



TRENDS IN YIELD AND EXPLOITATION PATTERNS OF THE COMMERCIAL FISHERIES IN KYOGA BASIN LAKES AND FUTURE PROSPECTS.

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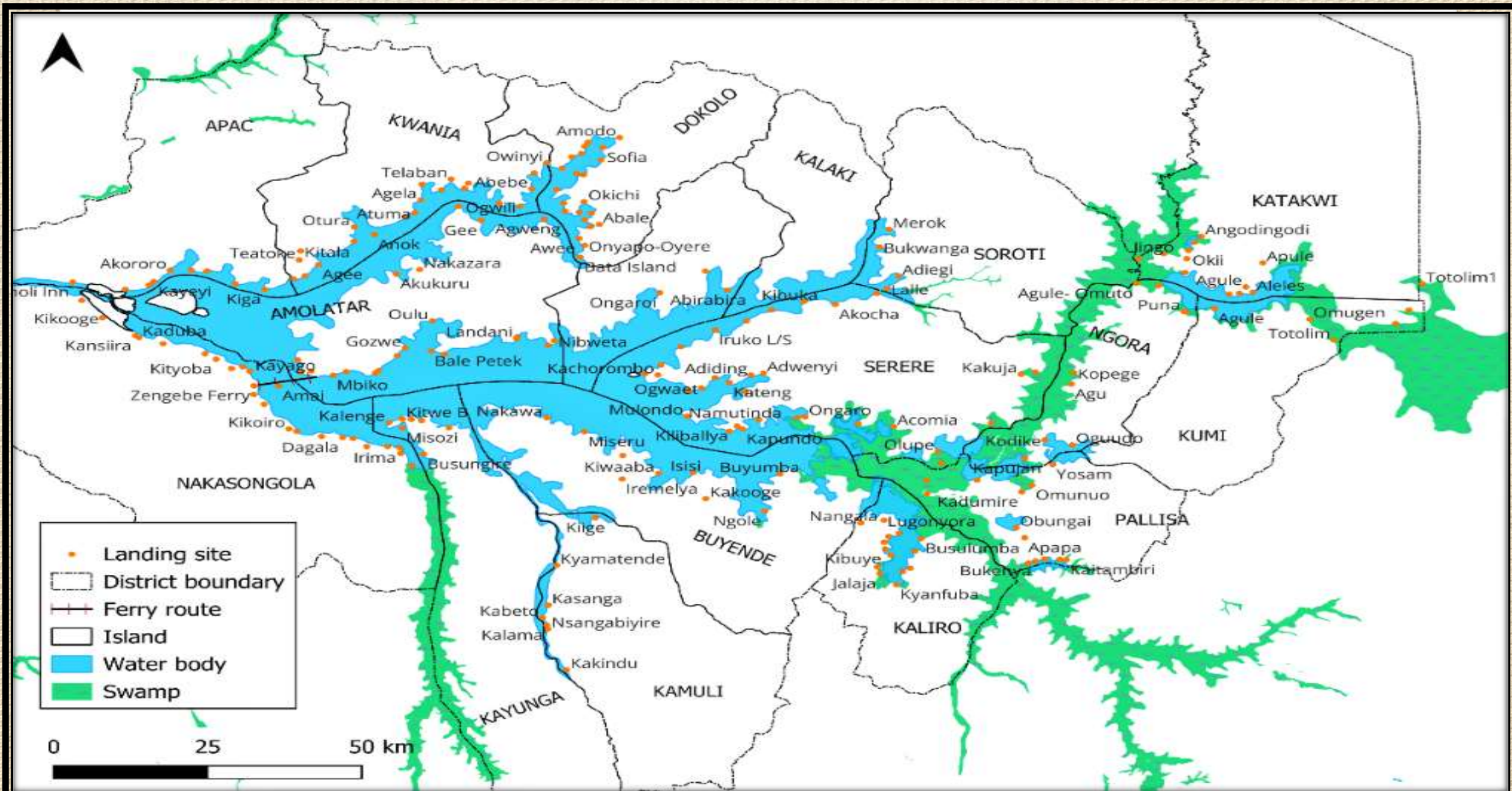
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THEME: Aquatic Food Systems in the Blue Economy Penang, Malaysia

INTRODUCTION

- ❖ Lake Kyoga complex is an extensive network of shallow open water areas fringed by papyrus swamps.
- ❖ open water covers, 2700 Km², mean depth = 3.6m, max depth = 6m
- ❖ Kyoga basin lakes have two major lakes Kyoga (1,800 km²) & Kwana (783 km²).
- ❖ Other 2 major lakes, Bisina (130 km²) & Nakuwa (83km²) & 30 other small lakes.
- ❖ Fishing activities Kyoga basin lakes contribute greatly to income, nutrition, communities.
- ❖ Fisheries sub-sector, UGANDA contributes 3 - 6% to National GDP & 12.6% to the agricultural GDP; Employment to ~3 MILLION ppe.
- ❖ Increasing concern about the declining stocks of commercial and native fish spp.
- ❖ An examination of fishing activities on the Kyoga basin lakes calls for changes in fishing effort.

