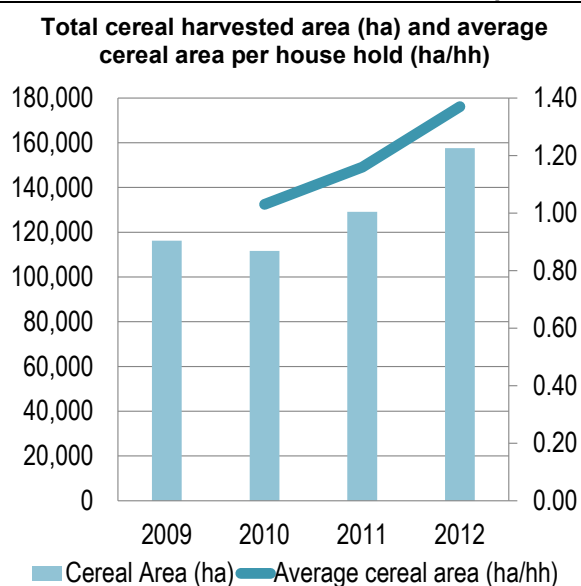
Source: CAMP survey team 2013.  
\* This is not a representative sample.

Crop production	
Farming household (%) (2012)	87
Farming household (No.) (2012)	115,377
Cereal area (ha) (2012)	157,557 (2 <sup>nd</sup> )
Cereal gross yield (t/ha) (2012)	1.25 (1 <sup>st</sup> )
Gross cereal production (t) (2012)	196,737 (1 <sup>st</sup> )
Average cereal area per household (ha/hh) (2012)	1.37 (1 <sup>st</sup> )

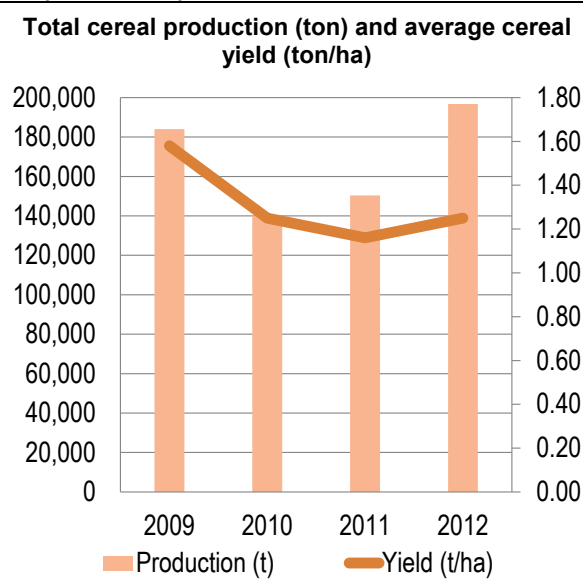


Source: FAO and WFP. 2013 CFSAM.

### Cereal production (2009-2012)



Source: Aggregate from CFSAM 2010, 2011, 2012 and 2013.



Source: Aggregate from CFSAM 2010, 2011, 2012 and 2013.

### Crop production by livelihood zone

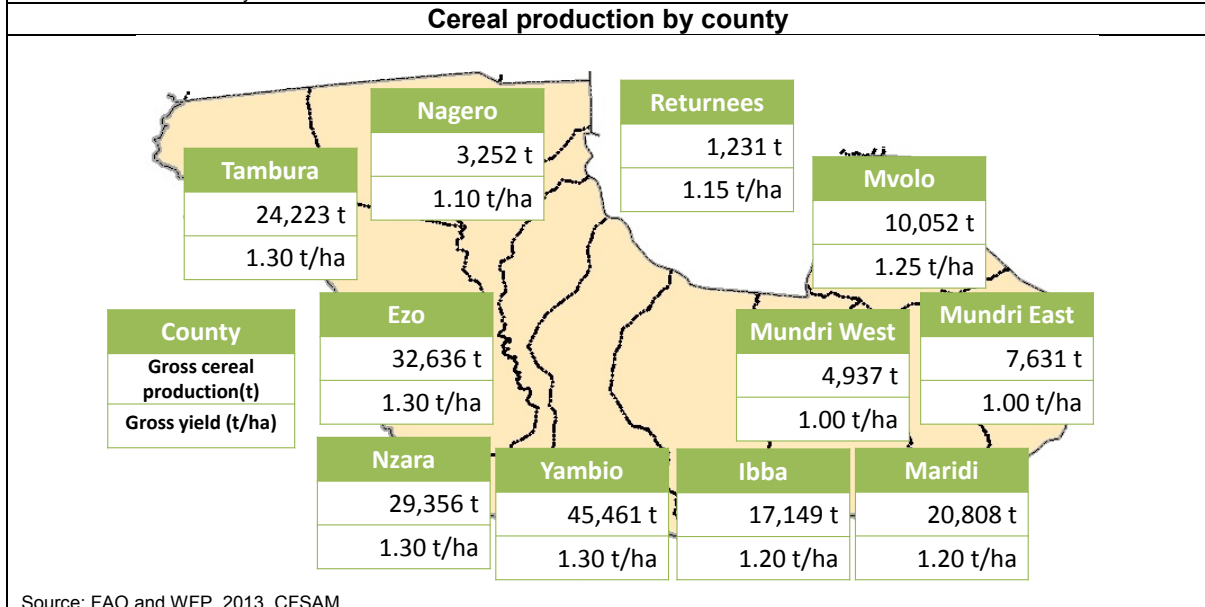
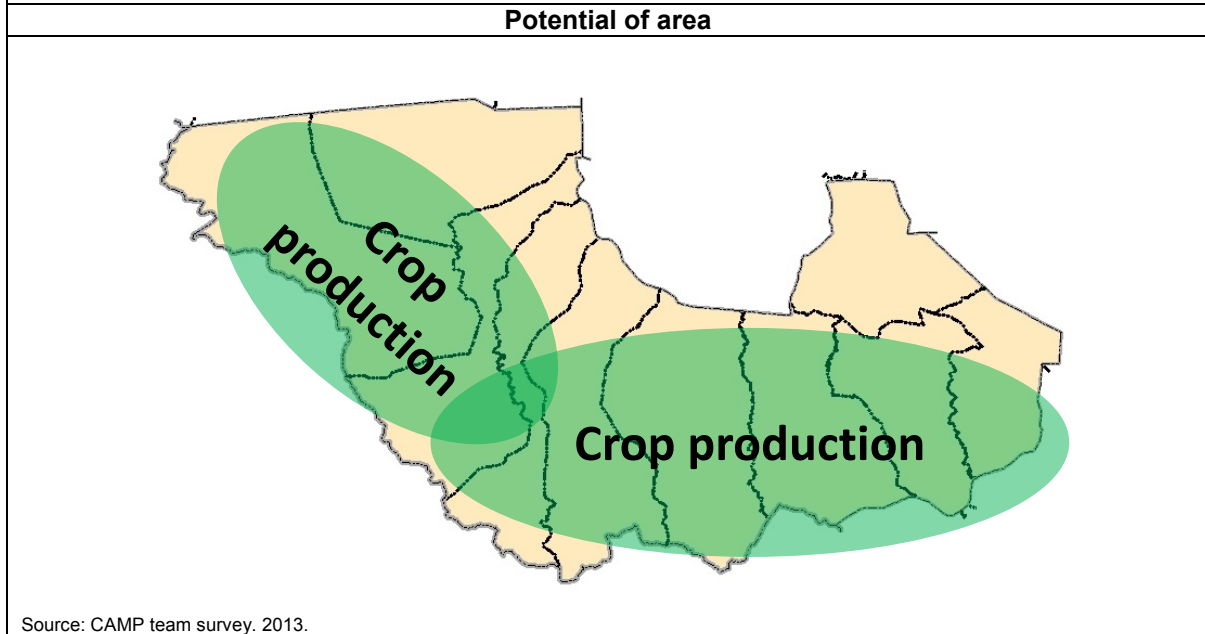
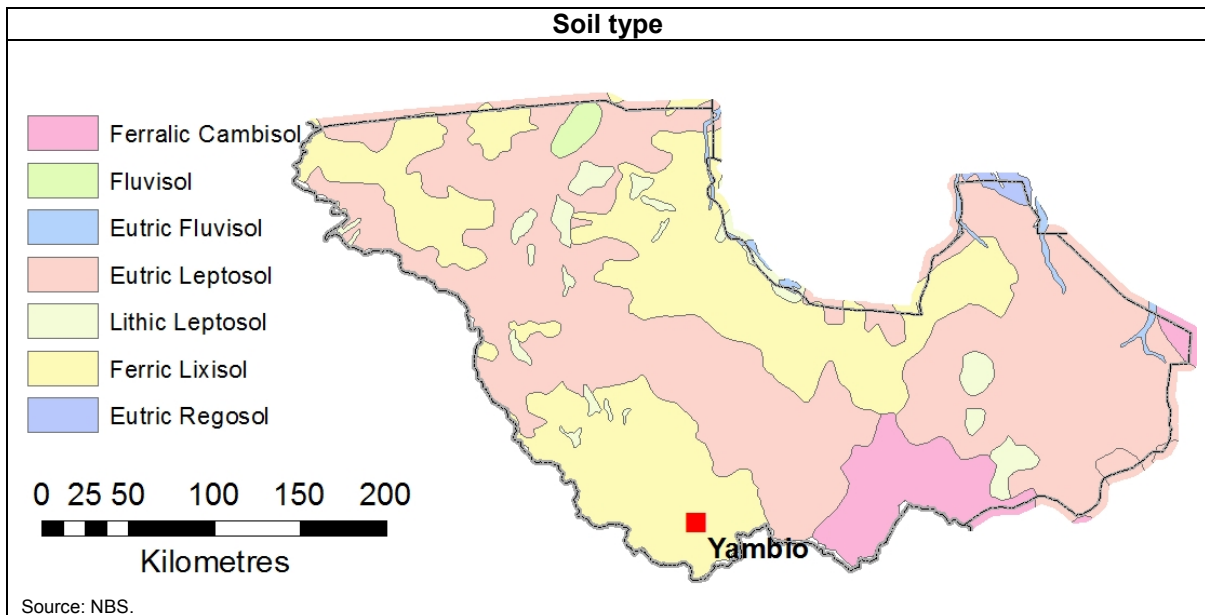
Greenbelt		Ironstone Plateau	
Major agricultural products			
<b>Crop</b>	<b>Cash crop</b>	<b>Crop</b>	<b>Vegetable</b>
Sorghum	Sesame	Sorghum	Tomato
Maize	Groundnut	Maize	Eggplant
Rice	Sugarcane	Cassava	Rocket
Finger millet	Coffee	Finger millet	Okra
Cassava	Tobacco	Rice	Pumpkin
Bean	<b>Vegetable</b>	<b>Cash crop</b>	Jew's mallow
Sweet potato	Many types of vegetables	Sesame	
	<b>Fruits</b>	Groundnut	
	Pineapple		
	Mango		
	Banana		

### Cropping calendar

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maize			L	S	S			H	H	H		
Sorghum			L	S	S			H	H	H		
Finger millet			L	S	S			H	H	H		
Groundnut			L	S	S			H	H			
Cassava (2yrs)			L	T	T							
Rice			L	L	S	S	S			H	H	H
Vegetable			L	S	S	S	H	S	H	S	H	H
	L		S		T			H				

Source: CAMP survey team. 2013

Source: CAMP survey team. 2013





<b>Cross cutting issues</b>	
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>No serious land issues are found in rural areas but some land ownership issues in urban areas.</li> </ul> <p><b>(Gender)</b></p> <ul style="list-style-type: none"> <li>Women tend not to be involved in decision making process at community and household levels.</li> <li>Widows cannot own land and properties of their late husbands unless there are special arrangements.</li> </ul> <p><b>(Security)</b></p> <ul style="list-style-type: none"> <li>Border conflicts along the state border with Lakes State due to cattle entering from that state.</li> <li>The number of LRA attacks is going down in Tombra and Ezo Counties but the attacks still continue.</li> </ul> <p><b>(IDPs and returnees)</b></p> <ul style="list-style-type: none"> <li>Support to IDPs and returnees is insufficient.</li> </ul> <p><b>(HIV)</b></p> <ul style="list-style-type: none"> <li>Infection rate may be high in youth but no surveys are conducted.</li> </ul>	
<b>Opportunities</b>	
<p><b>Overall</b></p> <ul style="list-style-type: none"> <li>Sufficient manpower</li> </ul>	
<p><b>Crop</b></p> <ul style="list-style-type: none"> <li>Climate (sufficient rainfall)</li> <li>Fertile soil</li> <li>Vast unutilized land</li> </ul>	
<b>Challenges</b>	
<p><b>Overall</b></p> <ul style="list-style-type: none"> <li>Feeder roads are not well established.</li> <li>Poor access to financial institutions</li> <li>High tax rates</li> <li>High transport costs</li> <li>High labour costs</li> </ul>	
<p><b>Crop</b></p> <ul style="list-style-type: none"> <li>High cost for tree trunk removal</li> <li>No effective pest and disease control methods</li> <li>Few training opportunities for extension workers and farmers</li> <li>Insufficient means of transport for extension activities</li> <li>Insufficient budget for extension work</li> </ul>	

## 8.4 Forestry

### On-going and proposed projects

#### List of on-going projects

Project name	Objectives/activities	Duration	Annual cost
Equatoria Teak Company Nzara	Develop timber production	(Information not available)	(Information not available)
Blue Lakes	Promote plantation for timber	(Information not available)	(Information not available)
Afforestation	Develop plantation	On-going	SSP 1,933,120

Source: CAMP team survey, 2013.

#### List of proposed projects

Project name	Objectives/activities	Duration	Annual cost
Farmer support	Promote farmers for income generation from forest	(Information not available)	(Information not available)
Agro forestry	Introduce effective land use	(Information not available)	(Information not available)
Capacity development	Deliver new forest management skills	(Information not available)	(Information not available)
Saw milling	Increase timber production	(Information not available)	(Information not available)

Source: CAMP team survey, 2013.

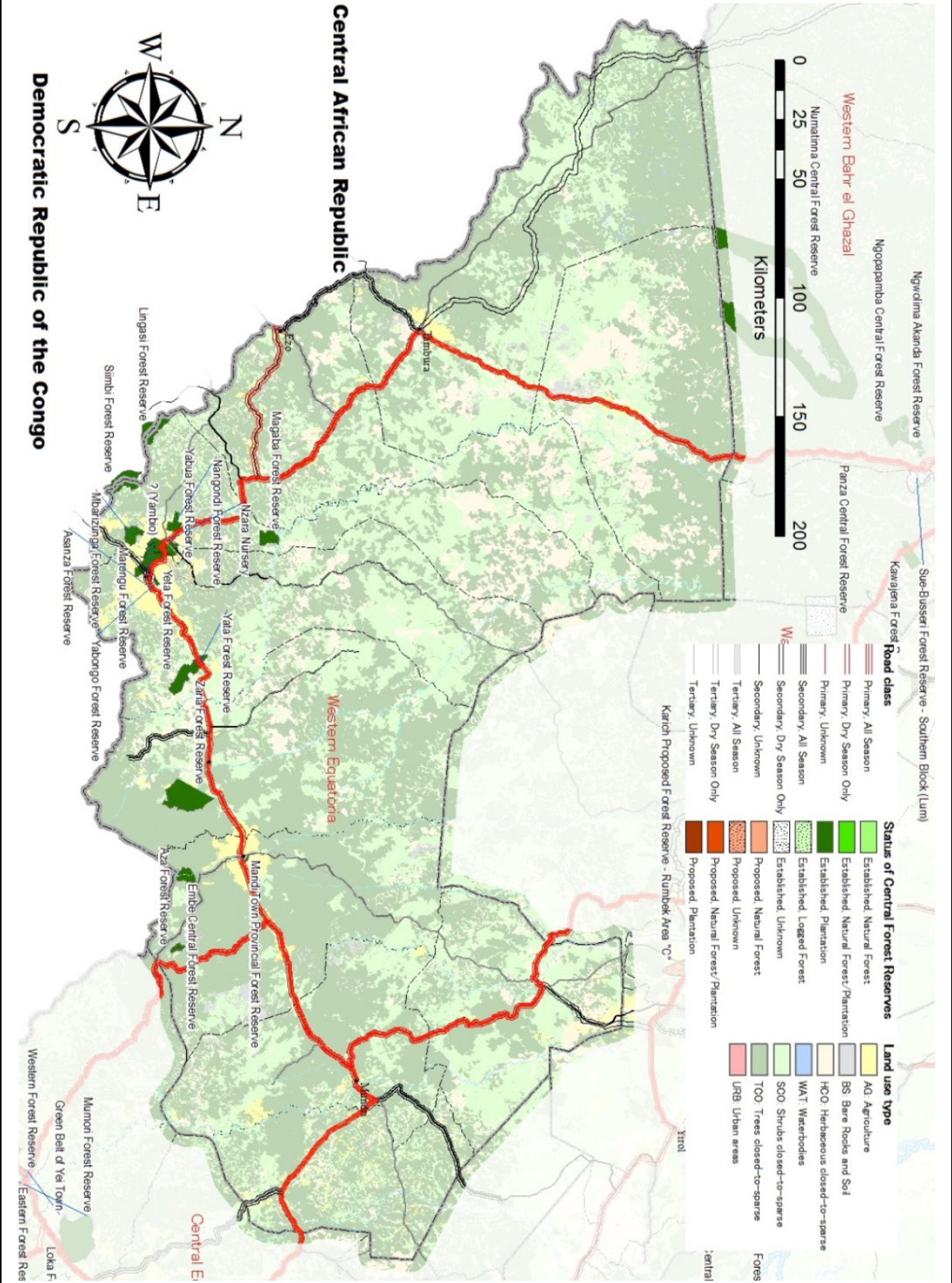
#### Land cover percentage to total area

County	AG	TCO	SCO	HCO	URB	BS	WAT	Total area	Total area (ha)
Ezo	3.3%	52.2%	26.3%	17.4%		0.7%	0.1%	100.0%	804,983
Ibba	2.4%	64.3%	21.9%	11.0%		0.3%	0.1%	100.0%	978,773
Maridi	6.6%	68.8%	17.9%	2.9%	0.0%	3.7%	0.0%	100.0%	773,552
Mundri East	7.7%	61.7%	21.1%	9.2%	0.1%	0.2%	0.2%	100.0%	477,799
Mundri West	6.5%	63.9%	22.9%	5.2%	0.0%	1.4%	0.2%	100.0%	585,206
Mvolo	3.6%	38.8%	40.6%	16.2%	0.1%	0.6%	0.1%	100.0%	576,108
Nagero	0.5%	51.8%	23.7%	22.0%		1.4%	0.5%	100.0%	926,250
Nzara	5.9%	45.6%	26.2%	21.8%	0.0%	0.3%	0.1%	100.0%	646,364
Tambura	2.9%	56.2%	32.4%	6.8%	0.0%	1.1%	0.7%	100.0%	1,258,207
Yambio	7.3%	47.3%	28.0%	17.3%	0.1%	0.0%	0.0%	100.0%	884,724
<b>Total</b>	<b>4.3%</b>	<b>55.3%</b>	<b>26.3%</b>	<b>12.9%</b>	<b>0.0%</b>	<b>1.0%</b>	<b>0.2%</b>	<b>100.0%</b>	<b>7,911,966</b>

Source: FAO, 2011. *Land cover atlas of South Sudan*. Rome: FAO.

Legend: AG=Agriculture, TCO=Tree closed-to-sparse, SCO=Shrubs closed-to-sparse, HCO=Herbaceous closed-to sparse, URB=Urban areas, BS=Bare Rocks and Soil, and WAT=Waterbodies.

Location of Central Forest Reserves and land cover in 2009



Source: NBS.

