LAKE VICTORIA FISHERIES ORGANIZATION

OF THE EAST AFRICAN COMMUNITY

IMPLEMENTATION OF A FISHERIES MANAGEMENT PLAN (IFMP) PROJECT FOR LAKE VICTORIA

EDF PROJECT NO. 8 ACP ROR 029

REGIONAL SYNTHESIS OF THE SOCIO-ECONOMIC BASELINE SURVEY OF THE FISHING COMMUNITIES OF LAKE VICTORIA

DRAFT

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EXECUTIVE SUMMARY

Lake Victoria Fisheries Organization carried out a large socio-economic survey within the fisheries communities of Lake Victoria in 2005 to generate baseline socio-economic data on livelihoods, access to financial services, access to information and about the scale of business operation. The survey was carried out in the three Partner States – Kenya, Tanzania and Uganda - at a total of 97 landing sites, with 4028 respondents, of whom 25% were boat owners, 25% boat crew, 38% traders and processors and 12% from the 'others' category. Overall, 75% of the respondents were male, reflecting the occupational categories interviewed and the fact that most of the respondents were heads of households.

Something on social facilities

Table 1 gives a summary of key indicators from the survey. The results show that respondents are more likely to have completed primary level education in Tanzania, followed by Kenya then Uganda. This may reflect the year of introduction of Universal Primary Education (UPE) in each Partner State, with Tanzania being the first country of the three to introduce it.

Many of the respondents own land, which is primarily used for growing food crops. Few respondents have a bank account, but the level of access to, and membership of, savings schemes is much higher in Kenya than in Uganda and Tanzania. More people also indicated interest in savings schemes in Kenya, perhaps reflecting greater awareness about savings and credit. Most of the savings schemes that do exist are operated by the communities themselves.

The main source of household income at the beaches come from fisheries, as expected, with fisheries on average contributing the main source of household income for 87% of respondents. The priority area of expenditure is food, followed by education and clothing. Leisure activities received a low ranking in order of priority for how fisheries-related income is used.

A high percentage of respondents drink water from the lake, but no information was collected on whether the water is boiled or purifying tablets used. However, with half the population dependent on lake water for drinking, this is a worrying figure, although no information was collection on whether or not the water is treated or boiled before consumption.

Most people get enough to eat, at least most of the time, and fish is the most common sauce eaten around the lake (85% of respondents). Most of the respondents in Kenya and Tanzania eat Nile perch most often, followed closely by tilapia, although they prefer tilapia. In Uganda, however, most people each tilapia most often and prefer tilapia. Tilapia is clearly the preferred fish of the fishing communities. The main reasons given for the consumption and preference for tilapia are that the fish is easily available and because of its taste.

Most people around the lake have access to a radio, with 76% of respondents on average listening to the radio most days or every day of the week. Early evening is the

most common time to listen to the radio, making it a good time to reach the fishing communities with fisheries-related messages. Information was also gathered on the most listened-to radio stations, which is critical for selecting radio stations for fisheries-related spot messages and programmes. Very few people watch TV or read newspapers, and people prefer to receive information via the radio or barazas (open meetings), rather than in printed form.

Many of the respondents reported that there is a Fisheries Officer stationed at the landing site (78% of respondents) and, for those without a Fisheries Officer, most reported that fisheries staff visit at least every week (34%) or month (32%). Many people reported receiving fisheries related information, particularly regarding fisheries laws and regulations, fishing gears and methods, size of fish to be harvested and about sanitation.

The most common boats used are sesse-pointed in Tanzania and Kenya, and sesse-flat in Uganda, with most boats being propelled with paddles in Uganda and Tanzania, and by sails in Kenya. Most boat owners and crew reported targeting Nile perch, followed by dagaa in Kenya and Tanzania, and tilapia in Uganda. The target species varies little during the year, indicating that people stay with targeting a certain species, reflecting the different skills, knowledge and gears needed. The most common gears used are gillnets and long lines/hook and lines. Boats tend to stay at a certain landing, with little movement between beaches.

Most boat owners select crew according to their skill and trustworthiness. It was found that most crew have worked in that occupation for between 1 to 5 years, and have worked for around a year on the boat they were working on at present. Most are paid by a percentage of the income from the catch, which is shared equally between crew members after costs are deducted. Most crew worked on one beach in the past year, although around a half worked on two or more beaches.

Information was also collected on processing and trading fish, most of which traded fresh and, if processed, has been smoked or sun-dried, with just some fried or salted. Most of the dagaa processors dry dagaa on nets in Kenya, but on sand, rocks or soil in Tanzania and Uganda. Most of the fish is sold within the village, mostly to other traders, though much is sold over 50km from the beach. There were no clear trading seasons, reflecting perhaps more frequent slight variations around the lake and perhaps for different species.

The information generated from the survey will be used for further monitoring, to inform the design of interventions, such as for information dissemination, and to provide a better understanding of the fisheries communities.

Table 1 Summary of key indicators

Indicator	Kenya	Tanzania	Uganda	Overall
Percentage of respondents with no education	8%	8%	13%	10%
Percentage of respondents who failed to complete primary education	32%	10%	43%	28%
Percentage of respondents who completed at least primary	60%	82%	44%	62%
Percentage of respondents owning land	79%	56%	61%	65%
Percentage of respondents with a bank account	11%	10%	10%	10%
Percentage of respondents belonging to a savings scheme	58%	14%	13%	28%
Percentage of savings schemes run by the people themselves	78%	82%	72%	77%
Fisheries related livelihoods (boat owning, crew, trading/ processing, net and boat making/repairing)	89%	81%	86%	85%
Percentage of respondents using the lake for drinking water	57%	45%	49%	50%
Percentage of respondents with a latrine at home	69%	84%	60%	71%
Percentage of respondents who get enough to eat most or all of the time	73%	83%	79%	78%
Percentage for whom fish is the most common sauce eaten	83%	90%	81%	85%
Type of fish most often eaten				
Tilapia	32%	38%	74%	48%
Nile Perch	40%	47%	20%	36%
Most preferred fish				
Tilapia	57%	49%	71%	62%
Nile Perch	26%	33%	20%	27%

Average number of days a week fish is eaten	4	5	4	4
Percentage of respondents who own a radio	83%	80%	73%	79%
Percentage of sites reported to have a Fisheries Officer stationed	78%	62%	79%	73%
Average percentage of respondents who have received information on fisheries laws and regulations, fishing gears and methods and size of fish to be harvested	93%	81%	80%	85%
Member of BMU	50%	8%	28%	29%
Percentage of boat crew working as a crew for five years or less	60%	57%	70%	62%
Average number of boats worked on in a year by boat crew	4	3	4	4
Average number of beaches worked on by boat crew in a year	2	3	2	2

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1. INTRODUCTION AND METHODOLOGY

1.1 Introduction

The Lake Victoria Fisheries Organization (LVFO) coordinates fisheries policy, management and research around the lake. In 2002, LVFO was awarded funding from the European Union to support the implementation of a Fisheries Management Plan, through a project known as the Implementation of a Fisheries Management Plan (IFMP). The overall development objective of IFMP is "to contribute to the sustainable economic growth, resource use and development in the Lake Victoria Basin". Socio-economic studies are being conducted within the IFMP to monitor impacts and benefits of implementation, to generate information and understanding of the fishing communities in a range of areas, and to support activities such as fish processing and marketing. The generation of socio-economic baseline data is the first stage in the development and implementation of a socio-economic monitoring system for the IFMP.

Baseline information on the socio-economic status of the primary fishery stakeholders (fishers, boat owners, artisanal processors and traders) is essential for any later evaluation of the change in their status over time. While much information has already been collected around Lake Victoria, the lack of consistency in study designs and the issues covered, together with variations in timing, make it highly probable that this will not provide a sufficiently consistent starting point for later evaluations.

The collection of household baseline data provides a valuable resource for future *ad hoc* surveys or research on the Lake, providing initial estimates of important parameters. Of particular value will be a clearer understanding of the demographic profile of households/fishers and their residency status at landing sites and the types of fishing activities undertaken by fishers during the year.

1.2 Background

Socio-economic research on Lake Victoria has attracted increasing interest in the past decade. To strengthen research effort by different partners, the LVFO produced the "Technical Report on Lake Victoria Wider Socio-Economic program" (LVEMP, 1998). The document defined the scope of socio-economic research and suggested a number of relevant studies that may be implemented to achieve the development goals for the fishery. Prior to IFMP, a significant number of those studies were carried out, and these are outlined in the "Report on the status of socio-economic research and monitoring on Lake Victoria" (Medard, Odongkara and Abila, 2004).

In the past six years some 'baseline' socio-economic information on Lake Victoria fisheries has been generated mainly through studies and frame surveys. The Lake Victoria Research Project Phase II conducted a survey of Lake Victoria's fishers (SEDAWOG, 1999) and a marketing study (SEDAWOG, 1999), which produced a wealth of socio-economic information on the characteristics of the people involved in fishing, fish processing and marketing, as well as the profiles of the fish production and marketing systems. Frame surveys, though primarily aimed at providing information to assess the level of effort in the fish production sector, also generate some socio-economic information. Such surveys have been conducted every two years since 2000 (LVFO, 2004).

1.3 Objectives

The objectives of the survey were to provide a deeper understanding of the broad socio-economic characteristics and well-being of the different stakeholder groups immediately dependent on the lake fisheries and the facilities available to them. This provides a solid basis for further studies and for any interim or final evaluations of impact.

The specific objectives were to:

1. Generate beach level information that would extend that already gathered from previous and on-going studies, particularly the Fisheries Frame Survey. Information on the following parameters was collected at each beach surveyed:

   (a) Fishing related facilities available
   (b) Proximity to nearest market
   (c) Quality and seasonal reliability of road connections
   (d) Information on fish prices of major species
   (e) Closest social facilities available (schools, health clinics)

2. Provide household information on the different categories of stakeholders dependent on the lake fisheries on the following parameters:

   (a) Demographic, social and educational status
   (b) Residency status
   (c) Housing characteristics
   (d) Assets owned (land, fishing gears etc.) and their location
   (e) Fishing activities undertaken through the year
   (f) Returns to fishing activities (share of catch and income)
   (g) Returns to fish trading/processing
   (h) Non-fishing activities
   (i) Health status
   (j) Well-being indicators

1.4 Methodology

1.4.1 Survey design

The socio-economic baseline survey design comprised of two levels of interviews;

1. Survey of key informants (e.g. beach leaders) to provide information on landing beach characteristics. The questionnaire for the beach-level information is given in Annex 1.
2. Survey of fisher community (boat owners, crew, traders and processors) to provide information on their socio-economic characteristics. The questionnaire used to generate socio-economic information on the stakeholders is provided in Annex 2. The household questionnaire has four sections, covering demographic, occupational, educational and residential status, a section for boat owners (and those who hire boats) only, a section for boat crew only and the last section for fish traders and processors.

Quantitative questionnaires were used to collect the data through structured interviews, in which the same sets of questions are asked to all potential respondents, requiring them to provide answers within a limited set of possibilities. Structured interviews are particularly useful in surveys requiring responses from a large sample, and where validity and reliability of results are sought. The interview format does not allow respondents to expand on their replies, nor can the interviewer deviate to probe the responses. In this study the use of quantitative questionnaires was important as comparative information was required from a large number of fishers concerning several variables defining their socio-economic status.

1.4.2 Study coverage

The survey was conducted in the three Partner States (Kenya, Tanzania and Uganda) between October and December 2005. Beaches were selected following the definition of beach types according to the principal target species, based on the 2004 Frame Survey data. The types of fishery were identified as Nile-perch (NP), tilapia, dagaa and mixed. Nile perch beaches were further sub-divided into those where outboard engines dominate (NP-O) and those where manual propulsion is dominant, using paddles and sails (NP-M).

Table 1.1 Number and type of beaches sampled

Country	Districts covered	Number of beaches	NP-O	NP-M	Tilapia	Dagaa	Mixed
Kenya	8	30	3	6	5	2	14
Tanzania	10	34	3	12	2	3	14
Uganda	10	34	5	11	10	3	5
TOTAL	**28**	**98**	**11**	**29**	**17**	**8**	**33**

Tables setting out the names of the beaches included in the study and the main fishery at each beach can be found in Annex 3.

1.4.3 Sampling of respondents

Interviews with members of the fishing communities were conducted with respondents from four primary stakeholder groups at each selected beach:

a) boat owners (including managers and renters)
b) crew members (fishing labourers/barias who do not own boats)
c) post-harvest dealers (traders and artisanal processors)
d) others

The target sample for each landing was 40, comprising of 10 boat owners, 10 fishing crew, 10 fish traders and 10 fish processors. The target was not reached at some of the smaller beaches, but was surpassed at some of the bigger beaches. Table 1.2 indicates how many per category were interviewed in each country. In total, 25% of respondents were boat owners, 25% boat crew, 12% from the other category and 38% traders and processors.