KYOGA BASIN LAKES, UGANDA



INTRODUCTION

- ❖ Study on fisheries production & exploitation levels & value in economic terms.
- ❖ The study looked at 52 landing sites in 19 districts terms of fisheries production estimates & value.
- ❖ In addition to the population characteristics of the commercial fish species such as Nile perch & Nile tilapia.
- ❖ Done in 2023 and in comparison with other years (Trends & Value).
- ❖ Comparison with other waters bodies (Population characteristics).

❖ These lakes support six major commercial fishes including:

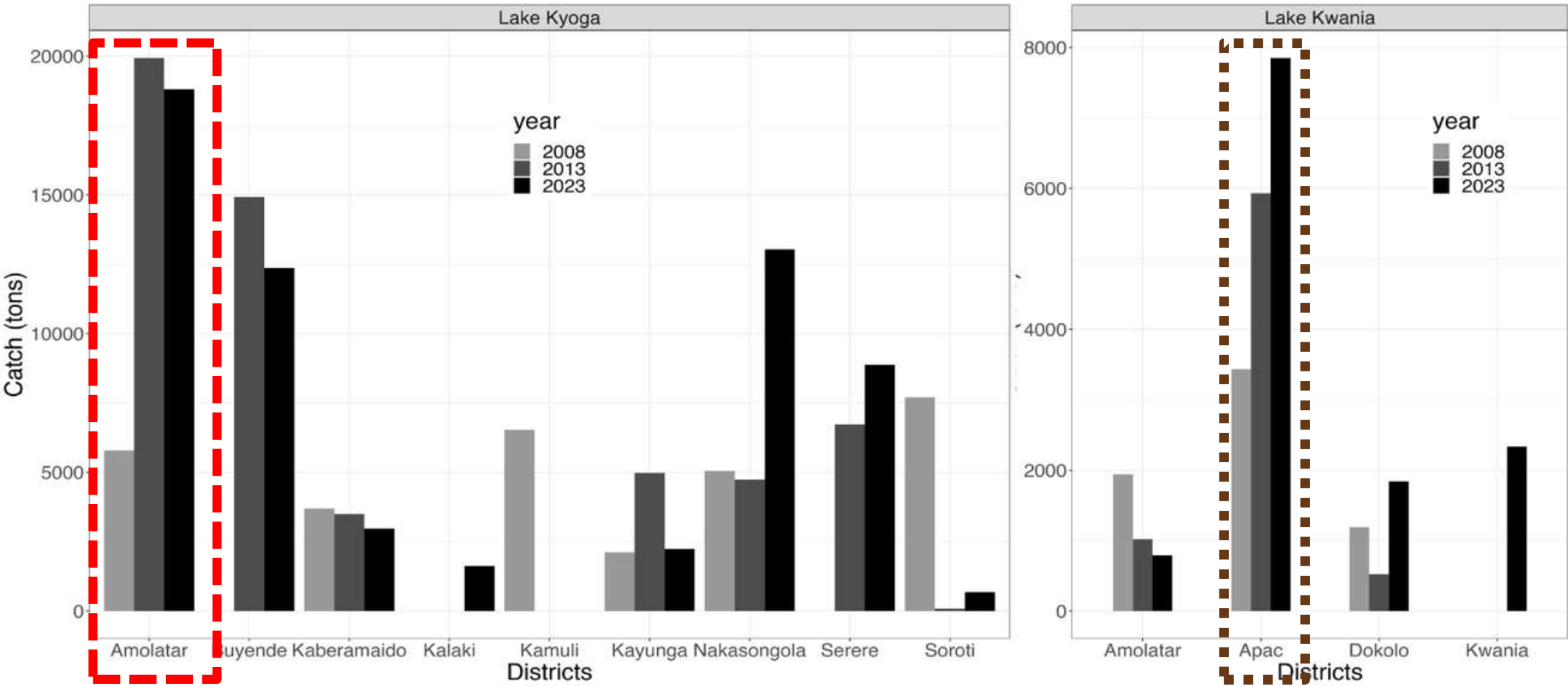
❖ Nile perch, Mukene, Tilapias, African catfish, Lungfish, and Haplochromines (Nkejje), among others.

