IFMP Socio-economics Series 3

CONTRIBUTION OF LAKE VICTORIA FISHERIES TO ECONOMIC GROWTH, POVERTY REDUCTION AND DEVELOPMENT

Literature Review and Data

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Implementation of a Fisheries Management Plan

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EXECUTIVE SUMMARY

Introduction

This is a report of the study on the contribution of Lake Victoria fisheries to economic growth, poverty reduction and development in Uganda. The purpose of the study was to establish the existing knowledge and data on fisheries contribution to Uganda's economy at the national and household levels and asses gaps that would be addressed through further research and data collection.

The study was conducted using two methods: A review of literature was done by reviewing documents, references, reports and published statistics at NaFIRRI, Makerere University, Ministry of Finance, Planning and Economic Development, Department of Fisheries Resources Entebbe (DFR), Uganda Bureau of Statistics (UBOS) and Ministry of Trade and Industry and to UFPEA. This provided information about Lake Victoria stakeholders covering their incomes, marketing chain and revenue data. Secondly, Key Informant Interviews (KIIs) were held with staff at Makerere University, Ministry of Finance, Planning and Economic Development, Department of Fisheries Resources Entebbe (DFR), Uganda Bureau of Statistics (UBOS), and Ministry of Trade and Industry.

The report covers fisheries contribution in the areas of production and Gross Domestic Product (GDP), employment, incomes, artisanal and industrial processing, domestic, regional and international marketing, consumption and public revenues.

Key Findings

Fish production in Lake Victoria has markedly increased since the lifting of the EU ban on fish. The data revealed that there was a rise in the contribution of Lake Victoria to the total catch from the year 2000, reaching a peak in 2003.

The contribution of fish and fish products to the country's GDP is estimated at about 2.48%) although sometimes it is reported to be as high as 12% (Banks 2003). The average monthly incomes to fishers, processors and traders ranged from 40,756 to 436,530 Uganda shillings.

The number of fishers on Lake Victoria, Uganda, had risen from 34,889 in 2000 to 54,148 in 2006. There was also a steady rise in number of people employed by the formal fish

processing and preservation establishments, reaching 2,529 persons with an annual wage bill of Ushs 3,547 million in 2004.

The artisanal fish processing methods in Uganda included: sun drying, salting, smoking and fresh forms while industrial processing included: chilled fillets, smoked whole fish, swim bladders and fish steaks among others.

Fish marketing was an important activity as it enhanced the social and economic contribution of fisheries to the different stakeholders. Three distribution channels for fish and fish products had emerged with different characteristics. They include domestic, regional and international fish markets.

The prices for fish varied across the marketing chain and were mostly affected by seasonal variations in fish catches. The market prices for fish and fish products varied across regions and averaged at UShs 1,256, 1,124 and 584 per kilo for Nile perch, Tilapia and mukene respectively over the period 1990 to 2004.

The value of fish exports from Uganda had increased significantly over the past decade from US$1.4 million in 1990 to US$142 million in 2005. The revenue sources included; licenses, fishing permits, landing fees, fish movement permits and tender charges.

Recommendations

There is need for continued socio-economic resource monitoring to improve and update data and information on the contribution of fisheries and the underlying factors behind the performance of the monitoring parameters.

1. INTRODUCTION

This is a report of the literature review on the contribution of Lake Victoria fisheries to economic growth, poverty reduction and development in Uganda. The purpose of the review was to establish the existing knowledge and data on fisheries contribution to Uganda's economy at the national and household levels and asses gaps that would be addressed through further research and data collection.

The report covers fisheries contribution in the areas of production and Gross Domestic Product (GDP), employment, incomes, artisanal and industrial processing, domestic, regional and international marketing, consumption and public revenues.