Table 1.2 Number of each stakeholder group interviewed

Country	Boat owner	Boat crew	Others	Traders and Processors	Total
Kenya	310	314	-	620	**1244**
Tanzania	333	329	305	582	**1549**
Uganda	356	350	185	344	**1235**
TOTAL	**999**	**993**	**490**	**1546**	**4028**

Table 1.3 Sex of the respondent

Sex	Kenya	Tanzania	Uganda
Male	56	82	86
Female	44	18	14

Far more women were interviewed in Kenya than in Tanzania and Uganda, which is due to more traders and processors being interviewed in Kenya, rather than stakeholders from the 'other' category. 97% of the processors or traders interviewed in Kenya were women. The difference in gender is relevant in interpreting some of the survey results. In Uganda, 44% of the fish processors and traders were women and in Tanzania this figure was 40%.

In Kenya 69% of the respondents reported being the head of the household and 26% as the spouse, compared to 74% in Tanzania and 83% in Uganda reporting to be the head of household.

To promote randomness in the sampling of respondents, one or more of the following methods was used:

i) Selecting boat owners as the boats landed
ii) Selecting crew as the boats landed
iii) Where there was an updated beach register, random sampling was based on the register
iv) Locating traders and processors and selecting them on the basis of the location of their trading/ processing sites

Other steps were taken to avoid bias. This included using frame survey data to ensure fair representation of the main groups. It was important that, due to timing, there was no bias towards fishers of the "wrong type". Thus, if the beach type was Dagaa dominant, it was critical that Dagaa crew and boat owners were adequately represented. For other groups (different types of processors/traders), the Team Leader needed to develop a crude sample frame based on key informant interviews. Team Members had a target for the main crew/boat-owner types and, once she/he had assessed the distribution of processor/trader types, kept track of who had been interviewed to ensure that no group was systematically ignored.

1.4.4 Data processing and analysis

Data were entered at national level in SPSS using regionally agreed set of variable codes. Most of the variables in questionnaire were already pre-coded, making it easy to process and enter data. Once completed, analysis and reporting was done at national level and the results synthesised into this regional report.

2. FINDINGS FROM BEACH LEVEL QUESTIONNAIRE

2.1 Introduction

Much of the information collected under the beach level questionnaire was used in the generation of a sampling frame for carrying out the survey. This chapter of the report therefore covers only the sections of beach questionnaire of broader interest, namely the seasonal prices of fish and the accessibility of social facilities.

2.2 Seasonal Prices of fish

Information was collected on seasonal prices of fish, but it was observed that there is little change in price during the high and low seasons. Tables 2.1 to 2.3 set out the average prices of Nile perch, tilapia and dagaa.

Table 2.1 Average price Nile perch per kg

Form	Kenya		Tanzania		Uganda	
	KES	US$[1]	TZS	US$[2]	UGX	US$[3]
Fresh	88.56	1.25	1044	0.80	1454	0.81
Smoked	-	-	525	0.40	2500	1.39
Salted	-	-	733	0.56	700	0.39
Sun-dried	-	-	580	0.45	-	

Table 2.1 suggests that the average price of Nile perch per kg is higher in Kenya than Tanzania and Uganda.

Table 2.2 Average price of Tilapia per whole fish

Form	Kenya		Tanzania		Uganda	
	KES	US$	TZS	US$	UGX	US$
Fresh	60.71 per kg	0.86	554	0.43	908	0.50
Smoked	-	-	700	0.54	1286	0.71
Sun-dried	-	-	-	-	1700	0.94
Fried	-	-	300	0.23	933	0.52

Very little tilapia is sun-dried in Tanzania, so no price is given for this type of product. The prices are difficult to compare as the price given in Kenya is per kg, whereas in Tanzania and Uganda, tilapia is generally sold as whole fish, with variation between sizes of fish.

[1] Exchange rate used US$1:71 KES
[2] Exchange rate used US$1:1300 TZS
[3] Exchange rate used US$1:1800 TZS

Table 2.3 Average price of Dagaa per bag

Form	Kenya		Tanzania		Uganda	
	KES	US$	TZS	US$	UGX	US$
Fresh	17.38 per kg	0.24	9880	7.6	4000 USh per basin 315 USh per kg	2.22 0.175
Sun-dried	24.56 per kg	0.35	250 per kg	0.19	1600 per tin 533 per kg	0.89 0.30

The measurements for selling dagaa vary tremendously, with bags, basins and kgs, with no consistency of sizes of bags and basins. However, Table 2.3 does confirm that sun-dried dagaa fetches a better price than fresh dagaa.

2.3 Social facilities

The beach level questionnaire collected information on the ownership, location and functionality of the following facilities: dispensary, clinic, nearest primary school, nearest secondary school and community hall. Good access to these facilities is essential for people to provide a good level of education to their children, to access health care and information, and to be able to come together for meetings and social events.

Table 2.1 Dispensary

Ownership, location and functioning of dispensary	Kenya	Tanzania	Uganda
Ownership:			
Government	81	68	85
Voluntary Agency	9.5	12	4
Private for profit	9.5	20	11
Location:			
Within this village	38	56	30
Another village nearby	28	4	22
This Location/Ward/SC	29	28	41
This District	5	12	7
Frequency of operating:			
Always	81	-	96.5
Never	19	-	3.5

There is fairly good coverage of dispensaries, with many in the village sampled, mostly run by government. Table 2.2 shows the operations and accessibility of clinics, and shows that there is good coverage within the villages, with most run by government in Tanzania, many run by government in Kenya, but most in Kenya and in Uganda are run by the private sector.

Table 2.2 Clinics

Ownership, location and functioning of clinic	Kenya	Tanzania	Uganda
Ownership:			
Government	33	88	0
Voluntary Agency	11	6	4
Private for profit	56	6	96
Location:			
Within this village	55	47	67
Another village nearby	28	0	21
This Location/Ward/SC	11	33	8
This District	6	20	4
Frequency of operating:			
Always	83	87	92.3
Never	6	13	7.7
Sometimes	11	-	-

As expected, the hospitals in general are away from the landing beaches, with the vast majority operated by government.

Table 2.3 Hospital

Ownership, location and functioning of hospital	Kenya	Tanzania	Uganda
Ownership:			
Government	95.5	100	84
Voluntary Agency	0	0	16
Private for profit	4.5	0	0
Location:			
Within this village	4	37.5	9.5
Another village nearby	27	0	4.8
This Location/Ward/SC	23	0	23.8
This District	46	62.5	61.9
Frequency of operating:			
Always	73	100	100
Never	27	0	0

Most primary schools are also run by government and most villages associated with the landing beach have a school, or at least there is on in a village nearby.

Table 2.4 Primary schools

Ownership, location and functioning of primary schools	Kenya	Tanzania	Uganda
Ownership:			
Government	93	100	78
Voluntary Agency	3.5	0	7
Private for profit	3.5	0	15
Location:			
Within this village	79	82	58.6

Another village nearby	7	7	27.6
This Location/Ward/SC	14	11	13.8
This District	0	0	0
Frequency of operating:			
Always	100	97	100
Never	0	3	0

Many secondary schools are also operated by government, though in Uganda, many are operated by the private sector. Whilst many villages do have secondary schools, fewer do than those that have primary schools, with many located in other villages or in other locations/wards/sub-counties.

Table 2.5 Secondary schools

Ownership, location and functioning of secondary schools	Kenya	Tanzania	Uganda
Ownership:			
Government	84	91	52
Voluntary Agency	8	0	4
Private for profit	8	9	44
Location:			
Within this village	34.5	31	22
Another village nearby	34.5	0	26
This Location/Ward/SC	27	54	39
This District	4	15	13
Frequency of operating:			
Always	96	86	95.8
Never	4	14	4.2

Many of the villages in Kenya and Tanzania have community halls, with less in Uganda. In Kenya, the majority are privately owned, whilst in Tanzania and Uganda they are owned by government.

Table 2.6 Community halls

Ownership, location and functioning of community halls	Kenya	Tanzania	Uganda
Ownership:			
Government	-	71	68.4
Voluntary Agency	14	0	5.3
Private for profit	86	29	26.3
Location:			
Within this village	62.5	64	11
Another village nearby	12.5	0	21
This Location/Ward/SC	25	9	42
This District	0	27	26
Frequency of operating:			
Always	54	92	95
Never	38	8	5
Sometimes	8		

3. FINDINGS FROM SECTION 1 OF THE HOUSEHOLD QUESTIONNAIRE: DEMOGRAPHIC, OCCUPATIONAL, EDUCATIONAL AND RESIDENTIAL STATUS

3.1 Introduction

The first section of the questionnaire provides information on the respondents' background, household sources of income, assets, food consumption, sources of information and types of expenditure.

3.2 Demographic, occupational, educational and residential status

The first part of this section recorded information on the ethnicity of the respondent, where they were born and their main income-generating activity. It went on to record the marital status of the respondent, the size of households and level of education.

The biggest ethnic group within Kenya is the Luo group, with 86% reporting they are Luo. The following groups are Luhya (7%) and Suba (6%). In Tanzania, the fishery is much more diverse, reflecting the larger area of the lake. The largest ethnic groups represented are Sukuma (26%), Jita (16.5%) and Haya (16.7%), followed by Kerewe (8.8%) and Luo (7.3%). In Uganda, the Baganda are the largest ethnic group (40%), followed by Basoga (15%), Samia (13%) and a mixture of other ethnic groups (32%).

Table 3.1 shows that most of the respondents were born in a district other than where they were interviewed, with the highest figure in Uganda. 26% of the Kenyan respondents reported being born within the village in which they were interviewed, compared with 17% in Tanzania and 9% in Uganda.

Table 3.1 Where the respondents were born

Where born?	Kenya	Tanzania	Uganda
Within this village	26	17	9
Another village nearby	8	6	3
This location/ward/ sub-county	2	4	3
This district	19	19	20
Other district	43	46	62
Other country	2	8	3

Table 3.2 records the activities reported to be most important to the respondent, reflecting the occupational status of the respondents.

Table 3.2 Most important activities of respondent

Activity	Kenya	Tanzania	Uganda
Owns/rents boat	25	21	29
Crew member	25	22	28
Trades or processes fish	50	37	28
Other fisheries	-	20	15

The vast majority of respondents reported to be married but no marital history was recorded, so it is not known whether this is their first marriage or not. Kenya reported a higher proportion of widow/widowers, most of which are women, as is the case in Uganda. More men than women reported to be single.

Table 3.3 Marital status of the respondent (%)

Marital Status	Kenya	Tanzania	Uganda
Single: total	8	16	21
Male	14	17	23
Female	2	14	8
Married: total	75	78	72
Male	84	80	73
Female	63	64	67
Separated: total	2	4	5
Male	1	2	3
Female	2	15	14
Widow/er: total	15	2	2
Male	1	1	1
Female	33	7	11

The highest percentages of single people were found amongst the boat crew and others categories in Uganda.

Table 3.4 Age of respondent

Age	Kenya	Tanzania	Uganda
18 years and below	0.3	1.9	3
19 – 29 years	14.3	35.4	45
30 – 39 years	26.0	38.7	33
40 – 49 years	32.5	16.5	14
50 and above	26.9	7.5	5

In Uganda, analysis revealed that crew members are collectively the youngest, with 61% being between 19 and 29 years of age, compared to 35% of boat owners, most of whom were within the age range 30 to 39 years (42%).

Table 3.5 summarises the results regarding the level of education achieved by the respondents. 56% of respondents in Uganda had no education or had not completed primary, compared to 40% in Kenya and 18% in Tanzania. This compares to 44% completing primary or higher in Uganda, 81% in Tanzania and 59% in Kenya.

Table 3.5 Education level of respondent

Education level of respondent	Kenya	Tanzania	Uganda
No education	8	8	13
Incomplete primary	32	10	43
Complete primary	46	74	19
Incomplete secondary	13	2	20
Complete secondary	0	5	4
Higher	1	1	1

Table 3.6 takes the analysis further and looks at the level of education achieved by occupation in the three countries. Although a large percentage of boat crew completed primary education in Tanzania, the trend is generally that the boat crew have a lower level of education than boat owners and fish processors/traders.

