





NATIONAL FISHERIES RESOURCES RESEARCH INSTITUTE (NaFIRRI), NATIONAL AGRICULTURAL RESEARCH ORGANISATION (NARO)

FINAL REPORT OF THE FISHERIES CATCH ASSESSMENT SURVEY CONDUCTED IN DECEMBER 2015 ON THE UGANDAN WATERS OF LAKE VICTORIA

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CATCH ASSESSMENT SURVEYS ARE JOINTLY CONDUCTED BY THE NATIONAL FISHERIES RESOURCES RESEARCH INSTITUTE (NaFIRRI), THE DIRECTORATE OF FISHERIES RESOURCES (DiFR), AND THE DISTRICTS OF BUSIA, NAMAYINGO, BUGIRI, MAYUGE, JINJA, MUKONO,BUIKWE, BUVUMA, WAKISO, KAMPALA, MPIGI, MASAKA, KALUNGU, KALANGALA AND RAKAI.

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FOREWORD

Monitoring fish stocks as well as the magnitude, distribution and trends of fishing effort and fish catches is required for sound fisheries resources management. Catch Assessment Surveys (CASs) are a popular fish stock assessment tool used to monitor and generate information on the fish stocks for their management. Results of CASs on the Uganda part of Lake Victoria provide the emerging trends of fish production in the lake, which together with information from similar surveys in the Kenyan and Tanzanian parts of the lake show the lake wide perspective of fisheries production and is utilized in the planning and management of the fisheries resources of Lake Victoria. Regular Catch Assessment Surveys (CASs) were conducted on Lake Victoria between July 2005 and December 2008 under the Implementation of a Fisheries Management Plan (IFMP) Project but were plagued by inconsistencies after the end of the project and no CAS data was collected for the years 2009, 2012 and 2013. For the years where CAS data is available beginning with 2010, only a single CAS was conducted. Seasonal variations affect fish catches and basing on one sampling to provide annual estimates for the lake may be misleading as it provides biased estimates.

The Lake Victoria Environmental Management Project Phase II (LVEMP II) funded the May 2014 and December 2015 CASs on the Uganda part of Lake Victoria. The CASs were carried out at 56 fish landing sites in the 15 riparian districts sharing the lake, following a statistical design laid down in Standard Operating Procedures (SOPs) agreed by the three partner states of the East African Community (LVFO, 2005). The National Fisheries Resources Research Institute (NaFIRRI), Jinja; the Directorate of Fisheries Resources (DiFR), Entebbe; and the 15 (formerly 11) riparian districts of Busia, Bugiri, Namayingo, Mayuge, Jinja, Mukono, Buikwe, Buvumma, Wakiso, Kampala, Mpigi, Masaka, Kalungu, Kalangala and Rakai jointly conducted the surveys. The CAS enumerators (112) were recruited from the fishing communities at the 56 participating landing sites on Uganda waters of Lake Victoria , trained and worked under direct supervision of sub county Fisheries Officers. In addition, the enumerators were given protective gears and CAS equipment. Capacity building of Beach Management Units (BMUs) and their participation in fisheries data collection is considered one of the avenues for sustainable data collection.

This report presents findings of the CAS conducted in the Ugandan waters of Lake Victoria in December 2015. The results of the previous thirteen harmonized CASs conducted since July 2005 (July, August, September and November 2005; in March, August and December 2006; in March and August 2007; in February and December 2008; March 2010; May 2011 and May 2014) are included to show the emerging trends. The report also presents annual catch estimates for the Ugandan part of the lake from 2005 to 2015.

This information together with other fish stock assessment and socio-economic monitoring survey data can now be utilized in the planning and management of the fisheries resources of Lake Victoria. The 2014 CAS results were very vital in the development of the Lake Victoria Fisheries Management Plan 2014.

NaFIRRI is very appreciative of the funding by the IDA World Bank to NARO and the LVEMP II, which have sustained CASs and other Resource and Socio-economic monitoring activities related to the Implementation of the Lake Victoria Council of Ministers decisions beyond the IFMP phase. NaFIRRI is also very keen and supportive of all efforts being made to sustain resource monitoring programmes beyond the life of the IFMP and LVEMP II

projects and has incorporated in NaFIRRI's Work plans a project on Evaluation of commercial catches in Uganda's major water bodies. This report is circulated to key stakeholders who are expected to provide feedback to NaFIRRI and engage policy in measures that illustrate response to scientific outputs.

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Director

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SUMMARY

Catch Assessment Surveys on Lake Victoria have been plagued with inconsistencies in data collection since the onset of harmonized sampling in July 2005, with some years (2009, 2012 and 2013) completely missing data while other have data collected in only one month (Table 9). Seasonal variations affect fish catches and basing on one sampling to provide annual estimates for the lake may result into biased estimates. Between July 2005 and December 2015, 15 Catch Assessment Surveys (CASs) were conducted at 56 pre-selected fish landing sites in the Ugandan part of Lake Victoria comprising approximately 10% of all landing sites in each of the former 11 (currently 15) districts sharing the lake. The CASs' were conducted following regionally harmonised Standard Operating Procedures (LVFO, 2005). This report covers the CAS conducted in December 2015 and puts into context the trends generated by results of the previous surveys.

A total of nine fish species groups (including others) were recorded during the December 2015 CAS. There was a 44.6% reduction in the estimated annual fish catches from 269,533 metric tonnes (MT) in 2014 to 149,382 MT in 2015. Similar to the previous two CASs in 2011 and 2014, Mukene dominated the commercial catch on the lake (65,268.6 MT, 43.7%). This was followed by Nile perch (37,219.3 MT, 24.9%), the haplochromines (15,072 MT, 10.1%) and Tilapia (13,278.2 MT, 8.9%). Comparing with the May 2014 CAS, all the three major commercial species (Nile perch, Tilapia and Mukene) registered declines in their monthly and annual catches (tables1&10). Despite forming the largest bulk of the total catch on the lake, the total beach values of Mukene remained significantly lower compared to the large size species, Nile perch and Tilapia whose combined catch was lower than that of Mukene. Mukene fetched 49 billion Uganda shillings (11.8%) in annual beach revenue compared to the 220 and 68.5 billion from Nile perch and Tilapia respectively. Overall, there a reduction in beach revenues generated from the three top commercial species compared to the May 2014 survey.

The catch rates (kg/boat/day) of Mukene were highest in the Catamaran boats using lift nets followed by the sesse motorized boats using small seine (Lampara) nets and was least in parachute boats small seines. For Nile perch, the ssesse motorized boat seine boats registered the highest catch rates (51.4kg/boat/day) followed by the flat boat seine boats (33.4kg/boat/day), the ssesse motorized long line boats (31.7kg/boat/day) and the ssesse pointed boat seine boats (30.8kg/boat/day). The Tilapia fishery on the other hand registered highest catch rates in the sesse pointed boats operating boat seines (18kg/boat/day) and the ssesse motorized boats using cast nets (16kg/boat/day).

The use of illegal fishing gears like beach seines, monofilament gillnets, cast nets, and basket traps was evident in the December 2015 CAS as evidenced by their highest catch rates for the target species (appendix 3). The continued use of these illegal gears to harvest the target species especially the Nile perch and tilapia is unsustainable for these fisheries and could be the main cause for the observed large declines in the two fisheries on the Lake. Management efforts on the lake need to be geared towards eliminating these illegal fishing practices. The very low beach values from Mukene catches despite their large contribution should be a matter of concern particularly along the value chain from post harvest handling, value addition and marketing. The CASs on Lake Victoria should cater for seasonal variations as per the SOPs in order to provide accurate and reliable estimates of the lake catches.

1 INTRODUCTION

Lake Victoria, with a surface area of 68,800 km^2, is the second largest freshwater body in the World. The largest part of the lake, i.e. 35,088 km^2 (51%) is in Tanzania, followed by the Uganda 29,584 km^2 (43%), and the Kenya 4,128 km^2 (6%). The lake has a shoreline length of 3,450 km with 1,150 km (33%) in Tanzania, 1,750 km (51%) in Uganda and 550 km (16%) in Kenya. The lake's fisheries support a vibrant fish export industry, which is one of the major foreign exchange earners of the three Partner States sharing the lake. The lake is also a very important source of high protein food and employment for the peoples of the Partner States of the East African Community (EAC).

The Partner states of the EAC through the Lake Victoria Fisheries Organization (LVFO) have been monitoring the exploitation of the fisheries resources of Lake Victoria through harmonized fisheries data collection methods around the lake including collection of information on trends of fishing effort and fish catches through Frame Surveys (FSs) and Catch Assessment Surveys (CASs) respectively. The data generated by CASs provide Catch per unit effort (CPUE), which, together with fishing effort information obtained from regular biannual Frame surveys is used to estimate total landed fish catches. Data from CASs also provide a quick rough index of stock size. The monthly catches in this report, covering the period between July 2005 and December 2008 were calculated using raising factors from the 2008 Frame Survey data, those covering March 2010 and September 2011 were estimated using the 2010 Frame Survey, those in May 2014 used the 2012 and the December 2015 used the 2014 Frame Survey data.

This CAS report provides estimates of the quantities of fish landed in the riparian districts sharing the Ugandan waters of Lake Victoria; the monetary value of the fish catches; the contribution of different fish species to the catches; and the trends in fish catch rates, and the monthly catches for the sampled month since the beginning of harmonized CAS activities in July 2005 to December 2015. The report also compares the annual catch and gross beach value of catch landings in 2005, 2006, 2007, 2010, 2014 and 2015. A total of 15 CASs have been undertaken in the Uganda sector of the lake with data gaps in 2009, 2012 and 2013 due to financial constraints. The annual catch estimates for the years 2010, 2011, 2014 and 2015 were based on one sampling covering the rainy season and may not capture changes that could occur in dry season. There is need to include dry season sampling in future surveys.

2 METHODOLOGY

2.1 The Catch Assessment Survey Design

The CASs conducted in the Ugandan waters of Lake Victoria follow a design laid out in the approved Standard Operating Procedures for Catch Assessment Surveys on Lake Victoria (LVFO, 2005). This is a two-stage stratified sampling design whereby: within each district, a sample of primary sampling units (PSUs) i.e. the fish landing sites were first selected, and then, at each PSU, stratified samples of Secondary Sampling Units (SSUs) i.e. the Vessel gear type, are randomly selected by the field enumerator for sampling.

2.2 Sampling Units

Landing sites are the primary sampling units (PSUs) and the vessel-gear (VG) types landing at each site are the secondary sampling units (SSUs). Within each of the formerly eleven districts sharing the Ugandan part of the lake, 10% of all landing sites (PSUs) selected for sampling at the beginning of the surveys in 2005 were maintained but implementation of the

CAS activities were done by new districts. A total of 56 PSUs (Appendix 1) were sampled in the Ugandan part of Lake Victoria. The landing sites were selected randomly with Probability Proportional to Size (PPS), where size is based on the number of vessels landing at the site.

There have been changes in district boundaries that resulted in formation of new districts with corresponding changes in location of some CAS landing sites (Appendix 2). However for purposes of maintaining the SOPs, landing sites in the formerly 11 districts were considered during the further analyses of monthly and annual estimates because the 2010 Frame survey was based on the former eleven districts. The 2014 survey provides CAS results for all the 15 riparian districts sharing Lake Victoria on the Uganda side.

During the sampling period, the enumerators identified the numbers of all Vessel-Gear (VG) types at each landing site that landed or were expected to land during the sampling day and allocated sampling effort among the SSUs and VG types in proportion to the number of vessels to be sampled. The maximum sample per day per PSU was set at 20 vessels. Sampling was done in four days in the month, staggered to two consecutive days in either the first and third or second and forth weeks of the month.

2.3 Data capture

Regionally harmonized data forms were used to record field data. The enumerators were trained and provided with a *Field Guide* containing the data recording instructions to ensure effective data capture. Provision for close supervision of enumerators by the Sub-county Fisheries Officers and spot checks by District Fisheries Officers and Officers from the National Fisheries Authorities, i.e. the National Fisheries Resources Research Institute (NaFIRRI), and the Department of Fisheries Resources (DFR) were made to ensure that data collection was done according to the laid down procedures.

2.4 Estimation of CAS-based Indicators

Data were stored and analyzed using Microsoft Excel. The fishing crafts were segregated into effort groups (Vessel-gear combinations) and the CAS indicators estimated for each effort group.

(i) The mean fish catch rates (kg $boat^{-1}$ day^{-1}) were estimated for each effort group by species.

(ii) The fish catches were estimated using the mean fish catch rates and the Frame survey data of 2008, 2010 and 2012. For each effort group, the Boat activity coefficient (*B)*, i.e. the probability that a fishing vessel of each vessel-gear type *g* would be active on any day during the month was estimated as the mean number of days boats in each effort group fished in a week divided by the number of days in a week. The catch (*C)* of each effort group was then estimated.

(iii) The beach value of the catch, i.e. the gross income to the fishers, was estimated by raising the estimated catch in each effort group by the mean unit price of each fish species landed.

(iv) The data used to estimate the annual catch of 2005 was based on the data collected July and November 2005 and the estimates for 2006 and 2007 were based on the Annual programme estimates period of the IFMP project (October to September of the following year) rather than the calendar year. Thus the data collected in the period

October 2005 to September 2006 were used to estimate the catches for 2006 and the data collected in the period October 2006 to September 2007 used to estimate the catches for 2007. In 2008, CAS data were collected in February and December and the two data points were used to estimate the annual catches. There was no CAS undertaken in the years 2009, 2012 and 2013 with only one CAS implemented in 2010, and 2011. The mean monthly estimates in each of the three years were raised through 12 months to obtain the annual catch estimates. However for the years 2014 and 2015 the mean monthly estimates were raised through the 365 days in the year divided by the total number of days in a month estimated as 30 days considering that some months are 28, 29, 30 and 31 days.

3 RESULTS

Details of the results, i.e. fish catch rates and the estimated fish catches are in Appendices 3&4. Both Nile perch and tilapia were the most targeted fish species recorded in more than half of the vessel gear categories during the December 2015 survey.

3.1 Fish catch rates (kg boat^{-1}day^{-1})

Nile perch catch rates

Nile perch (*Lates niloticus*) was targeted by three main fishing gears; beach seines, long lines and gillnets operated in three boat categories; Sesse motorized, Sesse paddled and parachute paddled boats. The species was also recorded as by-catch in the small seine boats targeting Mukene/Daaga (*Rastrineobola argentea*). Generally Nile perch recorded the highest catch rates in boat seines (Figure 1 a & b; Appendix 3) with the motorized boat seine boats and paddled Ssesse flat recording the highest (51.4 and 33.4 kg/boat/day) respectively. The least Nile perch catch rate in boat seines was recorded in paddled parachutes (16.4 kg/boat/day) which was still higher than the highest catch rate of the most recommended fishing gear, the motorized and paddled Ssesse flat gillnet boats (14.9 and 11.5 kg/boat respectively (Figure 1 & 2; Appendix 3). These results show a 24.0% an increase in Nile perch catch rates within the paddle ssesse flat beach seine boats from 24.9 kg/boat/day recorded in 2014. The catch rates in Paddle Sesse Flat gillnet boats slightly decreased from 12.3 kg/boat/day in 2014 to 11.5 in the current survey while that in paddle ssesse pointed gillnet boats showed a four-fold increase from only 2.4 kg/boat/day to 9.0 kg/boat/day in the same period. Despite the general high catch rates in beach seines and longlines there was a 25% and 39% reduction in Nile perch catch rates in paddled ssesse flat boats from 24.4 kg/boat/day in both gears (Figures 1; Appendix 3)

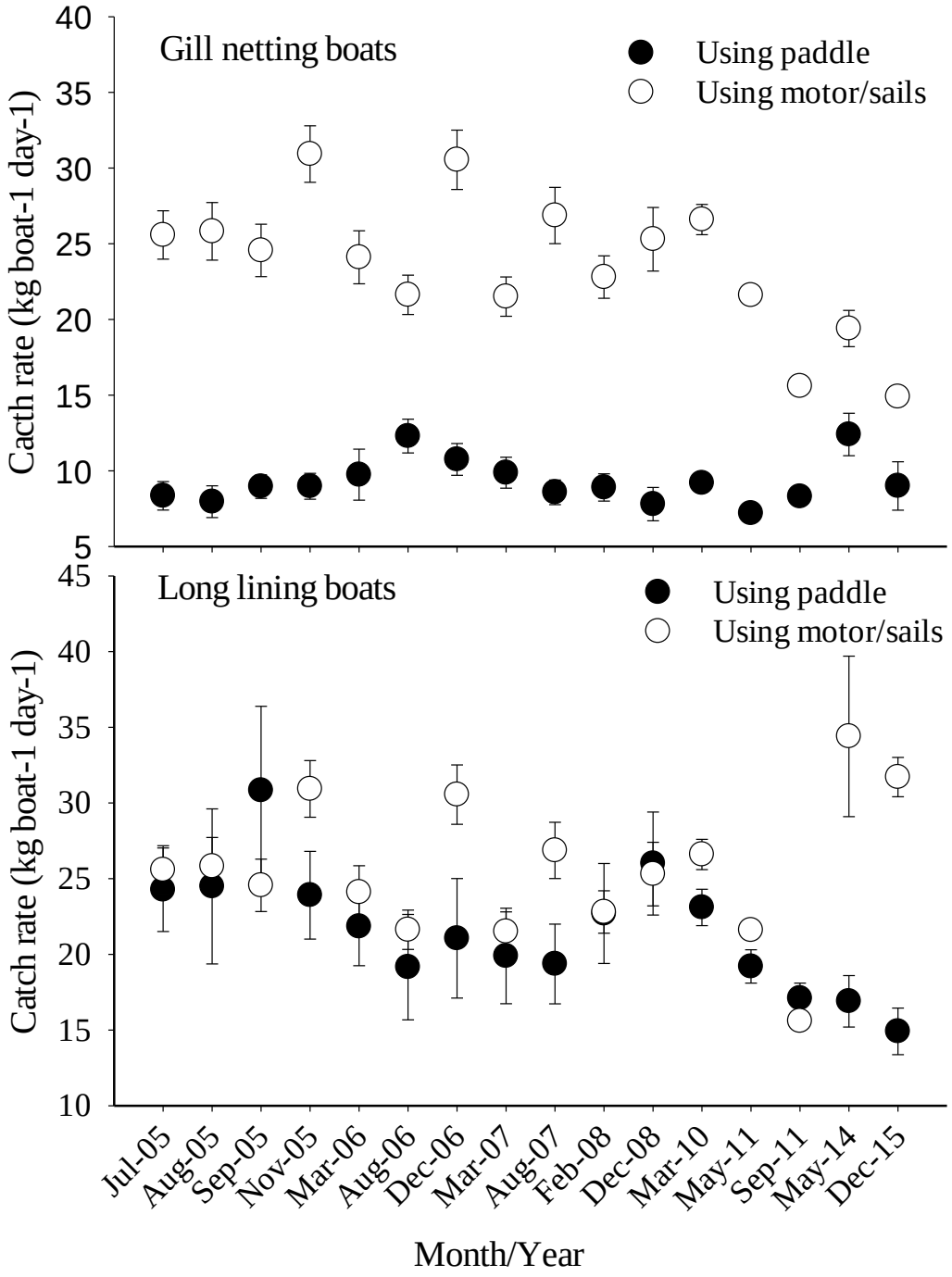

Figure 1 (a). Monthly trends of Nile perch catch rates of the main effort groups targeting the species in the Ugandan part of Lake Victoria between July 2005 and December 2015 (error bars = 95%CL).