❖ Enumerators Weighing and Recording the Catch Landed (Left Panel) and Measurements of Fish Total Length (Right Panel)

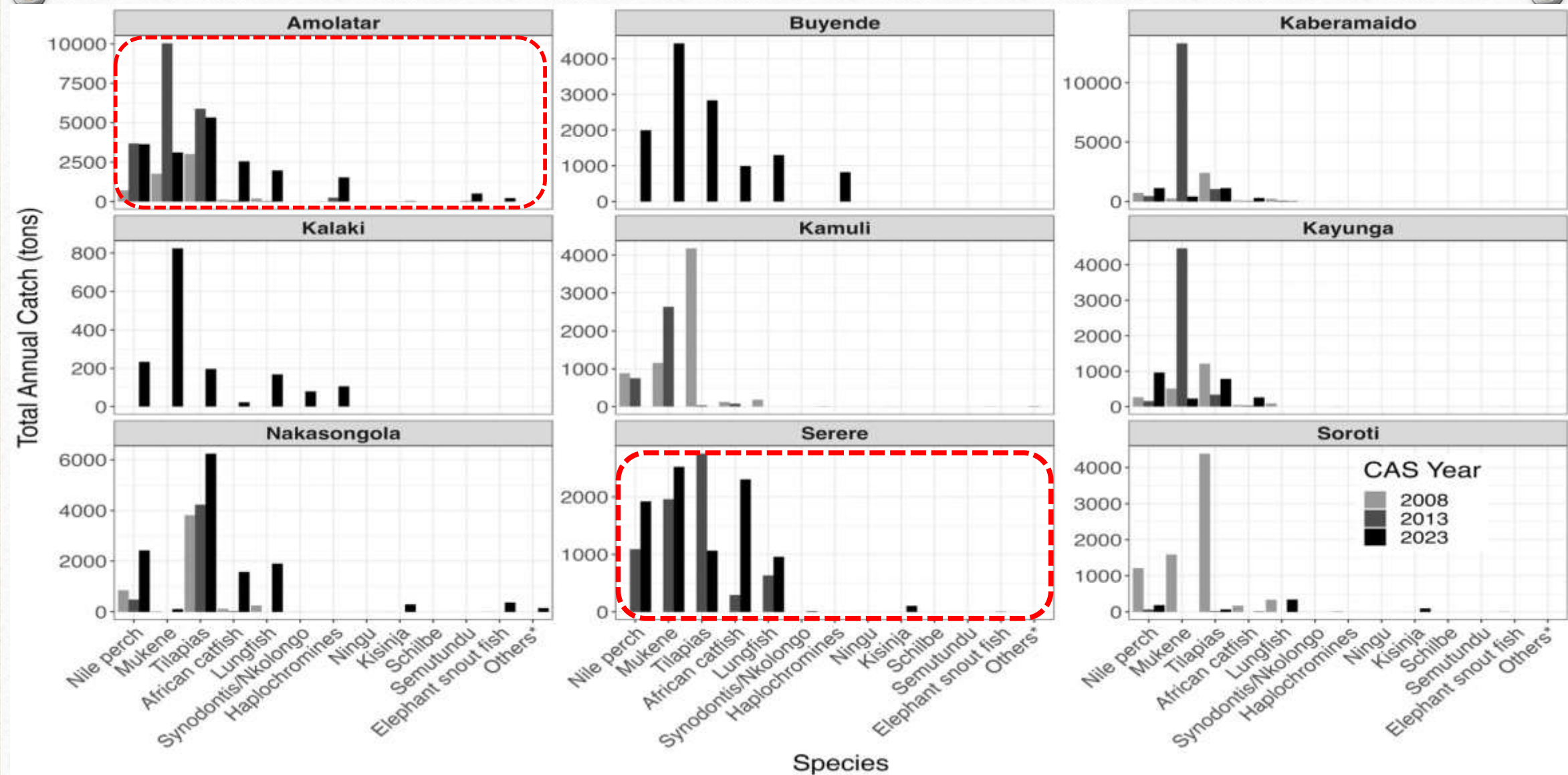
❖ During the 2023 CAS at Various Landing Sites.