Table 3.6 Level of education by occupation

Education level of respondent	Boat owner	Crew member	Fish processor/trader	Other
No education				
Kenya	4.2	1.3	14.2	-
Tanzania	4	8	9	10
Uganda	9.5	16	14	16
Incomplete primary				
Kenya	23.9	33.1	35	-
Tanzania	9	9	9	14
Uganda	43	51	36	40
Complete primary				
Kenya	43.2	47.5	36.8	-
Tanzania	77	79	71	69
Uganda	20	15	23	16
Incomplete secondary				
Kenya	16.5	14.6	9.7	-
Tanzania	1	1	3	3
Uganda	22	15	22	22
Complete secondary				
Kenya	10.9	3.5	3.7	-
Tanzania	7	3	7	4
Uganda	4	2	4	3
Higher education				
Kenya	1.3	0	0.6	-
Tanzania	2	0	1	0
Uganda	1.5	1	1	3

Most of the respondents have children, most of which are in primary schools, reflecting the age of the respondents, and the fact that more children drop out of school as they get older.

3.3 Owning assets and expenditure

3.3.1 Housing

Almost all the respondents owned some type of house. 77% of respondents in Uganda reported to own a house, compared to 78 in Tanzania. Most home owners own one house (62% in Uganda, 57% in Kenya and 56% in Tanzania), many of which are semi-permanent or temporary, as shown in Table 3.7.

Table 3.7 Type of houses owned

Type of house owned	Kenya	Tanzania	Uganda
Temporary	36	47	35
Semi-permanent	56	28	39
Permanent	8	25	26

Most of the houses are in the village in which the respondent was being interviewed, though a large percentage of all types of houses (26%) in Uganda are located in other districts.

3.3.2 Land ownership and use

78% of respondents in Kenya reported that they own land, compared to 56% in Tanzania and 61% in Uganda. Respondents were asked to rank the use of their land. Table 3.8 shows the first use to which they put land, the majority of which is used for food crops.

Table 3.8 First priority use of land

Land use	Kenya	Tanzania	Uganda
Cash crops	9.7	18.44	13
Food crops	76.36	78.8	70
Livestock grazing	5.8	1.44	3
Used by others	1.4	1.15	2
Not used	6.7	0.15	12

Very few people own a pond, with almost no respondents farming fish.

3.3.3 Livestock

Chickens and ducks are the most common livestock owned due to the lack of access to grazing land and the focus on fisheries activities.

Table 3.9 Ownership of livestock

Livestock owned	Kenya	Tanzania	Uganda
Cattle	53.9	21.9	25
Goats and sheep	62.5	35.6	34.7
Chicken and ducks	79.9	56.7	50
Pigs	1.9	1.4	13.4
Donkeys	5.7	0.5	0.5

3.3.4 Other assets

Respondents were asked how many bicycles, motorcycles and vehicles they own. Access to transport is an important factor in accessing markets, work and other facilities, such as healthcare. As shown in Table 3.10, almost half the respondents own a bicycle, while very few own either a motorcycle or a vehicle.

Table 3.10 Ownership of other assets

Other assets	Kenya	Tanzania	Uganda
Own a bicycle	44.9	43.6	42
Motorcycle	0.7	2.6	3.5
Vehicle	1.1	1.2	1.4

Table 3.11 shows a different type of asset, what the respondents sleep on. Most of the respondents sleep on a bed plus mattress, though with more people in Uganda sleeping on a mattress alone or a papyrus mat, than in Kenya and Tanzania.

Table 3.11 What the respondents sleep on

What do you sleep on at home?	Kenya	Tanzania	Uganda
Papyrus mat	9	10	12
Mattress alone	8	11	19
Bed plus mattress	82	77	68
Other	1	2	1

Most of the respondents use firewood or charcoal as the fuel for cooking, indicating pressure on the supply of wood, particularly amongst island communities.

Table 3.12 Fuel for cooking

Fuel for cooking	Kenya	Tanzania	Uganda
Firewood	68	64	58
Charcoal	30	34	34
Paraffin	1	1	1
Electricity/other	1	1	7

3.3.5 Financial assets

This section sets out the results of questions about access to bank accounts and saving schemes. The percentage of respondents with a bank account in the three countries was very similar, but the percentage reporting the bank to be within the village was much higher in Kenya, probably due to the presence of 'beach banks', rather than commercial banks. Far more people reported access to savings schemes in Kenya than in Uganda and Tanzania, with a much higher percentage belonging to the scheme, perhaps reflecting the higher percentage of women interviewed as well as the accessibility of savings schemes.

Table 3.13 Access to bank accounts and saving schemes

Question	Kenya	Tanzania	Uganda
Have bank account	11	10	10
Location of bank			
• Within village	27	2	8
• Another village nearby	18	2	15
• This location/ward/sub-county	1	5	1
• This district	24	39	28
• Other district	29	50	47

• Other country	1	2	1
Access to a savings scheme	65	21	17
Belong to a savings scheme	58	14	13
Would use savings scheme	89	54	56

The higher percentage of respondents in Kenya reporting that they would use a savings scheme if it were available reflects higher awareness of the benefits of such schemes, perhaps due in part to the greater accessibility. Of those savings schemes that do exist, most of the schemes are run by the local people themselves, indicating that training and support could extend the prevalence and uptake of such schemes, though the effectiveness of such schemes should be evaluated.

Table 3.14 Who runs the savings schemes?

Type of savings schemes	Kenya	Tanzania	Uganda
Run by local people for themselves	78	82	72
NGOs	18	9	15
Other financing institutions	4	9	13

3.3.6 Main livelihood activities

The respondents were asked to rank the main sources of household income. The majority of respondents ranked income from boats and gears, employment and trading and processing as their main sources of income, as shown in Table 3.15. The highest rank of trading and processing fish as the main source of income in Kenya reflects the higher percentage of respondents who are fish traders or processors.

Table 3.15 First ranked income-generating activity

Activities	Kenya	Tanzania	Uganda
Fishing income from boats and gear owned	22.8	25.9	27.9
Fishing employment (wages and salaries)	22.4	17.9	28.4
Fish trading and processing	42.7	29.5	24.5
Net making and repairing	0.6	4.9	0.6
Boat building and repairing	0.1	2.8	4.9
Non-fishing employment	0.3	0.2	4.5
Trading in other food commodities	0.8	1	0.3
Trading in non-food items	0.4	0.3	0.2
Farming (crops and horticulture)	6.7	11.1	4.3
Livestock farming	2.3	0.7	0.6
Remittances or transfer payments	0.1	0.2	0.2
Rental income	0.1	0.1	0.1
Other incomes	0.7	5.4	3.5

3.3.7 Expenditure

Respondents were asked to rank how they use their income from the fishery. Table 3.16 shows the first three prioritised ranked areas of expenditure, showing percentage of respondents ranking the item as their first, second or third priority. Buying food is clearly the first priority in all countries, followed by education and clothing, although the percentage ranking education as first priority is greater in Uganda than the other Partner

States. Health care becomes more important as a third and fourth area of expenditure, followed by shelter, although the percentages ranking health care as the first or second priority are higher in Uganda. Whilst fishing communities, particularly boat crew, are often accused of spending their income largely on leisure, the results in Table 3.16 question this assumption, with leisure well down the list of priorities.

Table 3.16 First, second and third ranked expenditure

Item	Kenya	Tanzania	Uganda
Food			
1	72.3	75	42.6
2	19.1	13	27
3	4.7	16	14.4
Education			
1	13.4	7	26.7
2	26.6	16	15.6
3	14.3	14	11.5
Clothing			
1	2.4	4	4.1
2	29.2	40	21.8
3	33.9	24	32.7
Health Care			
1	3.5	2	11.6
2	10.7	15	21.2
3	28.1	29	23
Shelter			
1	2.2	3	3.1
2	5.9	6	4.4
3	7.7	9	8
Bank			
1	0.9	1	0.6
2	1.3	1	0.4
3	1.6	2	0.4
Investment			
1	3.4	5	6
2	4.8	4	3.6
3	5.9	3	3.6
Leisure			
1	0.9	1	1.5
2	0.7	1	2.1
3	1.0	3	3.2
Other			
1	1	2	3.8
2	1.7	2	3.9
3	2.8	3	3.2

3.4 Health, water and sanitation

Respondents were asked how many members of their household suffered from the diseases set out in Table 3.17. The information collected, however, is difficult to use as the average household size is not clear and the respondents were not asked if the

diagnosis had been given by a qualified doctor. However, the results do show that malaria and diarrhoea are common problems. The results do not, however, adequately illustrate the severity of impacts of these diseases on the fishing communities, particularly from HIV/AIDS.

Table 3.17 Mean number of people per household with disease during the last year

	Kenya	Tanzania	Uganda
Malaria	3.58	2.74	4.07
Bilharzia	1.61	2.33	1.92
Tuberculosis	1.17	1.25	1.81
Convulsions	1.41	1.25	1.83
HIV/AIDS	1.76	1.48	1.95
Diarrhoea	2.17	2.21	2.53
Typhoid	1.47	1.77	2.00
Cholera	1.28	1.66	2.30

Lack of adequate access to safe drinking water and to sanitation facilities is also a characteristic of many fishing communities. Table 3.18 confirms this view, showing that most people use water from the lake as their source of drinking water, though the percentage with a household latrine is over 60% in each country, with 84.5% in Tanzania.

Table 3.18 Access to water and sanitation

Access	Kenya	Tanzania	Uganda
Main source of drinking water			
• Lake	57	45.5	49.5
• Shallow well	12	29	9
• Piped/tap	13	8	10.5
• Spring/river	13	16	9
• Rainwater	4	0.5	0
• Other	1	1	22
Has a latrine at house	69	84.5	61
If no latrine at home, use			
• Public toilet	3.5	28	39.2
• Neighbour's latrine	11	20	7.6
• The lake	2	2	0.2
• The bush	80	47	47
• Other	3.5	3	6

3.5 Food consumption

This part of the questionnaire asked questions about the availability of food, most common staple and sauce and the respondent's preferences. Most people get enough food to eat at least most of the time, with very few people infrequently or never getting enough to eat, as shown in Table 3.19.

Table 3.19 Food consumption

Get enough food to eat	Kenya	Tanzania	Uganda
Always	39	60.2	60
Most of the time	34	23.1	19
Some of the time	26	12.3	18
Infrequently	1	3	3
Never	0	1.4	0

Respondents were asked what were the main and second most common staple food in the household. Maize is the most common food in Kenya, whereas cassava and maize are most common in Tanzania and maize, cassava, sweet potatoes and matoke in Uganda, as shown in Table 3.20.

Table 3.20 Main and second staple food in household

Staple food	Kenya		Tanzania		Uganda	
	Main	Second	Main	Second	Main	Second
Maize	72	16	37.8	14.8	31	21
Cassava	7	10	48.9	10.8	27	25
Rice	1	12	3.7	48	2.5	9
Sorghum	11	40	0.5	0.7	0.2	0.5
Sweet potatoes	0	10	0.7	20	20.5	33.5
Millet	5	10	1	1	3	2
Bananas/matoke	4	2	7.4	4.7	15.8	9

The respondents were also asked which was the main sauce eaten in their households and what was the second most common sauce in their household. Table 3.21 shows that fish is the most common sauce as the main sauce, whereas vegetables or beans as the second most common sauce.

Table 3.21 Main and second sauce in the household

Sauce	Kenya		Tanzania		Uganda	
	Main	Second	Main	Second	Main	Second
Chicken	2.3	1.5	1	1	1.4	1
Beef	1.6	5	3	19	4	15
Fish	88	7.2	90	9	81	11.5
Vegetables	7.3	81.1	3	48	4	25
Beans/legumes	0.3	4.2	2	20	9	44
All of the above	0.3	0.8	0.5	2	0.1	0.5
Other	0.2	0.2	0.5	1	0.5	3

Respondents were asked which type of fish they eat most often and which type of fish they prefer. As seen in Table 3.22, most of the respondents in Kenya and Tanzania eat Nile perch most often, followed closely by tilapia, although they prefer tilapia. In Uganda, however, most people each tilapia most often and prefer tilapia. Tilapia is clearly the preferred fish of the fishing communities.

Table 3.22 Type of fish eat most often and prefer

Type of fish	Kenya		Tanzania		Uganda	
	Eat most often	Like best	Eat most often	Like best	Eat most often	Like best
Nile perch	40	26	47	33	20	20
Tilapia	32	57	39	49	74	71
Dagaa	25	14	12	13	4.7	2
Happlochromines	2	1	1	3	0.3	1
Others	1	2	1	2	1	6

The main reasons for preferring the type of fish (most commonly tilapia) were given as easy availability and the taste of the fish, as shown in Table 3.23.

