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REGIONAL STATUS REPORT ON LAKE VICTORIA BI-ENNIAL FRAME SURVEYS BETWEEN 2000 AND 2014

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LIST OF ACRONYMS

BMUs	Beach Management Units
CAS	Catch Assessment Surveys
EAC	East African Community
EU	European Union
GEF	Global Environmental Facility
GDP	Gross Domestic Product
GPS	Geographical Positioning Station
IFMP	Implementation of a Fisheries Management Plan
LVEMP	Lake Victoria Environmental Management Project
LVFO	Lake Victoria Fisheries Organization
LVFO CoM	LVFO Council of Ministers
LVFRP	Lake Victoria Fisheries Research Project
NWGs	National Working Groups
RWGs	Regional Working Groups
SOPs	Standard Operating Procedures
MCS	Monitoring Control and Surveillance
TASP-II	Trade and Agricultural Support Programme Phase Two
TV	Television

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EXECUTIVE SUMMARY

The assessment of the status of the fishery sector and the fishing effort on a sustainable basis to guide management of the fishery is very important. The fishery of Lake Victoria is to a large extent supporting the micro and macro economies of the three Partner States of Kenya, Tanzania and Uganda and its sustainable development is crucial to the communities depending on the resources. The biennial Frame Surveys conducted since the year 2000 to 2014 provide a comprehensive picture of the status of facilities and services in the fisheries sector and how fishing effort and capacity has been changing for proper planning, development and management of the sector.

The Frame survey 2014 was conducted in December 2014 concurrently in the three Partner States in all the landing sites around Lake Victoria. The results indicated a general decline in facilities at landing sites. These included portable water which decreased from 261 in 2012 to 208 landing sites in 2014. Similarly, the number of landing sites with jetties/pontoon decreased from 113 in 2012 to 103 in 2014. Other facilities which decreased include boat repair facilities which decreased from 683 in 2012 to 594 in 2014; cold rooms (working) decreased from 15 in 2012 to 12 in 2014; fish stores decreased from 106 in 2012 to 79 in 2014; net repair facilities decreased from 429 in 2012 to 385 in 2014. However, some social facilities increased during the same period, these include number of landing sites with electricity supply which increased from 112 landing sites in 2012 to 154 in 2014, fish bandas increased from 269 in 2012 to 293 in 2014. Other basic facilities such as toilets increased from 599 in 2012 to 633 in 2014 and all weather roads increased from 554 in 2012 to 601 in 2014.

In 2014, only 10.1% of landing sites were supplied with electricity, 38.8% had boat repair facility, 0.8% Cold rooms (working), 5.2% had fish store, 25.2% net repair facility, 39.3% were accessible by all-weather roads, 13.6% had portable water, 41.4% had public toilets, 6.7% had jetties/pontoons and 19.2% of the landing sites had bandas. Communication in terms of mobile phone networks increased and 94.8% of the landing sites were covered in 2014 Frame Survey.

Some facilities such as primary schools and health clinics within a distance of 2 km from landing site in question were also enumerated. Such primary schools increased from 995 in 2012 to 1,058 in 2014 an increase of 63 schools, and health clinics increased from 609 to 705 clinics during the same time. However, the coverage is low, with 69.2% and 46.1% of all landing sites having a primary school and a health clinic respectively within 2 km distance in 2014. There was an improvement in the presence of health facilities by 15.8% (from 609 in 2012 to 705 in 2014). This was coupled with improvement in HIV/AIDS services generally across the lake with over 70% of the landing site receiving awareness and VCT services.

In general, there was a continued rise in fishing effort in terms of number of fishers, fishing gears and fishing crafts. In 2014 frame survey, the number of fishers increased by 0.6%; fishing crafts by 0.6%; and gillnets <5 (Illegal) inches by 4.4% while gillnets >5 inches (legal) decreased by 7.1%. The number of longline hooks increased by 7.4% whereby those of sizes 4-7 and >10 increased by 29.0 and 28.7% respectively. Between 2012 and 2014 nearly all the illegal gears increased: Beach/boat seines increased by 30.3%; monofilaments by 28.5%; cast nets by 6.5%; and traps/baskets by 16.4%. These destructive gears affect mainly the juveniles and brooders because they are operated in breeding/nursery grounds.

It is recommended that the Riparian States should direct more effort to increase the essential facilities at landing sites such as public toilets, portable water, jetties/pontoon, all weathered roads, electricity, and health clinics. Such facilities will contribute to improving the health of the fishing communities and address the issue of fish quality and safety. Furthermore, species specific licensing should be used as a means of limiting access, and curbing illegalities. This should be coupled with more efforts in MCS by both the BMUs and government agencies.

1.0 INTRODUCTION

1.1 Background

Lake Victoria is Africa's largest lake with a total surface area of 68,800 sq. km. The lake has a catchment area of 193,000 km² (Uganda 30,880 km², 16%; Kenya 42,460 km², 22%; Tanzania 84,920 km², 44%; Rwanda 21,120 km², 11%; Burundi 13,510 km², 11%) with a rapidly growing population of over 35 million people (World Bank, 2009).

The lake is shared by Tanzania (51%), Uganda (43%) and Kenya (6%). Its shoreline is approximately 3,450 km long, whereby 33% is in Tanzania; 51% in Uganda and 16% in Kenya. It supports one of the world's most productive inland fisheries. The commercial species are Nile perch (*Lates niloticus*), Dagaa/Omena/Mukene (*Rastrineobola argentea*), Tilapiine and Haplochromines spp (fulu/furu/nkejje). The total catch is around a million tonnes of which 53.7% is from the Tanzanian part of lake, followed by 29.7% Uganda and 16.6% Kenya (Regional Catch Assessment Survey Synthesis Report 2005-2014). The beach value increased from about US\$ 550 Million in 2011 to about US\$ 840 Million in 2014, while the Nile perch exports is estimated at US \$300 million. The contribution of the fishery to the GDP of the riparian countries is: Kenya 2.0%, Tanzania 2.8% and Uganda 3.0% (World Bank, 2009). Lake Victoria, therefore, is very important to the economies of the East African Community (EAC) Partner States. It provides high protein food, employment, income, and water for domestic and industrial use. The Partner States have put in place concerted efforts to ensure sustainability of the fishery resource.

The fishery of Lake Victoria is dynamic and has changed considerably since the emergence of the Nile perch fishery in the late 1970s (Acere, 1985; 1995). The high demand for export market led to the establishment of fish processing plants within the riparian countries. This incentive created by the export market has fuelled rapid increase in fishing effort. This is coupled with unemployment and limited alternative livelihood options, which has made young people to venture into fishing for economic reasons.

Frame Survey is an important tool for generating information required for both fisheries management and research. It provides baseline data (sampling frame) for designing Catch Assessment Surveys (CAS) and other fisheries surveys such as socio-economic surveys. It provides indicators for evaluation of management interventions and baseline data for fisheries planning and development.

Fisheries Frame Surveys in Lake Victoria dates back to early 1970s. However, they were conducted at country level. The EAC Partner States riparian to the Lake Victoria (Kenya, Tanzania and Uganda) conducted Frame Surveys on Lake Victoria individually since the 1970s, i.e, in Kenya (1972, 1990, 1994 and 1998),

in Tanzania annually from early 1970s to 1991 then other surveys were conducted in 1992, 1995 and 1998. In Uganda, Frame Surveys were conducted on Lake Victoria in 1970, 1971, 1972, 1988 and 1990 (Wetherall, 1972; Frielink, 1989; Tumwebaze and Coenen, 1991).

The first time the frame survey was conducted lake wide (regionally) coordinated by LVFO Secretariat was in March 2000 with the support of the GEF/World Bank funded Lake Victoria Environmental Management Project Phase One (LVEMP I) and the EU funded Lake Victoria Fisheries Research Project Phase II (LVFRP II). The second Survey was carried out in April, 2002 with funds from LVEMP I and the third one was conducted in April, 2004. The Frame Surveys for 2006 and 2008 were conducted with financial support from the EU through IFMP. Frame survey 2010, 2012 and 2014 were funded by LVEMP II and TASP II (Tanzania 2014).

1.2 Objective of the Frame Survey

The overall objective of a Frame Survey is to provide information on the composition, magnitude and distribution of fishing effort, available facilities and services at landing sites to guide fisheries planning, management and infrastructure development.

The specific objectives were to provide information on:

- a) Number of fish landing sites;
- b) The facilities available at the landing sites to service the sector including accessibility;
- c) Number of fishers;
- d) The support and services available at the landing sites including fisheries staff and Beach Management Units (BMUs);
- e) Number and types of fishing crafts and their mode of propulsion;
- f) Number, types and sizes of fishing gears used on the lake and their mode of operation;
- g) Craft/gear combinations by target species;
- h) Number of transport crafts (fish carriers and general purpose) and
- i) Alternative livelihoods.

1.3 Key Questions Answered

The key fisheries management questions which the Frame Survey sought to answer included:

- a) Are the number of landing sites and fishing crafts and their mode of propulsion changing?
- b) Are the numbers of fishers increasing or decreasing?
- c) Are fishing gears and their sizes increasing or decreasing?
- d) Are the facilities and infrastructure at the landing sites changing?

- e) Are service providers adequate (Fisheries staff and BMUs, factory agents)?
- f) Are HIV and AIDS issues addressed at the level of the landing sites?

1.4 Survey Outputs

The outputs generated from the Frame Survey included information on:

- a) Number of fish landing sites and fishers;
- b) Number and types of fishing crafts and their mode of propulsion, number of transport crafts; number, types and sizes of fishing gears and their mode of operation;
- c) Service providers especially fisheries staff and Beach Management Units (BMUs);
- d) Facilities and infrastructure available at the fish landing sites to service the sector.

2. METHODOLOGY

2.1 Preparation for the Frame Survey

Lake Victoria Fisheries Organization (LVFO) has coordinated fisheries Frame Surveys on the lake bi-ennially since 2000. The 2014 Frame Survey is the 8th to be conducted lake wide since 2000. It was conducted from 16th to 19th December 2014. Regional Working Group (RWG) and National Working Groups (NWG) were involved in the planning and implementation of the survey. Each Partner State (riparian countries) coordinated and implemented the survey through its NWG.

The RWG planning meeting was held from 13th and 14th November 2014 at LVFO Secretariat, Uganda. The following regional plan of action was agreed upon:

Table 1: Regional Plan of Action for conducting the Frame Survey 2014:

S/N	ACTIVITY	DATES
1.	RWG harmonization meeting	13 th – 14 th November 2014
2.	NWG/DFO review/planning/identification of Supervisors, Enumerators and Inputs meeting	17 th – 21 st November 2014
3.	Procurement of Inputs, Publicity & printing of materials	13 th to 31 st November 2014
4.	Training of Trainers for Supervision	12 th December 2014
5.	Training of Enumerators	15 th December 2014
6.	Undertake Frame Survey	16 th -19 th December 2014
7.	Return of questionnaires by Supervisors	22 nd to 24 th December 2014

S/N	ACTIVITY	DATES
	to NWG Chairperson	
8.	Train data entry personnel/Data entry/Ground truthing/Cleaning	12 th - 26 th January 2015
9.	Data analysis and National Draft Report preparation	26 th January - 9 th February 2015
10.	National Stakeholders/NWG workshop for preparation of final report	14 th February 2015
11.	Submission of National reports to LVFO Secretariat	19 th February 2015
12.	Preparation of Draft Regional Report	24 th to 26 th February 2015
13.	RWG meeting for Final Report	10 th to 12 th March 2015
14.	Submission of Report to LVFO	16 th March 2015

The procedure for implementation of the surveys involved the following processes:

- i. Convening a RWG planning meeting to review previous surveys, review SOPs and inputs to the survey, questionnaire forms, prepare work-plans and set the dates for the subsequent survey.
- ii. Convening a NWG planning meeting to review survey plans, budget and training of supervisors and enumerators in line with agreed SOPs.
- iii. Planning and creation of awareness among all stakeholders before the surveys start. This involves preparation and distribution of publicity materials such as posters, and conducting radio and TV announcements a week before the survey;
- iv. Identification of supervisors and enumerators from key stakeholders especially BMUs. The supervisor and enumerator trainings were carried out during the week preceding the Survey and included pre-testing of the questionnaire in the field.

2.2 Conducting the Frame Survey

The frame survey exercise involved a complete enumeration (count) of all landing sites, facilities, infrastructure and services available, fishers, fishing crafts mode of propulsion and fishing gears by type and size.

Supervisors were in-charge of survey logistics and coordination at the regional / county/district level. Others were stationed at the lower administrative units such as Sub-county (Uganda /Kenya) or division (Tanzania). Each supervisor was in-charge of several enumerators whose number was proportional to the number of fishing crafts / landing sites (as per 2012 frame survey) in the administrative unit.

2.3 Data Collection

Enumerators collected the data by filling the coded Frame Survey questionnaires (Annex 1). The survey period was limited to four days (16th to 19th December 2014). Completed forms were returned to the Supervisors for correction and then forwarded to the County/District fisheries Coordination office for verification. The County/District Fisheries Coordinators forwarded the forms to the NWG chair for further scrutiny. For purposes of quality assurance, personnel from the Research and Management were deployed to oversee the work of Supervisors, check on arising issues and meet enumerators and BMU leaders.

2.4 Data entry, storage and analysis

Supervisors collected the filled questionnaires and survey equipment, compiled returns and submitted them to the National Frame Survey coordinator. Data entry personnel were identified and trained on the use of the EAFish database by National Database developers. The training of data entry personnel was followed by data entry using the EAFish database of 2014 version. Field questionnaires were used to create data sets in the EAFish database after cleaning and ground-truthing the raw data. The database was used to store information in the form of queries addressing specific questions. Outputs from the database included specific reports analyzed by the database to address the specific objectives of the survey and provide matrix tables. Some of the information sourced from the database was further analyzed by the NWG using MS-Excel.

Further, the data was consolidated at the regional level and trends and projections were deduced, identified gaps and discussed challenges encountered during the conduction of the survey. Some of the gaps were addressed and recommendations made. Some of the policy indications were identified for further deliberation at the LVFO Council of Ministers level.

2.5 Report preparation

National reports were prepared by the NWGs and presented to national stakeholders workshops for inputs and validation. The national reports were then submitted to the LVFO Secretariat. The RWG meeting to prepare regional synthesis report was convened between 7th and 9th July, 2015 in Kampala, Uganda.

3. RESULTS AND DISCUSSION

Table 2 presents summary results for the whole lake for all the biennial Frame Surveys conducted from 2000 to 2014 and lakewide changes in percentage for 2012 to 2014. Lakewide, fishing effort in terms of fishing crafts and all the gear apart from scoop nets indicated an increase (fishing crafts 1.6%, gillnets 58.5%,

small seines 46.9%, long line hooks 7.4%, beach/boat seines 30.3%, cast nets 6.5%, monofilament gillnets 28.5% and trap/baskets 16.4%) from 2012 to 2014. The findings for each country are summarized in Annexes 2 to 4. The trend of change for different items is given in percentage between 2012 and 2014 surveys.

Table 2: Lake wide summary of Lake Victoria bi-ennial Frame surveys results from 2000 to 2014

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012-2014
1	Landing sites									
1.1	Total number of landing sites	1,492	1,452	1,433	1,431	1,327	1,443	1,481	1,530	3.3
1.2	Number of landing sites on islands	0	0	0	0	519	535	567	548	-3.4
2	HIV/AIDS services									
2.1	Landing sites with HIV awareness raising	0	0	0	0	804	959	1,035	1,079	4.3
2.2	Landing sites with HIV-VCT services	0	0	0	0	657	837	1,003	1,045	4.2
2.3	Landing site with HIV-ARV services	0	0	0	0	405	529	690	794	15.1
2.4	Landing sites with services to HIV/AIDS orphans/widows	0	0	0	0	308	354	384	433	12.8
3	Landing site facilities									
3.1	Landing sites with primary schools	0	0	0	0	882	957	995	1,058	6.3
3.2	Landing sites with health clinic	0	0	0	0	480	551	609	705	15.8
3.3	Landing sites with mobile network	0	0	0	0	1,094	1,282	1,368	1,450	6
3.4	Landing sites with bandas (Fish shed)	166	133	128	204	211	279	269	293	8.9
3.5	Landing sites with cold rooms	11	40	54	23	12	16	24	35	45.8
3.6	Landing sites with working cold rooms	10	10	8	6	7	7	15	12	-20
3.7	Landing sites with non-working cold rooms	1	30	46	17	5	9	9	23	155.6
3.8	Landing sites with drying racks	0	0	0	0	112	128	165	169	2.4
3.9	Landing sites with smoking kilns	0	0	0	0	393	367	416	428	2.9
3.1	Landing sites with Fish Stores	108	42	40	67	63	69	106	79	-25.5
3.11	Landing sites with jetties	0	0	0	0	37	62	62	77	24.2
3.12	Landing sites with Pontoons	0	0	0	0	20	13	51	26	-49
3.13	Landing sites with Pontoons/Jetties	75	41	43	57	57	96	113	46	-59.3
3.14	Landing sites with electricity supply	65	60	56	71	59	106	112	154	37.5

Regional Frame Survey Report 2014

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012-2014
3.15	Landing sites with public toilets	0	265	294	432	480	493	599	633	5.7
3.16	Landing sites with potable water	0	51	93	121	160	156	261	208	-20.3
3.17	Landing sites accessible by all-weather roads	335	399	371	443	429	451	554	601	8.5
3.18	Landing sites with net repair facilities	480	355	329	427	329	318	429	385	-10.3
3.19	Landing sites with fishing gear shops	0	0	0	0	296	305	428	496	15.9
3.2	Number of landing sites with alcohol joints								1,055	
3.21	Number of alcohol joints on landing sites								5,534	
3.22	Landing sites with bank facilities								806	
3.23	Landing sites visited by agents					598	599	685	522	-23.8
3.24	Landing sites with boat repair facilities	496	363	407	595	506	553	683	594	-13
3.25	Landing sites with engine repair facilities	0	0	0	0	162	202	275	261	-5.1
4	Services at LSs									
4.1	Number of landing sites attended by fisheries staff	65	94	88	115	138	122	959	1,264	31.8
4.2	Number of landing sites served by fisheries staff daily								180	
4.3	Number of landing sites served by fisheries staff weekly								494	
4.4	Number of landing sites served by fisheries staff monthly								444	
4.5	Number of landing sites served by fisheries staff quarterly								146	
4.6	Number of landing sites with BMUs	0	0	466	416	1,237	1,168	1,340	941	-29.8
4.7	Number of landing sites with BMU office	0	0	0	0	394	415	640	540	-15.6
4.8	Fenced landing sites	0	0	0	0	78	87	140	70	-50
4.9	Privately owned LS land	0	0	0	0	426	507	679	521	-23.3
4.1	LSs visited by factory agents	0	0	0	0	598	599	685	522	-23.8
4.11	Tax collection tendered at the LS	0	0	0	0	710	825	902	922	2.2
4.12	Fish movement permit issued at the LS daily	0	0	0	0	450	519	600	589	-1.8

Regional Frame Survey Report 2014

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012-2014
5	Other Livelihood									
5.1	Farming								1,197	
5.2	Fish farming								109	
5.3	Tourism								24	
5.4	Fish trade								921	
5.5	General retailing								693	
6	Fishers									
6.1	Number of male fishers								204,805	
6.2	Number of female fishers								1,620	
6.3	Total number of fishers	129,305	175,890	153,066	196,426	199,242	194,172	205,249	206,425	0.6
7	Fishing crafts									
7.1	Craft types									
7.1.1	Dugout	966	566	423	440	386	355	439	411	-6.4
7.1.2	Parachute	6,912	7,841	8,138	8,286	8,846	8,757	8,285	9,109	9.9
7.1.3	Sesse flat at one end	11,126	16,147	16,288	24,013	23,187	25,174	30,323	30,078	-0.7
7.1.4	Sesse pointed at both ends	22,359	27,248	25,076	31,426	32,830	28,548	28,902	28,913	0.0
7.1.5	Rafts	0	2	1,478	4,354	2,134	1,659	1,523	1,307	-14.2
7.1.6	Catamaran	0	0	0	317	130	102	77	34	-55.8
7.1.7	Number of Foot fishers	0	0	0	1,208	1,861	983	1,589	487	-69.4
7.1.8	Other/Unspecified	1,156	672	189	0	0	0	0	60	
	Total No. of fishing crafts including foot fishers and rafts	42,519	52,476	51,592	70,044	69,374	65,578	71,138	70,399	-1.0
	Total No. of fishing crafts excluding foot fishers and rafts	42,519	52,476	51,592	68,836	67,513	64,595	69,549	69,912	0.6
7.2	Mode of Propulsion								0	

Regional Frame Survey Report 2014

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012-2014
7.2.1	Number of crafts using Outboard engines	4,108	6,552	9,609	12,765	13,721	16,188	20,217	21,578	6.7
7.2.2	Number of crafts using Inboard engine	90	0	0	0	0	10	12	10	-16.7
7.2.3	Number of crafts using Paddle	32,032	35,720	33,405	45,753	43,553	39,771	41,392	41,658	0.6
7.2.4	Number of crafts using Sails	6,304	9,620	8,672	10,310	9,811	8,424	7,871	7,346	-6.7
7.2.5	Number of crafts towed	0	0	0	0	413	75	43	79	83.7
7.3	Transport crafts									
7.3.1	Number of transport crafts (fish)	0	0	0	0	1,743	1,139	1,672	1,437	-14.1
7.3.2	Number of transport crafts (other goods)	0	0	0	0	2,180	2,144	2,349	2,630	12
7.3.3	Total number of transport crafts	1,958	2,380	1,714	2,729	3,923	3,283	4,021	4,067	1.1
7.4	Damaged crafts/under construction									
7.4.1	Number of derelict crafts	7,465	9,203	11,335	12,354	11,952	11,125	13,646	0	-100
7.4.2	Repairable damaged fishing crafts								5,991	
7.4.3	Fishing crafts under construction								4,417	
7.5	Fishing craft ownership									
7.5.1	Number of male								33,117	
7.5.2	Number of female								3,778	
7.5.3	Groups								14	
8	Fishing Gears									
8.1	Gillnets by size									
8.1.1	< 2.5"	12,083	18,699	16,116	17,433	18,648	29,524	47,182	52,465	11.2
8.1.2	2.5"	8,710	12,866	15,840	14,493	19,513	16,798	22,452	37,412	66.6
8.1.3	3"	14,362	13,066	13,934	20,837	17,574	21,042	31,749	32,321	1.8
8.1.4	3.5"	18,772	21,735	15,517	24,303	26,417	22,089	25,091	23,300	-7.1
8.1.5	4"	30,265	50,194	29,435	53,088	47,085	30,050	35,678	28,910	-19

