

**The Republic of South Sudan**  
**Ministry of Agriculture, Forestry, Cooperatives and Rural  
Development**

**Ministry of Livestock and Fisheries Industries**

# **Comprehensive Agricultural Development Master Plan**

## **Final Report**

### **Annex VI**

#### **State Profile 2013**

**May 2015**

**Japan International Cooperation Agency**

**JIN Corporation**

<b>RD</b>
<b>JR</b>
<b>15-036</b>



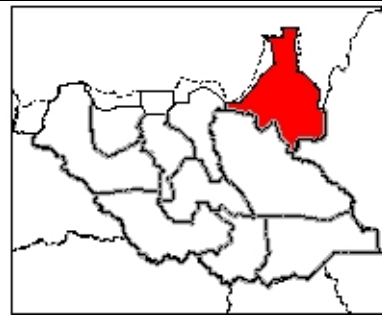
## Table of contents

<b>1</b>	<b>Upper Nile State (Capital: Malakal)</b> .....	<b>1-1</b>
1.1	Basic Information .....	1-1
1.2	State Ministry of Agriculture and Forestry (MAF) .....	1-4
1.3	Crop.....	1-5
1.4	Forestry.....	1-10
1.5	State Ministry of Animal Resources and Fisheries (MARF) .....	1-12
1.6	Livestock.....	1-13
1.7	Fisheries .....	1-17
<b>2</b>	<b>Jonglei State (Capital: Bor)</b> .....	<b>2-1</b>
2.1	Basic Information .....	2-1
2.2	State Ministry of Agriculture and Forestry (MAF) .....	2-4
2.3	Crop.....	2-5
2.4	Forestry.....	2-10
2.5	State Ministry of Livestock and Fisheries (MLF) .....	2-12
2.6	Livestock.....	2-13
2.7	Fisheries .....	2-17
<b>3</b>	<b>Unity State (Capital: Bentiu)</b> .....	<b>3-1</b>
3.1	Basic Information .....	3-1
3.2	State Ministry of Agriculture and Forestry (MAF) .....	3-4
3.3	Crop.....	3-5
3.4	Forestry.....	3-10
3.5	State Ministry of Animal Resources and Fisheries (MARF) .....	3-12
3.6	Livestock.....	3-13
3.7	Fisheries .....	3-17
<b>4</b>	<b>Warrap State (Capital: Kuajok)</b> .....	<b>4-1</b>
4.1	Basic Information .....	4-1
4.2	State Ministry of Agriculture and Forestry (MAF) .....	4-4
4.3	Crop.....	4-5
4.4	Forestry.....	4-10
4.5	State Ministry of Animal Resources and Fisheries (MARF) .....	4-12
4.6	Livestock.....	4-12
<b>5</b>	<b>Northern Bahr el Ghazal State (Capital: Aweil)</b> .....	<b>5-1</b>
5.1	Basic Information .....	5-1
5.2	State Ministry of Agriculture and Forestry (MAF) .....	5-4
5.3	Crop.....	5-5
5.4	Forestry.....	5-10
5.5	State Ministry of Animal Resources and Fisheries (MARF) .....	5-12
5.6	Livestock.....	5-12
5.7	E. Fisheries.....	5-17
<b>6</b>	<b>Western Bahr el Ghazal State (Capital: Wau)</b> .....	<b>6-1</b>
6.1	Basic Information .....	6-1
6.2	State Ministry of Agriculture, Forestry and Irrigation (MAFI) .....	6-4
6.3	Crop.....	6-5
6.4	Forestry.....	6-10
6.5	State Ministry of Animal Resources and Fisheries (MARF) .....	6-12
6.6	Livestock.....	6-13
6.7	Fisheries .....	6-17

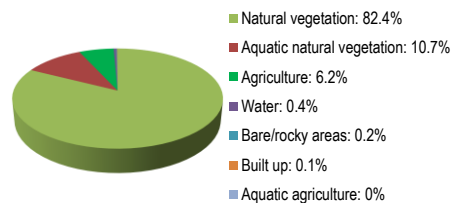
<b>7</b>	<b>Lakes State (Capital: Rumbek)</b> .....	<b>7-1</b>
7.1	Basic Information .....	7-1
7.2	State Ministry of Agriculture and Forestry (MAF) .....	7-4
7.3	Crop.....	7-5
7.4	Forestry.....	7-10
7.5	State Ministry of Animal Resources and Fisheries (MARF) .....	7-12
7.6	Livestock.....	7-13
7.7	Fisheries .....	7-17
<b>8</b>	<b>Western Equatoria State (Capital: Yambio)</b> .....	<b>8-1</b>
8.1	Basic Information .....	8-1
8.2	State Ministry of Agriculture, Cooperatives and Environment (MACE).....	8-4
8.3	Crop.....	8-5
8.4	Forestry.....	8-10
8.5	State Ministry of Agriculture, Cooperatives and Environment (MACE).....	8-12
8.6	Livestock.....	8-13
8.7	Fisheries .....	8-17
<b>9</b>	<b>Central Equatoria State (Capital: Juba)</b> .....	<b>9-1</b>
9.1	Basic Information .....	9-1
9.2	State Ministry of Agriculture (MAF).....	9-4
9.3	Crop.....	9-5
9.4	Forestry.....	9-10
9.5	State Ministry of Animal Resources and Fisheries (MARF) .....	9-12
9.6	Livestock.....	9-13
9.7	Fisheries .....	9-17
<b>10</b>	<b>Eastern Equatoria State (Capital: Torit)</b> .....	<b>10-1</b>
10.1	Basic Information .....	10-1
10.2	State Ministry of Agriculture, Forestry, Cooperative and Rural Development (MAFCRD) .....	10-4
10.3	Crop.....	10-5
10.4	Forestry.....	10-10
10.5	State Ministry of Animal Resources and Fisheries (MARF) .....	10-12
10.6	Livestock.....	10-13

# 1 Upper Nile State (Capital: Malakal)

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

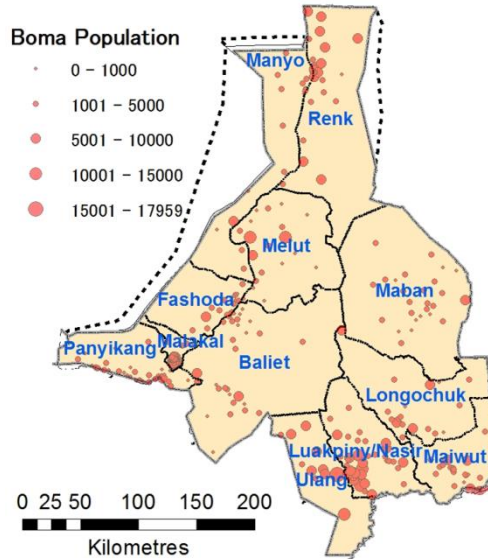


Land cover<sup>g</sup>



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)

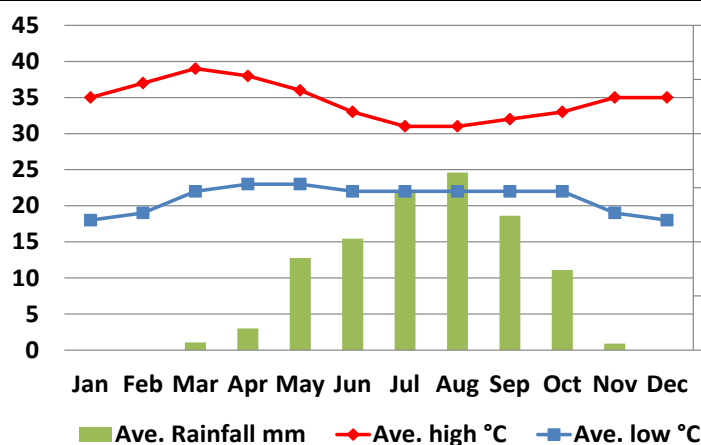


County	Estimated Population (2013) <sup>a</sup>	Pop. density (ppl/km <sup>2</sup> ) <sup>b</sup>
Luakpiny /Nasir	239,528	45.7
Malakal	161,955	215.7
Renk	157,157	15.5
Panyikang	144,557	27.7
Ulang	100,190	20.5
Melut	97,197	13.9
Manyo	90,817	13.5
Maiwut	89,409	22.6
Longochuk	78,375	11.1
Maban	72,192	6.0
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 Akok 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

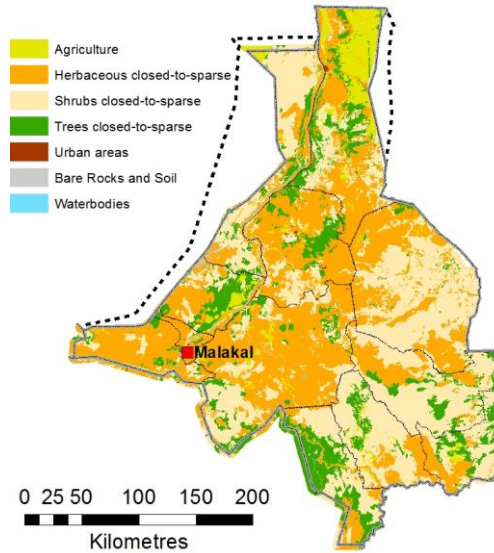
Source: Climatedata.eu. 2013. Climate Malakal.  
<http://www.climatedata.eu/climate.php?loc=suxx0008&lang=en> (accessed on 25<sup>th</sup> August 2013).

### Livelihood zones



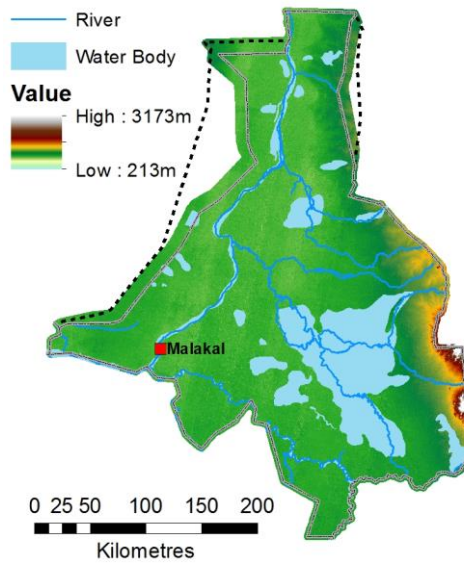
Source: NBS.

### Land cover



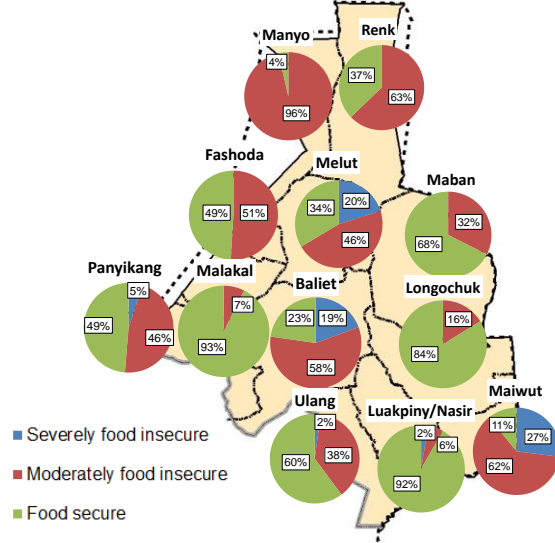
Source: FAO. 2011.

### Topography



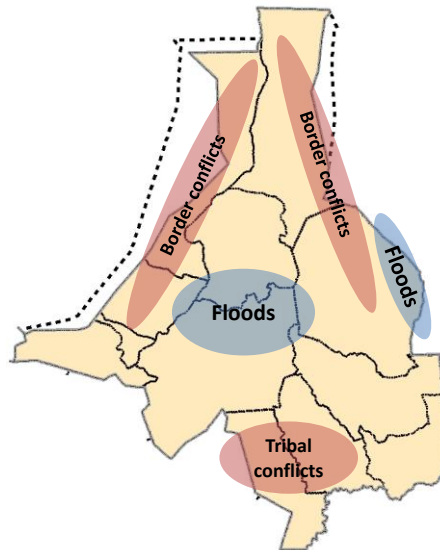
Source: NBS.

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



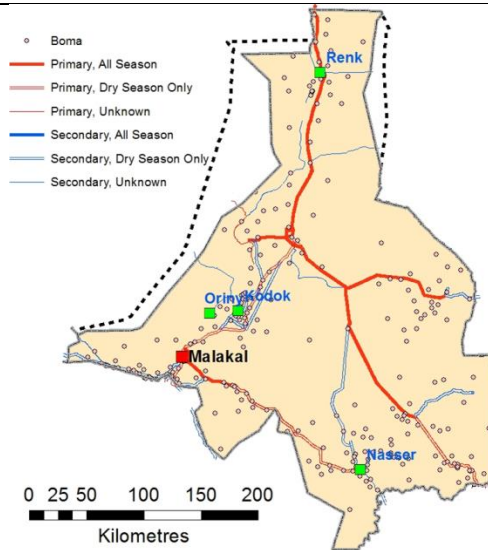
Source: WFP. 2013. ANLA.

### 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><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>	-	<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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<b>Services provided by State MAF and local government</b>																																					
<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> <p><b>(Tractor hiring service)</b></p> <ul style="list-style-type: none"> <li>• (Information not available)</li> </ul>																																					



### 1.3 Crop

#### Services provided by DPs and NGOs

Organisation	Activities	Area	Target
Upper Nile Youth Development Association (Local NGO)	<p>Following activities are conducted:</p> <p>Agriculture</p> <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> <p>Other</p> <ul style="list-style-type: none"> <li>• Fund raising and micro financing</li> </ul>	Malakal 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.

#### Services provided by private sector

**(Tractor hiring service)**

- Some private tractor hiring services are provided.

**(Agro-dealer)**

- (Information not available)

**(Financial institution)**

- Agricultural Bank of South Sudan offers cash loan especially for agricultural inputs.
- Ivory Bank offers cash loans.

<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.  
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<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

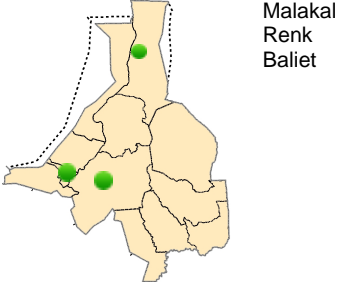
Source: CAMP survey team 2013.  
\*This is not a representative sample.

<b>Transportation cost (Malakal, May-June 2013)</b>				
<b>Type</b>	<b>Unit</b>	<b>Currency</b>	<b>Cost (range)</b>	
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	

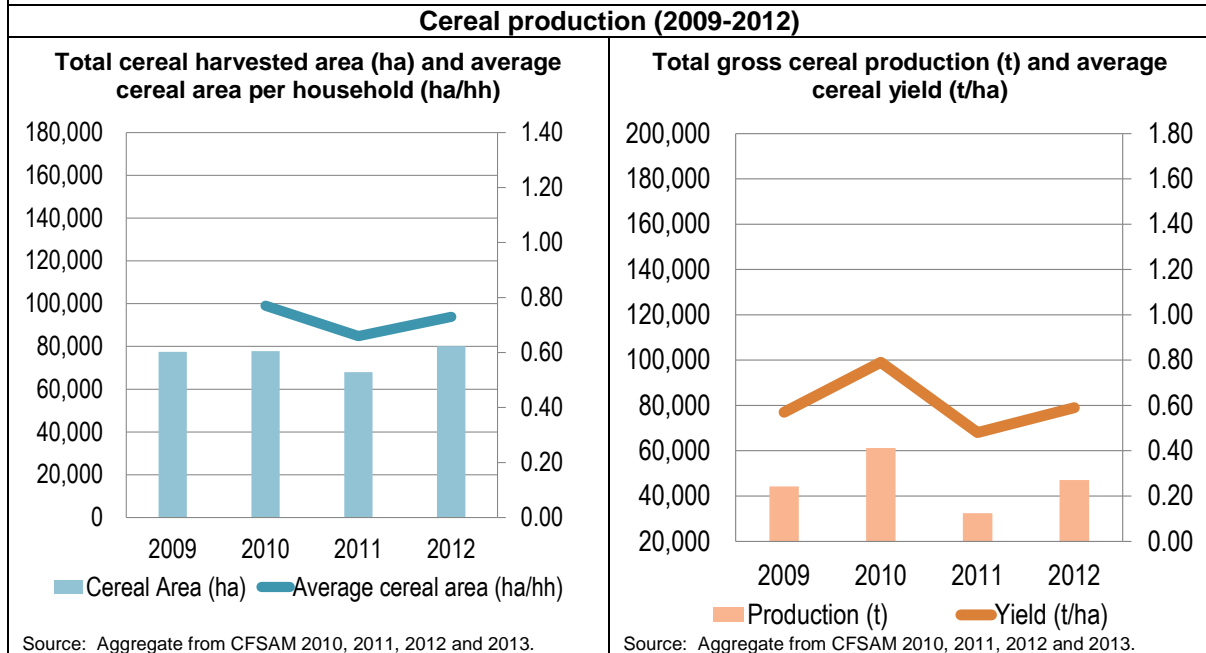
Source: CAMP survey team 2013.  
\*<sup>1</sup>Canal transport charges vary depending on type of commodity carried, boat, private or government. (e.g. Juba-Malakal: Private rate SSP1,200/ton, Government rate SSP 650/ton)  
\*<sup>2</sup>Most goods from Juba transported by boat to Malakal.  
\*<sup>3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

<b>Taxes and charges (Malakal, May-June 2013)</b>		
<b>(Wholesaler, size 4mx4m)</b>		
<b>Type</b>	<b>Cost (SSP) (range)</b>	<b>Frequency</b>
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
<b>(Retailer, Malakal)</b>		
<b>Type</b>	<b>Cost (SSP) (range)</b>	<b>Frequency</b>
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		<p><b>Survey area</b></p> 
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> )	

Source: FAO and WFP. 2013 CFSAM.



Crop production by livelihood zone	
Eastern Flood Plains	Nile-Sobat Rivers
Major agricultural products	
<p><b>Crop</b></p> <p>Sorghum</p> <p>Maize</p> <p><b>Cash</b></p> <p>Groundnut</p> <p>Sesame</p> <p>Sunflower</p>	<p><b>Vegetable</b></p> <p>Tomato</p> <p>Eggplant</p> <p>Chilli</p> <p>Watermelon</p> <p>Pumpkin</p> <p>Eggplant</p> <p>Okra</p> <p>Jew's mallow</p>
<p><b>Crop</b></p> <p>Maize</p> <p>Sorghum</p> <p><b>Cash Crop</b></p> <p>Sesame</p> <p>Cowpea</p>	<p><b>Vegetable</b></p> <p>Pumpkin</p> <p>Tomato</p> <p>Eggplant</p> <p>Okra</p> <p>Jew's mallow</p> <p>Water melon</p>

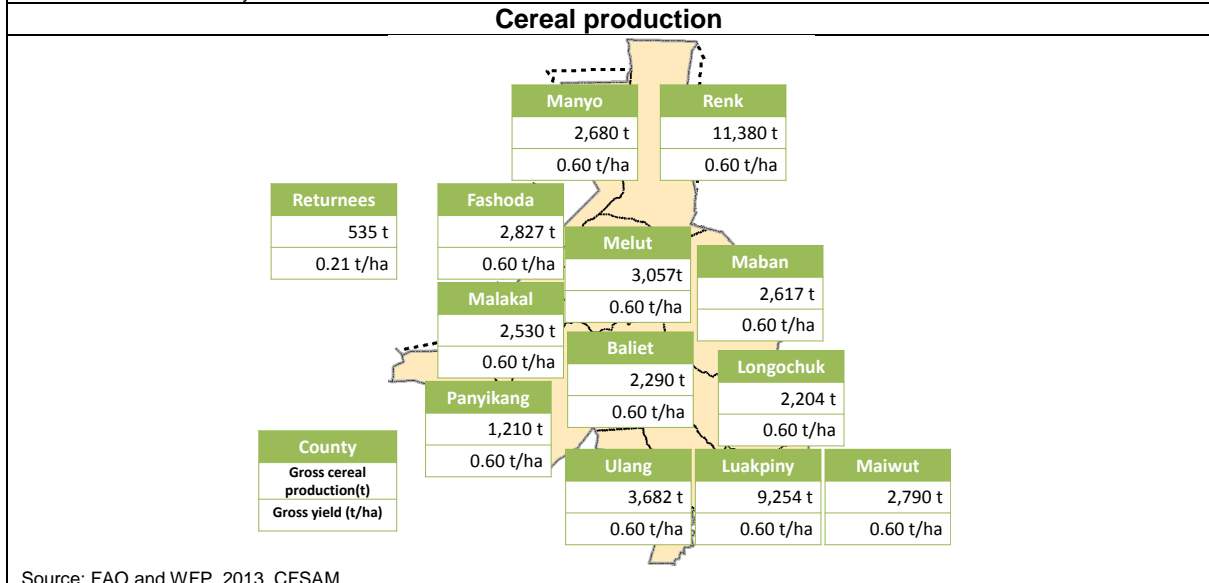
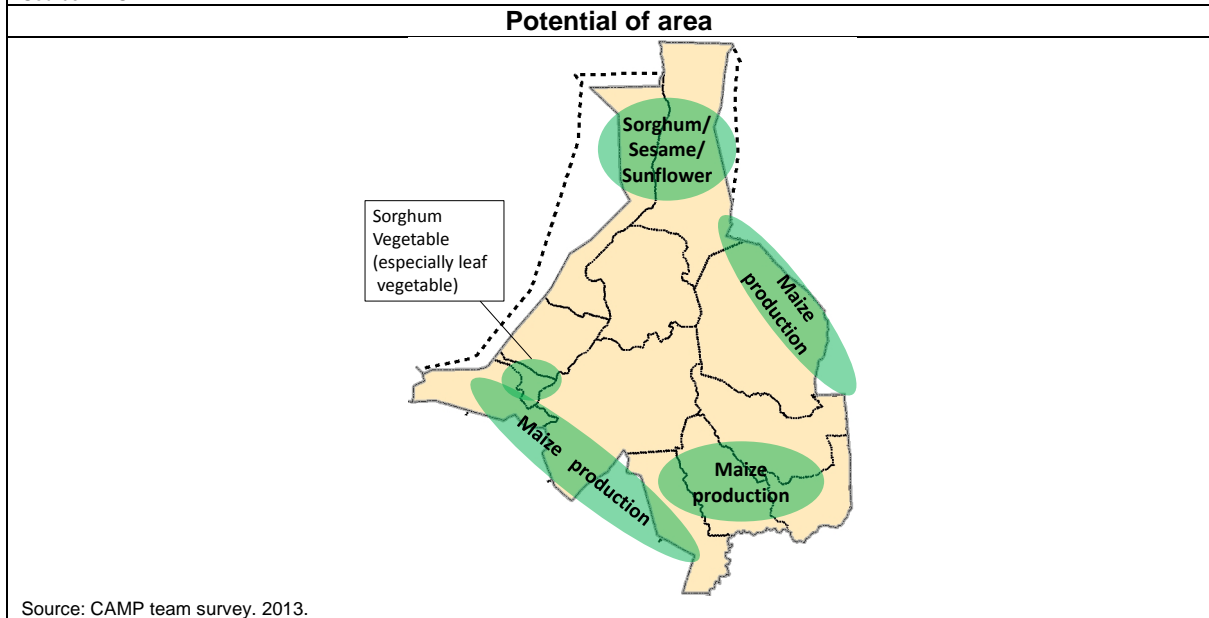
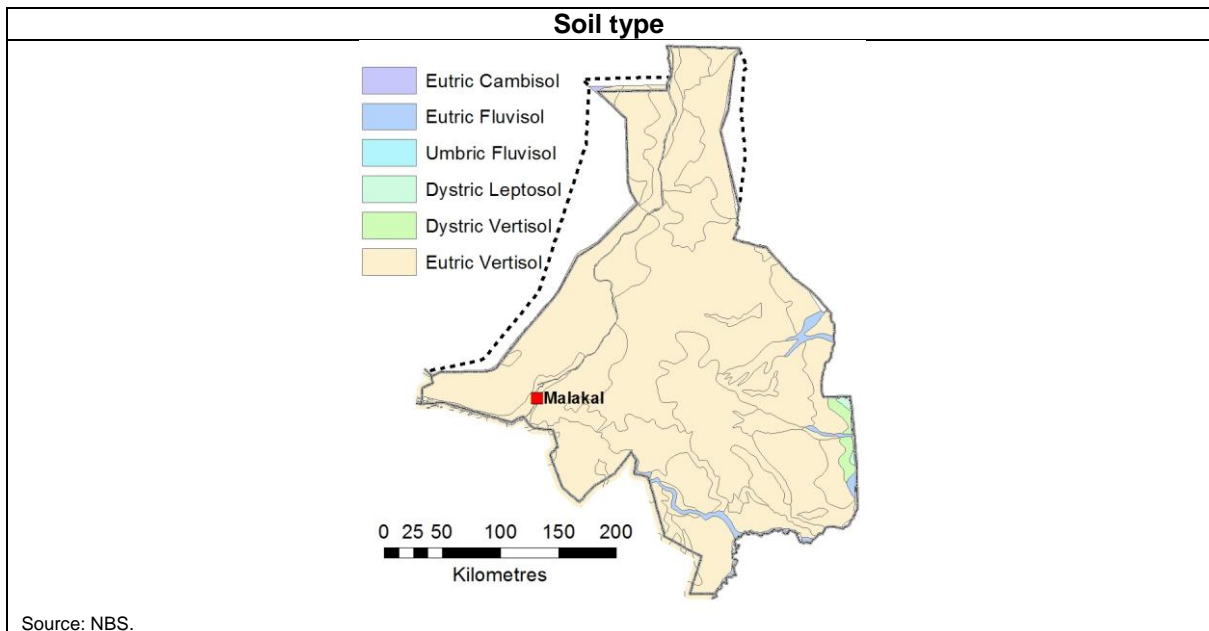
Cropping calendar												
Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sorghum					L	L	S				H	H
Sesame						L	S			H	H	
Maize					L	L	S			H		
Tomato/Pepper			L	S	T	S	T		H	H	H	
Leaf vegetable	S	H		L	S	S	H	S	H	S	H	S
	L		S		T				H			

Source: CAMP survey team. 2013.

Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maize				L	L	S	S			H	H	
Sorghum					L	S					H	
Sesame					L	S				H	H	
Cowpea					L	S	H	(Leave)	H	(Pods)		
Pumpkin					L	S		H	H	H		
Tomato	Planted all year round by small-scale irrigation											
Eggplant	Planted all year round by small-scale irrigation											
Jew's mallow	Planted all year round by small-scale irrigation											
Okra			H	H							L	S
Water Melon	H	H							Sow after flood		S	
	L		S		T				H			

Source: CAMP survey team. 2013.



<b>Cross cutting issues</b>	
<b>(Land)</b>	<ul style="list-style-type: none"> <li>• Serious conflict in Maban and Renk Counties due to land boundaries</li> </ul>
<b>(Gender)</b>	<ul style="list-style-type: none"> <li>• Issue of land ownership has been improved.</li> </ul>
<b>(Security)</b>	<ul style="list-style-type: none"> <li>• Border conflicts frequently happen.</li> <li>• Rebel groups are active in some areas.</li> </ul>
<b>(IDPs and returnees)</b>	<ul style="list-style-type: none"> <li>• Living standards of IDPs and returnees are lower than average.</li> <li>• Refugees from Sudan and Ethiopia are increasing.</li> </ul>
<b>(HIV)</b>	<ul style="list-style-type: none"> <li>• HIV patients might be increasing but the infection rate has not been surveyed.</li> </ul>
<b>Opportunities</b>	
<b>Overall</b>	<ul style="list-style-type: none"> <li>• Sufficient manpower</li> </ul>
<b>Crop</b>	<ul style="list-style-type: none"> <li>• Vast arable land</li> <li>• Motivated farmers</li> <li>• Sufficient water source from the River Nile and Sobat</li> <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>	
<b>Overall</b>	<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>
<b>Crop</b>	<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 Topogea and school nursery in Panyakago 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.

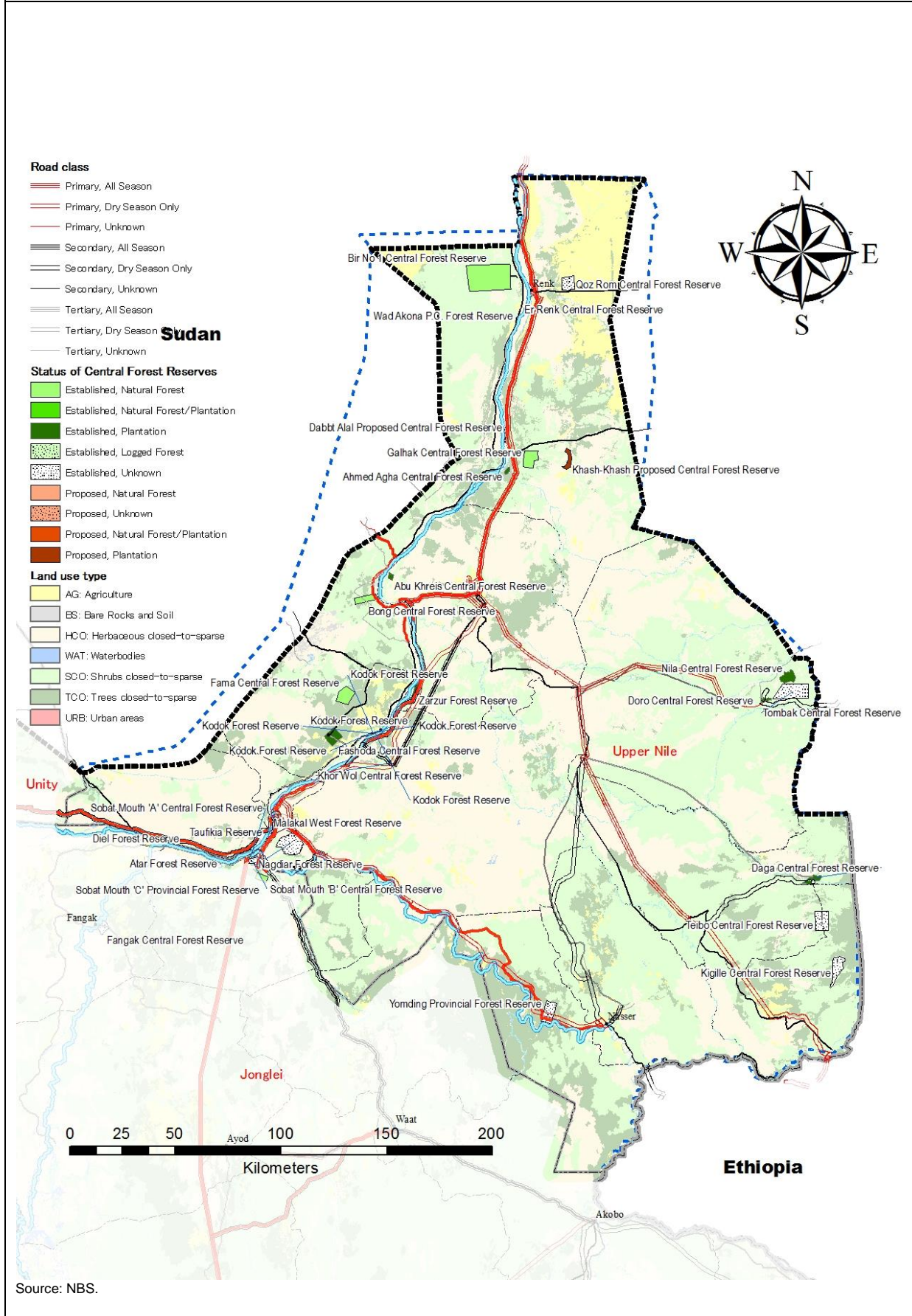
#### Land cover percentage to total area

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
Malakal	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)																																											
<b>Organogram</b>		<b>Staff</b>																																									
<pre> graph LR   Minister --&gt; DG[Director General]   DG --&gt; D1[Directorate of Fisheries and Aquaculture]   DG --&gt; D2[Directorate Veterinary Services]   DG --&gt; D3[Directorate of Animal Production and Range Management]   DG --&gt; D4[Directorate of Planning, Investment and Marketing]   DG --&gt; D5[Directorate of Research and Training]   DG --&gt; D6[Directorate of Finance and Administration]           </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 Fisheries and Aquaculture</b></td> <td style="text-align: right;"><b>511</b></td> </tr> <tr> <td>  Department of Aquaculture</td> <td style="text-align: right;">(-)</td> </tr> <tr> <td>  Department of Fisheries</td> <td style="text-align: right;">(-)</td> </tr> <tr> <td><b>Directorate of Veterinary Services</b></td> <td style="text-align: right;"><b>151</b></td> </tr> <tr> <td>  Department of Diseases, Vector Control and Epidemic</td> <td style="text-align: right;">(-)</td> </tr> <tr> <td>  Department of Public Health</td> <td style="text-align: right;">(-)</td> </tr> <tr> <td><b>Directorate of Animal Production and Range Management</b></td> <td style="text-align: right;"><b>154</b></td> </tr> <tr> <td>  Department of Animal Production</td> <td style="text-align: right;">(-)</td> </tr> <tr> <td>  Department of Range Management</td> <td style="text-align: right;">(-)</td> </tr> <tr> <td><b>Directorate of Planning, Investment and Marketing</b></td> <td style="text-align: right;"><b>5</b></td> </tr> <tr> <td>  Department of Investment and Marketing</td> <td style="text-align: right;">(-)</td> </tr> <tr> <td>  Department of Planning</td> <td style="text-align: right;">(-)</td> </tr> <tr> <td><b>Directorate of Research and Training</b></td> <td style="text-align: right;"><b>5</b></td> </tr> <tr> <td>  Department of Research</td> <td style="text-align: right;">(-)</td> </tr> <tr> <td>  Department of Training</td> <td style="text-align: right;">(-)</td> </tr> <tr> <td><b>Directorate of Finance and Administration</b></td> <td style="text-align: right;"><b>34</b></td> </tr> <tr> <td>  Department of Accounting</td> <td style="text-align: right;">(-)</td> </tr> <tr> <td>  Department of Administration</td> <td style="text-align: right;">(-)</td> </tr> <tr> <td><b>Total</b></td> <td style="text-align: right;"><b>860</b></td> </tr> </tbody> </table>		Section	Number of staff	<b>Directorate of Fisheries and Aquaculture</b>	<b>511</b>	Department of Aquaculture	(-)	Department of Fisheries	(-)	<b>Directorate of Veterinary Services</b>	<b>151</b>	Department of Diseases, Vector Control and Epidemic	(-)	Department of Public Health	(-)	<b>Directorate of Animal Production and Range Management</b>	<b>154</b>	Department of Animal Production	(-)	Department of Range Management	(-)	<b>Directorate of Planning, Investment and Marketing</b>	<b>5</b>	Department of Investment and Marketing	(-)	Department of Planning	(-)	<b>Directorate of Research and Training</b>	<b>5</b>	Department of Research	(-)	Department of Training	(-)	<b>Directorate of Finance and Administration</b>	<b>34</b>	Department of Accounting	(-)	Department of Administration	(-)	<b>Total</b>	<b>860</b>
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Source: State MARF.		Source: State MARF.																																									
<b>Budget</b>		<b>Strategic plan</b>																																									
<b>Category</b>	<b>2011/12 Budget</b>	<b>2011/12 Outturn</b>	<b>2014/14 Budget</b>																																								
<b>Salaries</b>	(Data not available)	(Data not available)	4,818,217																																								
<b>Operating</b>	(Data not available)	(Data not available)	60,000																																								
<b>Transfers</b>	(Data not available)	(Data not available)	0																																								
<b>Others</b>	(Data not available)	(Data not available)	60,000																																								
<b>Capital</b>	(Data not available)	(Data not available)	8,074																																								
<b>Overall total</b>	(Data not available)	(Data not available)	4,946,291																																								
Source: State MARF. Unit: SSP																																											
		<b>Upper Nile State Strategic plan (2012-15)</b>																																									
		<b>Objective</b> Ensure food security and improve livelihood and income generation for the people of Upper Nile State, through sustainable use of natural resources and land management																																									
		<b>Budget Plan</b> (Information not available)																																									
		<ul style="list-style-type: none"> <li>• Increase market access of livestock and its products</li> <li>• Manage the fisheries resources of Upper Nile State so as to maximize production to avoid overfishing</li> <li>• Increase livestock production through provision of widely accessible inputs and services to farmers and pastoralists</li> <li>• Establish a system of controlling imports fish that have not been produced in accordance with international standards and norms</li> </ul>																																									
		<b>Activities</b> <ul style="list-style-type: none"> <li>• Vaccinate against livestock diseases</li> <li>• Improve linkages with international research institutions for research and collaborative programs on fisheries for aquaculture promotion of cooperatives, fisheries associations and management committees</li> <li>• Improve livestock multi-production through breeding and feeding</li> <li>• Livestock water development</li> <li>• Provision of a better environment for grazing</li> </ul>																																									
Source: State MARF.																																											
<b>Services provided by State MARF and local government</b>																																											
<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>	Malakal 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>	Malakal County	2005-2009
BRAC (Bangladesh Rural Advancement Committee)	<ul style="list-style-type: none"> <li>Provide loan service</li> </ul>	Malakal 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>	Malakal 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 Malakal 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.				

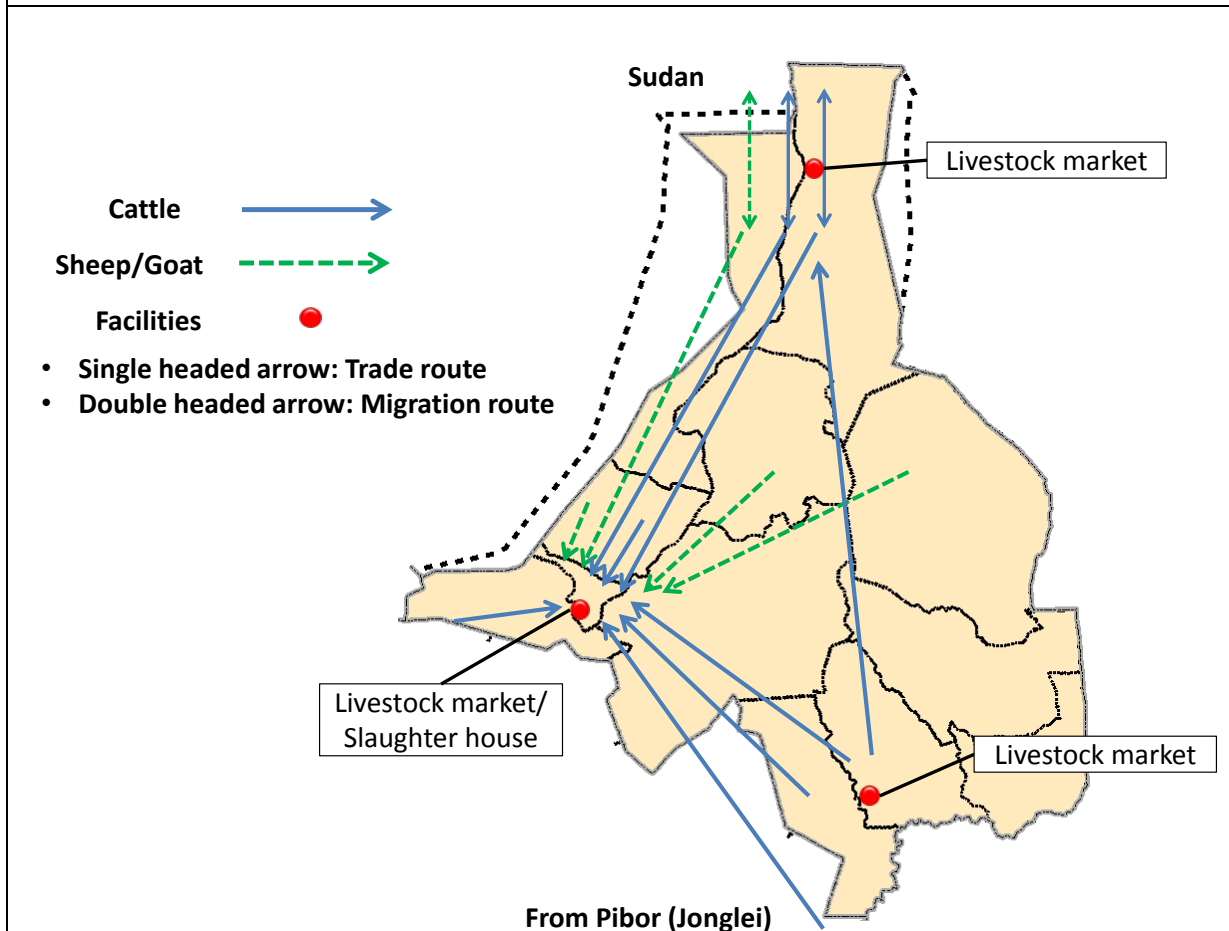
Taxes and charges		
Type	Cost (SSP)	Frequency
Licence for traders in the market for wholesale milk	1,500	Annually
Health certificate (butcher)	200	Every 6 months
Garbage collection fee	20	Monthly
Taxation chamber in the auction yard (cattle keeper)	10	Per head
Council Authority fee for certificates and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

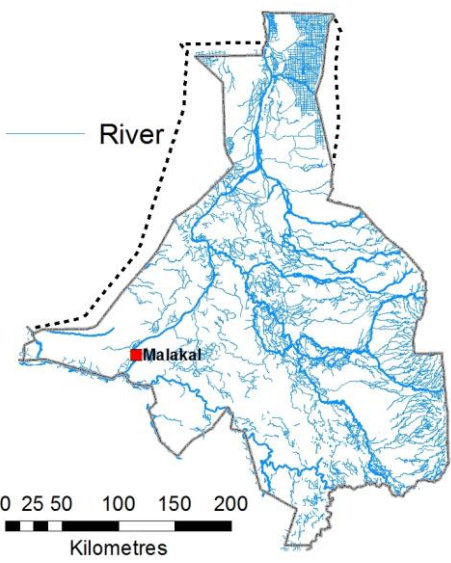

Source CAMP survey team. 2013.

**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.

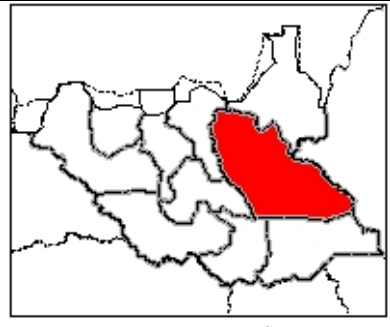
<b>Cross-cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• No serious land issues are found in the state in the field of livestock production.</li> </ul> <p><b>(Migration)</b></p> <ul style="list-style-type: none"> <li>• During cattle migration, occasionally conflicts happen 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 Selim (Arab nomads) from Kurdofan steal cattle from the local communities on the way back to their home settlements in Kurdofan.</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 north 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 Panykang, 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 Longechuk 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.</p> <p>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.</p> <p>Ice for fresh fish export to Khartoum came from Sudan (Khartoum or Kosti).</p> <p>(Photo: CAMP team weighing dried fish in Malakal)</p> <p>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

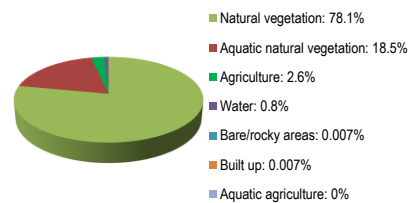


## 2 Jonglei State (Capital: Bor)

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> )



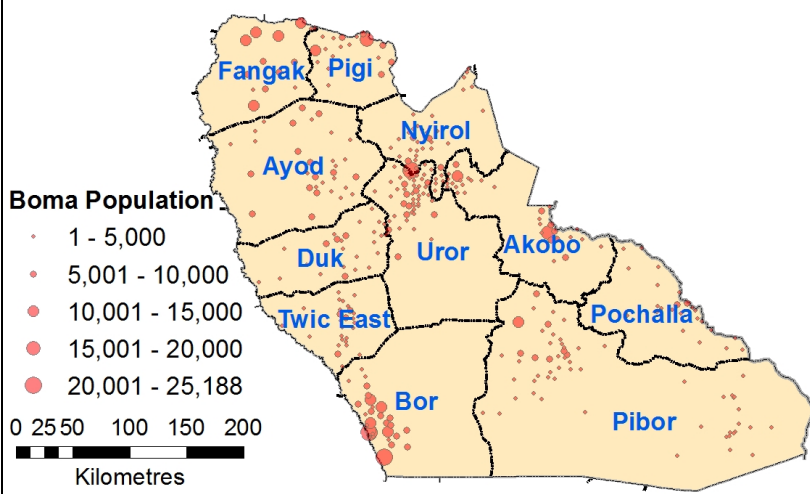
Land cover <sup>g</sup>



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)