2. OBJECTIVES

i) To assess the importance of fisheries contribution to the national economies through fish consumption, contribution to employment, earnings, GDP and foreign exchange. This will include generating a better understanding of how foreign exchange earnings from fish exports benefit the Partner States.

ii) To assess the impacts of exporting fish on the availability and price of fish and fish by-products for local and regional food security and on fish prices, and to assess the impacts of increasing or decreasing trade (mainly Nile perch, but also tilapia).

iii) To assess the extent (quantity over time) and impacts of diverting dagaa for animal feed from the market for human consumption.

iv) To generate a better understanding of the scale and share of benefits of the fish products and by-products for policy-making and for determining objectives for the management of the fisheries resources. This will include estimating the benefits at each stage of the production and marketing chain (i.e. value chain) and how people have been affected by increasing exports, particularly women processors and traders.

v) Document existing and potential policy scenarios that would affect the share of benefits along the value chain, e.g. increasing exports of tilapia; banning export of Nile perch; socio-economic impacts of freezing effort at 2006 levels.

3. METHODOLOGY

The study employed methodologies which were undertaken in two phases:

The first phase involved reviewing literature at Makerere University, Ministry of Finance, Planning and Economic Development, Department of Fisheries Resources Entebbe (DFR), Uganda Bureau of Statistics (UBOS), and Ministry of Trade and Industry. This provided information about Lake Victoria stakeholders covering their incomes, marketing chain and revenue data.

The second stage involved conducting Key Informant Interviews (KII) with staff at Makerere University, Ministry of Finance, Planning and Economic Development, Department of Fisheries Resources Entebbe (DFR), Uganda Bureau of Statistics (UBOS), and Ministry of Trade and Industry.

4. RESULTS AND DISCUSSIONS

4.1 FISH PRODUCTION AND GDP

UBOS (2003, 2005) identifies fisheries as a source of production that contributes to Uganda's GDP. It provides information on fisheries as well as total GDP, from which the contribution of fisheries is derived. This contribution has on average been 2.48% of total GDP between 2000 and 2004 (Table 1).

Table 1: GDP from fisheries at factor cost at current prices, 1998-2004 (Million shillings)

Period (Years)	Monetary	Non monetary	Total Fisheries GDP	Total GDP	% Contribution of Fisheries to Total GDP
1998	173,680	21,906	195,586	7,114,074	2.75
1999	163,661	20,642	184,303	7,940,621	2.32
2000	168,069	21,198	189,267	8,650,323	2.19
2001	209,852	36,468	246,320	9,319,016	2.64
2002	228,996	28,882	257,878	9,901,012	2.60
2003	248,282	31,315	279,597	11,667,123	2.40
2004	292,886	36,941	329,827	12,951,938	2.55

Source: UBOS 2003, 2004

Uganda's main concern has been to sustain its high growth rate which rose up to 10% per annum in the 1990s but has since fallen to 5-6% per annum, due mainly to declining world agricultural prices and unpredictable weather conditions for farming. Stable and rising prices within the fisheries provide the sector with a strong potential to contribute to Uganda's GDP and economic growth in general. FCS(U)P (1997 p.55) identifies three areas of interventions in enhancing the capacity of Uganda's fisheries to contribute to GDP, namely primary production, value addition and ancillary services to the fisheries. The report outlines the strategies to improve the contribution of Uganda's fisheries to GDP, including:

i) Exploring the possibility of further increase in total catch, through off-shore exploitation of mukene and harvesting of other aquatic resources such as mollusks

ii) Minimization of operating costs in the fisheries

iii) Improving fish prices through improved infrastructures and marketing

iv) Minimization of post harvest losses.

v) Diversification of fish production, particularly through aquaculture.

Fisheries contribution to GDP has often been considered to be under-estimated, due to limitations in the valuation methodologies applied. Banks (2003) attempts to re-evaluate the Uganda fisheries, putting its contribution to GDP at 12%. However, the weakness in Banks' estimate is that his methodology is only applied to fisheries. National Income Accounting requires that the same approach be used across all the sectors for comparison. Critics of Banks argue that if his approach was adopted across all the sectors, the values of all the sectors would rise, leaving the proportion of fisheries about the same as before.

As indicated by FCS(U)P (1997), primary production is a major determinant of GDP. Several studies have quantified and described Lake Victoria fish production. Table xx shows Lake Victoria and total fish catch, as well as the percentage contribution of Lake Victoria to the total catch. The table reveals that there was a rise in the contribution of Lake Victoria to the total catch from the year 2000, reaching a peak in 2003. However, no data have been identified on the values of Lake Victoria catch, until recently.