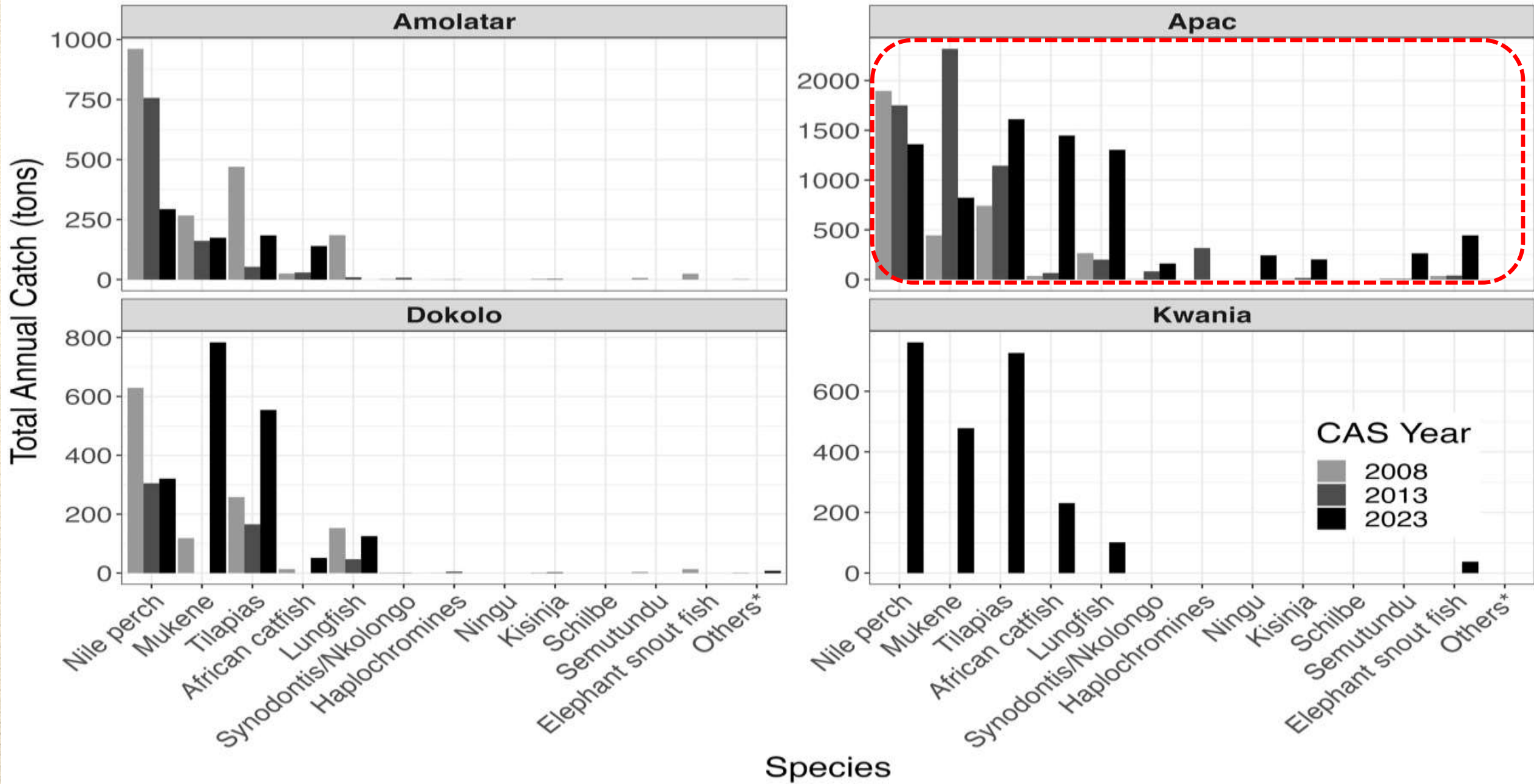
THE TRENDS IN THE TOTAL ANNUAL CATCHES FROM LAKES KYOGA AND KWANIA FOR AGGREGATED FOR THE RIPARIAN DISTRICTS DURING 2008-09, 2013-14, AND 2023.



THE ESTIMATED SPECIES-SPECIFIC ANNUAL CATCHES FOR THE NINE RIPARIAN DISTRICTS ON LAKE KYOGA SAMPLED DURING 2008-09, 2013-14, AND 2023 ;