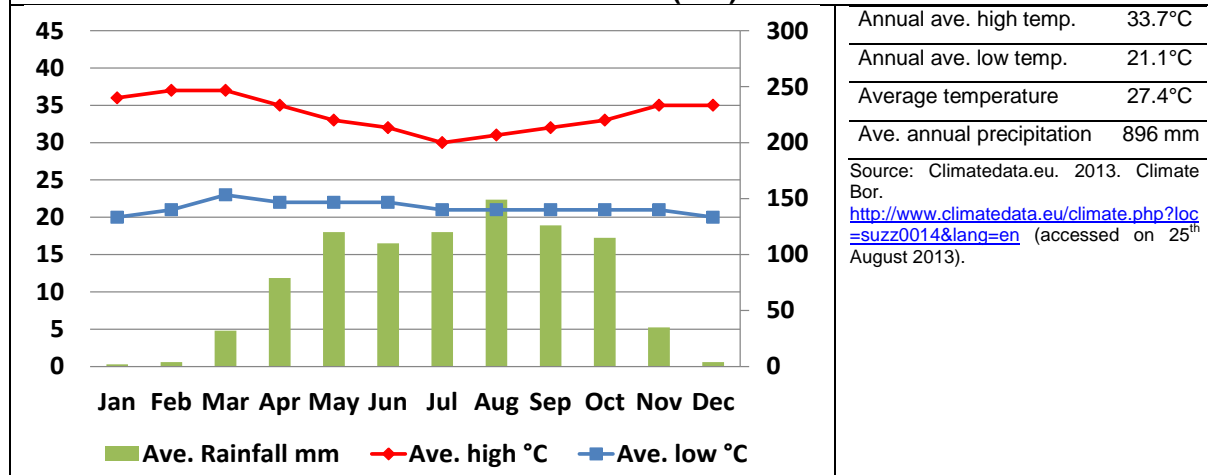
County	Estimated Population (2013) <sup>a</sup>	Pop. density (ppl/km <sup>2</sup> ) <sup>b</sup>
Bor	252,659	17.8
Uror	199,096	16.3
Pibor	165,384	4.9
Fangak	159,185	20.8
Ayod	154,849	11.5
Akobo	153,220	16.8
Twic East	124,203	20.3
Nyirrol	121,798	16.9
Duk	113,225	16.3
Pigi	107,913	24.4
Pochalla	73,610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



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

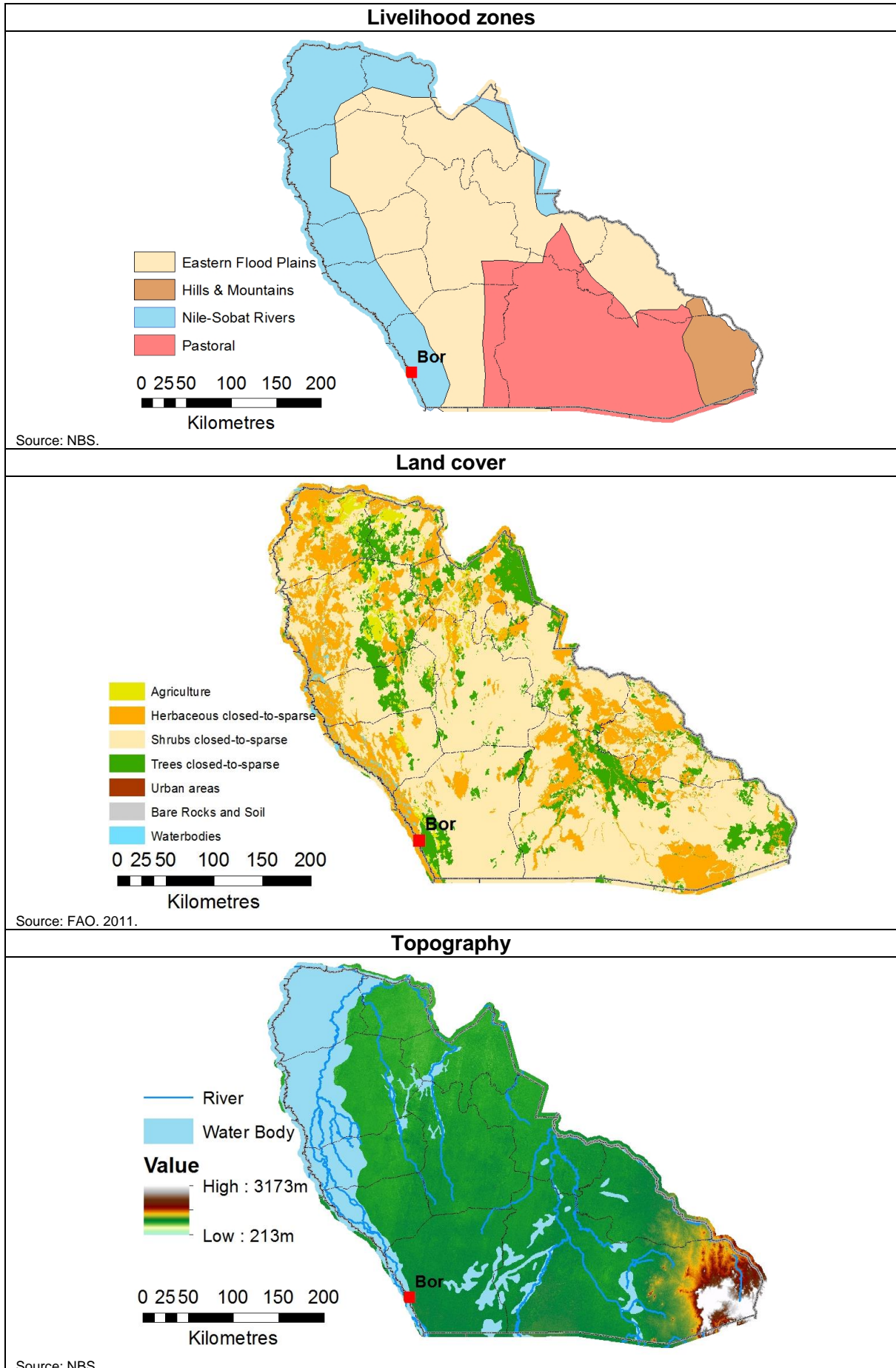
Source: (Map) NBS; (Table)<sup>a</sup> WFP. 2013. ANLA; <sup>b</sup> Land scale data applied from FAO. 2011. Land Cover Atlas of the Republic of South Sudan.

### Climate chart (Bor)



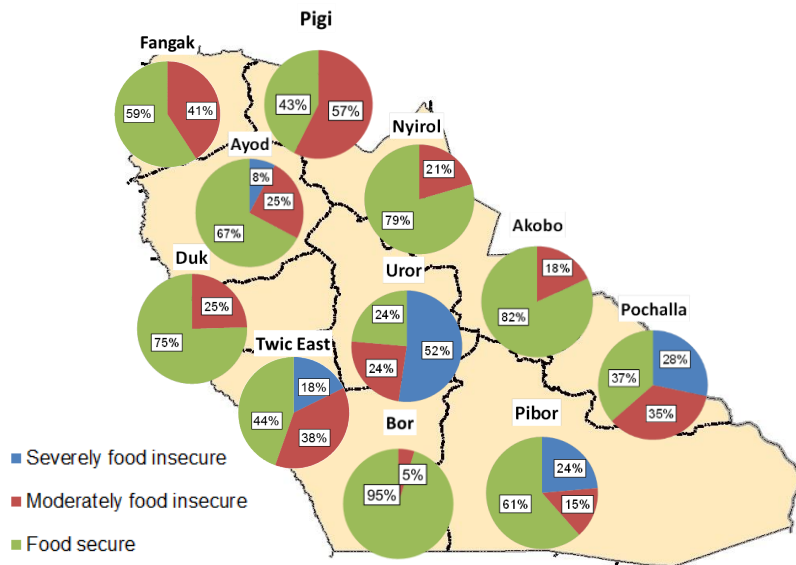
Annual ave. high temp.	33.7°C
Annual ave. low temp.	21.1°C
Average temperature	27.4°C
Ave. annual precipitation	896 mm

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



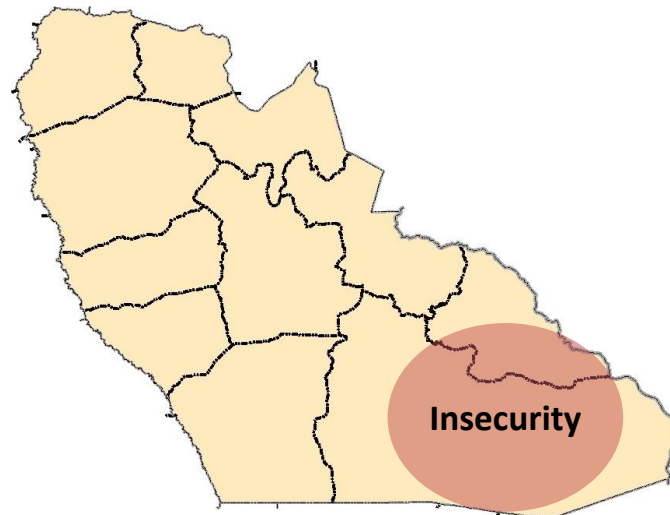


### Estimated food security status by county (2013)



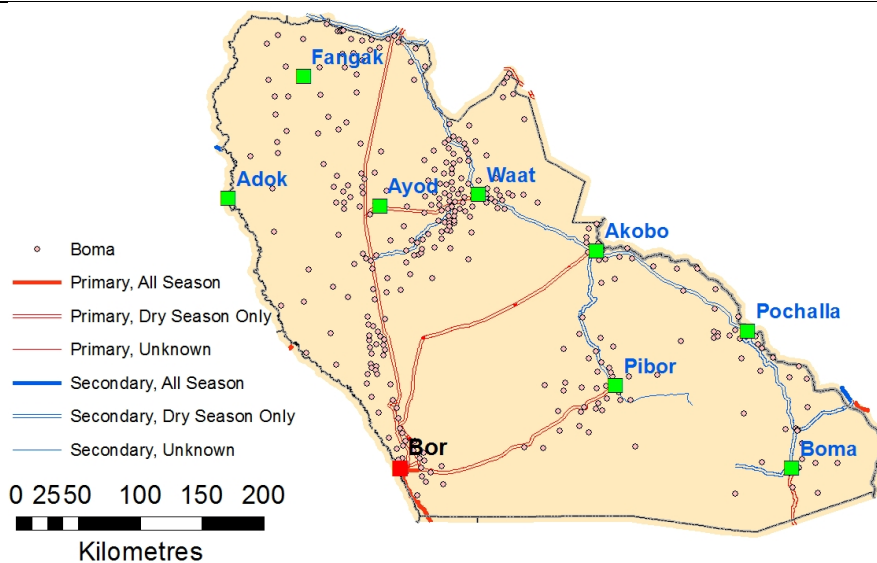
Source: WFP.2013.ANLA.

### Insecurity and natural disaster



Source: CAMP survey team 2013.

### Road and Boma location



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

2.2 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]           </pre> <p>Source: State MAF.</p>		<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><b>77</b></td> </tr> <tr> <td>Department of Utilization</td> <td>(55)</td> </tr> <tr> <td>Department of Central Nursery</td> <td>(11)</td> </tr> <tr> <td>Department of Agro-forestry</td> <td>(11)</td> </tr> <tr> <td><b>Directorate of Agriculture</b></td> <td><b>279</b></td> </tr> <tr> <td>Department of Extension</td> <td>(231)</td> </tr> <tr> <td>Department of Crop Production</td> <td>(18)</td> </tr> <tr> <td>Department of Horticulture</td> <td>(30)</td> </tr> <tr> <td><b>Directorate of Administration and Finance</b></td> <td><b>26</b></td> </tr> <tr> <td>Department of Administration</td> <td>(20)</td> </tr> <tr> <td>Department of Finance</td> <td>(6)</td> </tr> <tr> <td><b>Total</b></td> <td><b>382</b></td> </tr> </tbody> </table> <p>Source: State MAF.</p>		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>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	

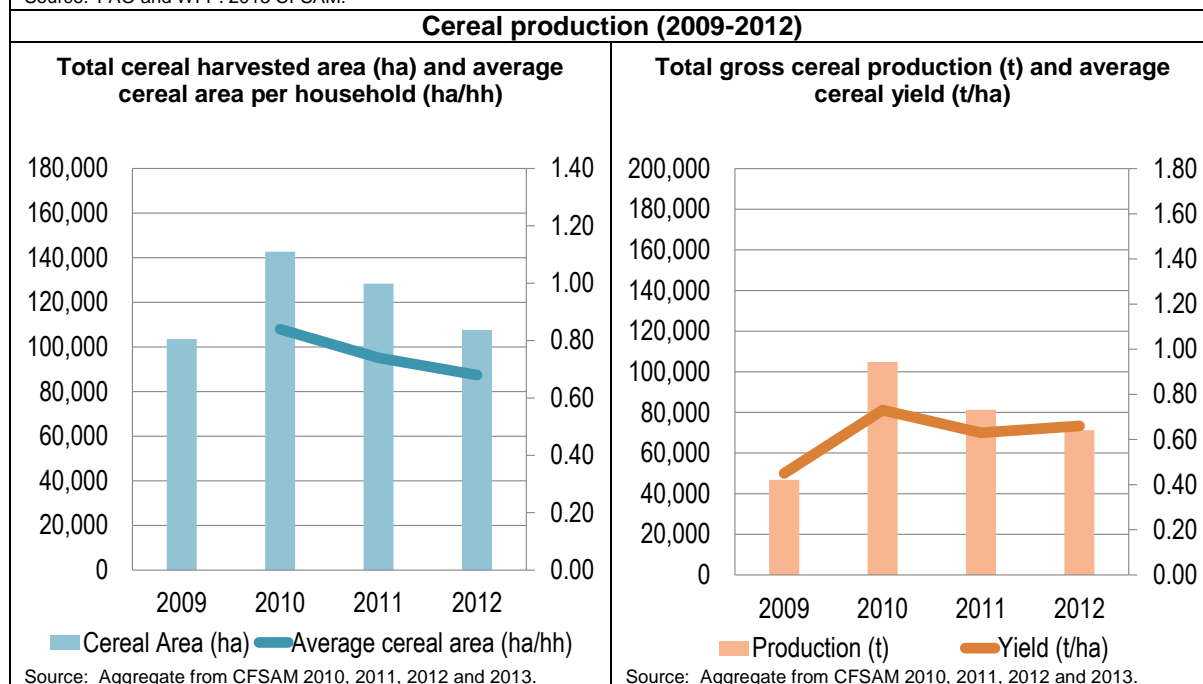
Source: CAMP survey team 2013.  
\*This is not a representative sample.

<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> 
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.



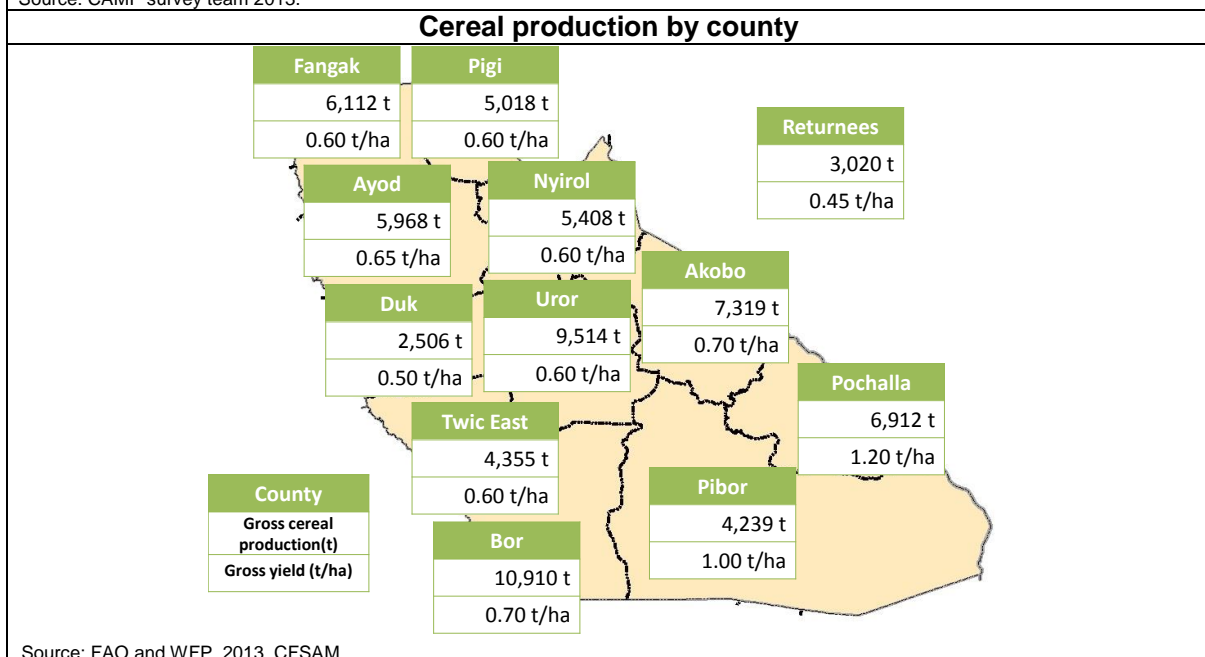
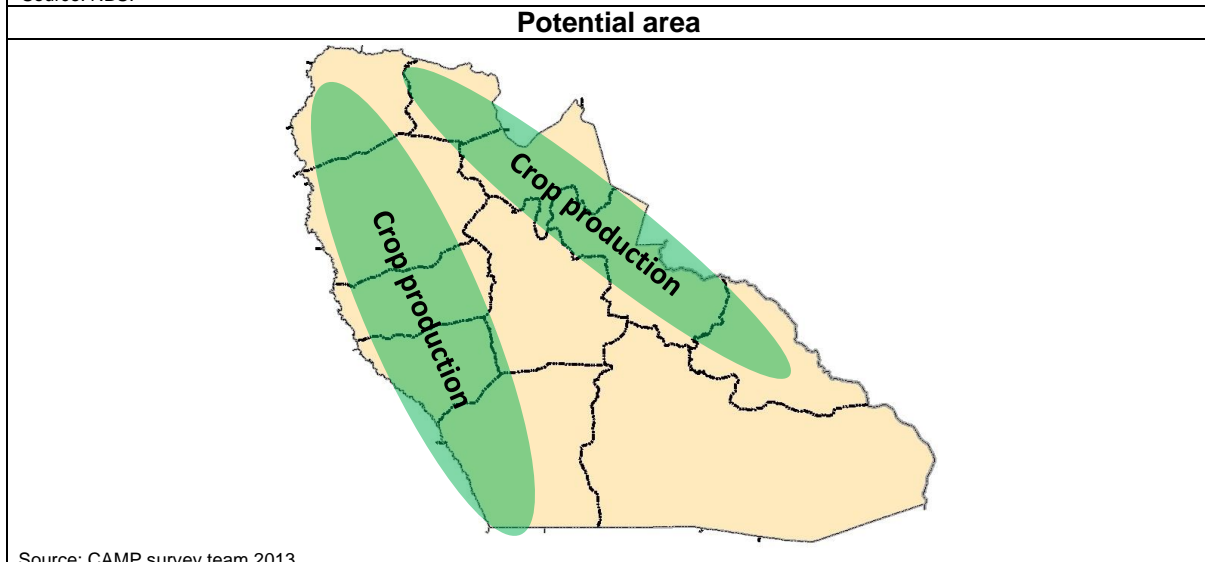
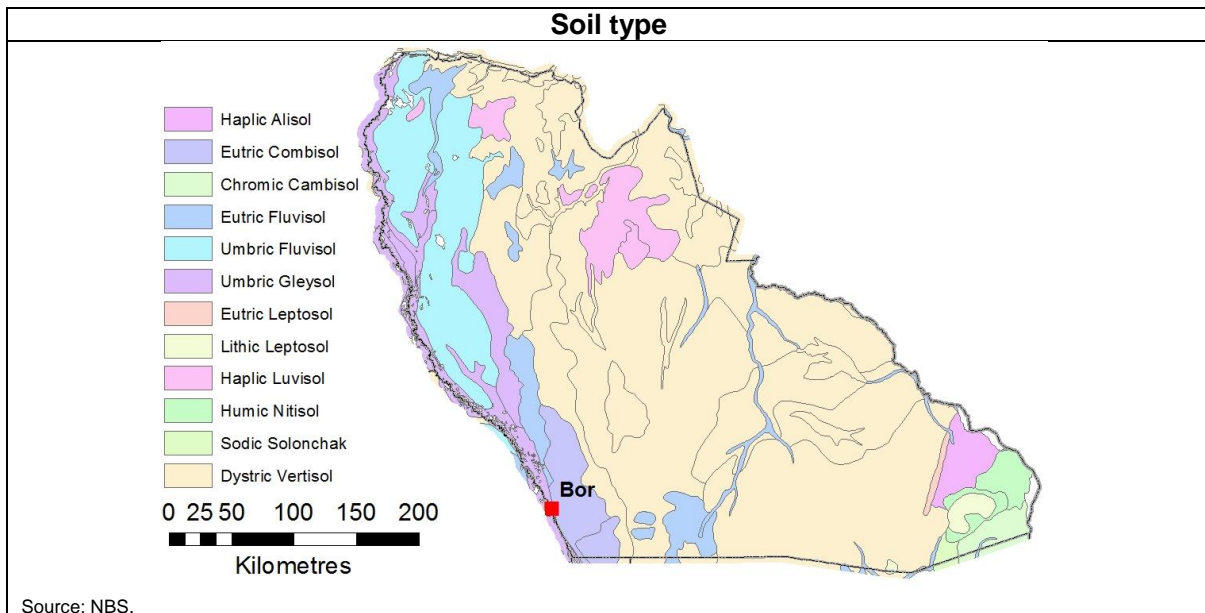
Crop production by livelihood zone					
Eastern Flood Plains		Nile-Sobat Rivers		Pastoral	
Major agricultural products					
<b>Crop</b>	<b>Vegetable</b>	<b>Crop</b>	<b>Vegetable</b>	<b>Crop</b>	<b>Vegetable</b>
Maize	Okra	Maize	Okra	Maize	Okra
Sorghum	Pumpkin	Sorghum	Eggplant	Sorghum	Pumpkin
Bean		Bean	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	H		
Pumpkin				L	S			H	H			
Okra				L	S		H	H	H	H		
Tabacco				L	S					H	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