Table 2: Lake Victoria and total fish catch for 1990 – 2004 (thousand tonnes),

Year	Lake Victoria Annual catch	Total Annual Catch	% Contribution of Lake Victoria to Total Catch
1990	119.9	245.2	48.90
1991	124.7	254.9	48.92
1992	129.7	265.5	48.85
1993	134.9	276.0	48.88
1994	103.0	213.3	48.29
1995	103.0	213.2	48.31
1996	106.4	222.0	47.93
1997	106.8	219.5	48.66
1998	105.2	218.7	48.10
1999	104.2	230.0	45.30
2000	133.4	220.0	60.64
2001	131.8	221.0	59.64
2002	136.1	222.0	61.31
2003	175.3	247.0	70.97
2004	253.3	434.8	58.26

Sources: UBOS, 2003, 2005, DFR

Recent efforts at generating reliable production data are now on-going under the Catch Assessment Surveys (CAS) (NAFIRRI 2006). The surveys produce quantities and values of fish by species for selected months of the year, as shown in Table 3.

Table 3: Lake Victoria catch and beach values for selected months

Months	Total catch (tonnes)	Beach values (Mill. Shs)
Jul. 05	15,047.5	13,958.2
Aug. 05	12,202.2	10,934.2
Sep. 05	15,203.9	12,597.3
Nov. 05	11,958.4	12,593.1
Mar. 06	12,360.2	12,802.2

Source: NAFIRRI 2006

Odongkara, Abila and Onyango (2005) attribute the performance of production to the assets at the disposal of the producers. Such assets include boats and gears. Table 4 provides indication of the boats in place for fish production, as periodically reported under the Frame Surveys. The data shows a steady growth in the number of boats on the Lake. The Surveys provide details of the types of boat and means of propulsion, indicating their catching capacities.

Table 4: Number of fishing crafts on Lake Victoria

Years	No. of fishing crafts
2000	15,544
2002	18,612
2004	16,775
2006	24,148

Source: DFR, 2006

Further information on the production capacity is provided by the fleets of fishing gears on the Lake. The Frame Surveys provide this information, as shown in Table 5. The table shows a rapid increase in the number of gears on the Lake over the period of 2000 to 2006.

Table 5: Effort levels by type of fishing gears, 2000-2006.

Years	Gillnets	Mukene nets	Hooks	Other gears*	Totals
2000	297,663	2,452	259,038	13,507	572,660
2002	427,488	1,851	933,506	7,785	1,370,630
2004	458,597	1,473	977,183	7,950	1,445,203
2006	589,777	2,198	2,301,469	2,605	2,896,049

*Beach/boat seine, cast nets, monofilaments, traps etc.
Source: DFR, 2006

A number of studies have detailed descriptions of the types of boats and gears used in fish production, (SEDAWOG 1999, Odongkara 2001, FIRRI 2003, Wegoye & Kaidhiwa 2005, Odongkara 2006A and NAFIRRI 2006). The studies have provided information on their average expected lifetimes, based on the materials used in their construction and average costs, among others (Table 6).

Table 6: Unit Price, Salvage Value and Expected Useful Life of Fishing Units

Enterprise Level	Boat			Engine			Fishing Gear			
	Unit price (Shs)	Salvage value (Shs)	Useful life (years)	Unit price (Shs	Salvage value (Shs)	Useful life (years)	No. per boat	Unit price (Shs	Salvage value (Shs)	Useful life (years)
Small handline	60,000	0	2	.	.	.	7	180	.	.
Small longline	118,000	3,200	5	.	.	.	300	8,714	.	.
Small basket trap	45,000	0	5	.	.	.	20	2,167	.	.
Small cast net	110,000	3,000	5	.	.	.	1	63,333	0	1
Small gillnet	108,221	3,434	5	.	.	.	18	17,644	673	0
Small beach seine	105,000	1,500	5	.	.	.	1	300,000	30,000	8
Medium longline	268,889	14,667	5	.	.	.	700	75	.	.
Medium gillnet	231,730	32,432	5	.	.	.	45	19,196	833	1
Medium beach seine	244,000	19,000	7	.	.	.	1	295,000	28,333	7
Medium-Mukene	274,211	17,500	4	.	.	.	1	256,421	12,105	1
Large longline	348,000	10,000	5	2,050,000	383,333	6	700	90	.	.
Large gillnet	543,158	67,105	5	2,458,333	708,333	6	95	42,528	3,056	1

Source Wegoye and Kaidhiwa 2005

4.2 INCOMES

The importance of production activities is in the incomes they generate for the fisheries stakeholders. (Lee 1985 p. 6) defines income as "the surplus arising from business activity ….. and derived from periodic matching of revenues from sales with the relevant costs."