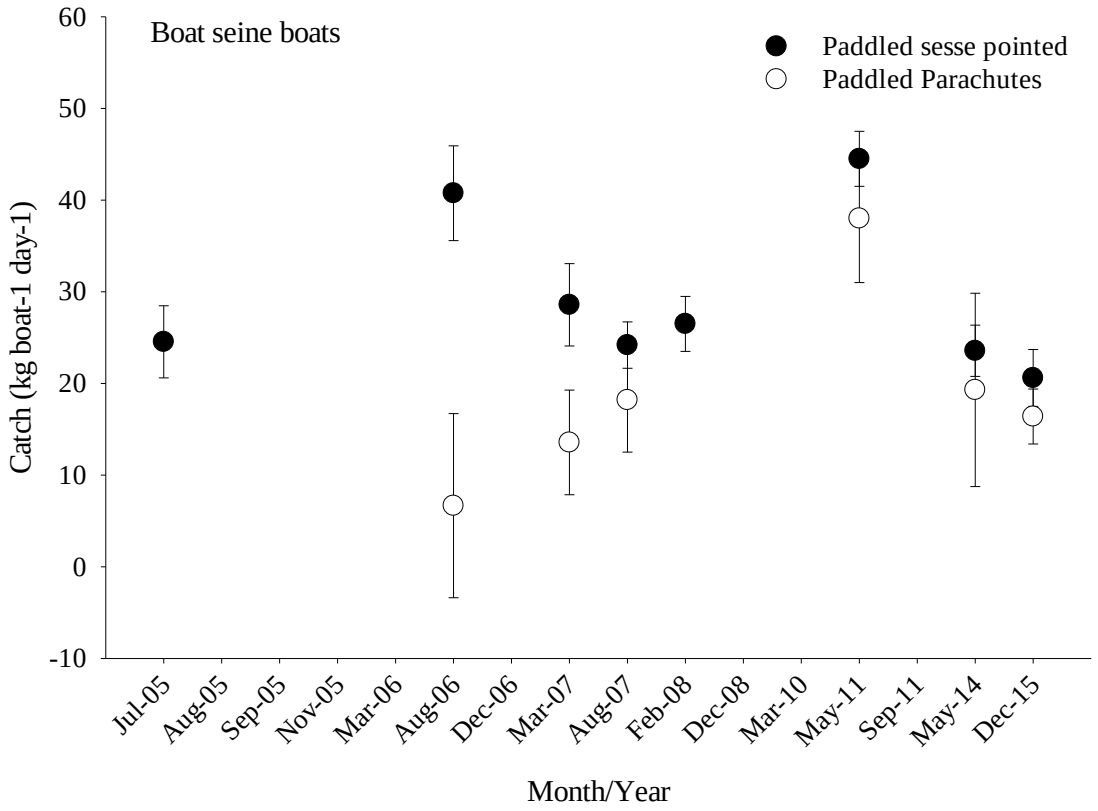

Figure 1 (b). Monthly trends of Nile perch catch rates from boat seines of the the main vessel groups targeting the species in the Ugandan part of Lake Victoria between July 2005 and December 2015 (error bars = 95%CL).

Tilapia catch rates

The tilapia species were recorded in all vessel categories except the catamaran boats. The parachute boats (locally known as *bawo tatu*), ssesse flat at one end and the ssesse pointed at both ends were the common fishing crafts involved in the tilapia fishery particularly the shallow inshore waters on the Ugandan portion of Lake Victoria in December 2015 (Appendix 3). Four main fishing gears; gillnets, boat seines, cast nets, hand line hooks, and basket traps were used to target tilapia on the lake. Like in the May 2014 survey, the paddle ssesse pointed boats using unidentified gear category recorded as others (OT) registered the highest catch rates for tilapia (25.5 kg/boat/day) during the current survey. The other high catch rates were recorded in the paddle sesse pointed boats using boat seines (18.0 kg/boat/day), motorized sesse flat boats using cast nets (16.0 kg/boat/day), the paddle sesse flat using boat seines (15.4 kg//boat/day) and the paddle sesse pointed boats using basket traps (14.5kg/boat/day). The paddled parachute gillnet boats which have for long been specialized in the tilapia fishery showed an increase in the tilapia catch rates (7.1 kg/boat/day) compared the previous two catch assessment surveys of May 2014 (4.9 kg/boat/day) and May 2011 (6.5 kg/boat/day). The Tilapia catch rates from unidentified vessel category using gills nets and hand lines increased from 4.7 to 9.4 kg/boat/day and 3.6 to 6.2 kg/boat/day from May 2014 to December 2015 respectively.

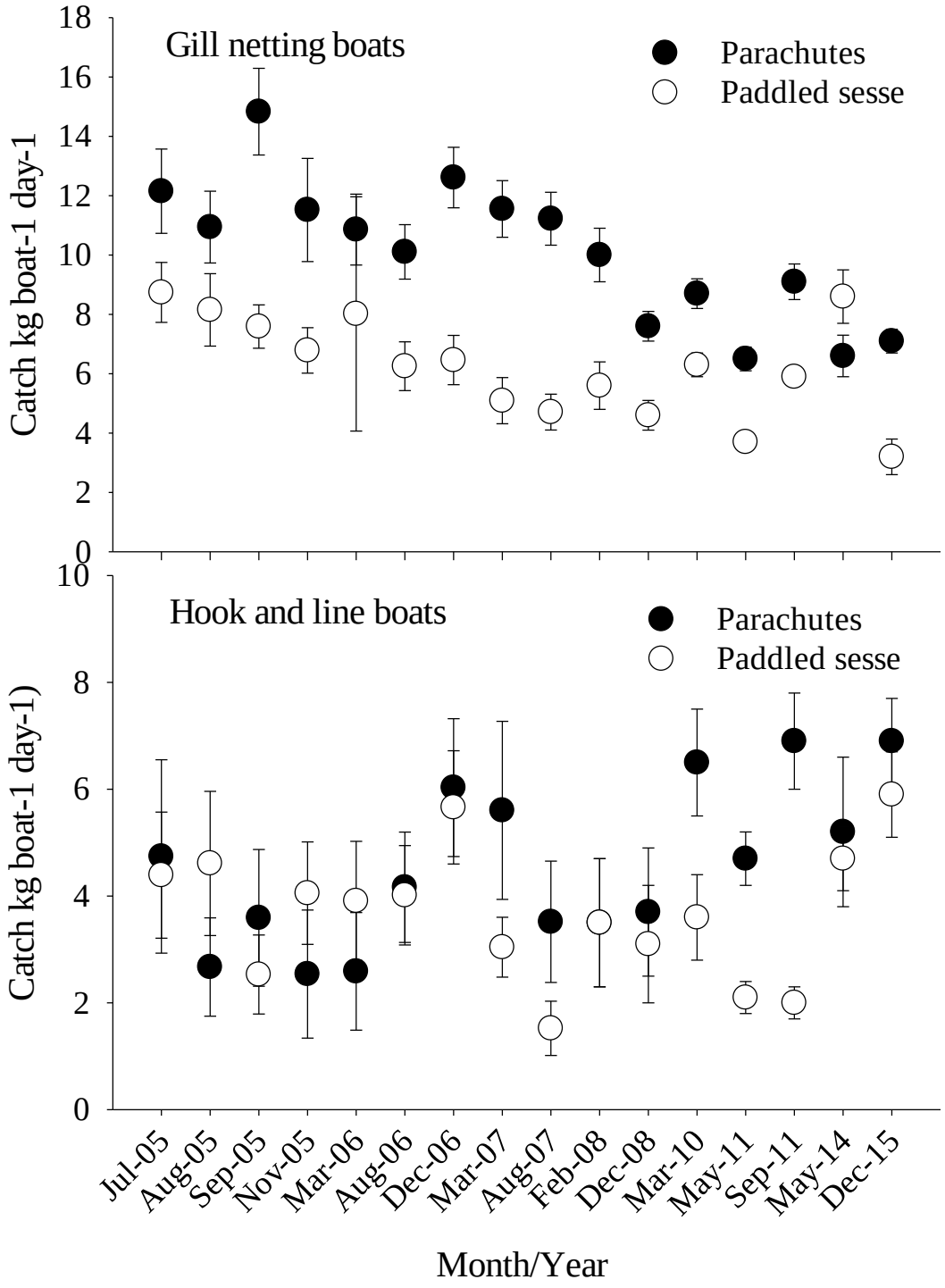

Figure 2 (a). Monthly trends of tilapia catch rates of the main vessel groups targeting the tilapia in the Ugandan part of Lake Victoria between July 2005 and December 2015 (error bars = 95%CL).

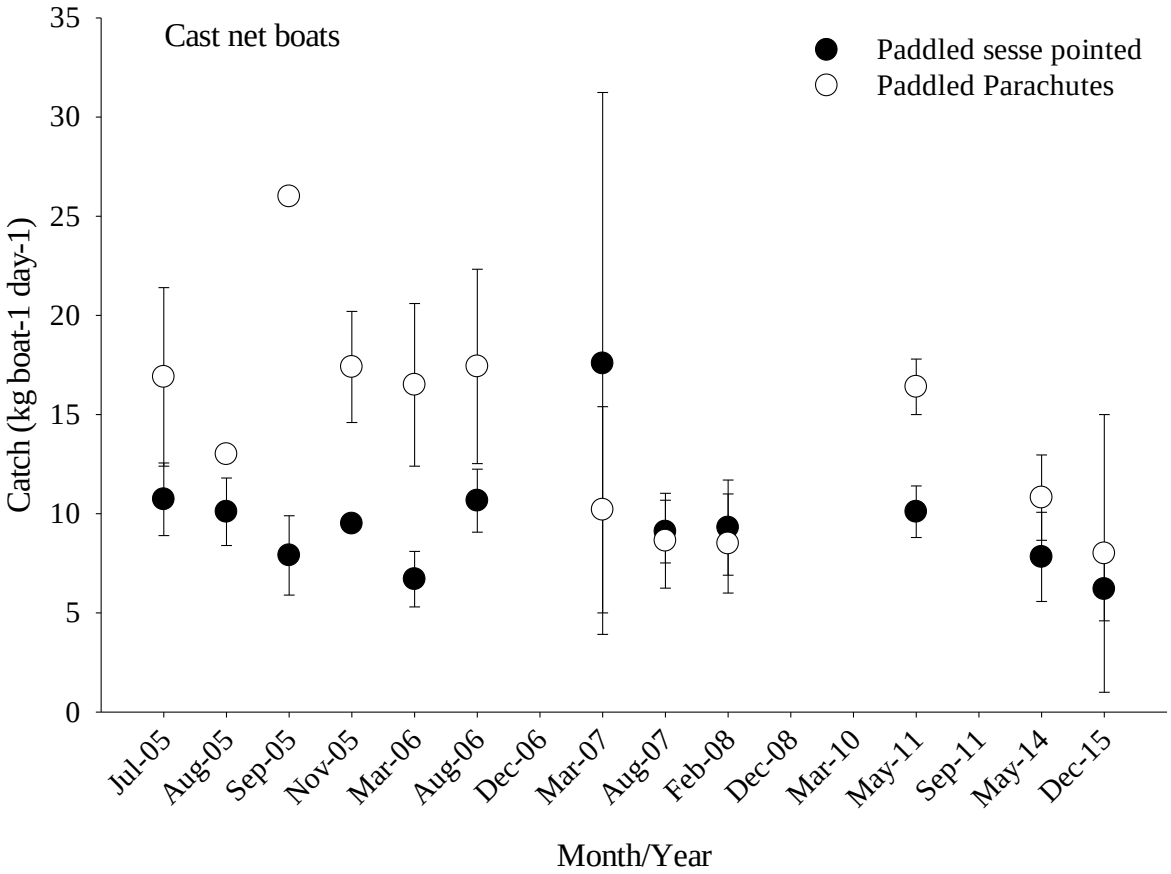

Figure 2 (b). Monthly trends of tilapia catch rates from act nets of the main vessel groups targeting the tilapia in the Ugandan part of Lake Victoria between July 2005 and December 2015 (error bars = 95%CL).

Mukene/Dagaa catch rates

Four major vessel gear categories; catamaran using lift nets (CA-LN), parachutes using small seines (PA-SS), sesse flat using small seines/Lampara nets (SF-SS) and sesse pointed using small seines (SP-SS) were involved in the Mukene fishing on the Uganda side of Lake Victoria in December 2015 (Appendix 3) but the dominant vessel category targeting Mukene in December 2015 were the paddled sesse flat boats using small seines (Lampala). The CA-LN category registered the highest catch rates for Mukene (945 kg/boat/day), representing an eight-fold increment from the 122.8 kg/boat/day recorded during the May 2014 survey. These were followed by the motorized sesse flat boats using small seines (237.6 kg/boat/day), the paddled sesse flat boats using small seines (139.8 kg/boat/day) and the sesse pointed boats using small seine nets (116.4 kg/boat/day). The dominant vessel gear category the paddled Sesse flat boats using small seines registered a 44% reduction from the 249.5 kg/boat/day recorded in May 2014. The sesse flat boats using scoop nets which recorded high catch rates of Mukene (205.4 kg/boat/day) during the May 2014 survey were not encountered in the current survey.

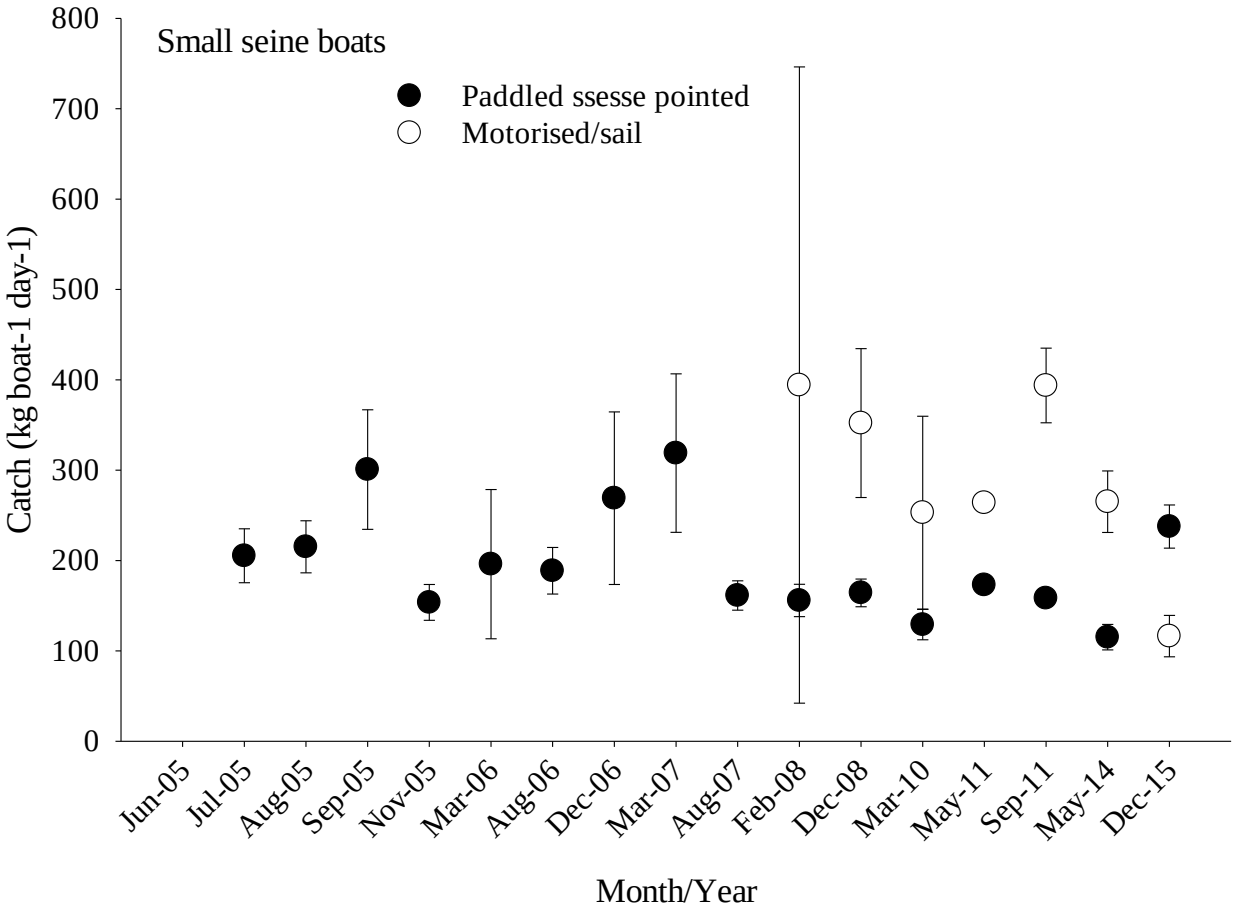

Figure 3. Trends of Mukene catch rates of the main effort groups targeting the species in the Ugandan part of Lake Victoria between July 2005 and December 2015 (error bars = 95%CL).

3.2 National Estimates of monthly fish catches of the main commercial species

Table 1 summarizes trends of estimated monthly catches of the sampled months between July 2005 and December 2015 on the Uganda part of Lake Victoria while appendices 5-18 provides detailed monthly catch landings segregated by species and district.

Generally the monthly catch landing of the dominant commercial fish species registered a notable reduction with Mukene recording 61% reduction from 13784.4 t to 5364.5 t, followed by Nile perch 46% from 5615.0 t to 3059.1 t the lowest monthly catch estimate since the beginning of the surveys in July 2005 and of Tilapia 38% from 1761.2 t to 1091.4 t May 2011 and December 2015 respectively. Despite the notable decline in the major commercial species the other five species plus (Haplochromines, *Protopterus, Synodontis, Clarias, Bagrus* etc) recorded a 112% increase from 1299.5 t in May 2014 to 2762.9 in December 2015.

Table 3.1. Estimated monthly fish catches (tonnes) in the Ugandan part of Lake Victoria between July 2005 and December 2015.