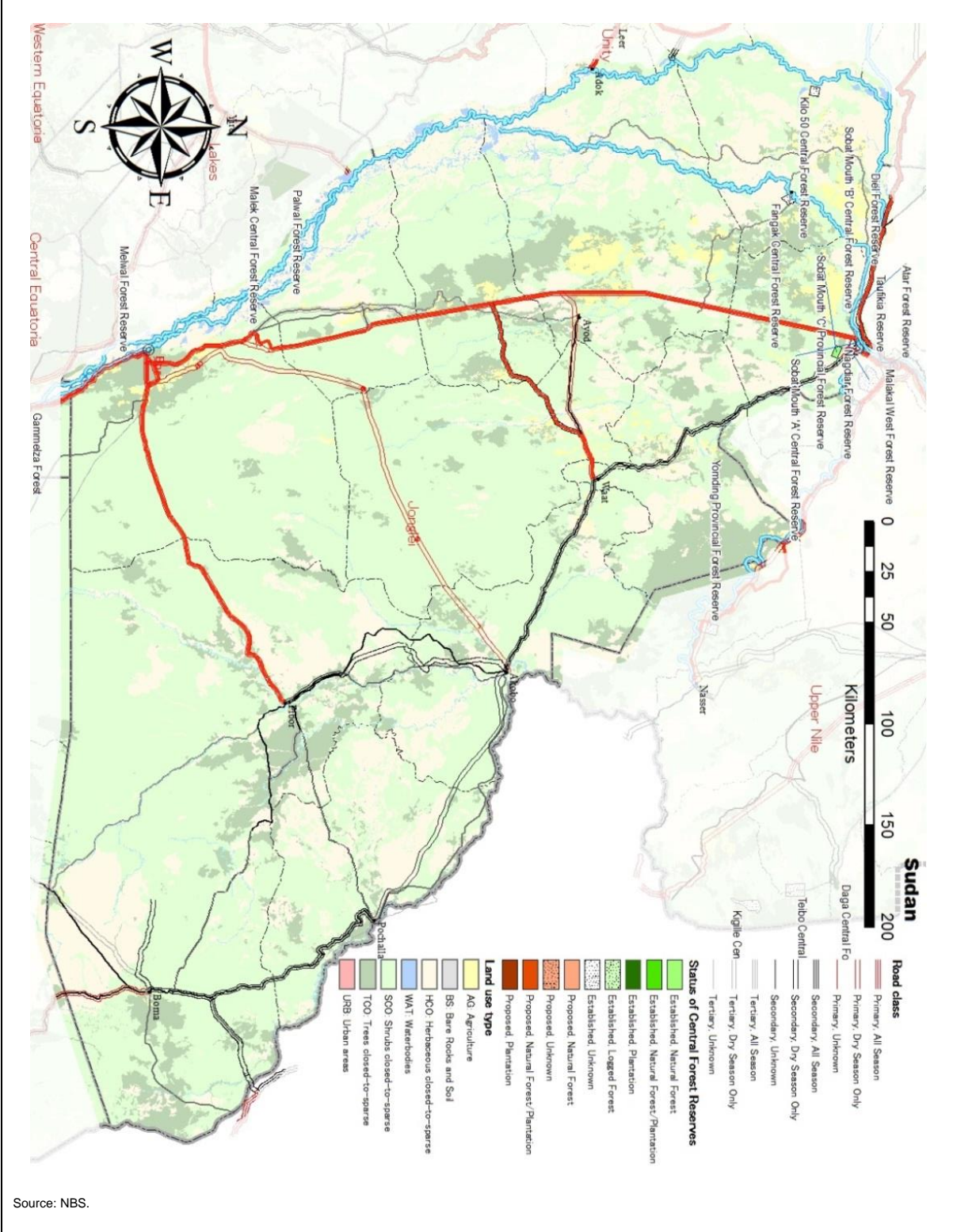
County	AG	TCO	SCO	HCO	URB	BS	WAT	Total area	Total area (ha)
Akobo	1.2%	13.9%	60.9%	23.9%		0.1%	0.1%	100.0%	914,674
Ayod	4.4%	13.0%	43.7%	35.5%	0.0%		3.4%	100.0%	1,351,732
Bor	2.0%	9.8%	78.7%	8.9%			0.7%	100.0%	1,420,710
Duk	2.2%	18.0%	60.2%	17.9%	0.0%		1.6%	100.0%	694,280
Fangak	8.4%	9.0%	39.8%	41.5%	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	Directorate of Livestock Development
		Directorate of Fisheries	Directorate of Extension Research and Training
Source: State MLF.		<b>Section</b>	<b>Number of staff</b>
		<b>Directorate of Finance and Administration</b>	<b>17</b>
		<b>Directorate of Livestock Development</b>	<b>24</b>
		<b>Directorate of Fisheries</b>	<b>24</b>
		<b>Directorate of Extension, Research and Training</b>	<b>7</b>
		<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>2012/13 Budget</b>
<b>Salaries</b>	(Data not available)	(Data not available)	1,220,906
<b>Operating</b>	(Data not available)	(Data not available)	238,000
<b>Transfers</b>	(Data not available)	(Data not available)	-
<b>Others</b>	(Data not available)	(Data not available)	-
<b>Capital</b>	(Data not available)	(Data not available)	251,800
<b>Overall total</b>	(Data not available)	(Data not available)	1,710,706
Source: State MLF. Unit: SSP			
<b>Jonglei State Strategic plan (2012-17)</b>			
<b>Mission</b>		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>Strategic Goal 1</b>		Strengthen institutional capacity to guide, supervise, coordinate and monitor all activities in the livestock and fisheries sectors	
<b>Strategic Goal 2</b>		Improved livestock production and productivity through improved technologies and sustainable use of natural resources	
<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	
<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>			

<b>2.6 Livestock</b>												
<b>Service provided National government institutions</b>												
<ul style="list-style-type: none"> <li>• 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.</li> <li>• The university also provides short courses. (e.g. animal health and production)</li> </ul>												
<b>Service provided by DPs and NGOs</b>												
<b>Organisation</b>	<b>Activities</b>				<b>Area</b>				<b>Period</b>			
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												
<b>Services provided by private sector</b>												
<b>(Agro-dealer)</b>												
<ul style="list-style-type: none"> <li>• There are some private veterinary pharmacies which provide veterinary drugs and technical advice.</li> </ul>												
<b>(Slaughter house and auction yard)</b>												
<ul style="list-style-type: none"> <li>• One private slaughter facility is in Bor town.</li> <li>• More than 20 private slabs are available in the state.</li> </ul>												
<b>Livestock population</b>												
Type of animal	Nyirrol	Pibor	Fanjak	Bor	Twich East	Uror	Ayot	Akobo	Pigi	Duk	Pochalla	Total
Cattle	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
Sheep	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
Goat	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.												
<b>Livestock diseases</b>												

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

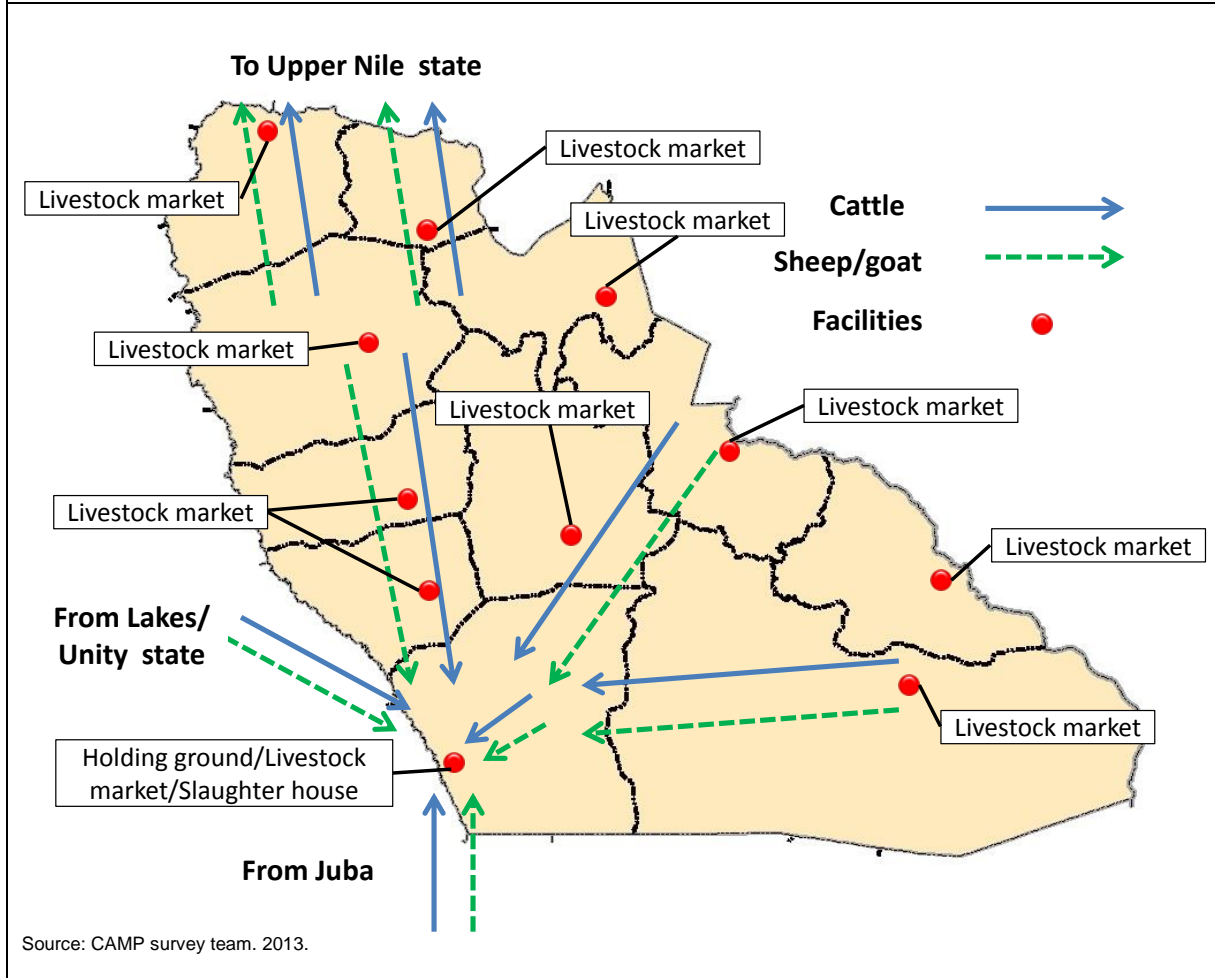
Taxes and charges		
Type	Cost (SSP) (range)	Frequency
Transportation (sheep or goat) per day	40-45	One trip
Transportation (cattle) per day	150	One trip
Slaughtering slab (paid by butchery) per cattle	50	Every slaughtering
Slaughtering slab (paid by butchery) per sheep or goat	5	Every slaughtering

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.

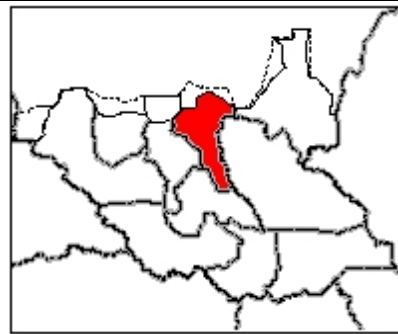
Species	Presentation	SSP/kg	Species	Presentation	SSP/kg
Clarius spp	Dried plaits	41.46	Protopterus spp	Fresh	4.37
Tilapia (unidentified)	Dried plaits	47.64	Tilapia (unidentified)	Fresh	8.92
Clarius spp	Fresh	6.02	Clarius spp	Sun dried	37.40
Distichotus sp	Fresh	3.88	Distichotus sp	Sun dried	27.08
Heterotus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



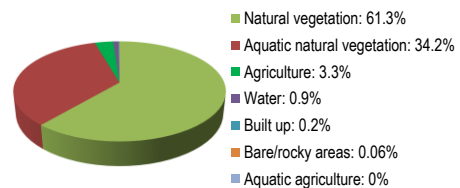


### 3 Unity State (Capital: Bentiu)

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>

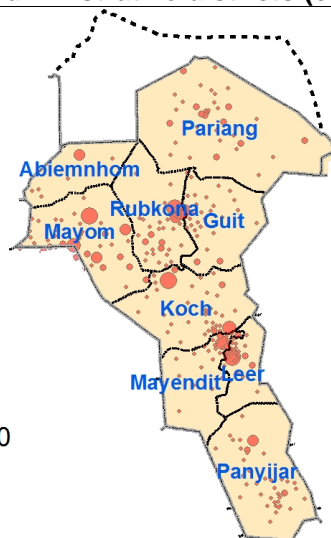
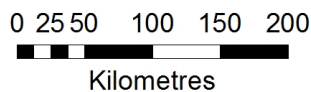


Source: <sup>a</sup> SSCSE. 2010. Southern Sudan Counts: Tables from the 5th Sudan Population and Housing Census, 2008; <sup>b</sup> WFP. 2013. ANLA; <sup>c</sup> FAO. 2011. Land Cover Atlas of the Republic of South Sudan; <sup>d</sup> Original data source of NBS. 2012. NBHS 2009; <sup>e</sup> NBS. 2012.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

#### Administrative districts (counties)

##### Boma Population

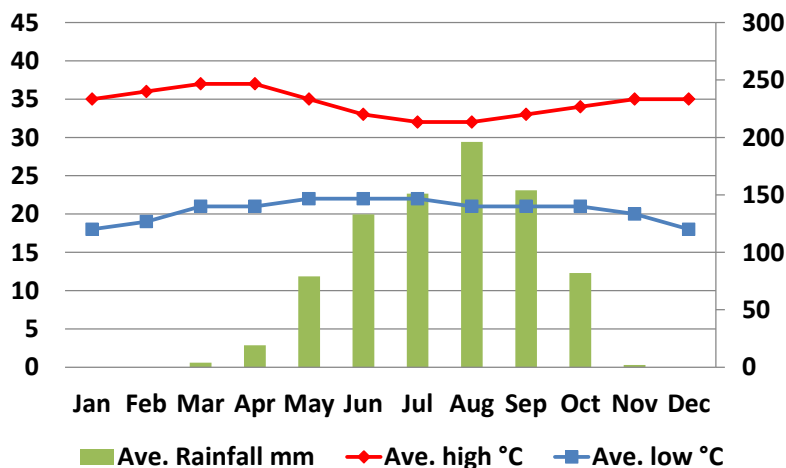
- 1 - 3,000
- 3,001 - 6,000
- 6,001 - 9,000
- 9,001 - 12,000
- 12,001 - 15,762



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

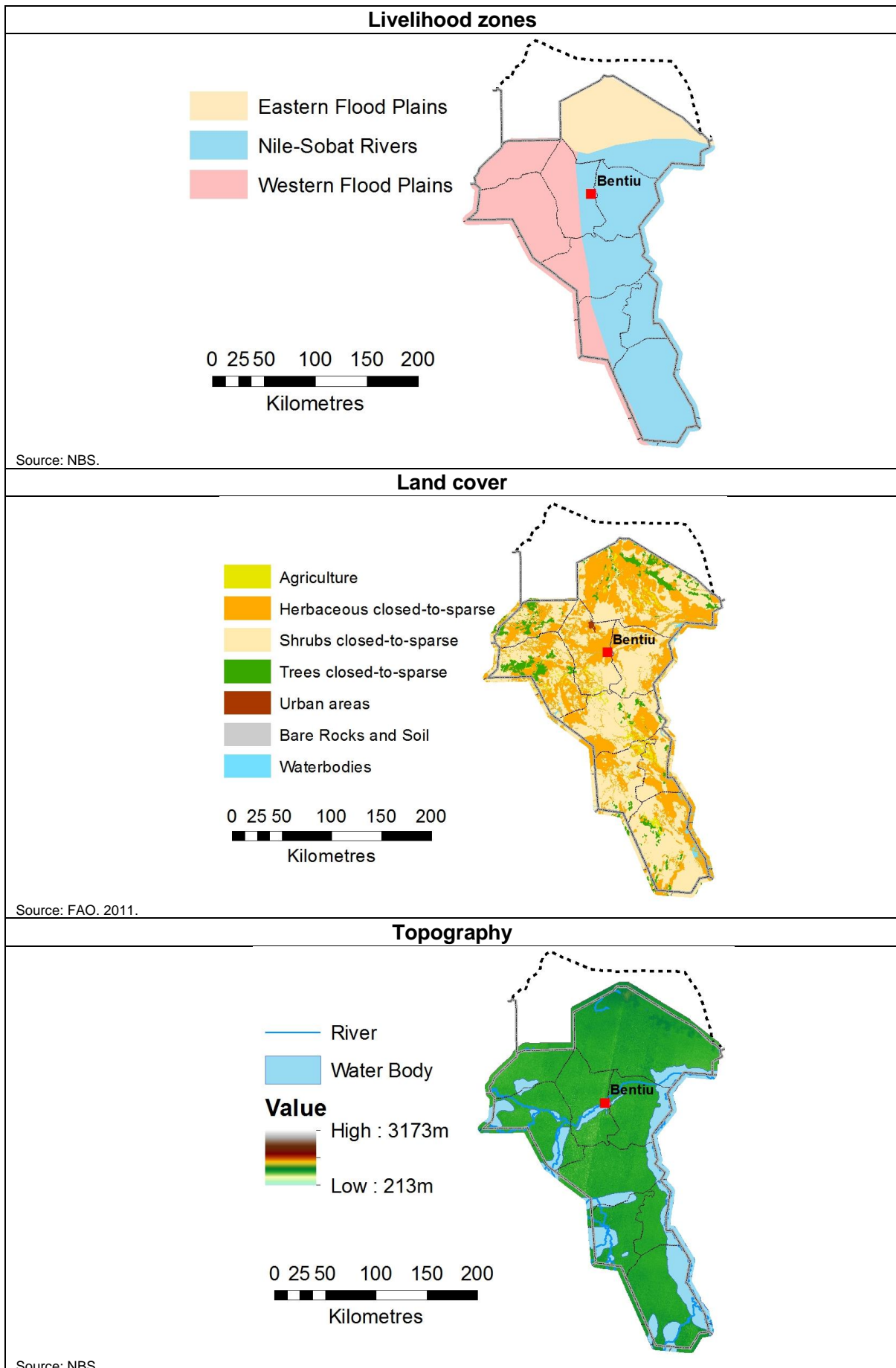
Source: (Map) NBS; (Table) <sup>a</sup> WFP. 2013. ANLA; <sup>b</sup> Land scale data applied from FAO. 2011. Land Cover Atlas of the Republic of South Sudan.

#### Climate chart (Bentiu)

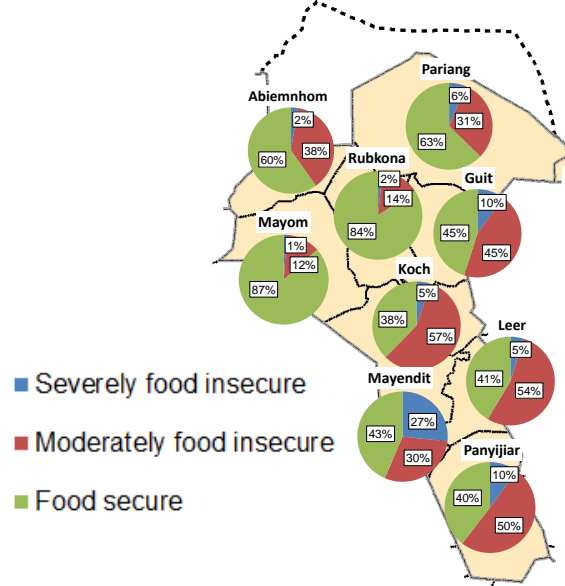


Annual ave. high temp.	34.4°C
Annual ave. low temp.	20.3°C
Average temperature	27.4°C
Ave. annual precipitation	820mm

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

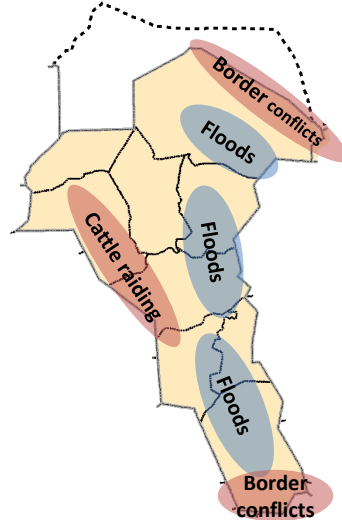


### Estimated food security status by county (2013)



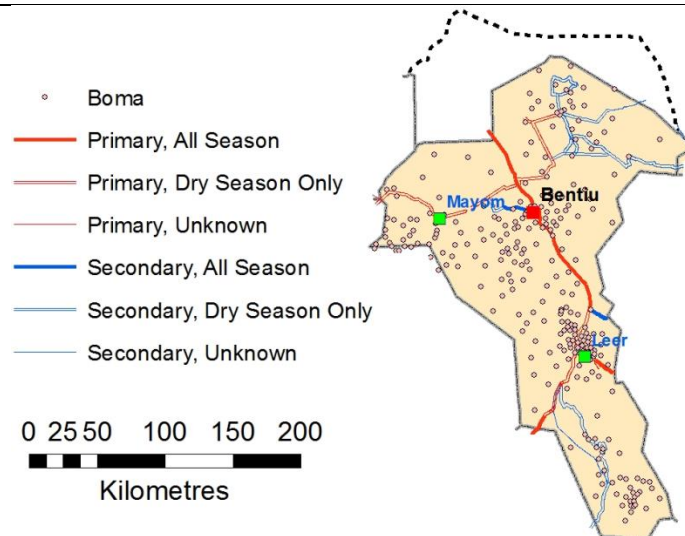
Source: WFP. 2013 .ANLA.

### 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>																																																			
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<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.

