Fisheries Catch Assessment Survey Information for the Uganda side of Lake Victoria, (2005 - 2008)

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Introduction

The monitoring of fish stocks as well as the magnitude, distribution and trends of fishing effort and fish catches is a key requirement for management of fisheries resources. Conducting regular Catch Assessment Surveys (CASs) in Lake Victoria is one of the ways through which the partner states sharing the lake are generating information to contribute to the above process.

The EU-funded Project, Implementation of a Fisheries Management Plan (IFMP) for Lake Victoria through the Lake Victoria Fisheries Organisation (LVFO) supported the implementation of regionally harmonized CASs in Lake Victoria in 2005 to 2008. On the Uganda side of the lake, CAS activities were carried out at 54 fish landing sites in eleven riparian districts. The National Fisheries Resources Research Institute (NaFIRRI), the Department of Fisheries Resources (DFR), and the Districts of Busia, Bugiri, Mayuge, Jinja, Mukono, Wakiso, Kampala, Mpigi, Masaka, Kalangala and Rakai jointly conduct the surveys. The CAS enumerators were recruited from the fishing communities at the Beach Management Unit (BMU) level and they worked under direct supervision of sub-county fisheries officers.

CAS enumerators (in yellow raincoats) collecting data

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Why CAS?

CASs in Lake Victoria provides information on:

1. Quantities of fish landed in the riparian districts along the lake;

2. The monetary value of the fish catches;
3. The contribution of different fish species to the total catches; and
4. The trends of fish catches.

CAS results

District total fish catches and beach value of the main commercial species

The main commercial fish species harvested from Lake Victoria are the Nile perch (Mputa), Nile tilapia (Ngege) and mukene.

Nile perch (Mputa)

The annual catch estimates of Nile perch on the Ugandan side of Lake Victoria were highest (94,902.6 t) in 2005 and lowest (80,976.7 t) in 2007 (Table 1). Approximately 39% of Nile perch catches were in Mukono district with the largest share of the lake amongst the riparian districts. Other districts with a substantial share of the Nile perch catches were Bugiri and Kalangala with 17 to 19% of the catch each, followed by Mayuge (7%). The gross value of Nile perch at the beach level decreased from shs 183 billion in 2005 to shs 147 billion in 2008.

The gross value of the catches showed higher reduction (19%) than catches (9%) over the same period. This was against price appreciation from shs 2000 - 2500 per kg in 2005 to shs 3000 – 3500 per kg in 2008 in the prime market offered by the fish processing industry. Increasing proportion of undersized fish in the catch that do not fetch the prime market price could have been responsible for this. Impacts of the latter probably become more effective with lake-wide adoption of self-monitoring by fish factories against processing of undersized fish in September 2007. Undersized Nile perch constitute approximately 40% the catch landed and increased rejection of this part of the catch would therefore lead to reduced revenue at the landing site. Despite the rejection by industry, the undersized fish have a lucrative market in regional and domestic markets which still encourage their harvest.

Legal Nile perch sizes destined for fish processing factories



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Under size Nile Perch (Mputa) commonly processed sold in regional and domestic markets

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Caught mainly by beach seines | **A basin is main unit measure** | **Initial processing by salting** | **Final processing by Sun drying**

Table 1. Estimated total catches and beach values of Nile perch in Lake Victoria presented by district

	2005		2006		2007		2008	
District	Total catch (t)	Value (mill shs)	Total catch (t)	Value (mill shs)	Total catch (tonnes)	Beach Value (Mill.shs)	Total catch (t)	Value (mill shs)
Busia	298.5	575.1	396.2	763.1	234.9	524.7	227.9	388.4
Bugiri	17,019.0	32,783.7	15,666.0	30,177.9	14,739.3	32,923.9	16,412.0	27,962.0
Mayuge	8,609.7	16,584.3	8,145.8	15,691.2	6,936.7	15,492.7	7,737.9	13,159.7
Jinja	583.5	1,123.5	579.0	1,114.7	510.2	1,139.3	505.4	862.5
Mukono	37,256.7	71,767.2	35,852.9	69,062.3	31,337.0	69,979.8	33,550.2	57,080.9
Kampala	612.3	1,179.0	633.0	1,219.1	519.8	1,160.9	546.2	927.8
Wakiso	6,550.5	12,618.3	6,297.8	12,131.9	5,462.5	12,196.5	5,841.9	9,941.6
Mpigi	1,906.5	3,672.3	1,954.2	3,764.4	1,860.0	4,157.3	1,766.6	3,002.4
Masaka	2,439.6	4,699.5	2,387.4	4,598.6	2,661.8	5,953.8	2,121.2	3,601.8
Kalangala	17,326.8	33,377.1	16,912.8	32,578.7	14,603.9	32,610.3	15,771.6	26,825.6
Rakai	2,300.1	4,430.4	2,214.9	4,266.5	2,110.6	4,716.1	2,174.6	3,701.3
Total	94,902.6	182,810.4	91,039.5	175,367.4	80,976.7	180,855.3	86,655.0	147,454.1

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Tilapia (Ngege)

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Like Nile perch, total tilapia catches decreased from the highest (29,419 t) in 2005 to the lowest (19,55.6 t) in 2007 and recovered slightly (24,355 t) in 2008 (Table 2). The overall gross beach value of tilapia catches ranged from shs 28.4 billion in 2005 to shs 25.5 billion in 2008.