4.2.1 Stakeholders' earnings

SEDAWOG (1999) attempted to estimate income levels on Lake Victoria as part of a fish marketing study. However, the exercise was not conclusive and the authors concluded: "Respondents did not really know what incomes they 'earned', given that incomes tend to vary from day to day and demands on income also fluctuate depending on domestic requirements or the demands of the wider community.

Other income studies have also been reported (Odongakra 2001, FIRRI 2003 and) made estimates of monthly earnings from the different types of enterprises within fish production, processing and marketing as given in Table 7. The Table reveals that motorized fishing generated the highest earnings, followed by processing of smoked fish, while traders were the least income earners.

Table 7: Average monthly earnings by sub-sector

Sub-sector		Earnings (UShs)
Fishing	Motorized	436,530
	Non-motorized	187,223
Processing	Smoking	306,413
	Sun drying	213,589
Trading	Bicycle Trader	41,805
	Market stall-trader	40,756

Source: Odongkara, 2001

4.2.2 Poverty levels

Various studies have attempted to provide information on poverty in fisheries. Geheb (2000) which attempted to characterize the poor fishers through PRAs conducted at Nkombe and Lwalalo. In a similar exercise, UPPAP defined the poor among fishing communities of Kalangala through PRA (MFPED 2000). Quantification of poverty in fisheries was provided by Odongkara (2001), which concluded that the crew and some segments of processors and traders were among the poorest segments in the fisheries. Table xx gives indication of the proportions of people within the different income brackets in fisheries. Most of the people in the group of Ushs 100,000 and below were likely to be below the poverty line.

Table 8: Monthly incomes for the different categories of fishers (%)

Income group (UShs) / **Type of operator**	100,000 & Below	100,001 to 200,000	200,001 to 300,000	Over 300,000	Total
Average Fisher	47.0	20.7	13.1	19.2	100
O.niloticus Fisher	63.9	16.4	10.1	9.6	100
R. argentea Fisher	39.4	26.6	14.9	19.1	100
L. niloticus Fisher	33.2	24.6	15.0	27.2	100
Powered Canoe Fisher	16.0	18.5	13.6	51.9	100
Non-powered Canoe Fisher	48.1	21.0	14.6	16.3	100
Male Fisher	46.5	21.5	13.1	18.9	100
Female Fisher	51.7	13.3	13.3	21.7	100
Labourer: Share system	90.5	7.7	.8	1.0	100
Labourer: Flat Rate	89.8	5.9	2.7	1.6	100

Source: Odongkara 2001

4.3 EMPLOYMENT

Unemployment is one of the challenges facing Uganda's economy. Fisheries contributes to employment within its production, processing, marketing and industrial processing components. The employment within production is given by the number of fishers recorded

under the Frame Surveys undertaken every two years on the Lake. This has risen from 34,889 in 2000 to 54,148 in 2006 (Table 9),

Table 9: Number of fishers on Lake Victoria, Uganda

Years	No. of fishers
2000	34,889
2002	41,647
2004	37,721
2006	54,148

Source: DFR, 2006

However, the data does not distinguish between boat owners and crew members, a distinction which is important from the point of view of employment and the earning associated with them.

Industrial fish processing is another source of employment. Surveys of industrial production by UBOS reveal a steady rise in number of people employed by fish processing and preservation establishments, reaching 2,529 persons with an annual wage bill of Ushs 3,547 million in 2004 (Table 10).