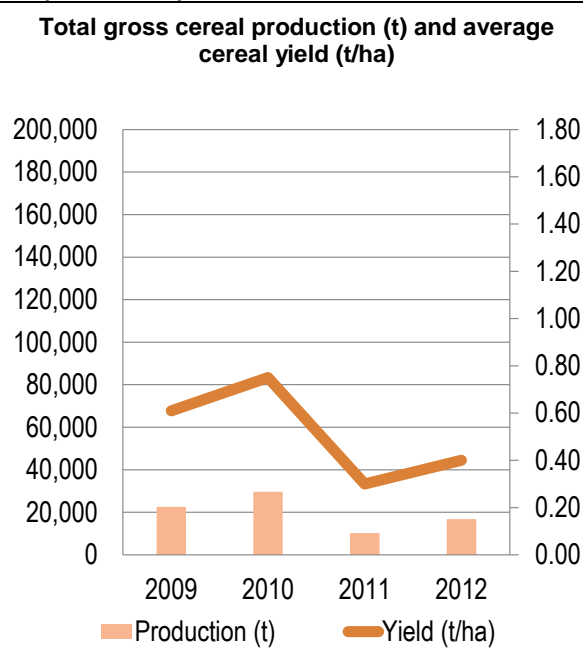
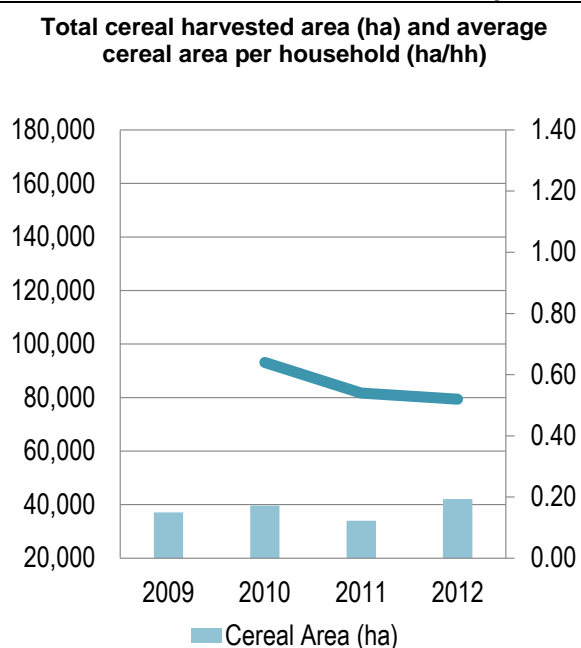
Market					
Major agricultural products and their origin (Guit, June 2013)					
<b>(Cereal)</b>			<b>(Others)</b>		
Item	Type	Origin	Item	Type	Origin
Sorghum	Import	Sudan	Onion	Import	Sudan
	Domestic	Unity State		Domestic	-
Maize flour	Import	Uganda			
	Domestic	-			
Rice	Import	India			
	Domestic	-			
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	
Farming household (%) (2012)	72
Farming household (No.) (2012)	80,823
Total cereal area (ha) (2012)	42,092 (10 <sup>th</sup> )
Cereal gross yield (t/ha) (2012)	0.40 (10 <sup>th</sup> )
Gross cereal production (t) (2012)	16,837 (10 <sup>th</sup> )
Average cereal area per household (ha/hh) (2012)	0.52 (10 <sup>th</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**

Western Flood Plains		Nile-Sobat Rivers		Eastern Flood Plains	
Major agricultural products					
Crop	Vegetable	Crop	Vegetable	Crop	Vegetable
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**

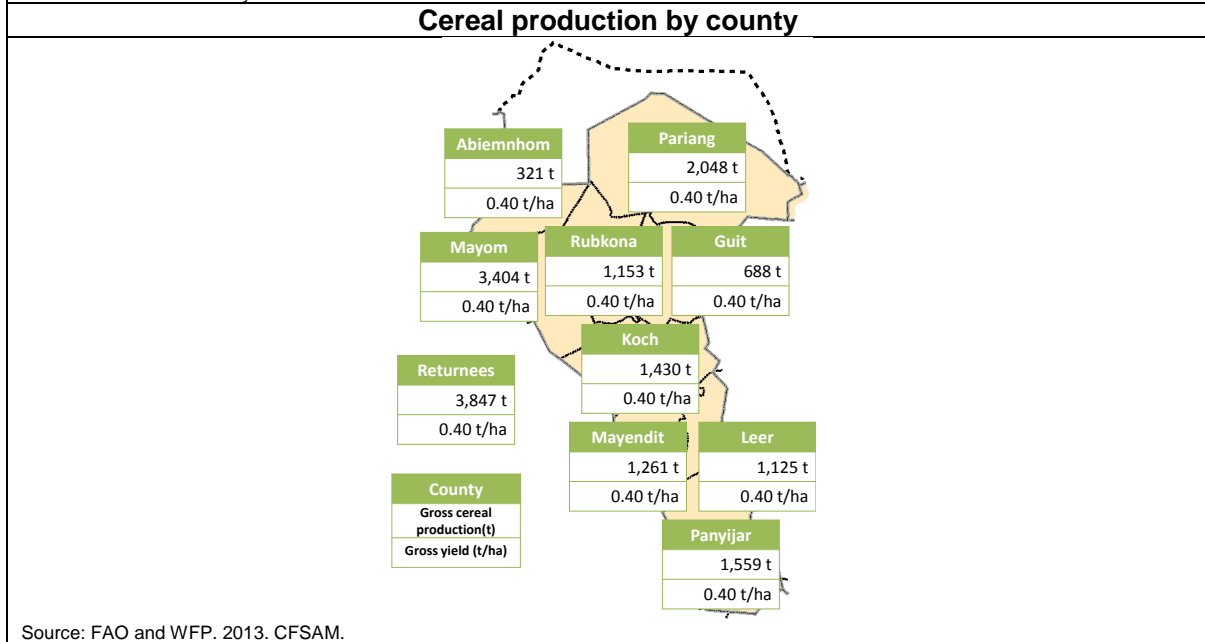
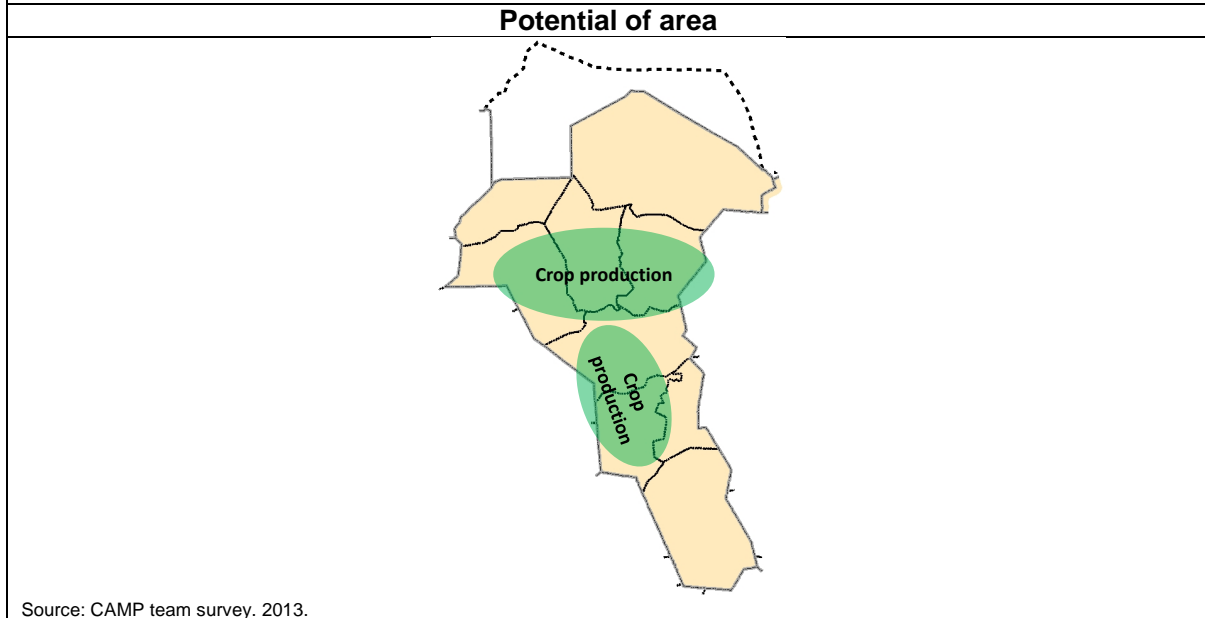
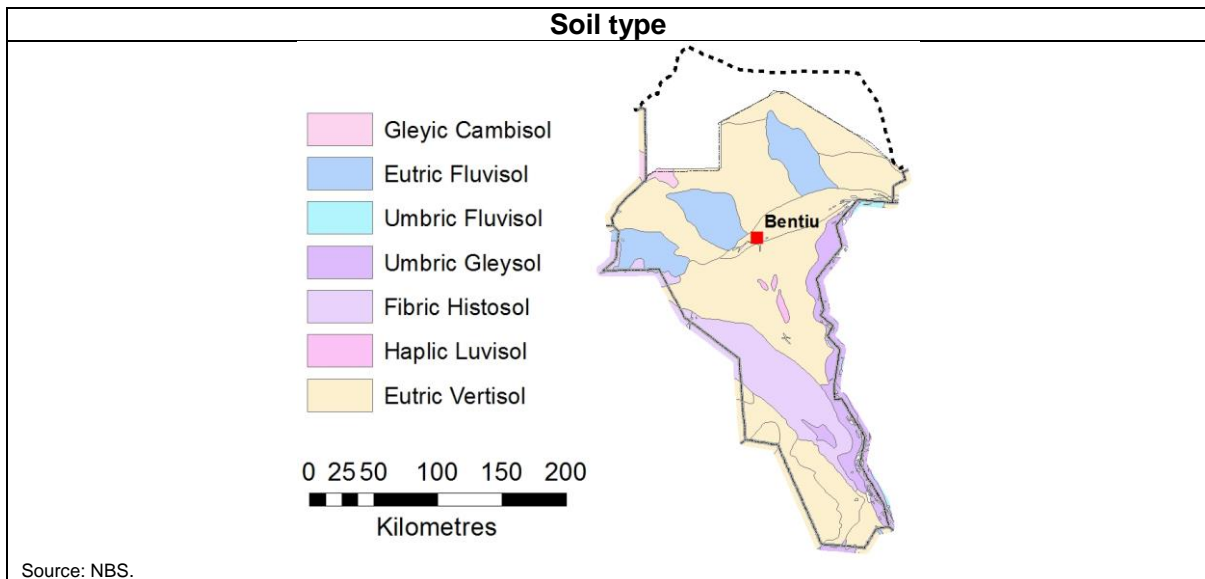
Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Sorghum			L	L	S	S				H	H	
Maize			L	L	S	S		H	H			
Groundnut			L	L	S	S				H	H	
Sesame			L	L	S	S			H			
Tomato	H		L	S	H	S	H	S	H	S		
Pumpkin			L	S			H	H				
Okra	H	H	L	L	S	S	H	H	H	H	H	
Maize			L	S	S		H	H	H	H		
Groundnut (1st)			L	S	S	H	H					
Groundnut (2nd)			L	S						H		
Cucumber			L	S			H					

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

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)

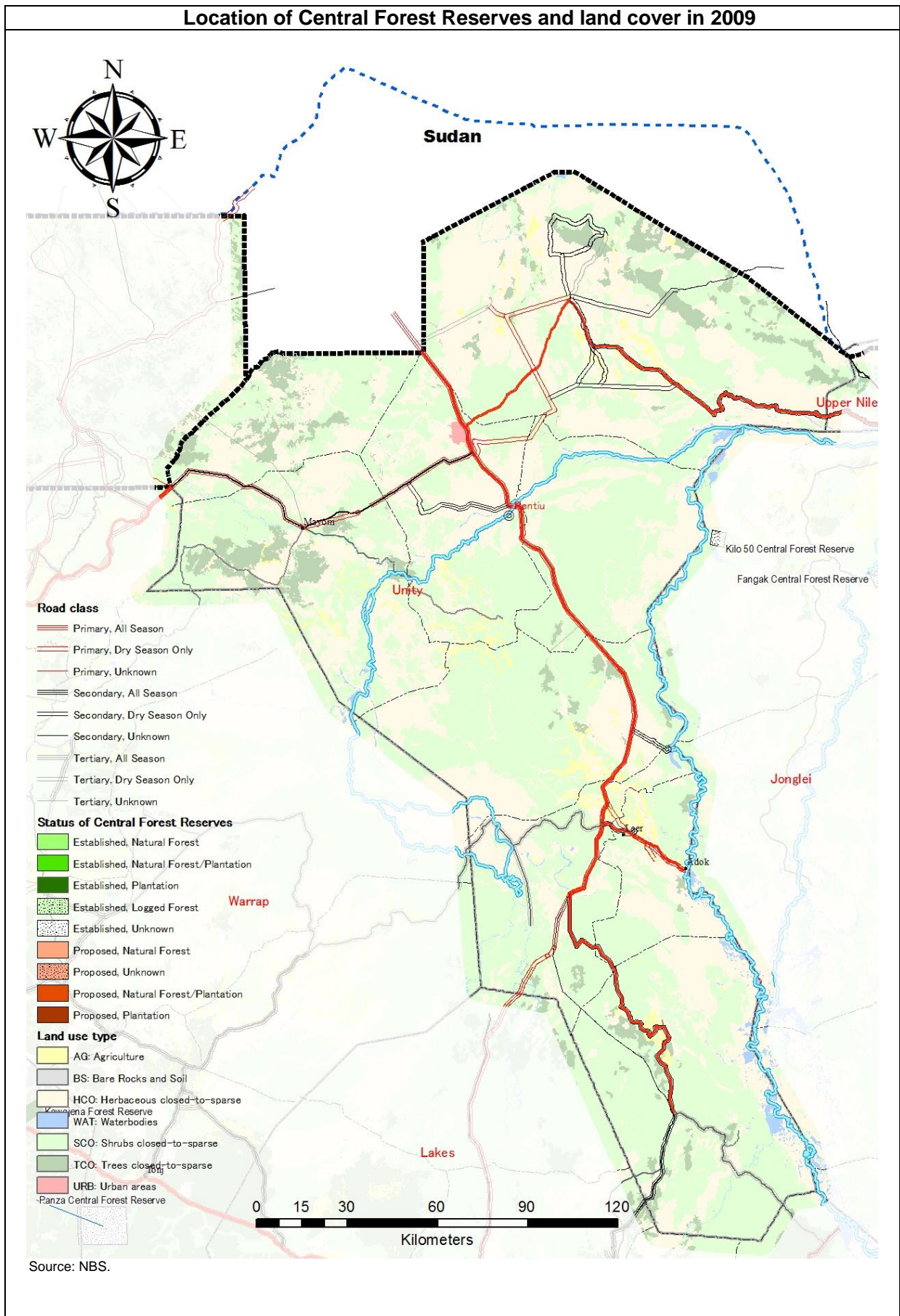
Source: CAMP team survey, 2013.

#### 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.



<b>3.5 State Ministry of Animal Resources and Fisheries (MARF)</b>																					
<b>Organogram</b>			<b>Staff</b>																		
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<b>Directorate of Planning and Budgeting</b>	-																				
<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>																					
<p><b>Unity State Strategic plan (2012-15)</b></p> <table border="1"> <tbody> <tr> <td><b>Objective</b></td> <td>(Information not available)</td> </tr> <tr> <td><b>Budget</b></td> <td>(Information not available)</td> </tr> <tr> <td><b>Plan</b></td> <td>(Information not available)</td> </tr> <tr> <td><b>Activities</b></td> <td> <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> </td> </tr> </tbody> </table> <p>Source: State MARF.</p>				<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>										
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<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

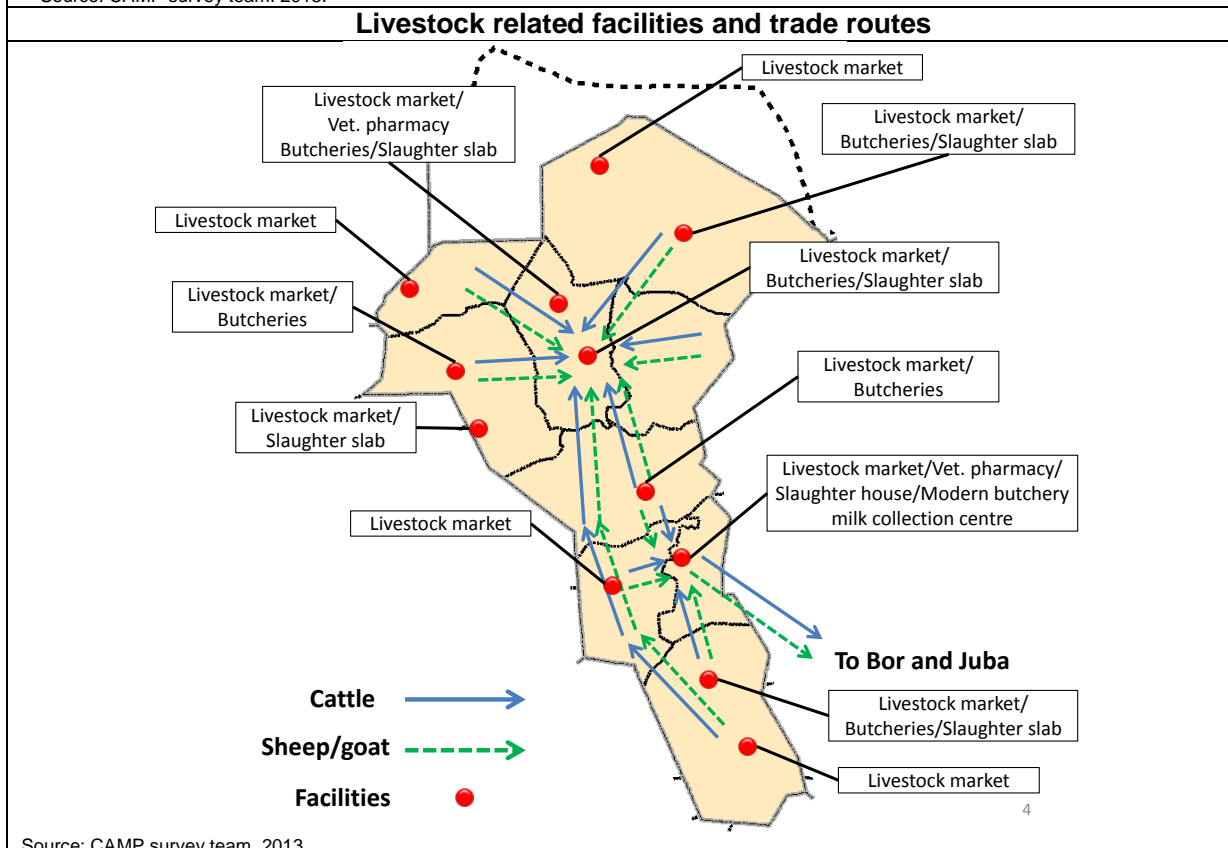
Livestock diseases				
Type of Animal	Type of disease	Outbreak area in last 2 years (2011-2012)		
Cattle	Contagious bovine pleuropneumonia	Panyijar and Leer Counties		
	Haemorrhagic septicaemia	Leer, Koch and Mayom Counties		
	Trypanosomiasis	Pariang and Panyijar Counties		
	Brucellosis	Panyijar and 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.

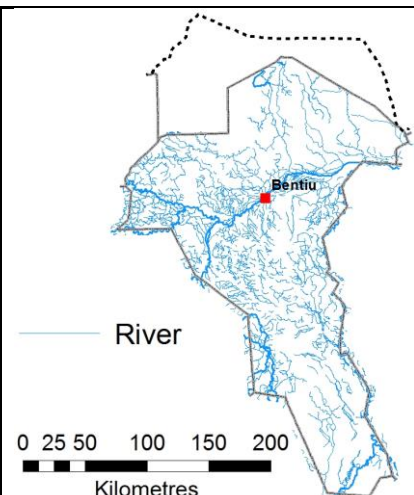


Source: CAMP survey team. 2013.

<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.

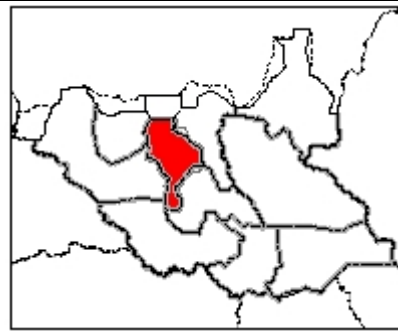


Species	Presentation	SSP/kg	Species	Presentation	SSP/kg
Clarius anguillaris	Dried plaits	48.39	Heterotus niloticus	Dried plaits	38.71
Lates niloticus	Dried plaits	36.52	Tilapia (unidentified)	Dried plaits	48.19
Heterotus niloticus	Fresh	11.69	Mormyrids (other)	Fresh	13.99
Oreochromis niloticus	Fresh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

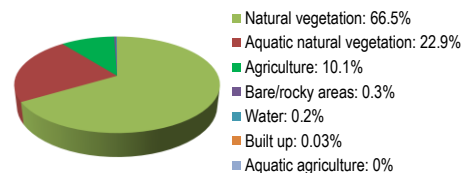


## 4 Warrap State (Capital: Kuajok)

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

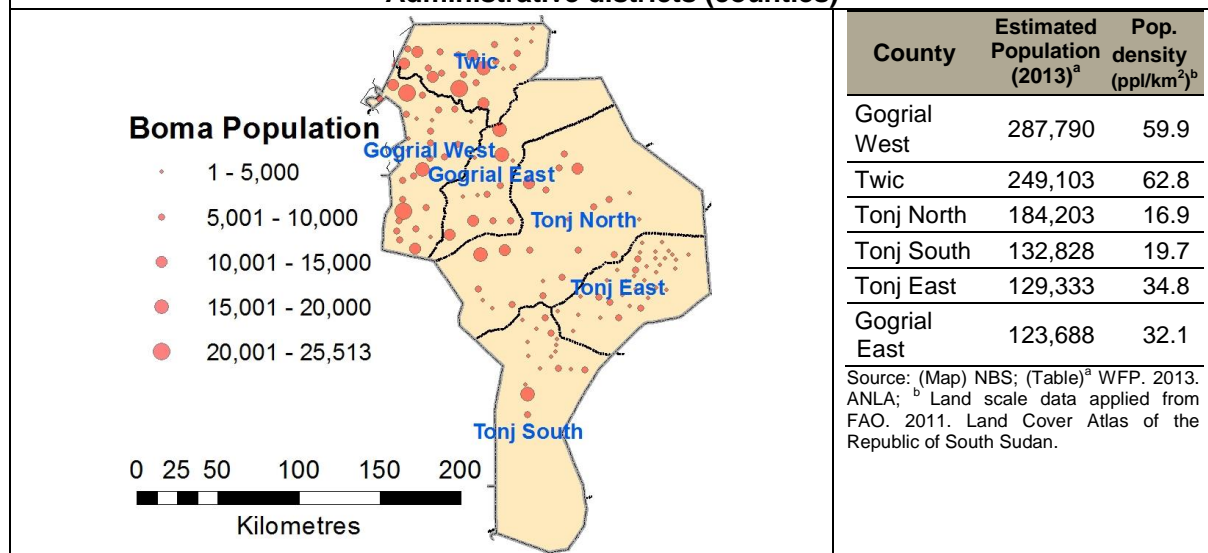


Land cover<sup>g</sup>



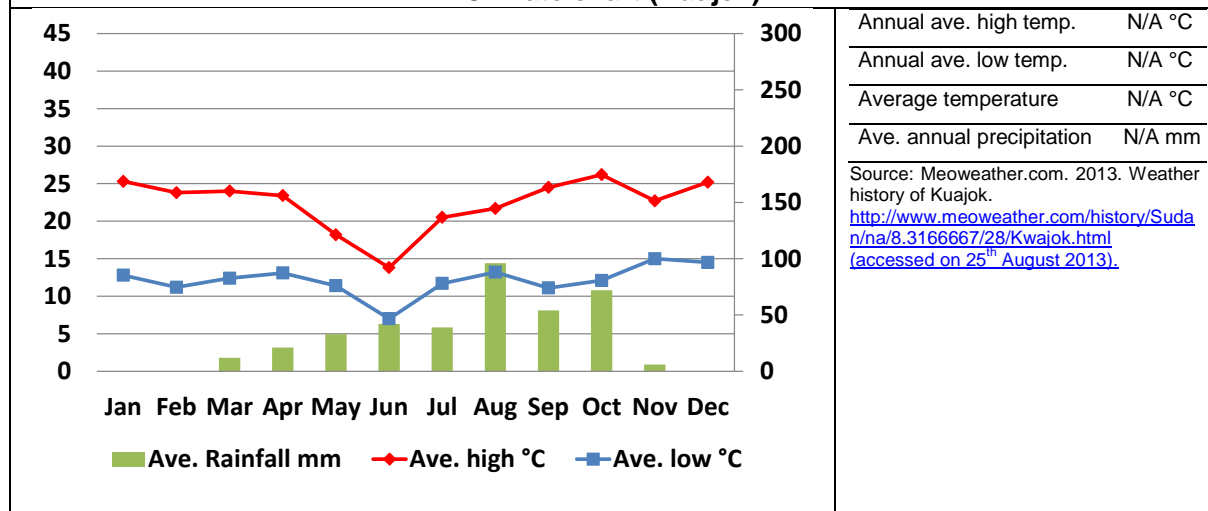
Source: <sup>a</sup> SSCSE. 2010. Southern Sudan Counts: Tables from the 5th Sudan Population and Housing Census, 2008; <sup>b</sup> WFP. 2013. ANLA; <sup>c</sup> FAO. 2011. Land Cover Atlas of the Republic of South Sudan; <sup>d</sup> Original data source of NBS. 2012. NBHS 2009; <sup>e</sup> NBS. 2012.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

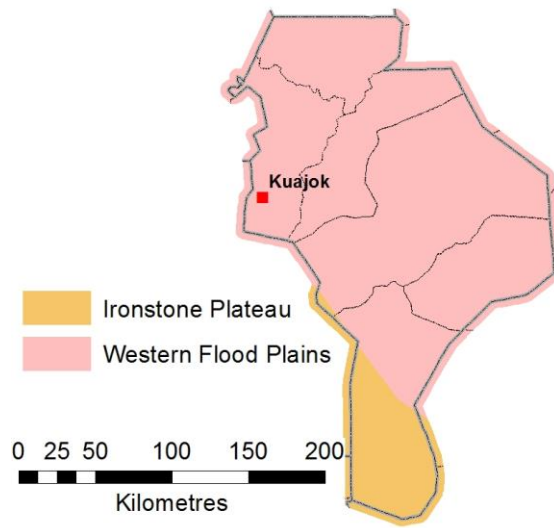


Source: (Map) NBS; (Table)<sup>a</sup> WFP. 2013. ANLA; <sup>b</sup> Land scale data applied from FAO. 2011. Land Cover Atlas of the Republic of South Sudan.