Regional Frame Survey Report 2014

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012-2014
8.1.6	4.5"	28,985	61,645	51,776	84,895	78,717	39,510	38,537	35,121	-8.9
	Total No. of gillnets <5"	113,177	178,205	142,618	215,049	207,954	159,013	200,689	209,529	4.4
8.1.7	5"	141,854	220,435	380,810	375,933	263,784	96,902	101,795	91,673	-9.9
8.1.8	5.5"	55,060	115,296	226,735	183,205	171,188	70,975	119,621	98,875	-17.3
8.1.9	6"	186,774	243,498	311,307	270,363	212,194	216,644	380,674	352,892	-7.3
8.1.10	6.5"	26,120	30,632	46,853	75,605	38,672	149,011	132,412	106,749	-19.4
8.1.11	7"	93,875	89,191	79,008	65,362	77,113	136,958	68,620	81,462	18.7
8.1.12	7.5"	3,624	2,796	3,487	6,570	7,471	7,357	7,071	8,730	25.5
8.1.13	8"	11,740	14,166	16,836	16,494	19,133	24,738	11,882	24,990	110.3
8.1.14	9"	4,487	2,289	14,142	10,029	7,096	3,572	2,300	57,681	150.8
8.1.15	10"	9,713	4,878	4,526	1,663	3,623	825	2,116	1,285	-39.3
8.1.16	> 10"	4,228	1,698	6,730	2,034	5,404	1,310	5,804	447	-92.3
	Number of gillnets ≥5"	537,475	724,879	1,090,434	1,007,258	805,678	708,292	832,295	772,871	-7.1
	Total number of gillnets	650,652	903,084	1,233,052	1,222,307	1,013,632	867,305	1,032,984	982,400	-4.9
8.2	Dagaa fishing gears									
8.2.1	Lift nets	315	144	309	370	167	94	159	72	-54.7
8.2.2	Small seines									
8.2.2. ₁	Number of Small seines ≤5 mm	3,251	3,874	3,522	4,370	4,205	4,615	4,891	8,686	77.6
8.2.2. ₂	Small seine, 6-9 mm	0	0	4,893	4,750	5,512	8,457	0	366	
8.2.2. ₃	Number of Small seines mesh size 10 mm	22	969	186	512	554	442	0	230	
8.2.2. ₄	Number of Small seines mesh size 6 - 7 mm							6,342	9,990	57.5
8.2.2. ₅	Number of Small seines mesh size 8 - 10 mm							3,831	3,519	-8.1

Regional Frame Survey Report 2014

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012-2014
	Total number of small seines	16,936	7,796	8,601	9,632	10,276	13,514	15,064	22,122	46.9
8.2.3	Scoop nets	809	1,379	842	1,584	1,826	892	1,438	776	-46
8.3	Hooks									
8.3.1	Handlines	53,205	58,123	40,953	71,636	65,717	48,681	49,679	45,812	-7.8
8.3.2	Longline hooks									
8.3.2.1	Number of Long Line hooks size < 4	0	0	0	32,133	25,080	30,982	101,548	84,712	-16.6
8.3.2.2	Number of Long Line hooks size 4 – 7	0	0	0	405,497	394,947	350,194	380,398	490,883	29
8.3.2.3	Number of Long Line hooks size 8 – 10	0	0	0	5,224,126	4,845,200	4,714,426	4,107,698	2,510,711	-38.9
8.3.2.4	Number of Long Line hooks size > 10	0	0	0	3,382,794	6,002,379	6,376,466	8,667,604	11,154,412	28.7
	Total Long line hooks	3,496,247	8,098,023	6,096,338	9,044,550	11,267,606	11,472,068	13,257,248	14,240,718	7.4
8.4	Other gears								0	
8.4.1	Beach/Boat seine	7,613	3,491	3,355	3,653	4,187	3,743	4,375	5,700	30.3
8.4.2	Beach Seines								3,461	
8.4.3	Boat seines								2,239	
8.4.4	Cast nets	5,887	1,095	803	775	1,174	1,282	1,551	1,652	6.5
8.4.5	Monofilament nets	0	0	5,944	2,293	20,194	16,488	35,253	45,289	28.5
8.4.6	Basket/Traps	15,558	9,122	7,805	1,196	9,492	13,199	9,385	10,920	16.4
8.4.7	Other/Unspecified	1,720	312	211	88	0	22	0	0	

3.1 Landing Sites

The total number of landing sites on the lake has gradually declined over the years from 1,492 in 2000 to 1,327 in 2008 but with a slight increase (8.7%) to 1,443 landing sites in 2010 and a further increase of 2.6% (1,481) by 2012 and a further increase by 3.3% to 1,530 in 2014. In Kenya the landing sites have declined from 331 in 2010 to 321 in 2014 with 57 landing sites on Islands. In Tanzania the landing sites have progressively increased from 585 in 2008 to 642 in 2014 with 197 landing sites on the islands. In Uganda the landing sites have also been increasing progressively from 435 in 2008 to 567 in 2014 with 294 on the islands (Table 2 and Annex 2 to 4). It is important to note that the landing sites on the islands decreased by 3.4% lakewide between 2012 (567) to 2014 (548).

3.1.1 Facilities at Fish Landing Sites

Twenty five landing site facilities and twelve social services in addition to sources of other livelihoods were enumerated during this survey (Table 2 and Annex 2 to 4). In the area of fish handling and quality only 293 out of 1,530 had fish bandas/sheds reflecting an increase of 8.9% from that recorded in 2012. However, this is still a very small number and poses a challenge in fish quality and safety. The presence of cold rooms is still too negligible (35), despite the presence of electricity at 154 landing sites. Presence of toilets and portable water 41.4% and 13.6% respectively is still too low and calls for more effort from the local governments to improve infrastructure for water and sanitation which has a bearing on the health of the fishers and fish quality and safety. Drying racks were only found at 169 (3.8%), Smoking kilns were at 428 (28%) and fish stores at 79 (5%) of the landing sites in 2014. The availability of these facilities is important in addressing issues of post harvest losses and value addition. There was an improvement in the presence of health facilities by 15.8% from 609 in 2012 to 705 in 2014. This was coupled with improvement in HIV/AIDS services generally across the lake with over 70% of the landing site receiving awareness and VCT services. There has been an improvement in accessibility by all weather roads to landing sites by 8.5% from 554 in 2012 to 601 in 2014 to facilitate fish marketing. Boat, engine and net repair facilities are still very low and were enumerated in only 554, 261 and 385 landing sites respectively.

This frame survey for the first time recorded the presence of banking facilities and alcohol joints at the landing sites. This was deemed important since there is a linkage between poor saving culture and over indulgence in alcohol among fishing communities resulting in the common saying of the 3Ws (Water, Wine and Women). 806 (53.7%) reported availability of some form of banking facility while 1,055 landing sites recorded 5,534 alcohol joints.

The survey in 2014 also looked at availability of alternative/complementary sources of livelihoods for fisherfolk which could be addressed as a way to reduce fishing

effort on the lake. Farming (1,197 landing sites), Fish trade (921) and General retailing (693) were the main activities reported while other activities included Fish farming (109) and Ecotourism (24).

The number of landing sites visited by factory agents decreased by 23.8% from 685 to 522 in 2012 and 2014 respectively. Landing sites with BMU decreased by 29.8% from 1,340 in 2012 to 941 in 2014. BMU offices also decreased from 640 in 2012 to 540 in 2014 survey, a decrease of 15.6%. The landing sites tendering tax collection increased by 2.2% from 902 to 922 and landing sites issuing daily fish movement permits decreased by 1.8% from 600 to 589 within the same period.

The number of landing sites which received service from a resident fisheries staff decreased by 12% from 138 in 2008 to 122 in 2010, however, the frame survey of 2012 considered all landing sites served by fisheries staff either on daily, weekly, monthly or quarterly basis. The number served in 2012 was 959 which increased by 31.8% to 1,264 in 2014. A total of 70 landing sites were fenced representing 4.6% a decline from 140 (9.5%) in 2012 while that of 2010 were 87 which represented 6%. Number of landing sites that are on privately owned land increased by 33.9% from 507 in 2010 to 679 in 2012 declining by 23.3% to 521 in 2014.

3.2 Number of Fishers

The number of fishers operating on Lake Victoria seems to have stabilized in 2006 after the drastic increase from 129,305 in 2000 to 175,890 in 2002 before decreasing to 153,066 in 2004 and then increasing to 196,426 in 2006. The numbers remained around that figure in 2008 with an increase of only 1.4% to 199,242. In 2010 there was a minimal decline of 2.5% to 194,172 fishers while in 2012 and 2014 there was an increase from 205,249 (5.7%) to 206,425 (0.6%) respectively (Figure 1 & Table 2). Nonetheless, at national level Tanzania had the highest increase number of fishers by 2.2%, followed by Kenya (0.1%) while Uganda registered a decrease by 1.6% between 2012 and 2014. Changes recorded between 2004 and 2006 in all the three Partner States were an increase from 37,348 to 44,263 (18.5%) in Kenya, 77,997 to 98,015 (25.6%) in Tanzania and 37,721 to 54,148 (43.5%) in Uganda. This represents a physical distribution of 104 and 137 fishers per landing site on the lake in 2004 and 2006 respectively. In 2008 and 2010 physical distribution were 150 and 135 fishers per landing site respectively. In 2006, 23% of the fishers operated in Kenya, 28% in Uganda and 49% in Tanzanian waters of Lake Victoria. In the year 2008 the fishers' distribution in the respective national waters was 21% in Kenya, 26% in Uganda and 53% in Tanzania. In 2012 the proportion of each country's contribution to the lake total was 20%, 31% and 49% for Kenya, Uganda and Tanzania respectively which was a slight change from the proportions in 2010 survey which was 22%, 29% and 49% for Kenya, Uganda and Tanzania respectively. In 2014 the percentage contribution was highest in Tanzania 50.1% followed by Uganda 30.5% and Kenya 19.4% (Figure 2). Unlike the other years, in 2014 gender distribution among fishers was recorded in each country. Male fishers dominated by

99.2% whereby in Kenya male fishers constituted 98.0%, in Tanzania 99.6% and in Uganda 99.4% indicating that there is no gender balance in the fisheries.

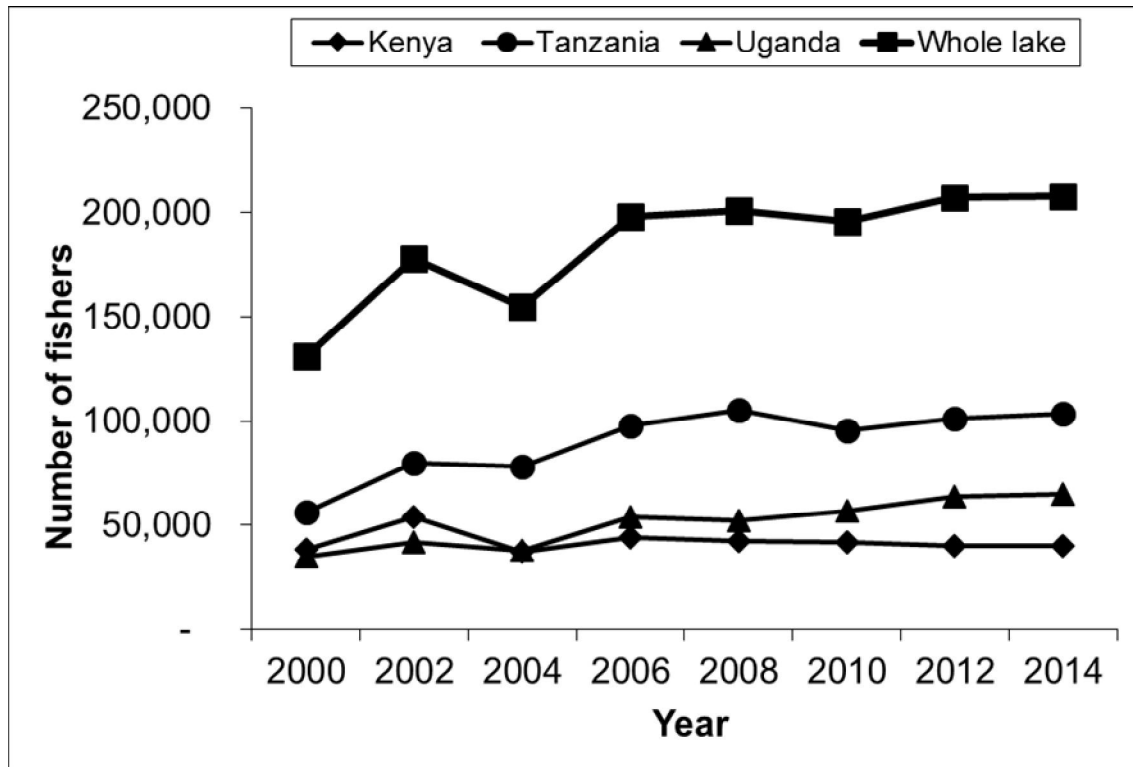


Figure 1: Distribution of fishers in Lake Victoria between 2000 and 2014

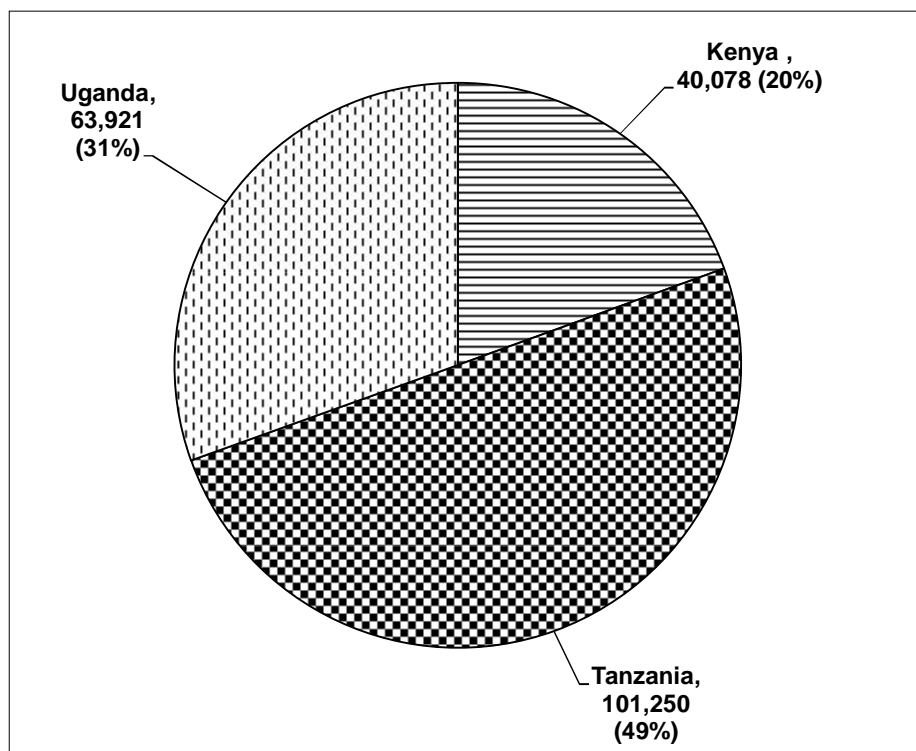


Figure 2: The distribution of fishers in Lake Victoria in 2014

3.3 Fishing Crafts

3.3.1 Number of Fishing Crafts

The number of fishing crafts in 2012 and 2014, increased in Tanzania and Uganda by 2.3% and 2.0% respectively, while Kenya and Uganda recorded a decrease of 0.6% (Annexes 2-4). The total number of fishing crafts over the entire lake increased from 69,549 in 2012 to 69,912 in 2014, an increase of 383 (0.6%) (Table 2). Of these crafts, 13,388 (19.1%) operated in Kenya, 27,412 (39.2%) in Uganda and 29,112 (41.6%) in Tanzanian waters of the lake in 2014 (Figure 4).

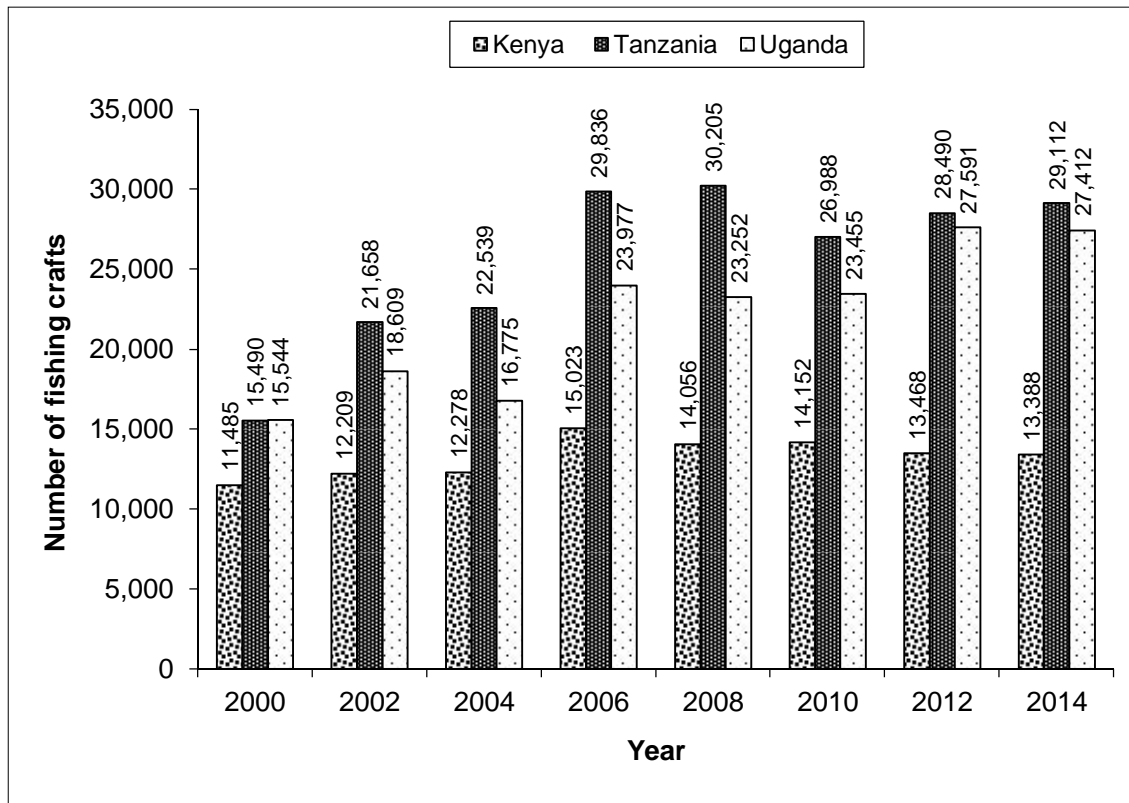


Figure 3: Distribution of fishing crafts in Lake Victoria recorded in 2014 Frame Survey

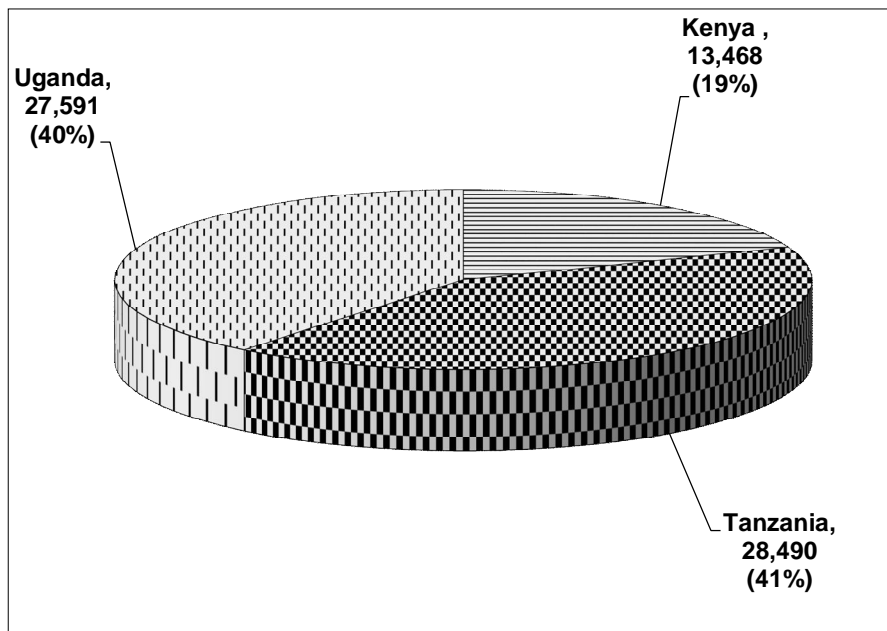


Figure 4: Distribution of fishing crafts in Lake Victoria in 2014

3.3.2 Distribution of the different types of fishing crafts

There were 7,903 Sesse pointed at both ends crafts recorded in Kenya in 2000 and then rose from 8,499 in the 2002 to 8,780 crafts (3.3% increase) in 2010 and finally decreased to 7,831 and 7,581 in 2012 and 2014 respectively. Overall, sesse pointed at both ends contributed 56.0% of the total number of fishing crafts on the Kenyan side in the year 2014. In Tanzania, 12,659 Sesse pointed at both ends crafts were registered in 2000, increasing to 16,552 in 2002 and dropped to 14,793 in 2004. A steady rise has since been recorded to a maximum of 20,569 crafts in 2008 and dropped again to 16,867 in 2010 but increased from 17,473 in 2012 to 17,826 in 2014, contributing 61.2% of the total crafts on the Tanzanian side of the lake. In Uganda, similar trends were observed with 1,797 crafts recorded in 2000, increasing to 3,067 crafts in 2008 then dropping to 2,901 crafts in 2010 but again increased to 3,598 in 2012 and dropped to 3,506 in 2014, contributing only 12.7% of the total fishing crafts on the Uganda side (Figure 5).

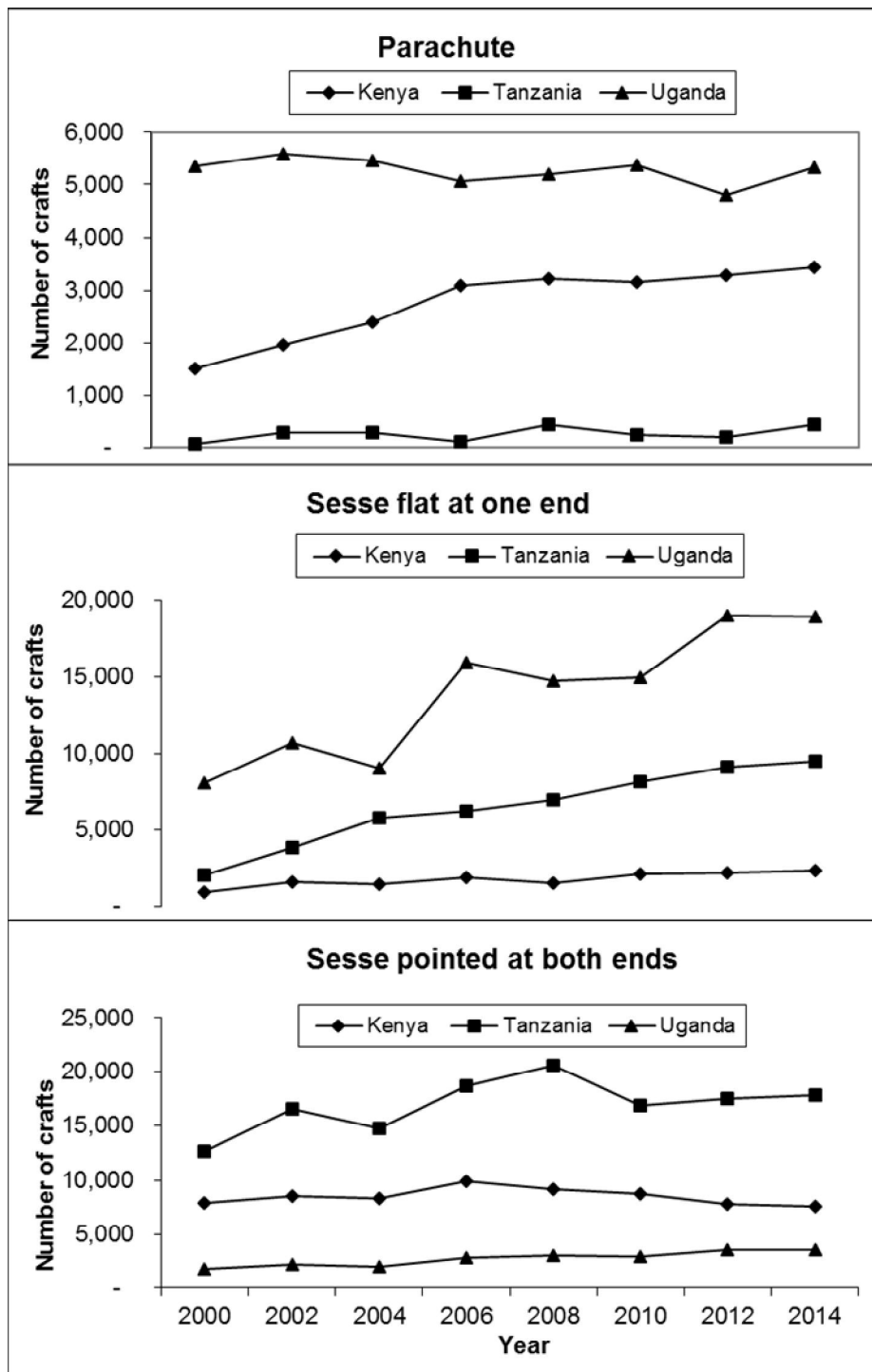


Figure 5: Distribution of the main types of fishing craft types, 2000 – 2014

Parachute crafts in Kenya recorded a steady rise from 1,501 in 2000 to 3,218 in 2008, slight decrease to 3,155 in 2010 then increase to 3,288 (4.2% increase) in 2012 and 3,432 in 2014 an increase of 4.4%. In Tanzania, parachute crafts

increased from 69 in 2000 to 295 in 2002 then dropped by one craft to 294 in 2004, before dropping further to 126 in 2006, but rose sharply again to a maximum of 439 in 2008 then dropped again to 246 parachutes in 2010 and to 199 (19.1% decrease) in 2012 and a tremendous increase to 438 (120.1%) in 2014. In Uganda parachute crafts increased from 5,342 in 2000 to 5,580 in 2002, before declining slightly to 5,450 in 2004 and further declined to 5,064 in 2006. In 2008 and 2010 they increased to 5,189 and 5,356 respectively and declined by 17.4% to 4,798 crafts in 2012 and increased to 5,319 in 2014 (10.9%) almost as it was in 2010.