Table 3.23 Reasons for preferring the type of fish

Like fish best	Kenya	Tanzania	Uganda
Fish is easily available	40	63	32
Fish is cheap	7	6	8
Fish is sweet	41	23	39.5
More nutritious	9	5	16
Other	3	3	4.5

Table 3.24 sets out the state of fish most favoured by the respondents. Fresh fish is eaten most often and is preferred by most people, followed by fried in Kenya and Tanzania and smoked in Uganda.

Table 3.24 State of fish most favoured

State of fish	Kenya		Tanzania		Uganda	
	Like most	Eat most	Like most	Eat most	Like most	Eat most
Fresh	42.8	44	70	57.2	77.6	78
Smoked	3.6	4	9	14	10.7	10
Sun-dried	6	7	7	9	1.9	2.5
Fried	45.6	43	14	19	7.6	6.8
Salted	0	0	0	0.5	0.2	0.2
Other	2	2	0	0.3	2	2.5

The reasons for liking the fish in the particular state are given in Table 3.25, with taste being the most common reason in all countries, followed by easy availability.

Table 3.25 Reason for liking the fish in this state

Like fish best	Kenya	Tanzania	Uganda
Fish is easily available	27	42	31
Fish is cheap	6	11	6.4
Fish is sweet	45	33	34
More nutritious	12	9	21
Can be bought in small units	1	1	0.4
Other	9	4	7.2

The respondents were also asked how many days in a week that they eat fish. In Kenya and Uganda, the average is 4 days a week, whilst in Tanzania, the average is 5 days a week.

3.6 Information, communication and outreach

Information was sought about how members of the fishing communities get access to information, whether they listen to radio stations and if so, when and which stations, and whether they read newspapers or have access to televisions. Questions were also asked about whether a Fisheries Officer is based at the landing site and, if not based there, how often a Fisheries Officer visits. All of this information will be used to inform the development of information, communication and outreach (ICO) work of IFMP, to ensure that the most appropriate media is used for communication, at the most appropriate time and in a form that will have the most impact.

Most of the respondents own a radio and most people listen to the radio at least most days a week, making it an ideal medium through which to reach the fishing communities. Most people listen to the radio in the early evening (7pm to 9pm) and many have heard a programme about fisheries on the radio. Table 3.26 shows that the fisheries communities in the different Partner States listen to different radio stations, rather than there being a lake-wide preference.

Table 3.26 Owning and listening to the radio

	Kenya	Tanzania	Uganda
Own a radio	83	80	74
How often do you listen to radio			
• Every day	72.3	52	64
• Most days each week	6.3	20	13
• Occasionally	15.1	22	17
• Never	6.3	6	6
Time of day listen to radio			
• All day	12	21	27
• Morning hours	11	13	15
• Lunch time	6	9	9
• Afternoon	9	9	10
• Early evening	44	34	30
• Late at night	18	14	9
Radio stations			
• KBC	29		
• Ramogi	43		
• Victoria	14		
• Citizen	8		
• Radio Free Africa		41	
• Radio One		14	
• Radio Tanzania		25	
• CBS			33
• Simba			19
• NBS			18
• Other	6	20	30

Can receive station all the time	91	86	95
Language • Kiswahili • Dholuo • English • Luganda • Lusoga • Other	 30 66 4	 99.7 0.15 0.15	 1.4 0.1 3.7 73.5 18.9 2.4
Have heard a programme about fisheries on the radio	74	62	72

Very few of the respondents own a TV and few people watch TV regularly. Even fewer read a newspaper regularly, as shown in Table 3.27.

Table 3.27 Access to TV and newspapers

Other media	Kenya	Tanzania	Uganda
Own a TV	13	8	10
How often watch TV • Every day • Most days each week • Occasionally • Never	 13 5 33 49	 9 9 50 32	 4 4 30 62
How often read a newspaper • Every day • Most days each week • Occasionally • Never	 3.9 4.6 39.8 51.7	 3 12 43 42	 2 3 31 64

Respondents were also asked for the best way of getting information to them. The most cited media were radio and meetings/barazas. People were not asked about the role of drama or songs, which may also be valid methods for communication within the fishing communities.

Table 3.28 Best way of getting information to respondent on fisheries

Other media	Kenya	Tanzania	Uganda
Information route • Brochures • Billboards • Newspapers • Radio • TV • Meetings/barazas	 3 0.3 1.5 51.3 1.1 42.8	 4 1 4 46 6 39	 1 1 3 57 2 36

A high percentage of respondents confirmed that there is a Fisheries Officer stationed at the landing site, with fewer in Tanzania than in Uganda and Kenya. Even those without

an officer are visited frequently, at least monthly or weekly. Many respondents confirmed that they had received information on fisheries.

Table 3.29 Fisheries Officers at the landing sites

Fisheries Officer	Kenya	Tanzania	Uganda
Have a Fisheries Officer at landing	78	62	79
Frequency of Fisheries Officer visiting landing			
• Daily	7	16.7	19
• Weekly	44	25.7	32
• Monthly	38	37.6	21
• Quarterly	10	14.2	14
• Not visited	1	5.8	14
Has been provided with information on fisheries	93	84	79

Table 3.30 shows the type of information received about fisheries. Most common areas of information include fisheries laws and regulations, fishing gears and methods, size of fish to be harvested and sanitation. It is encouraging that people confirmed that they have received such types of information.

Table 3.30 Types of fisheries information received

Fisheries information received	Kenya	Tanzania	Uganda
• Fisheries laws and regulations	92	79	77
• Fishing gears and methods	94	82	81
• Size of fish to be harvested	94	83	81
• Sanitation	92	78	72
• Environmental protection	90	81	56
• BMUs	82	75	69
• Fish handling and processing	85	72	49
• Fish marketing	67	58	29
• Fish business management	58	47	25
• Other (specify)	7	2	4

Several questions were asked about membership of fishermen's or traders' organizations and about the existence of BMUs. The survey was carried out before BMUs were reformed in Tanzania, at a time when very few people at a beach belonged to a BMU, and before they were reformed in Kenya, when some BMUs were active, but many were not. In Uganda, the BMUs had just been reformed, but there was still some confusion amongst members about membership and some respondents may have interpreted membership as being a member of the committee.

Table 3.31 Member of organization and BMU

Membership of organization	Kenya	Tanzania	Uganda
Member of a fishermen's or traders' organization	59	17	23

BMU at beach	86	74	63
Member of a BMU	50	8	28
Average number of BMU Assembly meetings attended in last year	5.6	3.6	2
Attend meetings	64	26	22
Contribute fish	29	4	2
Contribute cash	66	14	7

4. FINDINGS FROM SECTION II OF THE HOUSEHOLD QUESTIONNAIRE: OWNING AND RENTING BOATS

4.1 Introduction

This section of the questionnaire sought information on the fishing assets owned by boat owners, that is, boats and gears. The reasons for choosing the particular boats and gears were sought. Information on the employment of boat crew, fish selling, the location of fishing and type of target species was also sought.

4.2 Owning boats

Between 21% (Tanzania) and 29% (Uganda) of the respondents own or rent at least one boat. 8% in Kenya own a second boat and 3% a third, very similar to the figures in Uganda and Tanzania of 6.6% owning a second boat in Uganda, 7% in Tanzania and 3% owning a third boat in Uganda and Tanzania.

Table 4.1 Ownership and renting of boats

Boat	Kenya	Tanzania	Uganda
Own	22.2	18	24
Rent	2.5	3	5
No boat	75.3	79	71

Of those owning or renting a boat, the most common boat is the sesse-pointed (Kenya and Tanzania) and sesse-flat (Uganda). The data on the types of boat and propulsion methods from the baseline survey are compared to the results of the Frame Survey 2006 in Tables 4.2 and 4.3. The figures in Table 4.2 are fairly comparable, though far more parachute boats were reported in the Frame Survey in Kenya than in the baseline survey.

Table 4.2 Type of boat owned or rented

Type of boat	Kenya		Tanzania		Uganda	
	SE baseline	2006 FS	SE baseline	2006 FS	SE baseline	2006 FS
Sesse – pointed	84.3	66.2	68.4	62.5	16	11.8
Sesse – flat	14.4	12.5	29.4	21	70	54.0
Parachute	1.3	20.6	0.6	0.4	13	32.5
Dugout	0	0.3	0	1.0	1	0.7
Raft	0	0.4	1.2	14.1	0	1.0
Other	0	0	0.3	1.0	0	0

Table 4.3 shows that the most common propulsion method is the paddle in Uganda and Tanzania, with sails being most commonly used in Kenya. The results from the baseline survey and the 2006 Frame Survey are fairly comparable, as shown in Table 4.3.

Table 4.3 Type of propulsion

Type of boat	Kenya		Tanzania		Uganda	
	SE baseline	FS 2006	SE baseline	FS 2006	SE baseline	FS 2006
Inboard	2.3	0	2	0	2	0
Outboard	10.4	8.7	28	21.5	16	21.0
Paddle	33.9	55.4	60	66.9	78	72.9
Sail	53.4	35.9	10	11.6	4	6.1

Table 4.4 shows the main species targeted for boat one of each boat owning/renting respondent. Of those with a second boat, the percentages targeting the different species are very similar. Most boats are targeting Nile perch, though the percentage is greater in Kenya and Tanzania than in Uganda, where the percentage of boats targeting Nile perch and tilapia are almost equal. The proportion of boats targeting dagaa in Tanzania and Kenya is higher than in Uganda.

Table 4.4 Main species targeted

Type of boat	Kenya	Tanzania	Uganda
Nile perch	64	68	47
Tilapia	15	10	40
Dagaa	20	21	12
Other species	1	1	1

4.3 Gears used

People who own and rent boats for fishing were asked which type of gears they own. Table 4.5 shows the type of gears owned, demonstrating that most people own gillnets, followed by long line in Kenya and Tanzania and hook and line in Uganda. Long line fishing targets Nile perch, whilst hook and line targets tilapia. The illegal gears are the beach/boat seine, the case net and scoop nets, for which there were few people admitting their use. The small seines are used to target dagaa through light fishing at night.

The data in Table 4.5 is compared to the results of the Frame Survey 2006. The Frame Survey results shows that most of the gears are gillnets, although the figure for longline/ hook and line could be understated due to the different ways the data was recorded between the two surveys. Certainly, gillnets and long line/hook and line are the most common gears, although the number of illegal gears could be under-reported.

Table 4.5 Type of gears owned

Gear type	Kenya		Tanzania		Uganda	
Gillnets	44.8	89.6	45.5	90.5	55.3	96.4
Long line	29.6	8.4	25.7	7.7	9.6	2.6
Hook and line	2.6		8.1		10.4	
Beach/boat seine	4.6	0.2	3.3	0.4	1.8	0.2
Cast net	0.6	0.05	2.6	0	8.8	0.1

Traps	0	0.25	1.1	0.02	6.0	0.1
Lift nets	0	-	5.9	-	0.8	-
Small seines	17.2	1.3	1.5	1.06	2.9	0.3
Scoop nets	0.3	0	5.9	0.22	1.0	0.1
Others	0.3	0.2	0.4	0.1	3.4	0.2

Respondents were asked how important different criteria are in terms of selecting boats and gears. The criteria were given as cost, assessment of risks, income from fishing and skills required. Table 4.6 shows that the level of cost is given high consideration, especially in Kenya, income from fishing is also a strong consideration and the level of skills involved. The assessment of risks is given slightly less emphasis.

Table 4.6 Selection of boats and gears

Selection criteria	Kenya	Tanzania	Uganda
Cost			
• Low	17	21.7	34.6
• Medium	20	30.6	25.9
• High	63	48.7	39.5
Risks			
• Low	38	21	29
• Medium	19	34	35
• High	43	45	36
Income from fishing			
• Low	12	20	30
• Medium	38	33	54
• High	50	47	16
Skills required			
• Low	9.5	16	29
• Medium	22.5	45	29
• High	68	39	42

Table 4.7 Boat owners that fish with boat

Fishing	Kenya	Tanzania	Uganda
Go fishing with boat	79	13	63
Employ crew	98	95	79

Most boat owners select boat crew by considering their skill at fishing and their reliability or trustworthiness, as shown in Table 4.8.

Table 4.8 Criteria used to select boat crew

Selecting crew	Kenya	Tanzania	Uganda
Skilled at fishing	55	60	46
Reliable/trustworthy	33	30	39
Relative	1	6	9
Other	1	2	4
Do not choose	10	2	2

Local traders and factory agents/industrial processors are the main buyers of the fish, though local traders often undertake processing as well, so the buyers may be processors as well as traders in some cases.