Month	Nile perch	Tilapia	Mukene	Other spp	Total
Jul-05	8031.2 ± 1242.4	2828.9 ± 526.7	9445.0 ± 3239.0	2300.3 ± 752.3	22605.4 ± 5760.4
Aug-05	6633.9 ± 1268.9	2346.0 ± 469.0	8142.6 ± 1252.5	102.1 ± 134.9	17224.6 ± 3125.3

Month	Nile perch	Tilapia	Mukene	Other spp	Total
Sep-05	8322.8 ± 1268.0	2401.9 ± 586.9	11494.2 ± 2450.2	101.1 ± 96.8	22320.0 ± 4401.9
Nov-05	8646.3 ± 1100.8	2214.4 ± 425.1	6384.7 ± 1087.4	101.6 ± 98.1	17347.0 ± 2711.4
Mar-06	7099.1 ± 1098.3	2331.2 ± 921.4	8430.8 ± 3311.3	224.6 ±204.3	18085.7 ± 5535.3
Aug-06	7367.7 ± 1058.7	2206.2 ± 512.9	8587.0 ± 1275.2	176.4 ± 162.8	18337.3 ± 3009.6
Dec-06	8371.0 ± 1066.5	2371.3 ± 416.9	9948.3 ± 3629.1	170.3 ± 154.0	20860.9 ± 5266.6
Mar-07	6710.6 ± 998.1	1923.4 ± 472.5	11994.6 ± 3541.0	247.0 ± 185.2	20875.6 ± 5196.8
Aug-07	6,965.4 ± 807.3	1,908.0 ± 332.4	6,660.1 ± 1,270.6	236.3 ± 170.4	15,769.9 ± 2,580.6
Feb-08	6,569.0 ± 894.6	1,869.2 ± 424.6	5,582.4 ± 721.6	294.9 ± 178.7	14,315.5 ± 2219.5
Dec-08	6,927.1 ± 946.3	1,390.2 ± 400.4	6,084.4 ± 959.0	120.0 ± 101.1	14,521.7 ± 2,406.8
March-10	7080.8 ± 433.7	1414.3 ± 169.4	4893.1 ± 790.9	189.2 ± 55.3	13577.4 ± 1449.4
May -11	6005.1 ± 481.1	1612.5 ± 539.1	7356.7 ± 500.1	300.4 ± 98.2	15274.7 ± 1118.6
May-14	5615.0 ± 139.5	1761.2 ± 158.2	13784.4 ± 600.9	1299.5 ± 856.5	22460.2 ± 1755.1
Dec-15	3059.1 ± 785.2	1091.4 ± 251.4	5364.5± 2,244.2	2762.9 ± 924.7	12277.9 ± 2,377.1

3.3 Monthly fish catch estimates by district and beach value of the main commercial species

Based on the total number of fishing crafts categorized by craft-gear characteristics, the estimated the total monthly and annual catches for each fish species in each district of the 15 riparian districts (Table 2). The districts of Mayuge (34.2%), Mukono (22%), Buvuma (9.6%), Buikwe (8.6%) and Namayingo (7.8%) had the largest share of the fish catch estimates for all species in December 2015 (Tables 3-7). Generally, there has been a continuous increase in the beach values from commercial catches landed on the Uganda side of Lake Victoria since July 2005. The gross monthly beach value from the sale of fish was unevenly distributed in the riparian districts, but was highest for the Nile perch followed by tilapia and Mukene.

Table 3.2. Distribution of fishing crafts including rafts and foot fishers in the riparian districts of the Ugandan part of Lake Victoria (Frame survey 2014 data).

District	Total	Proportion
Bugiri	147	0.5
Buikwe	1,644	6.0
Busia	219	0.8
Buvuma	5,586	20.3
Jinja	403	1.5
Kalangala	3,473	12.6
Kalungu	150	0.6
Kampala	112	0.4
Masaka	1,033	3.8
Mayuge	3,331	12.1
Mpigi	854	3.1
Mukono	3,815	13.9
Namayingo	3,898	14.2
Rakai	580	2.1
Wakiso	2,241	8.2
Grand Total	**27,486**	**100.0**

Table 3.3. Estimated monthly catches (tones) and beach value (Mill.shs) of Nile perch in the Ugandan part of Lake Victoria by district (July 2005 to December 2015).

Month	Total catch /BeachValue	Busia	Bugiri	Mayuge	Namayingo	Jinja	Mukono	Buikwe	Buvuma	Kampala	Wakiso	Mpigi	Masaka	Kalungu	Kalangala	Rakai	Total
Jul-05	Catch	29.0	1,589.0	757.1		48.2	3,074.4			47.4	546.8	160.2	200.8		1,390.3	187.9	8,031.2
	Value	55.9	3,060.9	1,458.4		92.8	5,922.2			91.2	1,053.3	308.6	386.9		2,678.2	361.9	15,470.4
Aug-05	Catch	17.4	1,102.7	572.3		41.2	2,633.2			42.3	467.2	143.4	174.6		1,269.1	170.7	6,633.9
	Value	33.5	2,124.1	1,102.3		79.3	5,072.3			81.4	900.0	276.2	336.3		2,444.7	328.9	12,778.9
Sep-05	Catch	28.3	1,392.0	748.1		54.3	3,362.7			63.3	593.5	161.7	216.8		1,516.9	185.2	8,322.8
	Value	54.5	2,681.4	1,441.1		104.6	6,477.5			122.0	1,143.3	311.5	417.6		2,922.1	356.7	16,032.2
Nov-05	catch	24.8	1,589.3	792.4		50.8	3,348.6			51.1	576.0	170.2	221.0		1,599.3	222.9	8,646.3
	Value	47.8	3,061.5	1,526.3		97.8	6,450.4			98.4	1,109.5	327.8	425.7		3,080.7	429.3	16,655.3
Mar-06	Catch	23.5	1,204.5	642.6		44.2	2,810.2			49.0	488.3	152.5	186.2		1,323.7	174.3	7,099.1
	Value	45.3	2,320.3	1,237.8		85.1	5,413.2			94.4	940.7	293.7	358.7		2,549.9	335.8	13,674.8
Aug-06	Catch	48.0	1,217.3	639.3		50.6	2,924.7			57.6	527.2	168.3	197.0		1,368.5	169.3	7,367.7
	Value	92.4	2,344.9	1,231.6		97.4	5,633.7			110.9	1,015.6	324.3	379.4		2,636.0	326.1	14,192.2
Dec-06	Catch	20.3	1,599.9	763.7		41.7	3,193.2			50.5	543.3	171.4	214.3		1,548.0	224.6	8,371.0
	Value	32.7	2,570.5	1,227.1		67.0	5,130.5			81.1	872.9	275.4	344.4		2,487.2	360.9	13,449.7
Mar-07	Catch	17.9	1,231.3	594.6		41.6	2,637.4			45.5	466.0	139.2	164.6		1,215.1	157.5	6,710.6
	Value	28.7	1,978.3	955.3		66.8	4,237.5			73.2	748.8	223.6	264.4		1,952.3	253.0	10,782.0
Aug-07	Catch	19.2	1,349.2	615.8		42.9	2,689.4			42.2	470.0	139.1	163.9		1,257.7	176.0	6,965.4
	Value	35.8	2,521.8	1,151.0		80.2	5,026.8			78.9	878.5	260.0	306.4		2,350.8	328.9	13,019.1
Feb-08	Catch	18.3	1,170.4	562.6		43.0	2,589.3			42.5	461.9	134.4	169.1		1,218.3	159.3	6,569.0
	Value	40.6	2,594.8	1,247.3		95.3	5,740.5			94.1	1,024.1	297.9	374.9		2,700.9	353.1	14,563.5
Dec-08	Catch	20.8	1,286.1	593.5		42.1	2,633.5			44.2	448.5	175.6	274.5		1,215.7	192.5	6,927.1

Month	Total catch /BeachValue	Busia	Bugiri	Mayuge	Namayingo	Jinja	Mukono	Buikwe	Buvuma	Kampala	Wakiso	Mpigi	Masaka	Kalungu	Kalangala	Rakai	Total
	Value	46.9	2,892.5	1,334.8		94.6	5,922.8			99.4	1,008.7	395.0	617.4		2,734.1	432.9	15,579.0
March-10	Catch	49.6	885.1	793.1		92.1	2,577.4			56.6	644.4	254.9	453.2		1,104.6	169.9	7,080.8
	Value	173.3	3,094.2	2,772.4		32.2	9,010.4			198.0	2,252.6.	891.1	1,584.3		3,861.6	594.1	24,735.4
May-11	Catch	42.0	750.6	672.6		78.1	2,185.9			48.0	546.5	216.2	384.3		936.8	144.1	6,005.1
	Value	190.4	3,400.6	3,046.9		35.4	9,902.5			217.6	2,475.6	979.4	1,741.1		4,243.9	652.9	27,204.7
May-14	Catch	39.8	18.1	544.5	797.2	64.7	770.9	299.0	1,122.8	29.6	490.2	148.0	222.0	36.2	928.9	112.8	5,624.7
	Value	213.6	97.1	2,922.7	4,279.3	347.5	4,137.9	1,604.9	6,026.6	158.6	2,631.3	794.3	1,191.5	194.3	4,986.2	605.5	30,191.5
Dec-2015	Catch	13.4	13.7	482.0	251.9	10.0	959.5	158.6	462.1	44.9	173.8	43.4	28.9	24.3	296.5	96.2	3,059.1
	Value	79.4	81.1	2,848.7	1,488.7	59.0	5,671.2	937.7	2,731.4	265.2	1,027.1	256.3	170.6	143.8	1,752.2	568.6	18,080.7

Table 3.4. Estimated monthly catches (tones) and beach value (Mill.shs) of Tilapia in the Ugandan part of Lake Victoria by district (July 2005 to December 2015).

Month	Total catch and Beach Value	Busia	Bugiri	Mayuge	Namayingo	Jinja	Mukono	Buikwe	Buvuma	Kampala	Wakiso	Mpigi	Masaka	Kalungu	Kalangala	Rakai	Total
Jul-05	Catch	19.4	272.1	269.9		39.1	869.0			20.2	300.5	167.5	246.3		572.0	52.9	2,828.9
	Value	18.7	262.8	260.7		37.8	839.5			19.5	290.3	161.8	238.0		552.6	51.1	2,732.8
Aug-05	Catch	22.6	193.1	359.3		57.7	787.0			25.8	180.7	135.1	203.7		361.9	32.8	2,359.8
	Value	21.7	184.8	343.9		55.2	753.2			24.7	172.9	129.3	194.9		346.3	31.4	2,258.3
Sep-05	Catch	12.3	238.3	226.9		31.2	696.7			14.9	259.6	148.3	234.7		492.4	46.4	2,401.9
	Value	11.9	230.2	219.2		30.2	673.0			14.4	250.8	143.3	226.7		475.7	44.8	2,320.2
Nov-05	Catch	13.3	217.4	219.4		32.0	664.5			16.6	240.9	129.5	205.4		434.3	41.3	2,214.4
	Value	12.8	210.0	211.9		30.9	641.9			16.1	232.7	125.1	198.4		419.5	39.9	2,139.1
Mar-06	Catch	16.6	247.4	233.1		30.9	732.4			17.5	234.5	131.4	192.7		453.1	41.6	2,331.2
	Value	16.0	239.0	225.2		29.8	707.5			16.9	226.6	127.0	186.1		437.7	40.2	2,251.9
Aug-06	Catch	11.7	231.6	241.7		31.2	667.0			17.0	232.8	123.7	191.6		420.7	37.2	2,206.2
	Value	11.3	223.7	233.4		30.2	644.3			16.4	224.9	119.5	185.1		406.4	36.0	2,131.2
Dec-06	Catch	13.0	232.4	253.1		34.6	688.6			17.2	261.9	138.3	229.3		462.0	40.8	2,371.3
	Value	12.4	221.9	241.7		33.1	657.4			16.5	250.0	132.0	218.9		441.1	39.0	2,263.9
Mar-07	Catch	9.1	188.2	196.4		28.4	555.1			13.5	225.7	111.9	183.5		376.5	35.2	1,923.4
	Value	8.7	179.6	187.5		27.1	530.0			12.9	215.4	106.9	175.1		359.4	33.6	1,836.3
Aug-07	Catch	10.5	162.7	188.5		22.6	569.6			14.1	216.3	112.8	195.4		381.8	33.8	1,908.0
	Value	12.8	198.2	229.6		27.6	693.8			17.1	263.5	137.4	238.1		465.1	41.2	2,324.4
Feb-08	Catch	10.7	166.6	180.3		25.7	567.8			13.7	210.7	111.3	178.9		370.1	33.4	1,869.2

Month	Total catch and Beach Value	Busia	Bugiri	Mayuge	Namayingo	Jinja	Mukono	Buikwe	Buvuma	Kampala	Wakiso	Mpigi	Masaka	Kalungu	Kalangala	Rakai	Total
	Value	13.5	209.9	227.1		32.4	715.4			17.3	265.5	140.3	225.4		466.3	42.0	2,355.2
Dec-08	Catch	18.2	176.1	145.4		34.5	377.4			11.4	191.5	79.2	110.3		217.3	29.0	1,390.2
	Value	29.6	287.2	237.2		56.3	615.5			18.6	312.3	129.2	180.0		354.4	47.3	2,267.5
March-10	Catch	9.9	176.8	158.4		18.4	514.8			11.3	128.7	50.9	90.5		220.6	33.9	1,414.3
	Value	21.5	384.6	344.6		40.0	1,120.1			24.6	280.0	110.8	196.9		480.0	73.9	3,077.2
May-11	Catch	11.3	201.6	180.6		21.0	587.0			12.9	146.7	58.1	103.2		251.6	146.7	1,612.5
	Value	31.6	564.9	506.2		58.8	1,645.1			36.2	411.3	162.7	289.2		705.1	108.5	4,519.4
May-14	Catch	12.5	5.7	170.4	249.4	20.3	241.2	93.6	351.3	9.2	153.4	46.3	69.5	11.3	290.7	35.3	1,759.9
	Value	52.9	24.0	723.5	1,059.3	86.0	1,024.0	397.3	1,491.8	39.3	651.3	196.6	294.9	48.1	1,234.3	149.9	7,473.4
Dec-2015	Catch	16.4	4.6	157.3	75.5	16.0	353.5	84.8	111.3	10.6	55.2	64.4	27.7	31.0	68.5	14.5	1,091.4
	Value	84.4	23.9	811.9	389.7	82.6	1,824.3	437.5	574.2	54.9	284.8	332.3	143.1	160.1	353.4	74.9	5,631.9

Table 3.5. Estimated monthly catches (tonnes) and beach value (Mill. shs) of Mukene in the Ugandan part of Lake Victoria by district (July 2005 to December 2015).

Month	Total catch and Beach Value	Busia	Bugiri	Mayuge	Namayingo	Jinja	Mukono	Buikwe	Buvuma	Kampala	Wakiso	Mpigi	Masaka	Kalungu	Kalangala	Rakai	AAA	Overall
Jul-05	Catch	19.0	744.2	570.6		6.2	3,436.5			7.6	446.1	30.4	450.2		3,722.8	11.4	-	9,445.0
	Value	3.7	145.1	111.3		1.2	670.1			1.5	87.0	5.9	87.8		725.9	2.2	-	1,841.8
Aug-05	Catch	21.0	822.0	621.6		2.5	3,436.9			8.4	461.8	33.6	479.5		2,242.8	12.6	-	8,142.6
	Value	4.1	160.3	121.2		0.5	670.2			1.6	90.0	6.5	93.5		437.4	2.5	-	1,587.8
Sep-05	Catch	29.3	1,148.9	869.5		4.1	4,821.1			11.7	648.5	47.2	670.9		3,225.3	17.7	-	11,494.2
	Value	5.7	224.0	169.5		0.8	940.1			2.3	126.5	9.2	130.8		628.9	3.5	-	2,241.4
Nov-05	Catch	14.4	561.4	427.8		3.6	2,477.0			5.9	327.3	24.2	332.9		2,201.4	9.0	-	6,384.7
	Value	2.8	109.5	83.4		0.7	483.0			1.2	63.8	4.7	64.9		429.3	1.7	-	1,245.0
Mar-06	Catch	19.7	792.1	590.0		3.9	3,349.1			7.9	444.3	32.2	454.2		2,722.6	14.9	-	8,430.8
	Value	3.8	154.5	115.1		0.8	653.1			1.5	86.6	6.3	88.6		530.9	2.9	-	1,644.0
Aug-06	Catch	19.6	766.4	583.3		4.2	3,360.6			7.8	444.0	31.3	454.8		2,903.1	11.7	-	8,587.0
	Value	3.8	149.5	113.7		0.8	655.3			1.5	86.6	6.1	88.7		566.1	2.3	-	1,674.5
Dec-06	Catch	28.1	1,103.4	831.8		2.4	4,476.5			11.9	611.0	45.9	633.2		2,187.2	16.9	-	9,948.3
	Value	5.4	212.4	160.1		0.5	861.7			2.3	117.6	8.8	121.9		421.0	3.3	-	1,915.1
Mar-07	Catch	28.6	1,127.0	864.9		5.8	4,800.6			11.8	639.4	50.2	655.3		3,793.3	17.8	-	11,994.6
	Value	3.6	140.9	108.1		0.7	600.1			1.5	79.9	6.3	81.9		474.2	2.2	-	1,499.3
Aug-07	Catch	15.4	602.0	457.8		3.2	2,626.5			6.1	347.6	24.6	356.6		2,211.1	9.2	-	6,660.1
	Value	3.4	134.3	102.1		0.7	585.7			1.4	77.5	5.5	79.5		493.1	2.1	-	1,485.2
Feb-08	Catch	12.8	500.4	380.7		2.7	2,190.5			5.1	289.6	20.4	296.8		1,875.6	7.7	-	5,582.4
	Value	3.4	134.6	102.4		0.7	589.2			1.4	77.9	5.5	79.8		504.5	2.1	-	1,501.7

Month	Total catch and Beach Value	Busia	Bugiri	Mayuge	Namayingo	Jinja	Mukono	Buikwe	Buvuma	Kampala	Wakiso	Mpigi	Masaka	Kalungu	Kalangala	Rakai	AAA	Overall
Dec-08	Catch	9.6	864.6	531.2		-	2,038.9			2.8	243.5	62.6	518.1		1,813.1	-	-	6,084.4
	Value	2.6	237.8	146.1		-	560.7			0.8	67.0	17.2	142.5		498.6	-	-	1,673.2
March-10	Catch	34.0	607.1	544.0		63.1	1,767.9			38.9	442.0	174.8	310.8		757.7	116.6	36.2	4,893.1
	Value	9.3	167.0	149.6		17.4	486.2			10.7	121.5	48.1	85.5		320.6	32.0	10.0	1,345.6
May-11	Catch	51.5	919.6	823.9		95.6	2,677.8			58.9	669.5	264.8	470.8		1,147.6	176.6	44.0	7,400.7
	Value	26.7	477.5	427.9		49.7	1,390.6			30.6	347.7	137.5	244.5		596.0.	91.7	22.9	3,843.2
May-14	Catch	97.9	44.5	1,338.4	1,959.6	159.1	1,894.9	734.9	2,759.8	72.7	1,204.9	363.8	545.6	89.0	2,283.3	277.3		13,825.6
	Value	54.6	24.9	747.9	1,059.0	88.9	1,058.8	410.7	1,542.1	40.6	673.3	203.3	304.9	49.7	1,275.9	154.9		7,725.5
Dec-2015	Catch	9.4	4.9	2,862.5	488.3	0.6	451.6	503.9	554.1	1.9	190.2	79.0	-	-	218.1	-	5,364.5	9.4
	Value	7.0	3.7	2,146.9	366.2	0.4	338.7	377.9	415.6	1.4	142.7	59.3	-	-	163.5	-	4,023.4	7.0

Table 3.6. Estimated monthly catches (tones) and beach value (Mill. Shs.) of other fish species (Haplochromines, *Bagrus*, *Protopterus*, *Clarias*, *Synodontis* and others) in the Ugandan part of Lake Victoria presented by district between July 2005 and December 2015.