### Climate chart (Kuajok)

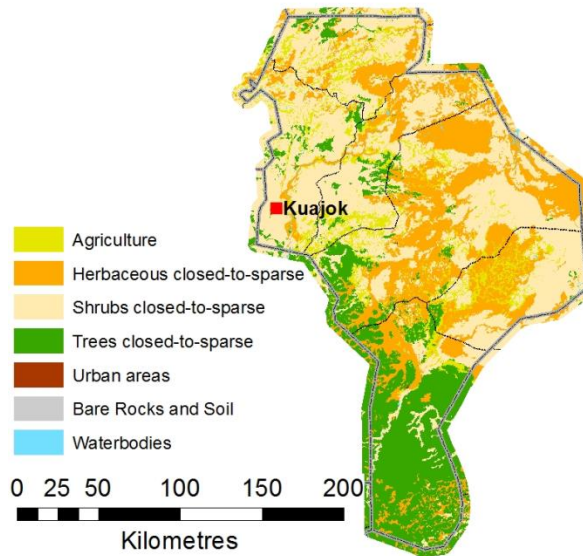


**Livelihood zones**



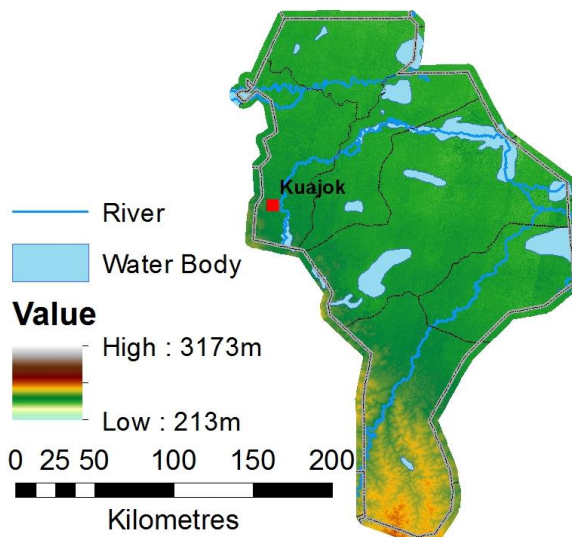
Source: NBS.

**Land cover**



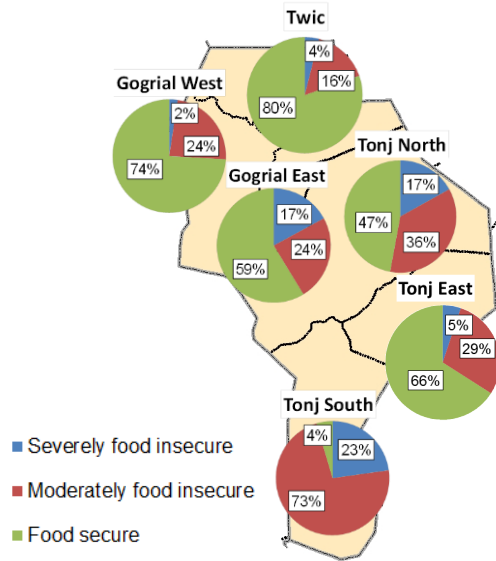
Source: FAO. 2011.

**Topography**



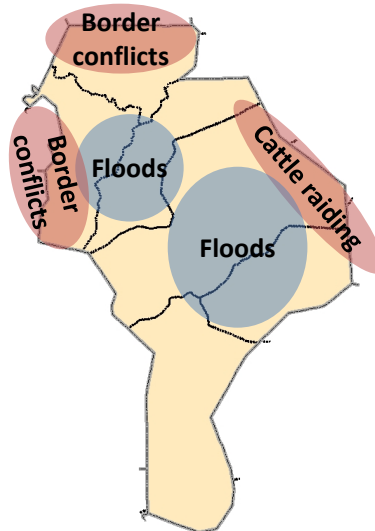
Source: NBS.

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



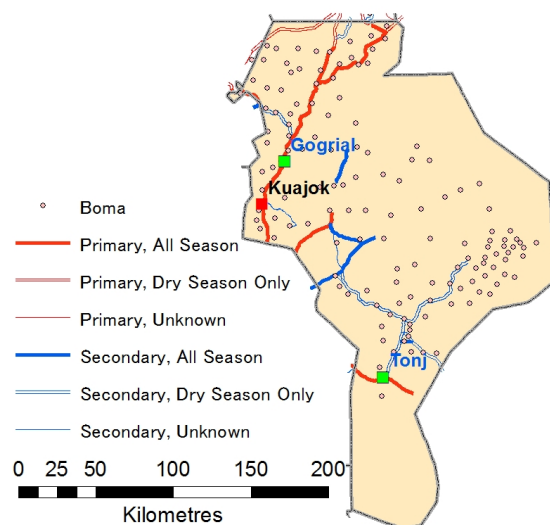
Source: WFP.2013.ANLA.

### Insecurity and natural disaster



Source: CAMP survey team 2013.

### Road and Boma location



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

## 4.2 State Ministry of Agriculture and Forestry (MAF)

Organogram				Staff																																															
<pre> graph TD     Minister --&gt; DG[Director General]     Minister --&gt; MO[Minister's office]     Minister --&gt; MA[Minister's Advisor]     DG --&gt; DA[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>				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>Minister's office</b></td> <td><b>8</b></td> </tr> <tr> <td><b>Directorate of Agriculture and Production</b></td> <td><b>54</b></td> </tr> <tr> <td>Department of Agriculture</td> <td>(-)</td> </tr> <tr> <td>Department of Plant Production</td> <td>(-)</td> </tr> <tr> <td>Department of Extension</td> <td>(-)</td> </tr> <tr> <td>Department of Soil Development</td> <td>(-)</td> </tr> <tr> <td>Department of Mechanization</td> <td>(-)</td> </tr> <tr> <td>Department of Horticulture</td> <td>(-)</td> </tr> <tr> <td>Department of Food Security and Inventory</td> <td>(-)</td> </tr> <tr> <td><b>Directorate of Forestry</b></td> <td><b>30</b></td> </tr> <tr> <td>Department of Afforestation</td> <td>(-)</td> </tr> <tr> <td>Department of Utilisation</td> <td>(-)</td> </tr> <tr> <td><b>Directorate of Planning, Research and Training</b></td> <td><b>20</b></td> </tr> <tr> <td>Department of Planning</td> <td>(-)</td> </tr> <tr> <td>Department of Research and Training</td> <td>(-)</td> </tr> <tr> <td>Department of Monitoring and Evaluation</td> <td>(-)</td> </tr> <tr> <td><b>Directorate of Administration and Finance</b></td> <td><b>74</b></td> </tr> <tr> <td>Department of Administration and Finance</td> <td>(-)</td> </tr> <tr> <td>Department of Establishment</td> <td>(-)</td> </tr> <tr> <td>Department of Account</td> <td>(-)</td> </tr> <tr> <td>Department of Procurement</td> <td>(-)</td> </tr> <tr> <td><b>Total</b></td> <td><b>186</b></td> </tr> </tbody> </table>		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>																																																			

### 4.3 Crop

#### Services provided by DPs and NGOs

Organisation	Activities	Area	Target
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.

#### Services provided by private sector

**(Tractor hiring service)**

- There are few tractor hiring service providers. (SSP 200/feddian for ploughing.)

**(Agro-dealers)**

- Agro-dealers are not found in the state.

**(Financial institution)**

- Financial providers for farmers are not found in the state.

<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.

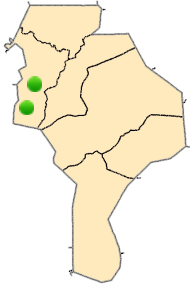
<b>Transportation cost (Kuajok, May-June 2013)</b>			
<b>Type</b>	<b>Unit</b>	<b>Currency</b>	<b>Cost</b>
Transport cost (Uganda-Kuajok)	Truck	Ush	30,000
Porterage (on/off loading)	Truck	SSP	1,000

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

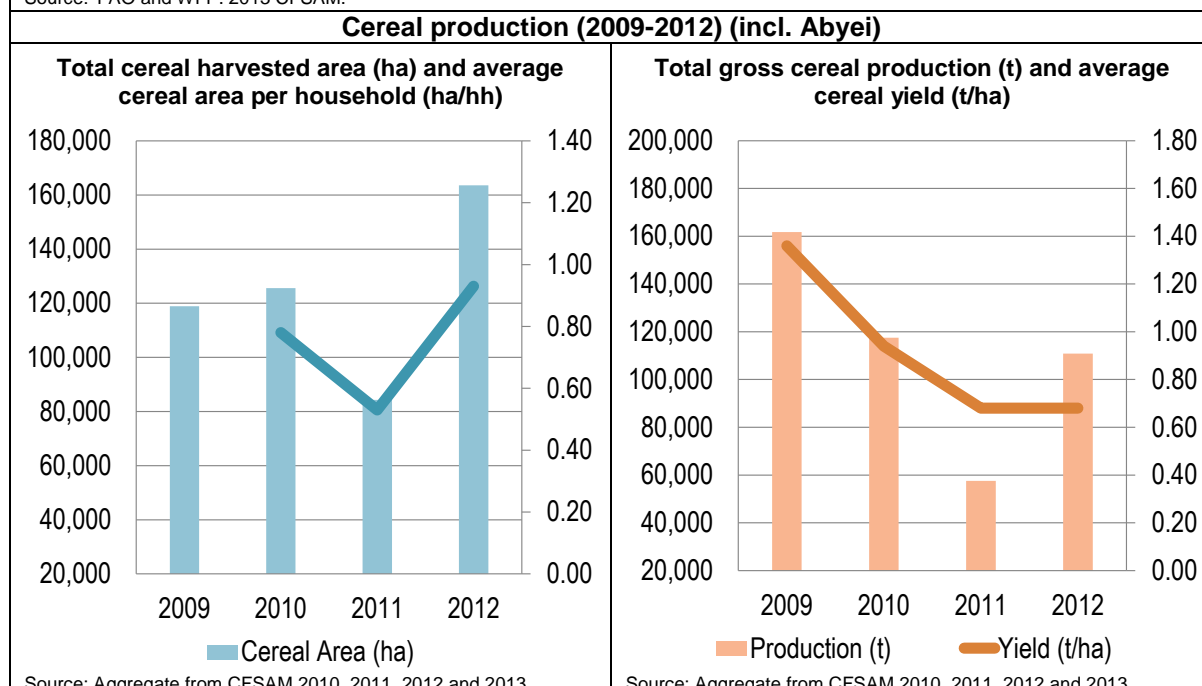
<b>Taxes and charges (Kuajok, May-June 2013)</b>			
<b>(Trader/ retailer)</b>			
<b>Type</b>	<b>Cost (SSP)</b>		<b>Frequency</b>
Licence	1,000		Annually
Rent	1,700		Monthly
Market cleaning fee	30		Monthly
Police service	30		Monthly
<b>(Retailer)</b>			
<b>Type</b>	<b>Cost (SSP)</b>		<b>Frequency</b>
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		<b>Survey area</b> 
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.



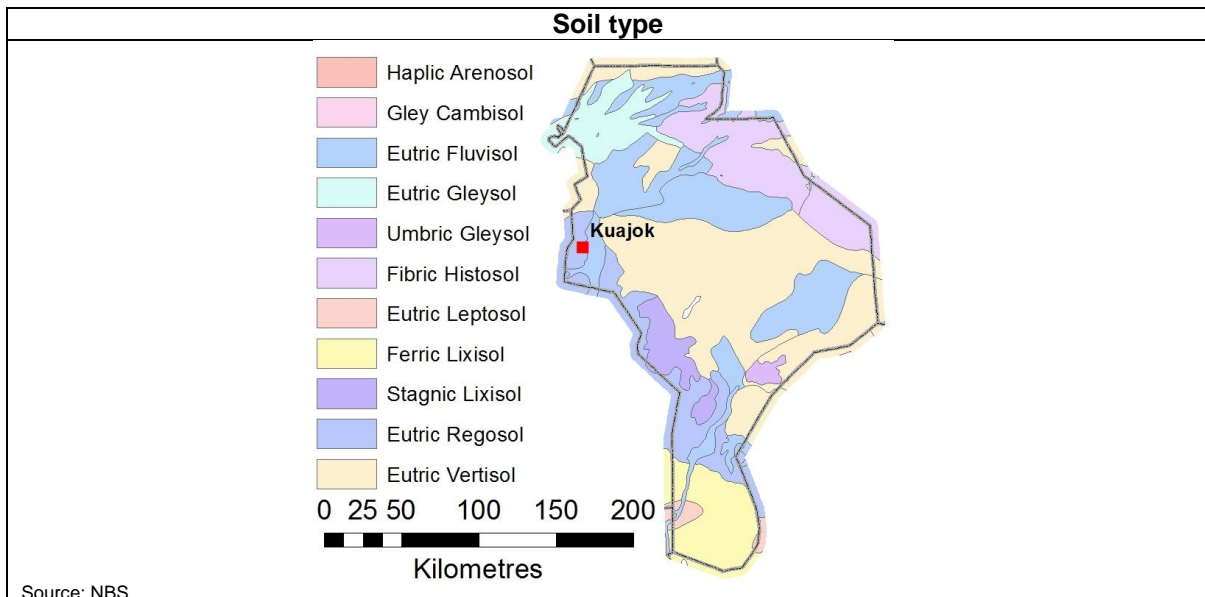
Source: Aggregate from CFSAM 2010, 2011, 2012 and 2013.

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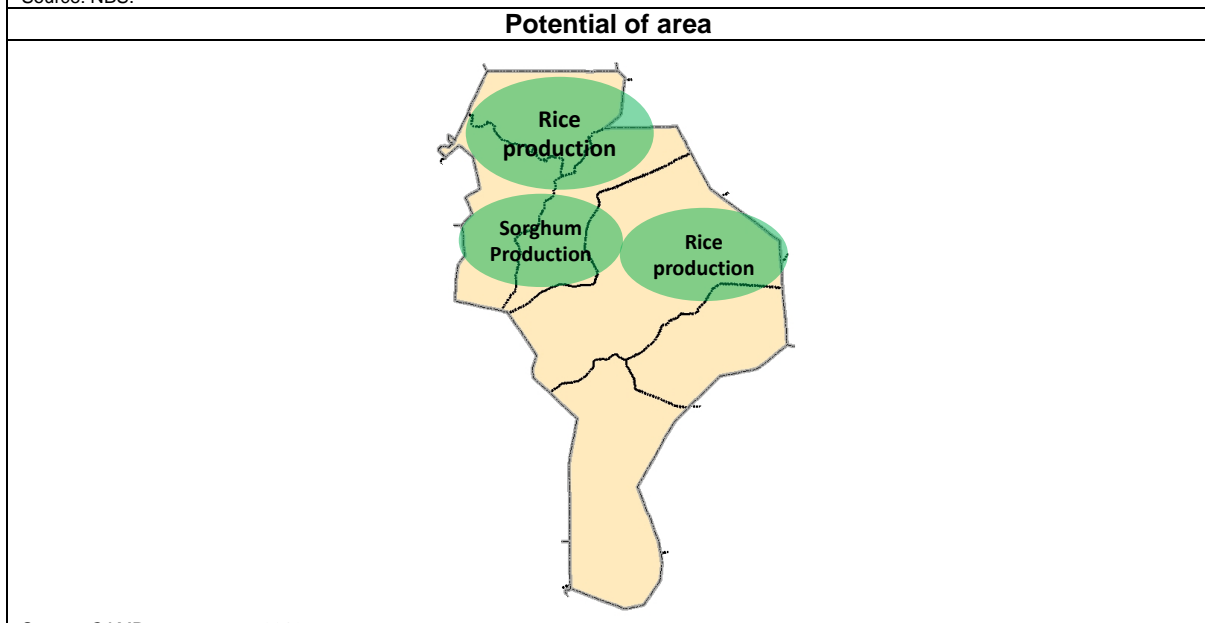
Crop production by livelihood zone			
Ironstone Plateau		Western Flood Plains	
Major agricultural products			
<b>Crop</b>	<b>Vegetable</b>	<b>Crop</b>	<b>Vegetable</b>
Sorghum	Tomato	Sorghum	Tomato
Rice	Jew's mallow	Rice	Jew's mallow
<b>Cash Crop</b>	Okra	Maize	Okra
Groundnut	Onion	<b>Cash Crop</b>	Onion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

Cropping calendar												
Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maize		H		L	S			H	H	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											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		S		T				H			
	L Land preparation   S Sowing   T Transplanting   H Harvesting											

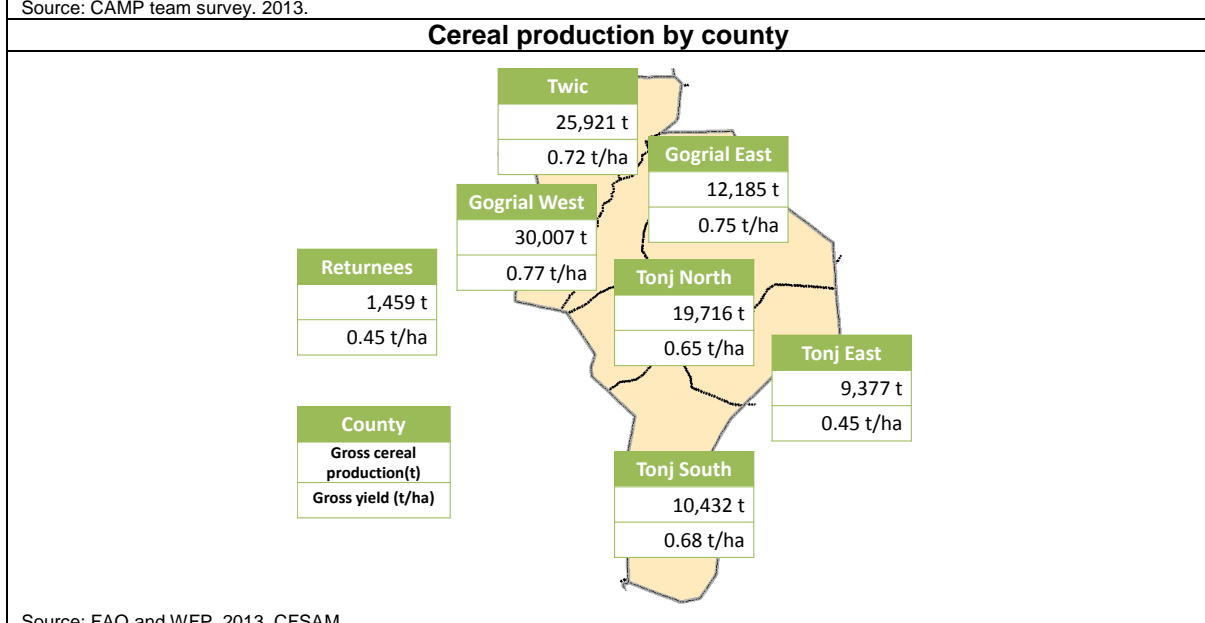
Source: CAMP survey team. 2013.



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.

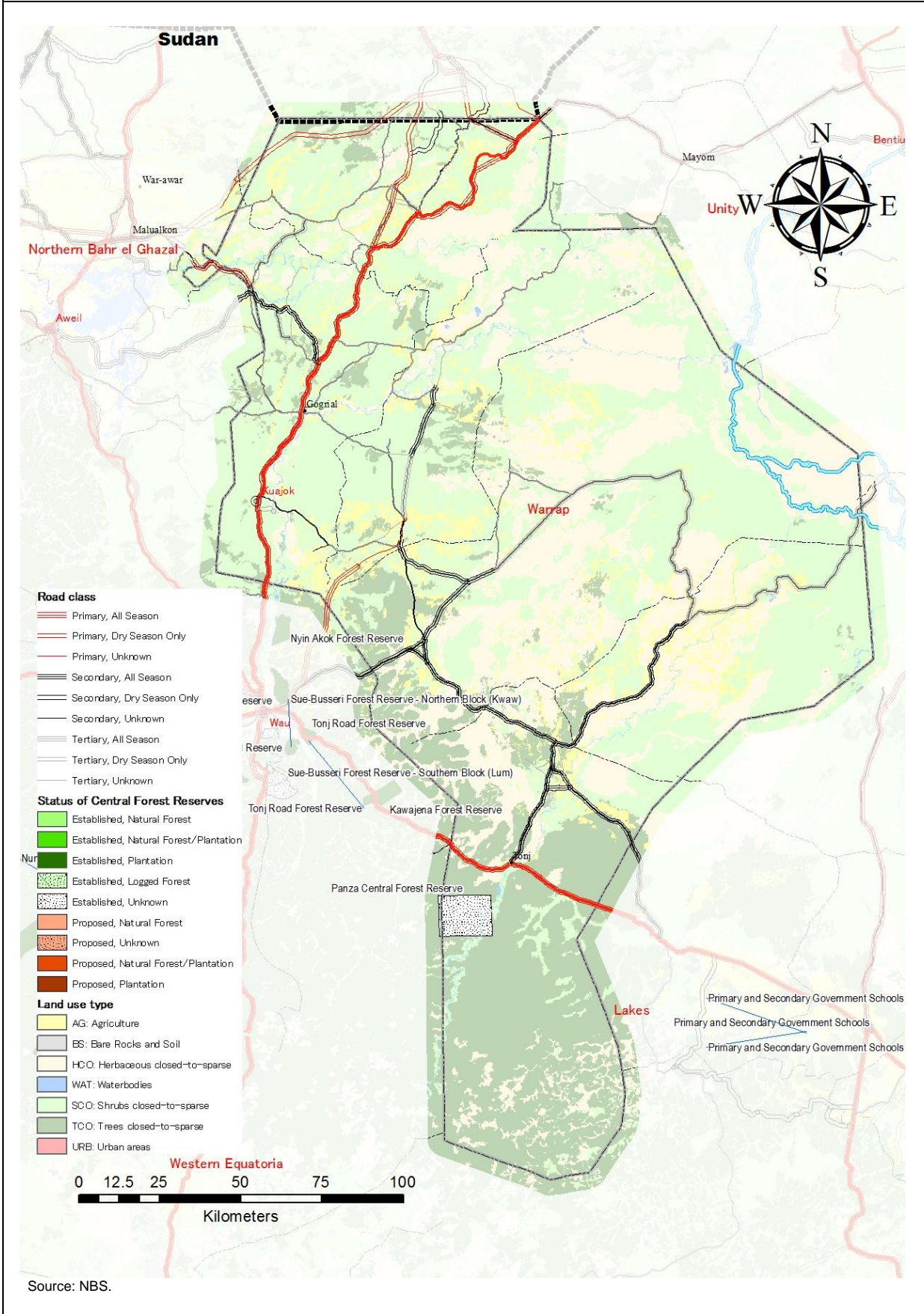
**Land cover percentage to total area**

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



<b>4.5 State Ministry of Animal Resources and Fisheries (MARF)</b>																																		
<b>Organogram</b>			<b>Staff</b>																															
<p>Minister — Director General — Directorate of Finance and Administration            — Directorate of Livestock Development            — Directorate of Fisheries            — Directorate of Extension, Research and Training</p>			<b>Breakdown of information not fully available</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>	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			<b>Warrap State Strategic plan (2012-15)</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>• 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>																															
			<b>Budget Plan</b>																															
			(Information not available) <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>																															
			<b>Activities</b> <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>																																		
<b>(Animal production services)</b> <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>																																		
<b>(Animal health services)</b> <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.