<b>8.5 State Ministry of Agriculture, Cooperatives and Environment (MACE)</b>																											
<b>Organogram</b>			<b>Staff</b>																								
<pre> graph TD     Minister --&gt; DG[Director General]     DG --&gt; DCA[Directorate of Cooperatives and Agriculture]     DG --&gt; DLF[Directorate of Livestock and Fisheries]     DG --&gt; DAF[Directorate of Administration and Finance]     DG --&gt; DFE[Directorate of Forestry and Environment]           </pre>			<table border="1"> <thead> <tr> <th>Section</th> <th>Number of staff</th> </tr> </thead> <tbody> <tr> <td><b>Directorate of Cooperatives and Agriculture</b></td> <td><b>286</b></td> </tr> <tr> <td>  Department of Agriculture</td> <td>(242)</td> </tr> <tr> <td>  Department of Cooperatives</td> <td>(44)</td> </tr> <tr> <td><b>Directorate of Livestock and Fisheries</b></td> <td><b>26</b></td> </tr> <tr> <td>  Department of Livestock</td> <td>(19)</td> </tr> <tr> <td>  Department of Fisheries</td> <td>(7)</td> </tr> <tr> <td><b>Directorate of Administration and Finance</b></td> <td><b>47</b></td> </tr> <tr> <td><b>Directorate of Forestry and Environment</b></td> <td><b>135</b></td> </tr> <tr> <td>  Department of Forestry</td> <td>(134)</td> </tr> <tr> <td>  Department of Environment</td> <td>(1)</td> </tr> <tr> <td><b>Total</b></td> <td><b>494</b></td> </tr> </tbody> </table>	Section	Number of staff	<b>Directorate of Cooperatives and Agriculture</b>	<b>286</b>	Department of Agriculture	(242)	Department of Cooperatives	(44)	<b>Directorate of Livestock and Fisheries</b>	<b>26</b>	Department of Livestock	(19)	Department of Fisheries	(7)	<b>Directorate of Administration and Finance</b>	<b>47</b>	<b>Directorate of Forestry and Environment</b>	<b>135</b>	Department of Forestry	(134)	Department of Environment	(1)	<b>Total</b>	<b>494</b>
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Department of Environment	(1)																										
<b>Total</b>	<b>494</b>																										
Source: State MACE.			Source: State MACE.																								
<b>Budget</b>			<b>Strategic plan</b>																								
Category	2011/12 Budget	2011/12 Outturn	2012/13 Budget																								
Salary	(Data not available)	(Data not available)	2,757,398																								
Operating	(Data not available)	(Data not available)	41,319																								
Transfers	(Data not available)	(Data not available)	0																								
Others	(Data not available)	(Data not available)	0																								
Capital	(Data not available)	(Data not available)	409,937																								
<b>Overall total</b>	(Data not available)	(Data not available)	<b>3,208,654</b>																								
Source: State MACE. Unit: SSP			<p><b>WES State Strategic plan (2012-15)</b></p> <p><b>Objective</b> The strategic plan provides strategies and activities to be carried out in the next 4 years. It attempts to give realistic timelines to ensure effective use is made of available resources. It attempts to increase food security and encourage growth in economic exploitation of the available natural resources through microenterprises which will in turn increase household incomes. The Strategic plan also provides an entry point for partners, NGOs and donor organizations that maybe interested in developing projects geared towards improving the livelihoods of the people of WES.</p> <p><b>Budget</b> 3,208,645 (SSP)</p> <p><b>Plan</b> (Information not available)</p> <p><b>Activities</b> (Information not available)</p> <p>Source: State MACE.</p>																								
<b>Services provided by State MACE and local government</b>																											
<p><b>(Animal production services)</b></p> <ul style="list-style-type: none"> <li>• Technical services are provided to cattle keepers.</li> <li>• Deliver beekeeping training and provide 30 modern beehives in cooperation with National MARF.</li> <li>• Radio program for providing technical information to cattle keepers</li> </ul> <p><b>(Animal health services)</b></p> <ul style="list-style-type: none"> <li>• Treatment</li> <li>• Vaccination</li> <li>• Extension and awareness</li> <li>• Technical support</li> <li>• Public health (meat inspection)</li> <li>• Disease outbreaks investigation missions in collaboration with State MACE and other NGOs</li> <li>• Basic and refresher training for State MACE and County staffs</li> </ul>																											

## 8.6 Livestock

### Services provided by National government institutions

Organisation	Activities	Target	Period
Amadi Rural Development Institute	<ul style="list-style-type: none"> <li>Deliver technical training to CAHWs and farmers</li> </ul>	Participants from 10 states	1-2 weeks

Source: CAMP survey team. 2013.

\*CAHW: Community Animal Health Worker

### Services provided by DPs and NGOs

Organisation	Activities	Area	Period
Word Vision	<ul style="list-style-type: none"> <li>Construction of the slaughter house and hide and skin store</li> <li>Training of CAHWs</li> <li>Training of farmers</li> <li>Training of bee keepers</li> <li>Provision of equipment for bee keepers</li> <li>Restocking of goats to vulnerable communities</li> <li>Construction of shade for slaughter house</li> <li>Construction of small ruminants' demonstration farm</li> </ul>	Yambio and Tambura Counties	2008 -
CRS (Christian Relief Services)	<ul style="list-style-type: none"> <li>Provide training and processing equipment (buckets, containers protective gears and smokers)</li> </ul>	Tambura and Yambio Counties	2008 -
FAO	<ul style="list-style-type: none"> <li>Capacity building</li> <li>Provide veterinary vaccines</li> </ul>	All counties	(Information not available)
NPA (Norwegian People's Aid)	<ul style="list-style-type: none"> <li>Goat restocking program</li> </ul>	Movolo County	2010-

Source: CAMP survey team. 2013.

\*CAHW: Community Animal Health Worker

### Services provided by private sector

#### (Agro-dealer)

- Veterinary drugs and technical advices are provided by agro-dealers.

#### (Slaughter house)

- (Information not available)

#### (Other)

- Tele-communication company (Zain Telecom) supports beekeepers through providing modern beehives.

### Livestock population

	Yambio	Mvolo	Mundri West	Mundri East	Maridi	Nzara	Ezo	Tambura	Nagero	Ibba	Estimated population
Cattle		X	X	X							500,000
Sheep		X	X		X						7-800,000
Goat	X	X	X	X	X	X	X	X	X	X	1,200,000
Poultry	X	X	X	X	X	X	X	X	X	X	1,500,000
Donkey	X	X	X	X	X	X	X	X	X	X	(Data not available)
Horse	X	X	X	X	X	X	X	X	X	X	(Data not available)
Pig	X							X			(Data not available)
Rabbit	X										1,350
Bee	X				X			X			(Data not available)

Source: State MACE.

X: Relevant livestock bred

Livestock diseases				
Type of Animal	Type of disease	Outbreak area in last 2 years		
Cattle	Contagious bovine pleuropneumonia	Tambura, Mvolo, Mundri West and East Counties		
	East Coast F/fever	Maridi, Mundri West and East Counties		
	Black Q\quarter	Mvolo, Mundri West and East Counties		
	Trypanosomiasis,	Tambura, Mundri West and East Counties		
	Lumpy skin disease, Foot rot, Internal parasites, Brucellosis	There was no outbreak in the last 2 years.		
Sheep and goat	Contagious caprine pleuropneumonia	Tambura, Yambio, Mvolo, Mundri West and East Counties		
	Peste des petits ruminants	Yambio County		
	Mange, Worms, Foot rot	There was no outbreak in the last 2 years.		
Poultry	Newcastle disease	Tambura, Yambio, Mundri West, and Mvolo Counties		
	Fowl pox, Infectious bronchitis, Coccidiosis, Internal parasites	There was no outbreak in the last 2 years.		
Canine	Rabies	Tambura and Ibba Counties		
Source: State MACE.				
Animal health issues				
<ul style="list-style-type: none"> <li>Lack of veterinary drugs, vaccines and equipment</li> <li>Inadequate professional staff at the state and county level</li> <li>Lack of infrastructure and facilities at the state HQs and county level</li> <li>Lack of communication and transport means</li> <li>Lack/irregular funding to the Animal Resources sector from the National MARF and the state ministry.</li> </ul>				
Market				
Type of livestock and livestock product	Market			
Cattle	Yambio holding ground (Secondary market) Mundri Town(Secondary market) Tambura (Secondary market)			
Sheep	Yambio, Mundri, Tambura			
Goat	Yambio, Tambura. Ezo, Maridi, Mundri			
Poultry	All the Counties			
Pig	Yambio			
Honey	Yambio (Primary market), Tambura (Primary market) Ezo, Maridi (Primary market), Mundri (Secondary market )			
Rabbit	Yambio			
Source: CAMP survey team. 2013.				
Market price				
Item	Unit	Price (SSP)		
		Low season		High season
Cattle	Head	(Data not available)	4,000 - 4,000	(Data not available)
Sheep	Head	(Data not available)	80 - 100	(Data not available)
Goat	Head	(Data not available)	150 - 200	(Data not available)
Hen	Each	(Data not available)	20 - 20	(Data not available)
Cock			30 - 30	
Duck (female)			30 - 30	
Duck (male)			50 - 50	
Fresh milk	500ml	(Data not available)	5 - 5	(Data not available)
Powdered milk	2.5kg (big can)		90 - 90	
Powdered milk	1.5kg (small can)		25 - 25	
Powdered milk	Sachet		2 - 2	
Leg	1kg	(Data not available)	35 - 35	(Data not available)
Liver			24 - 24	
Meat (boneless)			24 - 24	
Pile of offal			2 - 2	
Meat (goat)	1kg	(Data not available)	40 - 40	(Data not available)
Leg and head			15 - 20	
Pile of offal			5 - 5	
Egg	Each	(Data not available)	2 - 2	(Data not available)
Rabbit	Pair	(Data not available)	100 - 100	(Data not available)
Source: CAMP survey team. 2013.				
*This is not a representative sample.				

**Taxes and charges**

Type	Cost (SSP)	Frequency
County council	35/cattle	Daily
Slaughter house fee (veterinary office at county and payam levels)	27/cattle	Daily

Source: CAMP survey team. 2013.  
\*This is not a representative sample.

**Major livestock species and products by livelihood zone**

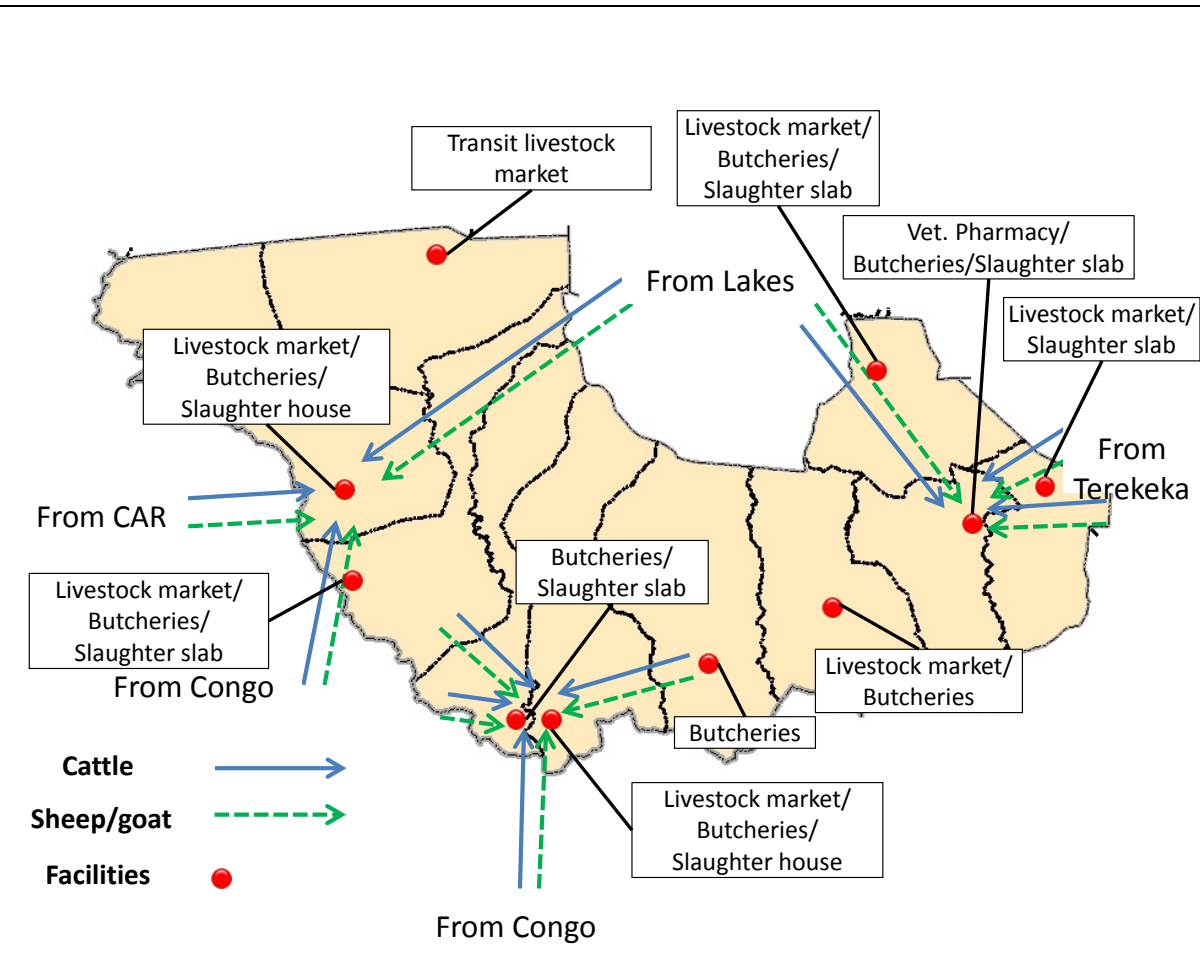
Greenbelt		Ironstone Plateau	
Type of Animal	Breed	Type of Animal	Breed
Cattle	Local (Lugbara, Nilotic)	Cattle	Local
Sheep	Local	Sheep	Local
Goat	Local and exotic	Goat	Local
Pig	Local	Bee	Local
Bee	Local	Poultry	Local
Rabbit	Local		
Poultry	Local		

Livestock products	Livestock products
<ul style="list-style-type: none"> <li>Milk</li> <li>Meat</li> <li>Honey</li> <li>Egg</li> <li>Hide and skin</li> </ul>	<ul style="list-style-type: none"> <li>Milk</li> <li>Meat</li> <li>Honey</li> <li>Egg</li> <li>Hide and skin</li> </ul>

Source: CAMP survey team. 2013.

**Livestock related facilities and trade routes**



Source: CAMP survey team. 2013

<b>Cross-cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• There is no available land for constructing livestock infrastructures.</li> <li>• Some slaughter slabs and an auction yard are found on people's land.</li> </ul> <p><b>(Migration)</b></p> <ul style="list-style-type: none"> <li>• Migrations are found from the neighbouring states by pastoral communities (e.g. Munday Tali Dinka Yoril, Dinka Bor and Western Bahr el Ghazal) for grazing areas and water for their livestock.</li> </ul> <p><b>(Conflict and insecurity)</b></p> <ul style="list-style-type: none"> <li>• Conflicts between livestock keepers and sedentary farmers occasionally erupt during cultivation period.</li> <li>• Raiding of livestock causes conflicts between tribes leading to insecurity.</li> <li>• There was an insecurity threats from the LRA but the incidence is minimized due to presence of Joint-security forces from SPLA, Ugandan army and African Union forces.</li> </ul> <p><b>(Gender disparities)</b></p> <ul style="list-style-type: none"> <li>• In Western Equatoria State, women participate in all activities like men, from cultivation to making houses.</li> </ul> <p><b>(Drought and floods)</b></p> <ul style="list-style-type: none"> <li>• Drought happened in Mundri on 16<sup>th</sup> of September 2005, people suffered hunger.</li> <li>• Prolonged dry spells in all counties</li> </ul>
<b>Opportunities</b>
<ul style="list-style-type: none"> <li>• Due to availability of vast rangeland and land fertility, there are huge potential pastures that could boost animal production in the state.</li> <li>• There are opportunities for establishment of ranches and farms for poultry, dairy, beef, etc.</li> <li>• There is willingness of the crop farming communities to diversify into other livelihood activities such as livestock rearing for both domestic consumption and commercialisation.</li> <li>• With easy accessibility to the border corridors of Congo and Central African Republic, there are opportunities for trans-boundary trades which can improve the national economy through revenues generated from the livestock exports.</li> <li>• Demand for meat is increasing especially in urban areas.</li> </ul>
<b>Challenges</b>
<ul style="list-style-type: none"> <li>• Lack of funding from State government</li> <li>• Due to sharing the ministry with agriculture and forestry, environment, cooperatives and rural development, livestock is always overshadowed by the other agriculture sub-sectors.</li> <li>• Lack of drugs and vaccines</li> <li>• Insufficient means of transport</li> <li>• Poor coordination between the State and National ministries</li> <li>• Livestock diseases</li> <li>• Conflicts resulting from stealing of animals</li> <li>• Lack of infrastructure at the state and county levels</li> <li>• Land problem for the livestock facilities within the state</li> <li>• Lack of laws and regulations</li> <li>• High and illegal taxation</li> <li>• Lack of awareness of extension activities to livestock keepers</li> </ul>



### 8.7 Fisheries

<b>Numbers of fishing households (ANLA 2012)</b>	6,682	
<b>Fish production</b>	Unknown but relatively low as there are few large rivers or swamps in the state. Any rivers near to habitation are heavily fished, mostly for subsistence but surplus will be sold.	
<b>Fish exports</b>	None	
<b>Fish imports</b>	From Uganda via Yei and from DRC, and from other states in South Sudan. All smoked and dried fish.	
<b>Seasonality</b>	A dry season fishery since in the wet season the fishing households are busy cultivating.	
<b>Landing sites</b>	These are located near rivers and human habitation, though not centralised in any way.	
<b>Gears</b>	Cast nets, pole and line, long lines, locally made scoop nets, gill nets (staked)	
<b>Vessels</b>	Planked and dugout canoes. (Relatively few in rivers)	
<b>Informal taxation</b>	Tax is a problem for importers. Taxation is the responsibility of the County Authorities and no revenues accrue to Fisheries.	
<b>Security</b>	WES has singular security problems with the LRA in Ezo, Tambura and Nazara Counties on the boundaries of CAR and DRC. Ambororo nomads have also caused insecurity as they are disliked by the settled farmers of the state.	

#### Aquaculture

WES has the most fish ponds of any state (32). These have been supported by NGOs and other donors. Production is still struggling. Problems with skills, feeds, seed, husbandry techniques. (also irregular support from NGOs) Major potential for IAA aquaculture throughout the state.

Possible to develop this small scale integrated fish farming in many areas among literally thousands of settled farmers. Ponds need to be larger than now, more commercial, in clusters around Yambio and a hatchery is required. Some traders take Uganda origin tilapia from the "Uganda" market in Konyo Konyo to Yambio, indicating a high unsatisfied demand for fresh fish in the area. (Photo: Fish pond near Yambio)



**Fish ponds in WES (2013) Updated September 2013**

County	Ponds	Producing Ponds
Yambio County	23	18
Ego County/	4	2 (just stocked)
Iba County	0	0
Tambura County	2	0
Mundri East	2	0. Not yet stocked

#### Post-harvest and marketing

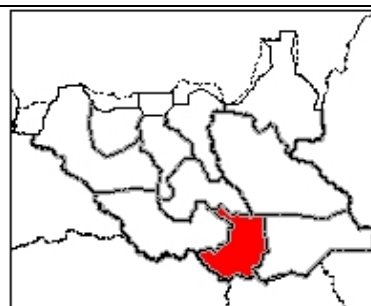
Fish is coming in to WES from CES, Uganda, DRC to feed the population, as local supplies are insufficient. Large selection of dried and smoked products available in the market in Yambio and other towns. Fish prices for Yambio in July 2013.