Table 4.9 Main buyers of the fish

Main buyers	Kenya	Tanzania	Uganda
Consumers	3	5	5
Local traders	43	39	73
Artisanal processor	3	4	1
Factory agents/ industrial processors	51	52	21

In response to the question, where does the respondent's boat fish throughout the year, the percentage varied little during the year, with between 89.6 and 93% in Kenya citing 'this beach', with the lowest percentage of 89.6% in November. The target species also did not vary significantly. In Uganda, again the average percentage of boats fishing at the beach where they were interviewed was 94.1% and the percentages targeting different species of fish remaining fairly constant throughout the year. The same picture was found in Tanzania.

These results suggest that whilst boat crew may move between beaches, boats do not tend to and that boats and gears are purchased to target a particular fishery and there is little movement between fisheries (i.e. Nile perch, tilapia and dagaa).

5. FINDINGS FROM SECTION III OF THE HOUSEHOLD QUESTIONNAIRE: THE BOAT CREW

5.1 Introduction

This section of the questionnaire was targeted at collecting information from boat crew only. The type of information sought included type of boat worked on, propulsion method and target species. Information was then sought on the number of years that the crew member has worked as a boat crew member, the relationship with the boat owner and how many years the crew member has been working on the boat they are working on now. Information on income was obtained and on movement between beaches.

5.2 Working as a crew for a boat

Most of the boat crew work on sesse-pointed boats (Kenya and Tanzania) and on sesse-flat boats (Uganda), reflecting the ownership of types of boats given in Table 4.2. The proportion working on boats with outboard engines is higher in Tanzania than Uganda and Kenya, again reflecting the findings regarding propulsion of boats given in Table 4.3.

Table 5.1 Type of boat and propulsion method used

Type of boat crew working on	Kenya	Tanzania	Uganda
Sesse – pointed	75	64	12.5
Sesse – flat	24	28	73.9
Parachute	1	6	12.2
Dugout	0	1	1.2
Raft	0	1	0
Other	0	0	0.3
Outboard engine	18	38	5.5

In terms of target species, most of the crew are employed to target Nile perch, followed by tilapia in Uganda and dagaa in Tanzania and Kenya, reflecting the larger dagaa fleet size in Tanzania and Kenya than Uganda (ref: Frame Survey results).

Table 5.2 Target species

Type of boat	Kenya	Tanzania	Uganda
Nile perch	59.3	69	48.7
Tilapia	15.4	10	38.3
Dagaa	25.3	20	11.5
Other species	0	1	1.5

6% of boat owners are a relative in Tanzania, compared to 21% in Uganda; 43% in Kenya. On average, boat crew have worked in this occupation for 7.25 years in Kenya, 8.9 years in Tanzania and 1.4 years in Uganda. Table 5.3 sets out the number of years worked in frequencies. Most people have worked for between 1 and 5 years, followed by 6 to 10 years.

Table 5.3 Number of years worked as a boat crew member

Number of years worked as a crew member	Kenya	Tanzania	Uganda
Less than 1 year	1	4.6	0
1 – 5 years	58.7	51.9	70
6 – 10 years	22.9	14.8	21
11 – 15 years	8.1	14.8	6
16 – 20 years	3.2	5.6	2
21 years and above	6.1	8.3	1

On average, crew have been working on the particular boat for 11 months in Uganda and Tanzania and 15 months in Kenya. This could suggest that crew members move between boats, but further probing would be needed. On average there are 3 additional crew members in Tanzania, 2 in Uganda and 4 in Kenya.

Table 5.4 Crew income

Crew income	Kenya	Tanzania	Uganda
Salary			
• Fixed wage	10	15	7
• % share	90	85	93
Average wage per week	975KSh (13.73 US$)	Not known	35,055 UGX (19.47US$) (s.d. 67,004 UGX)
% share			
• Fishing costs deducted	89	81	68
• Fishing costs not deducted: what is percentage?	25	Not known	40
Crew % divided equally	90	95	70
Fish in addition to payment			
• Always	48	66	44
• Sometimes	49	17	33
• Never	3	17	23

The average wage per week paid to boat crew is much higher than the unskilled labour wages paid in other sectors of the economy in Uganda, which is USh 100,000 per month, though few boat crew are paid in this way. Most crew members are paid after each catch, with the division of income being equal between crew members in most cases. For most crew, fishing costs are deducted before the percentage share is calculated. The majority of the crew always get fish to eat in addition as payment, though some only sometimes do.

Information was also sought on whether boat crew have worked on other boats in the last year, the number of boats they have worked on and how many beaches they have worked on. The percentage of boat crew working on other boats was quite high, as indicated in Table 5.5. Although the average number of beaches worked on is around 2, many of the respondents had worked on just one beach.

Crew members were asked whether there were times when they could not get work. The percentages are fairly high, but only in Uganda were there many people who felt that the situation was worse than before.

Table 5.5 Movement of boat crew

Moving between boats and beaches	**Kenya**	**Tanzania**	**Uganda**
Worked on other boats in last year	60	67	49
Number of other boats	3	2	3
Average number of beaches	2	2.5	2
One beach	45%	44.4%	61%
Two beaches	27%	24.6%	22%
Three beaches	14%	12.7%	7%
More than three beaches	14%	18.3%	10%
Times when could not get work	51	37	49
Frequency of difficulty getting work			
• More often than before	20	21.3	42
• Same as before	52	30.3	17
• Less than before	28	48.4	41

6. FINDINGS FROM SECTION IV OF THE HOUSEHOLD QUESTIONNAIRE: FISH TRADERS AND PROCESSORS

6.1 Introduction

This section of the questionnaire was targeted at fish traders and processors at the beaches. Respondents were asked about which fish they process and trade, what type of products they produce, and with what assets, and the amount of fish processed or traded.

6.2 Trading and processing fish

As shown by Table 6.1, many of the respondents are both processors and traders.

Table 6.1 Respondents working as traders/processors

Fish trading/ processing	Kenya	Tanzania	Uganda
Processing only	19	29	18
Trading only	39	47	47
Processing and trading	42	24	35

6.2.1 Fish processing

The majority of fish processors process Nile perch, followed by tilapia in Tanzania, dagaa in Kenya and both tilapia and dagaa in Uganda, as shown in Table 6.2.

Table 6.2 Species processed

Species processed	Kenya	Tanzania	Uganda
Nile perch	44.7	42	35
Tilapia	13.7	31	30
Dagaa	39.5	23	30
Other species	2.1	4	5

Most people smoke, sun-dry or fry the fish, as shown in Table 6.3.

Table 6.3 Fish product form

Product form	Kenya	Tanzania	Uganda
Fresh	12	15	6
Smoked	22	22	52
Sun-dried	38	22	35
Fried	28	35	4
Salted	0	6	3
Other	0	0	0

In terms of owning fish processing assets, many of the respondents own a smoking kiln, and many in Kenya and Tanzania own a stove.

Table 6.4 Fish processing assets owned

Processing assets	Kenya	Tanzania	Uganda
Smoking kiln	32	27	48
Drying racks	5	25	9
Stove (Jiko)	35	48	7
Other	28	0	36

Most of the respondents in Kenya dry dagaa on nets, compared to Tanzania where most dry it on sand, followed by soil, rocks and other. In Uganda, rocks are the most common place where dagaa is dried, followed by nets, sand and soil.

Table 6.5 Drying dagaa

Where dagaa is dried	Kenya	Tanzania	Uganda
Sand	2	29	18
Soil	2	19	11
Rocks	3	19	38
Nets	87	8	29
Concrete slab	0	2	0
Drying rack	1	5	2
Other	5	18	2

Many people store their fish in their houses, which is not an ideal practice, given the amount of space in many houses at the landing sites and the uses to which houses are put.

Table 6.6 Where fish is stored

Store fish	Kenya	Tanzania	Uganda
In the house	65.4	62	64
Separate store at home	9.5	13	21
At the beach	15.6	19	9
Other	9.5	6	6

Table 6.7 shows the average amount of fish sold most days by the processors, however, the sample sizes are small and the ranges of amounts sold are large.

Table 6.7 Amount of fish sold most days by traders

Average kg fish sold per day	Kenya	Tanzania	Uganda
Nile perch	34kg	1.7kg	222kg
Tilapia	4.65kg	162.4kg	20kg
Dagaa	35.73kg	99.3kg	28kg
Other	4kg	20kg	1-2kg

Table 6.8 provides information on the use and availability of different materials for processing fish. A fairly high percentage of people reported using wood in Kenya and Uganda, but it seems that people were reluctant to report using wood in Tanzania, as there has been a lot of awareness raising, with the message that forests have been cleared and the use of wood in fish processing should be minimised. The lack of reporting the use of wood is believed to result from people not wanting to admit to using it.

Table 6.8 Materials used for processing fish

Materials and availability	Kenya	Tanzania	Uganda
Wood	75	-	85
• Always	33		32
• Most of the time	30		60
• Some of the time	21		6
• Infrequently	4		1
• Never	12		0
Salt	37	8	41
• Always	28	82	64
• Most of the time	24	12	29
• Some of the time	4	3	7
• Infrequently	0	3	0
• Never	44	0	0
Oil	55	7	5
• Always	54.3	89	4
• Most of the time	15.2	4.5	94
• Some of the time	6.1	2	1
• Infrequently	0	0	1
• Never	24.4	4.5	0
Other	69	3.2	63
• Always	55.5	64	18
• Most of the time	38.9	25	80
• Some of the time	1.9	0	2
• Infrequently	3.7	4	0
• Never	0	7	0

6.2.2 Fish trading

This sub-section collected information on the types of fish and fish product traded by traders found at the beach, who they buy from and sell to, where the fish is taken to be sold. Respondents were also asked how the fish is transported, whether there are any constraints and about seasonal changes in the trade of fish.

Table 6.9 shows which fish are most commonly traded, with Nile perch being the most common, followed by tilapia in Uganda, and tilapia and dagaa in Kenya and Tanzania.

Table 6.9 Fish traded

Species traded	Kenya	Tanzania	Uganda
Nile perch	47	62	43
Tilapia	23	18	37
Dagaa	28	17	16
Other species	2	3	4

The most common product forms are fresh, followed sun-dried in Kenya and Tanzania, reflecting the higher proportions of dagaa processed compared to Uganda. A higher percentage of the processed products are smoked in Uganda.

Table 6.10 Product form traded

Product form traded	Kenya	Tanzania	Uganda
Fresh	39	61.5	51
Smoked	18	8	26
Sun-dried	25	17	19
Fried	18	11.5	2
Salted	0	2	2
Other	0	0	0

Most traders buy from the fishermen, but many traders are also processors, so they may buy for processing before sale.

Table 6.11 Who do the traders buy from?

Buy from	Kenya	Tanzania	Uganda
Fishermen	88	92	89
Other traders	5	5	5
Fish agents	4	1.5	3
Other	3	1.5	3

Most of the traders sell to other traders to take to bigger markets or to the fish factories. About a third of the traders sell direct to consumers.

Table 6.12 Who do the traders sell to?

Sell to	Kenya	Tanzania	Uganda
Traders	62	35	53
Fish factories	6	33	19
Consumers	32	31	27
Other	0	1	1

Most of the fish is sold within the village, which would be to other traders or agents of the factories. A large proportion is, however, sold within other districts, confirming the importance of domestic markets.

Table 6.13 Where is the fish sold?

Where sell?	Kenya	Tanzania	Uganda
Within this village	55	57	36
Another village nearby	12	14	20
This location/ ward/ sub-county	2	2	8
This district	8	13	14
Other district	23	12	20
Other country	0	2	2

Most of the markets are within 5km of the beach, reflecting the amount sold within the village, shown in Table 6.13. A fairly high proportion, particularly in Tanzania and Uganda, travels for more than 50km.

Table 6.14 Distance to market

Buy from	Kenya	Tanzania	Uganda
<5km	57	59	40.5
6-20km	11	13	19
21-50km	18	5	17
>50km	14	23	23.5

The most common modes of transport for the fish are on foot, bicycle (own or hired), public vehicle and boat for Tanzania and Uganda.

Table 6.15 Mode of transport

Transport to market	Kenya	Tanzania	Uganda
On foot	46	48	30
Own bicycle	9	14	15
Hired bicycle	12	3	4
Public vehicle	26	11	15
Own vehicle	0	7	1
Hired truck/vehicle	2	5	8
Boat	2	10	22
Other	3	2	5

The respondents were asked if a series of statements about constraints to fish processing and selling are true all of the time, most of the time, some of the time, infrequently, never or were not relevant. Table 6.16 shows the results of these questions. In response to the statement "there aren't enough fish to buy" roughly half thought this statement was true some of the time, with almost half in Kenya believing it to be true most or always. Most of the respondents believe they can sell their fish most of the time and they can afford to buy the fish. Many of the respondents believed that the statement "I can't get enough ice" is not relevant, either reflecting the trade in processed fish or that the use of ice is not common in domestic trade of fresh fish.