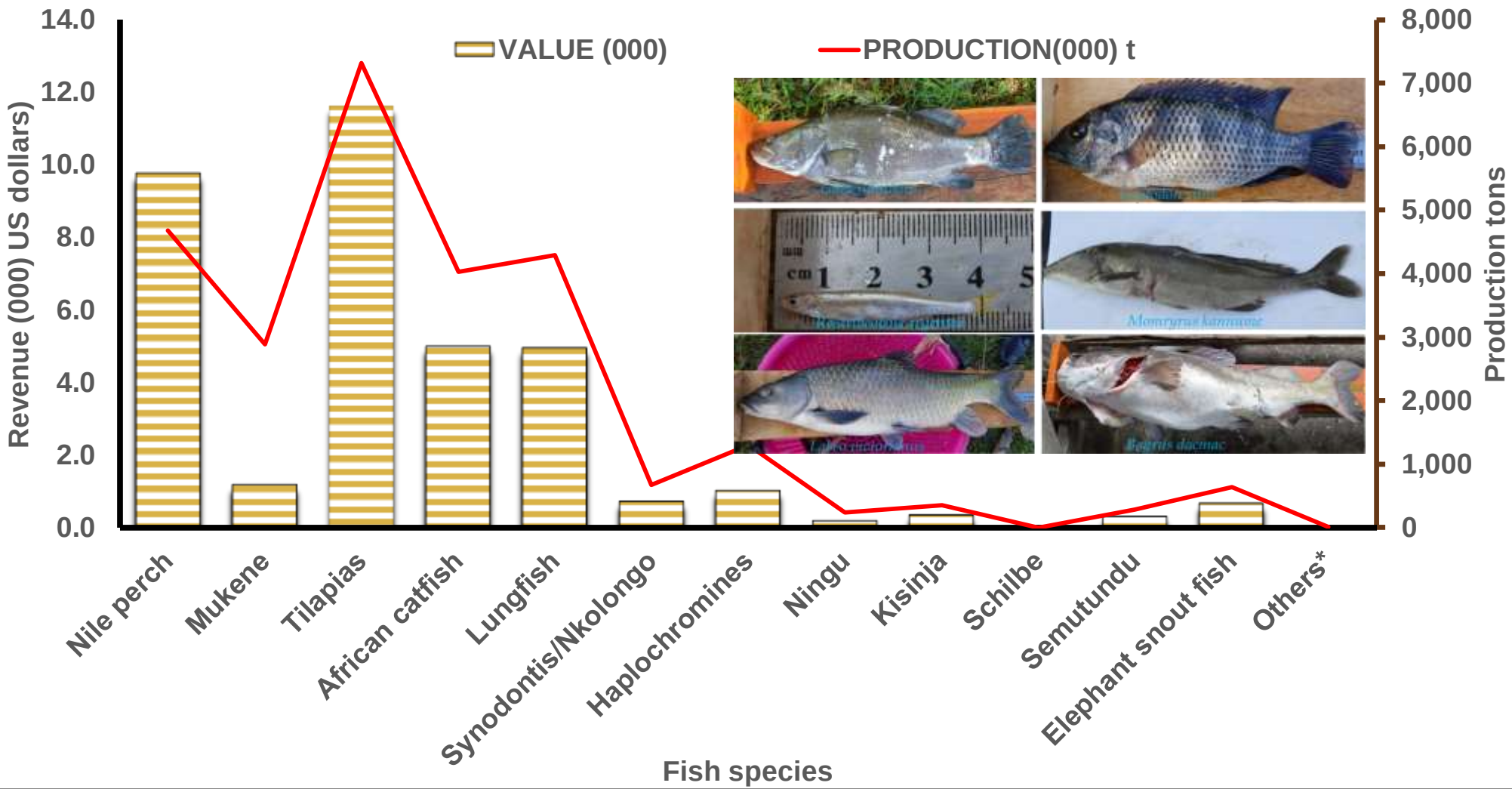
THE ESTIMATED SPECIES-SPECIFIC ANNUAL CATCHES FOR THE FOUR RIPARIAN DISTRICTS ON LAKE KWANIA SAMPLED DURING 2008-09, 2013-14, AND 2023



TRENDS IN THE ANNUAL BEACH REVENUE ('000,000 UGX) FROM RIVER NILE AND SMALL LAKES WITHIN THE LAKE KYOGA BASIN BETWEEN 2008 AND 2023

WATER BODY/YEAR	ANNUAL CATCHES (TONS)			ANNUAL BEACH REVENUE (000US dollars)		
	2008	2013	2023	2008	2013	2023
R. Nile			6,120.3			9.55
L. Nakuwa	3,285.1	5,522	10,878.5	0.9	3.91	6.46
L. Bisina	943.3	2,407	704	0.25	1.63	0.93
L. Gawa	217.9	62		0.05	0.04	
L. Gigate	80.4	1,136	412.0	0.02	0.79	0.496
L. Kawi	196.7	25	86.2	0.04	0.01	0.17
L. Meito	55.0	17	871.8	0.01	0.01	0.73
L. Nyaguo	251.7	2,999	422.4	0.06	0.85	0.001
L. Lemua	126.9	152	1,176.2	0.03	0.11	1.38
L. Opeta	545.7	1,051	492.2	0.12	0.92	0.67
L. Agu			517.5			0.42
L. Nyasala	101.5			0.02		
L. Komunuo	65.6			0.02		
Total	5,869.8	13,370.9	21,681	1.52	8.27	20.81