Table 10: Processing and preserving of fish and fish products

Year	2001	2002	2004
No. establishments	5	10	6
No. of employees	1,191	2,466	2,529
Annual wage bill (Shs mill)	1,976.5	3,827.0	3,547.0

Source UBOS 2005

However, the data does not give a gender breakdown of the number of people employed

4.4 PROCESSING

Fish processing on Lake Victoria can be distinguished between artisanal and industrial processing. FIRRI (2003) reports that artisanal fish processing has been on the decline as industrial processing grows.

4.4.1 Artisanal processing

Several studies have reported on artisanal fish processing on Lake Victoria in the recent past (TDRI 1983, Reynolds & Greboval 1990, FCS(U)P 1997, SEDAWOG 1999, Odongkara 2001, FIRRI 2003, Kyangwa & Odongkara 2005, Odongkara 2006).

The studies describe the different forms of artisanal fish processing, namely smoking, sun-drying, salting and frying. Sun-drying is of limited importance, being restricted mainly to the processing of mukene and juvenile tilapia. Salting is a traditional mode of processing in the fisheries although salted products are not especially popular amongst Uganda consumers, but have always enjoyed a strong demand on the DRC markets. Frying has become a popular method for the Nile perch. Fried perch, often prepared in its own oil, is widely sold in the regular municipal markets of urban centres around the lakeshore, has also become an extremely common item in the numerous informal neighborhood street markets that have become a standard feature of city life (FIRRI 2003). Hot-smoking is by far the most popular processing method and is reputed to provide the best returns to the processor. At many remote islands and mainland fishing communities most of the catch is smoked, due to transport constraints.

4.4.2 Industrial fish processing

Fisheries represent one of Uganda's greatest achievements in the area of value addition. Several authors have reported on the various aspects of the development of industrial fish processing since its introduction in the early 1990s. The industry has taken advantage of policies aimed at providing enabling environment for investment, namely the Investment Promotion, Privatisation and Export Promotion Poliicies, among others (Odongkara & Okaronon 1999). UBOS (various years) gives annual data on number of plants, workforce and output.

Ponte 2005 provides an overview of the industrial fish processing sector, listing the number of companies, processing plants and their features. Table xx shows that in 2004 there were

14 plants in operation, with total installed capacities of 530 tonnes per day. This translates to well over 180,000 tons of raw material per annum. However, the official policy of Uganda is to allow only 60,000 tons of fish as raw material per annum for export processing (MAAIF 2004a). This is to ensure that adequate fish is available for local consumption. Fish processors are being encouraged to start fish farming to supplement their requirements for raw material. (Nyeko 2004).

Table 11: Overview of industrial fish processors in Uganda.

Company Code	No. of Processing Plants 2004	Operative from (year)	Employment (n) (2002)	Total processed fish by species (% total value, 2003)		Total installed capacity (tonne, 2003)
				Nile perch	Tilapia	
A	2	1989/2003	366	99	1	90
B	2	1991/2004	187	90	10	10
C	1	1996	120	97	3	20
D	1	1989	211	85	15	20
E	1	1995	160	95	5	60
F	1	1993	350	100	0	45
G	2	1994/2000	403	100	0	115
H	4	1994/2003(3)	600	100	0	120
I	1	1992	128	100	0	50
Total/average	15		2,525	96	4	530

Sources: Ponte, 2005

FAO (2003) gives information on the location of the plants, types of products produced, facilities installed and market destinations (Table 12).

Table 12: Features of the major private fish processing plants in Uganda

Locations/ Headquarters	Fish Forms/by-Products	Industrial Facilities Present	Market Destination
Jinja Entebbe Kampala Rakai	Swim bladders. Smoked fillets. Smoked whole fish. Frozen fillets. Fresh whole gutted fish. Fresh chilled fish. Hot smoked fish. Frames. Vacuum packed fillets. Chilled filets. Fish steaks.	Off loading dock. Receiving room. Filleting room. Flake ice plant. Cold store. Smoking unit. Stores. Generator room. Processing room. Chill rooms. A workshop. Insulated trucks. Chilled rooms. Blast freezers.	European Union USA Japan Asia Middle East Australia Local markets. Local agents

Source: FAO Corporate Document, 2003.

The total investment by private investors in fish sector in Uganda is around US$ 200 million. There is a strong private sector involvement in fish processing and export, under their umbrella institution called Uganda fish Processors and Exporters Association (UFPEA), which is comprised of 16 fish processing and export firms. (UFPEA 2005).