Table 6.16 Constraints to trading in fish

Statement is true	Kenya	Tanzania	Uganda
There aren't enough fish to buy			
• Always	24.5	11	11
• Most of the time	24	21	24
• Some of the time	45	50	45
• Infrequently	5.5	8	10
• Never	1	9	5
• Not relevant	0	1	5
I can't sell all the fish I have bought			
• Always	18.5	7	5
• Most of the time	7	11	8
• Some of the time	53	27	26
• Infrequently	14	12	19
• Never	6.5	41	39
• Not relevant	1	2	3
I can't afford to buy the fish available			
• Always	15	6	3
• Most of the time	10	16	7
• Some of the time	43	35	34
• Infrequently	19	12	21
• Never	12	29	32
• Not relevant	1	2	3
I can't get enough ice			
• Always	19	6	3
• Most of the time	7	7	4
• Some of the time	10	14	14
• Infrequently	11	6	5
• Never	6	25	12
• Not relevant	47	42	62

The start and end of the high and low trading times are not clear lake-wide, or even within each Partner State, as seen in Tables 6.17 and 6.18. This could be due to frequent variations in fish availability or variations around the lake.

Table 6.17 High trading months

Month	Kenya		Tanzania		Uganda	
	Start	End	Start	End	Start	End
January	13	2	14	13	13	6
February	2	7	8	12	7	6
March	4	19	15	12	7	4
April	46	10	7	18	12	10
May	3	5	11	15	4	12
June	3	9	7	6	14	11
July	3	7	7	3	5	6
August	10	15	6	5	15	8
September	5	4	7	3	8	10

October	6	5	9	5	8	9
November	3	5	4	2	4	5
December	2	12	5	6	3	13

Table 6.18 Low trading months

Month	Kenya		Tanzania		Uganda	
	Start	End	Start	End	Start	End
January	15	9	20	14	21	7
February	3	5	9	9	5	5
March	15	26	10	10	6.5	6
April	11	12	12	9	6	5
May	4	5	18	11	11	10
June	6	3	10	8	11	9
July	7	6	5	6	11	12
August	9	6	4	15	6.5	9
September	10	4	3	10	9	12
October	5.5	5	3	4	3	11
November	9	9	3	1	6	4
December	5.5	10	3	3	4	10

Traders were also asked about how many kilograms on average they took to market, and how many trips they made to market, each week for each species of fish and in each product form. Tables 6.19 and 6.20 show the results for fresh and smoked Nile perch and tilapia, and fresh and sun-dried dagaa, the main product forms of the three main commercial species.

Table 6.19 Kgs taken to market each week

	Kenya		Tanzania		Uganda	
	Low	High	Low	High	Low	High
Nile perch fresh	11.60	19.81	55.73	152.99	534	2575
Nile perch smoked	3.33	3.33	9.42	19.04	75.5	139.2
Tilapia fresh	9.69	15.56	106.15	29.44	141.35	431.16
Tilapia smoked	3.59	4.29	8.05	3.93	262.22	524.67
Fresh dagaa	3.40	5.80	1.7	2.94	9	51.5
Sun-dried dagaa	3.75	4.16	4.88	3.82	13.38	29.3

Table 6.20 Number of trips to market per week

	Kenya		Tanzania		Uganda	
	Low	High	Low	High	Low	High
Nile perch fresh	4.98	6.9	2.65		4	4
Nile perch smoked	5.06	2.32	3.34	7.14	1	2
Tilapia fresh	3.32	4.82	3.80	5.38	3.49	6.83
Tilapia smoked	2.83	3.2	4.57	2.96	1.82	2.83
Fresh dagaa	4.83	5.0	3.02	2.19	2	2.67
Sun-dried dagaa	4.61	5.09	2.53	3.09	1.96	7

6.3 Training

Finally, respondents were asked whether they had received any business-related training and if they had, in what areas. Table 6.21 shows that few respondents had received any training.

Table 6.21 Received training

Received training	Kenya	Tanzania	Uganda
Yes	16	17	2.8
Areas:			
Bookkeeping and accounts	42	11	17
Fish processing	6	15	30
Quality control	22	68	42
Other	11	6	11

7. CONCLUSIONS

7.1 Conclusions

The study has generated a range of baseline socio-economic information, some of which should be monitored over time and some of which will be used to inform the design of interventions and provide general information on the fisheries communities. General observations and conclusions from the study include the following:

1. Main source of income: The main source of household income at the beaches come from fisheries, as expected, with fisheries on average contributing the main source of household income for 87% of respondents. Social facilities: points needed
2. Price of fish: points needed
3. Ethnicity: there is much more ethnic diversity in Tanzania and Uganda than in Kenya, where 86% of the respondents reported to be Luo.
4. Education: The level of achievement of primary education differs between the Partner States, with higher levels in Tanzania than Uganda and Kenya. There are slight differences between level of educational achievement between occupational groups, with fewer boat crew completing primary level or secondary in Uganda than other groups, but this is not the case in Tanzania.
5. Housing and assets: Most of the respondents own at least one house, though in many cases, this is a temporary or semi-permanent dwelling. Most of the respondents sleep on a bed and mattress. Most people use firewood or charcoal as fuel for cooking, implying good access to wood, or people bringing in charcoal, where there are inadequate trees.
6. Land ownership: Over half the respondents own land and the majority use it for food crops.
7. Access to banking, savings and credit: Few respondents have a bank account, but the level of access to, and membership of, savings schemes is much higher in Kenya than in Uganda and Tanzania. More people also indicated interest in savings schemes in Kenya, perhaps reflecting greater awareness about savings and credit. Most of the savings schemes that do exist are operated by the communities themselves.
8. Expenditure: The priority area of expenditure is food, followed by education and clothing. Leisure activities received a low ranking in order of priority for how fisheries-related income is used.
9. Access to drinking water: A high percentage of respondents drink water from the lake, but no information was collected on whether the water is boiled or purifying tablets used. However, with half the population dependent on lake water for drinking, this is a worrying figure.
10. Food security: Most people get enough to eat, at least most of the time, and fish is the most common sauce eaten around the lake (85% of respondents), with fresh tilapia being the most commonly consumed fish in Uganda and Nile perch in Kenya and Tanzania, although tilapia is the most preferred fish. The main reasons given for the consumption and preference for tilapia are that the fish is easily available and because of its taste.
11. Access to information: Most people around the lake have access to a radio, with 76% of respondents on average listening to the radio most days or every day of the week. Early evening is the most common time to listen to the radio, making it a good time to

reach the fishing communities with fisheries-related messages. Information was also gathered on the most listened-to radio stations, which is critical for selecting radio stations for fisheries-related spot messages and programmes. Very few people watch TV or read newspapers, and people prefer to receive information via the radio or barazas (open meetings), rather than in printed form.

12. Access to fisheries information and support: Many of the respondents reported that there is a Fisheries Officer stationed at the landing site (78% of respondents) and, for those without a Fisheries Officer, most reported that fisheries staff visit at least every week (34%) or month (32%). Many people reported receiving fisheries related information, particularly regarding fisheries laws and regulations, fishing gears and methods, size of fish to be harvested and about sanitation.
13. Boat and gears used: The most common boats used are sesse-pointed in Tanzania and Kenya, and sesse-flat in Uganda, with most boats being propelled with paddles in Uganda and Tanzania, and by sails in Kenya. Most boat owners and crew reported targeting Nile perch, followed by dagaa in Kenya and Tanzania, and tilapia in Uganda. The target species varies little during the year, indicating that people stay with targeting a certain species, reflecting the different skills, knowledge and gears needed. The most common gears used are gillnets and long lines/hook and lines. Boats tend to stay at a certain landing, with little movement between beaches.
14. Employment and payment of boat crew: Most boat owners select crew according to their skill and trustworthiness. It was found that most crew have worked in that occupation for between 1 to 5 years, and have worked for around a year on the boat they were working on at present. Most are paid by a percentage of the income from the catch, which is shared equally between crew members after costs are deducted. Most crew worked on one beach in the past year, although around a half worked on two or more beaches.
15. Processing and trading of fish: Most of the fish traded is fresh and, if processed, has been smoked or sun-dried, with just some fried or salted. Most of the dagaa processors dry dagaa on nets in Kenya, but on sand, rocks or soil in Tanzania and Uganda. Most of the fish is sold within the village, mostly to other traders, though much is sold over 50km from the beach. There were no clear trading seasons, reflecting perhaps more frequent slight variations around the lake and perhaps for different species.

Several sections of the survey contribute information about the movement of boats and crew. Most of the respondents were not born at the beach, though no information was collected on how long they had lived at that site. Most of the boats stay at the beach and few move between beaches. Boat crew, however, do move between beaches, though around half reported to have worked at only one beach in the past year and of those that do move, most worked at just two beaches, though still leaving a third in Kenya and Tanzania working at three or more beaches. The boat crew reported however, that they had worked on an average of 4 boats during the year. More probing questions on movement are needed, though it does seem that many boat crew do move, but not necessarily frequently or to many other beaches.

7.2 Recommendations for monitoring the impact of the implementation of the Fisheries Management Plan

Socio-economic impact monitoring within the IFMP during the next two to three years will focus on monitoring the impact through generating data for the Objectively Verifiable

Indicators (OVIs). Lessons from the survey that should be taken into consideration include:

1. Sample size and sampling frame. The sampling of beaches and respondents worked well, although more consistency between Partner States should be sought. The sample size was, however, very large, with implications for time and resources and the questionnaire was long. The sample size and questionnaire length should be considered as part of planning for the next survey.

2. The sample should also be reconsidered in terms of gender coverage, as far fewer women were interviewed in Uganda and Tanzania compared to Kenya.

3. More consideration is needed for the use of the data. Areas that should be followed up in more depth include income, expenditure, access to savings and credit, and to bank accounts, access to health care, including HIV/AIDS services, migration between beaches, and into and out of fisheries, and BMU membership and participation.

While the survey produced a significant amount of information, shorter, more targeted surveys may produce information of greater application.

ANNEX 1 BEACH LEVEL QUESTIONNAIRE

This Questionnaire is critical to both an understanding of the beach and to the calculations of the number of stakeholders represented by the main survey of individuals. It is to be completed by the Team Leaders for every beach covered.

Information will be gathered through interviews with key respondents (those best placed to answer the Questions) and their responses should be cross-checked through direct observation and additional interviews. This does not have to filled in with a single respondent: go to whoever is reported to know best.

Name of Beach		
Beach Type	Code	
District		
Date Started	/ /2005	
Date Ended	/ /2005	

Beach Type Code: [1] NP-O [2] NP-M [3] Tilapia [4] Dagaa [5] Mixed

Fisheries related activities

Is there anyone at this beach who is employed for most of their time in repairing or making fishing boats?	Y/N	
If Y, how many people are employed in this way?	No.	
Is there anyone at this beach who is employed for most of their time in repairing or making fishing gear?	Y/N	
If Y, how many people are employed in this way?	No.	
Are there any other people directly employed in supplying the fishing industry (e.g. ice makers etc….)	Y/N	
If Y, please list:		
	No.	
	No.	
	No.	
	No.	

What post-harvest activities take place at this beach or are associated with it nearby?.

	Landed by fishers	Landed by collector boats	Trade in Fresh form	Processing			
				Drying	Smoking	Frying	Salting
Nile perch							
Tilapia							
Dagaa							
Other species							

Numbers of Traders and Processors

How many people make a living at this beach by:

	Processing only	Trading only	Trading and Processing
Nile perch			
Tilapia			
Dagaa			

Seasonal Prices of fish

Only complete for those items regularly traded at this beach.
Give price paid by traders (not local consumers).

	Form	Unit Code or Other	Typical Prices	Highest Prices	Lowest Prices	Kgs per Unit
			Shs/Unit	Shs/Unit	Shs/Unit	
NP	Fresh					
Tilapia	Fresh					
Dagaa	Fresh					
NP	Smoked					
Tilapia	Smoked					
Dagaa	Smoked					
NP	Salted					
NP	Sun dried					
Tilapia	Sun dried					
Dagaa	Sun dried					
Tilapia	Fried					

Unit code: [1] Kg [2] Bags [3] Baskets [4] Whole fish

Boat ownership

What is the largest number of boats owned by anyone at this beach?	No.	
Do they own boats at other beaches as well?	Y/N	

Social facilities

It is important that these questions are answered in relation to the "beach community", i.e. the closest community to the beach.