OVERALL PRODUCTION AND VALUE FOR THE FISH SPECIES, 2023



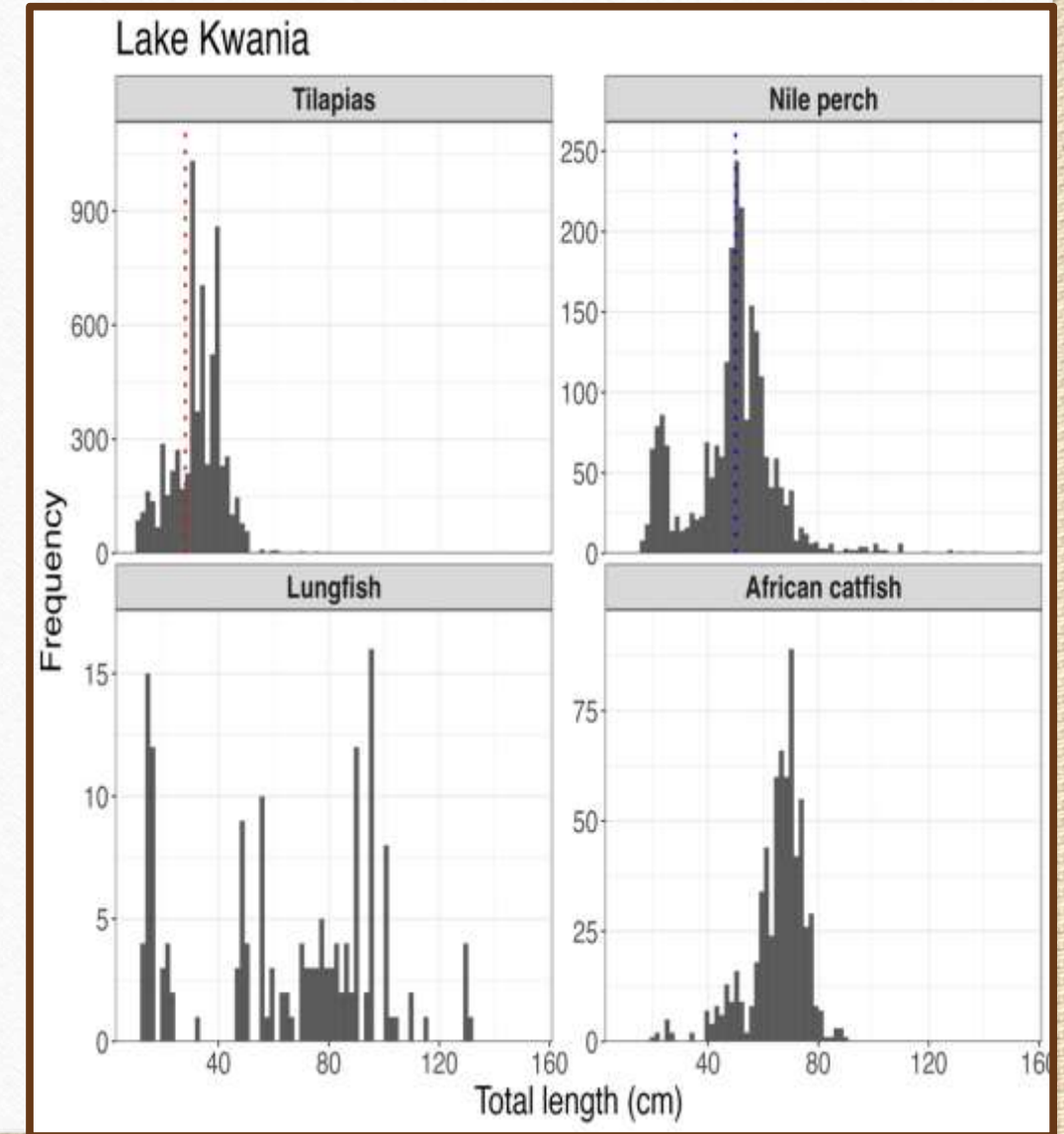