Month	Total Catch/ Beach Value	Busia	Bugiri	Mayuge	Namayingo	Jinja	Mukono	Buikwe	Buvuma	Kampala	Wakiso	Mpigi	Masaka	Kalungu	Kalangala	Rakai	Overall
5-Jul	Catch	7.6	278.8	201.3		2.2	1,061.20			4.1	151.7	21	147.7		413.5	11.3	2,300.30
	Value	7.9	300.5	221.7		1.3	1,160.60			3.8	163.7	18.2	165.4		442.4	8.4	2,493.90
5-Aug	Catch	10.5	8.2	7.1		0.9	37.6			0.7	9.1	5.2	4.3		16.9	1.6	102.1
	Value	8.9	6.4	5.7		0.7	26.7			0.5	7.2	3.9	3.2		12.7	1.2	77
5-Sep	Catch	2.3	13.8	10.5		1.9	36.2			0.9	11	4.2	4		14.8	1.5	101.1
	Value	1.9	10.9	8.3		1.5	27.5			0.7	8.9	3.3	3.2		11.4	1.2	78.8
5-Nov	Catch	0.4	12.1	9.2		1	32.7			0.9	11.3	6.2	5.6		20	2.2	101.6
	Value	0.3	9.2	7.1		0.7	23.2			0.6	8.7	4.7	4.5		14.8	1.7	75.6
6-Mar	Catch	3.1	21.8	19.9		2.2	91.6			2	22	9.5	8.1		41.2	3.2	224.6
	Value	1.9	15.2	14.3		1.6	65.5			1.4	16.5	6.9	5.8		29.5	2.1	160.6
6-Aug	Catch	0.6	16	13.6		1.5	64.4			1.4	16.8	7.7	6.7		45.3	2.4	176.4
	Value	0.5	13.1	11.3		1.2	53.2			1.1	14.1	6.5	5.7		42.1	1.9	150.8
6-Dec	Catch	0.8	14.6	13.2		1.7	71.1			1.9	15.8	7.8	7.1		33.7	2.5	170.2
	Value	0.6	11.4	10.1		1.2	53.1			1.4	12	5.8	5.3		24.9	1.9	127.9
7-Mar	Catch	0.8	24.2	22		2.7	103.7			2.3	25	9.3	7.9		46	3	247
	Value	0.6	17.3	15.7		1.9	73.7			1.6	17.8	6.8	5.8		32.9	2.1	176.3
7-Aug	Catch	0.8	22.1	19.7		3	109.5			2.4	21.8	6.9	5.8		42.4	2	236.3
	Value	0.8	21.9	20		2.9	106.2			2.3	21.4	6.8	6.4		41.4	2	232.1
8-Feb	Catch	1	23.8	21.6		3.4	133.6			3	27.3	11.1	7.5		59.2	3.4	294.9

Month	Total Catch/ Beach Value	Busia	Bugiri	Mayuge	Namayingo	Jinja	Mukono	Buikwe	Buvuma	Kampala	Wakiso	Mpigi	Masaka	Kalungu	Kalangala	Rakai	Overall
	Value	1	24.2	22.2		3.5	136.1			3.1	27.8	11.1	7.6		60.1	3.4	300.1
8-Dec	Catch	0.9	13.7	13		1.6	45.8			1	11.5	5.1	5.3		19.1	2.9	120
	Value	1.4	21.4	20.4		2.4	71.5			1.6	18.1	7.8	8.3		29.6	4.5	186.9
10-Mar	Catch	1.3	23.7	21.2		2.5	68.9			1.5	17.2	6.8	12.1		29.5	4.5	189.2
	Value	2.6	46.6	41.8		4.9	135.9			3	34	13.4	23.9		58.2	9	373.2
11-May	Catch	2.1	37.5	33.6		3.9	109.3			2.4	27.3	10.8	19.2		46.9	7.2	300.4
	Value	4.7	83.3	74.6		8.7	242.6			5.3	60.6	24	42.7		104	16	666..5
14-May	Catch	8.8	4	121	177.2	14.4	171.3	66.4	249.5	6.6	108.9	32.9	49.3	8	206.4	25.1	1,250.00
	Value	23.2	10.6	317.5	464.8	37.8	449.5	174.3	654.6	17.2	285.8	86.3	129.4	21.1	541.6	65.8	3,279.60
Dec-15	Catch	42.4	8.8	695.1	145.1	24.2	936.5	312.9	55.8	21.8	186.9	68.2	28.8	28.4	66.4	141.7	2,762.90
	Value	121.7	22	790.2	183.3	81.1	2,890.30	425.7	183	58.9	494.9	160.3	92.2	119.5	248.8	578	6,450.00

Table 3.7. Estimated monthly Catches (t) and value mill. Shs) of all fish species pooled in the Ugandan part of Lake Victoria presented by district (July 2005 to December 2015).

Month	Catch / Beach value	Busia	Bugiri	Mayuge	Namayingo	Jinja	Mukono	Buikwe	Buvuma	Kampala	Wakiso	Mpigi	Masaka	Kalungu	Kalangala	Rakai	Total
5-Jul	Catch	75	2,884.00	1,798.90		95.8	8,441.20			79.3	1,445.20	379	1,045.10		6,098.60	263.4	22,605.40
	Value	86.3	3,769.30	2,052.10		133.1	8,592.40			116	1,594.30	494.5	878		4,399.10	423.7	22,538.80
5-Aug	Catch	71.5	2,126.00	1,560.30		102.2	6,894.70			77.2	1,118.80	317.3	862.1		3,890.70	217.7	17,238.40
	Value	68.2	2,475.50	1,573.10		135.6	6,522.40			108.3	1,170.20	416	627.9		3,241.00	363.9	16,702.10
5-Sep	Catch	72.2	2,793.00	1,855.00		91.5	8,916.70			90.9	1,512.70	361.4	1,126.40		5,249.50	250.8	22,320.00
	Value	74	3,146.60	1,838.10		137.1	8,118.20			139.3	1,529.40	467.2	778.4		4,038.10	406.2	20,672.60
5-Nov	Catch	52.9	2,380.20	1,448.70		87.4	6,522.80			74.5	1,155.40	330.1	764.9		4,254.90	275.3	17,347.00
	Value	63.7	3,390.20	1,828.80		130.1	7,598.50			116.2	1,414.70	462.4	693.6		3,944.30	472.6	20,115.00
6-Mar	Catch	62.9	2,265.80	1,485.60		81.2	6,983.30			76.3	1,189.10	325.6	841.2		4,540.70	234	18,085.60
	Value	67	2,729.00	1,592.30		117.3	6,839.20			114.2	1,270.30	433.8	639.2		3,548.00	381	17,731.30
6-Aug	Catch	79.8	2,231.30	1,477.90		87.5	7,016.70			83.8	1,220.80	331	850.1		4,737.60	220.6	18,337.20
	Value	107.9	2,731.20	1,590.00		129.6	6,986.60			130	1,341.20	456.3	658.9		3,650.70	366.3	18,148.70
6-Dec	Catch	62.3	2,950.30	1,861.80		80.4	8,429.50			81.5	1,432.00	363.3	1,083.90		4,231.00	284.9	20,860.90
	Value	51.2	3,016.20	1,639.00		101.7	6,702.80			101.2	1,252.50	422	690.5		3,374.30	405.1	17,756.60
7-Mar	Catch	56.4	2,570.70	1,677.90		78.5	8,096.80			73.1	1,356.10	310.7	1,011.30		5,430.80	213.4	20,875.60
	Value	41.6	2,316.10	1,266.60		96.6	5,441.30			89.2	1,062.00	343.5	527.3		2,818.80	291	14,293.80
7-Aug	Catch	45.8	2,136.00	1,281.80		71.7	5,994.90			64.8	1,055.80	283.4	721.7		3,892.90	221	15,769.90
	Value	52.8	2,876.20	1,502.70		111.4	6,412.50			99.8	1,240.90	409.7	630.3		3,350.40	374.1	17,060.70
8-Feb	Catch	42.8	1,861.30	1,145.30		74.8	5,481.20			64.3	989.6	277.2	652.2		3,523.20	203.7	14,315.50
	Value	58.5	2,963.60	1,599.00		131.9	7,181.20			115.9	1,395.30	454.8	687.8		3,731.80	400.6	18,720.40

8-Dec	Catch	42.8	1,861.30	1,145.30		74.8	5,481.20			64.3	989.6	277.2	652.2		3,523.20	203.7	14,315.50
	Value	58.5	2,963.60	1,599.00		131.9	7,181.20			115.9	1,395.30	454.8	687.8		3,731.80	400.6	18,720.40
10-Mar	Catch	94.8	1,692.70	1,516.60		176	4,929.00			108.3	1,232.30	487.5	866.6		2,112.40	325	13,577.40
	Value	206.7	3,692.50	3,308.50		384	10,752.50			236.3	2,688.10	1,063.40	1,890.60		4,608.20	709	29,549.90
11-May	Catch	106.9	1,909.30	1,710.80		198.6	5,560.00			122.2	1,390.00	549.9	977.6		2,382.90	366.6	15,318.70
	Value	253.5	4,526.40	4,055.60		470.7	13,180.80			289.7	3,295.20	1,303.60	2,317.50		5,648.90	869.1	39,924.30
14-May	Catch	159	72.3	2,174.20	3,183.50	258.5	3,078.30	1,193.90	4,483.40	118	1,957.50	590.9	886.4	144.5	3,709.40	450.4	22,460.20
	Value	344.5	156.6	4,711.50	6,898.40	560.2	6,670.50	2,587.10	9,715.20	255.8	4,241.70	1,280.50	1,920.80	313.2	8,038.00	976	48,670.10
15-Dec	Catch	81.6	32	4,196.90	960.8	50.8	2,701.10	1,060.20	1,183.30	79.3	606	255	85.4	83.7	649.4	252.4	12,277.90
	Value	292.6	130.7	6,597.70	2,427.90	223.1	10,724.50	2,178.70	3,904.20	380.3	1,949.40	808.1	405.8	423.4	2,518.00	1,221.50	34,186.00

3.4 Annual Fish Catches and Value

The annual fish Catch estimates based on the sample month estimates from 2005 to 2015 are presented in Table 10 and details by district are in Appendix 19 (a-e). The overall annual Catches of Nile perch in the Ugandan part of the lake has continued to decline over the years from 94,903.0 t in 2005 to 70,061.0 t in 2011 and 37,219.3 t in December 2015; a 61% reduction in 10 years. Despite the reduction in Catches over the years, the gross revenue from the Nile perch catches continued increasing from 183 billion in 2005 Uganda shillings to 362 billion in 2014 except the current survey that recorded a 39% reduction in value to 219,982 billion. The annual catch estimates for tilapia reduced by 34% from 29,415.0 t in 2005 to 19,350 in 2011, increased by 8.4% to 21,119 t in May 2014 and reduced by 37% to 13,278.2 the lowest catch ever recorded since July 20015 (Table 9). Similar to the Nile perch, the gross revenue from the tilapia catches that had tripled from Uganda shillings 28.4 billion in 2005 to 89.7 billion in 2014 reduced by 24% to 65,268.6. The annual catch estimate for Mukene reduced from the 165,907.3 t in May 2014 is highest record for the species in ten years since 2005 to more than twofold to 65,268.6 t and still remains with its low economic value compared to the Nile perch and tilapia fisheries. The overall annual fish catch for the Lake Victoria fisheries for 2015 was estimated at 149,381.6 t and was valued 415.9 billion Uganda shillings.

Table 3.8. Estimated annual catch landings (t) on the Ugandan part of Lake Victoria presented by district and species based on the December 2015 survey

District	BD	±	CG	±	DA	±	HA	±	NP	±	OT	±	PA	±	SY	±	TL	±	Total	±
Bugiri			11.3	0.6	59.8		57.1	3.1	167.0	31.8			38.4	5.3			56.3	11.1	389.9	41.9
Buikwe	56.1	8.0			6,130.6	2,202.4	3,196.1	1,457.6	1,930.2	292.2	215.2	30.4	89.8		250.0	26.9	1,031.4	289.2	12,899.5	1,629.6
Busia			24.1	2.4	114.0	9.8	32.0		163.5	21.2	207.2	35.7	34.2		218.5	23.1	199.0	46.6	992.5	79.7
Buvuma	74.4	66.8	45.3	4.2	6,741.8	2,090.4	18.7		5,622.5	1,558.5	411.6	4.9	91.9	17.8	37.4	6.8	1,353.9	921.2	14,397.4	3,564.4
Jinja			34.6	12.2	7.2	5.1	71.5	32.0	121 .4	31.5			177.2		11.1	3.1	194.8	50.9	617.7	64.1
Kalangala	15.3		225.2	22.6	2,653.1	2,160.1			3,607.0	1,326.8	144.3		264.4	68.0	158.6	111.3	833.3	315.4	7,901.0	2,927.7
Kalungu	4.1		101.7	39.8	-		2.7		295.9	85.7			236.5	47.9			377.5	80.9	1,018.4	123.8
Kampala			74.7	2.4	23.4		133.6	4.6	545.9	135.7			56.4	14.5	1.0	0.3	129.3	23.4	964.3	147.0
Masaka							101.7		351.1	43.1			248.8	52.7			337.4	60.5	1,038.9	62.4
Mayuge			129.3		34,827.2	19,828.8	8,185.2	1,716.7	5,864.0	1,446.7			133.8	20.2	9.1		1,914.2	380.5	51,062.8	15,158.3
Mpigi			195.8	15.7	961.7		504.9		527.5	129.6			128.6	30.5			783.4	212.4	3,101.9	165.5
Mukono	291.4	114.9	961.5	524.7	5,494.6		148.3	195.0	11,674.2	2,426.6	223.3	153.2	2,258.3	613.5	7,511.1	4,986.7	4,301.1	369.3	32,863.9	2,355.7
Namayingo	112.2				5,941.0	374.8	1,601.1		3,064.5	1,229.7	51.8	3.6					918.8	166.9	11,689.3	1,352.2
Rakai	488.2	123.6	282.4						1,170.5	76.2			953.1				176.5		3,070.7	76.8
Wakiso	82.0		449.8	41.8	2,314.2	632.6	1,019.2		2,114.3	718.2	333.7	605.9	378.9		10.1		671.4	130.3	7,373.5	1,171.7
Grand Total	**1,123.7**	**313.3**	**2,535.7**	**666.2**	**65,268.6**	**27,304.2**	**15,072.0**	**3,409.1**	**37,219.3**	**9,553.5**	**1,587.1**	**833.6**	**5,090.3**	**870.4**	**8,206.8**	**5,158.1**	**13,278.2**	**3,058.5**	**149,381.6**	**28,920.8**

Table 9. Estimated annual beach revenue (million. shs) on the Ugandan part of Lake Victoria presented by district and species based on the December 2015 survey

District	BD	CG	DA	HA	NP	OT	PA	SY	TL	Grand Total	%
Bugiri		52	45	59	987		157		290	1,590	0.4
Buikwe	211		4,598	3,298	11,408	651	367	652	5,322	26,508	6.4
Busia		111	86	33	966	627	140	569	1,027	3,559	0.9
Buvuma	279	209	5,056	19	33,232	1,246	375	97	6,987	47,501	11.4
Jinja		160	5	74	717		724	29	1,005	2,714	0.7
Kalangala	57	1,039	1,990		21,319	437	1,080	413	4,300	30,636	7.4
Kalungu	15	469		3	1,749		966		1,948	5,151	1.2
Kampala		345	18	138	3,226		231	3	667	4,627	1.1
Masaka				105	2,075		1,017		1,741	4,938	1.2
Mayuge		597	26,120	8,447	34,659		547	24	9,878	80,272	19.3
Mpigi		903	721	521	3,118		525		4,043	9,832	2.4
Mukono	1,095	4,438	4,121	153	69,000	676	9,230	19,574	22,196	130,482	31.4
Namayingo	421		4,456	1,652	18,112	157			4,741	29,540	7.1
Rakai	1,834	1,303			6,918		3,895		911	14,862	3.6
Wakiso	308	2,076	1,736	1,052	12,496	1,010	1,549	26	3,464	23,717	5.7
Grand Total	**4,221**	**11,703**	**48,951**	**15,554**	**219,982**	**4,805**	**20,803**	**21,388**	**68,521**	**415,929**	**100.0**
%	1.0	2.8	11.8	3.7	52.9	1.2	5.0	5.1	16.5	100.0	

Table10. Estimated annual fish catches (tones) and value (Million Uganda shillings) for the years 2005 to 2015

Year	Nile perch		Tilapia		Daaga/Mukene		Other species		Overall	
	Catch (t)	value (UGX)	Catch (t)	value (UGX)	Catch (t)	value (UGX)	Catch (t)	value (UGX)	Catch (t)	value (UGX)
2005	94,903.0	182,810	29,415.0	28,351	106,400.0	20,748.0	7,815.0	8,176	238,533.0	240,085
2006	91,039.0	175,368	27,061.0	26,141	95,734.0	18,668.0	2,109.0	1,628	215,943.0	221,805
2007	86,655.0	147,454	24,356.0	25,515	113,791.0	19,176.0	2,685.0	2,221	227,487.0	194,366
2008	80,977.0	180,855	19,557.0	27,736	70,001.0	19,049.0	2,489.0	2,922	173,024.0	230,562
2010	84,969.0	297,048	16,971.0	36,926	58,717.0	16,147.0	2,270.0	4,478	162,927.0	354,599
2011	70,061.0	326,456	19,350.0	54,233	88,808.0	46,119.0	3,605.0	7,998	181,824.0	434,806
2014	67,496.6	362,298	21,119.0	89,681	165,907.3	92,706.0	15,000.1	39,355	269,523.0	584,040
2015	37,219.3	219,982	13,278.2	68,521	65,268.6	48,951	33,615.6	78,474.5	149,381.6	415,929