Location of closest social facilities

Type of social facility	Functioning Code	Location Code	Operator Code

Dispensary			
Clinic			
Hospital			
Primary school			
Secondary school			
Community Hall			

Functioning Code [1] Always [2] Sometimes [3] Never
Location Code [1] Within this village [2] Another village nearby [3] This Location/Ward/Sub-County [4] This District
Operator Code [1] Govt, [2] Voluntary Agency (e.g. mission, NGO) [3] Private for profit

Name of Beach		
Beach Type	Code	
District		
Date Started	/ /2005	
Date Ended	/ /2005	

Beach Type Code: [1] NP-O [2] NP-M [3] Tilapia [4] Dagaa [5] Mixed

Respondents Covered in Survey

Respondent Type	Day 1						Day 2						Total	Target
	TL[1]	E1	E2	E3	E4	Total	TL[1]	E1	E2	E3	E4	Total		
Enumerator Initials														
	No.	No.	No.	No.	No.		No.	No.	No.	No.	No.	No.	No.	No.
Boat owner														10
Crew (Baria)														10
Trader/processor														10
Other														10

[1] Respondent type is defined by response on Baseline Survey Q10 (Which activities are most important to you?)
TL has no specific target for respondents but may choose to undertake interviews, as needed

The TL must try to make sure that the Target number of respondents of each type is reached. The targets for boat owners and crew should be easily reached at most beaches. The TL must make sure, however, that the types of boat owners and crew covered include a majority of those for the beach type: don't go to a dagaa beach and mainly interview those fishing for Nile perch or Tilapia. *If necessary, adjust the timing of the interviews to ensure that you are there at the time when the type of fishers that you want are also there.* This will allow targets to be reached.

The targets for processors and traders will be more difficult at some beaches. The target for Other respondent types (boat and gear makers/repairers and other fisheries related stakeholders) will be the hardest and may not be reached at some beaches. The TL should

keep track of what types of respondents are being covered and seek out those that are harder to find.

Issues or Problems arising at beach

Team Leader Name	
Team Leader Signature	
Date	/ /2005

ANNEX 2 SOCIO-ECONOMIC BASELINE SURVEY QUESTIONNAIRE

SECTION I - ALL RESPONDENTS

Demographic, occupational, educational and residential status

Q1	Respondent Name		
Q2	Ethnic group (Text)		
Q3	Where were you born?	Code	

Code: [1] Within this village [2] Another village nearby [3] This Location/Ward/Sub-County [4] This District [5] Other District [6] Other Country

	Activities		Is respondent involved?(Y/N)
Q4	Owns or Rents-in a Boat	Y/N	
Q5	Crew member	Y/N	
Q6	Trades or Processes fish	Y/N	
Q7	Other fisheries related activity [specify]	Text	

Q10. Which of these activities is most important to you?	Code	

[1] Boat owner [2] Crew member [3] Fish processor or trader [5] Other

		Sex (M/F)	Marital Status (Code)	Age (Years)	Education Level (Code)
Q11	Respondent (R)				
Q12	If R not Household head, give details of Household Head (HHH)				

Marital code: [1] Single [2] Married [3] Separated [4] Widow/er
Education code : [1] No education [2] Incomplete primary [3] Complete primary [4] Incomplete secondary [5] Completed Secondary [6] Higher

Q13	Relationship of R to HHH	

[1] R is HHH [2] Husband/wife HHH [3] Son [4] Daughter
[5] Brother [6] Sister [7] Other relative [8] Not related

		How many people in your household	How many dependents do you have?		How many are involved in fishing
			Dependent on R (No.)	How many are here (No.)	
Q14	Adult males (18+)				
Q15	Adult females (18+)				
Q16	Male Children				
Q17	Female Children				

Note: "here" means at the place you stay when you are working at the beach

How many of the children in your household have attained the following education level

		Primary								Secondary								
		P1	P2	P3	P4	P5	P6	P7	P8	S1	S2	S3	S4	S5	S6	University	College	Vocational
Q18	Still at school																	
Q19	Left school																	

Housing characteristics

Q20	How many houses do you own?	No.	

How would you categorize your house/s?

		Permanent	Semi-permanent	Temporary
Q21	Total number of houses			
Q22	How many are in this village			
Q23	How many are in this location			
Q24	How many in this district			
Q25	How many in other district			
Q26	How many in this country			

Assets owned (land etc.) and their location

Q27	Do you own any land?	Y/N	
Q28	If Yes, what size of land do you own?	Acres	

Rank by area the usage of your land for the following:

Q29	Use for cash crops?		
Q30	Use for food crops?		
Q31	Use for livestock grazing?		
Q32	Used by others?		
Q33	Unused land?		
Q34	Do you have a pond?	Y/N	
Q35	Do you farm fish in this pond?	Y/N	

Do you own any of the following?

S/N	Asset	Number		Asset	Number
Q36	Cattle		Q49	Bicycle	
Q37	Goats & Sheep		Q50	Motor cycle	
Q38	Chicken & Ducks		Q51	Vehicle	
Q39	Pigs				
Q40	Donkeys				

Q41	What do you sleep on at home ?	Code	

[1] Papyrus mat [2] Mattress alone [3] Bed plus Mattress [4] Other

Q42	What do you use for cooking?	Code	

[1] Firewood [2] Charcoal [3] Paraffin [4] Gas [5] Electricity [6] Other

Financial assets

Q43	Do you have a bank account?	Y/N	
Q44	Where is the bank?	Code	

Code: [1] Within this village [2] Another village nearby [3] This L/W/SC [4] This District [5] Other District [6] Other Country

Q45a	Is there a savings scheme operated outside of a bank to which you could have access	Y/N	
Q45b	If Yes, do you belong to it?	Y/N	
Q45c	If Yes, what type of savings scheme is this?	Code	
Q46	If No, would you use such a scheme if it were available	Y/N	

Saving Scheme Code: [1] Run by local people for themselves [2] NGOs [3] Other financing institutions (4) Not applicable

Overall livelihood activities

Which income-earning activities in which you are involved makes a contribution to your household?

	Activity	Number of Months in the yr.	Rank of Income
Q47	Fishing income from boats and gear owned		
Q48	Fishing employment (wages and salaries)		
Q49	Fish trading & processing		
Q50	Net making or repairing		
Q51	Boat building and repairing		
Q52	Non-fishing employment (wages and salaries)		
Q53	Trading in other food commodities		
Q54	Trading in non-food items		
Q55	Farming (Crops and Horticulture)		
Q56	Livestock Farming		
Q57	Remittances or Transfer payments		
Q58	Rental income		
Q59	Other		

Note: Only rank those activities which are undertaken by the household

Health status

How many members of your household suffered from the following diseases in the last year:

Q60	Malaria	No.	
Q61	Bilharzia	No.	
Q62	Tuberculosis	No.	
Q63	Convulsions	No.	
Q64	HIV/AIDS	No.	
Q65	Diarrhoea	No.	
Q66	Typhoid	No.	
Q67	Cholera	No.	

Q68	What is the main source of your drinking water for use at home?	Code	

[1] Lake [2] Shallow well [3] Piped/tap [4] Spring/river [5] Rainwater [6] Other

Q69	Do you have a latrine at the house where you stay?	Y/N	
Q70	If No, where do you go?	Code	

[1] Public toilet [2] Neighbour's latrine [3] The lake [4] The bush [5] Other

Food consumption

Q71	How often do you and your household get enough to eat?	Code	

[1] Always [2] Most of the time [3] Some of the time [4] Infrequently [5] Never

Q72	What is the usual number of meals eaten in your household in a day?	No.	
Q73	What is your main staple food in your household?	Code	
Q74	What is your second staple food in your household?	Code	

[1]Maize [2] Cassava [3] Rice [4] Sorghum [5] Sweet potatoes [6] Millet [7] Bananas/Matoke

Q75	What is the main sauce in your household?	Code	
Q76	What is the second sauce in your household?	Code	

[1]Chicken [2] Beef [3] Fish [4] Vegetable [5] Beans/Legumes [6] All of the above [7]Other

Q77	What fish do you eat most often?	Code	
Q78	Which fish do you like best?	Code	

[1] Nile perch [2] Tilapia [3] Dagaa [4] Happlochromis [5] Others

Q79	Why do you like this fish best? (last question)	Code	

[1] Fish is easily available [2] Fish is cheap [3] Fish is sweet [4] More nutritious [5] Other

Q80	In what state do you most like to eat fish?	Code	
Q81	What state of fish do you eat most?	Code	

[1] Fresh [2] Smoked [3] Sun-dried [4] Fried [5] Salted [7] Other

Q82a	What is the best reason why you like fish in this state (Last question)	Code	

[1] Fish is easily available [2] Fish is cheap [3] Fish is sweet [4] More nutritious [5] Can be bought in small units(6) Other

Q82b	On how many days do you usually eat fish each week?	No.	

Information, communication, outreach

Q83	Do you own a radio?	Y/N	
Q84	How often do you listen to the Radio?	Code	

[1] Every day [2] Most days each week [3] Occasionally [4] Never

Q85	What time of day do you usually listen to the Radio?	Code	

[1] All day [2] Morning hours [3] Lunch time [4] Afternoon [5] Early evening [6] Late at night

Q86	Which Radio station do you like listening to most?	Text	
Q87	Can you receive this station all the time?	Y/N	

Q88	What language is most used on that Radio station?	Code	

[1] Kiswahili [2] Dholuo [3] English [4] Luhya[5] Luganda [6] Lusoga [7] Other (specify)

Q89	Have you ever heard a programme about fisheries on the radio?	Y/N	
	What time do you prefer to receive information on fisheries on the radio		

[1] All day [2] Morning hours [3] Lunch time [4] Afternoon [5] Early evening [6] Late at night

Q90	Do you own a TV?	Y/N	
Q91	How often do you watch TV?	Code	

[1] Every day [2] Most days each week [3] Occasionally [4] Never

Q92	How often do you read newspapers?	Code	

[1] Every day [2] Most days each week [3] Occasionally [4] Never

Q93	What is the best way of getting information about fisheries to you?	Code	

[1] Brochures [2] Billboards [3] Newspapers [4] Radio [5] TV [6] Meetings/Barazas

Fisheries management

Q94	Do you have a Fisheries Officer at your landing?	Y/N	
Q95	How often is your beach visited by Fisheries Officers in a year ?	code	

[1] [2] Weekly [3] Monthly [4] Quartely [5] Not visited

Q96	Have you ever been provided with information on fisheries?	Y/N	

If Yes, what areas have you received information on:

Q97	Fisheries laws and regulations	Y/N	
Q98	Fishing gears and methods	Y/N	
Q99	Size of fish to be harvested	Y/N	
Q100	Sanitation	Y/N	
Q101	Environmental protection	Y/N	
Q102	BMUs	Y/N	
Q103	Fish handling and processing	Y/N	
Q104	Fish marketing	Y/N	
Q105	Fish business management	Y/N	
Q106	Other (specify)	Y/N	

Q107a	Are you a member of a fishermen's or traders' organization?	Y/N	
Q107b	Is there a BMU at your beach	Y/N	
Q107c	When was it formed?	Year	
Q107d	Are you a member?	Y/N	
Q107e	How many meetings of the BMU Assembly have you attended over the last year?	No.	

How do you support the organization?

Q107f	Attend meetings	Y/N	

Q108	Contribute fish	Y/N	
Q109	Contribute cash	Y/N	

Expenditure

Rank how you use your income from the fishery activities

	Items	**Rank**
Q110	Food	
Q112	Education	
Q113	Clothing	
Q114	Health care	
Q115	Shelter	
Q116	Bank	
Q117	Investment [specify] _____	
Q118	Leisure	
Q119	Other [specify]_____	

SECTION II - BOAT OWNERS (and Rent-in) ONLY

Fishing assets owned

	Boats	Ownership Code	Boat Type Code	Propulsion Type Code	Main Target Species
Q120	Boat 1				
Q121	Boat 2				
Q122	Boat 3				

Ownership Code [1] Owned [2] Rented-in

Boat code: [1] Sesse – Pointed [2] Sesse – Flat [3] Parachute [4] Dugout [5] Raft [6] Other

Propulsion code: [1] Inboard [2] Outboard [3] Paddle [4] Sail

Target Species code: [1] Nile perch [2] Tilapia species [3] Dagaa [4] Other species

Q123	How many other boats do you own?	No.	

