Introduction

This booklet intends to give a snap-shot of Lakes State in South Sudan. Located in the centre of South Sudan Lakes represent much of the challenges and strengths of the world’s newest country: dynamic and traditional; abundant potential but a delicate resource system; rich in livestock yet also food insecure; an area in rapid transformation. As snapshots go the story is told in pictures - on people, their economy; the resources and the support systems.

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According to the South Sudan Centre for Census, Statistics, and Evaluation (SSCCSE) Lakes State covers approximately 40,235 Km². There are a projected 807,203 people in Lakes State (91 % rural). The population in Lakes is composed mainly of Dinka, Atuot and Jur tribal groupings. The Dinka and Atuot are agro-pastoralists, whereas the Jur are sedentary farmers.

The population is very young: 50 % is less than 18 years old. According to the South Sudan Bureau of Statistics 49 % of the population is below the poverty line. The economy is large non-monetized: 51 % of households did not have any monetary transaction in the week prior to the statistical survey.
In the flat floodplain area small differences matter considerably in the landscape. The main distinction is between the flood plains and the slightly higher crop and land and forest land. Within the floodplain soil types and their capacity to store water matter a lot.

The drying of the area is manifest in the encroachment of trees of previously completely open grazing areas.
Burnt grass in river flood plain in Billing

Savannah wood and grass land
The rivers shaping Lakes State originate from the Nile-Congo Divide. The rivers end in the extensive flood plains of the northern regions of Lakes State. Typically they do not reach the Bahr El Jebel and Bahr El Ghazal during the flood season, but drain into these main rivers once water levels are lowered in the dry season.

There is a clear distinction between the wet season (June-November) and dry season (December-May). At the end of the dry season rivers turn ephemeral. Rainfall patterns have changed. The rainy season is now starting later and total rainfall amounts have reduced with an estimated 20% compared to the period 1980-2000.
Baar Naam Midstream at Main Brigde

Baar Naam upstream at Mvolo

Baar Naam upstream in Billing Floodplain

Tail end Baar Naam at Lake Akew
Lakes

There are a large number of seasonal wetlands and a number of permanent lakes: Lake Yirol and Lake Nyubor. The toic grazing areas around the lakes are the last resort for the massive cattle population in the dry season.
There has been considerable progress in road development in Lakes State, with much work on the trunk roads. At present the emphasis is on the development of feeder road. Roads help to extend security, yet their maintenance is a major challenge. Roads also affect surface hydrology. Particularly when cross drainage is in adequate roads can have a large effect on the soil moisture in the landscape and the functioning of local streams.
Much progress has been made in the provision of safe drinking water - dating back from the war, but coverage and sustainability remain large challenges. According to the South Sudan Bureau of Statistics 71% of the population has access to safe water sources, but this may far less.

There are clear problem spots. In part of Cueibet the water scarcity and competition with bees is so severe that entire families move out in the dry period. In Yirol the population of the town more than doubles in this season by ‘water’ refugees. Another health problem is the practice of using pools in the wet season. This is one reason that guinea worm still persists.
There is a need to increase water storage for the dry season - so as to spread the pressure on grazing land and provide water for horticulture. This may be small storages similar to the road side ponds. On the other hand some of the hafirs that are under development in various programmes appear to be overengineered.
Hafir in Yirol; design errors

Modernized Hafir; excavation on-going

Modernized Hafir; fence, pumpstation, cattle throughs
Security remains a paramount concern. In Lakes State disarmament has taken place with strong involvement of local leadership registering arms and hosting the SPLA to collect weapons. There is investment in roads, government buildings and police posts, to extend the reach of government authority.

Insecurity now often related to local individual conflicts, that risk to escalate into larger conflicts. This is particularly so when many people are congested in a small area. Other conflicts are more directly related to access to land and water, for instance the encroachment of farm land by livestock or the use of grazing areas.
New security outpost in Lake Naibour

New country commissioners office in Mapei

Chiefs large role in disarmement

Dinka agaar at Mvolo, peaceful return after conflict
Agriculture: Staple Crops

Crop production in Lakes is largely for self subsistence. Main crops in Lakes are rain-fed: sorghum - intermixed with sesame seed, bulrush millet, cowpeas and greengram (lentils). A second main crop is groundnut. There are various land races of sorghum, short duration (three months) and long duration (six to nine months). The long duration varieties are preferred because they

The common practice is to clear an area and grow the crops for a number of years. After this period a new area is cleared, with the individual family moving to the new area. This slash and burn practice adds fertility to the soil but it is argued that with ‘slash and char’ soil improvement would be far more longer lasting as the bio char would improve water retention capacity and would enhance microbial action.
are less susceptible to bird damage and post harvest losses and have better taste. The advantage of short duration varieties, however, is that they are less susceptible to failure in the rainy season. They produce early and hence mean an end to the ‘hunger season’.