Sesse pointed at one end in Kenya fluctuated between 951 and 1,879 during the period of 2000 to 2006. In 2008 the numbers decreased to 1,557 but the number rose to 2,119 and 2,199 in 2010 and 2012 respectively. In 2014 Kenya recorded 2,345 an increase of 146 (6.6%). In Tanzania, the number of this category has been steadily rising from 2,068 in 2000 to 8,133 in 2010. It then rose to 9,155 in 2012 and to a maximum of 9,491 in 2014 and increase of 3.7%. In Uganda, this type of craft registered 8,107 in 2000 before rising to 15,883 in 2006, but dropped to 14,692 in 2008, and it has steadily increased from 14,922 in 2010 to 18,969 in 2012 and dropped to 18,929 (0.2%) in 2014.

3.3.3 Mode of Propulsion of Fishing Crafts

The number of outboard engines in Kenya increased from 626 in 2000 to 2,207 in 2014. In Tanzania, the number rose from 1,451 to 9,416 during the same period. In Uganda, the number of outboard engines increased from 2,031 in 2000 to 9,955 in 2014 (Annexes 2-4). Lake wide, the number of outboard engines increased by 425.3% from 4,108 in 2000 to 21,578 in 2014 while the percentage change between 2012 and 2014 was 6.7% from 20,217 in 2012 to 21,578 in 2014 (Figure 6).

Kenya recorded 7,561 crafts using paddles in 2000 then increased to 8,324 in 2006 but dropped to 7,546 in 2010 and 7,210 in 2012, and dropped to 6,937 in 2014. In Tanzania, crafts using paddles have been increasing steadily from 11,623 in 2000 to 19,954 in 2006, then decreased to 15,836 in 2010 and increased from 17,071 in 2012 to 17,461 in 2014. Paddled crafts in Uganda were 12,848 in 2000 before they increased to 17,475 in 2006 then dropped to 16,577 in 2008 and to 16,389 in 2010 but increased from 17,111 in 2012 to 17,260 in 2014 (Annexes 2-4). The trend lake wide showed an increase from 32,032 in 2000, peaking at 45,753 in 2006, then dropped to 39,771 in 2010 and rose again from 41,392 in 2012 to 41,658 in 2014 (Figure 6).

Use of sails in Kenya has been on the rise since 2000 increasing from 3,313 to 4,797 in 2010 but declined from 4,273 in 2012 to 4,240 in 2014. The use of sails in Tanzania showed a fluctuating trend increasing from 2,326 in 2000 to a maximum of 3,962 in 2008 then dropped to 2,945 in 2010 and further from 2,473 in 2012 to 2,249 in 2014. In Uganda, 665 crafts were recorded in 2000 using sails and this figure increased steadily to 1,466 in 2006 but dropped to 682 in 2010 with a sudden rise to 1,125 in 2012 and then dropped to 857 in 2014 (Annexes 2-4). Lake wide results showed an increasing trend from 6,304 in 2000 to 10,310 in 2006, but decreased to

8,424 in 2010 with a further 6.6% decline from 7,871 in 2012 to 7,346 in 2014 (Fig. 6).

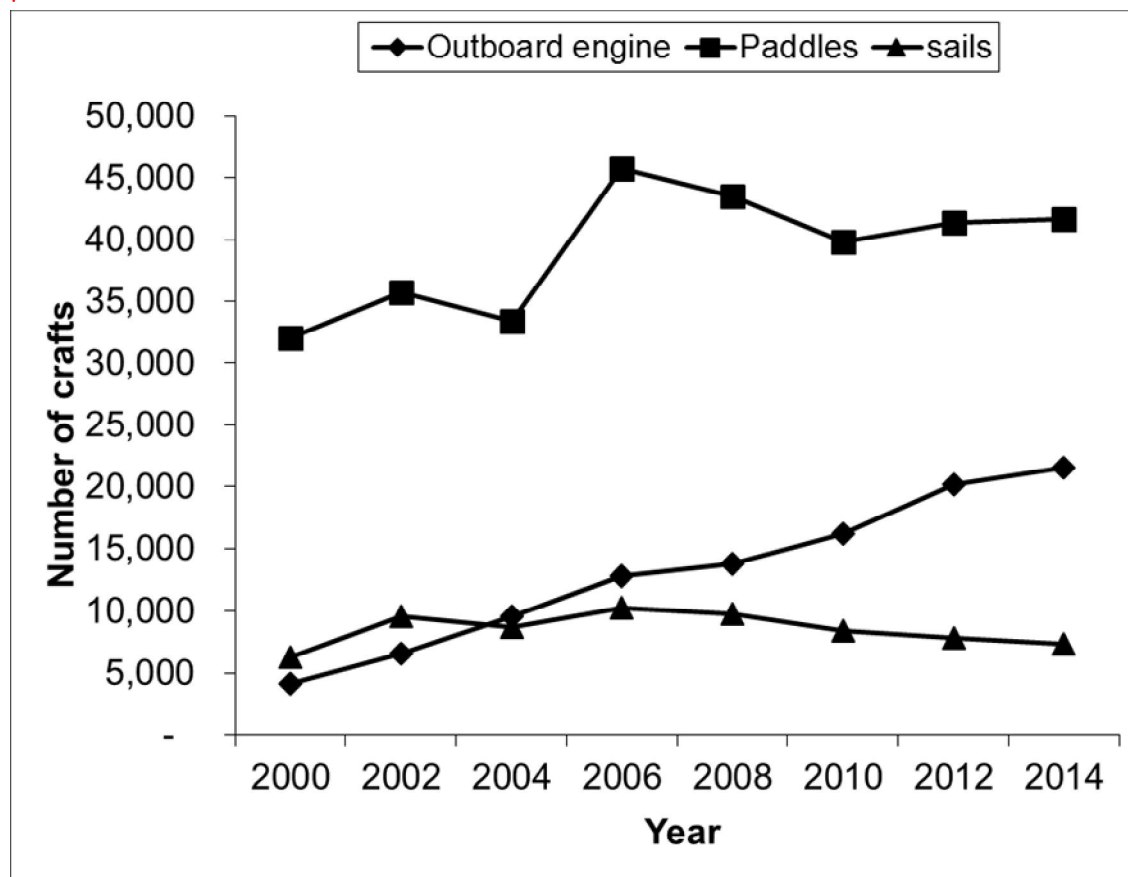


Figure 6: Trends of numbers of fishing crafts by major propulsion methods 2000-2014

3.4 Fishing Gears

Although the legal fishing gears permitted by the three Partner States on Lake Victoria are gillnet mesh sizes of 5 inches and above, hooks and small seines, other illegal fishing gears are still persistent in the fishery. In addition, the 11th LVFO Council of Ministers Session in Dar-es-Salaam on 27th February 2009, they approved 7 inches gillnets as the minimum legal size gillnets for Nile perch in Lake Victoria but the regulation to that effect is yet to be enacted in some of the Partner States.

3.4.1 Gill nets

Lake wide, from 2000 to 2006 the total number of gillnets steadily increased from 650,652 in 2000 to 1,222,307 in 2006 before dropping by 17% to 1,013,632 in 2008 and then again by 14% to 867,305 in 2010 but this figure increased by 19% (1,032,984) in 2012 before decreasing by 4.9% (982,400) in 2014 (Figure 7).

In Kenya the number of undersized gillnets (< 5 inch mesh size) increased from 33,544 in 2000 to 43,467 in 2008 then further increase by 10% to 47,638 in 2010 before increasing again 13.6% to 54,115 in 2012 with a further increase by 39% to 75,205 in 2014. However, those equal to or >5 inches (legal) increased from 99,821 in 2000 to 170,312 in 2008 but decreased to 165,355 in 2010 and decreased again by 6.9% to 154,012 in 2012 with a further decrease of 26% to 113,779 in 2014. In Tanzania, the undersized gillnets (< 5 inch mesh size) increased from 25,179 in 2000 to 87,579 in 2008 then declined by 49% to 44,843 in 2010 before increasing by 94% to 86,989 in 2012 but decreased by 7% to 80,616. Gillnets equal to or >5 inches (legal) increased from 194,445 in 2000 to 308,268 in 2008 but reduced by 23% to 235,885 in 2010 then increased by 8.2% to 255,128 in 2012 and again increased by 7.5% to 274,243 in 2014. In Uganda, the use of undersized gillnets (< 5 inch mesh size) increased from 54,454 in 2000 to 76,908 in 2008 then the figure reduced by 13% to 66,532 in 2010 before reducing again by 10.4% to 59,585 in 2012 then increased by 31.9% to 78,573 in 2014. On the other hand gillnets equal to or >5 inches (legal) increased from 243,209 in 2000 to 327,098 in 2008 but decreased to 307,052 in 2010 and then increased by 37.8% to 423,155 in 2012 before increasing again by 13.6% to 438,557 in 2014. (Fig.8).

Lake wide, Gillnets equal to or >5 inch increased from 537,475 in 2000 to 805,678 in 2008 before decreasing by 12% to 708,292 in 2010 then Increasing by 17.5% to 832,295 in 2012 before decreasing by 7.1% to 772,871 in 2014 (Table 2). The undersize gillnets (< 5 inch mesh size) lake wide increased from 113,177 in 2000 to 207,954 in 2008 then decreased by 23.5% to 159,013 in 2010 before increasing by 26.2% to 200,689 in 2012 and by 4.4% to 209,529 in 2014 with the <2.5 inch and 2.5" gillnets that target the haplochromines increasing by 11.2% and 66.6% respectively between 2012 and 2014. The majority of the gillnets in the lake are 6" constituting 35.9% of the total gillnets followed by 6.5" at 10.9% and 5.5" at 10.1% of the total gillnets. However, the greatest increase was noted in the 8" and 9" mesh sizes which increased by 110.3% and 150.8% respectively between 2012 and 2014. The high increase in the bigger mesh sizes may be linked to the search for bigger Nile perch for fish maws which is now a lucrative business. The demand for bait for the Nile perch fishery has also led to increase in small mesh size nets targeting Haplochromines.

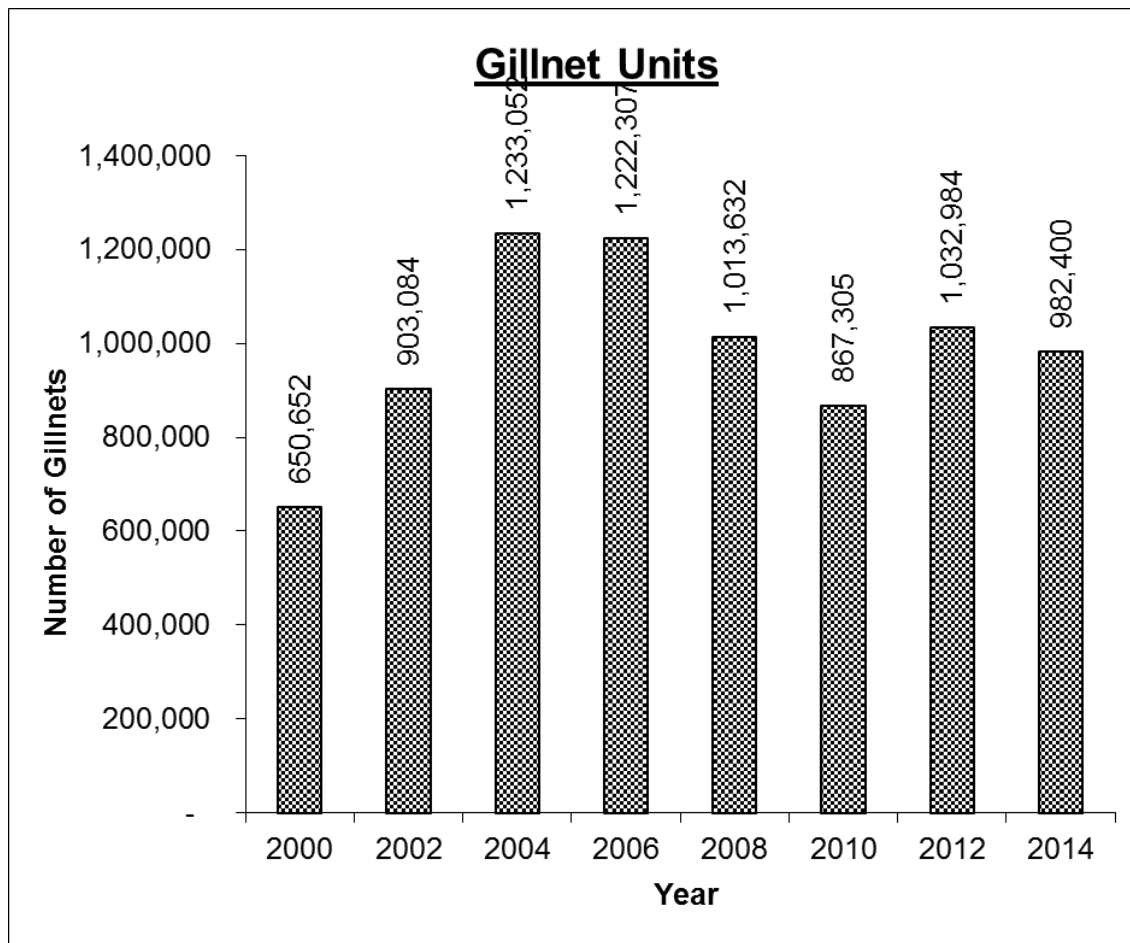


Figure 7: Trends of number of gillnets in Lake Victoria between 2000 and 2014

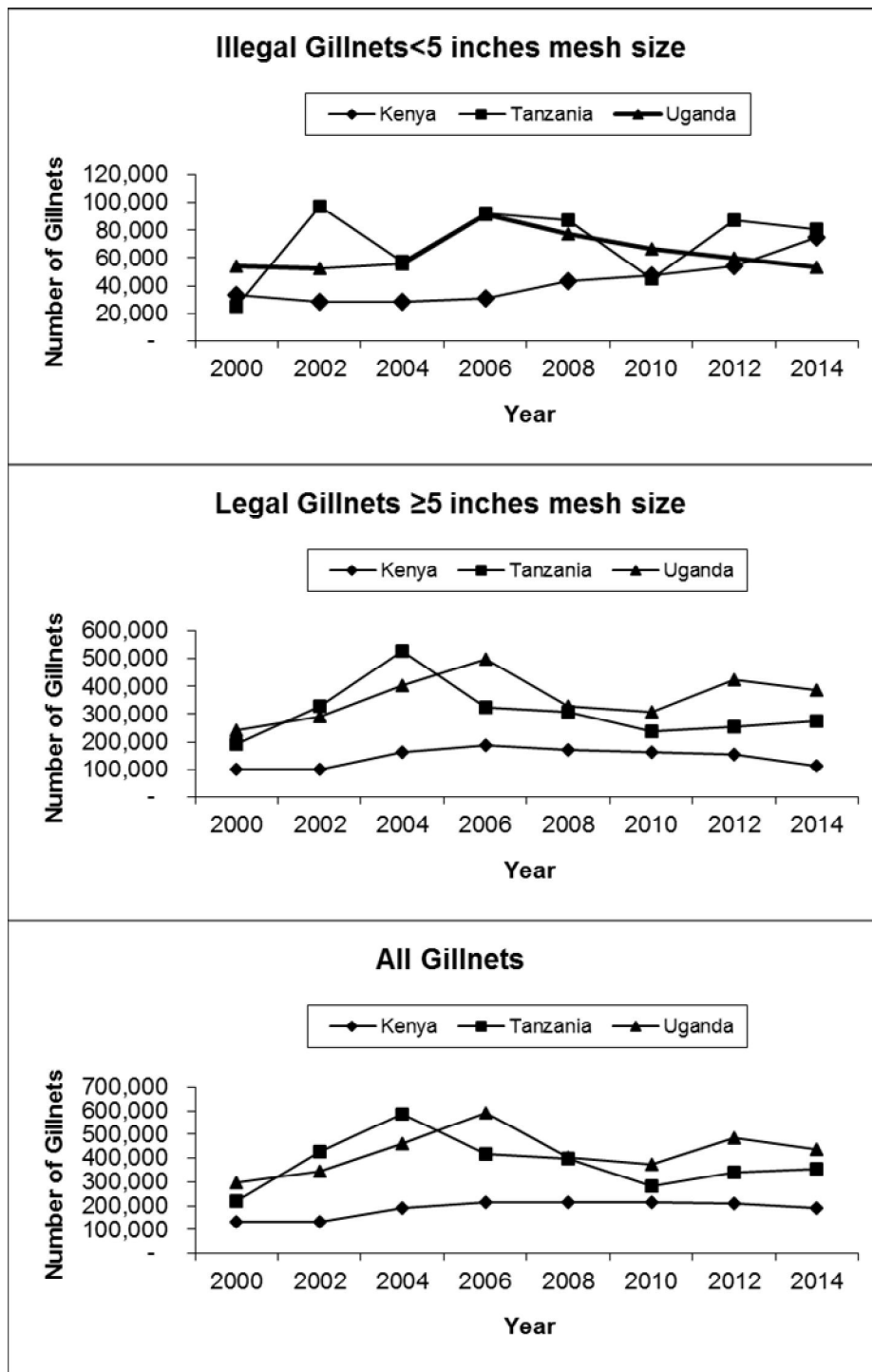


Figure 8: Trends of different categories of gillnets in Lake Victoria between 2000 and 2014

3.4.1.1 Number of Gillnets by Vertical Panels

The numbers of gillnet by panel arrangement in the lake across the years 2010, 2012 and 2014 is summarized in (Table 3). A total of 2,421,063 gillnets counted with consideration of vertical panels in the lake in 2014 comprised of 208,651 single nets (8.62%); doubles 415,430 (17.16%); triples 1,504,329 (62.14%); Quadruples 197,108 (8.14%); five 35,875 (1.52%); six 31,710 (1.31%); seven 2,205 (0.09%); eight 6,096 (0.25%); nine 13,779 (0.57%) and ten panels 4,880 (0.20%) as given in Figure 9 and Table 3. Similarly, out of the 2,680,912 single gillnets enumerated in 2012, triple vertical panels had the highest contribution of 1,749,582 (65.3%) followed by double panels with 572,734 (21.4%), single panels 256,838 (9.6%) with the rest contributing the remaining 3.3%. In 2012 panels of seven and above were not enumerated.

In 2014 the highest number of gillnets panels were with gillnets of size 6 inch (353,068) followed by 6.5 inch (106,745), 5.5 inch (98,936), 5 inch (91,914) and 7 inch (81,462). Thus, most paneled gillnets fell with mesh size range of 5-7 inches. The bigger mesh nets (7.5->10 inches) had the least numbers of panels followed by gillnets in size range of <2.5 – 4.5 inches. Across the years 2010, 2012 and 2014 (Figure 10) gillnets of size range 6-8 inches were most frequently paneled. In 2014 Kenya has the lowest proportion of paneled gillnets (101,967 nets, 53.3%) followed by Tanzania (310,196 nets, 82.5%) and Uganda (362,028 nets, 87.8%).