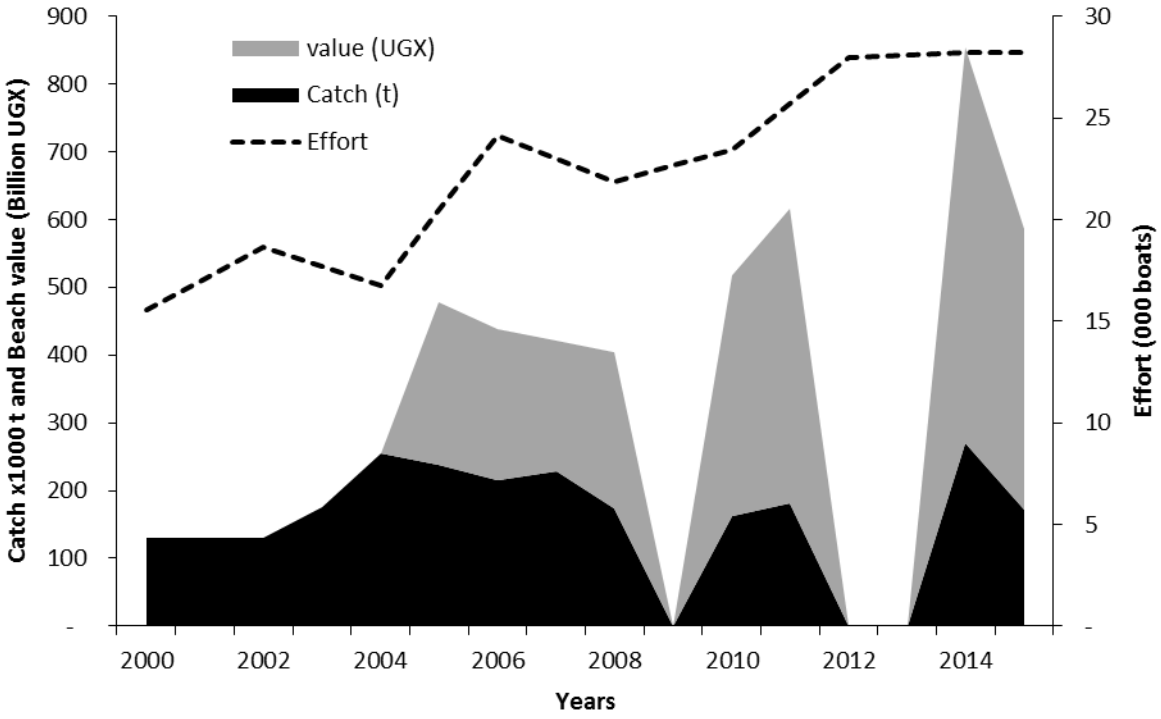

Figure 4. Trends of estimated annual fish catches (tones), value (Billion Uganda shillings) and Effort (boats) in the Ugandan portion of Lake Victoria for the years 2000 to 2015

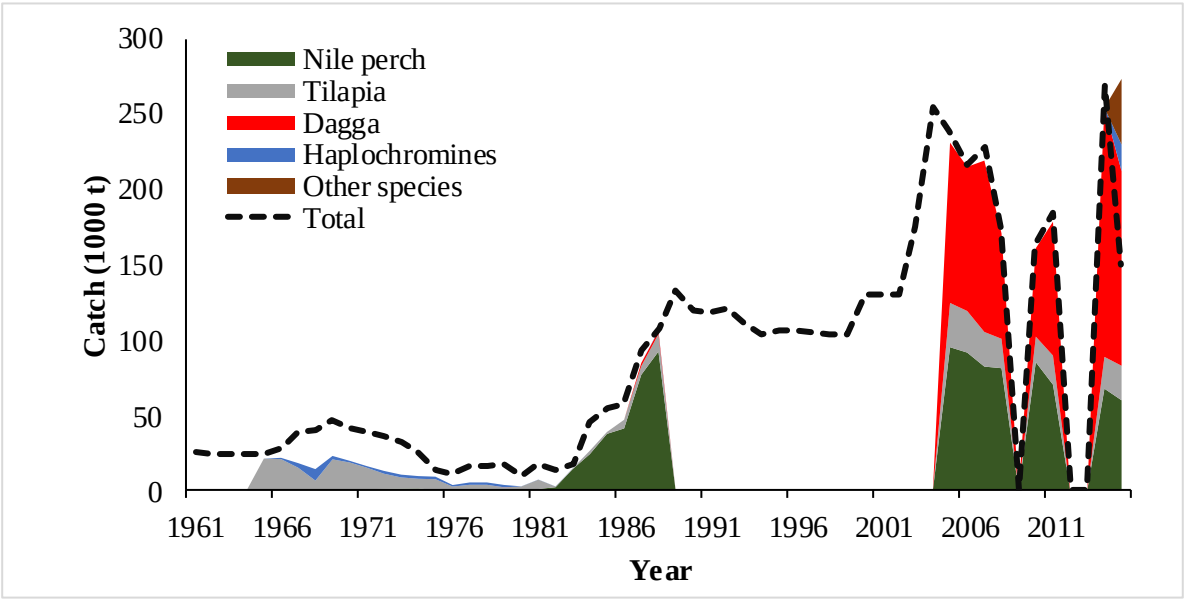

Figure 4. Trends of estimated annual fish catches (tones) by species in the Ugandan portion of Lake Victoria for the years 1961 to 2015 (Note that Tilapia before 1981 was dominated by native *Oreochromis esculentus* and *O. variabilis* and after 1981 mainly *Oreochromis niloticus*.

4 DISCUSSION

Catch Assessment Surveys provide an indication of the status of the fisheries in relation to catch, value of the catch, number of fishers, type and quantities of fishing crafts and

gears in use in a particular period (LVFO, 2005). Trends in these factors tend to vary and quarterly assessments (i.e. every three months) provide early signals in the direction of the fisheries and what measure may be taken, enhanced or acted upon.

Since the onset of harmonized Catch Assessment Surveys on Lake Victoria in July 2005, the catches of Nile perch have continued to decline, registering the lowest value of 37,219.3 t in December 2015. Earlier CASs in the Ugandan part of the lake (Muhoozi, 2002) indicated peak Nile perch catches in the November-December period and a higher Nile perch catch estimate would be expected. The tilapia catches declined steadily from 29,415 t in 2005 to the initial minimum of a 16,971 t in 2010 before increasing to the current 21,119 t in May 2014 and declined the lowest minimum of 13,278.2 t ever recorded since July 2005. Despite the previous low tilapia and Nile perch catches in surveys 2005-2014 they would still correspond with higher unit prices and gross beach revenue from the catch compared to when the catches were higher in 2005. However in the current survey despite the higher unit prices for the Nile perch and tilapia the extremely low catches translated into a reduction in gross revenue (Table 10). These results are also consistent with acoustics surveys of September 2014 during which a reduction in the biomass of Nile perch and tilapia and an upsurge of the Mukene biomass in the lake were observed. The ready market and price incentive is likely to be the main factor keeping fishers in business against declining catches. The general out cry of low catches in the fishery, closure of factories are other indicators of the depletion of the Nile perch and tilapia fisheries.

The Mukene catches remained relatively stable between 2005 and 2007 but reduced to the lowest record level of 58,717 t representing a 50% reduction between 2008 and 2010. The May 2014 surveys saw Mukene catches increase by a twofold margin between 2011 and 2014 and a more than two fold reduction in December 2015 (Table 10). Mukene is a short lived fish that is likely to have strong seasonal variations in abundance. Inconsistence in sampling periods could be one of the reasons for the observed erratic changes in catches. The intended quarterly sampling in the Standard Operating Procedures for CASs was not closely followed because of funding gaps leading to inconsistent coverage of seasonal variations of catches.

The 2012 Frame survey showed a shift in the composition and distribution fishing effort. from that observed on Lake Victoria in 2008. The number of gillnets reduced on the lake while the small mesh size gillnets (2.5 and 3 inches of mesh size) increased by over 30%. The other illegal fishing gears like beach seines, small size hooks, basket traps, cast nets, and monofilament gillnets also registered a substantial increase, the latter three targeting mainly tilapia. These illegal fishing gears are a threat to the sustainability of the fisheries of Nile perch and tilapia. A point of concern in the Nile perch hook fishery that is not sufficiently documented is their impacts on the Nile perch and other fishes during bait collection in the lake using mosquito seines. The impacts of the long line fishery in the Nile perch fishery should be evaluated and the fishery regulated accordingly.

The use of Monofilament gillnets, small sized hooks, basket traps and cast nets is a major threat in the tilapia fishery where they are most commonly used. They are being preferred by fishers because of their higher efficiency of catching fish than the ordinary multifilament gillnets as the tilapia catches continue to decrease. The basket traps and cast nets are operated in the shallow inshore areas targeting mainly the spawning stock of tilapia. The continued use of these gears is likely to exacerbate the status of the tilapia

fishery if no management efforts to eliminate them on the lake are put in place. The elimination of the rampant use of illegal gears, especially beach seines and under sized gillnets and hooks that capture immature fish and monofilament gillnets should be given priority to reverse the trends of declining catches of Nile perch and tilapia. Other management interventions that would ensure quick recovery of the Nile perch and tilapia fisheries i.e. closed seasons/areas, regulation and reduction of the fishing effort targeting the species should be considered.

The Mukene fishery in the Ugandan waters of Lake Victoria is mainly a near shore activity in which paddle Sesse boats using small seines or scoop nets dominate the fishery. Fishing Mukene in the inshore habitats is detrimental to the other lake fisheries especially of the Nile perch and tilapia as high proportions of by catch dominated by juvenile individuals of the two species are cropped. Recent acoustic surveys conducted in September 2014 however showed an increase in the biomass of the small pelagic species (Mukene and the haplochromines) in the open waters of the lake. Development of this fishery in the offshore waters, with the more efficient fishing methods suitable for open waters therefore remains an option to be explored to further increase the Catches of Mukene beyond the current levels. The catamaran boats, a recent technology of paired boats using small seines opted from the Tanzanian part of the lake and are more stable in the open waters during rough weather are slowly increasing in number and recorded moderate catch rates in the May 2014 survey. There is need to popularize this technology among the Mukene fisher folks through awareness campaigns. Success adoption of this technology on the lake, together with a strong policy on sustainable exploitation of the light fishery is hoped to transform this fishery in the Ugandan waters of Lake Victoria. Despite dominating the commercial fishery on the lake, its stcoks are also showing signs of decline as efforts to harvest it increase and the economic beach value from Mukene still remains too low compared to the other two important commercial fisheries of Nile perch and tilapia. Sustainability of the Mukene fishery on the lake should be evaluated alongside value addition to maximize economic value from the fishery.

5 CONCLUSIONS AND RECOMMENDATIONS

The commercial fishery on the Uganda part of Lake Victoria in December 2015 was dominated by three species Mukene (65268.6 MT, 43%), Nile perch (377,219.3 MT, 25%) and Tilapia (13,278.2 MT, 9%). There has been a more than twofold decrease in the annual production of Mukene between May 2014 and December 2015 and the lake fishery has shifted from dominance of large commercial stocks to Mukene which is of low economic value and requires substantial value addition to harness economic benefits. Sustainability of the Mukene fishery on the lake should be evaluated alongside value addition to maximize economic value from the fishery. Fish stock monitoring studies based on CASs should be more regular and need to be backed by information from the fishery independent surveys like experimental trawling, gillnetting and acoustic surveys to accurately inform the lake management decisions.

The use of illegal fishing practices has persisted on the lake and is attributed to the decline of Nile perch and Tilapia catches. There is need to strengthen enforcement of the fisheries regulation to eliminate illegal destructive fishing practices on the lake.

6 REFERENCES

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APPENDICES

Appendix 1. List of fish landing sites selected and sampled in Catch Assessment surveys in the former districts Ugandan waters of Lake Victoria

District	Laning site
Bugiri	Golofa
	Bumeru A
	Butanila B
	Mwango
	Maruba
	Hama 'B'
Busia	Madwa
Jinja	Owen Falls Dam
	Wanyange
Kampala	Luzira Port Bell
Masaka	Nakigga
	Makonzi
Mayuge	Khaaza
	Maganda
	Malindi
	Nakirimira
	Ntinkalu
Rakai	Kasensero A
	Kasensero B
Wakiso	Kinywante
	Kagulube
	NsongaKava
	Nakiwogo
	Kasenyi
Mukono	Buwagajjo
	Namugambe
	Bukaali
	Ziiru (Kibulwe)

District	Laning site
Mukono	Nantwalantya
	KawunguliBulago
	MalijaWabuziba
	Maala
	Kiruguma
	Lufu
	Kisu
	Gunda
	Kinaggaba
	Kawafu
	Zinga
	KachangaBulago
	Luwero
	Kaziru
	Nambula
	Namugombe
	Kalega
	Nyenda
	Kiyindi
Mpigi	Katebo Lwazi
	Nakaziba
Kalangala	Banda
	Kakyanga
	Kasenyi
	LukuNabisukiro
	Mweena
	Kyagalanyi
	55

Appendix 2. Distribution of fish landing sites selected and sampled for Catch Assessment surveys in the current districts Ugandan waters of Lake Victoria in May 2014.

District	Landing site
Namayingo	Golofa
	Butanila 'B'
	Mwango
	Hama 'B'
	Maruba
	Bumeru 'A'
Busia	Madwa
Jinja	Masese
	Wanyange
Kampala	Luzira Port Bell
Masaka	Nakigga
	Makonzi
Mayuge	Khaaza
	Maganda
	Malindi
	Nakirimira
	Ntinkalu
Rakai	Kasensero A
	Kasensero B
Wakiso	Kinywante
	Kagulube
	Kitufu
	Kigungu
	Kasenyi
Buvuma	Bukaali
	Ziiru (Kibulwe)
	Zinga

District	Landing site
Buvuma	Luwero
	Lufu
	Namugombe
	Gunda
	Kiruguma
	Kaziru
	Nyenda
	MalijaWabuziba
	Kisu
Mukono	Maala
	Kawafu
	Kimmi
	KachangaBulago
	Namugambe
	Kinaggaba
	Nantwalantya
Buikwe	Kalega
	Buwagajjo
	Kiyindi
	Nambula
Mpigi	Nakaziba
	Nabisukiro
Kalungu	Kamuwunga
Kalangala	Banda
	Kakyanga
	Kasenyi
	LukuNabisukiro
	Mweena
	Kyagalanyi
	56

Appendix 3. Fish Catch rates (kg boat^{1} day^{1}) in the Ugandan part of Lake Victoria presented by effort group (Vessel gear type) and species for December 2015 (Boat days = number of times the vessel gear type was sampled after a fishing trip of one day)

VG	BD	±	CG	±	DA	±	HA	±	NP	±	OT	±	PA	±	SY	±	TL	±
CA_LN					945.0	135.0												
O_GN									1.5	0.5							9.4	2.2
O_HL			12.4	2.6													6.2	0.9
O_TR																	9.0	
PA_BES									19.7	12.3			10.0				8.7	0.7
PA_BOS			3.5	2.5			7.4		16.4	3.0			1.2	0.4			6.0	1.8
PA_CN									3.5	0.8							8.0	0.7
PA_GN	0.9	0.2	4.1	1.0			11.0	5.1	8.7	0.8	4.6	1.4	5.6	0.6	3.5	0.9	7.1	0.4
PA_HL									9.7	1.2	0.5						6.9	0.8
PA_LL	5.0		8.2	2.5					16.2	2.3			9.4	1.7			5.1	3.0
PA_OT									18.0				14.0	11.0			2.0	
PA_SS					62.3	18.7												
PA_TR			2.5	0.5					3.8	2.8			3.4	1.0	10.0		5.2	0.6
SF_BES	2.0	0.6					3.2	0.7	18.3	1.0	7.4	2.7	7.7	3.0	2.5	0.9	8.7	2.1
SF_BOS	1.2	0.6	4.7	1.8			17.0	15.0	33.4	3.4	6.0		4.0	0.7	64.0	61.5	15.4	2.1
SF_CN							0.4	0.1	3.4	1.4							6.8	1.1
SF_GN	0.8	0.2	4.7	1.0			1.0	0.5	11.5	0.6	3.7	1.1	4.7	0.6	4.8	0.7	5.8	0.4
SF_HL	0.5						0.8	0.3	10.4	2.8			7.0				5.3	0.8
SF_LL	0.8	0.2	7.0	4.0					14.9	1.0	0.3	0.3	12.5	1.7	1.0		2.8	2.2
SF_OT	1.0								0.5								6.7	1.8
SF_SS					139.8	25.6	30.4	1.6	0.5						0.2			
SF_TR			2.2	0.4					16.5	15.8			1.3	0.3			4.7	0.8
SMS_BES			3.0						4.0	3.5								
SMS_BOS									51.4	16.0			10.0				9.8	3.3

VG	BD	±	CG	±	DA	±	HA	±	NP	±	OT	±	PA	±	SY	±	TL	±
SMS_CN									13.0								16.0	9.0
SMS_GN	6.8	3.9	5.6	0.7			54.0		14.9	0.5	2.4	1.1	12.6	3.3	1.6	0.8	4.5	0.9
SMS_HL									15.2	2.9								
SMS_LL	9.9	3.5	2.0						31.7	1.3			10.3	4.9			1.8	0.3
SMS_SS					237.6	23.9	45.8	23.7	1.6	0.5					0.6	0.2		
SMS_TR			3.3	0.8									5.5	3.8			2.5	
SP_BES									30.8	5.7			6.0				2.8	1.2
SP_BOS									20.6	3.1			3.5	1.5			18.0	16.0
SP_CN									0.5								6.2	1.6
SP_GN	1.0						309.8	297.6	9.0	1.6	7.1	1.1	2.3	1.3	8.6	0.7	3.2	0.6
SP_HL									6.9	3.4							5.9	0.8
SP_LL			8.5	1.5					14.9	1.5	1.0		13.0					
SP_OT																	25.5	4.5
SP_SS	26.0		3.0		116.4	22.9	45.6	8.0	3.8	3.0			4.0		0.2	0.1	2.5	1.5
SP_TR			8.0										10.0		8.0		14.5	3.1

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, SY = *Synodontis* spp OT=Other spp, ± Standard Error

Appendix 4. Estimated fish landed in the Ugandan part of Lake Victoria presented by district and species for July 2005

DISTRICT	NP	±	TL	±	DA	±	HA	±	BD	±	PA	±	CG	±	OT	±		±
Busia	29.0	9.9	19.4	6.2	19.0	2.8	6.3	1.6	0.1	0.1	0.1	0.2	0.0	0.0	1.1	1.0	**75.0**	**21.8**
Bugiri	1,589.0	243.6	272.1	59.1	744.2	111.4	245.2	63.2	1.4	1.9	4.4	5.7	0.5	0.7	27.2	24.6	**2,884.0**	**510.2**
Mayuge	757.1	136.3	269.9	75.8	570.6	92.5	183.9	47.5	1.0	1.2	4.2	5.6	0.5	0.7	11.7	9.8	**1,798.9**	**369.4**
Jinja	48.2	9.6	39.1	6.6	6.2	4.5	0.0	0.0	0.1	0.1	0.3	0.5	0.1	0.1	1.7	1.2	**95.8**	**22.6**
Mukono	3,074.4	451.3	869.0	165.4	3,436.5	800.5	965.3	248.3	5.4	6.5	7.2	7.8	1.5	1.8	81.8	67.1	**8,441.2**	**1,748.8**
Kampala	47.4	8.4	20.2	4.1	7.6	1.1	2.5	0.7	0.1	0.1	0.3	0.3	0.0	0.0	1.2	0.8	**79.3**	**15.6**
Wakiso	546.8	95.4	300.5	44.7	446.1	91.5	132.8	34.4	0.9	1.1	4.0	4.1	0.4	0.6	13.6	10.6	**1,445.2**	**282.4**
Mpigi	160.2	32.6	167.5	24.2	30.4	4.5	10.1	2.8	0.3	0.3	2.5	2.4	0.3	0.3	7.8	5.7	**379.0**	**72.9**
Masaka	200.8	45.9	246.3	34.0	450.2	81.5	140.1	36.1	0.6	0.8	1.6	1.6	0.2	0.4	5.1	4.6	**1,045.1**	**205.0**
Kalangala	1,390.3	188.6	572.0	97.9	3,722.8	2,046.8	359.1	92.6	2.4	2.9	5.4	5.0	0.8	1.0	45.8	37.8	**6,098.6**	**2,472.7**
Rakai	187.9	20.9	52.9	8.5	11.4	1.7	3.8	1.0	0.2	0.2	0.6	0.5	0.1	0.1	6.6	6.0	**263.4**	**39.0**
	8,031.2	**1,242.4**	**2,828.9**	**526.7**	**9,445.0**	**3,239.0**	**2,049.1**	**528.1**	**12.5**	**15.3**	**30.6**	**33.8**	**4.4**	**5.8**	**203.8**	**169.3**	**22,605.4**	**5,760.4**

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, OT=Other spp, ± Standard Error

Appendix 5. Estimated fish landed in the Ugandan part of Lake Victoria presented by district and species for August 2005.

