Recent Climate Change Trends and Achievement of SDGs: A Case of Lake Kyoga Basin, Uganda

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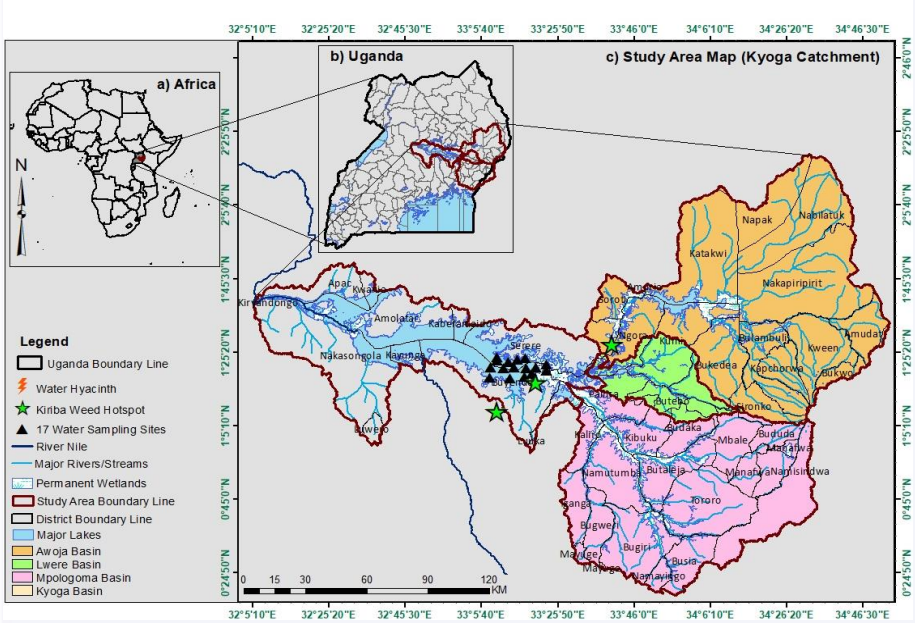
Introduction

Methods



Precipitation

- 8 met stations were used
- Monthly in-situ data (UNMA) 98%
- Daily satellite reanalysis data (CHIRPS) 2%
- Datasets were blended into a gridded rainfall dataset using Climate Data Tool (CDT).

Temperature

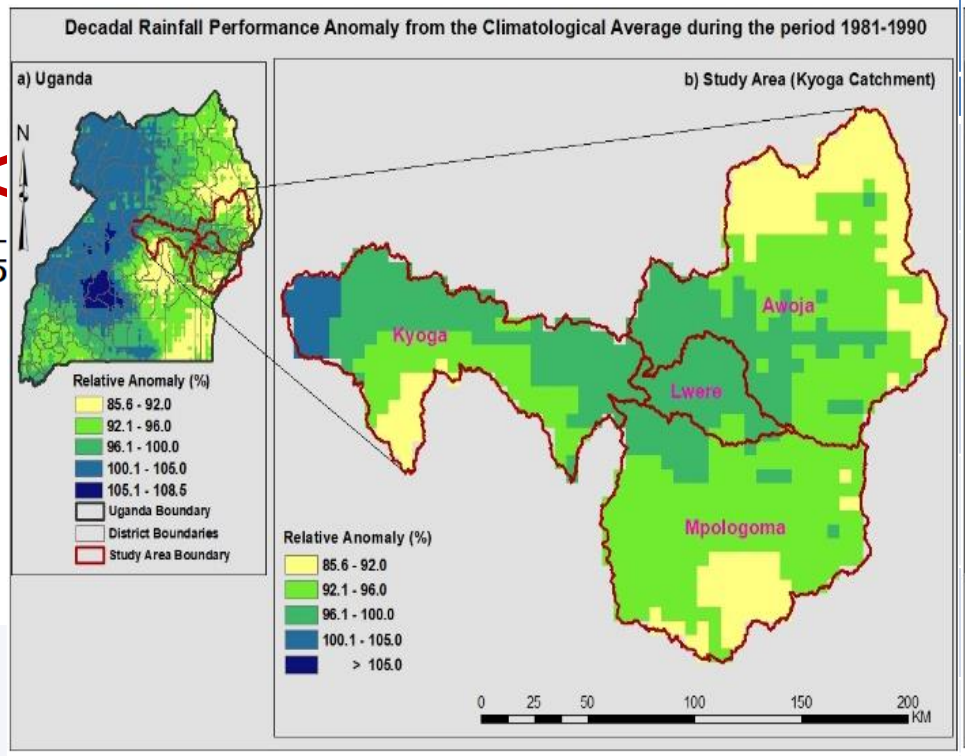
- Monthly in-situ data (UNMA) scanty
- 3-hourly satellite data from Japanese 55-year reanalysis (JRA-55)
- Data was blended after processing by interpolation techniques