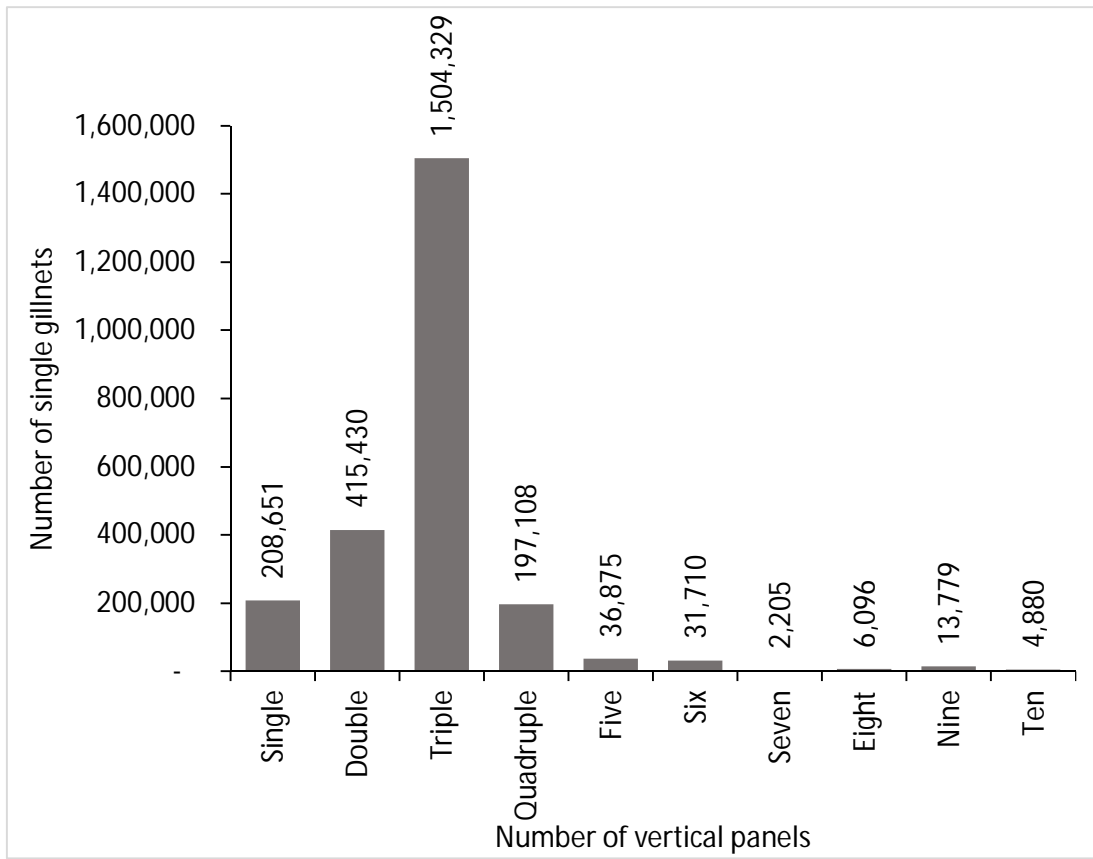


Figure 9: Number of single gillnets by panel category 2014

Table 3: Number of gillnets by vertical panels by country 2010-2014 with the last column indicating the derived absolute total units of gillnets for 2014

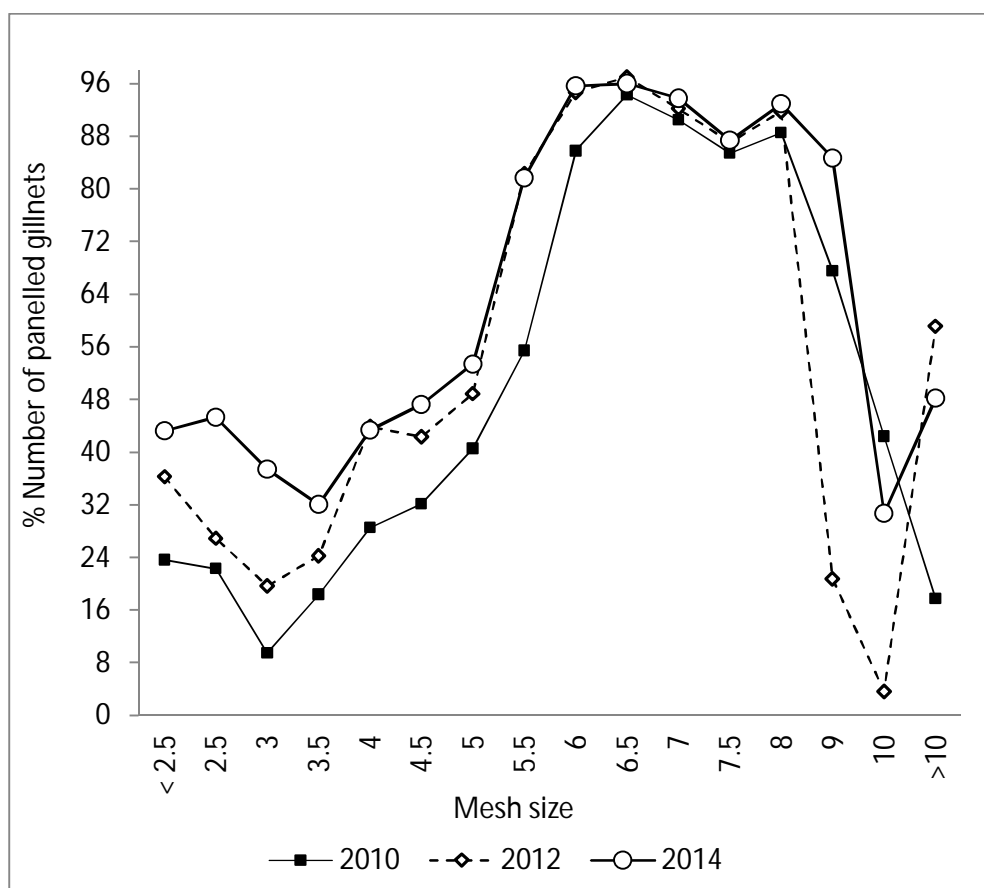
Mesh Size (inches)	Country	Depth panels																				Total 2014	
		Single			Double			Triple			Quadruple			Five			Six		Seven	Eight	Nine		Ten
		2010	2012	2014	2010	2012	2014	2010	2012	2014	2010	2012	2014	2010	2012	2014	2012	2014	2014	2014	2014		2014
<2.5	Kenya	9,380	11,670	16,036			3778			58								166			10		20,048
	Tanzania	10,741	15,368	8,071	6,619	16,705	17,264	46	503	578		119			203			218					26,131
	Uganda	2,426	3,763	5,820	56		300	256		60								46					6,226
2.5	Kenya	10,204	9,304	12,571	2,054	2,826	3,909	600	30	68		60									37		16,585
	Tanzania		5,570	5,736	758	3,267	10,987	15	42	1560					50			90					18,373
	Uganda	2,080	2,588	2,198	13	99	226	80	56	10													2,434
3	Kenya	5,219	7,703	9,085		58	1648		60														10,733
	Tanzania	5,224	8,025	4,509	1,058	4,479	5,290	3	684	2316		3			3								12,115
	Uganda	8,609	9,816	6,541	541	932	2,297	388	35	635													9,473
3.5	Kenya	3,905	5,154	7,712	336	130	533	795	15														8,245
	Tanzania	2,197	6,542	2,835	1,060	2,420	2,614	60	905	1192		20				30							6,671
	Uganda	12,500	7,316	5,117	1,572	2,203	2,662	362	361	635													8,414
4	Kenya	7,126	9,450	9,594	420	1,488	1,297	60	96		16	220									21	40	10,952
	Tanzania	3,508	4,385	1,679	2,178	6,778	3,349	460	1,452	2,511	25	222	255		10	215		170					8,179
	Uganda	11,031	6,678	4,723	4,925	3,052	4,343	568	2,720	603						110							9,779
4.5	Kenya	9,524	7,003	6,682	740	2,916	2,020	48	90	4			3										8,709
	Tanzania	4,103	3,464	2,244	3,564	3,909	3,391	678	1,816	2,799	130	25	80		20	265		260					9,039
	Uganda	13,455	12,671	9,577	6,779	5,815	5,249	891	2,330	2,483			28		30	45	32						17,382
5	Kenya	17,975	13,278	10,728	3,168	6,196	4,483	570	2,232	289	136	124	9					8			19	78	15,614
	Tanzania	10,657	7,133	7,553	13,477	12,957	9,516	6,343	10,108	10,104	729	1,174	1,454		148	798	395	1024			234		30,683

Regional Frame Survey Report 2014

Mesh Size (inches)	Country	Depth panels																					Total 2014
		Single			Double			Triple			Quadruple			Five			Six		Seven	Eight	Nine	Ten	
		2010	2012	2014	2010	2012	2014	2010	2012	2014	2010	2012	2014	2010	2012	2014	2012	2014	2014	2014	2014	2014	
	Uganda	30,232	34,034	23,585	13,077	13,550	11,152	2,624	5,131	10,490			6		33	150					234		45,617
5.5	Kenya	11,727	6,837	6,510	5,948	9,666	3,608	1,146	8,370	2,910								20	80	283			13,411
	Tanzania	4,489	3,369	3,543	8,641	5,622	7,576	6,564	10,550	10,950	750	2,694	2,888		180	485	45	375			30		25,847
	Uganda	17,065	12,758	6,785	8,580	17,957	9,412	9,803	51,820	43,451							50				30		59,678
6	Kenya	8,991	8,449	5,095	28,906	37,026	9,365	24,153	103,221	35,093	160	324							45	298	326		50,222
	Tanzania	6,622	7,385	3,256	28,078	34,613	19,080	33,240	90,932	77,541	3,724	9,444	22,843	2	415	1685	2,000	1,027			150		125,582
	Uganda	19,524	9,014	6,532	30,837	30,815	19,608	63,082	134,419	150,969		100	5								150		177,264
6.5	Kenya	3,792	1,475	1,874	23,513	7,759	3,418	37,275	30,284	11,513	40			350								330	17,135
	Tanzania	2,190	923	1423	15,220	5,291	7,457	16,876	19,396	17,703	1,178	2,924	8,227			1045	127	451					36,306
	Uganda	2,585	1,559	905	6,380	10,092	4,865	39,942	52,694	47,534													53,304
7	Kenya	3,511	1,896	2,385	19,574	5,583	4,287	6,225	10,877	5,901						110			150	61			12,894
	Tanzania	4,498	1,710	1,231	32,214	11,186	6,965	29,926	16,369	21,847	4,166	2,243	9,986			1777		615					42,421
	Uganda	5,027	2,538	1,660	8,275	10,420	7,488	23,602	15,660	16,889		150	110										26,147
7.5	Kenya	273	330	345	1,047	608	536	108	426	1402											185		2,468
	Tanzania	298	335	581	1,355	520	667	1,038	430	1658	300	30	1050			330		310					4,596
	Uganda	502	250	175	946	1,698	746	1,490	2,444	740													1,661
8	Kenya	377	487	348	1,940	516	1437	694	142	896									40	120	55		2,896
	Tanzania	508	10	139	955	381	514	1,062	197	1900	65	140	1669			275		315			10		4,822
	Uganda	1,956	480	1,268	4,528	3,634	2,945	12,653	5,845	13,044		50	4								10		17,271
9	Kenya	139	48	67			159			716													942
	Tanzania		70	65	112	245		616	228	1194		10	645			40		190					2,134
	Uganda	1,021	1,729	755	219		791	1,465		1,146													2,692

Regional Frame Survey Report 2014

Mesh Size (inches)	Country	Depth panels																					Total 2014
		Single			Double			Triple			Quadruple			Five			Six		Seven	Eight	Nine	Ten	
		2010	2012	2014	2010	2012	2014	2010	2012	2014	2010	2012	2014	2010	2012	2014	2012	2014	2014	2014	2014	2014	
10	Kenya	81	31	107			22																129
	Tanzania	2	20			55	82	50	24							15						20	117
	Uganda	392	2,076	777	150		213	150		49												20	1059
>10	Kenya	325	434	79			91			2											30		202
	Tanzania			39		2,900	30		200				15										84
	Uganda	720	1,710	111	25		45	200															156
Total by Country (not panelled)	Kenya	92,549	83,549	89,218	87,646	74,772	40,591	71,674	155,843	58,852	352	728	12	350	0	110	0	194	315	762	683	448	191,185
	Tanzania	55,037	64,309	42,904	115,289	111,328	94,782	96,977	153,836	153,853	11,067	19,048	49,112	2	1,029	6,960	2,567	5,045	0	0	424	20	353,100
	Uganda	129,125	108,980	76,529	86,903	100,267	72,342	157,556	273,515	288,738	0	300	153	0	63	305	82	46	0	0	424	20	438,557
	Total	276,711	256,838	208,651	289,838	286,367	207,715	326,207	583,194	501,443	11,419	20,076	49,277	352	1,092	7,375	2,649	5,285	315	762	1,531	488	982,842
	%	28.2	26.1	21.2	29.5	29.1	21.1	33.2	59.3	51.0	1.2	2.0	5.0	0.0	0.1	0.8	0.3	0.5	0.0	0.1	0.2	0.0	100.0
Total by Country (panelled)	Kenya	92,549	83,549	89,218	175,292	149,544	81,182	215,022	467,529	176,556	1,408	2,912	48	1,750	0	550	0	1,164	2,205	6,096	6,147	4,480	367,646
	Tanzania	55,037	64,309	42,904	230,578	222,656	189,564	290,931	461,508	461,559	44,268	76,192	196,448	10	5,145	34,800	15,402	30,270	0	0	3,816	200	959,561
	Uganda	129,125	108,980	76,529	173,806	200,534	144,684	472,668	820,545	866,214	0	1,200	612	0	315	1,525	492	276	0	0	3,816	200	1,093,856
	Total	276,711	256,838	208,651	579,676	572,734	415,430	978,621	1,749,582	1,504,329	45,676	80,304	197,108	1,760	5,460	36,875	15,894	31,710	2,205	6,096	13,779	4,880	2,421,063
	%	11.4	10.6	8.6	23.9	23.7	17.2	40.4	72.3	62.1	1.9	3.3	8.1	0.1	0.2	1.5	0.7	1.3	0.1	0.3	0.6	0.2	100.0



10: Percentage of paneled gillnets by mesh sizes 2010, 2012 and 2014

3.4.2 Beach/Boat seines

Lake wide, the total number of beach/boat seines decreased from 7,613 in 2000 to 4,187 in 2008 a reduction of 45% and reduced by 10.6% to 3,743 in 2010 before increasing by 16.9% to 4,375 in 2012 and again by 30.3% to 5,700 in 2014 (Figure 11 and Table 2). Beach seines were 3,461 constituting 60.7% while boat seines were 2,239 constituted 39.3% in 2014.

In Uganda there was a decrease of 15% in the number of beach/boat seines from 1,451 in 2010 to 1,233 in 2012 but increase by 47.5% to 1,819 in 2014 with boat seines accounting for 64.3%. In Tanzania, there was an increase of 59.8% from 1,301 in 2010 to 2,079 in 2012 with an increase of 11% to 2,298 in 2014 with the Beach seines constituting 85.1% (1,956). In Kenya, beach/boat seines increased by 7.3% from 991 in 2010 to 1,063 in 2012 with a further increase by 48.9% to 1,583 in 2014 with Beach seines constituting 54.1% (856), (Figure 11 & Annexes 2,3,4). Generally there is a persistence of beach seines in the lake and continues to pose a serious threat to the recovery of the fishery.

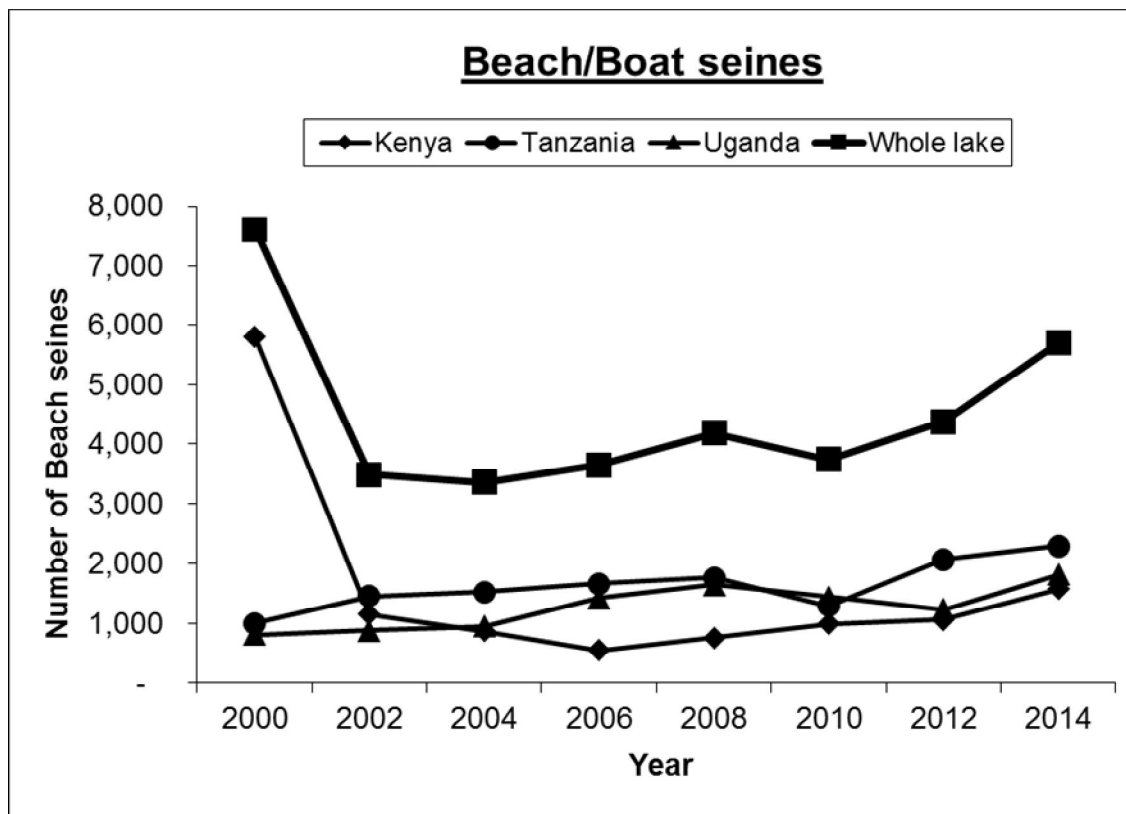


Figure 11: Trends in number of beach seines: 2002 - 2014

3.4.3 Monofilament nets

Monofilaments nets in Kenya increased from 58 in 2004 to 469 in 2006 and to 4,190 in 2008 but declined by 65% to 1,468 in 2010 then drastically increased by 728.4% to 12,161 in 2012 but drastically declined by 88% to 1,432 in 2014. The trend in Tanzania showed a drop from 5,041 in 2004 to 261 in 2006 followed by reoccurrence to 4,801 in 2008 and a drop to 2,905 in 2010 before another increase of 173.5% to 7,944 in 2012 with a further increase of 178% to 22,064 in 2014. In Uganda there has been a steady increase in the use of monofilament nets from 845 in 2004 to 1,563 in 2006, 11,203 in 2008, then a further increase by 22% to 12,115 in 2010 followed by another increase of 25% to 15,148 in 2012 with a further increase of 44% to 21,793 in 2014. Lake wide, In 2012 Monofilament nets have shown an overall increase by 113.8% from 16,488 in 2010 to 35,253 in 2012 with a further increase by 28.5% to 45,289 in 2014. (Figure 12). The drastic decline in Kenya was attributed to concerted MCS efforts conducted with support from SmartFish.

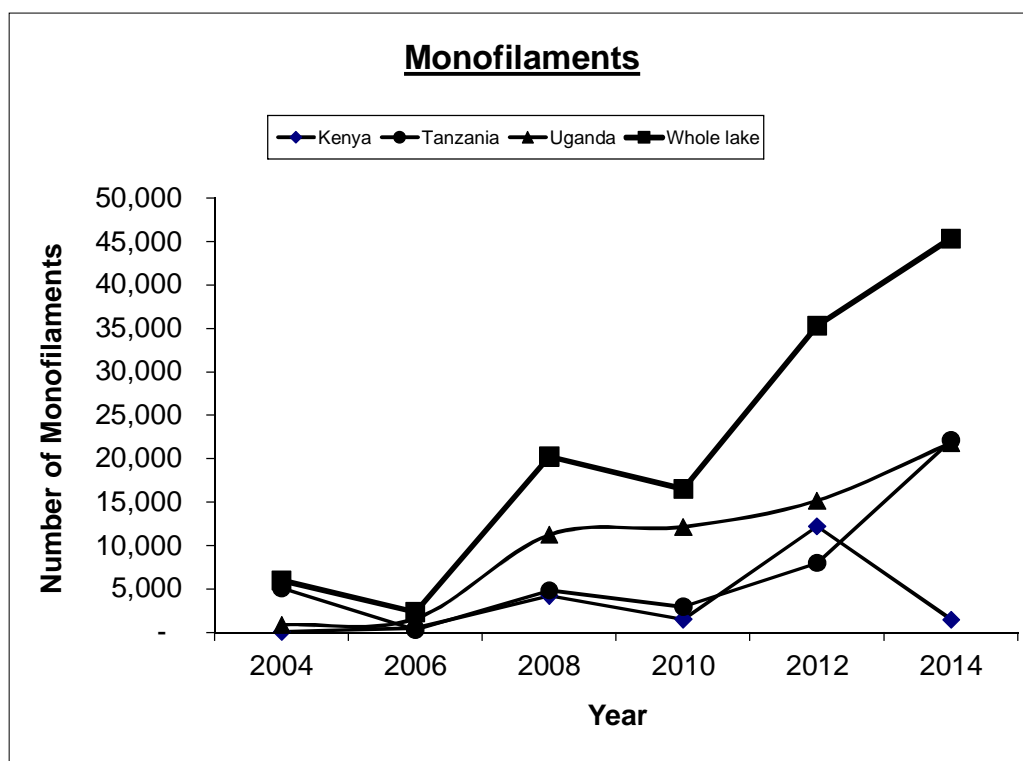


Figure 12: Trends of number of monofilament nets in Lake Victoria between 2004 and 2014

3.4.4 Long line Hooks

There has been a steady increase lakewide in the number of hooks used in the long line fishery. The frame survey of 2000 recorded 3,241,794 hooks and increased to 8,094,023 in 2002. However the number of hooks on the lake decreased by 25% to 6,096,338 in 2004. In 2006, the number increased remarkably by 48% to 9,044,550 and in 2008 it increased by 24.1% to 11,267,606 and stabilised in 2010 at 11,472,066. In 2012 there was an increase by 15.6% to 13,257,248 with a further increase by 7.4% to 14,240,718 in 2014 (Figure 13).

In Kenya, there was a slight increase of 4% from 2,478,976 in 2012 to 2,573,736 in 2014, while in Tanzania there was an increase of 11% from 6,359,887 in 2012 to 7,079,216 in 2014 and in Uganda there was increase of 4% from 4,423,139 in 2012 to 4,587,766 in 2014.

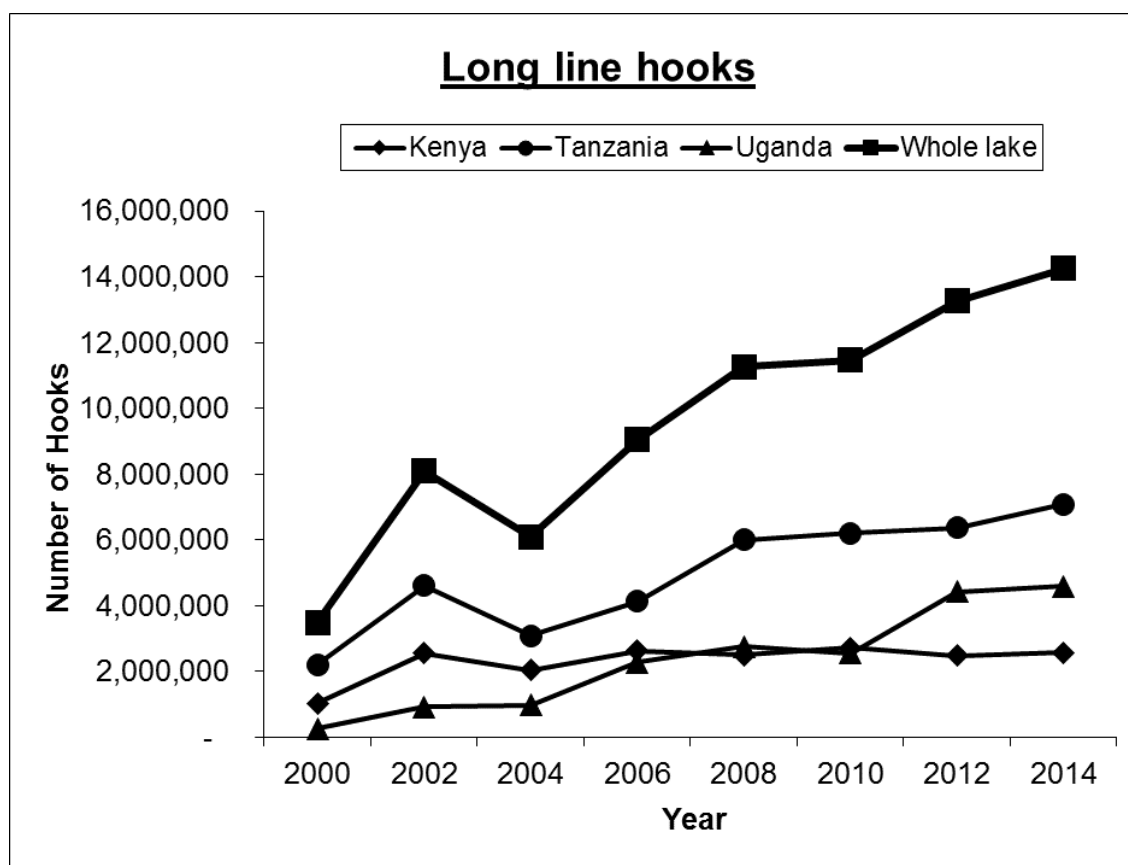


Figure 13: Trends in number of long line hooks in Lake Victoria between 2000 and 2014

There was a general increase of hook size <4, from 32,133 in 2006 to 101,548 in 2012 a 216% but had a (17%) decrease to 84,712 in 2014. These sizes are currently not allowed on the lake as they target Nile perch above the upper limit of slot size of 85 cm. 4-7 hook size decreased from 405,497 in 2006 to 380,398 over the same period only to increase again to 490,883 in 2014. Hook size 8-10 has been progressively declining from 5,224,126 in 2006 to 2,510,711 in 2014 a 52% decline over the period. Hooks greater than 10 have progressively increased from 3,382,794 in 2006 to 11,154,412 in 2014 a 230% increase. In 2014 hook size <4 contributed 0.6%, 4-7 constituted 3.4%, 8-10 constituted 17.6% while the illegal hooks >10 contributed 78.3% (Figure 14).