There is between 65,000 and 80,000 hectares under cultivation in Lakes State. Land is traditionally prepared manually, soon after the onset of rain. Oxploughs have been strongly promoted in the last five years. They allow the farm area to expand considerably, to store moisture deeper (and make it last longer after the rains are over) and put the seeds deeper, so they are less prone to wash outs. The oxploughs are important because - due to the later rains - the season for land preparations has shortened.
Agriculture:

Gardening

There is at present only very scattered irrigation. This consists of small vegetable gardens cultivated with water from hand pumps, storage ponds or lakeside moisture. Much of this horticulture is by women groups. There is almost no cultivation in the flood plain.
Market gardening by women from water pond
Lake State is a cattle producing state. The number of cattle is estimated by FAO at 1,365,000 yet estimating is difficult. The main livestock product is milk. This also constitutes the main diet item. Livestock is traditionally the mayor sole source of prestige among the cattle-keeping groups in Lakes State: Dinka culture in particular centers around cattle and life revolves around the cattle camps. Cattle is also the currency for marriage arrangements, fines and other social transactions. It hardly is an economic commodity.

Cattle population in Lakes is assessed to have increased very significantly, with increased stability and the control of main cattle diseases. Where there were few cattle camps ten years ago, there are many now. Dowry payments as expressed in number of cattle have increased.
Live in the cattle camp - each animal its own peg

Young boys

Young men
There is a strong relation between cattle keeping and water resources. The use of grazing areas is very much determined by the availability of water and the development of dry matter is also dependent on sufficient intake of water. Cattle can roam 4-5 kilometer from the watering point, and the use of a grazing area hence depends on the availability of water, particularly in the dry season (December-May). There are more over several areas in Lakes State where there is ample grass for grazing but no water storage. During the dry season water sources dry up (through evaporation and consumption by cattle) and pastoralist movement to cattle camps is related to the vicinity of water resources. Where water is intensely used the quality deteriorates and the turbidity increases. In some areas thick mud layers in water bodies is a major problem causing cattle injuries.
There is contrast between the large symbolical wealth of cattle on one hand and the very persistent poverty on the other hand. Cattle sales, unless forced by circumstances is still unusual and taboo, though the domestic livestock market is growing. There are eight cattle auctions in the state. Marketing of livestock through the auctions has improved, though transactions do not cover more than 5% of all cattle that is changing hands.
In order of preference of cattle keepers the main grasses are: [1] *nuonlo*, [2] *a peach* and [3] *tuot*. *Nuonluo* is also used for thatch and needs to be bruned to regenerate and be palatable. *A peach* has a low ground cover and often surface when swamps recline. *Tuot* is vulnerable to being submerged in floods, this will cause it to stop growing. *Tuot* is also used for brooms.
Toic (dried swamp) grazing area

Burning grassland to rejuvenate in time

Harvesting thatch from nuonluo
Fisheries are a source of protein in Lakes State, especially for those living close to the rivers and lakes. About 13% of the population in Lakes is involved in fishing, and 40% of these sell at least part of the landings. The fishing grounds have their origin in two fish movements (north-south and south-north) coming together in the area. Fishing is artisanal using very simple equipment and post-catch losses are high. The disruption of river flows in the longer dry season has affected fish migration and fish stocks.
Fishing with fishing spears

Fishing with throw net
Fish trap from Lake Yirol

Fishing nets are scarce and hard to get

Fresh fish at the market

Dried fish at the market
Of the total population 13% is estimated to be severely food insecure and 28% moderately food insecure. This puts States in the lower bracket of food insecure areas in South Sudan.

Considerable food aid keeps going to the Lake State. In 2012 the import of sorghum by WFP is likely to equal or even exceed the 45,000 MT local production.
Trees are important in overcoming the ‘hunger season’ that starts at the end of the dry season and lasts till the first harvests are in. There is commercial potential in developing tree crops. [1] Lakes State has a large natural stand of lulu sheanut trees (Vitellaria Nilotica). This sheanut butter is quality-wise superior to the more popular sheanut butter from West Africa.

Scarce ebony wood

Lulu (sheanut) important food in the hunger season
The wetlands of Lakes attract considerable bird life. There have been many changes too. Significant is the withdrawal of hippos from smaller habitat, mainly Lake Nyubor. Earlier hippos were found in most rivers and streams, their movement helping to keep the depth of the rivers. Also, the diversity of fish species in rivers is said to have decreased.
Colofon

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