Data Analyses

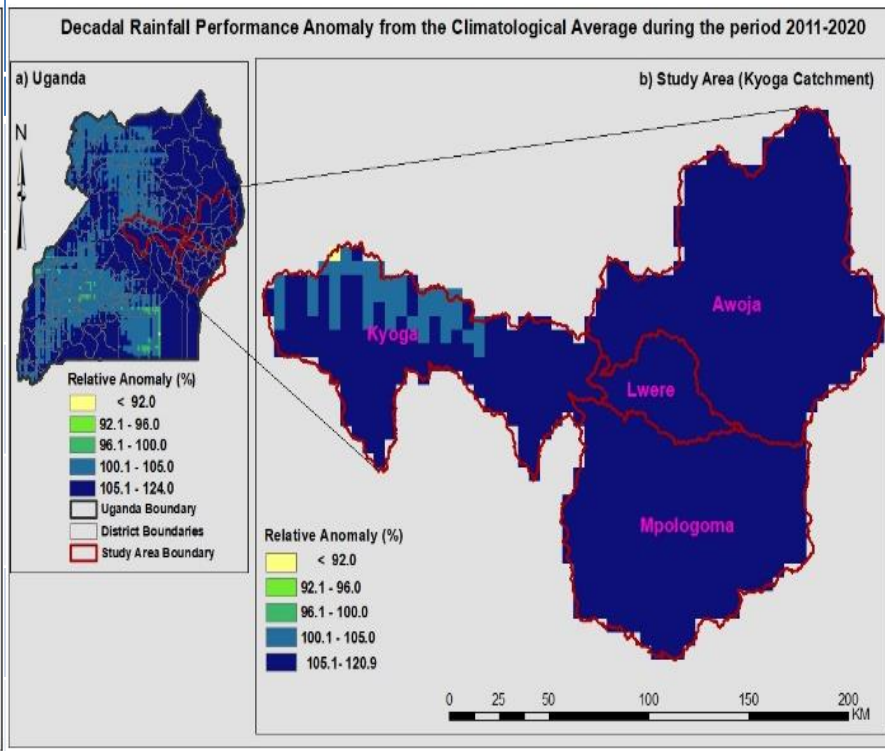
- ✓ Short-term data 39 years (1981-2020)
- ✓ Long-term data 59 years (1961-2020)
- ✓ SPI-6 was used to determine RF
- ✓ SAI determine temp trend
- ✓ Mann–Kendall Trend analysis

Findings

Serere.station SPI-6 (1961-2020)



SPI



Findings Cont...

Station	Temp	Kendall_tau	Kendall_Score	p_value	α
Serere	T-mean	0.48222351	590	8.34E-07***	0.01
	T-max	0.47833264	585	1.07E-06***	0.01
	T-min	0.48712748	596	5.96E-07***	0.01
Soroti	T-mean	0.47957531	587	9.54E-07***	0.01
	T-max	0.45896289	562	2.74E-06***	0.01
	T-min	0.47996795	587	9.54E-07***	0.01
Tororo	T-mean	0.46827862	572	1.79E-06***	0.01
	T-max	0.45506549	557	3.34E-06***	0.01
	T-min	0.46386284	568	2.15E-06***	0.01
Jinja	T-mean	0.50347406	616	2.38E-07***	0.01
	T-max	0.49672815	607	3.58E-07***	0.01
	T-min	0.48487395	593	7.15E-07***	0.01
Lira	T-mean	0.47078091	576	1.55E-06***	0.01
	T-max	0.46135065	564	2.50E-06***	0.01
	T-min	0.47443864	580	1.31E-06***	0.01
Buginyanya	T-mean	0.45443437	556	3.46E-06***	0.01
	T-max	0.44135711	540	6.56E-06***	0.01
	T-min	0.47482798	580	1.31E-06***	0.01
Namalu	T-mean	0.44280896	540	6.44E-06***	0.01
	T-max	0.38970599	477	6.83E-05***	0.01
	T-min	0.58761609	716	4.60E-05***	0.01
Kiige	T-mean	0.50632918	620	2.38E-07***	0.01
	T-max	0.50306255	616	2.38E-07***	0.01
	T-min	0.48916259	598	5.96E-07***	0.01

Conclusions & Recommendations

- *CC (increase in temp and RF) is happening in the Kyoga basin and affects achievement of SDGs*

1) *Regional tree planting esp of local varieties, growth of fast growing and drought resistant crops to mitigate CC impacts (Goals 2, 13. 16)*
2) *Policy and regulation harmonization in the NBI region for easy coordination and implementation of resilient approaches in communities*
   a. *Soil and water conservation practices in the NBDF region to increase water storage, reduce erosion and increase soil fertility (17, 16, 10,6)*
3) *Carry out local, national and regional CC studies for accurate CC*


NILE BASIN INITIATIVE
INITIATIVE DU BASSIN DU NIL
THANK
YOU!