The large number of small size hooks (>10) targeting juvenile Nile perch fish is of great concern as it affects recruitment to the fishery and in the long run, they could contribute to Nile perch stock decline.

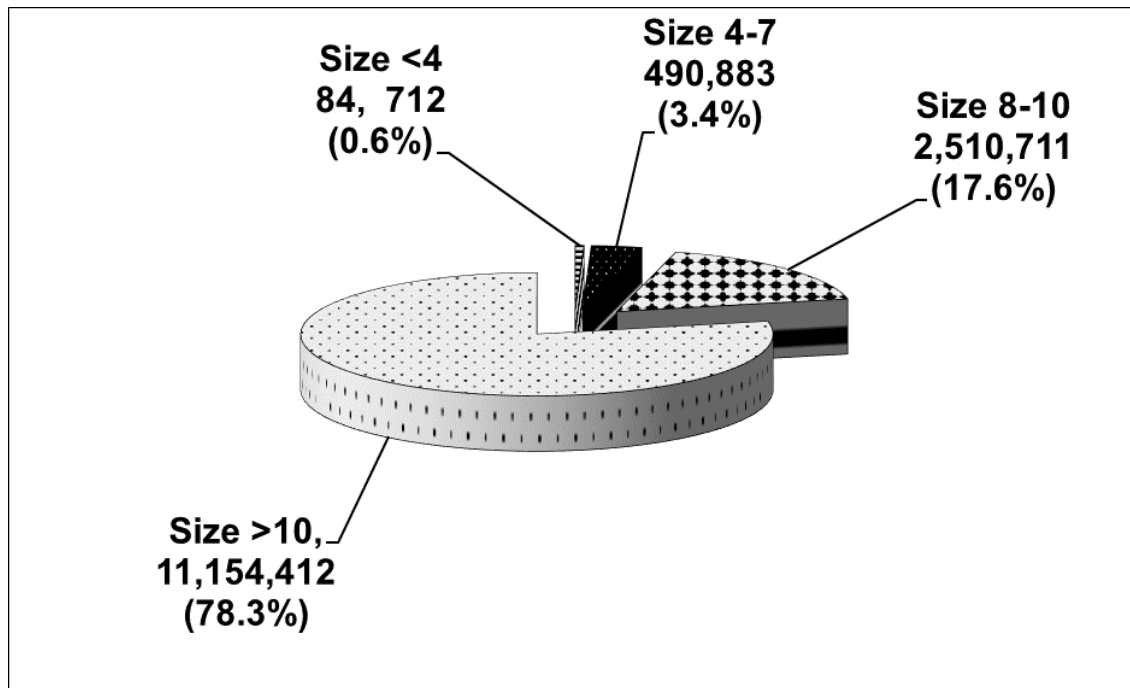


Figure 14: Size composition of hooks in Lake Victoria in 2014

3.4.5 Hand line

The number of Handline increased by 2.1% from 48,681 in 2010 to 49,679 in 2012 and decreased by 7.8% to 45,812 in 2014. It should be noted that the number of hand lines has been fluctuating between the years. They increased from 53,205 hand lines in 2000 to 58,123 in 2002, an increase of 9.0%. In 2004, the number dropped by 9.5% to 40,953 hand lines then increased by 75% to 71,636 in 2006. There was a reduction by 8.2 % to 65,717 handlines in 2008 and a drop of 26% to 48,681 in 2010 (Figure 15).

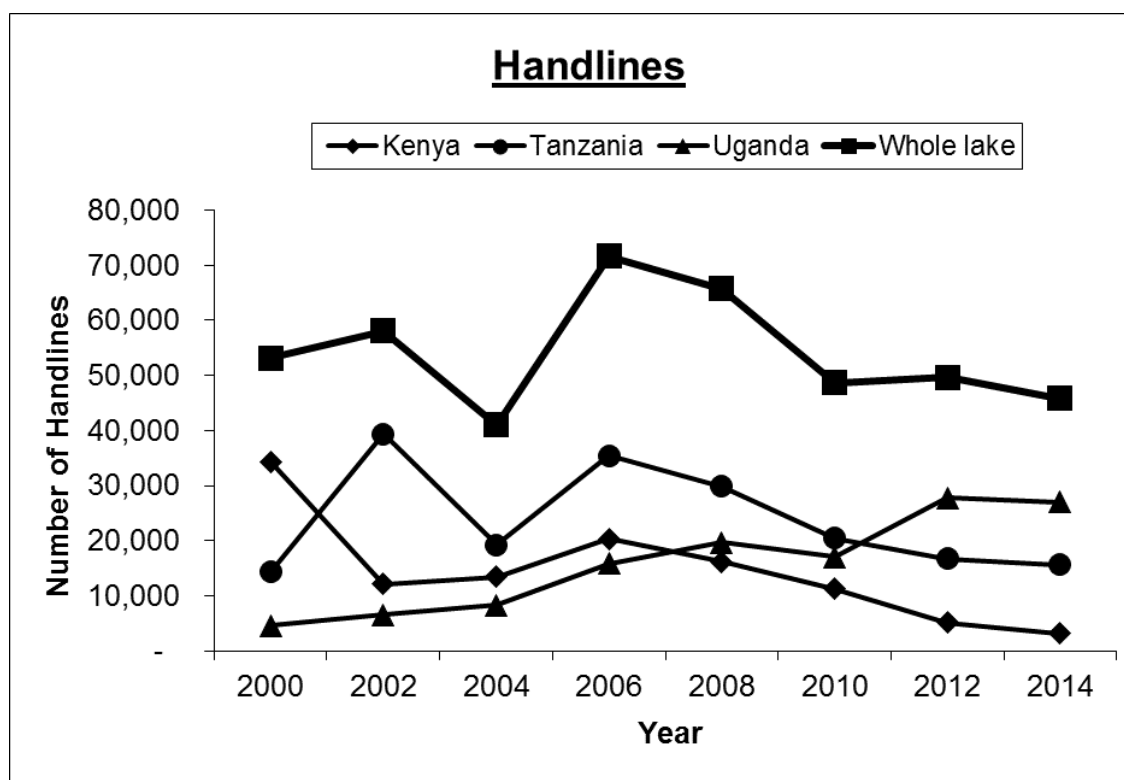


Figure 15: Number of hand lines in Lake Victoria between 2000 and 2014

3.4.6 Small seines

This is the most important gear specialized for *Rastrienobola argentea* fishing in Lake Victoria. The first lakewide Frame survey in 2000 recorded 16,936 Small seines. This declined sharply in the subsequent frame survey in 2002 and the trend of Small seines has steadily increased over the years (Figure 16). In 2002 and 2004, the gear units recorded were 7,796 and 8,601 respectively, an increase of 10%. In 2006, the number recorded was 9,632, an increase of 12%. There was a slight increase of 6.7% between 2006 and 2008 (10,276 Small seines in 2008). In 2010 there was an increase by 31.5% to 13,514 Small seines. The 2012 results indicated an increase of 11.5% to 15,064 since 2010 and the 2014 frame survey recorded an increase of 46.9% to 22,122 Small seines.

The composition of Small seines by mesh size over the years 2000 - 2010 shows a predominance of mesh sizes 6-9 mm category, followed by < 5mm mesh size, the legal mesh size category of 10 mm had the minimal contribution (Figure 17A). In the 2012 frame survey, the mesh size categorization for Small seines changed to include mesh size ≤5mm; 6-7mm and 8-10mm mesh. In both 2012 and 2014 the composition of Small seines with mesh size 6-7 was the most prevalent in the fishery (44%), followed by Small seines of mesh size category ≤5mm (39.3%).

(Figure 17B). The recommended mesh size of 8-10 mm declined by 14.3% between 2012 and 2014 and contributed only 15% of the nets. There is need to revisit the recommended legal mesh size for dagaa since most of the fishers are using 6-7mm mesh.

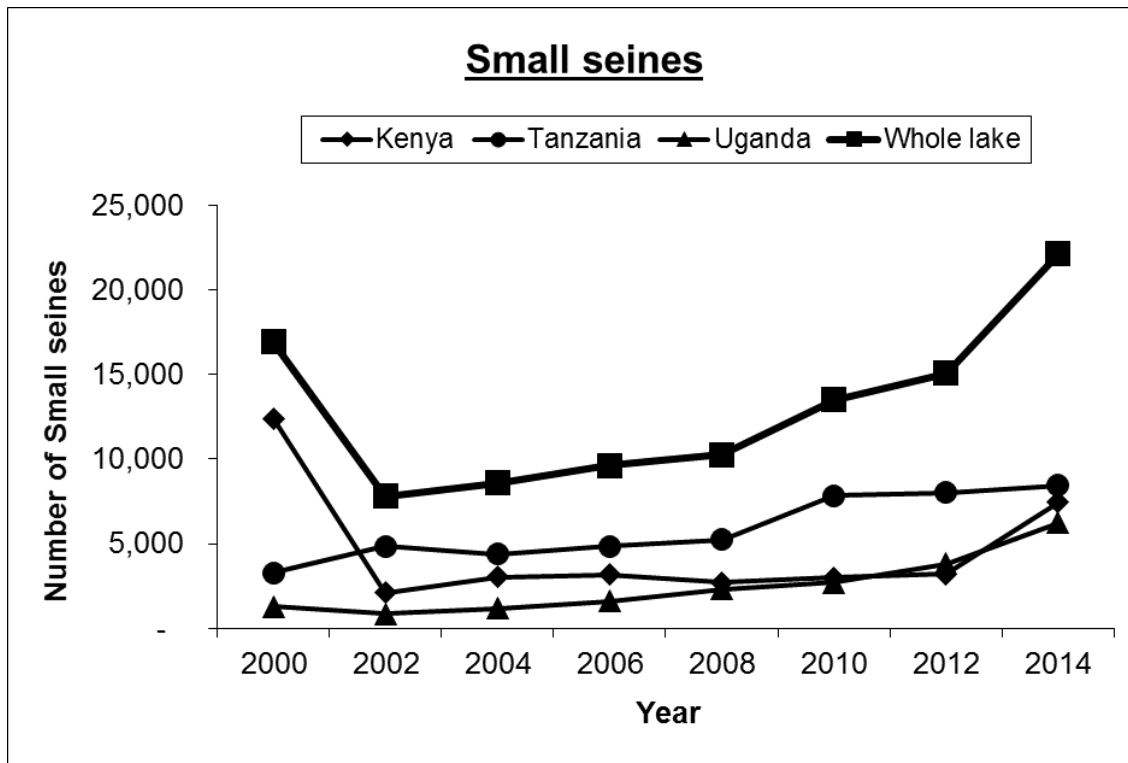


Figure 16: Number of small seines in Lake Victoria between 2000 to 2014

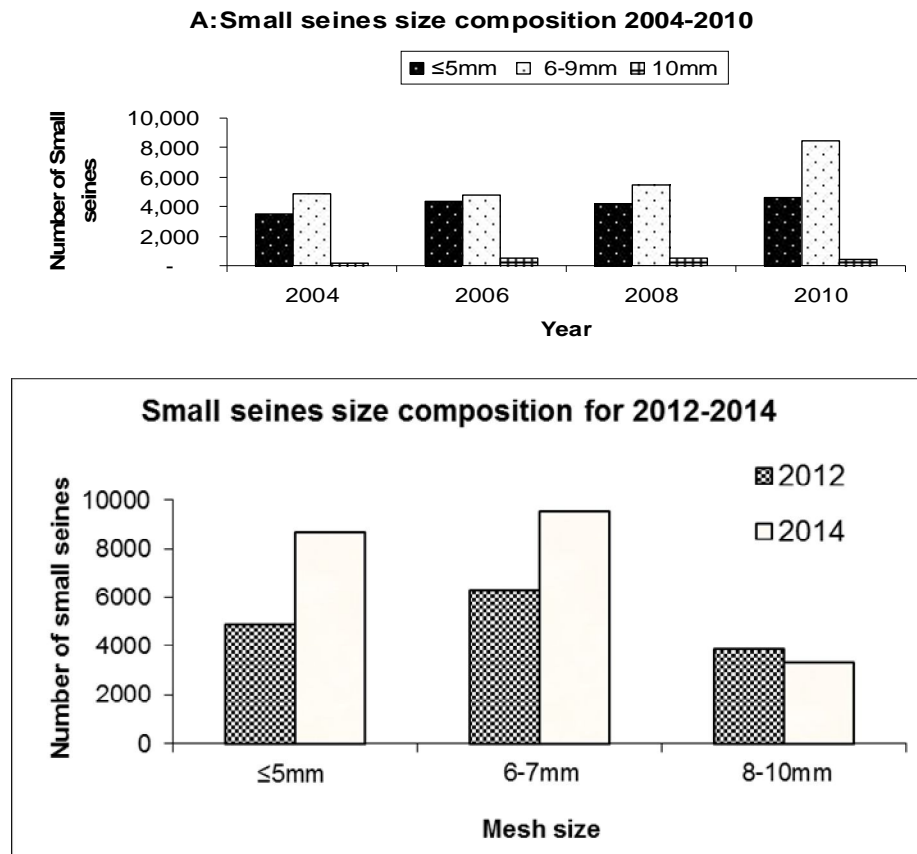


Figure 17: (A, B) Size composition of small seines in Lake Victoria in 2004-2014

3.4.7 Traps/ Baskets

Traps/baskets are traditional fishing gears made from local materials and are used in shallow waters, floodplains and river mouths. They primarily target tilapiines and other riverine fish species. Traps/baskets in the fishery have fluctuated markedly since the year 2000 with highest recorded number of traps/baskets of 15,558 recorded in 2000. Since then, there has been a decline with the lowest recorded in 2006 (1,196). 2014 Frame survey recorded 10,920 traps (Table.2 and Figure 18).The largest number of traps/baskets in 2014 was recorded Uganda (82%), Kenya (10%) and Tanzania (8%) respectively.

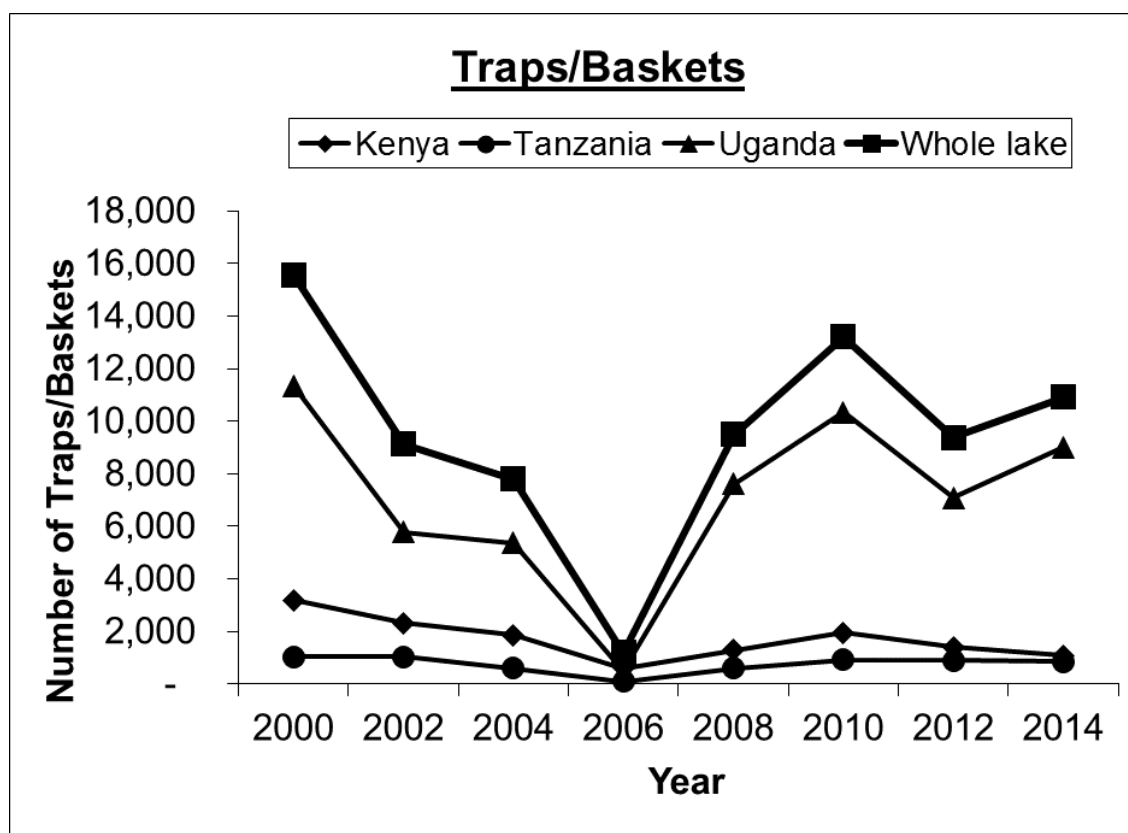


Figure 18: Trends of number of traps/baskets in Lake Victoria between 2000 and 2014

3.4.8 Cast nets

Cast nets, locally referred to as '*tupa tupa*' are used in littoral zones, primarily targeting tilapiines. Frame survey results since 2000 show a general decline in the number of cast nets in the fishery from 5,887 cast nets recorded in 2000 to a 755 in 2006. There has been a slight increase in the number of cast nets since 2006 to 1,551 cast nets recorded in the 2012 frame survey with a slight increase of 6.5% to 1,652 traps in 2014 (Figure 17). Nearly all of the cast nets in the fishery are in Uganda (82%), Tanzania and Kenya account for 10% and 8% respectively of the cast nets recorded in the fishery in 2014 a trend similar to that in 2012.

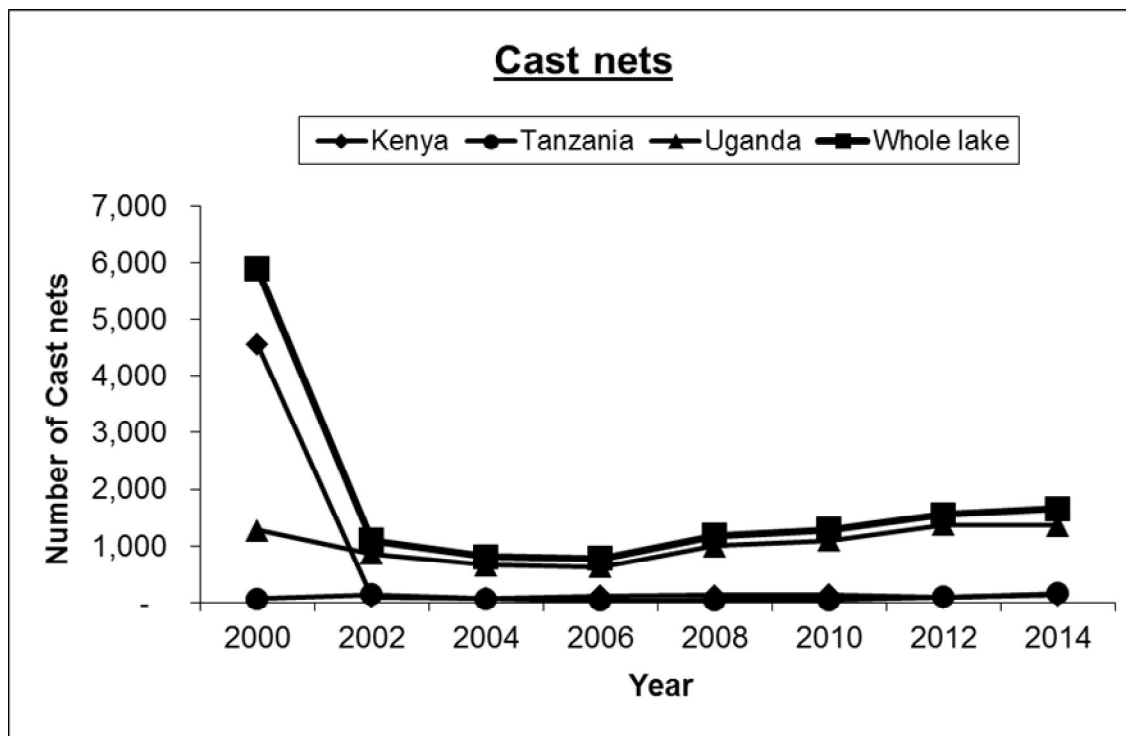


Figure 19: Trends of number of cast nets in Lake Victoria between 2000 and 2014

3.4.9 Scoop nets

Scoop net is a common gear used in Tanzania and Uganda for 'dagaa' fishing in deep waters. The number of Scoop nets in the fishery has fluctuated widely since 2000 (Figure 20). The highest number of 1,826 scoop nets was recorded in 2008 while the least number ever recorded was 809 scoop nets in 2000. In 2012 frame survey, 1,438 scoop nets were recorded but declined by 46% to 776 in 2014. Uganda and Tanzania accounted for 61% and 39% of the total number of scoop nets recorded in 2014.

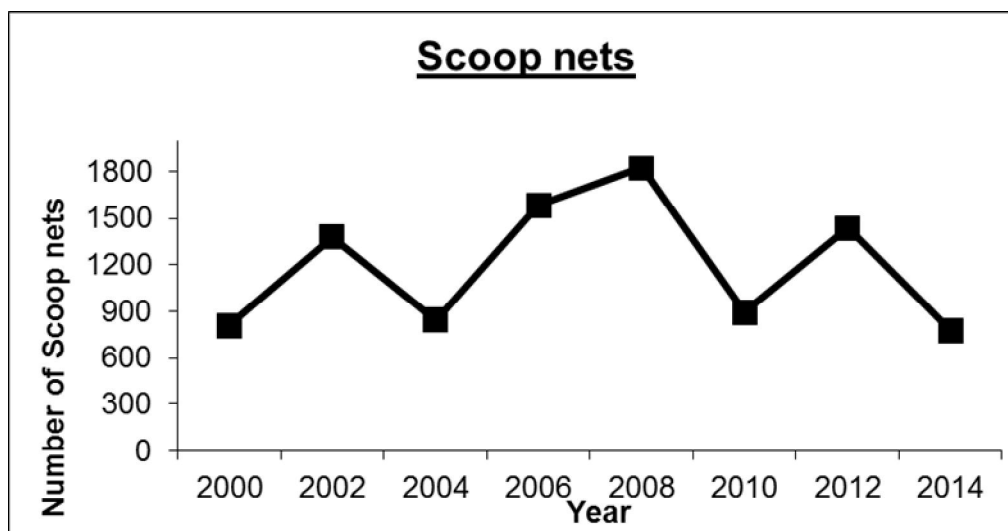


Figure 20: Trends of number of scoop nets in Lake Victoria between 2000 and 2014

3.4.10 Lift nets

The gear is reputed to have originated from Lake Tanganyika, and is deployed by the Catamarans in Tanzania to target 'dagaa' and haplochromines. The gear has spread to Uganda where currently the highest number of lift nets is now found. Lift nets decreased by 54% from 315 in 2000 to 144 in 2002, but the number rose by 53% to 309 in the 2004 survey. There was a further increase by 19% to 370 Lift nets in 2006 but reduced to 167 Lift nets in the 2008 survey, a decrease of 54.9 %. In 2010, the gear registered yet another decline of 43.7% to 94 Lift nets. The 2012 frame survey recorded 159 an increase of 69.1% compared to the 2010 results. In 2014 there was a decline of 54.7% to 72 liftnets. The failure of liftnets to expand in the lake needs to be examined.