Tilapia

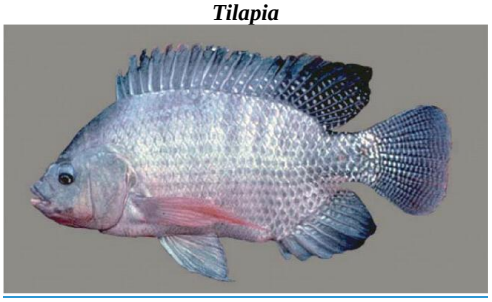

Table 2. Estimated total catches and beach values of Tilapia in Lake Victoria presented by districts.

	2005		2006		2007		2008	
District	Total catch (t)	Value (mill shs)	Total catch (t)	Value (mill shs)	Total catch (tonnes)	Beach Value (Mill.shs)	Total catch (t)	Value (mill shs)
Busia	202.8	195.3	167.3	161.3	173.1	258.6	127.2	134.0
Bugiri	2,762.7	2,663.4	2,807.7	2,712.2	2,056.4	2,983.0	2,276.3	2,365.8
Mayuge	3,226.5	3,107.1	2,794.8	2,699.4	1,954.0	2,785.8	2,491.4	2,602.1
Jinja	480.0	462.3	375.5	362.7	361.5	532.4	333.3	345.5
Mukono	9,051.6	8,722.8	8,290.8	8,008.8	5,671.0	7,985.5	7,127.0	7,479.3
Kampala	232.5	224.1	205.1	198.2	150.8	215.3	175.8	184.5
Wakiso	2,945.1	2,840.1	2,825.6	2,729.9	2,413.0	3,466.6	2,774.7	2,905.1
Mpigi	1,741.2	1,678.5	1,536.5	1,484.6	1,143.5	1,617.2	1,426.1	1,495.4

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Masaka	2,670.3	2,574.0	2,345.6	2,265.6	1,735.3	2,432.1	2,393.0	2,516.1
Kalangala	5,581.8	5,382.3	5,235.0	5,057.0	3,523.9	4,923.8	4,798.4	5,033.6
Rakai	520.2	501.6	478.5	462.6	374.0	535.8	432.9	453.6
Total	29,415.0	28,351.2	27,061.5	26,141.3	19,556.6	27,736.0	24,355.2	25,514.9

Mukene

The Mukene fish catches, like Nile perch and tilapia were lowest (70,000 t) in 2007 but the highest catches (113,791 t) were recorded in 2008 (Table 3). The gross beach value of this fishery ranged from ~~was followed by Kalangala, with 31,919.9 to 34,176.9 t and beach values ranging from 5,615.9 to 6,664.5 billion shillings. Other districts with substantial production of Mukene were Bugiri and Mayuge~~shs 18.6 billion to shs 20.7 billion per year.~~.~~

Mukene



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Table 3. Estimated total catches and beach values of Mukene in Lake Victoria presented by districts.

	2005		2006		2007		2008	
District	Total catch (t)	Value (mill shs)	Total catch (t)	Value (mill shs)	Total catch (tonnes)	Beach Value (Mill.shs)	Total catch (t)	Value (mill shs)
Busia	251.1	48.9	220.1	42.6	134.4	36.5	282.3	47.7
Bugiri	9,829.5	1,916.7	8,697.5	1,696.5	8,190.5	2,234.4	11,090.7	1,875.6
Mayuge	7,468.5	1,456.2	6,563.3	1,279.8	5,471.7	1,491.0	8,447.6	1,426.2
Jinja	49.2	9.6	47.3	9.3	16.2	4.4	47.7	7.8
Mukono	42,514.5	8,290.2	37,624.7	7,336.8	25,376.2	6,899.6	46,851.5	7,921.2
Kampala	100.8	19.8	88.4	17.1	47.2	12.8	116.3	20.0
Wakiso	5,651.1	1,101.9	4,979.3	970.8	3,198.7	869.2	6,274.5	1,061.1
Mpigi	406.2	78.9	358.4	69.9	497.9	136.2	474.3	79.5
Masaka	5,800.5	1,131.0	5,089.2	992.6	4,889.4	1,333.9	6,453.2	1,092.0
Kalangala	34,176.9	6,664.5	31,919.9	6,224.4	22,132.4	6,018.9	33,581.4	5,615.9
Rakai	152.1	29.7	146.7	28.5	46.0	12.4	172.2	29.3
Total	106,399.5	20,748.0	95,734.2	18,668.3	70,000.5	19,049.2	113,791.1	19,175.6

Other fish species

In 2005, records indicated high values of haplochromines in the catches probably due to recording errors by freshly recruited enumerators but this did not recur in subsequent years (Table 4). The contribution of fishes that occur occasionally in catches in Lake Victoria**,** i.e. Haplochromines (Nkejje), *Bagrus* (Semutundu), *Protopterus* (Mamba) and *Clarias* (Male) was less around 1% of total catches.