Species	Presentation	SSP/kg	Species	Presentation	SSP/kg
Clarius spp	Dried plaits	62.18	Alestes	Sun dried	15.38
Distichotus sp	Dried plaits	46.81	Clarius spp	Sun dried	54.05
Heterotus niloticus	Dried plaits	44.90	Daga'a	Sun dried	25.00
Lates niloticus	Smoked	64.94	Marmyrus caschive	Sun dried	16.67
Alestes	Sun dried				

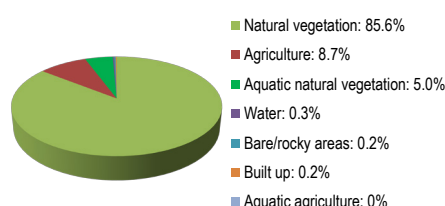


## 9 Central Equatoria State (Capital: Juba)

9.1 Basic Information	
<b>Population (2008)<sup>a</sup></b>	1,103,557 (2 <sup>nd</sup> ) Male: 581,722 Female: 521,835
<b>Projected population (2013)<sup>b</sup></b>	1,395,905 (2 <sup>nd</sup> )
<b>Area<sup>c</sup></b>	43,906 km <sup>2</sup> (7 <sup>th</sup> )
<b>No. of Counties, Payams and Bomas (2009)<sup>d</sup></b>	6 Counties 45 Payams 224 Bomas
<b>Food secure population (2012)<sup>b</sup></b>	72% (2 <sup>nd</sup> )
<b>Access to improved drinking water (2009)<sup>e</sup></b>	51% (7 <sup>th</sup> )
<b>Literacy rate (15-24 years old) (2009)<sup>e</sup></b>	55% (2 <sup>nd</sup> )
<b>Primary school gross enrolment rate (GER) (2010)<sup>f</sup></b>	51% (9 <sup>th</sup> )



Land cover <sup>g</sup>

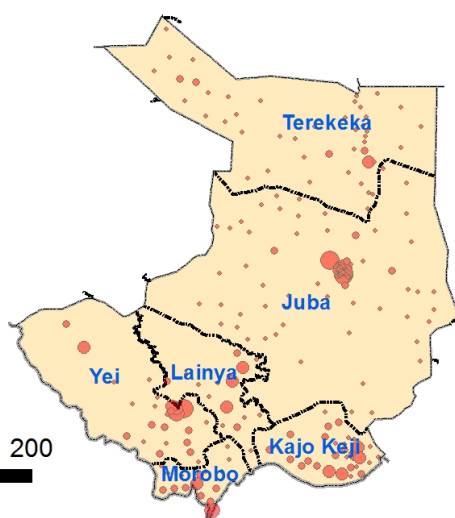
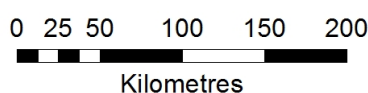


Source: <sup>a</sup> SSCSE. 2010. Southern Sudan Counts: Tables from the 5th Sudan Population and Housing Census, 2008; <sup>b</sup> WFP. 2013. ANLA; <sup>c</sup> FAO. 2011. Land Cover Atlas of the Republic of South Sudan; <sup>d</sup> Original data source of NBS. 2012. NBHS 2009; <sup>e</sup> NBS. 2012. NBHS 2009; <sup>f</sup> MoE. 2010. EMIS; <sup>g</sup> NBS. 2011. South Sudan Statistical Yearbook 2011.

### Administrative districts (counties)

#### Boma Population

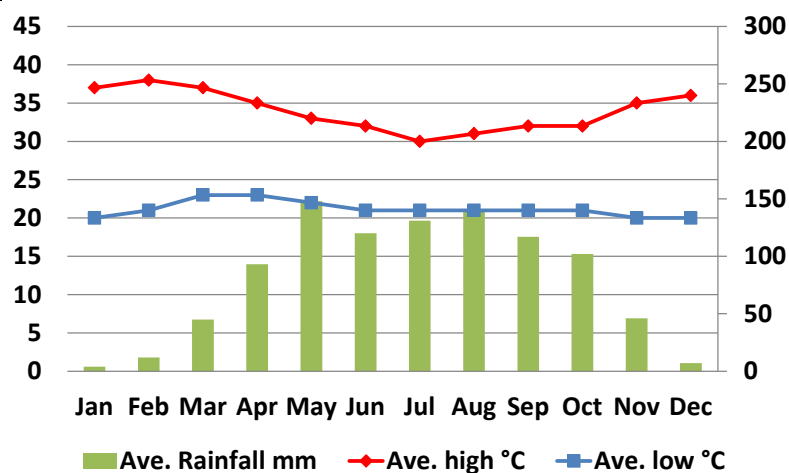
- 1 – 5,000
- 5,001 – 10,000
- 10,001 – 15,000
- 15,001 – 20,000
- 20,001 – 26,136



County	Estimated Population (2013) <sup>a</sup>	Pop. density (ppl/km <sup>2</sup> ) <sup>b</sup>
Juba	437,956	23.2
Yei	230,228	34.4
Terekéka	224,490	20.7
Kajo Keji	220,886	83.4
Morobo	128,218	94.5
Lainya	118,407	34.2

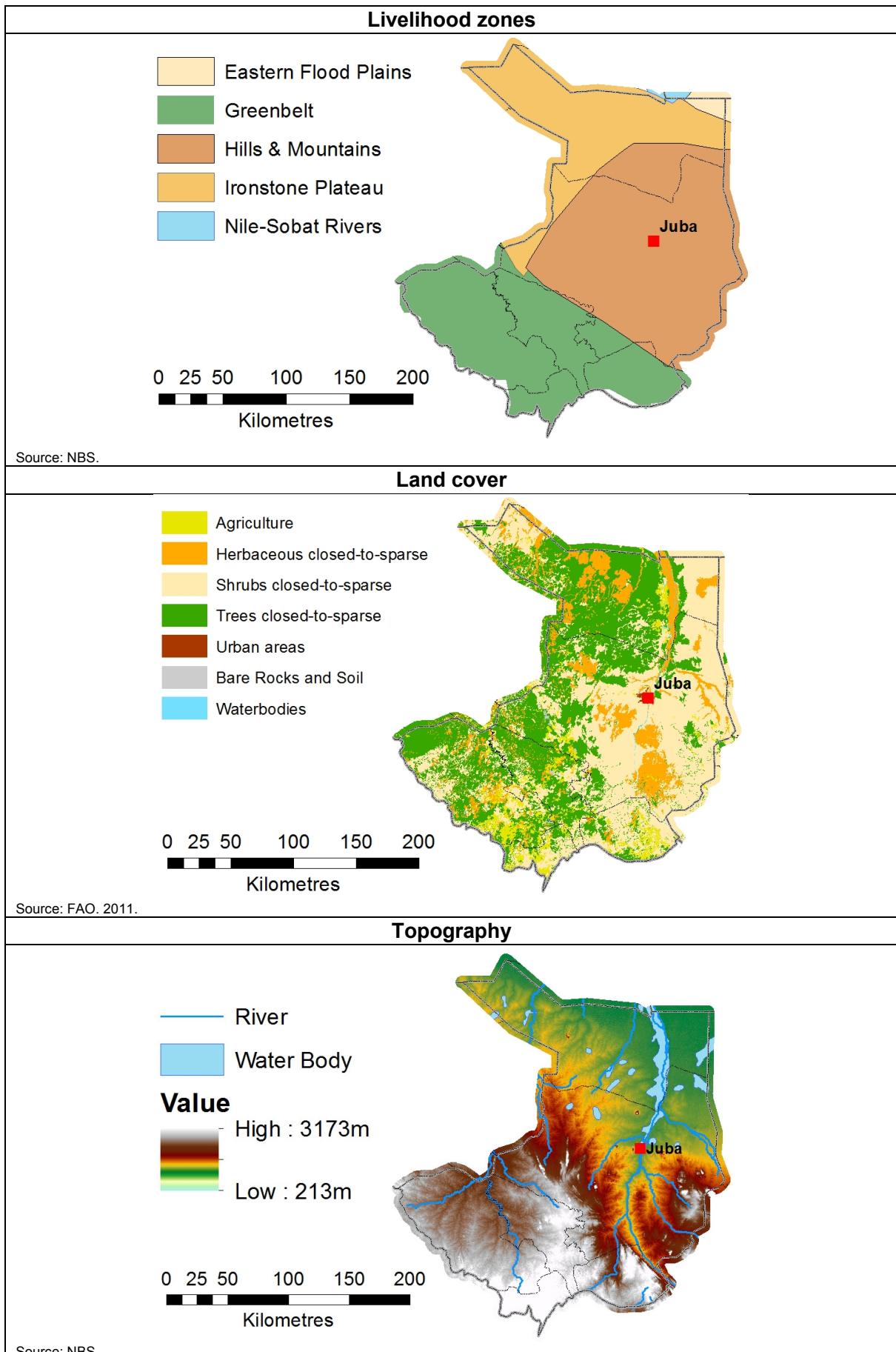
Source: (Map) NBS; (Table)<sup>a</sup> WFP. 2013. ANLA; <sup>b</sup> Land scale data applied from FAO.2011. Land Cover Atlas of the Republic of South Sudan.

### Climate chart (Juba)

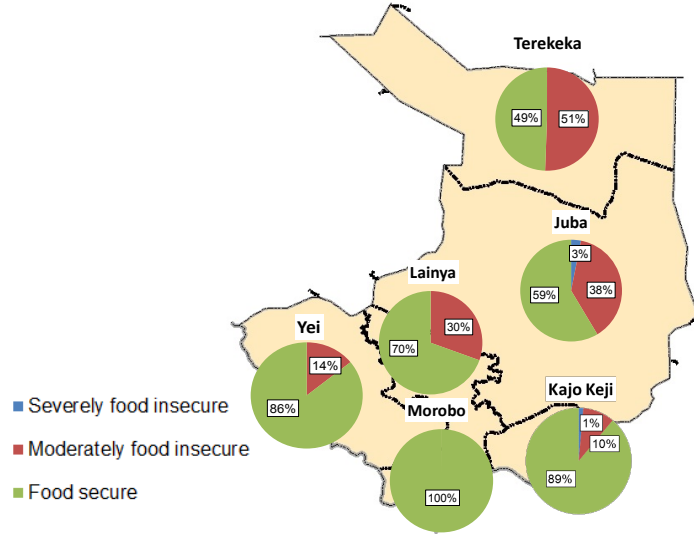


Annual ave. high temp.	33.8°C
Annual ave. low temp.	21.0°C
Average temperature	27.4°C
Ave. annual precipitation	966mm

Source: Climatedata.eu. 2013. Climate Juba.  
<http://www.climatedata.eu/climate.php?loc=suzz0007&lang=en> (accessed on 25<sup>th</sup> August 2013).

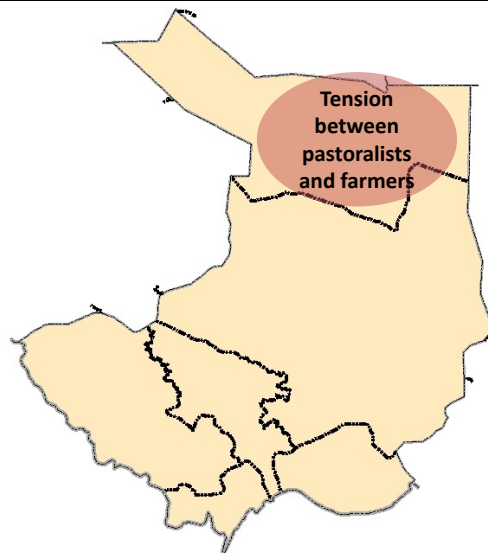


### Estimated food security status by county (2013)



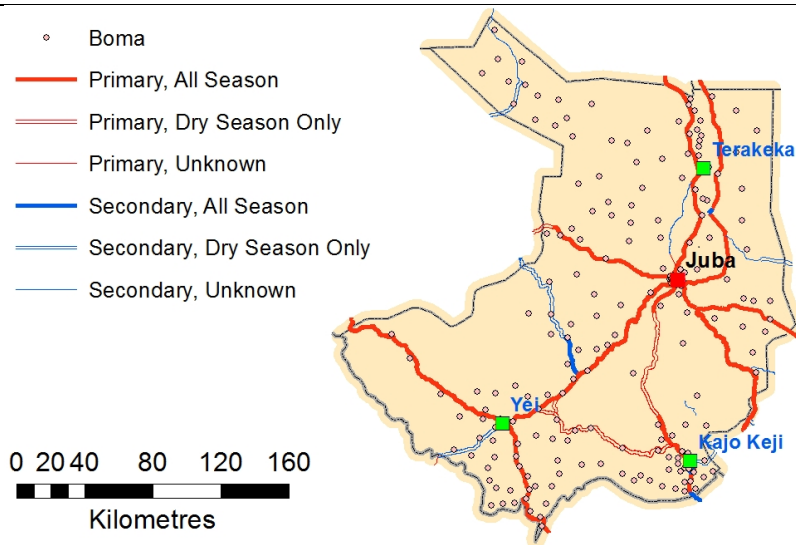
Source: WFP.2013.ANLA.

### Insecurity and natural disaster



Source: CAMP survey team 2013.

### Road and Boma location



Source: Road (WFP. 2013), Boma location (NBS).

9.2 State Ministry of Agriculture (MAF)																																										
Organogram			Staff																																							
<p>Source: State MAF.</p>			Breakdown of information not fully available																																							
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<p><b>(Technical advice)</b></p> <ul style="list-style-type: none"> <li>• Technical advice is delivered by extension officers who are deployed by State MAF to the county agriculture departments (CAD). Some extension officers work in the payam offices and pass information to farmers at boma level.</li> <li>• Technical advices is also provided by some of the plant protection officers, agriculture mechanization officers and crop production officers who work collectively with the extension workers at county and payam level.</li> </ul> <p><b>(Seeds and tools provision)</b></p> <ul style="list-style-type: none"> <li>• The state ministry of agriculture normally provides seeds and some tools in the beginning of the first and second rain season respectively to farmers in six counties.</li> </ul> <p><b>(Demo farm and field day= visit to field to share best agricultural practices)</b></p> <ul style="list-style-type: none"> <li>• Demo farms are well established in CES. The CAD offices in Yei, Morobo, Lainya and Kajo Keji Counties have demo farms (FFS: Farmers Field School) to train farmers in new agricultural practices.</li> </ul> <p><b>(Tractor hiring service)</b></p> <ul style="list-style-type: none"> <li>• The state ministry provides one tractor to each county. The serve charge is between SSP 150 and 200/feddan. Some of these tractors are not sufficiently maintained.</li> </ul>																																										

<b>9.3 Crop</b>			
<b>Services provided by DPs and NGOs</b>			
<b>Organisation</b>	<b>Activities</b>	<b>Area</b>	<b>Target</b>
BRAC (Bangladesh Rural Advancement Comittee)	<ul style="list-style-type: none"> <li>• Provide grinding mills and boreholes for two women's groups.</li> </ul>	Yei County	Farmers in the pilot areas
AAH-I (Action Africa Help International)	<ul style="list-style-type: none"> <li>• Provide three motorized rice mills to three farmers' groups</li> </ul>	Yei County	Farmers in the pilot areas
UMCOR (United Methodist Committee on Relief)	<ul style="list-style-type: none"> <li>• Provide grinding mills for maize as loan to individuals for value addition</li> </ul>	Yei County	Farmers in the pilot areas
FARM Project/USAID	Following services are provided: <ul style="list-style-type: none"> <li>• Seed distribution</li> <li>• Training farmers and extension workers</li> <li>• Marketing project (value addition)</li> <li>• Demo plots</li> <li>• Land preparation support (80% of the charge will be supported by the project)</li> </ul>	Yei, Kajo Keji and Morobo Counties	Farmers in the pilot areas (FBOs: Farmer-based organisations)
GIZ	<ul style="list-style-type: none"> <li>• Implement value chain development project</li> </ul>	Morobo Counties	
IFDC (International Fertilizer Development Centre)	<ul style="list-style-type: none"> <li>• Provide quality maize seeds with fertilizer</li> </ul>	Yei, Morobo, Kajo Keji Counties	
AAO Morobo (Community based organisation)	Following services are provided: <ul style="list-style-type: none"> <li>• Deliver training for farmers</li> <li>• Implement seed multiplication project</li> </ul>	Morobo County	
*There are a number of DPs and NGOs in the state. The above information collected by CAMP team is shown as examples.			
<b>Services provided by private sector</b>			
<b>(Tractor hiring service)</b>			
<ul style="list-style-type: none"> <li>• There are some individual tractor hiring service providers in Yei, Morobo, Lainya and Kajo Keji Counties. (e.g. Savannah Company in Kajo Keji County)</li> </ul>			
<b>(Agro-dealer)</b>			
<ul style="list-style-type: none"> <li>• Seed and tool supply systems are well established in Yei, Lainya, Morobo and Kajo Keji Counties. Some of them provide technical advice to their clients. (e.g. Centuty Seeds in Yei)</li> </ul>			
<b>(Financial institution)</b>			
<ul style="list-style-type: none"> <li>• Financial institutions which support farmers are few.</li> <li>• Equity bank started providing loans to group of farmers in the four counties, however there are other micro finance institutions such as Rural Finance Initiative and Episcopal Church of Sudan in Kajo Keji which also provide loans to individuals and group of farmers.</li> </ul>			

<b>Market</b>						
<b>Agricultural products and their origin (Yei, April 2013)</b>						
<b>(Crop)</b>			<b>(Others)</b>			
Item	Type	Origin	Item	Type	Origin	
Sorghum	Import	-	Tomato	Import	Uganda	
	Domestic	Yei, Morobo, Lainya		Domestic	Yei, Morobo	
Maize grain	Import	-	Okra	Import	-	
	Domestic	Morobo, Yei		Domestic	Yei, Morobo, Lainya, Kajo Keji	
Maize flour	Import	Uganda	Onion	Import	Uganda	
	Domestic	Morobo		Domestic	Yei, Morobo, Lainya	
Cassava	Import	-	Jew's mallow	Import	-	
	Domestic	Yei, Morobo, Lainya, Kajo Keji		Domestic	Yei, Morobo, Lainya, Kajo Keji	
Bean	Import	Tanzania, Uganda	Cabbage	Import	Uganda	
	Domestic	Yei, Morobo		Domestic	Yei, Morobo	
Groundnut	Import	-	Irish potato and carrot	Import	Uganda	
	Domestic	Yei, Morobo, Lainya, Kajo Keji		Domestic	Yei	

Source: CAMP survey team 2013.  
\*This not a representative sample.

Source: CAMP survey team 2013.  
\*This not a representative sample.

<b>Market price (Retail price, Yei, April 2013)</b>						
Item	Unit	Price (SSP) (range)				
		Low season			High season	
Maize grain (Domestic)	1 kg	Sep-Oct	1.4	-	1.6	June-July
Maize flour (Import)	Sack (50 kg)	Jan-Apr	120	-	140	May-Sep
Sorghum (Domestic)	1 kg	Dec-Mar	1.4	-	1.6	June
Cassava (Domestic)	Bucket	Jan-Mar	18	-	20	Apr-Dec
Groundnut (Domestic)	Bucket	July-Aug	12	-	15	Apr-May
Sesame (Domestic)	Basin (18 kg)	Jan	150	-	170	Ma-Aug
Jew's mallow (Domestic)	Bundle	Apr-Aug	1	-	1	Jan-Mar
			(small)	-	(big)	
Okra (Domestic)	Piece	July	2	-	2	Feb
			8-10 pieces	-	4-6 pieces	
Tomato (Domestic)	Piece	June-Dec	1	-	2	Jan-May
			3-4 pieces	-	3-4 pieces	
Onion (Import)	Piece	Aug-Jan	2	-	5	Dec-Apr
			4 pieces	-	5 pieces	
Cabbage (Domestic)	Head	July-Nov	3	-	7	Jan-June
Irish potato (Import)	Piece	Aug-Dec	2	-	5	Feb-May
			4 pieces	-	5 pieces	

Source: CAMP survey team 2013.  
\*This not a representative sample.

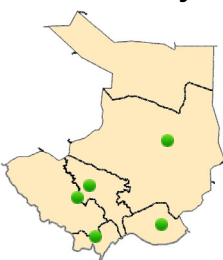
<b>Transportation cost (Yei, April, 2013)</b>			
Type	Unit	Currency	Cost
Uganda-Yei	Truck (50 ton)	SSP	2,500
Uganda-Nimule	Truck (50 ton)	Ush	1,000,000
Juba-Yei	Truck (6 ton)	SSP	2,750
Juba-Morobo	Truck (6 ton)	SSP	3,500
Juba- Kajo Keji	Truck (6 ton)	SSP	3,000
Juba-Lainya	Truck (6 ton)	SSP	2,000

Source: CAMP survey team 2013.  
\*This not a representative sample.