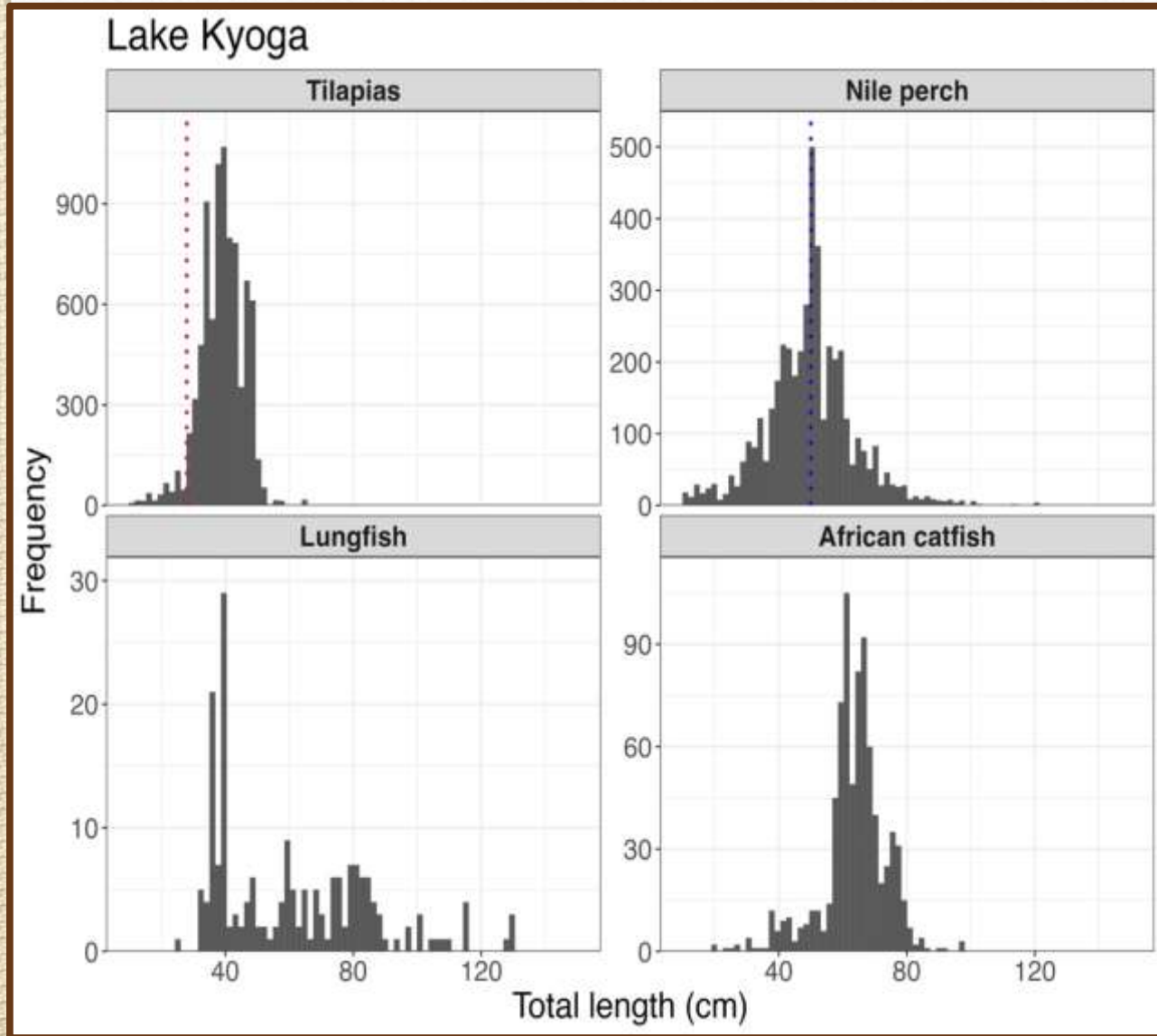
TRENDS IN CATCHES AND VALUE IN UGX