INSERT PICTURES OF *Bagrus* (Semutundu), *Protopterus* (Mamba) and *Clarias* (Male)

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Table 4. Estimated total catches and beach values of other less common fishes (Haplochromines (Nkejje), *Bagrus* (Semutundu), *Protopterus* (Mamba) and *Clarias* (Male)) in Lake Victoria presented by districts.

	2005		2006		2007		2008	
District	Total catch (t)	Value (mill shs)	Total catch (t)	Value (mill shs)	Total catch (tonnes)	Beach Value (Mill.shs)	Total catch (t)	Value (mill shs)
Busia	62.4	57.0	17.9	11.7	11.6	14.4	9.6	8.0
Bugiri	938.7	981.0	206.4	155.0	225.2	273.6	252.1	210.8
Mayuge	684.3	728.4	178.4	136.5	207.6	255.2	227.3	191.0
Jinja	18.0	12.6	19.7	14.7	29.9	35.1	30.7	25.1
Mukono	3,503.1	3,714.0	800.1	603.8	1,076.4	1,245.4	1,172.6	968.7
Kampala	19.8	16.8	18.0	13.1	24.4	28.0	26.7	21.8
Wakiso	549.3	565.5	208.5	163.8	232.9	276.0	257.8	212.3
Mpigi	109.8	90.3	96.0	74.4	97.3	113.8	96.4	78.8
Masaka	484.8	528.9	83.4	65.3	76.5	95.3	82.9	70.7
Kalangala	1,395.6	1,443.9	449.3	366.6	469.8	537.8	498.8	409.2
Rakai	49.8	37.5	31.8	23.1	37.6	47.2	30.0	24.0
Total	7,815.3	8,175.9	2,109.3	1,628.1	2,489.3	2,921.6	2,685.5	2,221.3

The overall total annual fish catches (all species pooled) were highest (238,532 t) in 2005 (Table 5). The catches reduced to the lowest estimate in 2007 (173,024 t) and increased to 227,488 t in 2008. The fisheries on the Uganda side of Lake Victoria had the highest gross landed value of shs 240 billion in 2005 and the least (shs 194 billion) in 2008. Whereas the total catches for all the three main commercial species (Nile perch, Tilapia and Mukene) increased from 2007 to 2008, the gross landed value decreased. Increased rejection of undersized Nile perch by fish processing factories could be one of the explanations.

Table 5. Estimated total catches (tonnes) and beach value (Million shs) in 2005, 2006 and 2007

	2005		2006		2007		2008	
	Catch (t)	Beach value (Million Shs)	Catch (t)	Beach value (Million Shs)	Catch (t)	Beach value (Mill. Shs)	Catch (t)	Beach value (Million Shs)
Nile perch	94,902.6	182,810.4	91,039	175,368	80,977	180,855	86,655	147,454
Tilapia	29,415.0	28,351.2	27,061	26,141	19,557	27,736	24,356	25,515
Mukene	106,399.5	20,748.0	95,734	18,668	70,001	19,049	113,791	19,176
Other species	7,815.3	8,175.9	2,109	1,628	2,489	2,922	2,685	2,221
Total	238,532.4	240,085.5	215,944	221,805	173,024	230,562	227,488	194,365

Conclusions and Recommendations

1. Catch assessment surveys in 2005 to 2008 showed a general decline of Nile perch and tilapia catches despite the slight recovery from 2007 to 2008. This calls for urgent attention to the factors driving the decline and continued monitoring of the status of the fisheries.
2. Implementation of zero tolerance of processing of undersize Nile perch by fish factories from September 2007 through self-policing in addition to other law enforcement efforts appear to have reversed the downward trend of Nile perch and tilapia catches in 2008. These efforts should be consolidated and sustained to achieve total rejuvenation of the fisheries.
3. Elimination of the rampant use of illegal gears, especially beach seines and under sized gillnets that capture immature fish and monofilament gillnets should be a priority to reverse trends of declining catches of Nile perch and tilapia.
4. The domestic and regional markets which continue to encourage exploitation of undersized fish should be closely monitored and regulated to ensure compliance to fisheries regulations.

The contribution of Mukene to total catches on the Uganda side of the lake was 40 to 50% compared to 60 to 70% in Kenya and Tanzania parts of the lake.

INSERT PICTURE OF CATAMARAN

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