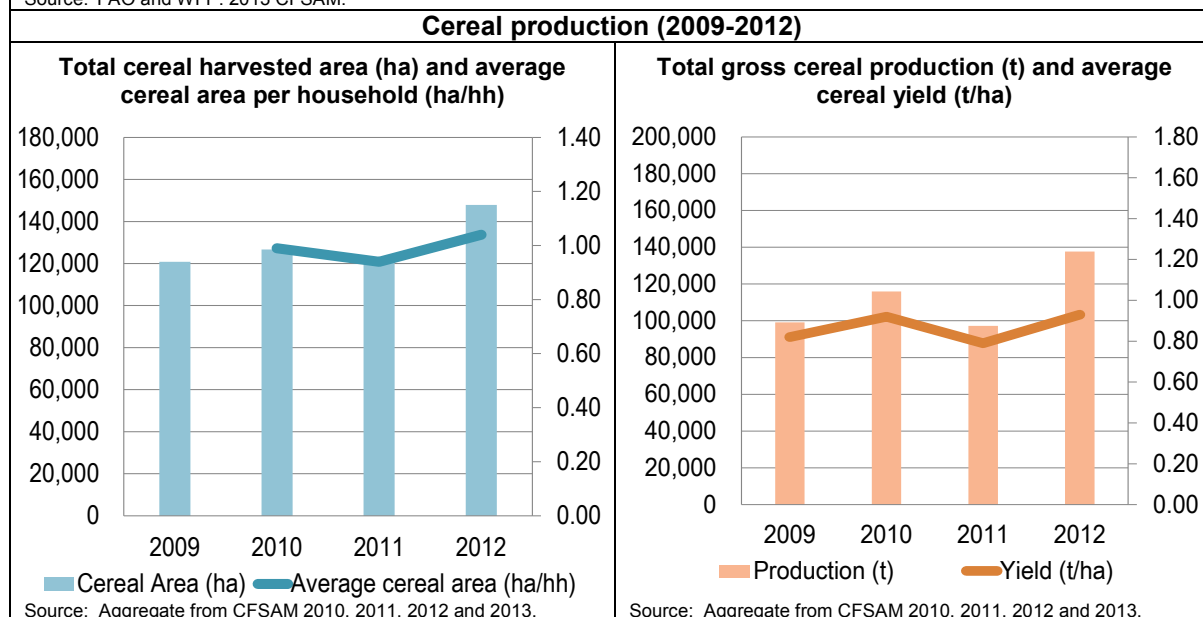
<b>Taxes and charges (Yei, April, 2013)</b>		
<b>(Wholesaler size 4mx4m)</b>		
Type	Cost (SSP)	Frequency
Licence	200	Annually
Rent	30	Monthly
Customs tax	6	Per bag
Chamber of Commerce (5% of value)	-	Every purchase
<b>(Retailer)</b>		
Type	Cost (SSP) (range)	Frequency
Market fee	1	Daily
Shelter rent	10-30	Monthly

Source: CAMP survey team 2013.  
\*This not a representative sample.



Crop production		<b>Survey area</b> 
Farming household (%) (2012)	65	
Farming household (No.) (2012)	142,817	
Total cereal area (ha) (2012)	147,859 (3 <sup>rd</sup> )	
Cereal gross yield (t/ha) (2012)	0.93 (4 <sup>th</sup> )	
Gross cereal production (t) (2012)	137,643 (3 <sup>rd</sup> )	
<b>Average cereal area per household (ha/hh) (2012)</b>	<b>1.04 (2<sup>nd</sup>)</b>	

Source: FAO and WFP. 2013 CFSAM.



**Crop production by Livelihood zone**

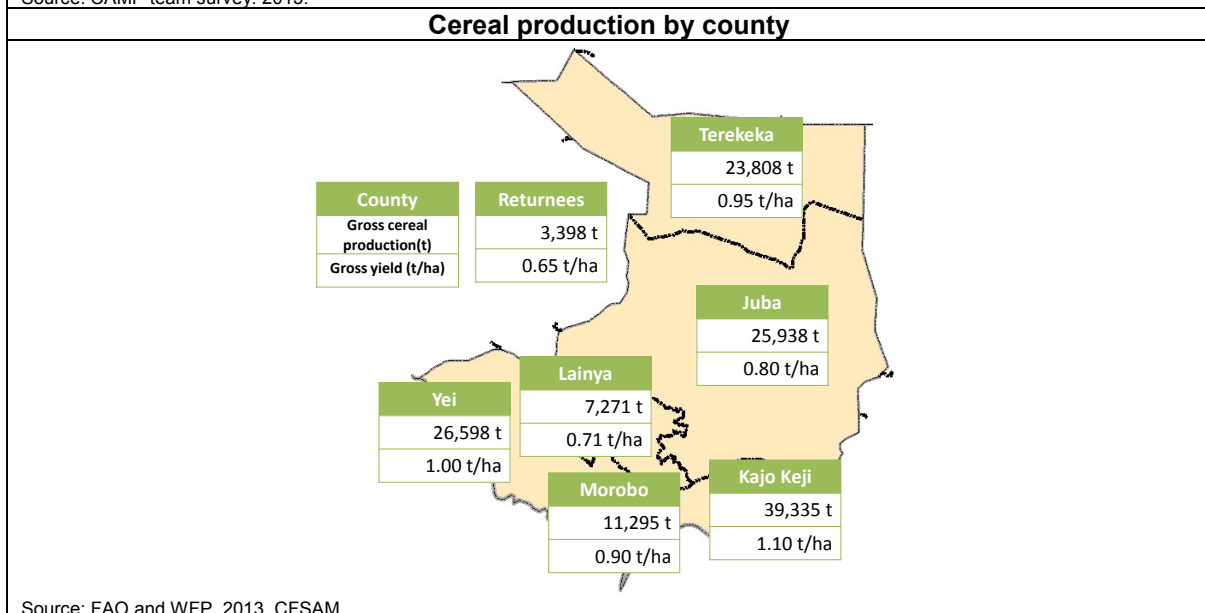
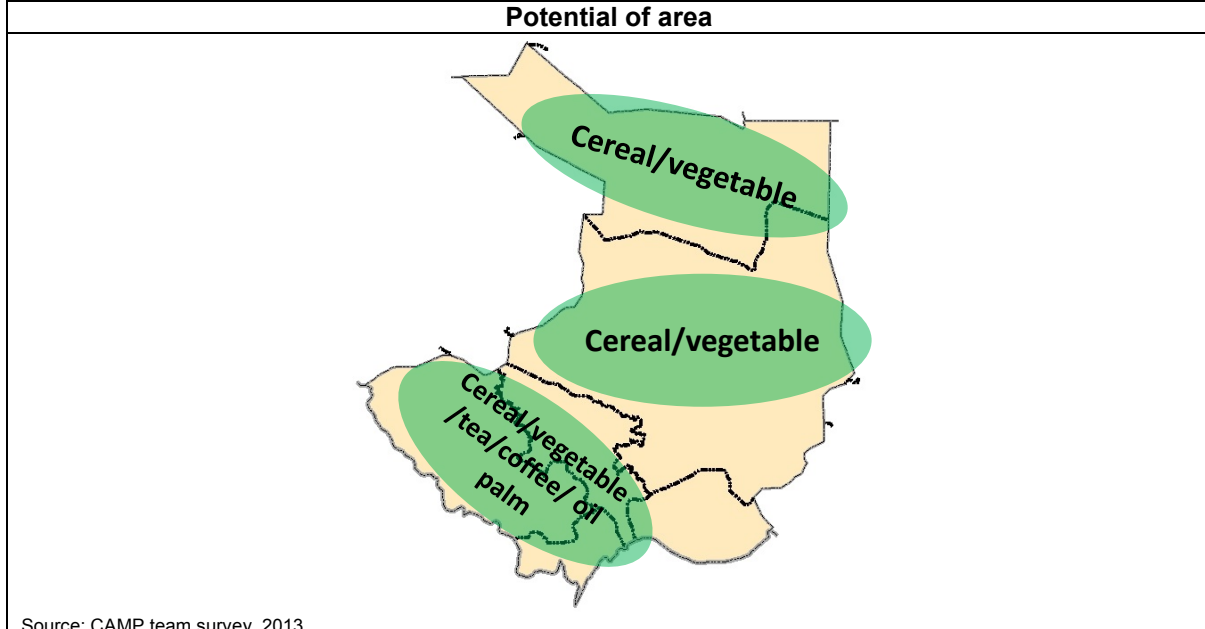
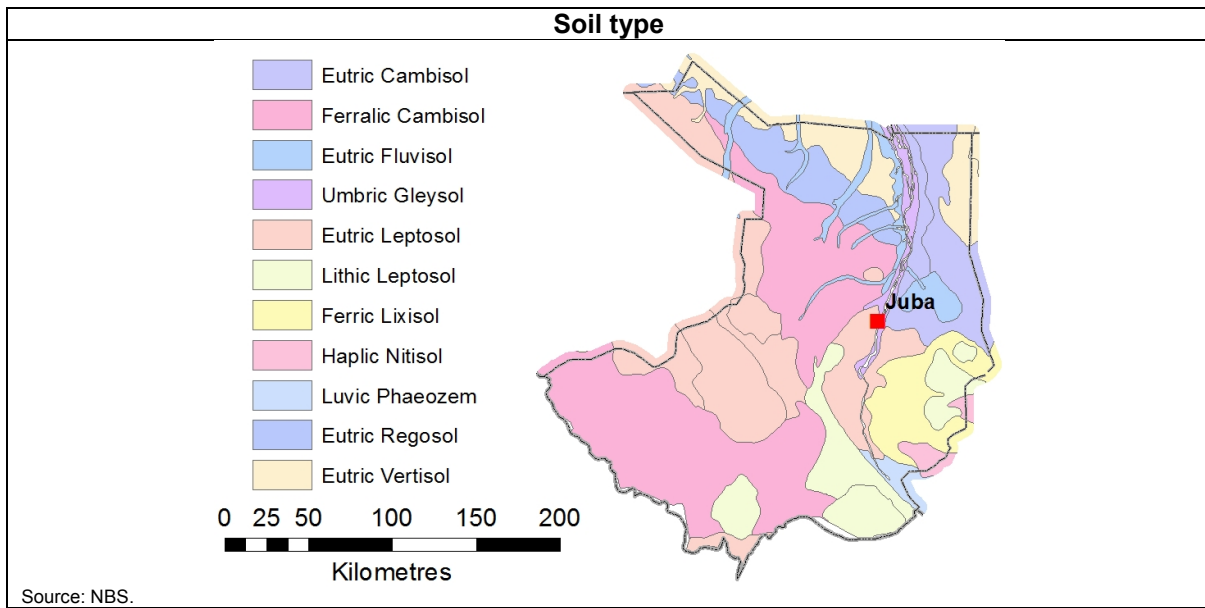
Greenbelt		Hills and Mountains		Ironstone Plateau	
Major agricultural products					
<b>Crop</b>	<b>Vegetable</b>	<b>Crop</b>		<b>Crop</b>	
Maize	Tomato	Sorghum		Sorghum	
Sorghum	Okra	Maize		Maize	
Cassava	Jew's mallow	Cassava		Cassava	
Millet	Amaranthus	<b>Cash Crop</b>		<b>Cash Crop</b>	
Beans	Onion	Groundnut		Groundnut	
Rice	Cabbage	Sesame		<b>Vegetable</b>	
<b>Cash crop</b>	Eggplant & Tula	<b>Vegetable</b>		Tomato	
Groundnut	Sweet potato	Tomato		Okra	
Cowpea	Pumpkin	Okra		Jew's mallow	
Sesame	<b>Fruits</b>	Eggplant			
Coffee	Banana				
Sugarcane					
Pigeon pea					
Soya bean					

**Cropping calendar**

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maize	H	L	S			H	H	S	S			H
Sorghum (long)	H		L	L	S			H	H	S		H
Rice (NERICA)	H	L	S			H	H	S	S			H
Groundnut		L	S			H	S				H	H
Cassava		L	L	T	T						H	H
Sesame			L	S		S	S	H			H	H
Bean				L	S					H		
Tomato	T	L	L	S	T		H	S	T			H
Cabbage			L	S	T			H				

Legend: L Land preparation, S Sowing, T Transplanting, H Harvesting

Source: CAMP survey team. 2013.



<b>Cross cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• Land boundary issues between urban and sub-urban areas</li> <li>• Tension between pastoralists and sedentary farmers in Terekeka County</li> </ul> <p><b>(Gender)</b></p> <ul style="list-style-type: none"> <li>• Weak land rights of widows</li> </ul> <p><b>(Security)</b></p> <ul style="list-style-type: none"> <li>• There are few serious security issues.</li> </ul> <p><b>(IDPs and returnees)</b></p> <ul style="list-style-type: none"> <li>• Refugees from DRC near border</li> <li>• Considerable number of IDPs especially from Jonglei State</li> </ul> <p><b>(HIV)</b></p> <ul style="list-style-type: none"> <li>• HIV infection rate is higher in areas along the border.</li> </ul>
<b>Opportunities</b>
<p><b>Crop</b></p> <ul style="list-style-type: none"> <li>• Fertile land with sufficient rainfall</li> <li>• Double crop farming is available.</li> <li>• Considerable number of farmers is commercial oriented.</li> </ul>
<b>Challenges</b>
<p><b>Overall</b></p> <ul style="list-style-type: none"> <li>• Feeder roads are not well established.</li> <li>• Poor access to financial institutions</li> <li>• High tax rates</li> <li>• High transport costs</li> <li>• High labour costs</li> </ul>
<p><b>Crop</b></p> <ul style="list-style-type: none"> <li>• Appropriate agricultural inputs are not available for most farmers.</li> <li>• Capacities of the extension workers and farmers are underdeveloped.</li> <li>• Market information is not available for some farmers.</li> <li>• Few agricultural processing facilities</li> <li>• The number of tractors does not meet the farmers' needs.</li> <li>• Few opportunities of practical training for farmers</li> <li>• Conditions of storage facilities at local level are not adequate to keep agricultural products long term.</li> <li>• Effective pest and disease control methods are not available.</li> <li>• Occasionally floods occur mainly in July and August.</li> <li>• Soil fertility goes down due to over cropping without sufficient fertilizer and manure input.</li> </ul>

## 9.4 Forestry

### On-going and proposed projects

#### List of on-going projects

Project name	Objectives/activities	Duration	Annual cost
Afforestation (CETC: Central Equatoria Teak Company)	Afforestation and utilization of forest resources	(Information not available)	(Information not available)
Nursery development (GIZ: German Agency for International Development)	Agriculture and nursery development	(Information not available)	(Information not available)
Forestry management (KFTC: Kagelu Forestry Training Centre)	Training on forestry management at Kagelu Forestry Training Centre	(Information not available)	(Information not available)

Source: CAMP team survey, 2013.

#### List of proposed projects

Project name	Objectives/activities	Duration	Annual cost
Afforestation	Plantation development	(Information not available)	(Information not available)
Capacity development 1	Support tree out-growers	(Information not available)	(Information not available)
Capacity development 2	Train farmers on forestry	(Information not available)	(Information not available)
Extension program	Develop extension system	(Information not available)	(Information not available)

Source: CAMP team survey, 2013.

#### Land cover percentage to total area

County	AG	TCO	SCO	HCO	URB	BS	WAT	Total	Total area (ha)
Juba	3.8%	25.3%	56.2%	13.7%	0.4%	0.2%	0.3%	100.0%	1,889,060
Kajo Keji	22.6%	19.1%	54.9%	3.1%		0.1%	0.1%	100.0%	265,002
Lainya	14.5%	53.8%	24.0%	7.2%	0.0%	0.5%	0.0%	100.0%	345,843
Morobo	41.0%	19.9%	37.7%	1.2%	0.1%	0.2%		100.0%	135,662
Terekeka	4.3%	48.9%	26.2%	20.1%	0.0%	0.1%	0.5%	100.0%	1,085,093
Yei	14.4%	46.1%	24.5%	14.4%	0.1%	0.4%	0.0%	100.0%	669,909
<b>Total</b>	<b>8.7%</b>	<b>36.0%</b>	<b>40.8%</b>	<b>13.9%</b>	<b>0.2%</b>	<b>0.2%</b>	<b>0.3%</b>	<b>100.0%</b>	<b>4,390,569</b>

Source: FAO, 2011. *Land cover atlas of South Sudan*. Rome: FAO.

Legend: AG=Agriculture, TCO=Tree closed-to-sparse, SCO=Shrubs closed-to-sparse, HCO=Herbaceous closed-to-sparse, URB=Urban areas, BS=Bare Rocks and Soil, and WAT=Waterbodies.

**Location of Central Forest Reserves and land cover in 2009**



Source: NBS.

9.5 State Ministry of Animal Resources and Fisheries (MARF)																																																																																																						
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surveillance and reporting system</li> <li>Improve production and productivity of livestock and livestock products</li> <li>Provision of water to livestock</li> <li>Enhance poultry production and productivity</li> <li>Build capacity of technical staff and farmers</li> </ul> <p><b>Budget</b> (Information not available)</p> <p><b>Plan</b></p> <ul style="list-style-type: none"> <li>Enhance delivery of essential veterinary drugs and vaccines to livestock keepers through appropriate channels</li> <li>Develop and implement a training plan for staff at all levels</li> <li>Focus on the development strategies for control of two priority diseases of cattle (Contagious bovine pleuropneumonia, East Coast Fever)</li> <li>Deploy the vet staff to all level to coordinate all extension activities for the Directorate of Veterinary Services</li> <li>Implement effective rabies control in domestic dogs</li> <li>Participate in the collection of data for a first national livestock census</li> <li>Improve meat and milk hygiene</li> <li>Establishment of ranches</li> <li>Construction of livestock holding facilities</li> <li>Provision of extension packages in livestock market Preservation of hides and skins</li> <li>Construction of water catchment for livestock</li> <li>Establishment of demonstration farms</li> </ul> <p><b>Activities</b></p> <ul style="list-style-type: none"> <li>Goat units to support the food security in the state through distribution of improved goats to farmers</li> <li>Treatment and animal health advices</li> <li>Public Health awareness</li> <li>Drugs on cost recovery basis</li> <li>Disease inspection and control</li> </ul>	
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<p><b>(Animal production services)</b></p> <ul style="list-style-type: none"> <li>Promotion of dairy development/milk production and collection, processing and distribution, marketing to the consumers and processors in Juba</li> <li>Promotion of poultry production, processing and distribution</li> <li>Training of various categories of stakeholders in livestock improvement techniques</li> <li>Development of extension and training materials</li> <li>Extension services and livestock provision by the state livestock and poultry demonstration centre</li> </ul> <p><b>(Animal health services)</b></p> <ul style="list-style-type: none"> <li>Vaccination/treatment/drugs on cost recovery basis</li> <li>Disease surveillance and control</li> </ul>																																																																																																						

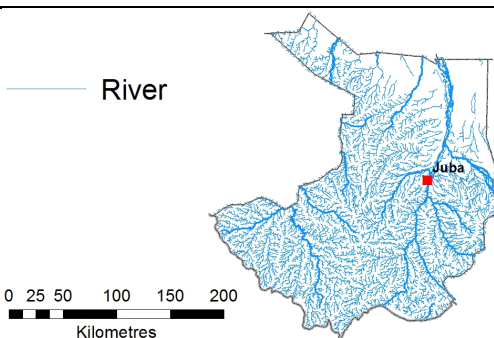


<b>9.6 Livestock</b>			
<b>Services provided by National government institutions</b>			
No national government organisations are in the state.			
<b>Services provided by DPs and NGOs</b>			
<b>Organisation</b>	<b>Activities</b>	<b>Area</b>	<b>Period</b>
VSF (Vétérinaires Sans Frontières) Belgium	<ul style="list-style-type: none"> <li>• Deliver training on meat hygiene</li> <li>• Provide veterinary drugs</li> </ul>	Terekeka and Juba Counties	(Information not available)
NPA (Norwegian People's Aid)	<ul style="list-style-type: none"> <li>• Train CAHWs on livestock management</li> <li>• Provide veterinary equipment</li> </ul>	Kajo-Keji, Terekeka, Juba and Lainya Counties	(Information not available)
FAO	<ul style="list-style-type: none"> <li>• Provide vaccine and veterinary drugs through ministries</li> </ul>	Yei, Lainya and Morobo Counties	(Information not available)
NICODO (Nile Basin Community Development Organisation)	<ul style="list-style-type: none"> <li>• Deliver service on treatment and livestock vaccination</li> <li>• Deliver training on milk hygiene to livestock keepers</li> <li>• Provide training to livestock keepers and CAHWs</li> <li>• Collect milk from cattle camps and produce fresh milk and yogurt</li> <li>• Establish a veterinary clinic supported by the milk processing factory</li> <li>• Implement goat restocking program for women's group in cooperation with other NGOs</li> </ul>	Juba County	(Information not available)
CEPA (Central Equatoria Poultry Association, Local community organisation)	<ul style="list-style-type: none"> <li>• Coordinate poultry farmers and provide extension services in cooperation with the State MARF</li> </ul>	(Information not available)	(Information not available)
World Vision	<ul style="list-style-type: none"> <li>• Provide chicks to develop poultry production</li> </ul>	(Information not available)	(Information not available)
Source: CAMP survey team. 2013. *CAHW: Community Animal Health Worker			
<b>Services provided by private sector</b>			
<p><b>(Agro-dealer)</b></p> <ul style="list-style-type: none"> <li>• A number of agro-dealers provide veterinary drugs and technical advices to livestock keepers.</li> </ul> <p><b>(Livestock market)</b></p> <ul style="list-style-type: none"> <li>• (Information not available)</li> </ul> <p><b>(Slaughter house)</b></p> <ul style="list-style-type: none"> <li>• (Information not available)</li> </ul> <p><b>(Others)</b></p> <ul style="list-style-type: none"> <li>• (Information not available)</li> </ul>			
<b>Livestock population</b>			
<b>Type of Animal</b>	<b>Population in Terekeka County</b>		
Cattle	2,000,000		
Goat	1,800,000		
Sheep	1,200,000		
*Livestock population data in other counties is not available. Source: State MARF.			