	Gears owned (Code)	Total No.
Q124		
Q125		
Q126		
Q127		
Q128		

Gear Code
[1] Gillnets
[2] Long Line
[3] Beach/Boat seine
[4] Cast net
[5] Hook and line
[6] Traps
[7] Lift nets
[8] Small seines
[9] Scoop nets
[10] Others

To what extent is your choice of boats and gears based on the following?

		Code
Q129	Costs	
Q130	Risks	

Q131	Income from fishing	
Q132	Skills required	

[1] Low [2] Medium [3] High

Q133	Do you usually go fishing with your boat?	Y/N	
Q134	Do you use crew (barias)?	Y/N	
Q135	What do you consider as the **most important** factor in choosing your crews/barias?	code	

Crew choice: [1] Skilled at fishing [2] Reliable/trustworthy [3] Relative [4] Other (5) Do not choose

Q136	Who are the main buyers of your fish?	Code	

[1] Consumers [2] Local traders [3] Artisanal processor [4] Factory agents/Industrial processors

Where does R's boat fish throughout the year and what species do they catch?.

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Q136	Location												
Q137	Target Species												

Location: [1] This beach [2] Other beach
Target Species code: [1] Nile perch [2] Tilapia species [3] Dagaa [4] Other species

SECTION III - CREW (BARIAS) ONLY

Barias/Crews only

Q138	What type of boat are you working on at the moment?	Code	

Boat code: [1] Sesse – Pointed [2] Sesse – Flat [3] Parchute [4] Dugout [5] Raft [6] Other

Q139	Does this boat have an outboard engine?	Y/N	
Q140	What type of species have you mainly been catching?	Code	

Target Species code: [1] Nile perch [2] Tilapia species [3] Dagaa [4] Other species

Q141	How long have you been working as a crew member?	Years	
Q142	Is the owner of the boat a relative of yours?	Y/N	
Q143	How long have you been working on this boat?	Months	
Q144	How many other members are there in the crew?	No.	
Q145	How are you paid for your work on this boat?	Code	

[1] Wage (Fixed) [2] Share %

Q146	If wage, how much do you get each week?	Shs	
Q147	If Share %, are fishing costs deducted before the crew gets a share?	Y/N	
Q148	If costs are deducted, what is the % share going to the crew of the money that remains?	%	
Q149	If costs are not deducted, what is the % share going to the crew?	%	
Q150	Is the crew % divided equally between all crew members?	Y/N	

Q151	How often do you get fish to eat in addition as this payment?	No.	

[1] Always [2] Sometimes [3] Never

Q152	Have you worked on any other boat in the last year?	Y/N	
Q153	If Y, how many other boats?	No.	
Q154	How many beaches have you worked on in the last year?	No.	

Q155	Were there any times in the last year you wanted to work but could not get it?	Y/N	
Q156	If Y, how frequently do you have problems with getting work compared to previous years?	Code	

[1] More often than before [2] Same as before [3] Less than before

SECTION IV - FISH TRADERS AND PROCESSORS ONLY

Fish trading/processing

Q157	What do you do?	Code	

[1] Processing only [2] Trading only [3] Processing and trading

Fish processing Sub-section

Q158	Which fish species do you process mostly?	Code	

[1] Nile perch [2] Tilapia [3] Dagaa [4] Other

Q159	What fish product form do you process mostly?	Code	

[1] Fresh [2] Smoked [3] Sun-dried [4] Fried [5] Salted [6] Other

Q160a	Which processing assets do you own?	Code	

[1] Smoking kiln [2] Drying racks [3] Stove (Jiko) [4] Other (specify)

Q160b	If you dry dagaa, where do you dry it?	Code	

[1] Sand [2] Soil [3] Rocks [4] Nets [5] Concrete slab [6] Drying rack [7] Other

Q161	Where do you store your fish?	Code	

[1] In the house [2] Separate store at your home [3] At the beach (4) Other

	What amount of fish you sell each day most of the time?	Units	No. of units
Q162	Nile perch		
Q163	Tilapia		
Q164	Dagaa		
Q165	Others		

Unit code: [1] Kg [2] Bags [3] Baskets [4] Whole fish

	Do you use these materials for processing fish	Y/N	Availability of material
Q166	Wood		
Q167	Salt		
Q168	Oil		
Q169	Other [specify]		

Availability code: [1] Always [2] Most of the time [3] Some of the time [4] Infrequently [5] Never

Fish trading Sub-section

Q170	Which fish species do you deal in mostly?	Code	

Code:[1] Nile perch [2] Tilapia [3] Dagaa [4] Other

Q171	What fish product form do you deal in mostly?	Code	

Code: [1] Fresh [2] Smoked [3] Sun-dried [4] Fried [5] Salted [6] Other

Q172	Who do you buy from?	Code	

Code: [1] Fishermen [2] Other traders [3] Fish agents [4] Other

Q173	To whom do you sell fish?	Code	

Code: [1] Traders [2] Fish Factories [3] Consumers [3] Other

Q174	Where do you sell fish?	Code	

Code: [1] Within this village [2] Another village nearby [3] This L/W/SC [4] This District [5] Other District [6] Other Country

Q175	How far is the market where you sell?	Code	

Code: [1] < 5 Km [2] 6-20 Km [3] 21-50 Km [4] >50 Km

Q176	With what means do you mostly transport fish to market?	Code	

[1] On foot [2] Own bicycle [3] Hired bicycle [4] Public vehicle [5] Own vehicle [6] Hired truck/ vehicle [7] Donkey [8] Boat [9] Rail [10] Other

How often are the following statements true?

Q177	There aren't enough fish to buy	Code	
Q178	I can't sell all the fish that I have bought	Code	
Q179	I can't afford to buy the fish available	Code	
Q180	I can't get enough ice	Code	

[1] Always [2] Most of the time [3] Some of the time [4] Infrequently [5] Never [6] Not relevant

Indicate the low and high fish trading months

			Start	End

			Month	Month
Q181	High season	Code		
Q182	Low season	Code		

Month Codes: [1] Jan [2] Feb [3] Mar [4] Apr [5] May [6] Jun
[7] Jul [8] Aug [9] Sep [10] Oct [11] Nov [12] Dec

Give information on the average quantity of fish you deal on in low (L) and high (H) seasons?

			Low Season			High Season		
			Trips to market per week	Quantity of fish per trip		Trips to market per week	Quantity of fish per trip	
	Fish species Code	Product form Code	No. of trips	Unit Code	No. of units	No. of trips	Unit Code	No. units
Q182								
Q183								
Q184								

Fish species code: [1] Nile perch [2] Tilapia [3] Dagaa [4] Other
Product form code: [1] Fresh [2] Smoked [3] Sun-dried [4] Fried [5] Salted [6] Other
Unit code: [1] Kg [2] Bags [3] Baskets [4] Whole fish

Q185	Have you received training relevant to your business?	Y/N	
Q186	If yes, indicate the most relevant training received	|Code	

[1] Book keeping and accounting [2] Fish processing [3] Quality control
[4] Other [5] None

ANNEX 3 BEACHES SURVEYED

Uganda

No.	BEACH	DISTRICT	CATEGORY	NO. OF QUESTIONNAIRES
1	Kasenyi	Kalangala	1. NP-O	36
2	Kachanga	Kalangala	1. NP-O	36
3	Kinagaba	Mukono	1. NP-O	41
4	Golofa	Bugiri	1. NP-O	39
5	Kasensero	Rakai	1. NP-O	37
6	Butanira-Lolwe Island	Bugiri	1. NP-O	37
7	Khaza	Mayuge	2. NP-M	41
8	Maduwa	Busia	2. NP-M	37
9	Kalega	Mukono	2. NP-M	37
10	Buwagajjo	Mukono	2. NP-M	40
11	Maala	Mukono	2. NP-M	39
12	Nambula	Mukono	2. NP-M	35
13	Maganda-Sagiti Island	Mayuge	2. NP-M	40
14	Kyagalanyi	Kalangala	2. NP-M	40
15	Kagulube	Wakiso	3. Tilapia	41
16	Nabisukiro	Kalangala	3. Tilapia	40
17	Gunda	Mukono	3. Tilapia	41
18	Katebo-Lwazi	Mpigi	3. Tilapia	38
19	Makonzi	Masaka	3. Tilapia	37
20	Nakiga	Masaka	3. Tilapia	40
21	Nakaziba	Mpigi	3. Tilapia	41
22	Nakiwogo	Wakiso	3. Tilapia	36
23	Wanyange	Jinja	3. Tilapia	32
24	Ntinkalu	Mayuge	4. Dagga	48
25	Ziru-Kibulwe	Mukono	4. Dagga	31
26	Banda	Kalangala	4. Dagga	20
27	Bumeru A	Bugiri	5. Mixed	42
28	Maruba	Bugiri	5. Mixed	40
29	Owen Falls	Jinja	5. Mixed	14
30	Mwena	Kalangala	5. Mixed	36
31	Kiruguma	Mukono	5. Mixed	38
32	Nakirimira	Mayuge	5. Mixed	40
33	Malindi	Mayuge	5. Mixed	38
Total				1228

Kenya

BEACH	TYPE OF FISHERY	SAMPLE SIZE	DISTRICT
Dunga	Mixed	40	KISUMU
Ogal	Tilapia (+ Nile perch)	39	
Asat	Dagaa (+ mixed)	40	
Kowange	Tilapia	42	BONDO
Kogonga	Mixed	39	
Misori	Tilapia (+ mixed)	45	
Ndeda	Mixed	46	
Uwaria	Tilapia	38	
Honge	Dagaa	40	
Mahanga	Mixed	39	
Osieko	Nile perch (+ mixed)	42	BUSIA
Rudacho	Mixed	40	
Sango Rota	Nile perch + mixed	37	NYANDO
Rakwaro	Mixed	40	RACHUONYO
Obaria	Mixed	53	
Awana	Mixed	40	
Bala Rawi	Nile perch	36	HOMA BAY
Lela	Tilapia	43	
Lwanda Nyamasare	Mixed	40	SUBA
Kiumba	Nile perch (+mixed)	40	
Nyakwara	Mixed	43	
Nyakondo	Nile perch (+ mixed)	42	
Nyandiwa	Nile perch (+mixed)	47	
Kinda	Mixed	41	
Rasira	Nile perch (+mixed)	43	
Mulundu	Mixed	40	
Remba	Nile perch	46	
Ringiti	Nile perch	40	
Got Kachola	Mixed	42	MIGORI
Sori	Mixed	41	
		1244	
Mean		**41.5**	

Tanzania

DISTRICT	BEACH	Beach Type	Boat owner	Crews	Others (Fish carriers)	Processors	Traders	TOTAL
TARIME	**Kibuyi**		10	10	9	10	10	**49**
	Rwangenyi		10	10	10	3	17	**50**
MUSOMA	**Iriga**		10	10	8	8	10	**46**
	Busekera		10	11	8	11	9	**49**
	Esaru		10	10	7	6	16	**49**
	Nyamitwebile		9	9	9	4	15	**46**
	Busige&kangatitu		10	8	10	-	13	**41**
	Nduruma		9	10	9	11	8	**47**
UKEREWE	**Rugezi**		10	11	10	9	10	**50**
	Sambi		10	10	7	11	7	**47**
	Ghana kivukoni		8	9	9	13	7	**46**
MAGU	**Chabula**		10	10	10	9	11	**50**
	Buyolwa ndogo/ichil		3	8	1	-	12	**24**
	Bukome		10	9	9	10	10	**48**
MWANZA	**Kayenze ndogo**		10	10	10	9	17	**53**
	Igombe		10	11	8	6	14	**49**
	Igalagala		10	11	10	5	13	**49**
SENGEREMA	**Nfurubizi**		10	9	11	3	7	**40**
	Lubaragazi A		11	10	10	6	14	**51**
	Bugombe A		11	10	11	7	12	**51**
	Chikuku		10	8	11	10	10	**49**
	Kahunda		8	10	10	10	8	**46**
	Kasenyi		10	8	11	10	10	**51**
GEITA	**Nkome-mchangani**		12	10	10	4	14	**50**
	Kaboya		9	9	11	5	12	**46**
BIHARAMULO	**Nyakakarango**		15	8	8	6	12	**46**
MULEBA	**Kasenyi**		10	10	10	6	14	**50**
	Nyarugusu		10	10	5	3	10	**38**
	Ruhanga		10	10	7	1	7	**35**
	Amushenyi		10	10	10	4	12	**46**
	Akisheno		9	10	7	3	7	**36**
	Iramba		10	10	10	2	9	**41**
	Kashekuro		9	10	9	5	2	**35**
BUKOBA	**Igabiro**		10	10	10	3	10	**43**
TOTAL			**333**	**329**	**305**	**213**	**369**	**1549**