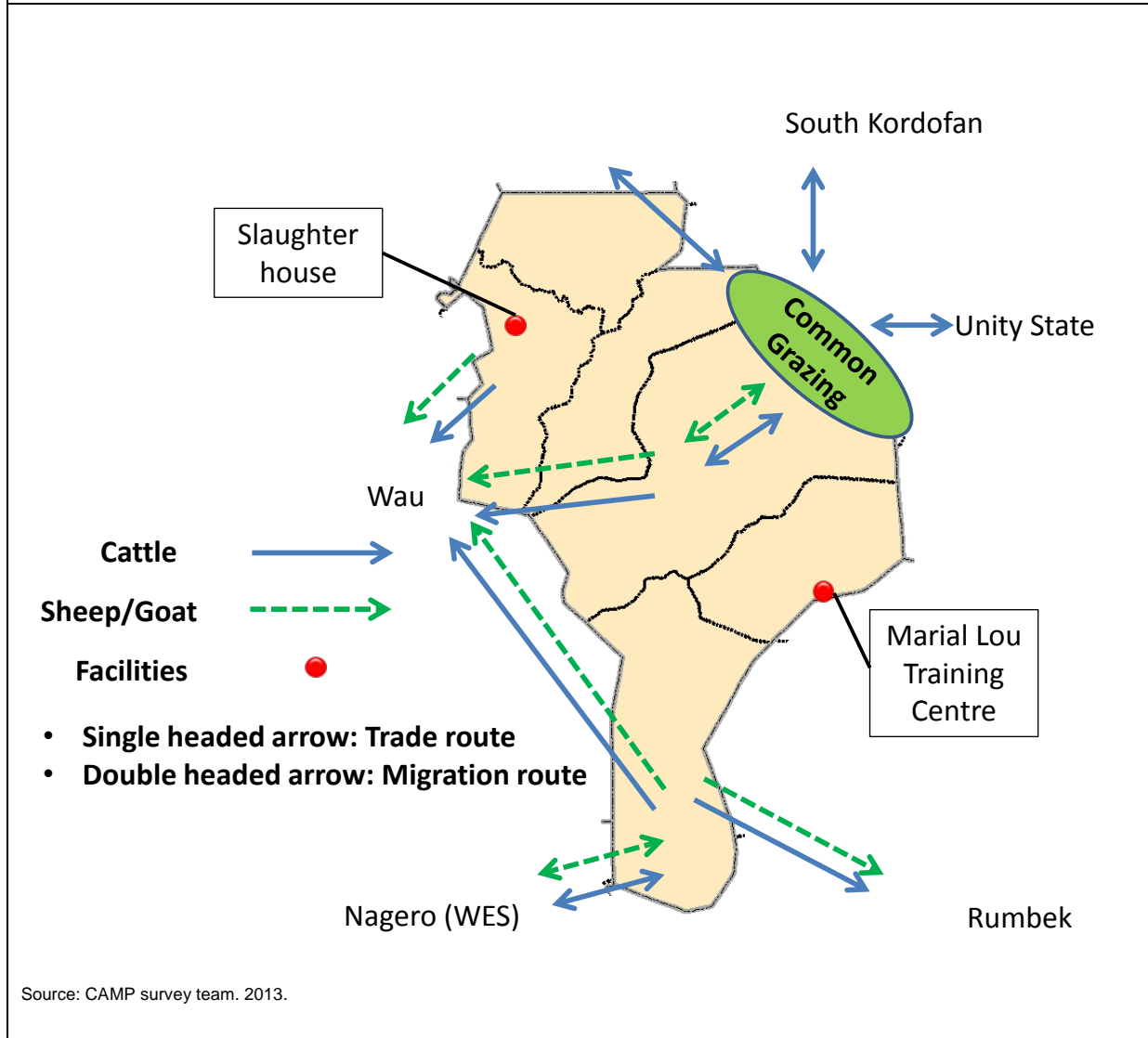


Taxes and charges		
Type	Cost (SSP)	Frequency
(Information not available)	(Information not available)	(Information not available)

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**

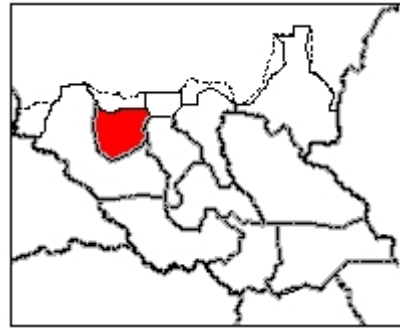


Source: CAMP survey team. 2013.

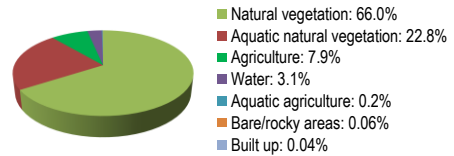
<b>Cross-cutting issues</b>
<p><b>(Land)</b></p> <ul style="list-style-type: none"> <li>• Competition over common grazing area along state border with Unity State and international border</li> </ul> <p><b>(Migration)</b></p> <p>Following cattle movements are confirmed.</p> <ul style="list-style-type: 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> )

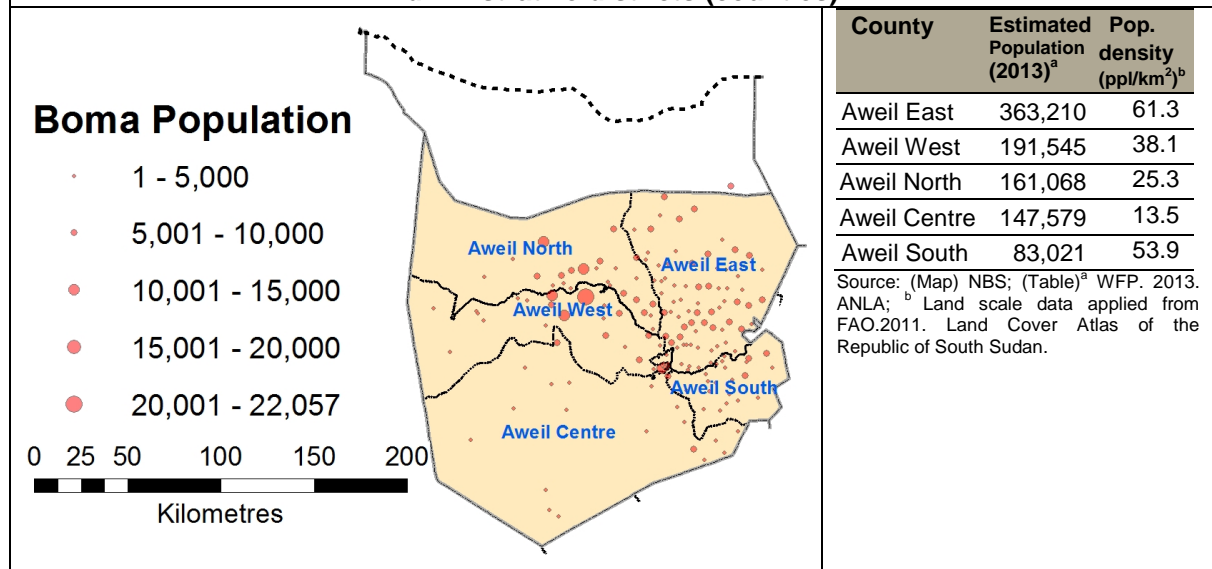


Land cover <sup>g</sup>

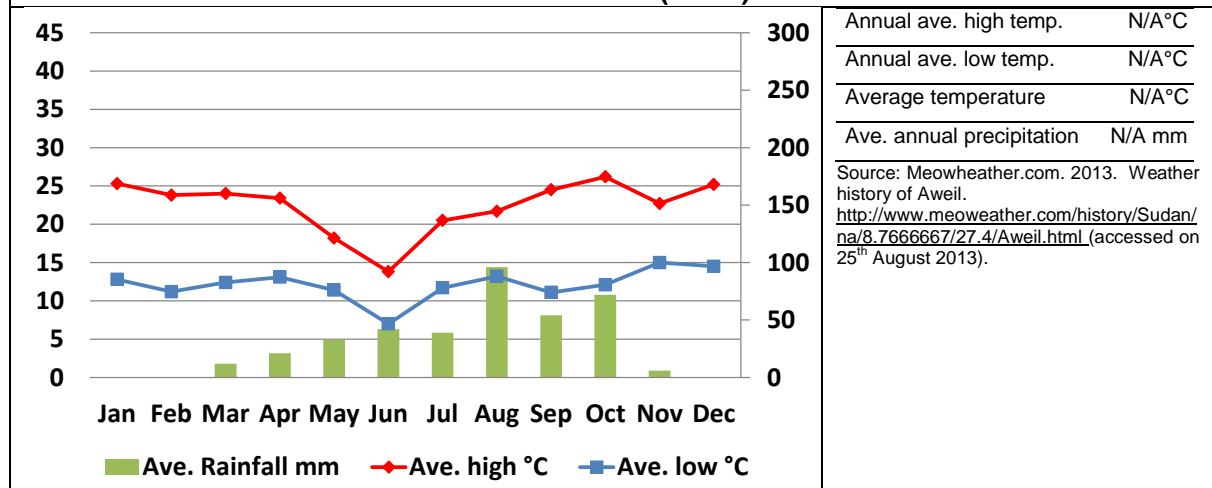


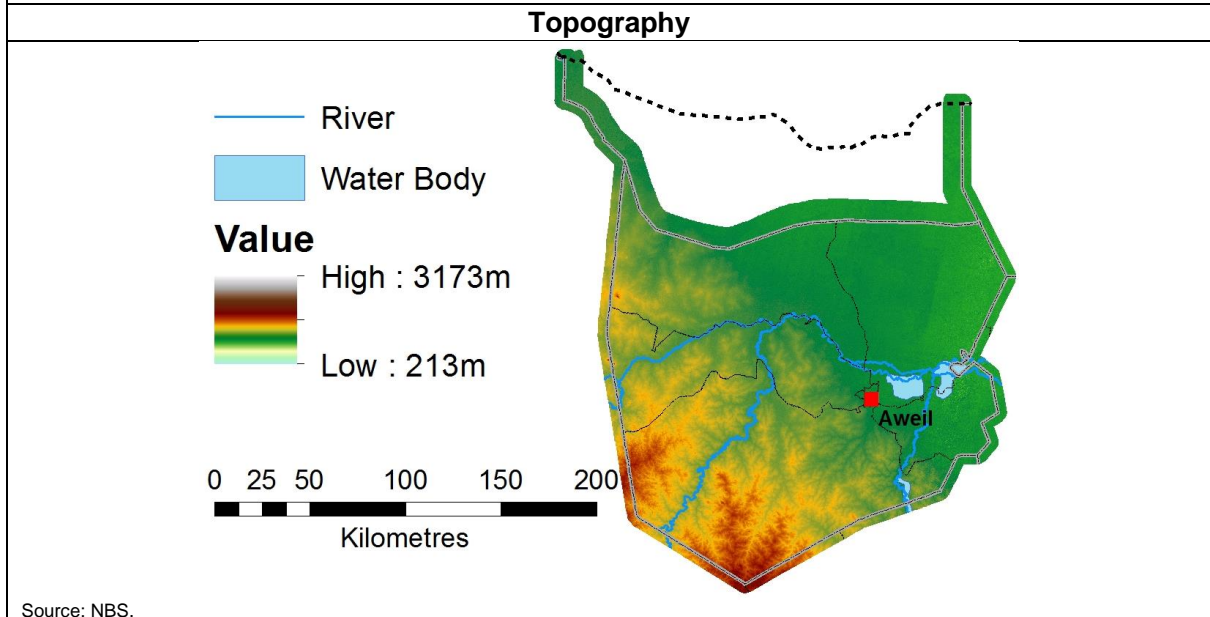
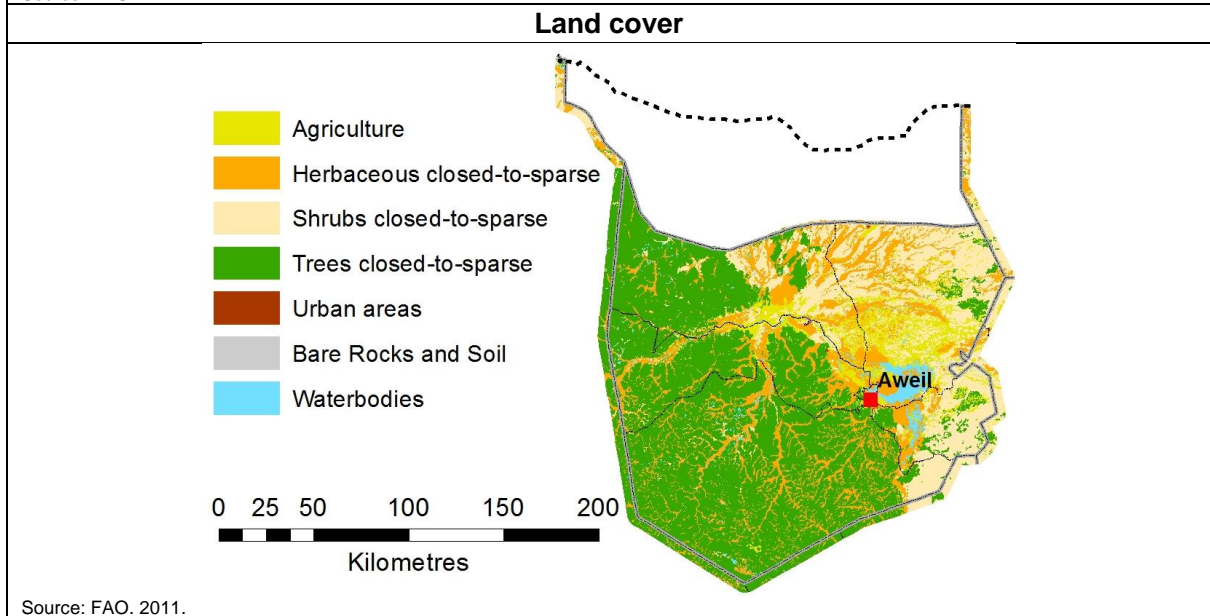
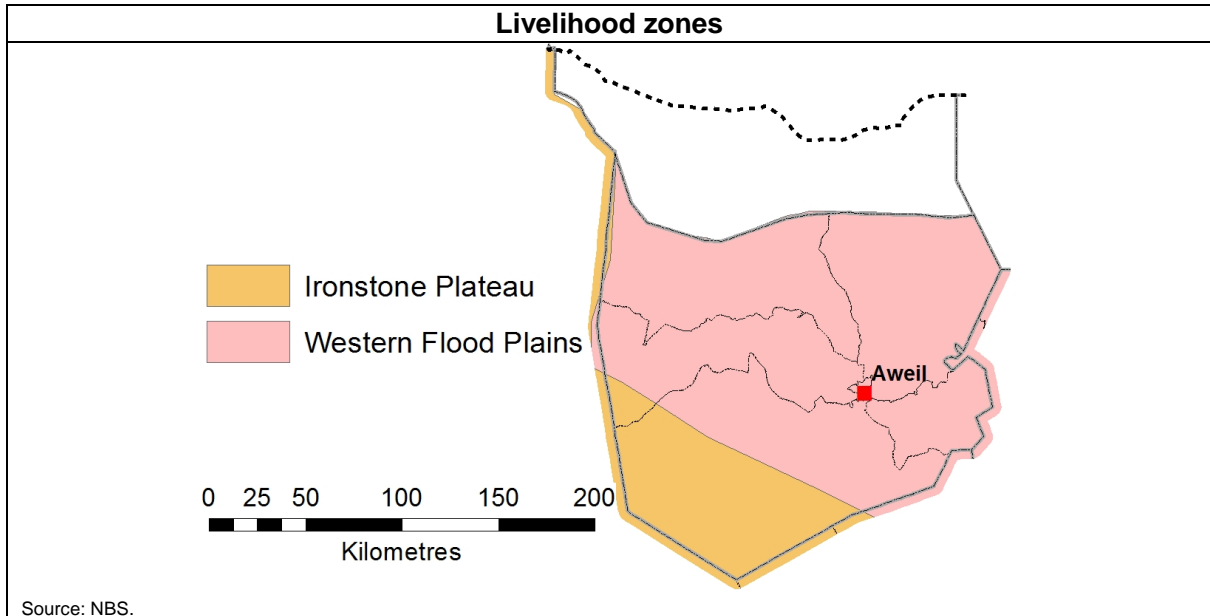
Source: <sup>a</sup> SSCSE. 2010. Southern Sudan Counts: Tables from the 5th Sudan Population and Housing Census, 2008; <sup>b</sup> WFP. 2013. ANLA; <sup>c</sup> FAO. 2011. Land Cover Atlas of the Republic of South Sudan; <sup>d</sup> Originla data source of NBS. 2012. NBHS 2009; <sup>e</sup> NBS. 2012.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

### Administrative districts (counties)

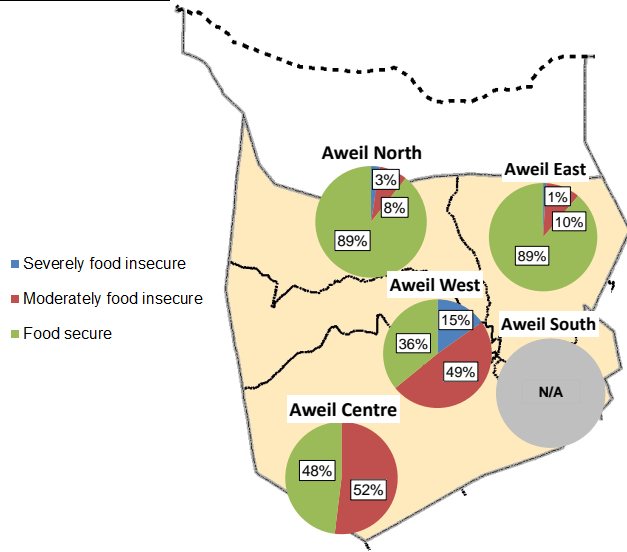


### Climate chart (Aweil)



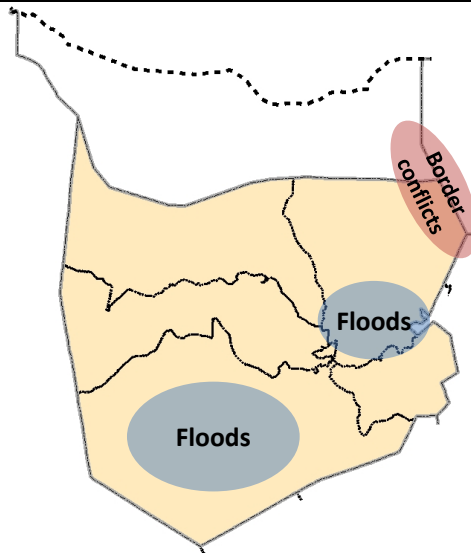


**Estimated food security status by county (2013)**



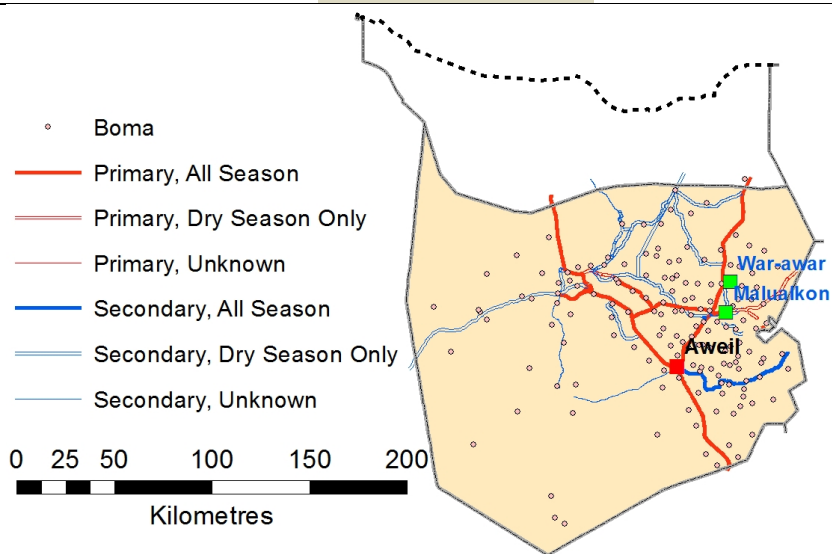
Source: WFP.2013.ANLA.