Livestock diseases				
Type of animal	Type of disease	Outbreak area in last 2 years		
Cattle	East Coast fever, Haemorrhagic septicaemia, Black quarter, Trypanosomiasis, Contagious bovine pleuropneumonia, Internal parasite, Foot and mouse disease, Tick borne disease, Liver flu, Anthrax, Fasciolosis, Brucellosis, Mange, Lumpy skin disease.	East Coast Fever (2010 and 2011, Terekeka) Black quarter, Haemorrhagic septicaemia (2013, Terekeka)		
Sheep and goat	Peste des petits ruminants, Contagions caprine pleuropneumonia, Mange, Internal parasite, Foot rot, Pneumonia	Peste des Petits Ruminants (2013, Lanya)		
Poultry	Newcastle disease, External parasites, Helminthiasis, Salmonellosis, Coccidiosis, Fowl typhoid, Respiratory disease	Newcastle Disease (2013) (Area information not available)		
Pig	Internal and external parasites	There was no outbreak in the last 2 years.		
Canine	Rabies, Internal and external parasites, Mange	There was no outbreak in the last 2 years		
Source: State MARF.				
Animal health issues				
<ul style="list-style-type: none"> <li>• Lack of laws and regulations</li> <li>• Trans-boundary disease due to livestock cross border movement</li> <li>• Floods cause more diseases.</li> <li>• Lack of veterinary drugs</li> <li>• Limited technical advices and extension services.</li> </ul>				
Market				
Type of livestock and livestock product	Market			
Cattle	Juba (primary and secondary) Terekeka (primary market) Yei (primary and secondary market) Kajio kaji (terminal, primary and secondary market)			
Sheep and goat	All counties (primary and secondary market)			
Poultry	All counties (primary market) (Imported poultry from Uganda is in the market)			
Hide and skin	Juba primary market, Uganda and Kenyan secondary market			
Source: CAMP survey team. 2013.				
Market price				
Item	Unit	Price (SSP)		
		Low season		High season
Meat (beef)	1 kg	(Data not available)	30 - 30	(Data not available)
Meat (sheep and goat)	1 kg	(Data not available)	40 - 40	(Data not available)
Fresh milk (Terekeka)	600 ml	(Data not available)	2 - 2	(Data not available)
Yogurt	500 ml	(Data not available)	3 - 3	(Data not available)
Milk (fresh, Juba)	500 ml	(Data not available)	4 - 4	(Data not available)
Sheep and goat (Yei)	Head	(Data not available)	220 - 270	(Data not available)
Cattle (Juba)	Head	(Data not available)	1,200 - 3,500	(Data not available)
Meat (pork)	1 kg	(Data not available)	40 - 40	(Data not available)
Egg	Each	(Data not available)	1 - 1	(Data not available)
Chicken	Each	(Data not available)	60 - 90	(Data not available)
Frozen chicken (Imported from Thailand and Brazil)	1 kg	(Data not available)	25 - 30	(Data not available)
Hide	Each	(Data not available)	5 - 5	(Data not available)
Skin	Each	(Data not available)	7 - 10	(Data not available)
Honey	600 ml	(Data not available)	10 - 10	(Data not available)
Source: CAMP survey team. 2013.				
*This is not a representative sample.				



Taxes and charges					
(Traders in Terekeka)					
Type		Cost (SSP)		Frequency	
Milk market fee (ground)		1		Daily	
Auction fees for cattle		30		Daily	
Auction fees for sheep/goat		5		Daily	
Butcher license		200		Annually	
Market fees for butchery		20		Monthly	
Source: CAMP survey team. 2013. *This is not a representative sample.					
Major livestock species and products by livelihood zone					
Greenbelt		Hills and Mountains		Ironstone Plateau	
Type of Animal	Breed	Type of Animal	Breed	Type of Animal	Breed
Cattle	Nilotic and Logari	Cattle	Nilotic and Logari	Cattle	Nilotic and Logari
Sheep and goat	Nilotic, Toposa, Dwarf, Sannan and Tong burg	Sheep and goat	Nilotic, Toposa, Dwarf, Sannan and Tong burg	Sheep and goat	Nilotic, Toposa, Dwarf, Sannan and Tong burg
Pig	Local	Pig	Local	Pig	Local
Poultry	Local and exotic	Poultry	Local and exotic	Poultry	Local and exotic
Bee	Local	Bee	Local		
Livestock products		Livestock products		Livestock products	
<ul style="list-style-type: none"> <li>Meat (cow, sheep, goat, pig and poultry)</li> <li>Yoghurt</li> <li>Honey</li> <li>Hide and skin</li> <li>Milk (Fresh and sour)</li> <li>Ghee</li> <li>Egg</li> </ul>		<ul style="list-style-type: none"> <li>Meat (cow, sheep, goat, pig, and poultry)</li> <li>Yoghurt</li> <li>Honey</li> <li>Hide and skin</li> <li>Milk (Fresh and sour)</li> <li>Ghee</li> <li>Egg</li> </ul>		<ul style="list-style-type: none"> <li>Meat (cow, sheep, goat, pig and poultry)</li> <li>Yoghurt</li> <li>Hide and skin</li> <li>Milk (Fresh and sour)</li> <li>Ghee</li> <li>Egg</li> </ul>	
Source: CAMP survey team. 2013.					
Livestock related facilities and trade routes					
<p>The map illustrates the geographical distribution of livestock facilities and trade routes in Central Equatoria State. Key features include:</p> <ul style="list-style-type: none"> <li><b>Trade Routes (Single-headed arrows):</b> <ul style="list-style-type: none"> <li>Cattle: Solid blue arrows pointing towards Lakes, Mundri, Yambio, and Bor.</li> <li>Sheep/Goat: Dashed green arrows pointing towards Lakes, Mundri, Yambio, and Bor.</li> </ul> </li> <li><b>Migration Routes (Double-headed arrows):</b> <ul style="list-style-type: none"> <li>From Torit/Magwi to the central and southern parts of the state.</li> <li>Between the central and southern grazing areas.</li> </ul> </li> <li><b>Facilities (Red dots):</b> <ul style="list-style-type: none"> <li>Livestock markets and Slaughter slabs are located in the northern and central regions.</li> <li>Livestock markets and Slaughter houses are located in the southern region.</li> <li>Grazing areas are marked in green ovals in the central and southern regions.</li> </ul> </li> <li><b>Geographical Context:</b> The map shows the state's location relative to Uganda to the south and various directions (Lakes, Mundri, Yambio, Bor, Torit/Magwi).</li> </ul>					
Source: CAMP survey team. 2013.					

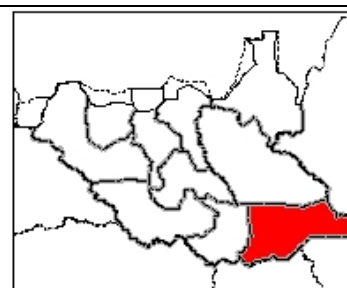
<b>Cross-cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• With the absence of clear land tenure policy, land issues for livestock infrastructures are found.</li> </ul> <p><b>(Migration)</b></p> <ul style="list-style-type: none"> <li>• There are no regular seasonal migration routes because of abnormal climate and insecurity.</li> </ul> <p><b>(Conflict and insecurity)</b></p> <ul style="list-style-type: none"> <li>• Conflicts caused by scarce natural resources (water and grazing) among pastoralists and between pastoralists and sedentary famers</li> <li>• Cattle raiding has become a major source of insecurity in the state.</li> </ul> <p><b>(Gender disparities)</b></p> <ul style="list-style-type: none"> <li>• Unequal ownership rights of cattle</li> <li>• Widows are allowed to own cattle of their late husbands but they do not have right to sell the cattle. When widows want to sell them, consultations with their relatives are required.</li> <li>• Women have the right to own and sell poultry.</li> </ul> <p><b>(Drought and floods)</b></p> <ul style="list-style-type: none"> <li>• Floods cause more diseases.</li> <li>• Cattle are forced to move to high land when severe flood affect the communities.</li> </ul> <p><b>(IDPs and returnees)</b></p> <ul style="list-style-type: none"> <li>• Insufficient support programs are prepared for IDPs and returnees.</li> </ul>
<b>Opportunities</b>
<ul style="list-style-type: none"> <li>• The livestock keepers are more commercial oriented.</li> <li>• High population of livestock</li> <li>• Piggery and honey industry potential areas in Yei</li> <li>• Sufficient labour from urban areas</li> <li>• High hides and skins demand</li> <li>• Vast land with abundant rangelands resources</li> <li>• Potential supply centre of fodder crop production</li> </ul>
<b>Challenges</b>
<ul style="list-style-type: none"> <li>• Limited number of technical staff</li> <li>• Veterinary services are insufficient to cure animal diseases.</li> <li>• Lack of extension services and poor government support</li> <li>• Inappropriate land use (e.g. grazing areas)</li> <li>• Poor slaughtering facilities</li> <li>• Investment environment is undeveloped in livestock sectors.</li> <li>• There are no effective countermeasures for inter-state cattle raiding.</li> <li>• Long distance livestock migration occasionally causes tension between pastoralists and sedentary agriculturalists.</li> <li>• Veterinary drugs are not available due to insufficient budget.</li> </ul>

<b>9.7 Fisheries</b>	
<b>Numbers of fishing households (ANLA 2012)</b>	22,919
<b>Fish production</b>	<p>Probably from 20,000 to 30,000 tonnes/year mostly from the Terekeka County, but also from landing sites all down the Nile and smaller rivers and lakes throughout the state. State contains Juba, with 1.2 million people, so is a destination for fish from everywhere. Fish sold fresh if possible to Juba, but also smoked in Terekeka.</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 20px;"> <p>— River</p>  </div> </div>
<b>Fish exports</b>	Smoked fish from the Terekeka area finds its way to all of Greater Equatoria, and north to Lakes, WBG and NBG States.
<b>Fish imports</b>	Smoked from Uganda via Yei and Nimule, and from other states in South Sudan (Unity, Lakes and Jonglei). Fresh to Juba from Uganda. Dried (Daga'a) from Uganda.
<b>Seasonality</b>	Along the Nile all year but best in the wet season. In the areas away from the Nile a dry season fishery since in the wet season the fishing households are busy cultivating. The Lakes of Yelon, Bayak, Yor and Nuni are drying and fish production from them is reduced. Production from these lakes is very seasonal.
<b>Landing sites</b>	Seasonal and permanent landing sites on the Nile at and around Terekeka and elsewhere on the Nile. More than 100 fishing camps in the Terekeka area alone.
<b>Gears</b>	Gill nets, long lines, cast nets
<b>Vessels</b>	Planked and dugout canoes mainly. Occasional fibreglass boat where donors have been active (Terekeka). Large number of motorised steel vessels for transport on the Nile.
<b>Informal taxation</b>	Particularly heavy on transporters from Terekeka to Juba. Also taxes imposed on fish coming up from Uganda to Yei (and through Nimule to Juba)
<b>Investment</b>	Concentrated in Juba. Ice machines, cool boxes, etc. for transport and storage of fish (mostly from Bor). Markets and stock of fish, dried and fresh.
<b>Aquaculture</b>	
	<p>In Yei County there are 49 ponds, of which 14 are operating. Lainya Country has 9 fish ponds, 22 in Morobo County, 7 in Kejukeji and 3 in Juba County of which 2 are operative. These have been supported by NGOs and other donors. Production is still struggling. Problems with skills, feeds, seed, husbandry techniques. (also irregular support from NGOs) (Photo: A pond in Mugwo Payam near Yei)</p>
<b>Post-harvest and marketing</b>	
<p>Terekeka in CES is the major fish producing area in the state and produces both fresh and smoked fish. The fresh fish is collected by traders and transported to Juba where it is sold in markets and direct to customers. The smoked fish is very good quality and is also sold through middlemen to consumers throughout the whole of Greater Equatoria, being seen in Yei, Yambio, Torit and smaller towns in the region. It keeps well but suffers from beetle attack if kept for too long. The photo shows smoked fish from Terekeka.</p> <p>Fish is coming in to CES from Uganda and stations up the Nile river in Jonglei, Unity and Lakes. Fresh from Jonglei, Terekeka and Uganda goes to Juba, dried from Jonglei, Unity and Lakes, and smoked from Terekeka and Uganda. The market in Juba is huge. At least 400 tonnes of dried fish comes from Jonglei, Lakes and Unity states to Juba annually. Fresh fish, Tilapia and Nile Perch comes up from Uganda. (~300 tonnes annually). Support from SNV is being sought to provide two hygienic structures for fish retailing in Juba, with insulated chill storage.</p>	

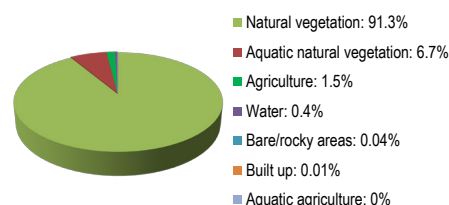


## 10 Eastern Equatoria State (Capital: Torit)

10.1 Basic Information	
<b>Population (2008)<sup>a</sup></b>	906,161 (5 <sup>th</sup> ) Male: 465,187 Female: 440,974
<b>Projected population (2013)<sup>b</sup></b>	1,059,862 (5 <sup>th</sup> )
<b>Area<sup>c</sup></b>	74,255 km <sup>2</sup> (5 <sup>th</sup> )
<b>No. of Counties, Payams and Bomas (2009)<sup>d</sup></b>	8 Counties 53 Payams 262 Bomas
<b>Food secure population (2012)<sup>b</sup></b>	54% (7 <sup>th</sup> )
<b>Access to improved drinking water (2009)<sup>e</sup></b>	63% (4 <sup>th</sup> )
<b>Literacy rate (15-24 years old) (2009)<sup>e</sup></b>	26% (9 <sup>th</sup> )
<b>Primary school gross enrolment rate (GER) (2010)<sup>f</sup></b>	50% (10 <sup>th</sup> )



Land cover <sup>g</sup>



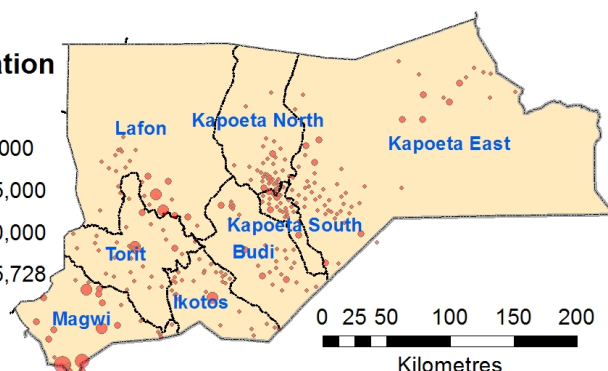
Source: <sup>a</sup> SSCSE. 2010. Southern Sudan Counts: Tables from the 5th Sudan Population and Housing Census, 2008; <sup>b</sup> WFP. 2013. ANLA; <sup>c</sup> FAO. 2011. Land Cover Atlas of the Republic of South Sudan; <sup>d</sup> Original data source of NBS. 2012. NBHS 2009; <sup>e</sup> NBS. 2012. NBHS 2009; <sup>f</sup> MoE. 2010. EMIS; <sup>g</sup> NBS. 2011. South Sudan Statistical Yearbook 2011.

### Administrative districts (counties)

County	Estimated Population (2013) <sup>a</sup>	Pop. density (ppl/km <sup>2</sup> ) <sup>b</sup>
Magwi	189,440	35.8
Kapoeta East	187,431	6.1
Lafon	119,241	7.3
Budi	113,993	19.6
Kapoeta North	113,375	19.4
Ikotos	97,578	27.3
Kapoeta South	96,745	82.2

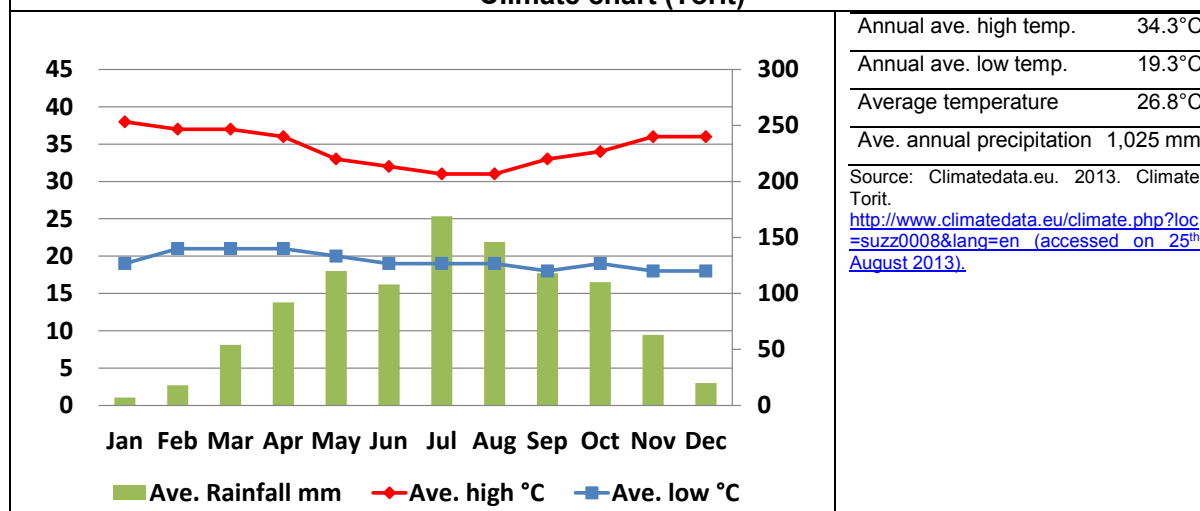
### Boma Population

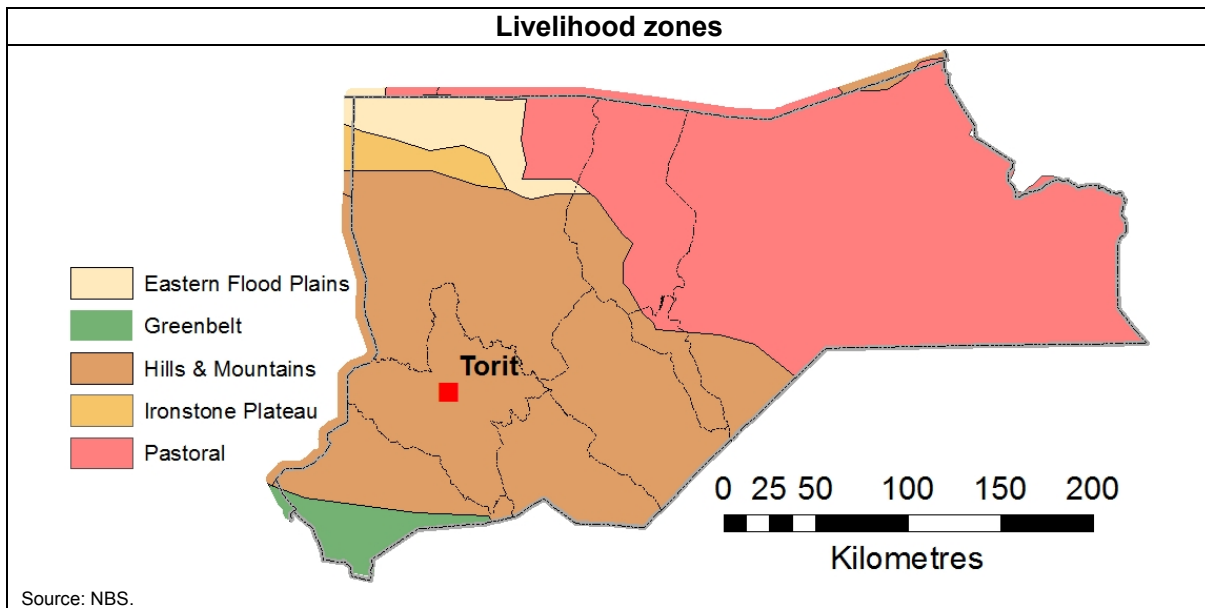
- 1 - 5,000
- 5,001 - 10,000
- 10,001 - 15,000
- 15,001 - 20,000
- 20,001 - 25,728