	NP	**95%CL**	**TL**	**95%CL**	**DA**	**95%CL**	**HA**	**95%CL**	**BD**	**95%CL**	**PA**	**95%CL**	**CG**	**95%CL**	**OT**	**95%CL**		**95%CL**
Busia	17.4	3.9	11.9	2.6	21.0	2.8	0.0	0.0	0.0	0.0	6.2	17.4	3.5	17.4	0.8	1.1	60.8	45.3
Bugiri	1,102.7	203.7	233.2	55.8	822.0	110.3	0.4	0.5	1.0	1.3	3.5	3.7	1.1	1.5	2.2	1.6	2,166.1	378.3
Mayuge	572.3	135.1	226.5	52.3	621.6	84.3	0.3	0.5	0.8	1.0	3.3	3.6	1.1	1.5	1.6	1.2	1,427.4	279.5
Jinja	41.2	10.2	34.9	7.4	2.5	0.6	0.0	0.0	0.1	0.1	0.3	0.4	0.1	0.1	0.3	0.2	79.4	19.2
Mukono	2,633.2	476.8	757.2	162.0	3,436.9	485.9	0.6	1.0	5.1	6.6	10.1	11.9	5.4	7.9	16.4	16.1	6,864.8	1,168.3
Kampala	42.3	10.3	20.0	4.5	8.4	1.2	0.0	0.0	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.1	71.4	16.7
Wakiso	467.2	106.2	241.1	43.3	461.8	64.1	0.5	0.7	0.9	1.3	4.3	4.4	1.3	1.6	2.1	1.5	1,179.2	223.1
Mpigi	143.4	35.3	130.9	19.8	33.6	4.6	0.3	0.4	0.3	0.3	2.3	2.1	0.6	0.7	1.8	1.5	313.1	64.7
Masaka	174.6	49.9	190.9	29.7	479.5	65.5	0.3	0.5	0.2	0.3	1.7	1.8	0.5	0.6	1.7	2.0	849.2	150.2
Kalangala	1,269.1	216.3	458.4	83.7	2,242.8	431.6	0.6	0.9	2.1	2.6	5.8	5.5	2.6	3.0	5.8	4.1	3,987.2	747.7
Rakai	170.7	21.2	41.1	7.9	12.6	1.7	0.1	0.1	0.2	0.2	0.7	0.8	0.2	0.2	0.5	0.3	226.0	32.3
	6,633.9	**1,268.9**	**2,346.0**	**469.0**	**8,142.6**	**1,252.5**	**3.0**	**4.7**	**10.8**	**13.9**	**38.4**	**51.9**	**16.5**	**34.7**	**33.4**	**29.7**	17,224.6	3,125.2

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, OT=Other spp, ± Standard Error

Appendix 6. Estimated fish landed in the Ugandan part of Lake Victoria presented by district and species for September 2005

District	NP	95%CL	TL	95%CL	DA	95%CL	HA	95%CL	BD	95%CL	PA	95%CL	CG	95%CL	OT	95%CL		95%CL
Busia	28.3	6.2	12.3	3.2	29.3	6.4	0.1	0.1	0.0	0.0	1.8	1.2	0.1	0.1	0.3	0.3	72.2	17.7
Bugiri	1,392.0	209.3	238.3	105.2	1,148.9	253.1	0.2	0.2	4.8	5.3	6.2	6.2	0.7	1.0	1.9	1.7	2,793.0	581.9
Mayuge	748.1	126.0	226.9	64.3	869.5	191.6	0.1	0.2	1.6	1.8	5.8	5.9	0.9	1.1	2.1	3.2	1,855.0	394.1
Jinja	54.3	9.5	31.2	6.4	4.1	1.1	0.0	0.0	0.1	0.1	1.1	1.0	0.3	0.4	0.4	0.2	91.5	18.7
Mukono	3,362.7	504.5	696.7	180.1	4,821.1	1,048.6	0.3	0.3	4.3	4.6	20.2	18.5	1.8	2.4	9.6	6.4	8,916.7	1,765.4
Kampala	63.3	10.7	14.9	2.7	11.7	2.6	0.0	0.0	0.0	0.0	0.6	0.5	0.0	0.0	0.2	0.1	90.9	16.8
Wakiso	593.5	101.8	259.6	53.6	648.5	143.1	0.2	0.2	0.6	0.7	6.6	5.9	1.7	2.1	1.9	1.8	1,512.7	309.2
Mpigi	161.7	22.9	148.3	18.2	47.2	10.6	0.1	0.1	0.2	0.2	2.4	2.4	0.5	0.6	1.0	0.7	361.4	55.6
Masaka	216.8	41.2	234.7	41.1	670.9	146.9	0.0	0.1	0.2	0.2	2.9	3.6	0.3	0.4	0.6	0.4	1,126.4	233.9
Kalangala	1,516.9	215.6	492.4	100.4	3,225.3	641.9	0.2	0.2	1.6	1.5	8.7	8.3	0.7	1.0	3.6	2.1	5,249.5	971.1
Rakai	185.2	20.3	46.4	11.7	17.7	4.0	0.0	0.0	0.3	0.3	0.8	0.8	0.2	0.2	0.3	0.2	250.8	37.5
	8,322.8	1,268.0	2,401.9	586.9	11,494.2	2,450.2	1.2	1.5	13.7	14.6	57.0	54.3	7.3	9.4	21.8	17.1	22,320.0	4,401.9

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, OT=Other spp, ± Standard Error

Appendix 7. Estimated fish landed in the Ugandan part of Lake Victoria presented by district and species for November 2005

District	NP	95%CL	TL	95%CL	DA	95%CL	HA	95%CL	BD	95%CL	PA	95%CL	CG	95%CL	OT	95%CL		95%CL
Busia	24.8	3.8	13.3	3.7	14.4	2.0	0.0	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.2	0.1	52.9	9.8
Bugiri	1,589.3	202.3	217.4	50.9	561.4	76.7	0.3	0.5	1.4	1.9	6.4	6.5	0.6	1.3	3.5	3.1	2,380.2	343.3
Mayuge	792.4	123.7	219.4	48.1	427.8	60.2	0.3	0.5	0.7	0.9	5.3	4.8	0.6	1.7	2.4	1.9	1,448.7	241.6
Jinja	50.8	8.8	32.0	5.9	3.6	1.8	0.0	0.0	0.0	0.1	0.3	0.3	0.0	0.5	0.6	0.4	87.4	17.7
Mukono	3,348.6	403.1	664.5	129.0	2,477.0	371.4	0.4	0.7	3.2	3.9	13.4	12.7	1.9	4.1	13.8	9.4	6,522.8	934.3
Kampala	51.1	8.4	16.6	3.2	5.9	1.1	0.0	0.0	0.0	0.0	0.4	0.3	0.0	0.1	0.4	0.2	74.5	13.4
Wakiso	576.0	85.6	240.9	44.6	327.3	50.4	0.4	0.7	0.6	0.7	6.5	5.1	0.8	2.9	3.1	2.2	1,155.4	192.3
Mpigi	170.2	26.6	129.5	19.8	24.2	5.4	0.2	0.4	0.2	0.2	3.6	2.6	0.4	0.9	1.7	1.1	330.1	57.1
Masaka	221.0	36.1	205.4	34.8	332.9	45.3	0.4	0.7	0.2	0.2	3.3	2.6	0.6	0.9	1.1	1.0	764.9	121.6
Kalangala	1,599.3	182.9	434.3	76.8	2,201.4	471.2	0.6	1.0	1.4	1.7	9.7	7.8	1.3	2.0	7.0	5.0	4,254.9	748.4
Rakai	222.9	19.4	41.3	8.5	9.0	1.9	0.1	0.1	0.2	0.2	1.2	1.1	0.1	0.3	0.7	0.6	275.3	32.1
	8,646.3	1,100.8	2,214.4	425.1	6,384.7	1,087.4	2.5	4.6	7.9	9.9	50.3	43.8	6.4	14.7	34.5	25.1	17,347.0	2,711.5

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, OT=Other spp, ± Standard Error

Appendix 8. Estimated fish landed in the Ugandan part of Lake Victoria presented by district and species for March 2006

District	NP	±	TL	±	DA	±	HA	±	BD	±	PA	±	CG	±	OT	±		±
Busia	23.5	9.4	16.6	9.4	19.7	8.4	0.0	0.0	0.1	0.1	0.2	0.2	0.5	0.6	2.4	3.7	62.9	31.8
Bugiri	1,204.5	177.0	247.4	96.8	792.1	347.2	0.2	0.4	1.6	2.2	6.8	6.2	2.9	2.9	10.2	9.3	2,265.8	642.0
Mayuge	642.6	121.1	233.1	91.2	590.0	251.5	0.2	0.4	1.2	1.6	6.9	6.2	3.1	3.2	8.5	8.5	1,485.6	483.8
Jinja	44.2	9.5	30.9	10.5	3.9	1.1	0.0	0.0	0.2	0.2	0.6	0.4	0.5	0.4	1.0	0.5	81.2	22.8
Mukono	2,810.2	438.9	732.4	349.4	3,349.1	1,384.8	1.1	1.6	5.6	5.4	26.1	20.5	18.1	16.0	40.7	35.2	6,983.3	2,251.9
Kampala	49.0	7.8	17.5	9.4	7.9	3.4	0.0	0.0	0.1	0.1	0.6	0.5	0.3	0.3	0.9	0.5	76.3	22.1
Wakiso	488.3	74.8	234.5	79.2	444.3	186.0	0.3	0.5	1.6	2.1	9.0	8.2	3.7	3.6	7.4	5.5	1,189.1	360.0
Mpigi	152.5	28.5	131.4	42.6	32.2	14.5	0.1	0.2	0.7	1.1	3.8	3.8	1.1	1.3	3.8	2.9	325.6	94.8
Masaka	186.2	34.1	192.7	46.6	454.2	190.4	0.1	0.1	0.4	0.6	3.6	3.4	0.6	0.8	3.5	4.6	841.2	280.6
Kalangala	1,323.7	178.1	453.1	171.1	2,722.6	915.1	0.5	0.8	2.8	3.2	13.4	11.8	6.6	6.4	17.8	13.2	4,540.7	1,299.6
Rakai	174.3	18.9	41.6	15.2	14.9	8.9	0.0	0.1	0.3	0.3	0.9	0.9	0.2	0.3	1.8	1.3	234.0	46.0
	7,099.1	**1,098.3**	**2,331.2**	**921.4**	**8,430.8**	**3,311.3**	**2.6**	**4.1**	**14.6**	**17.0**	**71.8**	**62.1**	**37.7**	**35.8**	**97.8**	**85.3**	**18,085.6**	**5,535.3**

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, OT=Other spp, ± Standard Error

Appendix 9. Estimated fish landed in the Ugandan part of Lake Victoria presented by district and species for August 2006

District	NP	±	TL	±	DA	±	HA	±	BD	±	PA	±	CG	±	OT	±		±
Busia	48.0	11.5	11.7	2.6	19.6	2.7	0.0	0.1	0.1	0.1	0.3	0.2	0.0	0.0	0.2	0.2	79.8	17.4
Bugiri	1,217.3	165.6	231.6	98.7	766.4	104.9	1.2	1.6	2.3	2.5	9.3	8.3	0.9	1.0	2.3	1.7	2,231.3	384.4
Mayuge	639.3	120.8	241.7	111.2	583.3	80.2	1.1	1.5	1.2	1.4	8.7	7.6	0.8	1.0	1.7	1.2	1,477.9	324.8
Jinja	50.6	11.0	31.2	5.4	4.2	0.8	0.1	0.1	0.2	0.2	0.8	0.6	0.1	0.2	0.3	0.2	87.5	18.5
Mukono	2,924.7	397.1	667.0	134.8	3,360.6	475.6	6.4	7.9	5.6	5.1	36.5	31.1	5.4	6.5	10.5	6.7	7,016.7	1,064.8
Kampala	57.6	9.2	17.0	3.1	7.8	1.1	0.1	0.1	0.1	0.1	0.8	0.6	0.1	0.1	0.3	0.2	83.8	14.5
Wakiso	527.2	89.4	232.8	35.5	444.0	62.1	1.5	2.1	1.0	0.9	11.3	9.5	1.1	1.3	1.9	1.2	1,220.8	202.0
Mpigi	168.3	30.9	123.7	23.2	31.3	4.3	0.7	1.0	0.5	0.4	5.0	4.0	0.6	0.6	0.9	0.5	331.0	64.9
Masaka	197.0	33.4	191.6	28.6	454.8	63.0	0.8	1.1	0.3	0.3	4.3	4.0	0.6	1.0	0.8	0.5	850.1	131.9
Kalangala	1,368.5	173.3	420.7	64.0	2,903.1	479.0	17.1	21.0	2.5	2.1	18.5	15.5	2.5	2.7	4.7	2.9	4,737.6	760.4
Rakai	169.3	16.5	37.2	5.6	11.7	1.6	0.2	0.3	0.3	0.2	1.3	1.0	0.3	0.3	0.4	0.3	220.6	25.8
	7,367.7	**1,058.7**	**2,206.2**	**512.9**	**8,587.0**	**1,275.2**	**29.2**	**36.7**	**14.1**	**13.2**	**96.8**	**82.5**	**12.4**	**14.9**	**23.9**	**15.6**	**18,337.2**	**3,009.6**

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, OT=Other spp, ± Standard Error

Appendix 10. Estimated fish landed in the Ugandan part of Lake Victoria presented by district and species for December 2006

District	NP	±	TL	±	DA	±	HA	±	BD	±	PA	±	CG	±	OT	±	Total	±
Busia	20.3	2.7	13.0	2.9	28.1	10.2	0.1	0.1	0.0	0.0	0.2	0.2	0.1	0.2	0.4	0.2	62.3	16.4
Bugiri	1,599.9	216.1	232.4	58.5	1,103.4	401.6	1.2	1.0	0.7	0.7	6.2	6.2	3.3	4.7	3.2	2.2	2,950.3	690.9
Mayuge	763.7	143.0	253.1	68.4	831.8	305.1	0.9	0.8	0.4	0.4	6.5	6.5	2.4	3.3	3.1	2.0	1,861.8	529.5
Jinja	41.7	7.1	34.6	5.6	2.4	2.5	0.2	0.2	0.0	0.0	0.7	0.5	0.3	0.3	0.5	0.3	80.4	16.4
Mukono	3,193.2	378.8	688.6	127.1	4,476.5	1,657.5	6.5	5.6	2.1	1.9	31.9	28.6	11.8	15.3	18.9	11.5	8,429.5	2,226.3
Kampala	50.5	6.5	17.2	3.3	11.9	5.4	0.2	0.1	0.0	0.0	0.9	0.6	0.2	0.3	0.5	0.3	81.5	16.6
Wakiso	543.3	72.5	261.9	35.1	611.0	229.7	1.2	1.1	0.4	0.4	7.6	6.4	3.0	3.5	3.5	2.2	1,432.0	350.9
Mpigi	171.4	27.4	138.3	18.9	45.9	18.0	0.9	0.7	0.2	0.2	3.4	3.5	1.4	1.7	1.9	1.1	363.3	71.4
Masaka	214.3	28.8	229.3	27.4	633.2	225.8	0.3	0.3	0.2	0.2	3.9	5.3	1.0	2.0	1.7	1.1	1,083.9	290.9
Kalangala	1,548.0	164.7	462.0	64.4	2,187.2	767.0	3.4	2.9	1.1	1.0	15.4	13.0	5.4	6.3	8.4	5.2	4,231.0	1,024.5
Rakai	224.6	18.9	40.8	5.4	16.9	6.2	0.3	0.2	0.1	0.1	1.0	0.8	0.5	0.6	0.6	0.4	284.9	32.7
	8,371.0	**1,066.5**	**2,371.3**	**416.9**	**9,948.3**	**3,629.1**	**15.0**	**13.0**	**5.3**	**4.9**	**77.8**	**71.5**	**29.4**	**38.1**	**42.7**	**26.6**	**20,860.9**	**5,266.6**

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, OT=Other spp, ± Standard Error

Appendix 11. Estimated fish landed in the Ugandan part of Lake Victoria presented by district and species for March 2007

District	NP	±	TL	±	DA	±	HA	±	BD	±	PA	±	CG	±	OT	±		±
Busia	17.9	3.0	9.1	2.3	28.6	8.1	0.0	0.0	0.0	0.0	0.5	0.4	0.0	0.0	0.2	0.3	56.4	14.3
Bugiri	1,231.3	201.5	188.2	69.2	1,127.0	309.1	2.4	2.4	1.4	1.8	14.6	11.2	1.2	1.5	4.6	1.6	2,570.7	598.4
Mayuge	594.6	110.5	196.4	70.1	864.9	235.3	2.1	2.1	0.7	0.9	15.1	11.4	1.1	1.4	3.0	1.5	1,677.9	433.2
Jinja	41.6	7.7	28.4	9.8	5.8	2.6	0.0	0.0	0.1	0.1	1.8	1.6	0.1	0.1	0.7	0.4	78.5	22.4
Mukono	2,637.4	369.4	555.1	139.7	4,800.6	1,371.5	7.6	7.5	3.8	4.2	68.4	49.3	5.3	5.9	18.5	10.3	8,096.8	1,957.8
Kampala	45.5	7.3	13.5	2.8	11.8	3.7	0.0	0.0	0.1	0.1	1.6	1.1	0.1	0.2	0.5	0.3	73.1	15.5
Wakiso	466.0	75.9	225.7	58.3	639.4	182.3	1.1	1.1	0.7	0.8	18.1	14.0	1.4	1.6	3.7	2.1	1,356.1	336.1
Mpigi	139.2	23.3	111.9	20.6	50.2	16.0	0.2	0.2	0.3	0.2	6.2	4.6	0.7	0.8	2.0	1.1	310.7	66.7
Masaka	164.6	26.8	183.5	23.1	655.3	182.4	1.0	0.9	0.2	0.2	5.1	3.8	0.6	0.7	1.0	0.7	1,011.3	238.6
Kalangala	1,215.1	156.4	376.5	68.2	3,793.3	1,224.2	2.6	2.6	1.6	1.6	29.6	21.7	2.9	3.1	9.3	3.9	5,430.8	1,481.6
Rakai	157.5	16.3	35.2	8.3	17.8	5.8	0.0	0.0	0.2	0.2	1.5	1.2	0.2	0.3	1.0	0.3	213.4	32.3
	6,710.6	**998.1**	**1,923.4**	**472.5**	**11,994.6**	**3,541.0**	**17.0**	**16.8**	**9.2**	**10.2**	**162.5**	**120.3**	**13.9**	**15.5**	**44.4**	**22.4**	**20,875.6**	**5,196.8**