- ❖ Overall catches 106,000 t in 2023, that increased 76,000t in 2013 and 43,300t in 2008/09.
- ❖ Valued at Ugx. 0.121 bn\$ in 2023, 0.05 bn\$ in 2013/14, and 0.013 bn\$ in 2008/09.
- ❖ Lake Kyoga, the catches, 60,612 t, valued at Ugx. 0.09 bn\$
- ❖ Kwana, the catches 12,817 t worth Ugx. 0.02 bn\$.

THE CATCHES AND BEACH VALUE FROM SMALLER LAKES.

- ❖ From 19,000 tons in 2013/14 to 21,681t in 2023.
- ❖ Beach revenue increased 0.01 bn\$ in 2013/14, and 0.021 bn\$ in 2023.

THE SIZE STRUCTURE OF THE COMMERCIAL FISH SPECIES . THE DOTTED LINES FOR TILAPIA AND NILE PERCH ARE THE 28 AND 50 CM TL SLOT SIZES RESPECTIVELY.



CPUE (KG/BOAT/DAY)

Vessel category	V-G Combination	Nile perch	Mukene	Tilapias	African catfish	Lungfish	Synodontis/Nkolo ngo	Haplochromines	Kisinja	Schilbe	Semutundu	Elephant snout fish
Dugout Canoes	DO_GN			3.0	0.5	0.5						1.0
	DO_HL			0.3	1.3	4.2		105.0	0.0			
	DO_LL			0.5	1.8	3.6						0.2
	DO_MF			2.0								1.0
	DO_TR			4.8	0.2	1.2	0.0	80.2				0.1
Foot fishers	FF_CN			2.5	1.0							
	FF_HL			3.3	6.4	10.7	0.5					
	FF_LL				1.0	32.0						
	FF_TR			1.9	1.3	2.5						
Parachute boats	PA_BOS	9.4		17.0								
	PA_CN	1.6		6.3	4.3	3.0						
	PA_GN	6.9		4.0	9.6	2.6	2.7	34.0	0.4	0.1	0.5	1.2
	PA_HL	30.0		5.8	5.6	16.2		47.2				
	PA_LL	9.3		4.0	5.8	8.4	0.1					
	PA_MF	2.4		8.3	1.3	1.4	1.3		2.0			0.3
	PA_SS	1.4	32.9				1.4	25.5				
	PA_TR	2.3		6.4	1.9	1.7	3.0	54.0	1.0			
SESSE FLAT	SF_BOS	12.0		33.3		6.0						
	SF_CN			14.0								
	SF_GN	3.0		8.1	1.8	5.7						0.5
	SF_LL	17.1		41.0	1.6	25.7					1.0	
	SF_MF			3.4	1.0							1.0
	SF_SS		40.4									
	SF_TR			12.0								

GROWTH PARAMETERS AND GROWTH PERFORMANCE OF LATES NILOTICUS AND OREOCHROMIS NILOTICUS IN VARIOUS WATER BODY

LATES NILOTICUS

Source	Areas	L_{∞}	K	Z	M	F	E
Bassa, 2021	Upper Victoria Nile	90.3	0.36	1.71	0.65	1.06	0.62
2008-2013 Upper Nile	Upper Nile, Bujagali area	78.7	0.55	2.49	0.89	1.60	0.64
Rabour & Mayala, 1990	Winamu Gulf, Lake Victoria	205	0.19	4.73	0.34	4.89	0.93
Njiru et al., 2008	Lake Victoria Kenya (1998-00)	204	0.21	2.92	1.50	1.42	0.86
Njiru et al., 2008	Lake Victoria Kenya (2004-05)	133	0.25	3.40	0.58	2.92	0.86
Bassa S. 2000	Lake Victoria			1.65	0.81	0.84	0.95
~~Yongo et al., 2018~~	~~Lake Victoria, Kenya~~	~~124~~	~~0.22~~	~~0.96~~	~~0.42~~	~~0.54~~	~~0.57~~
~~Bassa et al., 2024~~	~~Kyoga basin Lakes~~	~~160.7~~	~~0.03~~	~~0.24~~	~~0.10~~	~~0.14~~	~~0.57~~

OREOCHROMIS NILOTICUS

Source	Areas	L_{∞}	K	Z	M	F	E
Getabu (1992)	Lake Victoria Kenya	64.60	0.25	0.82	0.54	0.28	0.34
Dache (1994)	Lake Victoria Kenya	63.10	0.35	1.71	0.72	0.993	0.58
Njiru et al., 2005	Lake Victoria Kenya	58.33	0.59	1.92	1.00	1.12	0.52
~~Bassa S. 2021~~	~~Upper Victoria Nile~~	~~47.3~~	~~0.89~~	~~2.80~~	~~1.41~~	~~1.39~~	~~0.50~~
~~Bassa et al., 2024~~	~~Kyoga basin lakes~~	~~54.6~~	~~0.18~~	~~1.58~~	~~0.45~~	~~1.13~~	~~0.72~~

OBSERVATIONS

- ❖ General increase catches and annual beach revenue from the Kyoga basin lakes between 2008 and 2023.
- ❖ Catches indicated relative dominance of Tilapias and Nile perch, followed by fish species.
- ❖ Revenue was highest from followed Tilapias, by Nile perch.
- ❖ Small pelagic still low beach revenue despite contribution to the catches necessitating an urgent need for improved handling and processing facilities to ensure value addition.
- ❖ High length at infinity of the Nile perch and Nile tilapia in the Kyoga basin lakes

CONCLUSION AND RECOMMENDATION

- ❖ A need to be cautious about the catch rate as most of the catch was landed in illegal destructive gears/operations or illegal gears in prohibited boats.
- ❖ Therefore, management efforts should be directed towards elimination of illegal fishing effort groups from the commercial fisheries of the basin.

THANKS