3.5 Fishing Crafts, Gears, Fishers and Target Species combination

3.5.1 Number of fishers targeting different fish species

Lake wide majority of the fishers 111,867 (54.2%) targeted *Lates niloticus*. It is worth noting that in each of the three Partner States the percentage of the number of fishers targeting *Lates niloticus* was more or less the same in Kenya at 54.0%, Tanzania 55.0% and Uganda 53.1% (Table 4). *Rastrineobola argentea* (Omena/Dagaa) was targeted by 59,680 (28.9%) fishers lake wide, whereby 29.5% of the fishers in Kenya targeted *Rastrineobola argentea* while in Tanzania and Uganda 32.2% and 23.1% targeted the same respectively. *Tilapiines* (Ngege) were targeted by 26,538 (12.9%) fishers lakewide. The percentages of fishers targeting *Tilapiines* in Kenya, Tanzania and Uganda were 12.6%, 7.5% and 21.8%

respectively. Lake wide, 2.7%, 0.6%, and 0.4% of the fishers targeted *Haplochromines*, *Synodontis* and *Protepterus* respectively.

Table 4: Number of fishers targeting different fish species per country in 2014

Country	Target species	Male fishers	Female fishers	Total No. of fishers
Kenya	Clarias(Mumi)	410 99.0%	4 1.0%	414 1.0%
	Haplochromines(Fulu)	544 100.0%	0 0.0%	544 1.4%
	Lates(Mbuta)	20,995 97.0%	651 3.0%	21,646 54.0%
	Protepterus(Kamongo)	165 100.0%	0 0.0%	165 0.4%
	Rastrineobola(Omena/Dagaa)	11,759 99.4%	76 0.6%	11,835 29.5%
	Synodontis(Okoko)	429 100.0%	0 0.0%	429 1.1%
	Tilapiines(Ngege)	5,007 98.8%	62 1.2%	5,069 12.6%
	Unidentified species	6 85.7%	1 14.3%	7 0.0%
	Total (Kenya)	39,315 98.0%	794 2.0%	40,109 100.0%
Tanzania	Clarias(Mumi)	124 100.0%	0 0.0%	124 0.1%
	Haplochromines(Fulu)	4,505 99.9%	5 0.1%	4,510 4.4%
	Lates(Mbuta)	56,489 99.4%	368 0.6%	56,857 55.0%
	Others	188 100.0%	0 0.0%	188 0.2%
	Protepterus(Kamongo)	216 100.0%	0 0.0%	216 0.2%
	Rastrineobola(Omena/Dagaa)	33,307 100.0%	0 0.0%	33,307 32.2%
	Synodontis(Okoko)	496 99.8%	1 0.2%	497 0.5%
	Tilapiines(Ngege)	7,654 98.9%	88 1.1%	7,742 7.5%
	Total (Tanzania)	102,979 99.6%	462 0.4%	103,441 100.0%
Uganda	Clarias(Mumi)	32 100.0%	0 0.0%	32 0.1%

Country	Target species	Male fishers	Female fishers	Total No. of fishers
	Haplochromines(Fulu)	573 <i>97.8%</i>	13 <i>2.2%</i>	586 <i>0.9%</i>
	Lates(Mbuta)	33,116 <i>99.3%</i>	248 <i>0.7%</i>	33,364 <i>53.1%</i>
	Protepterus(Kamongo)	399 <i>100.0%</i>	0 <i>0.0%</i>	399 <i>0.6%</i>
	Rastrineobola(Omena/Dagaa)	14,506 <i>99.8%</i>	32 <i>0.2%</i>	14,538 <i>23.1%</i>
	Synodontis(Okoko)	207 <i>98.6%</i>	3 <i>1.4%</i>	210 <i>0.3%</i>
	Tilapiines(Ngege)	13,665 <i>99.5%</i>	62 <i>0.5%</i>	13,727 <i>21.8%</i>
	Unidentified species	13 <i>68.4%</i>	6 <i>31.6%</i>	19 <i>0.0%</i>
	Total (Uganda)	62,511 <i>99.4%</i>	364 <i>0.6%</i>	62,875 <i>100.0%</i>
Lakewide	Clarias(Mumi)	566 <i>0.3%</i>	4 <i>0.2%</i>	570 <i>0.3%</i>
	Haplochromines(Fulu)	5,622 <i>2.7%</i>	18 <i>1.1%</i>	5,640 <i>2.7%</i>
	Lates(Mbuta)	110,600 <i>54.0%</i>	1,267 <i>78.2%</i>	111,867 <i>54.2%</i>
	Others	188 <i>0.1%</i>	0 <i>0.0%</i>	188 <i>0.1%</i>
	Protepterus(Kamongo)	780 <i>0.4%</i>	0 <i>0.0%</i>	780 <i>0.4%</i>
	Rastrineobola(Omena/Dagaa)	59,572 <i>29.1%</i>	108 <i>6.7%</i>	59,680 <i>28.9%</i>
	Synodontis(Okoko)	1,132 <i>0.6%</i>	4 <i>0.2%</i>	1,136 <i>0.6%</i>
	Tilapiines(Ngege)	26,326 <i>12.9%</i>	212 <i>13.1%</i>	26,538 <i>12.9%</i>
	Unidentified species	19 <i>0.0%</i>	7 <i>0.4%</i>	26 <i>0.0%</i>
	Grand Total	204,805 <i>99.2%</i>	1,620 <i>0.8%</i>	206,425 <i>100%</i>

NB: Numbers in italics are percentage numbers of fishers (by species within country for gender columns; and based on country and lakewide totals for total number of fishers) targeting the indicated fish species

3.5.2. Number of fishing crafts by type targeting different fish species

In 2014, *Lates niloticus* was mainly targeted by sesse flat at one end (18,234 crafts, 48.2%) which is a slightly lower proportion compared to numbers recorded in the previous survey (18,577 crafts, 51.1%) (Table 5). Among crafts targeting *Lates niloticus* in Uganda, Sesse flat at one end remained the most dominant in both years 2012 (70.3%) and 2014 (85.1%). The second most important craft type targeting *Lates niloticus* was Sesse pointed at both ends targeting (16,966 crafts, 44.9%) constituting a slightly higher proportion compared to numbers recorded in 2012 (15,962, 43.9%). The importance of Sesse pointed at both ends crafts in *Lates niloticus* fishery increased from 64.4% in 2012 to 71.1% in 2014 in Tanzania. A similar pattern was recorded in Kenya whereby in 2014 64.2% of all crafts targeting *Lates niloticus* were Sesse pointed at both ends.

Unlike in the the previous survey where both types of Sesse crafts were almost equally important in the *Rastrineobola argentea* (Omena/Dagaa) fishery (Sesse flat 48.5% and Sesse pointed 48.7%), in 2014 Sesse flat crafts (54.5%) overshadowed Sesse pointed (41.6%). This suggests that the use of engines as a means of propulsion in *Rastrineobola argentea* fishery is becoming increasingly profitable. This pattern is particularly evident in Tanzania and Uganda, whereas, in Kenya Sesse pointed at both ends crafts featured most strongly in *Rastrineobola argentea* fishery both in 2012 (47.3%) and 2014 (53.5%).

Among crafts targeting tilapiines, parachutes were most frequent (5,360 crafts 39.3% in 2014 slightly higher than 4,580 crafts, 35.7% recorded in 2012). These were mostly operated in Uganda where 3,827 parachutes constituted 28.1% of all fishing units targeting Tilapiines in the whole lake. *Tilapiines* were also targeted by Sesse pointed at both ends (26.2% in 2014 which is very close to 26.9% in 2012) mostly in Tanzania; and sesse flat at one end (21.1% in 2014 slightly higher than 24.1% in 2012) mostly in Uganda. It is worth noting that rafts constituted 9.0% in 2014 which is slightly lower than 11.6% recorded in 2012 and that in the fishery rafts were mostly operated in Tanzania. Among all foot fishers in the lake, 80.5% (recorded in 2014) and (81.1% in 2012) targeted tilapiines. Most of the foot fishers targeting tilapiines operated in Tanzania (221 foot fishers) and Kenya (125 foot fishers).

Sesse pointed at both ends dominated in the haplochromine fishery at the rate of 68.0%. Almost all such crafts targeting haplochromines were recorded in Tanzania 1,166 while Kenya had 80 and Uganda 27. out of 239 sesse pointed at one end crafts targeting haplochromines, 103 were in Tanzania, 96 in Uganda and only 40 were in Kenya. Parachutes constituted a notable proportion (14.9%) of crafts targeting haplochromines, most of which (61.3%) operated in Uganda.

Majority of crafts targeting *Clarias* (49.0%) were sesse pointed at both ends. Of all the sesse pointed at both ends crafts targeting *Clarias*, 69.4% were operated in Kenya followed by Tanzania (30.6%) with Uganda having none.

Across the lake, parachutes were the most important (45.0%) fishing crafts for lung fish (*Protopterus*) mostly in Uganda where 78.6% of all parachutes targeting lung fish in the whole lake were operated. The second important craft type targeting lung fish

was sesse pointed at both ends (24.6%) most of which were operated in Tanzania where 53.0% of all such crafts targeting lung fish in the lake were recorded. Other crafts recorded in notable numbers targeting lung fish were sesse flat at one end (16.7% nearly all in Uganda) and dugout canoes (7.5%, mostly in Tanzania and Uganda).

Sesse pointed at both ends dominated in the *Synodontis* fishery lakewide, whereby 53.1% of all crafts targeting the species were of this craft type. Country comparison shows that the highest proportion was recorded in Tanzania (50.3%) followed by Kenya (39.2%) and Uganda (10.5%). Other craft types targeting *Synodontis* were parachutes (22.3%), mostly in Kenya and Uganda (60.8% and 35.8% respectively), sesse pointed at one end (12.8% mostly in Uganda), dugout canoe (11.1%, nearly all in Tanzania), rafts (0.6% all in Uganda).

Table 5: Fishing Crafts by target fish species 2014

Species	Craft type	Kenya	Tanzania	Uganda	Lakewide
Clarias (Mumi)	Dugout	1 0.6%	6 12.5%	0.0%	7 2.8%
	Foot Fisher	2 1.1%	4 8.3%	0.0%	6 2.4%
	Parachute	64 35.4%	0.0%	18 75.0%	82 32.4%
	Sesse Flat at One End	28 15.5%	0.0%	6 25.0%	34 13.4%
	Sesse pointed at both Ends	86 47.5%	38 79.2%	0.0%	124 49.0%
Haplochromines (Furu)	Dugout	0.0%	39 2.8%	1 0.3%	40 2.1%
	Foot Fisher	3 1.7%	9 0.6%	6 1.9%	18 1.0%
	Parachute	52 29.7%	56 4.0%	171 55.0%	279 14.9%
	Raft	0.0%	13 0.9%	10 3.2%	23 1.2%
	Sesse Flat at One End	40 22.9%	103 7.4%	96 30.9%	239 12.8%
	Sesse pointed at both Ends	80 45.7%	1,166 84.1%	27 8.7%	1,273 68.0%
Lates (Mbuta)	Catamarans	4 0.1%	1 0.0%	2 0.0%	7 0.0%
	Dugout	5 0.1%	18 0.1%	61 0.4%	84 0.2%

Species	Craft type	Kenya	Tanzania	Uganda	Lakewide
	Foot Fisher	0.0%	6 0.0%	1 0.0%	7 0.0%
	Parachute	1,377 18.3%	142 0.9%	960 6.4%	2,479 6.6%
	Raft	1 0.0%	40 0.3%	2 0.0%	43 0.1%
	Sesse Flat at One End	1,314 17.4%	4,247 27.6%	12,673 85.1%	18,234 48.2%
	Sesse pointed at both Ends	4,840 64.2%	10,938 71.1%	1,188 8.0%	16,966 44.9%
	Unidentified craft	0.0%	0.0%	1 0.0%	1 0.0%
Others	Dugout		16 23.2%		16 23.2%
	Raft		1 1.4%		1 1.4%
	Sesse Flat at One End		1 1.4%		1 1.4%
	Sesse pointed at both Ends		51 73.9%		51 73.9%
Protepterus (Kamongo)	Dugout	0.0%	30 28.8%	5 1.8%	35 7.5%
	Foot Fisher	15 16.7%	3 2.9%	7 2.6%	25 5.4%
	Parachute	41 45.6%	4 3.8%	165 60.4%	210 45.0%
	Raft	0.0%	4 3.8%	0.0%	4 0.9%
	Sesse Flat at One End	7 7.8%	2 1.9%	69 25.3%	78 16.7%
	Sesse pointed at both Ends	27 30.0%	61 58.7%	27 9.9%	115 24.6%
Rastrineobola (Omena/Dagaa)	Catamarans	1 0.0%	0.0%	22 0.5%	23 0.1%
	Dugout	0.0%	1 0.0%	17 0.4%	18 0.1%
	Parachute	465 15.6%	44 0.5%	67 1.6%	576 3.7%
	Sesse Flat at One End	918 30.8%	5,097 60.6%	2,528 58.9%	8,543 54.5%
	Sesse pointed at both Ends	1,595 53.5%	3,270 38.9%	1,657 38.6%	6,522 41.6%
	Unidentified craft			1	1

Species	Craft type	Kenya	Tanzania	Uganda	Lakewide
		<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>
Synodontis (Okoko)	Dugout	5 <i>2.5%</i>	55 <i>26.2%</i>	<i>0.0%</i>	60 <i>11.1%</i>
	Foot Fisher	<i>0.0%</i>	<i>0.0%</i>	1 <i>0.8%</i>	1 <i>0.2%</i>
	Parachute	73 <i>36.5%</i>	4 <i>1.9%</i>	43 <i>33.3%</i>	120 <i>22.3%</i>
	Raft	<i>0.0%</i>	3 <i>1.4%</i>	<i>0.0%</i>	3 <i>0.6%</i>
	Sesse Flat at One End	10 <i>5.0%</i>	4 <i>1.9%</i>	55 <i>42.6%</i>	69 <i>12.8%</i>
	Sesse pointed at both Ends	112 <i>56.0%</i>	144 <i>68.6%</i>	30 <i>23.3%</i>	286 <i>53.1%</i>
Tilapiines (Ngege)	Catamarans	1 <i>0.0%</i>	2 <i>0.1%</i>	1 <i>0.0%</i>	4 <i>0.0%</i>
	Dugout	1 <i>0.0%</i>	85 <i>2.3%</i>	65 <i>0.9%</i>	151 <i>1.1%</i>
	Foot Fisher	125 <i>5.3%</i>	221 <i>5.9%</i>	84 <i>1.1%</i>	430 <i>3.2%</i>
	Parachute	1,346 <i>57.1%</i>	187 <i>5.0%</i>	3,827 <i>50.8%</i>	5,360 <i>39.3%</i>
	Raft	22 <i>0.9%</i>	1,066 <i>28.5%</i>	145 <i>1.9%</i>	1,233 <i>9.0%</i>
	Sesse Flat at One End	22 <i>0.9%</i>	14 <i>0.4%</i>	2,839 <i>37.7%</i>	2,875 <i>21.1%</i>
	Sesse pointed at both Ends	841 <i>35.7%</i>	2,158 <i>57.8%</i>	576 <i>7.6%</i>	3,575 <i>26.2%</i>
	Unidentified craft	<i>0.0%</i>	1 <i>0.0%</i>	2 <i>0.0%</i>	3 <i>0.0%</i>
Unidentified species	Parachute	2 <i>22.2%</i>		1 <i>1.8%</i>	3 <i>4.7%</i>
	Sesse Flat at One End	1 <i>11.1%</i>		4 <i>7.3%</i>	5 <i>7.8%</i>
	Sesse pointed at both Ends	<i>0.0%</i>		1 <i>1.8%</i>	1 <i>1.6%</i>
	Unidentified craft	6 <i>66.7%</i>		49 <i>89.1%</i>	55 <i>85.9%</i>

NB: Number in italics are percentage of each craft type that targeted the indicated fish species per each country and lake wide

3.5.3 Number of fishing gears by type targeting different fish species

Distribution of fishing gears across species is presented in Table 6. Over 83% (798,072 nets) of all gillnets target *Lates niloticus* in the lake followed by 9.8% targeting Tilapiines and 3.1% targeting haplochromines. The rest of gillnets target other species at percentages lower than 2.5%. Likewise, almost all longline hooks were used to fish *Lates niloticus* (13,598,392 hooks, 98.2%), a pattern reflected in all the three countries. Handlines were mainly used to target Tilapiines (27,351 handlines, 61.0%) whereby Tanzania recorded the highest proportion (73.8%) followed by Kenya (70.7%) and Uganda (52.2%).

Beach seines which are illegal fishing gears targeted mostly *Lates niloticus* (3,400 seines, 95.9%) lakewide with almost similar proportions in all the three countries. Likewise boat seines targeted mainly *Lates niloticus* at relatively lower proportions (1,144 nets, 51.0%). However, the usage of this gear for targeting *Lates niloticus* differed significantly between countries (Kenya 104 nets 14.0%; Tanzania 105 nets, 30.9%; and 935 nets; 80.4% in Uganda). Monofilament nets which are also illegal, were mostly used to catch Tilapiines (22,631 nets, 51.3%) and *Lates niloticus* (21,192 nets, 48.1%) lakewide.

Traps and cast nets targeted mostly Tilapiines (1,523 cast nets, 95.4%; 9,111 traps, 84.5%), whereas, the specialized gears for *Rastrineobola argentea* were used to target almost exclusively the intended species (16,560 small seines, 89.1%; 800 scoop nets, 99.1%).

Table 6: Number and percentage of fishing gears by type targeting different fish species 2014

Gear type	Species	Kenya	Tanzania	Uganda	Lakewide
Boat seine	Clarias (Mumi)	25 3.4%		1 0.1%	26 1.2%
	Haplochromines(Furu)	97 13.1%	178 52.4%	2 0.2%	277 12.3%
	Lates (Mbuta)	104 14.0%	105 30.9%	935 80.4%	1,144 51.0%
	Protepterus (Kamongo)	1 0.1%	1 0.3%	1 0.1%	3 0.1%
	Rastrineobola (Omena/Dagaa)	489 65.9%	1 0.3%		490 21.8%
	Synodontis (Okoko)		1 0.3%		1 0.0%
	Tilapiines (Ngege)	26 3.5%	54 15.9%	223 19.2%	303 13.5%
	Unidentified species			1 0.1%	1 0.0%
Beach seine	Clarias (Mumi)	1	1		2

Gear type	Species	Kenya	Tanzania	Uganda	Lakewide
		0.1%	0.1%		0.1%
	Haplochromines (Furu)	1 0.1%	22 1.1%		23 0.6%
	Lates (Mbuta)	820 96.1%	1,907 97.5%	673 91.4%	3,400 95.9%
	Protepterus (Kamongo)	1 0.1%			1 0.0%
	Rastrineobola (Omena/Dagaa)	15 1.8%	1 0.1%	5 0.7%	21 0.6%
	Tilapiines (Ngege)	15 1.8%	25 1.3%	58 7.9%	98 2.8%
	Unidentified species	1 0.1%		1 0.1%	2 0.1%
Cast net	Clarias (Mumi)		1 0.6%		1 0.1%
	Haplochromines (Furu)	5 3.9%		8 0.6%	13 0.8%
	Lates (Mbuta)	6 4.7%	9 5.5%	32 2.5%	47 2.9%
	Protepterus (Kamongo)			1 0.1%	1 0.1%
	Rastrineobola (Omena/Dagaa)			6 0.5%	6 0.4%
	Synodontis (Okoko)		1 0.6%		1 0.1%
	Tilapiines (Ngege)	117 91.4%	154 93.3%	1,252 96.0%	1,523 95.4%
Gillnets	Unidentified species			5 0.4%	5 0.3%
	Clarias (Mumi)	1,815 1.0%	177 0.0%	95 0.0%	2,087 0.2%
	Haplochromines (Furu)	676 0.4%	24,408 6.9%	4,636 1.1%	29,720 3.1%
	Lates (Mbuta)	164,024 86.8%	296,235 83.5%	337,813 82.8%	798,072 83.8%
	Others		3,518 1.0%		3,518 0.4%
	Protepterus (Kamongo)	188 0.1%	1,108 0.3%	556 0.1%	1,852 0.2%
	Rastrineobola (Omena/Dagaa)	412 0.2%	229 0.1%	390 0.1%	1,031 0.1%
	Synodontis (Okoko)	7,850 4.2%	11,331 3.2%	2,508 0.6%	21,689 2.3%

Gear type	Species	Kenya	Tanzania	Uganda	Lakewide
	Tilapiines (Ngege)	14,066 7.4%	17,858 5.0%	61,430 15.1%	93,354 9.8%
	Unidentified species	25 0.0%		577 0.1%	602 0.1%
Handline	Clarias (Mumi)	172 5.4%		10 0.0%	182 0.4%
	Haplochromines (Furu)	12 0.4%	58 0.4%		70 0.2%
	Lates (Mbuta)	376 11.8%	4,006 25.6%	11,323 43.5%	15,705 35.0%
	Protepterus (Kamongo)	350 11.0%	24 0.2%	971 3.7%	1,345 3.0%
	Rastrineobola (Omena/Dagaa)	20 0.6%	10 0.1%	8 0.0%	38 0.1%
	Synodontis (Okoko)		9 0.1%	48 0.2%	57 0.1%
	Tilapiines (Ngege)	2,244 70.7%	11,540 73.8%	13,567 52.2%	27,351 61.0%
	Unidentified species			74 0.3%	74 0.2%
Long line hooks	Clarias (Mumi)	45,264 1.8%	25,327 0.4%	4,240 0.1%	74,831 0.5%
	Haplochromines (Furu)	470 0.0%	1,000 0.0%		1,470 0.0%
	Lates (Mbuta)	2,492,176 96.5%	6,993,650 98.8%	4,112,566 98.4%	13,598,392 98.2%
	Protepterus (Kamongo)	11,235 0.4%	11,873 0.2%	25,455 0.6%	48,563 0.4%
	Rastrineobola (Omena/Dagaa)	14,550 0.6%	800 0.0%	3,870 0.1%	19,220 0.1%
	Synodontis (Okoko)	2,580 0.1%		220 0.0%	2,800 0.0%
	Tilapiines (Ngege)	15,964 0.6%	46,566 0.7%	30,756 0.7%	93,286 0.7%
	Unidentified species	700 0.0%		3,210 0.1%	3,910 0.0%
Lift net	Haplochromines (Furu)		14 40.0%		14 0.7%
	Lates (Mbuta)			1,900 91.5%	1,900 90.0%
	Protepterus (Kamongo)			40 1.9%	40 1.9%
	Rastrineobola (Omena/Dagaa)		21	14	35

Gear type	Species	Kenya	Tanzania	Uganda	Lakewide
			60.0%	0.7%	1.7%
	Tilapiines (Ngege)			122 5.9%	122 5.8%
Monofilaments	Clarias (Mumi)	1 0.1%			1 0.0%
	Haplochromines (Furu)	1 0.1%	89 0.4%	13 0.1%	103 0.2%
	Lates (Mbuta)	325 18.8%	14,557 66.0%	6,310 31.1%	21,192 48.1%
	Protepterus (Kamongo)	2 0.1%	8 0.0%	7 0.0%	17 0.0%
	Rastrineobola (Omena/Dagaa)	9 0.5%	36 0.2%	17 0.1%	62 0.1%
	Synodontis (Okoko)	1 0.1%	49 0.2%	5 0.0%	55 0.1%
	Tilapiines(Ngege)	1,382 80.0%	7,325 33.2%	13,924 68.6%	22,631 51.3%
	Unidentified species	7 0.4%		34 0.2%	41 0.1%
Scoop nets	Haplochromines (Furu)		4 0.8%		4 0.5%
	Lates (Mbuta)		1 0.2%	1 0.3%	2 0.2%
	Rastrineobola (Omena/Dagaa)		468 98.7%	332 99.7%	800 99.1%
	Tilapiines (Ngege)		1 0.2%		1 0.1%
Small seines	Clarias(Mumi)	3 0.1%			3 0.0%
	Haplochromines (Furu)	25 0.6%	498 5.9%	71 1.2%	594 3.2%
	Lates (Mbuta)	1,313 31.7%	5 0.1%	23 0.4%	1,341 7.2%
	Protepterus (Kamongo)	3 0.1%	1 0.0%	12 0.2%	16 0.1%
	Rastrineobola (Omena/Dagaa)	2,747 66.4%	7,936 94.0%	5,877 98.0%	16,560 89.1%
	Synodontis (Okoko)			2 0.0%	2 0.0%
	Tilapiines (Ngege)	44 1.1%	3 0.0%	4 0.1%	51 0.3%
	Unidentified species	2 0.0%		7 0.1%	9 0.0%

Gear type	Species	Kenya	Tanzania	Uganda	Lakewide
Traps/Baskets	Clarias (Mumi)	269 24.8%	15 1.8%		284 2.6%
	Lates (Mbuta)	36 3.3%	57 6.8%	95 1.1%	188 1.7%
	Protepterus (Kamongo)	292 27.0%		279 3.1%	571 5.3%
	Rastrineobola (Omena/Dagaa)	4 0.4%			4 0.0%
	Synodontis (Okoko)	10 0.9%	52 6.2%	544 6.1%	606 5.6%
	Tilapiines (Ngege)	472 43.6%	713 85.2%	7,926 89.4%	9,111 84.5%
	Unidentified species			20 0.2%	20 0.2%

NB: Numbers in italics are percentage of each gear type targeting the indicated fish species per each country and lake wide

4. CONCLUSIONS AND RECOMMENDATIONS

The bi-ennial Frame surveys carried out on Lake Victoria between 2000 and 2014 present trends in landing sites facilities and services provided in the fisheries sector and also how fishing effort and capacity has changed over the years. Some of the key findings are summarized below. Some recommendations are proposed to guide proper planning, management and development of the fisheries sector for sustainability of the fisheries resources of Lake Victoria.

a) **Social amenities:** There was a general decline in social facilities at landing sites.