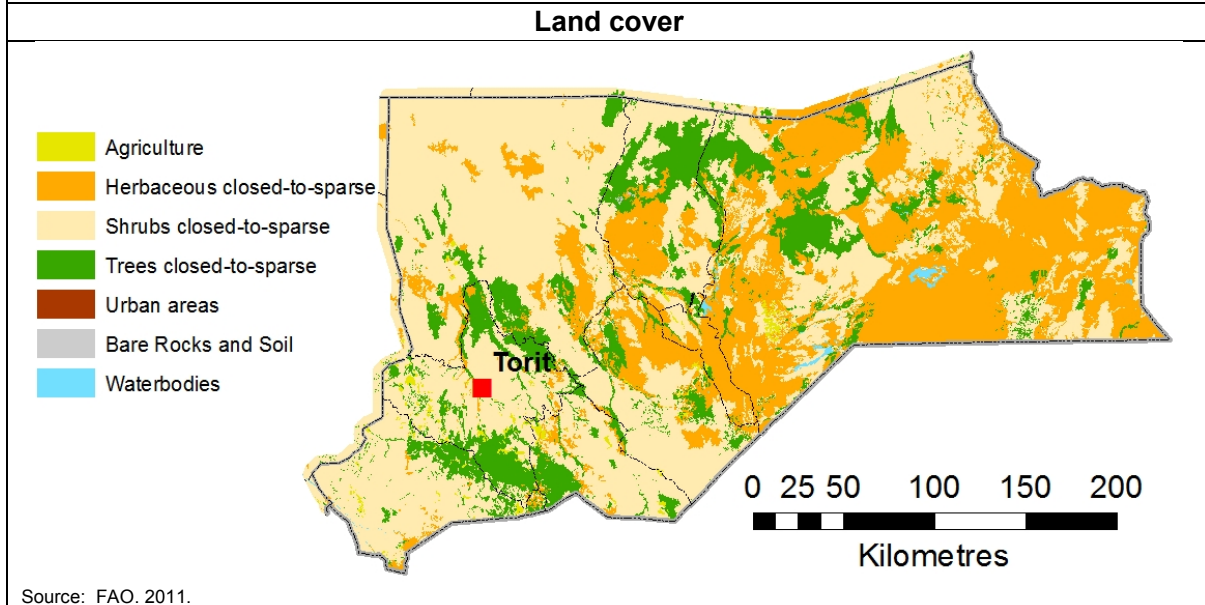
Source: (Map) NBS; (Table)<sup>a</sup> WFP. 2013. ANLA; <sup>b</sup> Land scale data applied from FAO. 2011. Land Cover Atlas of the Republic of South Sudan.

### Climate chart (Torit)

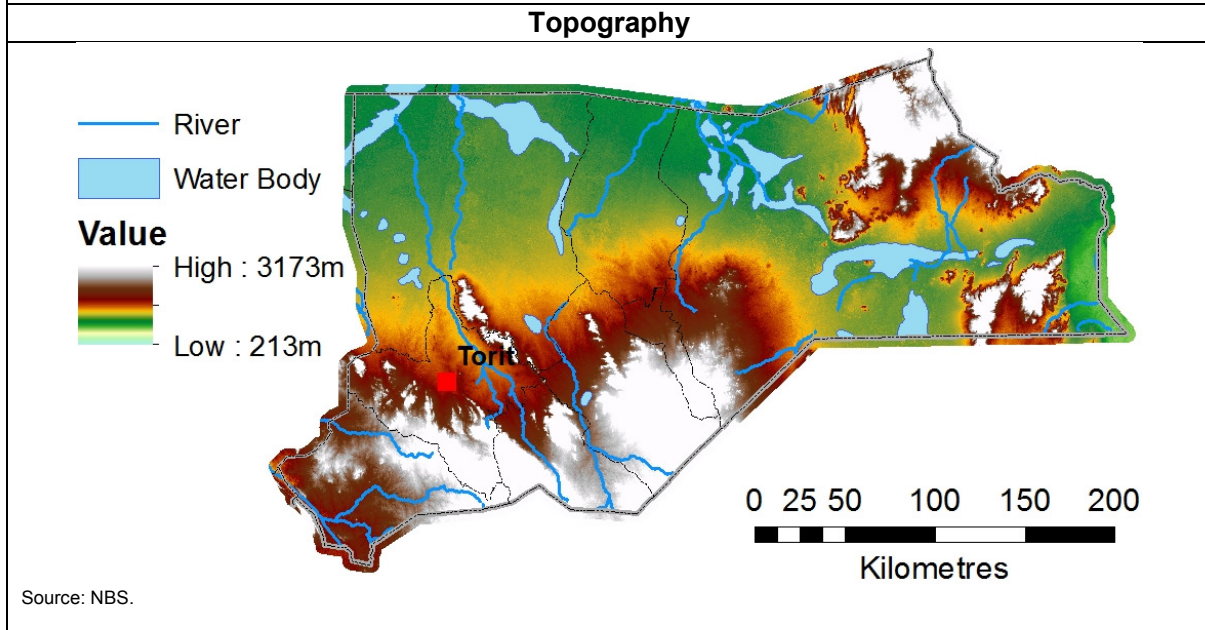




Source: NBS.

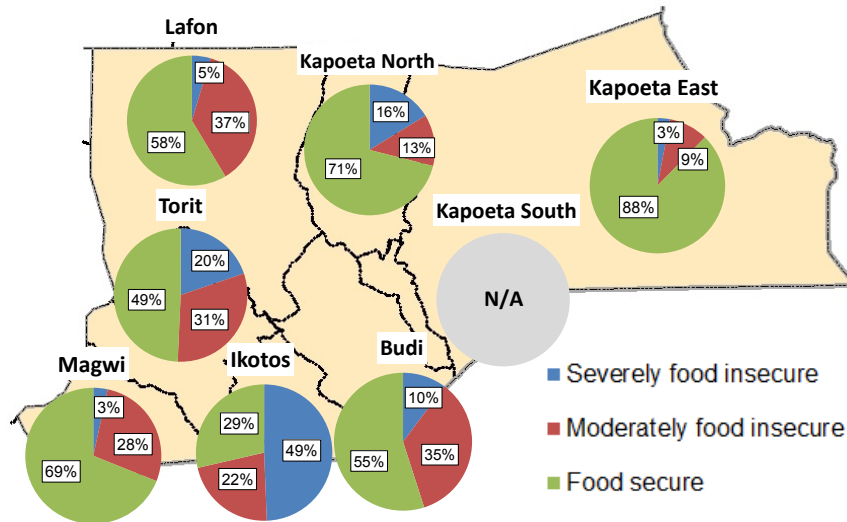


Source: FAO. 2011.



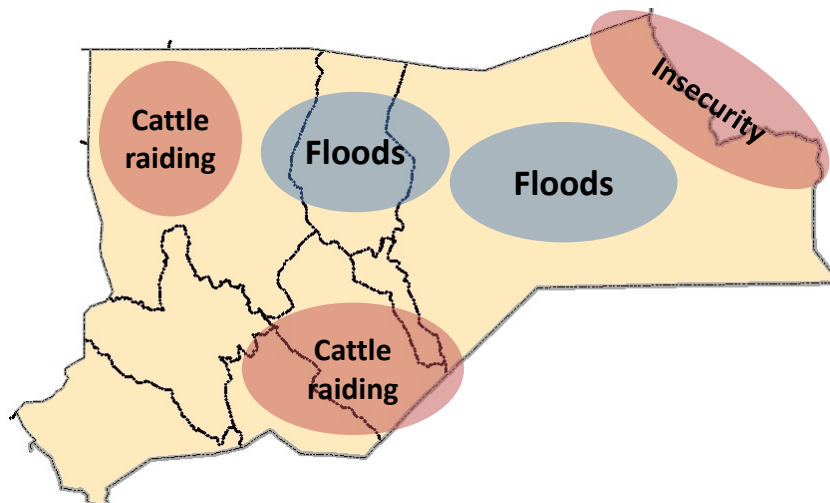
Source: NBS.

### Estimated food security status by county (2013)



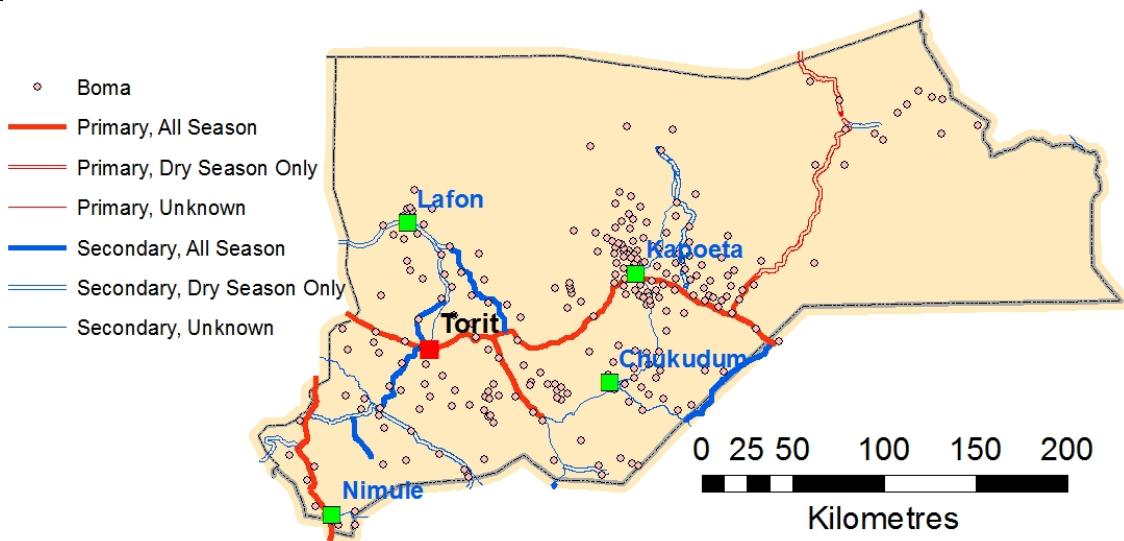
Source: WFP. 2013. ANLA.

### Insecurity and natural disaster



Source: CAMP survey team. 2013.

### Road and Boma location



Source: Road (WFP. 2013), Boma location (NBS).

10.2 State Ministry of Agriculture, Forestry, Cooperative and Rural Development (MAFCRD)																																						
Organogram			Staff																																			
<pre> graph TD     Minister --&gt; DG[Director General]     DG --&gt; DCRD[Directorate of Cooperatives and Rural Development]     DG --&gt; DF[Directorate of Forestry]     DG --&gt; DP[Directorate of Planning]     DG --&gt; DA[Directorate of Agriculture]     DG --&gt; DFA[Directorate of Finance and Administration]           </pre>			Breakdown of information not fully available <table border="1"> <thead> <tr> <th>Section</th> <th>Number of staff</th> </tr> </thead> <tbody> <tr> <td><b>Directorate of Cooperative and Rural Development</b></td> <td><b>40</b></td> </tr> <tr> <td>  Department of Cooperative</td> <td>(18)</td> </tr> <tr> <td>  Department of Rural Development</td> <td>(22)</td> </tr> <tr> <td><b>Directorate of Forestry</b></td> <td><b>41</b></td> </tr> <tr> <td>  Department of Afforestation, Agro-Forestry and Extension</td> <td>(-)</td> </tr> <tr> <td><b>Directorate of Planning</b></td> <td><b>7</b></td> </tr> <tr> <td>  Directorate of Planning, Budgeting and M&amp;E</td> <td>(-)</td> </tr> <tr> <td><b>Directorate of Agriculture</b></td> <td><b>51</b></td> </tr> <tr> <td>  Department of Plant Protection</td> <td>(-)</td> </tr> <tr> <td>  Department of Crop production, Mechanization and Irrigation</td> <td>(-)</td> </tr> <tr> <td>  Department of Horticulture and Nutrition</td> <td>(-)</td> </tr> <tr> <td>  Department of Extension Research</td> <td>(-)</td> </tr> <tr> <td><b>Directorate of Finance and Administration</b></td> <td><b>40</b></td> </tr> <tr> <td>  Department of Establishment</td> <td>(-)</td> </tr> <tr> <td>  Department of Accounts and Logistics</td> <td>(-)</td> </tr> <tr> <td><b>Total</b></td> <td><b>179</b></td> </tr> </tbody> </table>		Section	Number of staff	<b>Directorate of Cooperative and Rural Development</b>	<b>40</b>	Department of Cooperative	(18)	Department of Rural Development	(22)	<b>Directorate of Forestry</b>	<b>41</b>	Department of Afforestation, Agro-Forestry and Extension	(-)	<b>Directorate of Planning</b>	<b>7</b>	Directorate of Planning, Budgeting and M&E	(-)	<b>Directorate of Agriculture</b>	<b>51</b>	Department of Plant Protection	(-)	Department of Crop production, Mechanization and Irrigation	(-)	Department of Horticulture and Nutrition	(-)	Department of Extension Research	(-)	<b>Directorate of Finance and Administration</b>	<b>40</b>	Department of Establishment	(-)	Department of Accounts and Logistics	(-)	<b>Total</b>	<b>179</b>
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Source: State MAFCRD.			Source: State MAFCRD.																																			
Budget			Strategic plan																																			
Category	2012/13 Budget	2011/12 Outturn	2013/14 Budget	EES policy statement (2012-13)																																		
<b>Salaries</b>	<b>2,512,579</b>	(Data not available)	<b>2,593,676</b>	Objective	(Information not available)																																	
Salaries	2,021,767	(Data not available)	2,102,864	Budget	(Information not available)																																	
Conditional salaries	490,812	(Data not available)	490,812	Plan	(Information not available)																																	
<b>Operating</b>	<b>495,166</b>	(Data not available)	<b>695,166</b>	Activities	(Information not available)																																	
Operating Costs	275,520	(Data not available)	475,520																																			
Conditional Operating cost	219,646	(Data not available)	219,646																																			
<b>Transfers</b>	-	(Data not available)	-																																			
<b>Others</b>	-	(Data not available)	-																																			
<b>Capital</b>	<b>1,669,937</b>	(Data not available)	<b>1,169,937</b>																																			
Conditional transfers	1,669,937	(Data not available)	569,937																																			
Other capital expenses	-	(Data not available)	600,000																																			
<b>Overall total</b>	<b>4,677,682</b>	(Data not available)	<b>4,458,779</b>																																			
Source: State MAFCRD. Unit: SSP																																						
Services provided by State MAFCRD and local government																																						
<p><b>(Technical advice)</b></p> <ul style="list-style-type: none"> <li>• Technical advice is provided to farmers in cooperation with DPs and NGOs.</li> </ul> <p><b>(Seeds and tools provision)</b></p> <ul style="list-style-type: none"> <li>• Seeds are provided to farmers in cooperation with DPs and NGOs.</li> <li>• Seed provision does not coincide with sowing season due to logistical issues.</li> </ul> <p><b>(Demo farm and field day= visit to field to share best agricultural practices)</b></p> <ul style="list-style-type: none"> <li>• Demo farms are installed in some areas.</li> </ul> <p><b>(Tractor hiring service)</b></p> <ul style="list-style-type: none"> <li>• Tractor hiring service is provided to farmers but the number does not meet farmers' needs.</li> <li>• The majority of the tractors is not sufficiently maintained and utilised due to lack of spare parts.</li> </ul>																																						



<b>10.3 Crop</b>			
<b>Services provided by DPs and NGOs</b>			
<b>Organisation</b>	<b>Activities</b>	<b>Area</b>	<b>Target</b>
FARM Project/USAID	<ul style="list-style-type: none"> <li>Seed and cutting provision (maize, groundnut, cassava, bean, sesame, millet)</li> <li>Provide training for extension workers</li> <li>Land preparation support (80% of the charge will be supported by the project)</li> </ul>	Torit, Magwi and Ikotos Counties	Farmers in the pilot areas (FBOs: Farmer-based organisations)
Caritas International and SNV (Srpsko narodno vijeće )	<ul style="list-style-type: none"> <li>Provide technical advice</li> <li>Organise farmers groups</li> <li>Provide agricultural inputs</li> <li>Organic farm training</li> <li>Build a farmers training centre</li> <li>Teach nutrition and hygiene</li> </ul>	Ikotos and other Counties	Farmers in the pilot areas
Catholic Relief Services	<ul style="list-style-type: none"> <li>Training extension workers</li> <li>Provide agricultural inputs to farmers</li> </ul>	(Information not available)	Farmers in the pilot areas
*There are a number of DPs and NGOs in the state. The above information collected by CAMP team is shown as an example.			
<b>Services provided by private sector</b>			
<b>(Tractor hiring service)</b>			
<ul style="list-style-type: none"> <li>(Information not available)</li> </ul>			
<b>(Agro-dealer)</b>			
<ul style="list-style-type: none"> <li>Some agro-dealers are available. They provide improved seeds, fertilizers and tools. Some of the prices are shown below:</li> </ul>			
<b>Item</b>	<b>Origin of products</b>	<b>Retail Price (SSP)</b>	
Maize seeds (Hybrid KH600-14E)	Kenya (Fresco)	25/kg	
Maize (Hybrid, chemical coating)	Kenya/Uganda (Naseco)	10/5 kg	
Sukuma wiki seeds	Kenya (Easeed)	20/25 g	
Onion seeds(Red Creole C-5)	Kenya (Easeed/Vegflo)	35 (Easeed) 30 (Vegflo)/25 g	
Okra (Pusa Sawani)	Kenya (Vegflo)	25/10 g	
Cabbage seeds (Copenhagen market)	East Africa seed	30/50 g	
Tomato (Money maker Tanya)	East Africa seed	30/50 g	
Onion (Bombay red)	East Africa seed	30/50 g	
Sulban (Insecticide)	Kenya (Osho)	35/100 ml	
Ogor 40EC (Insecticide)	Kenya (Osho)	15/30 ml	
Urea	USA (packed in Uganda)	30/25 kg	
DAP	USA (packed in Uganda)	30/25 kg	
Hoe	China	20-30 each depending on size	
Panga	China	16-17 each	
Grass slasher	China	20 each	
Shovel	China	30 each	
<b>(Financial institution)</b>			
<ul style="list-style-type: none"> <li>No financial institutions for farmers are found in the state.</li> </ul>			

<b>Market</b>						
<b>Agricultural products and the origin (Torit, April 2013)</b>						
<b>(Crop)</b>			<b>(Others)</b>			
<b>Item</b>	<b>Type</b>	<b>Origin</b>	<b>Item</b>	<b>Type</b>	<b>Origin</b>	
Sorghum	Import	Uganda	Tomato	Import	Uganda	
	Domestic	EE State		Domestic	EE State	
Maize	Import	Uganda	Onion	Import	Kenya	
	Domestic	EE State		Domestic	-	
Maize flour	Import	Uganda	Okra	Import	-	
	Domestic	ES State		Domestic	EE State	
Millet	Import	Uganda	Jew's mallow	Import	-	
	Domestic	-		Domestic	EE State	
Cassava	Import	Uganda	Amaranthus	Import	-	
	Domestic	Torit, Magwi		Domestic	EE State	
Groundnut	Import	-	Cowpea	Import	-	
	Domestic	EE State		Domestic	EE State	
Bean	Import	Uganda	Eggplant	Import	-	
	Domestic	EE State		Domestic	EE State	
Sesame	Import	-	Cabbage	Import	Uganda	
	Domestic	EE State		Domestic	-	
Irish potato	Import	Kenya				
	Domestic	-				

Source: CAMP survey team. 2013.  
\*1 This is not a representative sample.  
\*2 EE: Eastern Equatoria

Source: CAMP survey team/ 2013.  
\*1 This is not a representative sample.  
\*2 EES: Eastern Equatoria

<b>Market price (Retail price, Torit, April 2013)</b>						
<b>Item</b>	<b>Unit</b>	<b>Price (SSP) (range)</b>				
		<b>Low season</b>			<b>High season</b>	
Maize (Import)	Sack (40 kg)	June-July	65	-	80	Apr-May
Cassava flour (Import)	Sack (50 kg)	May-June	130-150	-	170	Apr-May
Sorghum (Import)	Sack (50 kg)	Jan-May	60	-	120	June-July
Millet (Import)	Sack (50 kg)	Sep-Nov	150	-	200	June-July
Tomato (Import)	Box	Dry season	350	-	600	Apr-June
Okra (Domestic)	Piece	Depending on demand	1	-	1	Depending on demand
			8 pieces	-	3 pieces	
Irish potato (Import)	130 kg	Sep-Jan	300	-	450	May-Aug
Amaranthus (Domestic)	Piece	(Data not available)	1	-	2	(Data not available)
			10 pieces	-	15 pieces	
Jew's mallow (Domestic)	Sack	July-Oct	30	-	50	Dec-May
Eggplant (Domestic)	Piece	Apr-Oct	5	-	3	Nov-Mar
			4 pieces	-	2 pieces	
Beans (Import)	1 kg	Nov-Jan	4	-	6	Fab-May
Onion (Import)	1 kg	Jan-May	6	-	8	June-Dec

Source: CAMP survey team 2013.  
\*This is not a representative sample.