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, OT=Other spp, ± Standard Error

Appendix 12. Estimated fish landed in the Ugandan part of Lake Victoria presented by district and species for August 2007

District	NP	±	TL	±	DA	±	HA	±	BD	±	PA	±	CG	±	OT	±		±
Busia	19.2	3.6	10.5	4.1	15.4	1.6	0.1	0.1	0.0	0.0	0.3	0.2	0.1	0.1	0.3	0.2	45.8	9.8
Bugiri	1,349.2	151.3	162.7	30.2	602.0	60.8	1.7	2.6	2.3	2.4	11.9	9.8	2.3	1.9	3.9	2.5	2,136.0	261.6
Mayuge	615.8	83.4	188.5	36.0	457.8	48.5	1.5	2.3	0.9	1.1	11.6	8.4	2.7	2.4	3.0	2.0	1,281.8	184.2
Jinja	42.9	7.3	22.6	4.0	3.2	1.5	0.2	0.3	0.0	0.0	1.6	0.9	0.3	0.3	0.9	0.5	71.7	14.7
Mukono	2,689.4	310.7	569.6	126.2	2,626.5	358.9	3.9	6.2	3.0	2.9	69.8	43.1	12.4	10.2	20.4	13.5	5,994.9	871.7
Kampala	42.2	5.6	14.1	2.9	6.1	0.6	0.0	0.0	0.0	0.0	1.4	0.8	0.4	0.3	0.6	0.3	64.8	10.7
Wakiso	470.0	60.0	216.3	30.7	347.6	43.2	0.6	1.0	0.6	0.5	13.4	8.6	3.0	2.5	4.1	2.6	1,055.8	149.1
Mpigi	139.1	18.5	112.8	14.3	24.6	2.5	0.2	0.4	0.2	0.2	3.3	2.2	1.1	0.9	2.0	1.0	283.4	39.9
Masaka	163.9	20.3	195.4	23.8	356.6	40.6	0.7	1.1	0.3	0.3	2.6	1.8	1.3	0.9	0.9	0.5	721.7	89.4
Kalangala	1,257.7	131.5	381.8	56.0	2,211.1	711.4	1.4	2.2	1.4	1.2	25.1	15.7	5.6	4.4	8.9	5.3	3,892.9	927.8
Rakai	176.0	15.2	33.8	4.2	9.2	0.9	0.0	0.1	0.2	0.2	0.8	0.6	0.3	0.2	0.7	0.3	221.0	21.7
	6,965.4	**807.3**	**1,908.0**	**332.4**	**6,660.1**	**1,270.6**	**10.4**	**16.3**	**9.0**	**8.9**	**141.7**	**92.0**	**29.4**	**24.2**	**45.8**	**28.9**	**15,769.9**	**2,580.6**

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, OT=Other spp, ± Standard Error

Appendix 13. Estimated fish landed in the Ugandan part of Lake Victoria presented by district and species for February 2008

District	NP	±	TL	±	DA	±	HA	±	BD	±	PA	±	CG	±	OT	±		±
Busia	18.3	3.5	10.7	9.0	12.8	1.5	0.1	0.1	0.0	0.0	0.4	0.3	0.1	0.1	0.3	0.1	42.8	14.6
Bugiri	1,170.4	170.1	166.6	36.0	500.4	57.6	1.6	2.2	0.5	0.7	12.9	7.1	3.2	2.5	5.6	3.2	1,861.3	279.6
Mayuge	562.6	87.2	180.3	43.5	380.7	44.2	1.6	2.3	0.3	0.4	12.9	7.3	3.0	2.3	3.8	1.9	1,145.3	189.0
Jinja	43.0	6.9	25.7	5.5	2.7	0.5	0.2	0.3	0.1	0.1	1.9	1.1	0.5	0.3	0.8	0.3	74.8	14.9
Mukono	2,589.3	337.7	567.8	177.3	2,190.5	264.6	6.2	7.5	2.1	2.6	79.5	42.5	18.6	13.3	27.3	12.1	5,481.2	857.6
Kampala	42.5	5.4	13.7	2.8	5.1	0.6	0.2	0.2	0.0	0.0	1.7	0.9	0.5	0.3	0.6	0.3	64.3	10.5
Wakiso	461.9	69.0	210.7	36.5	289.6	34.4	1.2	1.4	0.4	0.5	16.7	9.3	3.8	3.0	5.2	2.3	989.6	156.3
Mpigi	134.4	19.2	111.3	19.4	20.4	2.4	0.6	0.6	0.1	0.1	5.1	2.8	1.7	1.2	3.6	1.3	277.2	47.0
Masaka	169.1	28.4	178.9	29.0	296.8	34.8	0.7	1.0	0.1	0.1	4.1	2.5	1.1	0.9	1.4	0.7	652.2	97.3
Kalangala	1,218.3	150.6	370.1	60.9	1,875.6	280.2	4.6	6.9	0.9	1.1	30.8	16.5	8.3	5.9	14.5	6.4	3,523.2	528.4
Rakai	159.3	16.5	33.4	4.7	7.7	0.9	0.2	0.2	0.1	0.1	1.3	0.7	0.5	0.4	1.3	0.7	203.7	24.2
	6,569.0	**894.6**	**1,869.2**	**424.6**	**5,582.4**	**721.6**	**17.1**	**22.7**	**4.7**	**5.7**	**167.4**	**90.8**	**41.3**	**30.2**	**64.5**	**29.3**	**14,315.5**	**2,219.5**

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, OT=Other spp, ± Standard Error

Appendix 14. Estimated fish landed in the Ugandan part of Lake Victoria presented by district and species for December 2008

District	NP	±	TL	±	DA	±	HA	±	BD	±	PA	±	CG	±	OT	±		±
Busia	20.8	3.8	18.2	8.5	9.6	1.4	0.1	0.2	0.0	0.0	0.4	0.3	0.1	0.1	0.3	0.2	49.6	14.5
Bugiri	1,286.1	164.0	176.1	41.8	864.6	87.2	0.3	0.8	0.2	0.3	9.2	7.7	1.6	2.0	2.4	1.4	2,340.6	305.2
Mayuge	593.5	92.4	145.4	64.3	531.2	53.1	0.2	0.5	0.2	0.3	9.2	7.3	1.4	1.7	1.9	1.1	1,283.1	220.8
Jinja	42.1	9.0	34.5	8.9			0.0	0.1	0.0	0.1	0.9	0.7	0.2	0.3	0.4	0.2	78.1	19.3
Mukono	2,633.5	351.7	377.4	123.7	2,038.9	267.2	1.2	3.6	0.6	0.8	30.6	22.7	5.8	6.8	7.6	4.5	5,095.6	781.1
Kampala	44.2	7.2	11.4	3.3	2.8	0.3	0.0	0.0	0.0	0.0	0.6	0.5	0.1	0.1	0.3	0.2	59.4	11.6
Wakiso	448.5	73.1	191.5	54.5	243.5	25.4	0.2	0.4	0.2	0.2	8.5	6.7	1.1	1.3	1.6	1.0	895.0	162.5
Mpigi	175.6	29.0	79.2	14.5	62.6	8.0	0.1	0.3	0.1	0.2	3.2	2.4	0.4	0.5	1.2	0.7	322.6	55.7
Masaka	274.5	42.6	110.3	22.9	518.1	94.4	0.1	0.5	0.1	0.2	3.7	3.0	0.4	0.5	0.9	0.7	908.2	164.9
Kalangala	1,215.7	150.7	217.3	51.0	1,813.1	421.9	0.4	0.9	0.3	0.5	12.4	9.6	2.2	2.5	3.7	2.0	3,265.2	639.1
Rakai	192.5	22.9	29.0	6.8			0.1	0.1	0.0	0.0	2.1	1.7	0.2	0.2	0.5	0.3	224.3	32.1
	6,927.1	**946.3**	**1,390.2**	**400.4**	**6,084.4**	**959.0**	**2.9**	**7.5**	**1.9**	**2.6**	**80.8**	**62.7**	**13.4**	**16.2**	**21.0**	**12.2**	**14,521.7**	**2,406.8**

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, OT=Other spp, ± Standard Error

Appendix 15. Estimated fish landed in the Ugandan part of Lake Victoria presented by district and species for March 2010

	NP	±	TL	±	DA	±	HA	±	BD	±	PA	±	CG	±	OT	±	TOTAL	±
Busia	49.6	3.0	9.9	1.2	34.0	5.5	0.0	0.0	0.1	0.0	0.8	0.2	0.2	0.1	0.3	0.1	94.8	10.1
Bugiri	885.1	54.2	176.8	21.2	607.1	98.9	0.0	0.0	1.6	0.7	14.0	3.8	3.5	1.2	4.6	1.3	1692.7	181.2
Mayuge	793.1	48.6	158.4	19.0	544.0	88.6	0.0	0.0	1.4	0.6	12.6	3.4	3.1	1.0	4.1	1.1	1516.6	162.3
Jinja	92.1	5.6	18.4	2.2	63.1	10.3	0.0	0.0	0.2	0.1	1.5	0.4	0.4	0.1	0.5	0.1	176.0	18.8
Mukono	2577.4	157.9	514.8	61.7	1767.9	287.9	0.1	0.1	4.6	2.0	40.8	11.0	10.1	3.4	13.3	3.6	4929.0	527.6
Kampala	56.6	3.5	11.3	1.4	38.9	6.3	0.0	0.0	0.1	0.0	0.9	0.2	0.2	0.1	0.3	0.1	108.3	11.6
Wakiso	644.4	39.5	128.7	15.4	442.0	72.0	0.0	0.0	1.1	0.5	10.2	2.8	2.5	0.9	3.3	0.9	1232.3	131.9
Mpigi	254.9	15.6	50.9	6.1	174.8	28.5	0.0	0.0	0.5	0.2	4.0	1.1	1.0	0.3	1.3	0.4	487.5	52.2
Masaka	453.2	27.8	90.5	10.8	310.8	50.6	0.0	0.0	0.8	0.4	7.2	1.9	1.8	0.6	2.3	0.6	866.6	92.8
Kalangala	1104.6	67.7	220.6	26.4	757.7	123.4	0.0	0.0	2.0	0.9	17.5	4.7	4.3	1.5	5.7	1.6	2112.4	226.1
Rakai	169.9	10.4	33.9	4.1	116.6	19.0	0.0	0.0	0.3	0.1	2.7	0.7	0.7	0.2	0.9	0.2	325.0	34.8
Arrow Aquaculture					36.2												36.2	
Total	**7080.8**	**433.8**	**1414.3**	**169.4**	**4893.1**	**790.9**	**0.1**	**0.1**	**12.5**	**5.5**	**112.2**	**30.3**	**27.9**	**9.4**	**36.5**	**10.0**	**13,577.4**	**1449.4**

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, OT=Other spp, ± Standard Error

Appendix 16. Estimated fish landed in the Ugandan part of Lake Victoria presented by district and species for May 2011

	NP .	±	TL .	±	DA .	±	HA .	±	BD .	±	PA .	±	CG .	±	OT .	±	TOTAL	±
Busia	42.0	3.4	11.3	3.8	51.5	0.0	0.7	0.2	0.0	0.0	0.9	0.4	0.1	0.1	0.3	0.1	106.9	7.8
Bugiri	750.6	60.1	201.6	67.4	919.6	0.0	12.9	3.0	0.4	0.3	16.4	6.3	2.4	1.1	5.4	1.5	1909.3	139.8
Mayuge	672.6	53.9	180.6	60.4	823.9	0.0	11.5	2.7	0.4	0.2	14.7	5.7	2.1	1.0	4.9	1.4	1710.8	125.3
Jinja	78.1	6.3	21.0	7.0	95.6	0.0	1.3	0.3	0.0	0.0	1.7	0.7	0.2	0.1	0.6	0.2	198.6	14.5
Mukono	2185.9	175.1	587.0	196.2	2677.8	0.1	37.5	8.8	1.2	0.8	47.9	18.5	6.9	3.2	15.8	4.5	5560.0	407.2
Kampala	48.0	3.8	12.9	4.3	58.9	0.0	0.8	0.2	0.0	0.0	1.1	0.4	0.2	0.1	0.3	0.1	122.2	8.9
Wakiso	546.5	43.8	146.7	49.1	669.5	0.0	9.4	2.2	0.3	0.2	12.0	4.6	1.7	0.8	3.9	1.1	1390.0	101.8
Mpigi	216.2	17.3	58.1	19.4	264.8	0.0	3.7	0.9	0.1	0.1	4.7	1.8	0.7	0.3	1.6	0.4	549.9	40.3
Masaka	384.33	30.79	103.20	34.50	470.83	0.01	6.60	1.55	0.22	0.14	8.42	3.25	1.22	0.56	2.77	0.79	977.6	71.6
Kalangala	936.8	75.1	251.6	84.1	1147.6	0.0	16.1	3.8	0.5	0.3	20.5	7.9	3.0	1.4	6.8	1.9	2382.9	174.5
Rakai	144.1	11.5	38.7	12.9	176.6	0.0	2.5	0.6	0.1	0.1	3.2	1.2	0.5	0.2	1.0	0.3	366.6	26.8
Arrow Aquaculture					44.0												44.0	
Total	**6005.1**	**481.1**	**1612.5**	**539.1**	**7400.7**	**0.1**	**103.1**	**24.3**	**3.4**	**2.2**	**131.5**	**50.7**	**19.0**	**8.8**	**43.3**	**12.3**	**15,318.7**	**1118.6**

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, OT=Other spp, ± Standard Error

Appendix 17. Estimated fish landed in May 2014 on the Ugandan part of Lake Victoria presented by district and species

District	NP	±	TL	±	DA	±	HA	±	BD	±	PA	±	CG	±	OT	±	Total	±
Busia	18.1	0.0	5.7	0.0	44.4	0.2	1.3	0.2	0.1	0.0	0.4	0.0	0.3	0.0	1.8	0.0	72.0	0.5
Bugiri	298.5	0.6	93.6	0.7	732.8	2.7	21.5	2.6	1.3	0.2	7.4	0.4	5.3	0.4	29.6	0.2	1,190.0	7.8
Buikwe	39.7	0.1	12.5	0.1	97.6	0.4	2.9	0.3	0.2	0.0	1.0	0.1	0.7	0.1	3.9	0.0	158.5	1.0
Buvuma	1,120.8	2.3	351.5	2.6	2,751.4	10.0	80.6	9.7	4.8	0.9	27.8	1.6	19.9	1.5	111.1	0.7	4,467.9	29.2
Mayuge	64.6	0.1	20.3	0.2	158.7	0.6	4.7	0.6	0.3	0.0	1.6	0.1	1.1	0.1	6.4	0.0	257.7	1.7
Jinja	927.2	1.9	290.8	2.2	2,276.3	8.3	66.7	8.0	4.0	0.7	23.0	1.3	16.5	1.2	91.9	0.5	3,696.4	24.2
Mukono	36.1	0.1	11.3	0.1	88.7	0.3	2.6	0.3	0.2	0.0	0.9	0.1	0.6	0.0	3.6	0.0	144.0	0.9
Namayingo	29.5	0.1	9.3	0.1	72.4	0.3	2.1	0.3	0.1	0.0	0.7	0.0	0.5	0.0	2.9	0.0	117.6	0.8
Kampala	221.6	0.5	69.5	0.5	544.1	2.0	15.9	1.9	1.0	0.2	5.5	0.3	3.9	0.3	22.0	0.1	883.5	5.8
Wakiso	543.4	1.1	170.4	1.3	1,334.0	4.8	39.1	4.7	2.3	0.4	13.5	0.8	9.7	0.7	53.9	0.3	2,166.3	14.2
Mpigi	147.7	0.3	46.3	0.3	362.7	1.3	10.6	1.3	0.6	0.1	3.7	0.2	2.6	0.2	14.6	0.1	589.0	3.8
Masaka	769.7	1.6	241.4	1.8	1,889.4	6.9	55.4	6.7	3.3	0.6	19.1	1.1	13.7	1.0	76.3	0.4	3,068.2	20.0
Kalangala	796.0	1.6	249.7	1.9	1,954.0	7.1	57.3	6.9	3.4	0.6	19.7	1.1	14.1	1.1	78.9	0.5	3,173.0	20.7
Kalungu	112.6	0.2	35.3	0.3	276.5	1.0	8.1	1.0	0.5	0.1	2.8	0.2	2.0	0.2	11.2	0.1	448.9	2.9
Rakai	489.4	1.0	153.5	1.1	1,201.5	4.4	35.2	4.2	2.1	0.4	12.1	0.7	8.7	0.7	48.5	0.3	1,951.0	12.7
Total	**5624.7**	**11.6**	**1,759.9**	**13.2**	**13,825.2**	**50.1**	**404.0**	**48.5**	**24.2**	**4.3**	**139.1**	**7.8**	**99.7**	**7.5**	**556.5**	**3.3**	**22,384.1**	**146.3**

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, OT=Other spp, ± Standard Error

Appendix 18. Estimated fish landed (tonnes) in December 2015 on the Ugandan part of Lake Victoria presented by district and species

District	BD	±	CG	±	DA	±	HA	±	NP	±	OT	±	PA	±	SY	±	TL	±	Total	±
Bugiri			0.9	0.0	4.9		4.7	0.3	13.7	2.6			3.2	0.4			4.6	0.9	32.0	3.4
Buikwe	4.6	0.7			503.9	181.0	262.7	119.8	158.6	24.0	17.7	2.5	7.4		20.6	2.2	84.8	23.8	1,060.2	133.9
Busia			2.0	0.2	9.4	0.8	2.6		13.4	1.7	17.0	2.9	2.8		18.0	1.9	16.4	3.8	81.6	6.5
Buvuma	6.1	5.5	3.7	0.3	554.1	171.8	1.5		462.1	128.1	33.8	0.4	7.5	1.5	3.1	0.6	111.3	75.7	1,183.3	293.0
Jinja			2.8	1.0	0.6	0.4	5.9	2.6	10.0	2.6			14.6		0.9	0.3	16.0	4.2	50.8	5.3
Kalangala	1.3		18.5	1.9	218.1	177.5			296.5	109.0	11.9		21.7	5.6	13.0	9.1	68.5	25.9	649.4	240.6
Kalungu	0.3		8.4	3.3			0.2		24.3	7.0			19.4	3.9			31.0	6.6	83.7	10.2
Kampala			6.1	0.2	1.9		11.0	0.4	44.9	11.2			4.6	1.2	0.1	0.0	10.6	1.9	79.3	12.1
Masaka							8.4		28.9	3.5			20.4	4.3			27.7	5.0	85.4	5.1
Mayuge			10.6		2,862.5	1,629.8	672.8	141.1	482.0	118.9			11.0	1.7	0.8		157.3	31.3	4,196.9	1,245.9
Mpigi			16.1	1.3	79.0		41.5		43.4	10.7			10.6	2.5			64.4	17.5	255.0	13.6
Mukono	24.0	9.4	79.0	43.1	451.6		12.2	16.0	959.5	199.4	18.4	12.6	185.6	50.4	617.4	409.9	353.5	30.4	2,701.1	193.6
Namayingo	9.2				488.3	30.8	131.6		251.9	101.1	4.3	0.3					75.5	13.7	960.8	111.1
Rakai	40.1	10.2	23.2						96.2	6.3			78.3				14.5		252.4	6.3
Wakiso	6.7		37.0	3.4	190.2	52.0	83.8		173.8	59.0	27.4	49.8	31.1		0.8		55.2	10.7	606.0	96.3
Grand Total	**92.4**	**25.8**	**208.4**	**54.8**	**5,364.5**	**2,244.2**	**1,238.8**	**280.2**	**3,059.1**	**785.2**	**130.4**	**68.5**	**418.4**	**71.5**	**674.5**	**424.0**	**1,091.4**	**251.4**	**12,277.9**	**2,377.1**

Abbreviations: NP=Nile perch, TL=Tilapiines, DA=Mukene/Dagaa, HA=Haplochromines, BD=*Bagrus*, PA= *Protopterus*, CA= *Clarias*, SY = *Synodontis* spp OT=Other spp, ± Standard Error

Appendix 19. Estimated annual fish catches (t) and beach values (Million Ug.Shs) on the Ugandan part of Lake Victoria presented by district and species for 2006 to 2015.