- **The Governments should direct efforts to landing sites to increase the essential facilities such as public toilets, portable water, health clinics so as to improve on the health of the fishing communities and address issue of fish quality and safety. The Local Governments and the BMUs should aim to achieve 100% coverage of landing site and also increase sensitization on the proper usage of toilets.**

Fish handling facilities (drying racks, smoking kilns, bands) had a minimal improvement. Both working coldrooms and fish stores declined thus affecting storage of both fresh and processed fish.

- **Governments both National/Central and County/Local should budget for the development of fish handling infrastructure at landing sites to address reduction in post-harvest losses**

Access to portable water, another basic requirement to ensure proper hygiene and sanitation, increased by 67.3% between 2010 and 2012 which was a positive trend but declined by 20.3% to 208 in 2014 which is a worrying trend. Governments should be encouraged to achieve 100% coverage. There was an increase by 22.8% for all-weather roads between 2010 and 2012 with a further improvement by 8.5% between 2012 and 2014.

- **However, more effort by County/Local governments to increase the number of landing sites with good road access is called for as this affects marketing and prices of products as well as provision of other basic services to the landing sites;**
- **A proportion of the revenue collected from licensing and other levies in the fisheries sector should be remitted back to the BMUs to improve facilities at the landing sites;**

Landing sites with public toilets increased from 18.3% in 2002 to 36.2% in 2008, and to 40.4% in 2012 but by 2014 the proportion of landing sites with public toilets was only 41.4% indicating a very minimal change as toilets increased by only 5.7% from 599 in 2012 to 633 in 2014.

- **The County/Local Governments and the BMUs should aim to achieve 100% landing site coverage and also increase sensitization on the proper usage of toilets;**

HIV/AIDs services also improved but are not matching with the level of prevalence of HIV and AIDs in fishing communities around Lake Victoria which was reported at 22.2% in Uganda, 15.3% in Kenya and 7.6% in Tanzania which are all above the national averages (EALP 2011).

- **HIV awareness programs targeting the most vulnerable groups should be intensified;**
- b) **Facilities for fish quality and safety:** There was an increase in the number of fish bands from 269 to 293 (8.9% increase) between 2012 and 2014, drying racks 165 to 169 (2.4%) and smoking kilns 416 to 428 (2.9%) all a positive trend towards improving fish quality and safety. However, pontoons/jetties decreased from 113 to 103 (8.8% decline) between 2012 and 2014, cold rooms (working) 15 to 12 (20.3%) and fish stores 106 to 79 (25.6%). The decline of these essential facilities is a serious concern in safe fish handling.
- **Central/National governments, County/Local governments, BMUs and private sector should join hands to ensure provision of adequate fish handling facilities;**
- c) **Extension services:** The number of landing sites served by fisheries staff increased by 31.8% from 959 to 1,265 between 2012 and 2014. The figure for 2014 represents 82.6% coverage of the total landing sites.
- **There is need to deploy more fisheries staff in the field to work hand in hand with the BMUs to improve compliance in fisheries management efforts. Some of the landing sites are only served once in a week or a month or in three months;**

The number of landing sites having access to Primary schools and Health clinics within the 2 km distance increased by 6.3% and 15.8% between 2012 and 2014 respectively. The proportion of landing sites with Primary schools and Health clinics was 69.2% and 46.1% respectively.

- **The Governments should direct efforts to landing sites to increase such essential facilities for the fishing communities to have equitable benefits for education and health care;**
- d) **Fishing effort:** The LVFO CoM in the RPOA Capacity had recommended limiting effort at the levels of 2006 FS results. Although some reductions were observed in the 2008, there was an increase in both 2012 and 2014 indicating continued rise in fishing effort in terms of fishers, fishing crafts and both illegal fishing gears and fishing methods. The increase of big sized hooks could be targeting the spawning stocks of Nile perch while the small size hooks are targeting the juveniles. The increase in illegal gillnets <5" may be a direct response to decline in large sized fish and increase in juvenile fish below the recommended minimum slot size of 50cm TL. This is affecting recruitment and drives the fishery down and calls for more efforts to eliminate illegal gears if the fishery is to recover.
- **The open access practice coupled with limited alternative sources of livelihoods among fishing communities has led to continued rise in fishing effort. Licensing should be used as a means of limiting access and not just for revenue generation;**
 - **Continued increase in the use of illegalities in the fishing calls for more efforts in MCS by both the BMUs and government agencies.**

The increase of traps/baskets and the dominance of boats using paddles imply that most of the fishing activities are conducted inshore and mostly targeting undersized fish (Nile perch).

- **There is need to encourage use of bigger boats that can go off shore and gazette breeding/nursery areas. BMUs should be facilitated to enforce this in their communities.**

The total number of small seines increased from 15,064 to 22,122 (46.9%) between 2012 and 2014. However, the illegal ≤ 5 mm seine nets increased by 77.6% and overall contributed 39.1% of the small seines in 2014.

- **The countries should implement the LVFO CoM recommendations on use of 10 mm and fishing 2 km from the shoreline. There is need to assess the increased use of panels in small seines as it is an indication of increased fishing effort.**

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6. APPENDICES

ANNEX 1: FRAME SURVEY RECORDING FORM

PART A: DOCUMENT IDENTIFICATION AND LOCATION DETAILS

Date			1
Name of Enumerator			2
Telephone No.			3
Status/ rank of respondent (e.g. BMU chair, secretary or other – specify)			4
Country			5
County/Region			6
Sub-county/ District			7
Division/Ward			8
Location/ Parish/			9
Sub-location (Ke)/LC1 (Ug)/Village (Tz)			10
Name of landing site			11
Longitude and Latitude			12
Name of BMU (if different from name of landing site)			13
Is the landing site on an island	Yes	No	14
If yes name the island			15
Is there a primary school within 2 km?	Yes	No	16
Is there a health clinic within 2 km?	Yes	No	17
Is there a banking facility within 2 km?	Yes	No	18
How many alcohol joints are within the site?			19
Has this landing site received any of the following HIV/AIDS services for the last one year?			
1. Awareness raising	Yes	No	20
2. Voluntary Counselling and Testing (VCT)	Yes	No	21
3. Provision of Anti Retroviral drugs (ARVs)	Yes	No	22
4. Help to orphans, widows	Yes	No	23

PART B: SUMMARY OF NUMBER OF NON-FISHING CRAFT AT LANDING SITE

VESSEL CATEGORY	NUMBER
How many fishing crafts are under construction?	24
How many fishing crafts are damaged but repairable?	25
How many fish carriers?	26
How many transport craft (other purposes)?	27

PART C: LANDING SITE FACILITIES

PART C: LANDING SITE FACILITIES						
Is there any cell phone network access?			Yes			No 28
Is there a banda at the landing site?			Yes			No 29
Is there a cold room?			Yes			No 30
If yes, is it operational?			Yes			No 31
Does the landing site have any of the following fish processing facilities?						
1. Drying racks/slabs			Yes			No 32
2. Smoking kilns			Yes			No 33
3. Others (specify)						34
Is there a public fish store?			Yes			No 35
Is there an operational jetty?			Yes			No 36
Is there pontoon?			Yes			No 37
Does the landing site have electricity?			Yes			No 38
If “No” how far to the nearest electricity supply (km)						
			< 1	1 - 5	6 - 10	> 10 39
Is there a public toilet facility?			Yes			No 40
Is there potable water supply?			Yes			No 41
Is the landing site accessible by all-weather road?			Yes			No 42
If “No” how far to the nearest all-weather road (km)?						
			<1	1-5	6-10	>10 42
Is there a net repair facility?			Yes			No 43
Is there a shop selling fishing gear?			Yes			No 44
Is there a boat repair facility?			Yes			No 45
Is there an engine repair facility?			Yes			No 46
Is the landing site served by fisheries staff?			Yes			No 47
If “Yes” how often?						
Daily	Weekly	Monthly	Quarterly	48		
Is the BMU office at this site?			Yes		No	49
Other than fishing, what other income generating activities are the fishers engaged in? (1. Farming, 2. fish farming, 3. Tourism related, 4.fish trade, 5.General retailing, 6. Others (specify?)						50
Is there a fenced area at this site for fish handling?			Yes			No 51
Is the land at this site privately owned?			Yes			No 52
Do fish factory agents buy fish from the site?			Yes			No 53
If yes, for which fish processing companies?						54
Is tax collection tendered to private organisations on behalf of local/central government at the site?			Yes		No	55
Are fish movement permits issued at this site?			Yes		No	56
Are fish landed at this site for:						
			< 5 months a year	> 5 months a year	All year-round	57

PART D: DETAILS OF ALL OPERATIONAL FISHING CRAFT AND GEARS

SHEET NUMBER

District_____ Location/Parish/Ward_____ Sub-location/LC1/Village_____ Landing site name _____

[illegible]

PART E: CODES

NOTES ON CRAFT

Operational Fishing Craft- craft that are fishing

Craft under construction

Damaged and repairable fishing craft

Fish carrier - Craft solely for transporting fish

Transport Craft (other purpose) - craft used for transport only (and never for fishing)

EXPLANATION OF CODING

CRAFT TYPE (and CODES)

1. Sesse flat at one end (SF)
2. Sesse pointed at both ends (SP)
3. Parachute (PA)
4. Dugout (DO)
5. Raft (RA)
6. Foot Fishers (FF)
7. Catamarans (CA)

Length: Measured in metres using a tape measure or a knotted rope

PROP: Method of propulsion: - State main method

1. Inboard motor (I)
2. Outboard motor (O)
3. Paddles (P)
4. Sail (S)
5. Towed by Motorized boat (T)

HP: If PROP is inboard or outboard engine state the Horse power, e.g. 15

CREW: Number of crew who normally accompany the craft

GEAR TYPES:

GN Gill Net: State number per mesh size in inches

LL Long Lines: State number of hooks by sizes

BS Beach seine: state a complete set

BoS Boat seine: state a complete set

CN Cast net: State number

HL Hand Line: State number of lines

TR Traps: State number

LN Lift net: State number

SN Scoop net: State number

SS Small seine: Targeting Dagaa/Omena/ Mukene: State number per mesh size in mm

MF Monofilament: State the number

GILLNET OPERATION MODE:

A Active

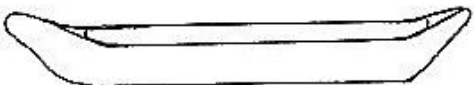
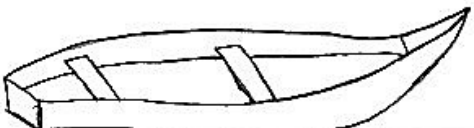
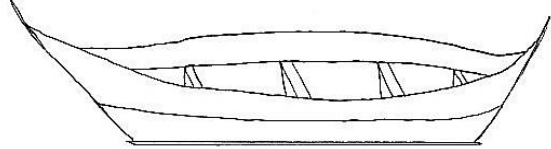

D Drift

ST Stationary

GILLNET/SMALL SEINE VERTICAL PANEL CODE:		SPECIES TARGETED	LONG/ HAND LINE BAITS
S-Single(1) Panels	O-Octagon(8) Panels	1. <i>Lates</i> (Mbuta);	1. <i>Clarias</i>
D-Double(2) Panels	N-Nonagon (9) Panels	2. <i>Rastrineobola</i> (Omena)	2. Haplochromines
T-Triple(3) Panels	X-Decagon(10) Panels	3. Tilapiines (Ngege)	3. <i>Synodontis</i>
Q-Quadruple(4) Panels		4. <i>Clarias</i> (Mumi)	4. <i>Mormyrus</i>
P-Quintuple(5) Panels		5. <i>Protopterus</i> (Mamba)	5. <i>Rastrineobola</i>
H-Sextuple(6) Panels		6. <i>Synodontis</i> (Okoko)	6. Earth Worms
E-Sextuple(7) Panels		7. Haplochromines(Fulu, nkeje)	7. Algae
			8. Others (Specify

DESCRIPTION OF CRAFT CATEGORIES

Sketches and description of the fishing craft types operating in Lake Victoria

Vessel type	Description
<p>1. Dugout boat</p> 	<ul style="list-style-type: none"> Curved out of a whole log of a tree. Common size, 4 to 5 m long Entirely propelled by paddle Operated exclusively in the littoral areas targeting Nile tilapia The main fishing gears used are gillnets and basket traps
<p>2. Parachute</p> 	<ul style="list-style-type: none"> Constructed from planks of timber Flat bottomed Common size, 4 to 6 m long Entirely propelled by paddle Operated exclusively in the littoral areas targeting Nile tilapia The main gears used are gillnets, cast nets and basket traps
<p>3. Sesse pointed at both ends</p> 	<ul style="list-style-type: none"> Constructed from planks of timber V-shaped bottom with a keel Common size, 6 to 10 m long Propelled by paddle or sails Operated in the littoral and sub-littoral areas, up to about 3 km from the shore Largely unspecialised, i.e. used in the Mukene/Dagaa /Omena fishery with small seines; in the Nile tilapia fishery with gillnets, cast nets and basket traps; and in the Nile perch fishery with gillnets, beach seines, long lines and hand lines
<p>4. Sesse flat at one end</p> 	<ul style="list-style-type: none"> Constructed from planks of timber V-shaped bottom with a keel Common size, 5 to 12 m long Propelled by paddle, sail or out board motor Largely unspecialised, i.e. used in the Mukene/Dagaa /Omena fishery with small seines; in the Nile tilapia fishery with gillnets, cast nets and basket traps; and in the Nile perch fishery with gillnets, beach seines, long lines and hand lines

ANNEX 2: Comparison of Lake Victoria (Kenya) Fisheries Frame Survey 2000 - 2014 results

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012- 2014
1	Landing sites									
1.1	Number of landing sites	297	306	304	316	307	331	324	321	-0.9
1.2	Number of landing sites on islands					56	62	62	57	-8.1
2	HIV/AIDS services									
2.1	Landing sites with HIV awareness raising					227	256	285	263	-7.7
2.2	Landing sites with HIV-VCT services					187	228	266	259	-2.6
2.3	Landing site with HIV-ARV services					118	116	113	135	19.5
2.4	Landing sites with services to HIV/AIDS orphans/widows					87	88	89	114	28.1
3	Landing site facilities									
3.1	Landing sites with primary schools					253	262	258	270	4.7
3.2	Landing sites with health clinic					119	127	137	158	15.3
3.3	Landing sites with mobile network					277	306	320	306	-4.4
3.4	Landing sites with bandas (Fish shed)	80	72	76	101	99	117	121	160	32.2
3.5	Landing sites with cold rooms	2	2	9	11	7	6	14	15	7.1
3.6	Landing sites with working cold rooms	1		3	1	6	1	7	1	-85.7
3.7	Landing sites with non-working cold rooms	1	2	6	10	1	5	7	14	100.0
3.8	Landing sites with drying racks					19	17	24	34	41.7
3.9	Landing sites with smoking kilns					75	66	62	75	21.0
3.10	Landing sites with Fish Stores	16	12	13	30	16	25	24	38	58.3
3.11	Landing sites with jetties					11	17	19	22	15.8
3.12	Landing sites with Pontoons					0	0	0	2	

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012- 2014
3.13	Landing sites with Pontoons/Jetties	9	5	11	15	11	17	19	24	26.3
3.14	Landing sites with electricity supply	29	15	12	23	13	37	46	73	58.7
3.15	Landing sites with public toilets		150	179	192	185	196	206	232	12.6
3.16	Landing sites with potable water		29	22	17	10	15	16	26	62.5
3.17	Landing sites accessible by all-weather roads	60	102	68	100	102	101	135	132	-2.2
3.18	Landing sites with net repair facilities	51		107	160	120	107	133	154	15.8
3.19	Landing sites with fishing gear shops					80	96	79	116	46.8
3.20	Number of landing sites with alcohol joints								114	
3.21	Number of alcohol joints on landing sites									
3.22	Landing sites with bank facilities								72	
3.23	Landing sites visited by agents					213	219	213	206	-3.3
3.24	Landing sites with boat repair facilities	51		149	205	165	162	212	203	-4.2
3.25	Landing sites with engine repair facilities					26	33	40	59	47.5
4	Services at LSs									
4.1	Number of landing sites attended by fisheries staff		22	39	17	31	17	301	290	-3.7
4.2	Number of landing sites served by fisheries staff daily								22	
4.3	Number of landing sites served by fisheries staff weekly								85	
4.4	Number of landing sites served by fisheries staff								121	

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012- 2014
	monthly									
4.5	Number of landing sites served by fisheries staff quarterly								62	
4.6	Number of landing sites with BMUs					286	331	324	321	-0.9
4.7	Number of landing sites with BMU office					174	161	203	198	-2.5
4.8	Fenced landing sites					23	27	30	28	-6.7
4.9	Privately owned LS land					57	65	58	34	-41.4
4.10	LSs visited by factory agents					213	219	213	206	-3.3
4.11	Tax collection tendered at the LS					0	0	0	0	
4.12	Fish movement permit issued at the LS daily					0	0	0	0	
5	Other Livelihood									
5.1	Farming								263	
5.2	Fish farming								44	
5.3	Tourism								9	
5.4	Fish trade								213	
5.5	General retailing								116	
6	Fishers									
6.1	Number of male fishers								39,315	
6.2	Number of female fishers								794	
6.3	Total number of fishers	38,431	54,163	37,348	44,263	42,307	41,912	40,078	40,109	0.1
7	Fishing crafts									
7.1	Craft types									
7.1.1	Dugout	3	29	7	40	8	65	102	12	-88.2%
7.1.2	Parachute	1,501	1,966	2,394	3,096	3,218	3,155	3,288	3,420	4.0%
7.1.3	Sesse flat at one end	951	1,625	1,445	1,879	1,557	2,119	2,199	2,340	6.4%
7.1.4	Sesse pointed at both ends	7,903	8,499	8,304	9,952	9,194	8,780	7,831	7,581	-3.2%
7.1.5	Rafts			128	56	79	33	48	23	-52.1%

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012- 2014
7.1.6	Catamaran				0	0	0	0	6	
7.1.7	Number of Foot fishers				257	237	97	249	145	-41.8%
7.1.8	Other/Unspecified	1,127	90		0	0	0	0	6	
	Total No. of fishing crafts including foot fishers and rafts	11,485	12,209	12,278	15,280	14,293	14,249	13,717	13,533	-1.3%
	Total No. of fishing crafts excluding foot fishers and rafts	11,485	12,209	12,278	15,023	14,056	14,152	13,468	13,388	-0.6%
7.2	Mode of Propulsion									
7.2.1	Number of crafts using Outboard engines	626	692	860	1,302	1,183	1,773	1,966	2,207	12.3
7.2.2	Number of crafts using Inboard engine	15			0	0	10	12	10	-16.7
7.2.3	Number of crafts using Paddle	7,561	6,820	6,560	8,324	8,081	7,546	7,210	6,937	-3.8
7.2.4	Number of crafts using Sails	3,313	4,697	4,858	5,396	4,771	4,797	4,273	4,240	-0.8
7.2.5	Number of crafts towed						0	0		
7.3	Transport crafts									
7.3.1	Number of transport crafts (fish)					235	65	424	334	-21.2
7.3.2	Number of transport crafts (other goods)					385	374	576	513	-10.9
7.3.3	Total number of transport crafts	409	508	352	443	620	439	1,000	847	-15.3
7.4	Damaged crafts/under construction									
7.4.1	Number of derelict crafts	1,876	2,467	1,906	2,265	2,017	1,999	4,139		-100.0
7.4.2	Repairable damaged fishing crafts								1,231	
7.4.3	Fishing crafts under construction								556	
7.5	Fishing craft ownership									
7.5.1	Number of male								10,485	
7.5.2	Number of female								1,471	
7.5.3	Groups								14	

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012- 2014
8	Fishing Gears									
8.1	Gillnets by size									
8.1.1	< 2.5"	4,313	3,123	5,064	4,698	4,692	9,380	11,670	20,098	72.2
8.1.2	2.5"	5,266	7,907	7,841	7,226	10,526	11,431	10,742	16,568	54.2
8.1.3	3"	8,412	3,817	3,589	4,256	3,130	5,219	7,762	10,733	38.3
8.1.4	3.5"	6,826	2,262	2,923	2,965	3,906	4,338	5,224	8,215	57.3
8.1.5	4"	5,825	4,475	4,192	3,938	6,637	7,360	10,226	10,891	6.5
8.1.6	4.5"	2,902	6,943	5,387	7,793	14,576	9,910	8,491	8,700	2.5
	Total No. of gillnets <5"	33,544	28,527	28,996	30,876	43,467	47,638	54,115	75,205	39.0
8.1.7	5"	8,085	26,194	27,303	47,883	43,163	19,783	17,151	15,510	-9.6
8.1.8	5.5"	11,677	20,501	27,407	49,027	57,139	15,083	14,460	13,017	-10.0
8.1.9	6"	32,147	28,096	57,174	60,298	42,160	31,535	61,557	49,532	-19.5
8.1.10	6.5"	9,249	8,039	21,974	15,785	7,329	64,660	39,466	16,809	-57.4
8.1.11	7"	24,293	14,779	18,421	10,208	10,444	29,310	18,356	12,683	-30.9
8.1.12	7.5"	2,226	981	1,036	482	1,231	1,428	1,364	2,288	67.7
8.1.13	8"	2,501	2,420	1,810	1,256	3,381	3,011	1,145	2,692	135.1
8.1.14	9"	2,513	264	470	410	616	139	48	942	1862.5
8.1.15	10"	3,527	669	497	229	2,303	81	31	129	316.1
8.1.16	> 10"	3,603	238	5,668	904	2,546	325	434	177	-59.2
	Number of gillnets ≥5"	99,821	102,181	161,760	186,482	170,312	165,355	154,012	113,779	-26.1
	Total number of gillnets	133,365	130,708	190,756	217,358	213,779	212,993	208,127	188,984	-9.2
8.2	Dagaa fishing gears									
8.2.1	Lift nets		11		0	0	0	0		
8.2.2	Small seines									
8.2.2.1	Number of Small seines ≤5 mm			1,520	2,047	1,667	2,001	1,668	2,695	61.6
8.2.2.2	Small seine, 6-9 mm			1,502	1,012	922	837			
8.2.2.3	Number of Small seines mesh size 10 mm			26	122	109	143			
8.2.2.4	Number of Small seines mesh size 6 - 7 mm							776	3,436	342.8
8.2.2.5	Number of Small seines mesh size 8 - 10 mm							775	1,321	70.5
	Total number of small seines	12,387	2,097	3,048	3,181	2,700	2,981	3,219	7,452	131.5
8.2.3	Scoop nets		12	14		0	0			
8.3	Hooks									