<b>Transportation cost (Torit, April, 2013)</b>			
<b>Type</b>	<b>Unit</b>	<b>Currency</b>	<b>Cost</b>
Transport from Uganda to Torit	Truck	Ush	2,500,000
Transport from Kampala to border	Truck	SSP	1,000
Transport from border to State checkpoint	Truck	SSP	150

Source: CAMP survey team 2013.  
\*This is not a representative sample.

<b>Taxes and charges (Torit, April, 2013)</b>			
<b>(Wholesaler size 4mx4m)</b>			
<b>Type</b>	<b>Cost (SSP) (range)</b>		<b>Frequency</b>
Licence	300-700		Annually
Rent	500		Monthly
Security fee	60		Monthly
Garbage collection fee	5		Weekly
Profit tax	500-700		Annually
<b>(Retailer)</b>			
<b>Type</b>	<b>Cost (SSP) (range)</b>		<b>Frequency</b>
Licence	300-700		Annually
Rent	500		Monthly
Security fee	60		Monthly
Garbage collection fee	5		Weekly

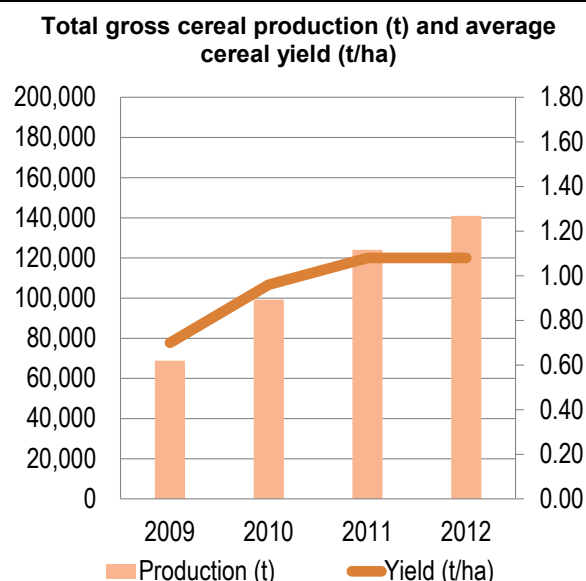
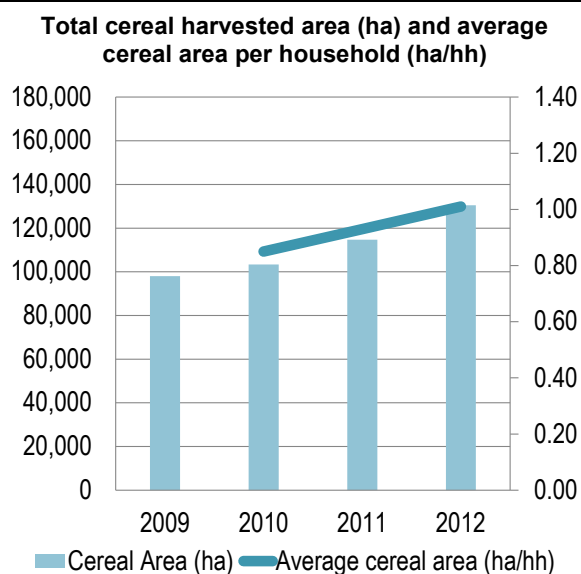
Source: CAMP survey team. 2013.  
\*1 This is not a representative sample.  
\*2 Revenue tax: Customs 20%, State border 1%, County border 5% of commodity value.

Crop production	
Farming household (%) (2012)	74
Farming household (No.) (2012)	129,195
Total cereal area (ha) (2012)	130,447 (4 <sup>th</sup> )
Cereal gross yield (t/ha) (2012)	1.08 (2 <sup>nd</sup> )
Gross cereal production (t) (2012)	140,963 (2 <sup>nd</sup> )
Average cereal area per household (ha/hh) (2012)	1.01 (3 <sup>rd</sup> )



Source: FAO and WFP. 2013 CFSAM.

### Cereal production (2009-2012)



Source: Aggregate from CFSAM 2010, 2011, 2012 and 2013.

Source: Aggregate from CFSAM 2010, 2011, 2012 and 2013.

### Crop production by livelihood zone

Greenbelt		Hills and Mountains		Pastoral
Major agricultural products				
<b>Crop</b> Maize Sorghum Bean Cassava <b>Cash Crop</b> Groundnut Sesame Banana Cowpea	<b>Vegetable</b> Okra Jew's mallow Irish potato Eggplant Tomato	<b>Crop</b> Sorghum Maize Cassava Bean Wheat Pearl millet <b>Cash Crop</b> Groundnut Sesame Cowpea	<b>Vegetable</b> Tomato Okra Jew's mallow Amaranthus Eggplant Pumpkin	<b>Crop</b> Sorghum Maize <b>Vegetable</b> Okra Jew's mallow

### Cropping calendar

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maize	L	L	S	S			H	L	S			H
Cassava	L	S	S						H			
Tomato	L	L	S		H	H						
Irish potato	L	L	S				H					
Cow pea	L	L	S		H	H						
Eggplant	L	L	S			H						
Okra	L	L	S		H	H						

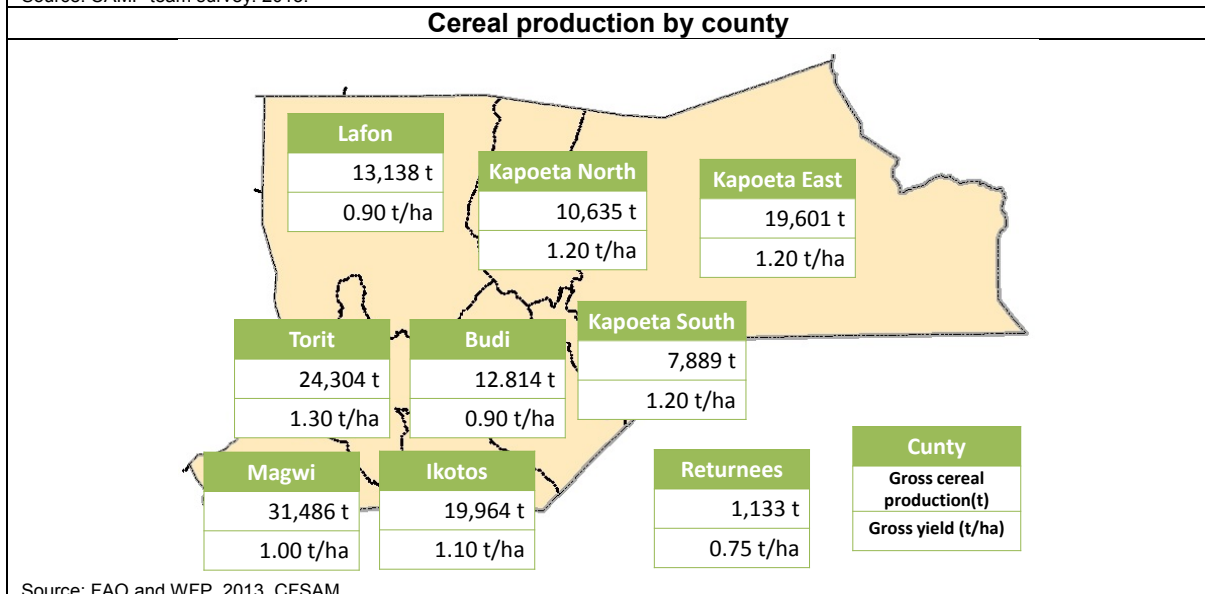
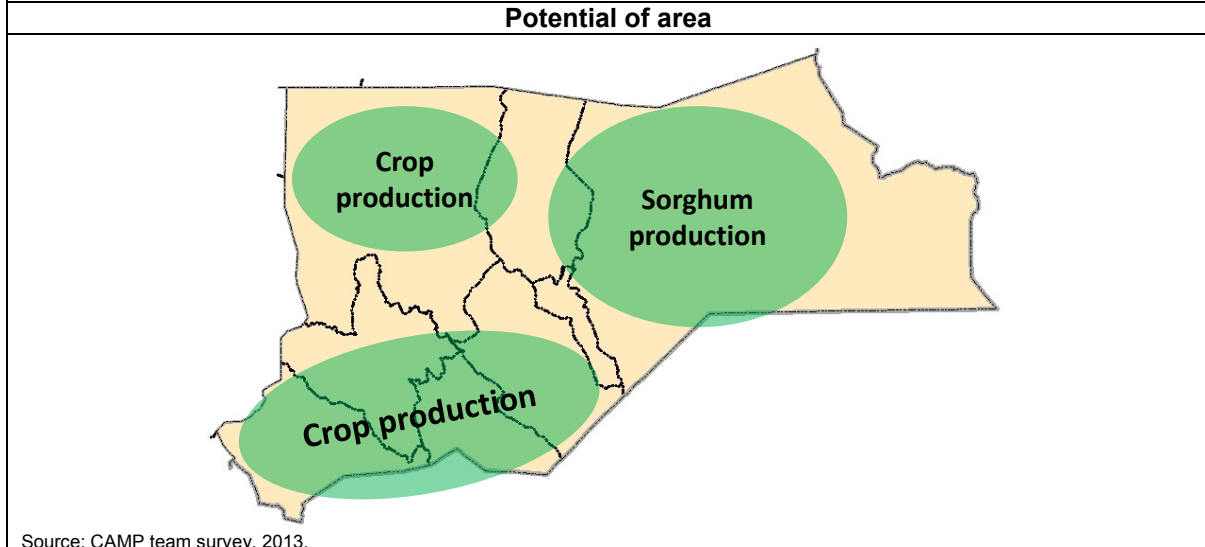
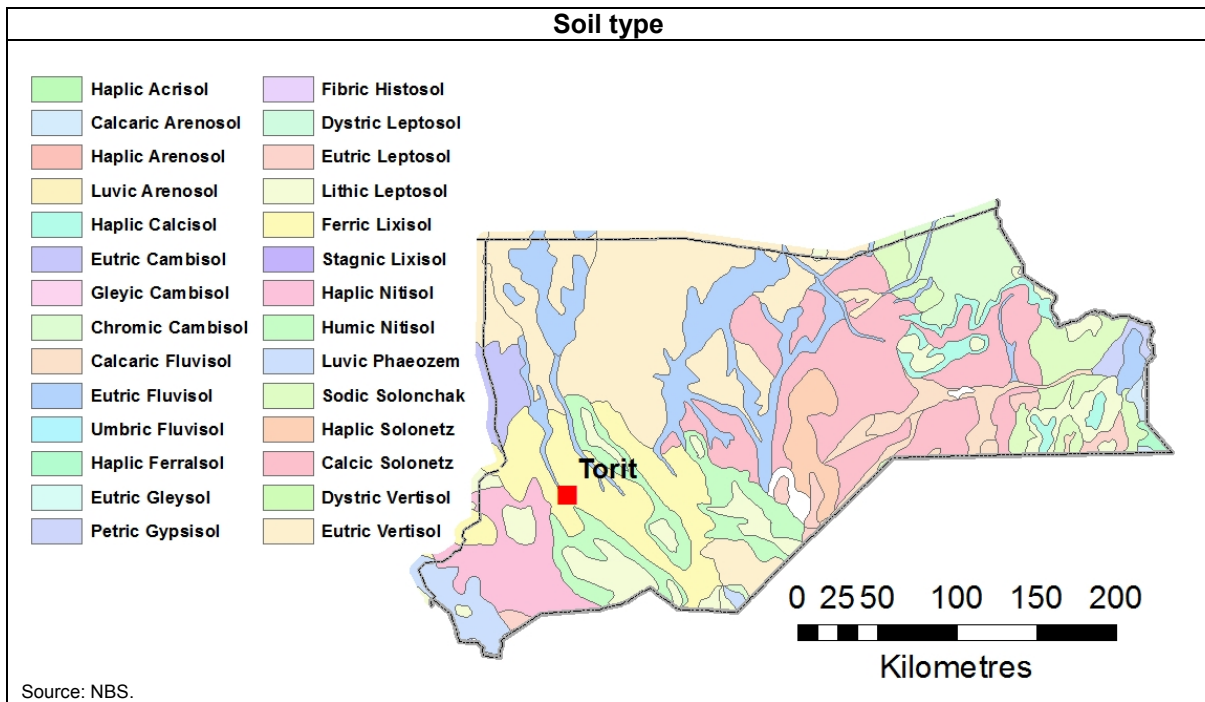
Source: CAMP survey team. 2013.

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sorghum			L	S	S		H	H	H			
Pearl millet			L	S	S		H	H				
Maize			L	S	S		H	H				
Cassava (Tuber, leave)			L	T	T				H	H	H	
Groundnut			L	S	S	S		H	H	H		
Sesame			L	S	S	S	S	H	H	H	H	
Bean			L	S	S	S	S	H	H	H	H	
Pumpkin			L	S	S			H	H			
Okra			L	S	S			H	H			

Source: CAMP survey team. 2013.

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sorghum				L	S					H		
Maize				L	S				H			
Okra				L	S		H	H				
Jew's mallow				L	S		H	H				

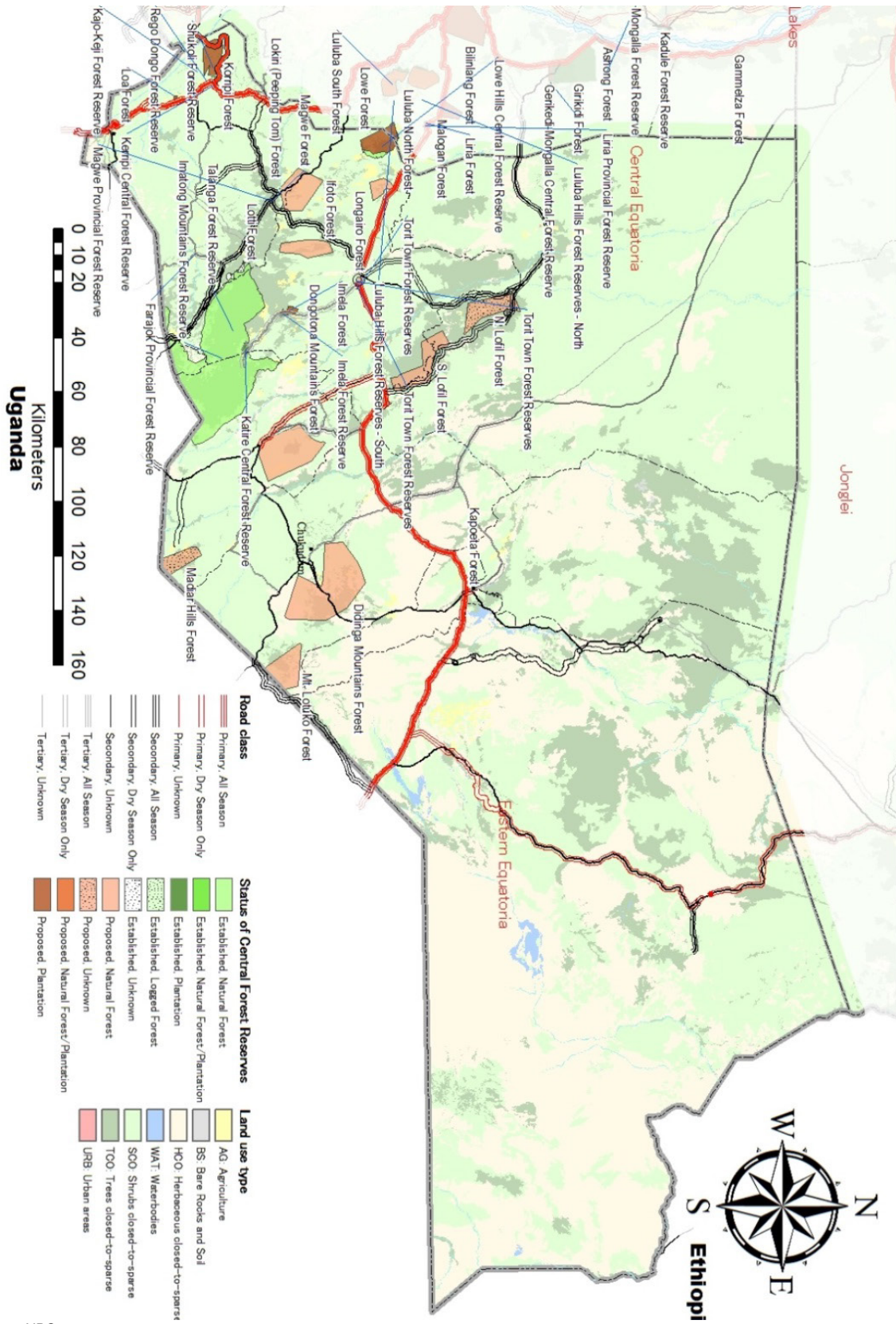
Source: CAMP survey team. 2013.