(a) Nile perch

	2006		2007		2008		2010		2011		2014		2015	
DISTRICT	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**
Bugiri	15,666.40	30,178.00	16,411.80	27,962.00	14,739.30	32,923.92	10621.3	37,130.90	9007.7	40807.1	217.2	1165.6	167.0	987
Buikwe											3,587.90	19,258.50	1,930.2	11,408
Busia	396	762.7	227.7	388.5	234.9	524.7	594.8	2,079.30	504.4	2285.2	477.7	2,564.30	163.5	966
Buvuma											13,473.30	72,319.80	5,622.5	33,232
Jinja	578.8	1,114.90	505.3	862.6	510.2	1,139.26	1104.6	3,861.60	936.8	4243.9	776.9	4,170.30	121.4	717
Kalangala	16,912.70	32,578.80	15,771.70	26,825.50	14,603.90	32,610.27	13255.3	46,339.40	11241.6	50927.2	11,147.30	59,834.80	3,607.0	21,319
Kalungu											434.3	2,331.20	295.9	1,749
Kampala	632.9	1,219.10	546.4	927.8	519.8	1,160.92	679.8	2376.4	576.5	2611.7	354.7	1,903.80	545.9	3,226
Masaka	2,387.30	4,598.70	2,121.10	3,601.50	2,661.75	5,953.80	5438.1	19,011.00	4611.9	20893.2	2,663.80	14,298.20	351.1	2,075
Mayuge	8,145.80	15,691.10	7,737.90	13,159.60	6,936.70	15,492.67	9516.6	33,269.30	8070.9	36563.1	6,533.90	35,072.00	5,864.0	34,659
Mpigi	1,954.10	3,764.20	1,766.40	3,002.30	1,859.97	4,157.28	3058.9	10,693.70	2594.2	11752.4	1,775.80	9,532.10	527.5	3,118
Mukono	35,852.50	69,062.30	33,550.40	57,081.10	31,337.00	69,979.81	30929.1	108,125.30	26230.4	118830.1	9,250.80	49,655.10	11,674.2	69,000
Namayingo											9,566.90	51,351.70	3,064.5	18,112
Rakai	2,214.90	4,266.50	2,174.50	3,701.60	2,110.59	4,716.13	2039.3	7,129.10	1729.5	7835	1,353.60	7,265.70	1,170.5	6,918
Wakiso	6,297.80	12,131.30	5,842.00	9,941.30	5,462.53	12,196.53	7732.3	27,031.30	6557.6	29707.5	5,882.50	31,575.10	2,114.3	12,496
Grand total	**91,039.10**	**175,367.70**	**86,655.30**	**147,453.80**	**80,976.67**	**180,855.29**	**84,970.10**	**297,047.50**	**72,061.50**	**326,456.40**	**67,496.60**	**362,298.20**	**37,219.3**	**219,982**

(b) Tilapia

	2006		2007		2008		2010		2011		2014		2015	
DISTRICT	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**
Bugiri	2,807.60	2,712.10	2,276.20	2,366.00	2,056.40	2,983.00	2,121.40	4,615.70	2418.8	6779.1	67.9	288.5	56.3	290
Buikwe											1,122.60	4,767.10	1,031.4	5,322
Busia	166.8	161.1	127.1	133.8	173.1	258.6	118.8	258.5	135.5	379.6	149.5	634.8	199.0	1,027
Buvuma											4,215.60	17,901.60	1,353.9	6,987
Jinja	375.3	362.5	333.7	345.5	361.5	532.4	220.6	480	251.6	705	243.1	1,032.30	194.8	1,005
Kalangala	5,235.20	5,057.20	4,798.30	5,033.70	3,523.90	4,923.80	2647.5	5760.4	3018.7	8460.3	3,487.90	14,811.20	833.3	4,300
Kalungu											135.9	577.1	377.5	1,948
Kampala	205	198	175.7	184.4	150.8	215.3	1,355.80	295.4	154.8	433.9	111	471.3	129.3	667
Masaka	2,345.60	2,265.80	2,392.90	2,516.20	1,735.30	2,432.10	1088.1	2363.2	1238.4	3470.9	833.5	3,539.30	337.4	1,741
Mayuge	2,794.60	2,699.60	2,491.30	2,601.90	1,954.00	2,785.80	1,900.80	4135.7	2167.3	6074.1	2,044.40	8,681.50	1,914.2	9,878
Mpigi	1,536.50	1,484.30	1,425.90	1,495.10	1,143.50	1,617.20	2011	1329.3	696.6	1952.4	555.6	2,359.50	783.4	4,043
Mukono	8,290.70	8,008.80	7,126.80	7,479.30	5,671.00	7,985.50	6,177.50	13440.9	7043.6	19740.7	2,894.50	12,291.30	4,301.1	22,196
Namayingo											2,993.40	12,711.30	918.8	4,741
Rakai	478.5	462.2	433	453.5	374	535.8	407.3	886.2	464.4	1301.6	423.5	1,798.50	176.5	911
Wakiso	2,825.70	2,729.60	2,774.60	2,905.40	2,413.00	3,466.60	1,544.40	3360.2	1760.9	4935.2	1,840.60	7,815.90	671.4	3,464
Grand total	**27,061.40**	**26,141.30**	**24,355.60**	**25,514.80**	**19,556.60**	**27,736.00**	**16,971.1**	**36925.7**	**19,350.50**	**54,232.70**	**21.119**	**89,682.20**	**13,278.2**	**68,521**

(c) Mukene

	2006		2007		2008		2010		2011		2014		2015	
DISTRICT	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**
Bugiri	8,697.50	1,696.00	11,090.90	1,875.30	8,190.50	2,234.40	7285.4	2003.5	11035	5730.5	533.8	298.3	59.8	45
Buikwe											8,819.10	4,928.00	6,130.6	4,598
Busia	219.7	42.8	282.2	47.7	134.4	36.5	408	112.2	618	320.9	1,174.30	656.2	114.0	86
Buvuma											33,117.40	18,505.50	6,741.8	5,056
Jinja	47.2	9.2	47.3	7.8	16.2	4.4	757.7	208.4	1147.6	596	1,909.70	1,067.10	7.2	5
Kalangala	31,920.00	6,224.40	33,581.20	5,615.60	22,132.40	6,018.90	9092.1	2500.3	13771.7	7151.7	27,400.10	15,310.80	2,653.1	1,990
Kalungu											1,067.50	596.5		
Kampala	88.4	17.2	116.4	19.7	47.2	12.8	466.3	128.2	706.2	366.8	871.8	487.2	23.4	18
Masaka	5,089.50	992.4	6,453.30	1,092.20	4,889.40	1,333.90	3730.1	1025.8	5649.9	2934	6,547.60	3,658.70		
Mayuge	6,563.00	1,279.80	8,447.70	1,426.30	5,471.70	1,491.00	6527.7	1795.1	9887.4	5134.6	16,060.50	8,974.40	34,827.2	26,120
Mpigi	358.3	69.9	474.1	79.4	497.9	136.2	2098.2	577	3178.1	1650.4	4,365.00	2,439.10	961.7	721
Mukono	37,624.80	7,336.80	46,851.30	7,921.20	25,376.20	6,899.60	21215	5834.1	32133.9	16687.3	22,738.60	12,706.00	5,494.6	4,121
Namayingo											23,515.50	13,140.10	5,941.0	4,456
Rakai	146.5	28.6	172.2	29	46	12.4	1398.8	384.7	2118.7	1100.3	3,327.20	1,859.20		
Wakiso	4,979.20	970.9	6,274.60	1,061.40	3,198.70	869.2	5303.7	1458.5	8033.5	4171.8	14,459.20	8,079.60	2,314.2	1,736
Arrow Aquaculture							434.4	119.5	528.2	274.2				
Grand total	**95,734.10**	**18,668.10**	**113,791.30**	**19,175.60**	**70,000.50**	**19,049.20**	**58717.3**	**16147.3**	**88808.2**	**46118.5**	**165,907.30**	**92,706.50**	**65,268.6**	**48,951**

(d) Other fish species

	2006		2007		2008		2010		2011		2014		2015	
DISTRICT	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**
Bugiri	206.1	155.1	252.2	210.6	225.2	273.6	283.9	559.8	450.6	999.7	48.3	126.6	106.8	268.0
Buikwe											797.4	2,092.00	3,807.3	5,179.5
Busia	18.2	11.4	9.8	8	11.6	14.4	15.9	31.3	25.2	56	106.2	278.6	516.0	1,480.8
Buvuma											2,994.20	7,855.80	679.2	2,226.5
Jinja	19.7	14.6	30.6	25.2	29.9	35.1	29.5	58.2	46.9	104	172.7	453	294.3	986.4
Kalangala	449.2	366.5	498.6	409.5	469.8	537.8	354.3	698.6	562.3	1247.6	2,477.30	6,499.60	807.7	3,027.1
Kalungu											96.5	253.2	344.9	1,453.9
Kampala	17.9	13.3	26.6	21.8	24.4	28	18.2	35.8	28.8	64	78.8	206.8	265.8	716.1
Masaka	83.4	65.1	83.2	70.8	76.5	95.3	145.3	286.6	230.7	511.9	592	1,553.10	350.5	1,121.6
Mayuge	178.1	136.3	227.5	190.8	207.6	255.2	254.3	501.6	403.7	895.7	1,452.10	3,809.70	8,457.4	9,614.5
Mpigi	96	74.4	96.6	78.8	97.3	113.8	81.8	161.2	129.8	287.9	394.7	1,035.40	829.3	1,950.1
Mukono	800.3	604	1,172.50	968.6	1,076.40	1,245.40	826.6	1630	1312.1	2911.2	2,055.80	5,393.80	11,394.0	35,165.8
Namayingo											2,126.10	5,578.10	1,765.1	2,230.5
Rakai	31.7	23.3	30	24.2	37.6	47.2	54.5	107.5	86.5	191.9	300.8	789.2	1,723.7	7,032.7
Wakiso	208.4	163.9	257.9	212.5	232.9	276	206.6	407.5	328	727.8	1,307.30	3,429.70	2,273.7	6,021.0
Grand total	**2,109.00**	**1,627.90**	**2,685.50**	**2,221.00**	**2,489.30**	**2,921.60**	**2270.9**	**4478.1**	**3604.6**	**7997.8**	**15,000.10**	**39,354.70**	**33,615.6**	**78,474.5**

(e) All fish species pooled

	2006		2007		2008		2010		2011		2014		2015	
DISTRICT	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**	**Catch**	**Value**
Bugiri	27,377.6	34,741.3	30,031.1	32,413.9	25,211.3	38,414.9	20,311.9	44,309.9	22,912.1	54,316.4	867.1	1,879.0	389.9	1,590
Buikwe											14,326.9	31,045.6	12,899.5	26,508
Busia	800.6	978.1	646.9	578.1	554.0	834.2	1,137.5	2,481.4	1,283.1	3,041.7	1,907.7	4,133.8	992.5	3,559
Buvuma											53,800.5	116,582.6	14,397.4	47,501
Jinja	1,021.0	1,501.2	917.0	1,241.1	917.9	1,711.1	2,112.4	4,608.2	2,382.9	5,648.9	3,102.4	6,722.7	617.7	2,714
Kalangala	54,517.2	44,226.9	54,649.8	37,884.3	40,730.0	44,090.7	25,349.2	55,298.7	28,594.3	67,786.9	44,512.6	96,456.5	7,901.0	30,636
Kalungu											1,734.3	3,758.0	1,018.4	5,151
Kampala	944.1	1,447.6	865.1	1,153.7	742.2	1,417.1	1,300.0	2,835.8	1,466.4	3,476.2	1,416.3	3,069.1	964.3	4,627
Masaka	9,905.8	7,922.0	11,050.5	7,280.7	9,362.9	9,815.1	10,399.7	22,686.7	11,731.0	27,810.0	10,636.8	23,049.3	1,038.9	4,938
Mayuge	17,681.5	19,806.8	18,904.3	17,378.6	14,570.1	20,024.6	18,199.4	39,701.7	20,529.2	48,667.5	26,090.9	56,537.6	51,062.8	80,272
Mpigi	3,945.0	5,392.8	3,763.1	4,655.6	3,598.7	6,024.5	5,849.8	12,761.2	6,598.7	15,643.1	7,091.2	15,366.2	3,101.9	9,832
Mukono	82,568.3	85,011.9	88,701.1	73,450.3	63,460.7	86,110.3	59,148.2	129,030.4	66,719.9	158,169.4	36,939.7	80,046.2	32,863.9	130,482
Namayingo											38,201.8	82,781.2	11,689.3	29,540
Rakai	2,871.6	4,780.6	2,809.7	4,208.3	2,568.1	5,311.4	3,899.9	8,507.5	4,399.1	10,428.7	5,405.1	11,712.5	3,070.7	14,862
Wakiso	14,311.0	15,995.8	15,149.1	14,120.7	11,307.1	16,808.3	14,787.0	32,257.6	16,680.0	39,542.3	23,489.6	50,900.5	7,373.5	23,717
AAA							4,334.4	119.5	528.2	274.2				
Grand total	**215,943.6**	**221,805.1**	**227,487.7**	**194,365.2**	**173,023.1**	**230,562.1**	**162,929.3**	**354,598.6**	**183,824.8**	**434,805.4**	**269,522.9**	**584,040.6**	**149,381.6**	**415,929**

Appendix 20. Number of boats sampled per Catch Assessment Survey for the period 2005 to 2014

Year	January	February	March	April	May	June	July	August	September	October	November	December	Total
2005							3375	2948	3563		3715		13,601
2006			2845					3976				3472	10,293
2007			3792					3878					7,670
2008		3738										3773	7,511
2009													
2010				3769									3,769
2011					4938								4,938
2012													
2013													
2014					4285								4,285
2015												4860	4860

Appendix 21: Catch Assessment Survey Form

Serial No.

Part A Document identification

Date	
Country	
District	
Sub-county/Division	
Parish/Location	
Landing site Name/Code	
Enumerator's name/Phone No.	

Part B – Vessels landing and Sampling targets

Number of vessels (all types) that landed at the site during the sampling day (00:00 to 24:00 hrs)	=	
Maximum number of vessels that can be sampled	=	
Sampling proportion	=	

Number of Vessels landing during the sampling day (00:00 – 24:00hrs)

	Main gear type			
Vessel type	**SS/SN**	**GN**	**LL**	**Other**
Parachute (Bawo-tatu)				
Sesse (Motorised/Sail)				
Sesse (Paddled)				
Other				

Number of Vessels to be sampled

	Main gear type			
Vessel type	**SS/SN**	**GN**	**LL**	**Other**
Parachute				
Sesse (Motorised/Sail)				
Sesse (Paddled)				
Other				

Form Codes for Part C

Vessel type Code	**Description**
SF	Sesse flat at one end
CA	Catamaran
SP	Sesse pointed at both ends
SMS	Sesse motorized
PA	Parachute
OT	Others (Dugout, rafts, Foot fishers)
Propulsion code	
O	Outboard motor
P	Paddles
S	Sail
Gear type code	
GN	Gillnet
LL	Long line
SS	Small seine net (Omena fishery)
SN	Scoop net (Omena fishery)
HL	Hand line
LN	Lift net (Omenafishery)
CN	Cast net
TR	Trap
BES/BOS	Beach seine/Boat seine

Gillnet panel code	**Description**
S	Single
D	Double
T	Triple
Mode of operation code	
A	Active
D	Drift
S	Stationary
Construction code	
MO	Monofilament
MU	Multifilament
Fish species code	
NP	Nile perch
TL	Tilapia
DA	Dagaa/Mukene
HA	Haplochromines/Furu/Nkejje
SY	Synodontis
BD	*Bagrus docmac*
PA	*Protopterus aethiopicus*
CG	*Clarias gariepinus*
OT	Other

Part C – Fishing Operations

Form Number		District/Subcounty	
Date		Landing site Name or Code	
Country		Enumerator's Name/Tel No.	

Use separate rows for each gear size and species. Ensure that hours fished with each gear type is recorded

VESSEL DETAILS							GEAR AND EFFORT DETAILS								FISH CATCH DETAILS			
Serial Number	Reg. No.	Vessel type code	Length (m)	Propulsion code	Crew	Days fished in the last one week	Gear type code	Construction code	GN panel code	Number of units	Size GN mesh (inches) SS mesh (mm) or Hook size No.	Mode of operation Code	Hours fished	Number of lamps (Dagaa)	Species name or Code	1. No. of fish (large spp) 2. No. basins/buckets (Mukene and Nkejje)	1. Catch wt (kg) large spp 2. Wt (kg) 1 basin/ bucket (Mukene & Nkejje)	1. Price (shs/kg) large spp 2. Price of 1 basin or bucket Mukene & Nkejje)