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012- 2014
8.3.1	Handlines	34,313	12,172	13,432	20,352	16,201	11,210	5,145	3,161	-38.6
8.3.2	Longline hooks									
8.3.2.1	Number of Long Line hooks size < 4				3,440	1,563	3,245	4,565	7,270	59.3
8.3.2.2	Number of Long Line hooks size 4 – 7				111,010	158,441	97,070	79,936	172,531	115.8
8.3.2.3	Number of Long Line hooks size 8 – 10				2,009,832	1,583,676	1,564,039	1,166,654	807,423	-30.8
8.3.2.4	Number of Long Line hooks size > 10				499,271	758,264	1,046,041	1,227,821	1,586,512	29.2
	Total Long line hooks	1,039,893	2,562,066	2,045,605	2,623,553	2,501,944	2,710,395	2,478,976	2,573,736	3.8
8.4	Other gears									
8.4.1	Beach/Boat seine	5,803	1,157	869	553	762	991	1,063	1,583	48.9
8.4.2	Beach Seines								856	
8.4.3	Boat seines								727	
8.4.4	Cast nets	4,548	102	78	114	131	143	85	128	50.6
8.4.5	Monofilament nets			58	469	4,190	1,468	12,161	1,432	-88.2
8.4.6	Basket/Traps	3,179	2,311	1,846	605	1,273	1,940	1,406	1,083	-23.0
8.4.7	Other/Unspecified	1,649	0	0	0	0	0	0	0	

ANNEX 3: Comparison of Lake Victoria (Tanzania) Fisheries Frame Survey 2000 – 2014 results

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012- 2014
1	Landing sites									
1.1	Number of landing sites	598	594	575	634	585	609	602	642	6.6
1.2	Number of landing sites on islands					220	216	215	197	-8.4
2	HIV/AIDS services									
2.1	Landing sites with HIV awareness raising					332	363	332	324	-2.4
2.2	Landing sites with HIV-VCT services					281	310	322	320	-0.6
2.3	Landing site with HIV-ARV services					165	212	283	298	5.3
2.4	Landing sites with services to HIV/AIDS orphans/widows					140	165	204	208	2.0
3	Landing site facilities									
3.1	Landing sites with primary schools					376	374	369	414	12.2
3.2	Landing sites with health clinic					184	192	211	248	17.5
3.3	Landing sites with mobile network					472	559	567	607	7.1
3.4	Landing sites with bandas (Fish shed)	30	28	31	49	44	74	70	67	-4.3
3.5	Landing sites with cold rooms	2	33	41	6	4	10	4	11	175.0
3.6	Landing sites with working cold rooms	2	6	5	0	0	6	2	10	400.0
3.7	Landing sites with non-working cold rooms	0	27	36	6	4	4	2	1	-50.0
3.8	Landing sites with drying racks					57	52	45	42	-6.7
3.9	Landing sites with smoking kilns					132	104	84	64	-23.8
3.10	Landing sites with Fish Stores	14	24	16	19	13	13	33	19	-42.4
3.11	Landing sites with jetties					15	45	21	38	81.0
3.12	Landing sites with					15	13	43	19	-55.8

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012- 2014
	Pontoons									
3.13	Landing sites with Pontoons/Jetties	32	31	25	26	30	58	64	0	-100.0
3.14	Landing sites with electricity supply	20	35	25	31	26	48	36	44	22.2
3.15	Landing sites with public toilets		20	74	69	99	99	126	138	9.5
3.16	Landing sites with potable water		1	30	49	62	53	80	43	-46.3
3.17	Landing sites accessible by all-weather roads	137	189	176	171	166	187	201	233	15.9
3.18	Landing sites with net repair facilities	248	332	218	218	145	110	128	95	-25.8
3.19	Landing sites with fishing gear shops					216	209	191	172	-9.9
3.20	Number of landing sites with alcohol joints								459	
3.21	Number of alcohol joints on landing sites								2,220	
3.22	Landing sites with bank facilities								633	
3.23	Landing sites visited by agents					278	257	337	245	-27.3
3.24	Landing sites with boat repair facilities	224	323	235	249	198	202	165	147	-10.9
3.25	Landing sites with engine repair facilities					70	89	90	75	-16.7
4	Services at LSs									
4.1	Number of landing sites attended by fisheries staff	65	54	49	68	53	49	579	404	-30.2
4.2	Number of landing sites served by fisheries staff daily								78	
4.3	Number of landing sites served by fisheries staff weekly								172	
4.4	Number of landing sites served by fisheries staff monthly								142	

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012- 2014
4.5	Number of landing sites served by fisheries staff quarterly								12	
4.6	Number of landing sites with BMUs			466	416	585	437	598	620	3.7
4.7	Number of landing sites with BMU office					62	63	112	99	-11.6
4.8	Fenced landing sites					28	31	56	40	-28.6
4.9	Privately owned LS land					150	197	183	215	17.5
4.10	LSs visited by factory agents					278	257	337	245	-27.3
4.11	Tax collection tendered at the LS					396	416	464	462	-0.4
4.12	Fish movement permit issued at the LS daily					152	156	169	150	-11.2
5	Other Livelihood									
5.1	Farming								519	
5.2	Fish farming								24	
5.3	Tourism								4	
5.4	Fish trade								332	
5.5	General retailing								253	
6	Fishers									
6.1	Number of male fishers								102,979	13.1
6.2	Number of female fishers								462	119.6
6.3	Total number of fishers	55,985	80,053	77,997	98,015	105,019	95,303	101,250	103,441	3.6
7	Fishing crafts									2.0
7.1	Craft types									-18.5
7.1.1	Dugout	694	373	294	268	215	183	221	250	-94.9
7.1.2	Parachute	69	295	294	126	439	246	199	437	-74.7
7.1.3	Sesse flat at one end	2,068	3,856	5,776	6,251	6,938	8,133	9,155	9,468	
7.1.4	Sesse pointed at both ends	12,659	16,552	14,793	18,658	20,569	16,867	17,473	17,826	-0.3
7.1.5	Rafts			1,201	4,216	1,917	1,457	1,383	1,127	2.3
7.1.6	Catamaran				317	127	102	59	3	13.1
7.1.7	Number of Foot fishers				780	1,430	713	960	243	119.6
7.1.8	Other/Unspecified		582	181	0	0	0	0	1	3.6

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012- 2014
	Total No. of fishing crafts including foot fishers and rafts	15,490	21,658	22,539	30,616	31,635	27,701	29,450	29,355	2.0
	Total No. of fishing crafts excluding foot fishers and rafts	15,490	21,658	22,539	29,836	30,205	26,988	28,490	29,112	-18.5
7.2	Mode of Propulsion									
7.2.1	Number of crafts using Outboard engines	1,451	2,610	5,576	6,416	6,943	8,081	8,900	9,416	5.8
7.2.2	Number of crafts using Inboard engine	75	0	0	0	0	0	0	0	
7.2.3	Number of crafts using Paddle	11,623	14,638	14,339	19,954	18,895	15,836	17,071	17,461	2.3
7.2.4	Number of crafts using Sails	2,326	3,909	2,718	3,448	3,962	2,945	2,473	2,249	-9.1
7.2.5	Number of crafts towed					413	75	26	28	7.7
7.3	Transport crafts									
7.3.1	Number of transport crafts (fish)					840	596	518	444	-14.3
7.3.2	Number of transport crafts (other goods)					876	730	752	672	-10.6
7.3.3	Total number of transport crafts	639	1,082	769	1,320	1,716	1,326	1,270	1,116	-12.1
7.4	Damaged crafts/under construction									
7.4.1	Number of derelict crafts	2,812	3,458	5,882	5,540	5,099	4,736	4,563	0	
7.4.2	Repairable damaged fishing crafts								3,419	
7.4.3	Fishing crafts under construction								1,190	
7.5	Fishing craft ownership									
7.5.1	Number of male								7,852	
7.5.2	Number of female								378	
7.5.3	Groups								0	
8	Fishing Gears									
8.1	Gillnets by size									
8.1.1	< 2.5"	7,095	14,563	10,693	11,926	12,399	17,406	32,898	26,141	-20.5
8.1.2	2.5"	3,123	4,614	7,736	6,666	7,772	3,194	8,929	18,410	106.2
8.1.3	3"	2,936	6,159	6,323	10,549	7,135	6,285	13,194	12,115	-8.2
8.1.4	3.5"	2,300	11,305	5,290	8,497	7,859	3,317	9,887	6,671	-32.5

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012- 2014
8.1.5	4"	4,074	29,475	10,184	23,708	16,664	6,166	12,847	8,240	-35.9
8.1.6	4.5"	5,651	30,716	17,150	31,087	35,750	8,475	9,234	9,039	-2.1
	Total No. of gillnets <5"	25,179	96,832	57,376	92,433	87,579	44,843	86,989	80,616	-7.3
8.1.7	5"	82,290	184,943	272,224	207,386	155,674	31,186	31,915	30,546	-4.3
8.1.8	5.5"	27,089	71,347	169,139	64,672	58,313	20,444	22,460	26,180	16.6
8.1.9	6"	59,325	57,274	64,514	31,392	39,718	71,666	144,789	126,096	-12.9
8.1.10	6.5"	8,804	7,834	8,571	6,829	9,566	35,444	28,661	36,636	27.8
8.1.11	7"	15,123	6,343	9,009	9,300	38,448	70,744	21,508	42,632	98.2
8.1.12	7.5"	0	530	358	832	2,138	2,991	1,315	4,781	263.6
8.1.13	8"	1,139	21	1,128	1,422	1,097	2,590	728	5,027	590.5
8.1.14	9"	198	296	909	377	411	728	553	2,134	285.9
8.1.15	10"	477	198	429	529	45	52	99	97	-2.0
8.1.16	> 10"	0	270	42	0	2,858	40	3,100	114	-96.3
	Number of gillnets ≥5"	194,445	329,056	526,323	322,739	308,268	235,885	255,128	274,243	7.5
	Total number of gillnets	219,624	425,888	583,699	415,172	395,847	280,728	342,117	354,859	3.7
8.2	Dagaa fishing gears									
8.2.1	Lift nets	315	130	307	370	164	94	45	35	-22.2
8.2.2	Small seines									
8.2.2.1	Number of Small seines ≤5 mm	3,251	3,874	1,135	856	753	414	116	360	210.3
8.2.2.2	Small seine, 6-9 mm			3,118	3,630	4,229	7,184			
8.2.2.3	Number of Small seines mesh size 10 mm	22	969	121	357	257	236			
8.2.2.4	Number of Small seines mesh size 6 - 7 mm							5,069	6,121	20.8
8.2.2.5	Number of Small seines mesh size 8 - 10 mm							2,834	1,962	-30.8
	Total number of small seines	3,273	4,843	4,374	4,843	5,239	7,834	8,019	8,443	5.3
8.2.3	Scoop nets	809	812	536	994	1,074	590	545	474	-13.0
8.3	Hooks									
8.3.1	Handlines	14,307	39,404	19,186	35,479	29,887	20,400	16,754	15,647	-6.6
8.3.2	Longline hooks									
8.3.2.1	Number of Long Line hooks size < 4				17,626	10,280	5,935	24,956	47,935	92.1
8.3.2.2	Number of Long Line hooks size 4 - 7				106,502	81,936	124,982	104,143	234,362	125.0
8.3.2.3	Number of Long Line hooks size 8				1,732,298	1,771,873	1,910,783	1,683,580	966,292	-42.6

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012- 2014
	- 10									
8.3.2.4	Number of Long Line hooks size> 10				2,278,962	4,137,774	4,160,618	4,547,208	5,830,627	28.2
	Total Long line hooks	2,201,901	4,608,998	3,081,885	4,135,388	6,001,863	6,202,318	6,359,887	7,079,216	11.3
8.4	Other gears									
8.4.1	Beach/Boat seine	999	1,454	1,532	1,675	1,776	1,301	2,079	2,298	10.5
8.4.2	Beach Seines								1,956	
8.4.3	Boat seines								342	
8.4.4	Cast nets	63	135	66	30	43	44	94	165	75.5
8.4.5	Monofilament nets			5,041	261	4,801	2,905	7,944	22,064	177.7
8.4.6	Basket/Traps	1,030	1,030	598	92	604	928	897	837	-6.7
8.4.7	Other/Unspecified	0	46	70	38	0	0	0	0	

ANNEX 4: Comparison of Lake Victoria (Uganda) Fisheries Frame Survey 2000 – 2014 results

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012-2014
1	Landing sites									
1.1	Number of landing sites	597	552	554	481	435	503	555	567	2.2
1.2	Number of landing sites on islands					243	257	290	294	1.4
2	HIV/AIDS services									
2.1	Landing sites with HIV awareness raising					245	340	418	492	17.7
2.2	Landing sites with HIV-VCT services					189	299	415	466	12.3
2.3	Landing site with HIV-ARV services					122	201	294	361	22.8
2.4	Landing sites with services to HIV/AIDS orphans/widows					81	101	91	111	22.0
3	Landing site facilities									
3.1	Landing sites with primary schools					253	321	368	374	1.6
3.2	Landing sites with health clinic					177	232	261	299	14.6
3.3	Landing sites with mobile network					345	417	481	537	11.6
3.4	Landing sites with bandas (Fish shed)	56	33	21	54	68	88	78	66	-15.4
3.5	Landing sites with cold rooms	7	5	4	6	1	0	6	9	50.0
3.6	Landing sites with working cold rooms	7	4	0	5	1	0	6	1	-83.3
3.7	Landing sites with non-working cold rooms	0	1	4	1		0	0	8	
3.8	Landing sites with drying racks					36	59	96	93	-3.1
3.9	Landing sites with smoking kilns					186	197	270	289	7.0
3.10	Landing sites with Fish Stores	78	6	11	18	34	31	49	22	-55.1
3.11	Landing sites with jetties					11	0	22	17	-22.7
3.12	Landing sites with Pontoons					5	0	8	5	-37.5

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012-2014
3.13	Landing sites with Pontoons/Jetties	34	5	7	16	16	21	30	22	-26.7
3.14	Landing sites with electricity supply	16	10	19	17	20	21	30	37	23.3
3.15	Landing sites with public toilets	0	95	41	171	196	198	267	263	-1.5
3.16	Landing sites with potable water	0	21	41	55	88	88	165	139	-15.8
3.17	Landing sites accessible by all-weather roads	138	108	127	172	161	163	218	236	8.3
3.18	Landing sites with net repair facilities	181	23	4	49	64	101	168	136	-19.0
3.19	Landing sites with fishing gear shops							158	208	31.6
3.20	Number of landing sites with alcohol joints								482	
3.21	Number of alcohol joints on landing sites								3,314	
3.22	Landing sites with bank facilities								101	
3.23	Landing sites visited by agents					107	123	135	71	-47.4
3.24	Landing sites with boat repair facilities	221	40	23	141	143	189	306	244	-20.3
3.25	Landing sites with engine repair facilities					66	80	145	127	-12.4
4	Services at LSs									
4.1	Number of landing sites attended by fisheries staff		18		30	54	56	79	570	621.5
4.2	Number of landing sites served by fisheries staff daily								80	
4.3	Number of landing sites served by fisheries staff weekly								237	
4.4	Number of landing sites served by fisheries staff monthly								181	
4.5	Number of landing sites								72	

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012-2014
	served by fisheries staff quarterly									
4.6	Number of landing sites with BMUs					366	400	418		-100.0
4.7	Number of landing sites with BMU office					158	191	325	243	-25.2
4.8	Fenced landing sites					27	29	54	2	-96.3
4.9	Privately owned LS land					219	245	438	272	-37.9
4.10	LSs visited by factory agents					107	123	135	71	-47.4
4.11	Tax collection tendered at the LS					314	409	438	460	5.0
4.12	Fish movement permit issued at the LS daily					298	363	431	439	1.9
5	Other Livelihood									
5.1	Farming								415	
5.2	Fish farming								41	
5.3	Tourism								11	
5.4	Fish trade								376	
5.5	General retailing								324	
6	Fishers									
6.1	Number of male fishers								62,511	
6.2	Number of female fishers								364	
6.3	Total number of fishers	34,889	41,674	37,721	54,148	51,916	56,957	63,921	62,875	-1.6
7	Fishing crafts									
7.1	Craft types									
7.1.1	Dugout	269	164	122	132	163	107	116	149	28.4%
7.1.2	Parachute	5,342	5,580	5,450	5,064	5,189	5,356	4,798	5,252	9.5%
7.1.3	Sesse flat at one end	8,107	10,666	9,067	15,883	14,692	14,922	18,969	18,270	-3.7%
7.1.4	Sesse pointed at both ends	1,797	2,197	1,979	2,816	3,067	2,901	3,598	3,506	-2.6%
7.1.5	Rafts		2	149	82	138	169	92	157	70.7%
7.1.6	Catamaran				0	3	0	18	25	38.9%
7.1.7	Number of Foot fishers				171	194	173	380	99	-73.9%
7.1.8	Other/Unspecified	29	0	8	0	0	0	0	53	
	Total No. of fishing crafts including foot fishers and rafts	15,544	18,609	16,775	24,148	23,446	23,628	27,971	27,511	-1.6%

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012-2014
	Total No. of fishing crafts excluding foot fishers and rafts	15,544	18,609	16,775	23,977	23,252	23,455	27,591	27,412	-0.6%
7.2	Mode of Propulsion									
7.2.1	Number of crafts using Outboard engines	2,031	3,250	3,173	5,047	5,595	6,334	9,351	9,955	6.5
7.2.2	Number of crafts using Inboard engine	0	0	0	0	0	0	0	0	
7.2.3	Number of crafts using Paddle	12,848	14,262	12,506	17,475	16,577	16,389	17,111	17,260	0.9
7.2.4	Number of crafts using Sails	665	1,014	1,096	1,466	1,078	682	1,125	857	-23.8
7.2.5	Number of crafts towed							17	51	200.0
7.3	Transport crafts									
7.3.1	Number of transport crafts (fish)					668	478	730	659	-9.7
7.3.2	Number of transport crafts (other goods)					919	1,040	1,021	1,445	41.5
7.3.3	Total number of transport crafts	910	790	593	966	1,587	1,518	1,751	2,104	20.2
7.4	Damaged crafts/under construction									
7.4.1	Number of derelict crafts	2,777	3,278	3,547	4,549	4,836	4,390	4,944		-100.0
7.4.2	Repairable damaged fishing crafts								1,341	
7.4.3	Fishing crafts under construction								2,671	
7.5	Fishing craft ownership									
7.5.1	Number of male								14,780	
7.5.2	Number of female								1,929	
7.5.3	Groups								0	
8	Fishing Gears									
8.1	Gillnets by size									
8.1.1	< 2.5"	675	1,013	359	809	1,557	2,738	2,614	6,226	138.2
8.1.2	2.5"	321	345	263	601	1,215	2,173	2,781	2,434	-12.5
8.1.3	3"	3,014	3,090	4,022	6,032	7,309	9,538	10,793	9,473	-12.2
8.1.4	3.5"	9,646	8,168	7,304	12,841	14,652	14,434	9,980	8,414	-15.7
8.1.5	4"	20,366	16,244	15,059	25,442	23,784	16,524	12,605	9,779	-22.4
8.1.6	4.5"	20,432	23,986	29,239	46,015	28,391	21,125	20,812	17,382	-16.5
	Total No. of gillnets <5"	54,454	52,846	56,246	91,740	76,908	66,532	59,585	53,7083	-9.9

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012-2014
8.1.7	5"	51,479	9,298	81,283	120,664	64,947	45,933	52,729	45,617	-13.5
8.1.8	5.5"	16,294	23,448	30,189	69,506	55,736	35,448	82,701	59,678	-27.8
8.1.9	6"	95,302	158,128	189,619	178,673	130,316	113,443	174,328	177,264	1.7
8.1.10	6.5"	8,067	14,759	16,308	52,991	21,777	48,907	64,285	53,304	-17.1
8.1.11	7"	54,459	68,069	51,578	45,854	28,221	36,904	28,756	26,147	-9.1
8.1.12	7.5"	1,398	1,285	2,093	5,256	4,102	2,938	4,392	1,6617	-62.2
8.1.13	8"	8,100	11,725	13,898	13,816	14,655	19,137	10,009	17,271	72.6
8.1.14	9"	1,776	1,729	12,763	9,242	6,069	2,705	1,699	2,692	58.4
8.1.15	10"	5,709	4,011	3,600	905	1,275	692	1,986	1,059	-46.7
8.1.16	> 10"	625	1,190	1,020	1,130	0	945	2,270	156	-93.1
	Number of gillnets ≥5"	243,209	293,642	402,351	498,037	327,098	307,052	423,155	384,849	-9.1
	Total number of gillnets	297,663	346,488	458,597	589,777	404,006	373,584	482,740	438,557	-9.2
8.2	Dagaa fishing gears									
8.2.1	Lift nets	0	3	2	0	3	0	114	37	-67.5
8.2.2	Small seines									
8.2.2.1	Number of Small seines ≤5 mm			867	1,467	1,785	2,200	3,107	5,631	81.2
8.2.2.2	Small seine, 6-9 mm			273	108	361	436		366	
8.2.2.3	Number of Small seines mesh size 10 mm			39	33	188	63		230	
8.2.2.4	Number of Small seines mesh size 6 - 7 mm							497	433	-12.9
8.2.2.5	Number of Small seines mesh size 8 - 10 mm							222	236	6.3
	Total number of small seines	1,276	856	1,179	1,608	2,337	2,699	3,826	6,227	62.8
8.2.3	Scoop nets		555	292	590	752	302	893	302	-66.2
8.3	Hooks									
8.3.1	Handlines	4,585	6,547	8,335	15,805	19,629	17,071	27,780	27,004	-2.8
8.3.2	Longline hooks									
8.3.2.1	Number of Long Line hooks size < 4				11,067	13,237	21,802	72,027	29,507	-59.0
8.3.2.2	Number of Long Line hooks size 4 - 7				187,985	154,570	128,142	196,319	83,990	-57.2
8.3.2.3	Number of Long Line hooks size 8 - 10				1,481,996	1,489,651	1,239,604	1,257,464	736,996	-41.4
8.3.2.4	Number of Long Line hooks size > 10				604,561	1,106,341	1,169,807	2,892,575	3,737,273	29.2
	Total Long line hooks	254,453	926,959	968,848	2,285,609	2,763,799	2,559,355	4,418,385	4,587,766	3.9

	Description	2000	2002	2004	2006	2008	2010	2012	2014	% Change 2012-2014
8.4	Other gears									
8.4.1	Beach/Boat seine	811	880	954	1,425	1,649	1,451	1,233	1,819	47.5
8.4.2	Beach Seines								649	
8.4.3	Boat seines								1,170	
8.4.4	Cast nets	1,276	858	659	631	1,000	1,095	1,372	1,359	-0.9
8.4.5	Monofilament nets			845	1,563	11,203	12,115	15,148	21,793	43.9
8.4.6	Basket/Traps	11,349	5,781	5,361	499	7,615	10,331	7,082	9,000	27.1
8.4.7	Other/Unspecified	71	266	141	50		22	0	0	