**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>																																													
<b>Organogram</b>			<b>Staff</b>																																										
<pre> graph TD     Minister --&gt; DG[Director General]     DG --&gt; D1[Directorate of Agriculture and Extension Services]     DG --&gt; D2[Directorate of Forestry]     DG --&gt; D3[Directorate of Plant Protection]     DG --&gt; D4[Directorate of Planning and Economics]     DG --&gt; D5[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 Agriculture and Extension Services</b></td> <td style="text-align: center;">53</td> </tr> <tr> <td>Department of Plant Protection</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Agriculture Extension</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Mechanization and Irrigation</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Agronomy</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Directorate of Forestry</b></td> <td style="text-align: center;">-</td> </tr> <tr> <td>Department of Forestry and Extension</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>Department of Industry and Non-wood</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Forestry Utility and Mills</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Natural Conservation</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Directorate of Plant Protection</b></td> <td style="text-align: center;">-</td> </tr> <tr> <td><b>Directorate of Planning and Economics</b></td> <td style="text-align: center;">2</td> </tr> <tr> <td>Department of Research and Training</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Project Formulation</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Statistics and Data Management</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Directorate of Administration and Finance</b></td> <td style="text-align: center;">9</td> </tr> <tr> <td>Department of Finance</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td>Department of Administration</td> <td style="text-align: center;">(-)</td> </tr> <tr> <td><b>Total</b></td> <td style="text-align: center;"><b>64</b></td> </tr> </tbody> </table>	Section	Number of staff	<b>Directorate of Agriculture and Extension Services</b>	53	Department of Plant Protection	(-)	Department of Agriculture Extension	(-)	Department of Mechanization and Irrigation	(-)	Department of Agronomy	(-)	<b>Directorate of Forestry</b>	-	Department of Forestry and Extension	(-)	Department of Survey and Inventory	(-)	Department of Industry and Non-wood	(-)	Department of Forestry Utility and Mills	(-)	Department of Natural Conservation	(-)	<b>Directorate of Plant Protection</b>	-	<b>Directorate of Planning and Economics</b>	2	Department of Research and Training	(-)	Department of Project Formulation	(-)	Department of Statistics and Data Management	(-)	<b>Directorate of Administration and Finance</b>	9	Department of Finance	(-)	Department of Administration	(-)	<b>Total</b>	<b>64</b>
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<b>NBG State strategic plan (2012-15)</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>Objective</td> <td style="text-align: center;">(Information not available)</td> </tr> <tr> <td>Budget</td> <td style="text-align: center;">(Information not available)</td> </tr> <tr> <td>Plan</td> <td style="text-align: center;">(Information not available)</td> </tr> <tr> <td>Activities</td> <td style="text-align: center;">(Information not available)</td> </tr> </tbody> </table>				Objective	(Information not available)	Budget	(Information not available)	Plan	(Information not available)	Activities	(Information not available)																																		
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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.</p> <p>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.

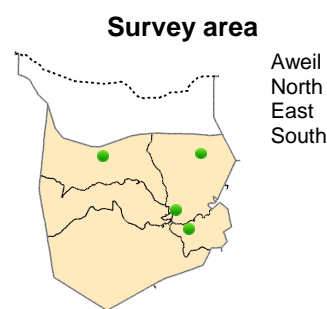
##### (Financial institution)

- (Information not available)

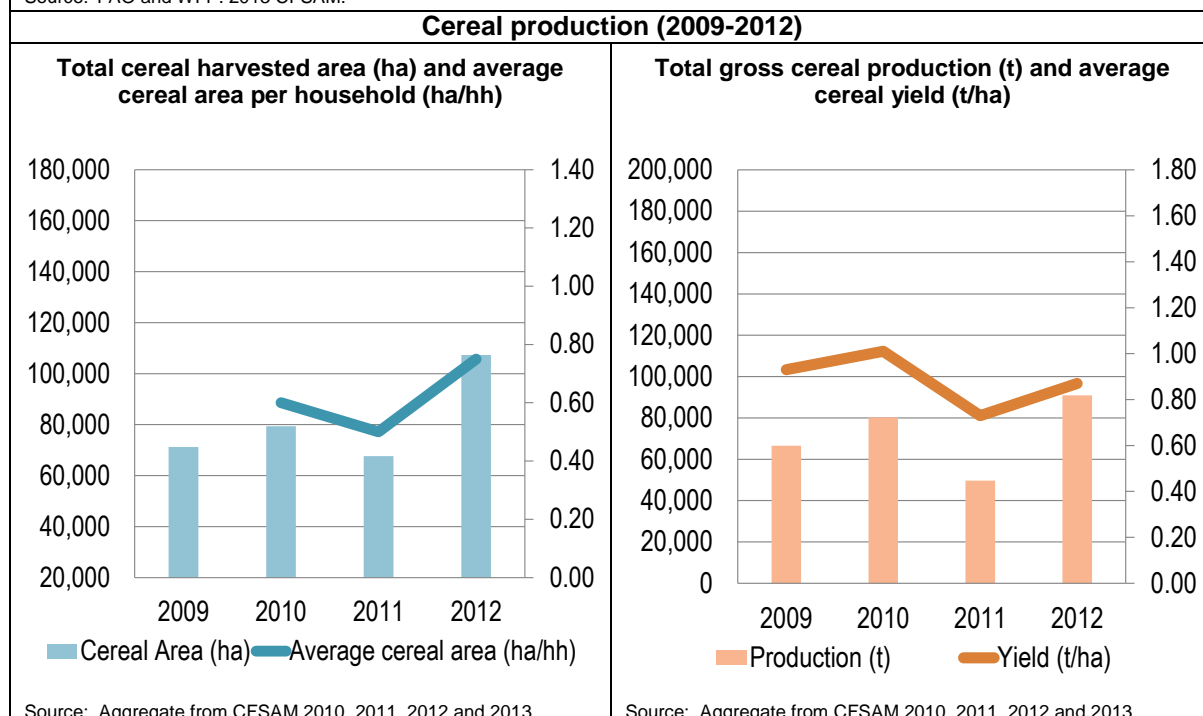
Market						
Agricultural products and their origin (Aweil, May, 2013)						
<b>(Crop)</b>			<b>(Others)</b>			
Item	Type	Origin	Item	Type	Origin	
Sorghum	Import	Sudan	Tomato	Import	Sudan	
	Domestic	-		Domestic	NBG State	
Maize flour	Import	Uganda	Onion	Import	Sudan	
	Domestic	-		Domestic	-	
Rice	Import	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			
Market price (Retail price, Aweil, May 2013)						
Item	Unit	Price (SSP) (range)				
		Low season				High season
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.						
Transportation cost (Aweil, May 2013)						
Type	Unit	Currency	Cost (range)			
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.						
Taxes and charges (Aweil, May 2013)						
<b>(Trader/retailer)</b>						
Type	Cost (SSP) (range)		Frequency			
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>						
Type	Cost (SSP)		Frequency			
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.

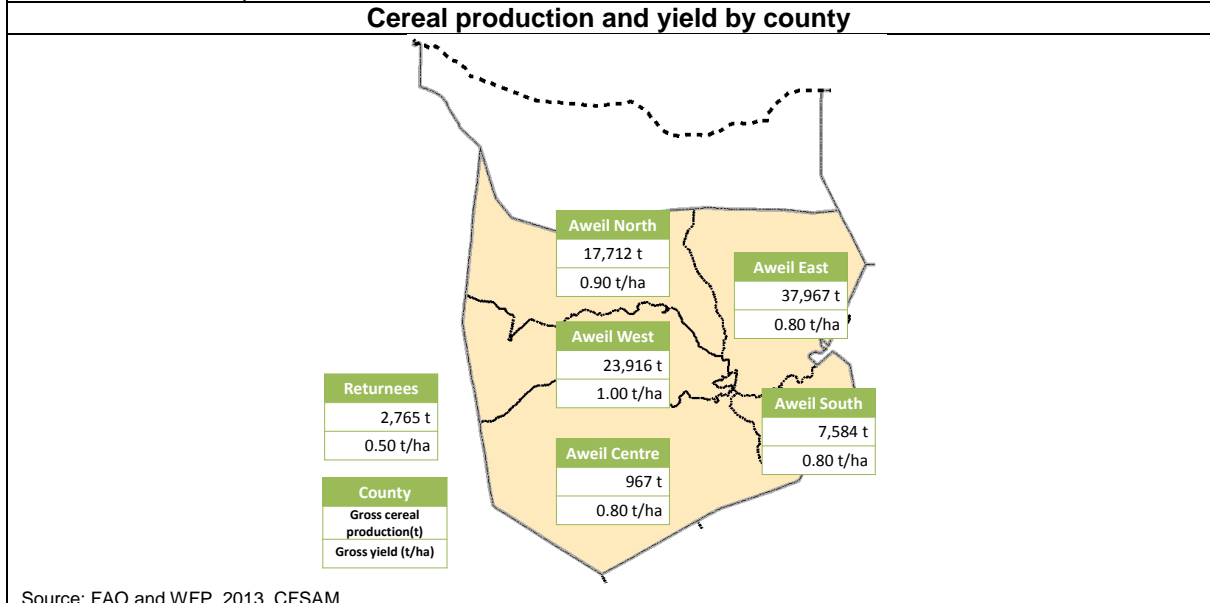
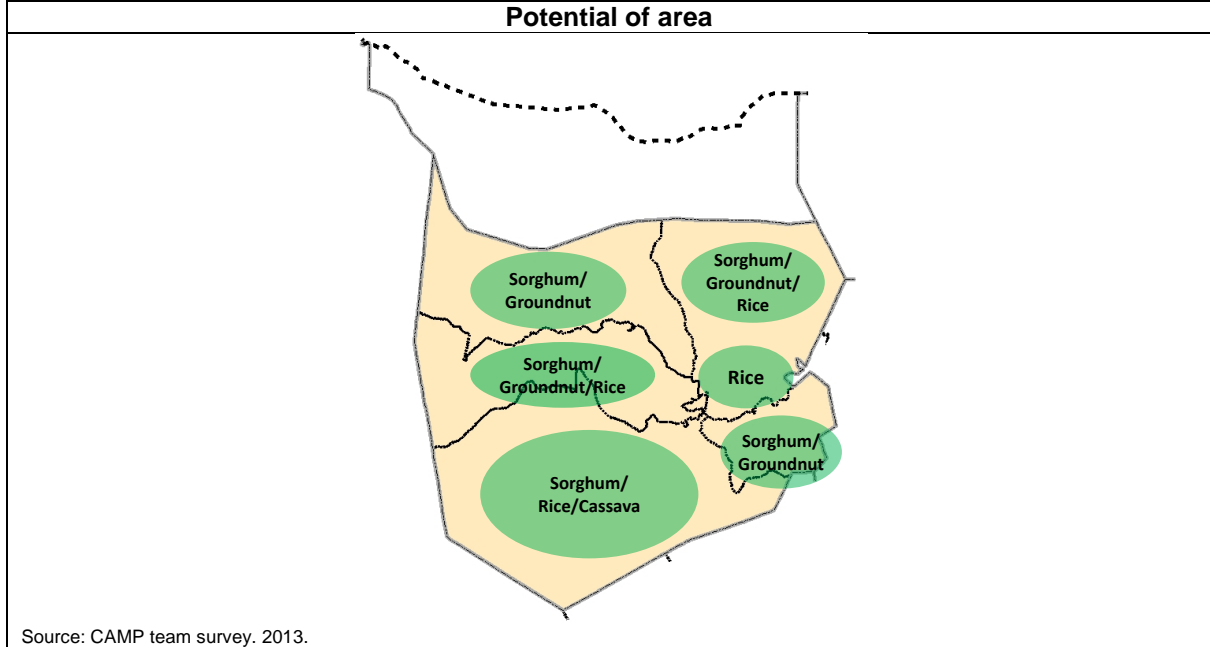
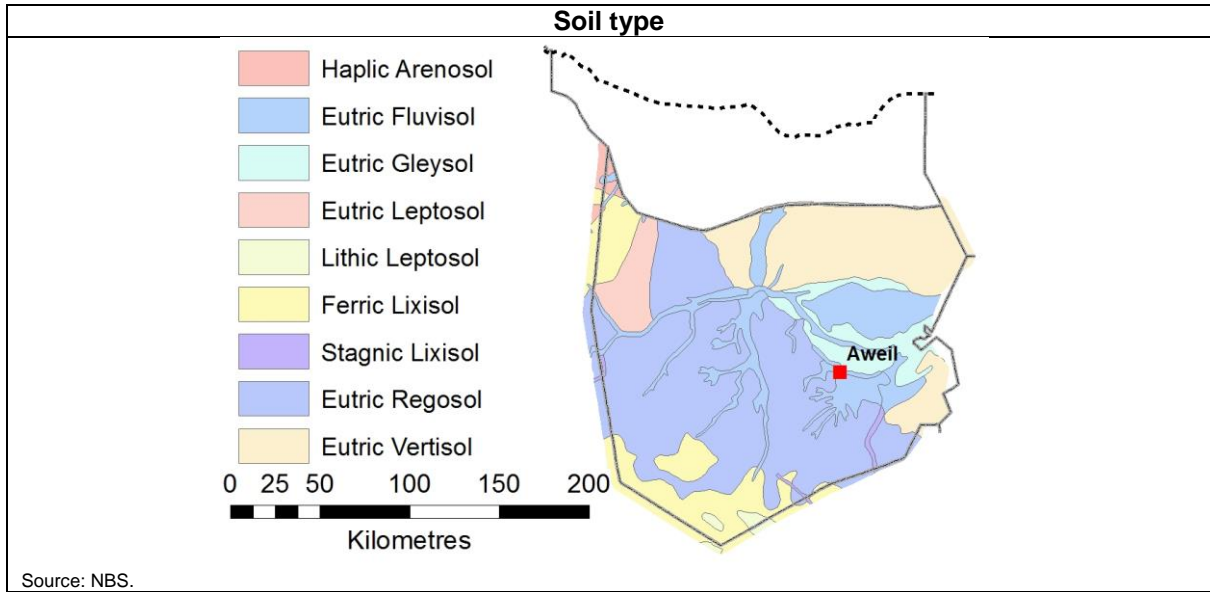
Source: Aggregate from CFSAM 2010, 2011, 2012 and 2013.

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
Maize		L	L	L	S				H	H		
Sorghum		L	L	L	S				H	H		
Rice		L	L	L	L	S	S	S			H	H
Bean		L				S	S	H	H			
Groundnut		L	L	L	L	S		S		H	H	
Sesame		L			S				H			

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>• 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)

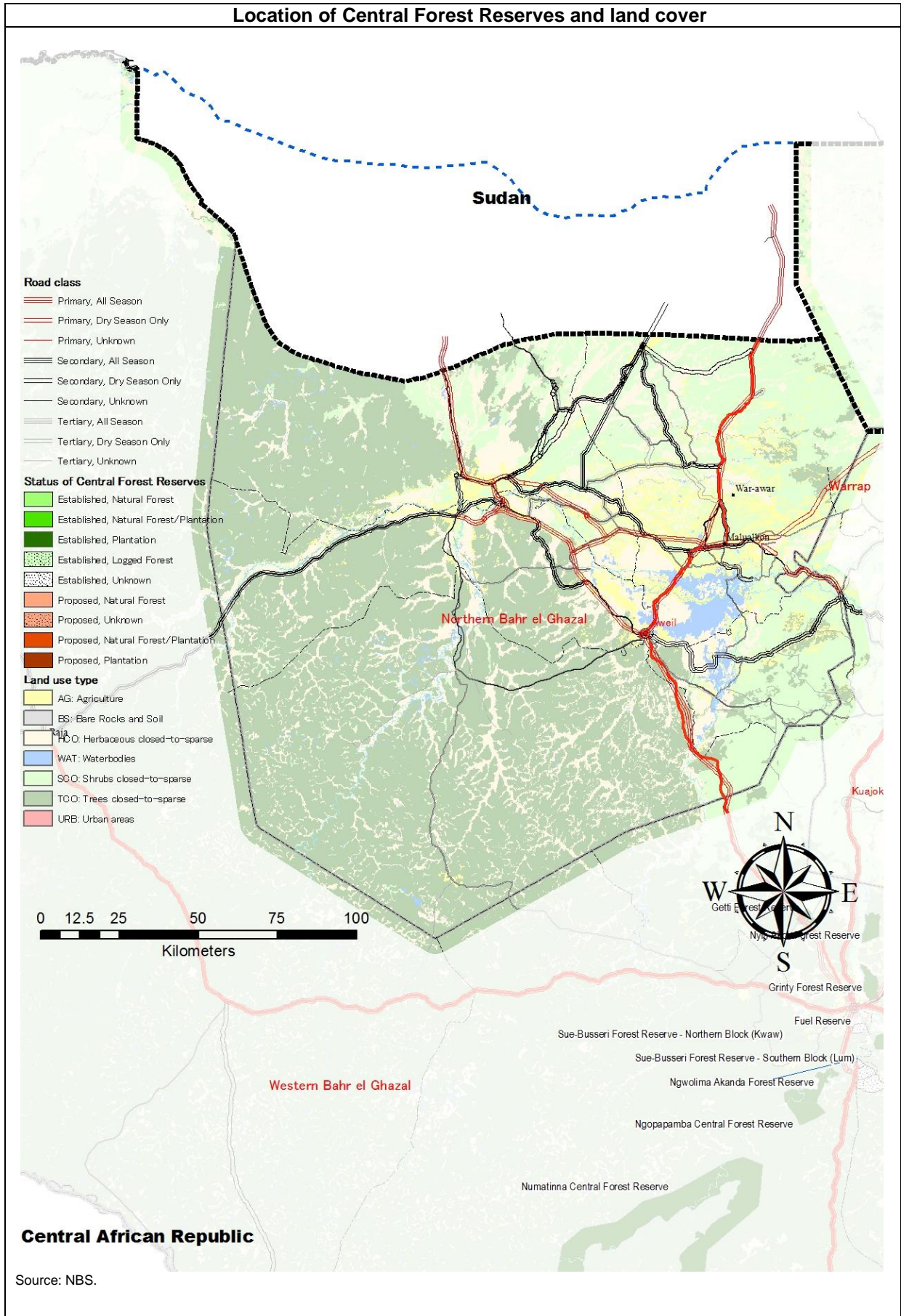
Source: CAMP team survey, 2013.

#### 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
Total	8.1%	52.9%	16.8%	19.0%	0.0%	0.1%	3.1%	100.0%	2,981,879

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	<div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Directorate of Finance and Administration</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Directorate of Planning and Budgeting</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Directorate of Animal Health</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Directorate of Animal Production</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Directorate of Fisheries</div> <div style="border: 1px solid black; padding: 2px;">Directorate of Extension</div> </div>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Section</th> <th style="text-align: right;">Number of staff</th> </tr> </thead> <tbody> <tr> <td>Classified staff</td> <td style="text-align: right;">31</td> </tr> <tr> <td><b>Directorate of Finance and Administration</b></td> <td style="text-align: right;"><b>(5)</b></td> </tr> <tr> <td><b>Directorate of Planning and Budgeting</b></td> <td style="text-align: right;"><b>(2)</b></td> </tr> <tr> <td><b>Directorate of Animal Health</b></td> <td style="text-align: right;"><b>(14)</b></td> </tr> <tr> <td><b>Directorate of Animal Production</b></td> <td style="text-align: right;"><b>(1)</b></td> </tr> <tr> <td><b>Directorate of Fisheries</b></td> <td style="text-align: right;"><b>(9)</b></td> </tr> <tr> <td><b>Directorate of Extension</b></td> <td style="text-align: right;"><b>(-)</b></td> </tr> <tr> <td colspan="2"><hr/></td> </tr> <tr> <td>Unclassified staff</td> <td style="text-align: right;">25</td> </tr> <tr> <td><b>Grand total</b></td> <td style="text-align: right;"><b>56</b></td> </tr> </tbody> </table> <p>Source: State MARF.</p>	Section	Number of staff	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>	<hr/>		Unclassified staff	25	<b>Grand total</b>	<b>56</b>
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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

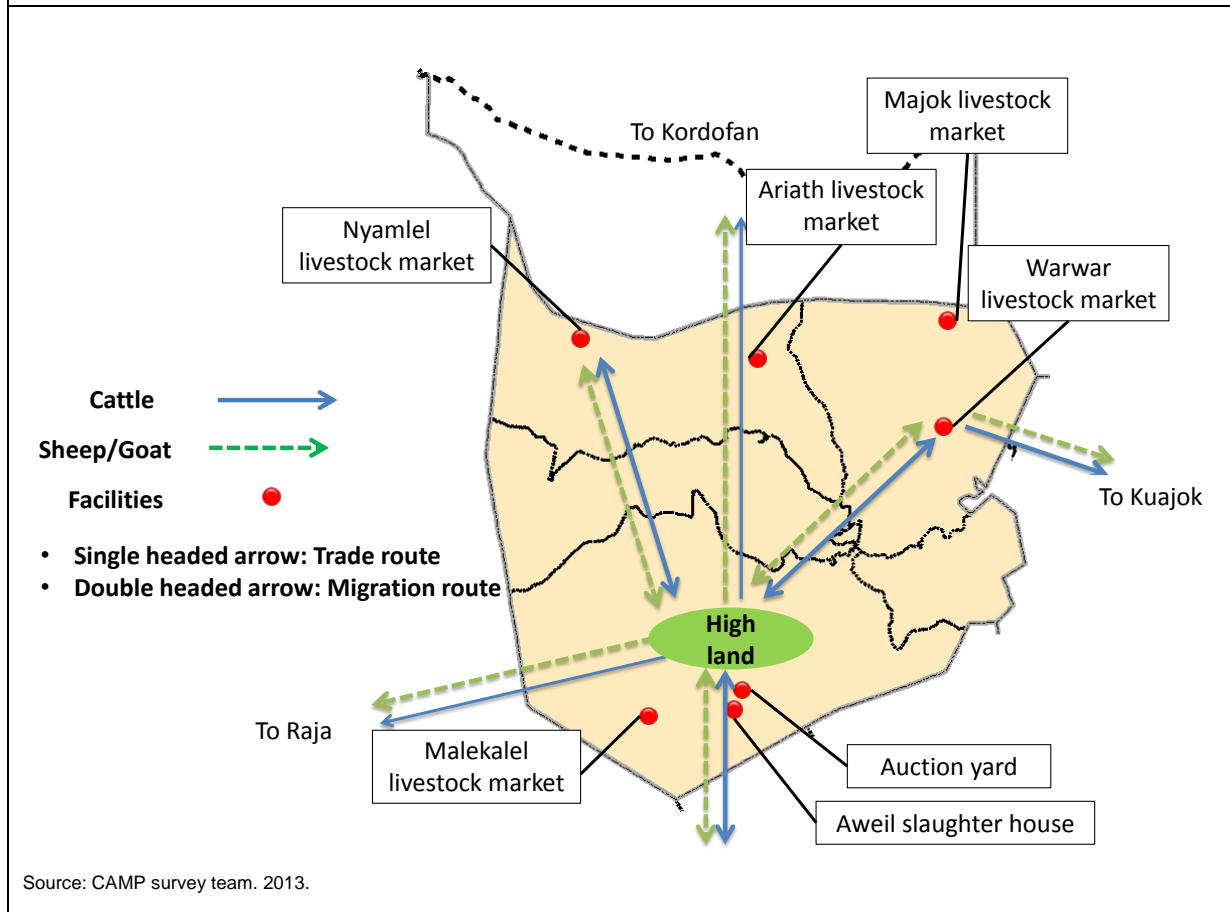
Source: CAMP survey team. 2013.

\* 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.

### 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 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>

5.7 Fisheries					
<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.				
Aquaculture					
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.					
Post-harvest and marketing					
<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.</p> <p>(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)</p> <p>Prices of sun dried fish in Aweil (2013) are given below.</p>					
Species	Presentation	SSP/kg	Species	Presentation	SSP/kg
Alestes	Sun dried	60.98			
Uganda pelagics	Sun dried	26.63			
Clarius anguillaris	Sun dried	53.33			