<b>Cross cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• Land boundary issues between pastoralists and sedentary farmers</li> </ul> <p><b>(Gender)</b></p> <ul style="list-style-type: none"> <li>• Women take important roles in agricultural production but they are not involved in the decision making process in farming activities.</li> </ul> <p><b>(Security)</b></p> <ul style="list-style-type: none"> <li>• Cattle raiding and tribal conflicts cause insecurity.</li> </ul> <p><b>(IDPs and returnees)</b></p> <ul style="list-style-type: none"> <li>• Support for IDPs and returnees is not sufficient to improve their livelihoods.</li> </ul> <p><b>(HIV)</b></p> <ul style="list-style-type: none"> <li>• The infection rate could be high. No survey has been conducted.</li> <li>• Sexually transmitted disease education is required to prevent infection.</li> </ul>
<b>Opportunities</b>
<p><b>Overall</b></p> <ul style="list-style-type: none"> <li>• Sufficient manpower</li> </ul>
<p><b>Crop</b></p> <ul style="list-style-type: none"> <li>• Vast unutilized land</li> <li>• Fertile land</li> <li>• Sufficient rainfall in Greenbelt and Hills and Mountains zones</li> </ul>
<b>Challenges</b>
<p><b>Overall</b></p> <ul style="list-style-type: none"> <li>• Feeder roads are not well established.</li> <li>• Poor access to financial institutions</li> <li>• High tax rates</li> <li>• High transport costs</li> <li>• High labour costs</li> <li>• Unskilled labour</li> </ul>
<p><b>Crop</b></p> <ul style="list-style-type: none"> <li>• Condition of storage facilities at local level is not adequate to keep agricultural products long term.</li> <li>• Appropriate agricultural inputs (seeds and tools) are not available for most farmers.</li> <li>• Few training opportunities for farmers and extension workers</li> <li>• Poor means of transport for extension activities</li> <li>• Insufficient budget for extension work</li> </ul>

<b>10.4 Forestry</b>									
<b>On-going and proposed projects</b>									
<b>List of on-going projects</b>									
Project name	Objectives/activities				Duration		Annual cost		
UNEP Bur Nursery	Propagate seedlings for communities				(Information not available)		(Information not available)		
Norwegian People's Aid Agro-forestry	Encourage agro-forestry practices				(Information not available)		(Information not available)		
Source: CAMP team survey. 2013.									
<b>List of proposed projects</b>									
Project name	Objectives/activities				Duration		Annual cost		
Afforestation	Develop plantation				(Information not available)		(Information not available)		
Extension service	Support extension system				(Information not available)		(Information not available)		
Agro-forestry	Disseminate sustainable land use				(Information not available)		(Information not available)		
Saw milling	Promote timber production				(Information not available)		(Information not available)		
Source: CAMP team survey. 2013.									
<b>Land cover percentage to total area</b>									
County	AG	TCO	SCO	HCO	URB	BS	WAT	Total area	Total area (ha)
Budi	1.6%	12.0%	57.0%	29.3%		0.0%	0.1%	100.0%	582,757
Ikotos	5.8%	24.6%	61.6%	7.9%		0.0%		100.0%	356,914
Kapoeta East	0.4%	11.5%	34.1%	53.3%		0.0%	0.6%	100.0%	3,052,849
Kapoeta North	3.2%	29.6%	38.6%	28.2%		0.3%	0.0%	100.0%	583,174
Kapoeta South	7.0%	7.7%	23.1%	62.0%	0.2%		0.0%	100.0%	117,721
Lafon	0.1%	8.7%	80.1%	10.5%	0.0%	0.0%	0.6%	100.0%	1,624,494
Magwi	2.6%	14.7%	78.2%	4.1%	0.0%		0.2%	100.0%	528,696
Torit	4.7%	30.1%	61.2%	3.7%	0.1%		0.2%	100.0%	578,932
<b>Total</b>	<b>1.5%</b>	<b>14.6%</b>	<b>52.7%</b>	<b>30.7%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.4%</b>	<b>100.0%</b>	<b>7,425,537</b>
Source: FAO. 2011. <i>Land cover atlas of South Sudan</i> . Rome: FAO.									
Legend: AG=Agriculture, TCO=Tree closed-to-sparse, SCO=Shrubs closed-to-sparse, HCO=Herbaceous closed-to-sparse, URB=Urban areas, BS=Bare Rocks and Soil, and WAT=Waterbodies.									

Location of Central Forest Reserves and land cover in 2009



Source: NBS.

<b>10.5 State Ministry of Animal Resources and Fisheries (MARF)</b>																																			
<b>Organogram</b>		<b>Organogram</b>																																	
<pre> graph TD     Minister --&gt; DG[Director General]     DG --&gt; DF[Directorate of Fisheries]     DG --&gt; DAVS[Directorate of Animal Production and Veterinary Services]     DG --&gt; DPT[Directorate of Planning, Research, Training and]     DG --&gt; DM[Directorate of Marketing]     DG --&gt; DAF[Directorate of Administration and Finance]           </pre>		Breakdown of information not fully available <table border="1"> <thead> <tr> <th style="text-align: center;">Section</th> <th style="text-align: center;">Number of staff</th> </tr> </thead> <tbody> <tr><td><b>Director General</b></td><td style="text-align: center;"><b>1</b></td></tr> <tr><td><b>Director of Veterinary Services and Livestock Development</b></td><td style="text-align: center;"><b>1</b></td></tr> <tr><td><b>Director of Animal Production and Range Management</b></td><td style="text-align: center;"><b>1</b></td></tr> <tr><td><b>Director of Fisheries</b></td><td style="text-align: center;"><b>1</b></td></tr> <tr><td><b>Director of Marketing</b></td><td style="text-align: center;"><b>1</b></td></tr> <tr><td><b>Director of Planning</b></td><td style="text-align: center;"><b>1</b></td></tr> <tr><td><b>A/Commissioners</b></td><td style="text-align: center;"><b>8</b></td></tr> <tr><td><b>District veterinary officer</b></td><td style="text-align: center;"><b>8</b></td></tr> <tr><td><b>Livestock production officer</b></td><td style="text-align: center;"><b>6</b></td></tr> <tr><td><b>Range management officer</b></td><td style="text-align: center;"><b>1</b></td></tr> <tr><td><b>Animal health technician</b></td><td style="text-align: center;"><b>6</b></td></tr> <tr><td><b>Animal health assistant</b></td><td style="text-align: center;"><b>3</b></td></tr> <tr><td><b>Stock person</b></td><td style="text-align: center;"><b>1</b></td></tr> <tr><td><b>Veterinary auxiliary</b></td><td style="text-align: center;"><b>1</b></td></tr> <tr><td><b>Total</b></td><td style="text-align: center;"><b>40</b></td></tr> </tbody> </table>		Section	Number of staff	<b>Director General</b>	<b>1</b>	<b>Director of Veterinary Services and Livestock Development</b>	<b>1</b>	<b>Director of Animal Production and Range Management</b>	<b>1</b>	<b>Director of Fisheries</b>	<b>1</b>	<b>Director of Marketing</b>	<b>1</b>	<b>Director of Planning</b>	<b>1</b>	<b>A/Commissioners</b>	<b>8</b>	<b>District veterinary officer</b>	<b>8</b>	<b>Livestock production officer</b>	<b>6</b>	<b>Range management officer</b>	<b>1</b>	<b>Animal health technician</b>	<b>6</b>	<b>Animal health assistant</b>	<b>3</b>	<b>Stock person</b>	<b>1</b>	<b>Veterinary auxiliary</b>	<b>1</b>	<b>Total</b>	<b>40</b>
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<b>Total</b>	<b>40</b>																																		
Source: State MARF.		Source: State MARF.																																	
<b>Budget</b>		<b>Strategic plan</b>																																	
Category	2012/13 Budget	2012/13 Outturn	2013/14 Budget																																
<b>Salaries</b>	<b>1,005,201</b>	<b>918,977</b>	<b>1,145,968</b>																																
Salaries	671,001	-	811,768																																
Conditional salaries	334,200	-	334,200																																
<b>Operating</b>	<b>320,620</b>	<b>254,456</b>	<b>320,620</b>																																
Operating costs	235,620	-	235,620																																
Conditional operating costs	85,000	-	85,000																																
<b>Transfers</b>	-	-	-																																
<b>Others</b>	-	<b>8,487</b>	-																																
<b>Capital</b>	<b>1,685,701</b>	<b>507,782</b>	<b>751,850</b>																																
Conditional transfer	1,685,701	-	251,850																																
Other capital expenses	-	-	500,000																																
<b>Overall total</b>	<b>3,011,522</b>	<b>1,689,702</b>	<b>2,218,438</b>																																
Source: State MARF. Unit: SSP																																			
<b>EES MARF Strategic plan (2012-13)</b>																																			
<b>Vision</b> Efficient and effective livestock and fisheries service delivery for sustainably development in the State																																			
<b>Budget</b> (Information not available)																																			
<b>Goal</b> Sustainably contribute towards food security and employment creation by facilitating and supporting public and private sector in the animal resources sector																																			
<b>Objectives</b> <ul style="list-style-type: none"> <li>• To provide institutional capacity to guide, supervise and coordinate all activities in the livestock and fisheries sectors</li> <li>• To develop animal health and protect human again zoonosis</li> <li>• To promote sustainable management of fisheries resources</li> <li>• To enhance improved livestock production and productivity through technology transfer and sustainable use of natural resources</li> <li>• To promote the integration of livestock and fish market chain actors into domestic and regional markets</li> </ul>																																			
Source: State MARF (2012) Policy Statement 2012-13.																																			
<b>Services provided by State MARF and local government</b>																																			
<b>(Animal production services)</b> <ul style="list-style-type: none"> <li>• Technical advice and useful information are provided to livestock keepers including education activities for cattle raid prevention.</li> <li>• Extension service is implemented but not fully functional.</li> </ul>																																			
<b>(Animal health services)</b> <ul style="list-style-type: none"> <li>• Supervise livestock markets and slaughter houses/slabs/grounds</li> <li>• Provide treatment and vaccination in cooperation with National MARF</li> <li>• Conduct disease surveillance.</li> </ul>																																			



## 10.6 Livestock

### Services provided by national government institutions

Integrated demonstration farm is installed in Kapoeta. It introduces cross-bleeding and ranching practices.

### Services provided by DPs and NGOs

Organisation	Activities	Area	Period
FAO	<ul style="list-style-type: none"> <li>Provide vaccines and vet. drugs</li> <li>Deliver training to CAHWs</li> <li>Conduct East Coast Fever eradication program</li> <li>Deliver milk handling program to youth with CAHWs</li> </ul>	Torit County	(Information not available)
FARM Africa	<ul style="list-style-type: none"> <li>Capacity building for CAHWs</li> <li>Provide veterinary drugs</li> </ul>	Kapoeta South County	Ended September 2013
SNV (Srpsko narodno vijeće ), Netherland	<ul style="list-style-type: none"> <li>Capacity building for CAHWs</li> <li>Prepare holding grounds at auction yards</li> <li>Provide fencing material for livestock keepers</li> <li>Construct livestock market</li> </ul>	Torit County	
DOT (Diocese of Torit)	<ul style="list-style-type: none"> <li>Provide animal health service to livestock keepers</li> <li>Deliver training to CAHWs</li> </ul>	Greater Kapoeta	Ended March 2013

Source: CAMP survey team. 2013.

\*CAHW: Community Animal Health Worker

### Services provided by private sector

#### (Veterinary services)

- Private veterinarians provide treatments and veterinary drugs.
- Private pharmacies supply veterinary drugs and useful information.

#### (Livestock product)

- Private organisations produce fresh milk (filtered and boiled) and yoghurt.

#### (Livestock market )

- Livestock markets at Torit and Kapoeta South Counties are run by traders union.

### Livestock population

County	Type						
	Cattle	Sheep	Goat	Poultry	Donkey	Camel	Pig
Torit	250,000	175,000	350,000	90,000	25	0	2,500
Magwi	20,000	80,000	110,000	350,000	0	0	2,400
Kapoeta South	400,000	380,000	820,000	170,000	340	50	5,200
Kapoeta North	560,000	450,000	900,000	200,000	450	0	1,500
Kapoeta East	650,000	760,000	1,400,000	130,000	700	1,000	2,015
Budi	350,000	250,000	750,000	250,000	300	0	105
Ikotos	120,000	145,000	320,000	160,000	200	0	0
Lafon	150,000	160,000	550,000	150,000	0	0	0
<b>Total</b>	<b>2,500,000</b>	<b>2,400,000</b>	<b>5,200,000</b>	<b>1,500,000</b>	<b>2,015</b>	<b>1,050</b>	<b>13,720</b>

Source: State MARF .2012. Policy Statement 2012-2013.

Livestock diseases		
Type of Animal	Type of disease	Outbreak area in last 2 years
Cattle	Contagious bovine pleuropneumonia, East Coast fever, Haemorrhagic septicaemia, Trypanosomiasis, Brucellosis, Black quarter	East Coast Fever in Torit County Contagious Bovine Pleura Pneumonia in Lafon and Pachiti Counties Black Quarter in Ikotos and Lafon Counties Haemorrhagic Septicaemia in Kapoeta North County
Sheep and goat	Peste des petits ruminants, Contagious caprine pleuropneumonia, Mange, External and internal parasites, Pneumonia	Peste des Petits Ruminants in Kapoeta East County Contagious Caprine Pleura Pneumonia in Kapoeta South County
Poultry	Newcastle disease, Salmonella, Fowl pox Coccidiosis, External and internal parasites	Newcastle Disease in all counties
Camel	Skin diseases, Respiratory, Trypanosomiasis, External and internal parasites	There was no outbreak in the last 2 years.
Equine	Tetanus, Respiratory, Wounds, External and internal parasites	There was no outbreak in the last 2 years.
Canine	Rabies, Respiratory, Canine distemper, Genital wounds	There was no outbreak in the last 2 years.
Zoonosis	Brucellosis, Tuberculosis, Tapeworm, Hydatid cyst, Rabies	There was no outbreak in the last 2 years.
Pig	Hydatid cyst, Wounds, External and internal parasites, Respiratory	There was no outbreak in the last 2 years.

Source: State MARF.

#### Animal health issues

- Livestock law and regulation are underdeveloped.
- Trans-boundary disease (Animal disease control system is not sufficiently functioned.)

#### Market

Type of livestock and livestock product	Market
Cattle	Kapoeta South, East, North and Torit Counties
Sheep and goat	Kapoeta South, East, North and Torit Counties
Poultry	Magwi County
Honey	Magwi and Budi Counties

Source: CAMP survey team. 2013.

#### Market price

Item	Unit	Price (SSP)		
		Low season		High season
Bull (big)	Head		2,200 - 2,400	
Bull (medium)		Dec-April	1,100 - 999	2,300 - 999
Milking cow			900	1,100
Heifer			200 - 240	400 - 250
Goat (mature male)	Head	Dec-April	300 - 240	450 - 350
Goat (mature female)			240 - 300	350 - 450
Sheep (mature male)	Head	Dec-April	240 - 700	350 - 1000
Sheep (mature female)			700 - 15	1000 - 40
Pig (male or female)	Head		30 - 5	50 - (Data not available)
Hen	Each	(Data not available)	5 - 24	5 - 30
Cock			5 - 27	5 - 30
Hide	1kg	(Data not available)	24 - 27	30 - 30
Skin	1kg	(Data not available)	24 - 3	30 - 3
Meat (beef)	1kg	(Data not available)	3 - 2	3 - 2
Meat (goat)	1kg	(Data not available)	4 - 4	4 - 4
Meat (mutton)	1kg	(Data not available)		
Yoghurt	600ml	(Data not available)		
Milk (fresh) from the cattle camp	600ml	(Data not available)		
Milk (fresh) milk at market	600ml	(Data not available)		

Source: CAMP survey team. 2013.

\* This is not a representative sample.

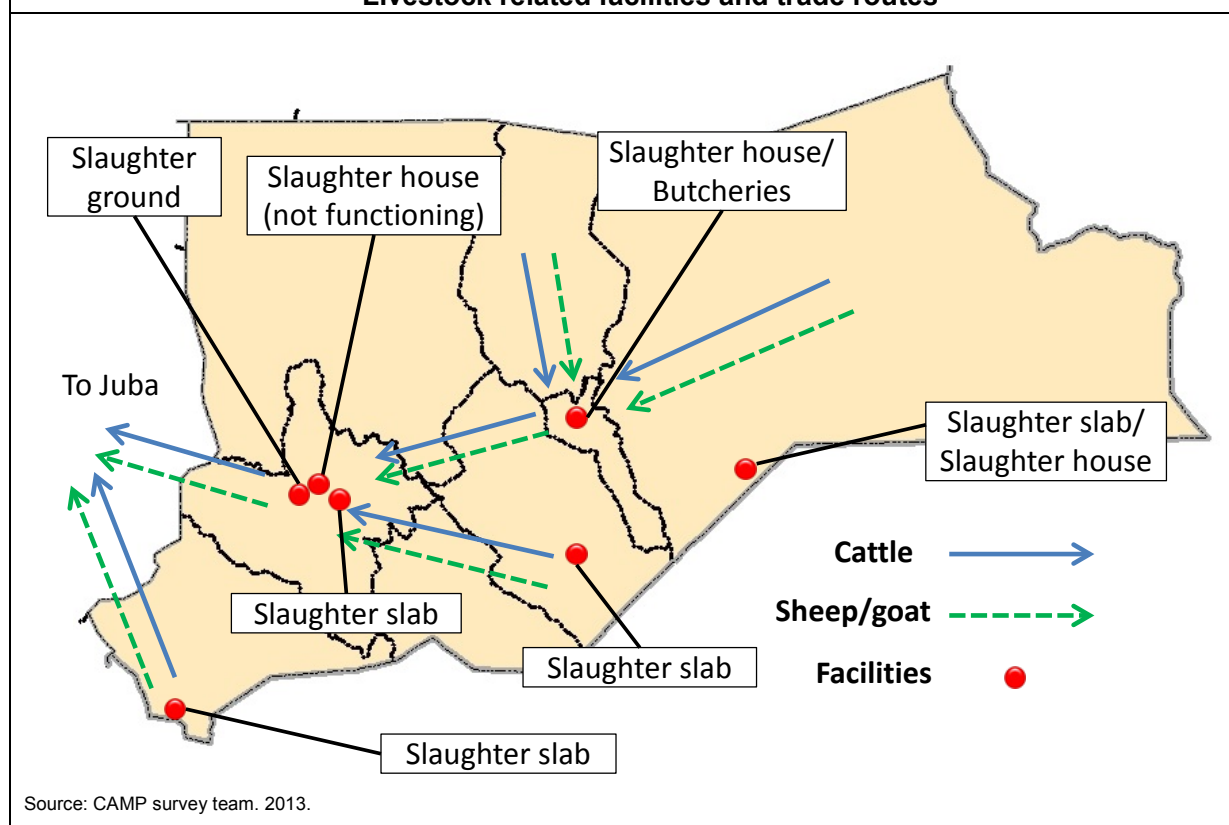
Taxes and charges		
(Taxes and charges paid by traders)		
Type	Cost (SSP)	Frequency
Pass permit at county border (per cow)	3	Every trip
Customs (Nimule) (per cow)	10	Every trip
Market rental fees at livestock market	2	(Information not available)
Inspection fee (per cow)	5	(Information not available)
Inspection fee (per sheep or goat)	1	(Information not available)
Slaughtering fee (per cow)	5	(Information not available)
Slaughtering fee (per sheep or goat)	1	(Information not available)
Tax per hide	2	(Information not available)
Tax per skin	1	(Information not available)

Source: CAMP survey team. 2013.  
\*This is not a representative sample.

Major livestock species and products by livelihood zone					
Greenbelt		Hills and Mountains		Pastoral	
Type of animal	Breed	Type of Animal	Breed	Type of Animal	Breed
Cattle	Crossbred	Cattle	Local	Cattle	Local
Sheep	Local	Sheep	Local	Sheep	Local
Goat	Local, exotic and crossbred	Goat	Local	Goat	Local
Pig	Exotic	Poultry	Local	Poultry	Local
Poultry	Local, exotic and crossbred			Camel	Exotic
Rabbit	Local			Donkey	Local
Livestock products		Livestock products		Livestock products	
<ul style="list-style-type: none"> <li>• Egg</li> <li>• Meat</li> <li>• Hide and skin</li> <li>• Milk</li> </ul>		<ul style="list-style-type: none"> <li>• Egg</li> <li>• Meat</li> <li>• Hide and skin</li> <li>• Milk</li> </ul>		<ul style="list-style-type: none"> <li>• Egg</li> <li>• Meat</li> <li>• Hide and skin</li> <li>• Milk</li> </ul>	

Source: CAMP survey team. 2013.

### Livestock related facilities and trade routes



Source: CAMP survey team. 2013.

<b>Cross-cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• Land related conflicts in Kidepo valley between Toposa, Didinga, Lotuko, Logir, Lopit and Buya over water sources</li> </ul> <p><b>(Migration)</b></p> <ul style="list-style-type: none"> <li>• Seasonal natural resources conflict in dry season within the state</li> </ul> <p><b>(Conflict and insecurity)</b></p> <ul style="list-style-type: none"> <li>• Border conflict between Thrukana in Kapoeta East (along international border with Kenya)</li> </ul> <p><b>(Gender disparities)</b></p> <ul style="list-style-type: none"> <li>• Only widows have right to own the cattle of late husbands.</li> <li>• Widows have the right to sell unproductive cows and bulls but do not have productive cattle.</li> </ul> <p><b>(Drought and floods)</b></p> <ul style="list-style-type: none"> <li>• Drought in the north part of the state</li> </ul>
<b>Opportunities</b>
<ul style="list-style-type: none"> <li>• Vast unutilised land</li> <li>• High number of livestock</li> <li>• Cross-border trade creates more livestock products sales and profits.</li> </ul>
<b>Challenges</b>
<ul style="list-style-type: none"> <li>• Lack of drugs, vaccine and equipment</li> <li>• Inadequate logistical support and budget</li> <li>• Poor road and livestock related infrastructure</li> <li>• Lack of slaughter houses, slabs, accommodation in counties</li> <li>• Lack of training opportunities for the government officers and farmers</li> <li>• Absence of quality assurance/surveillance for drugs, vaccines, equipment and cold chain in counties</li> <li>• Absence of regulation and acts for livestock</li> </ul>