To gain appreciation of the importance of industrial fish processing and export, studies have been carried out of the impact of the ban on Lake Victoria fish into the EU market in 1999-2000. Table xx outlines some of the effects

Table 13: Estimated losses to Uganda due to the fish ban

Aspects of the losses	Estimated figures
Export earnings	US$ 36,900,000
Factories that closed down	3 out of 11

Factories that reduced their labor force by 2/3	8 out of 11
Jobs lost in fish factories	2,000
Jobs lost in fishing activities	32,000
Persons that lost 2/3 of their income	68,000
Affected family members and relatives living on the same income	300,000

Source: UNIDO Report, 2000 and FAO, GLOBEFISH 2005.

4.5 MARKETING

Marketing is important in enhancing the social and economic contribution of fisheries in that it enables fishers to realize incomes from their catch and consumers to access fish supplies. According to FAO 2003, fish marketing in Uganda is quite complex, since it involves fairly wide geographical areas, an assortment of products, and a large number of traders and processors who supply the consumer in ways that may be direct or indirect, formal or informal.

Three distribution channels for the main commercial fish species, with distinct characteristics have emerged, namely the domestic, regional and international markets (LVEMP 2005).

4.5.1 Domestic market

On the domestic market:

i) Usually the primary stage occurs at landing sites, when canoes return from the fishing grounds and discharge their catches to waiting traders, processors, and consumers.

ii) In some cases, fish can be sold directly on the water to those operating collection boats.

iii) From the beaches, the fish goes to the urban and semi-urban markets, to rural communities, fishmeal factories, hotels and restaurants within the country.

iv) The fish is marketed fresh or processed in line with consumer preferences, storage conditions and supply and demand.

v) The lack of cold storage and marketing facilities makes fresh and frozen fish distribution to the inland population difficult. Therefore, some of the fish is smoked or salted/dried.

vi) Domestic fish distribution has improved with increased channels involving middle men/boat traders that supply to fish processors/traders who deliver to rural and urban markets.

Fish markets are centres where fish is sold to consumers or traders for onward distribution to other areas. Spatial distribution of markets is provided in Table 14, showing Kampala, Mayuge, Mukono and Wakiso as the districts with the largest numbers of fish markets.

Table 14: Number of main fish markets by district, 2004

District	Number of Main Fish Markets
Busia	1
Bugiri	5
Jinja	6
Kalangala	2
Kampala	10
Masaka	4
Mayuge	10
Mpigi	3
Mukono	9
Rakai	2
Wakiso	9
Total	58

Source: DFR 2004

However, there is no regular data on quantities of fish handled by these markets

a) Landing prices

Incomes earned do not only depend on the quantities of fish marketed but also on the prices realized. The recent Socio-economics Baseline Survey provides information on prevailing prices for the main commercial species on the domestic market (Odongkara 2006a). Other

reports have also provided price information over the recent past (FIRRI 2003, Odongkara, 2005, Wegoye and Kaidhiwa 2005, FIRRI 2006).

Seasonal variations were reported in the prices at which fresh Nile Perch was traded at the beaches. Table xx shows the average prices for the main fish species and forms on the domestic market, wth the mean typical price for Nile perch being Ushs 1,880 per kg. These variations are attributed to changes in fish catch and demand by the overseas buyers. (Odongkara 2006a).

Table 15: Average beach and market prices of major fish species by form, 2006

Species	Fish Form	Beach prices	Market prices
Nile Perch	Smoked	3050	3,500
	Salted/sun dried	1775	--
	Fresh	1880	2,200
Tilapia	Smoked	2000	3,000
	Salted/sun dried	1675	--
	Fresh	1057	2,000
Mukene	Smoked	---	--
	Salted/sun dried	1200	1,600
	Fresh	165	2,400

Source: Odongkara 2006a.

b) Market prices

Market (retail) prices for fish and fish products vary across regions (western, northern, southern, central and eastern) and towns in the country. Analysis of market prices for fish and fish products in major towns shows average price variations of major fish species as summarized in the Table xx above.

c) Price trends

With respect to historical data and trends in fish prices, the data shows that fresh Nile perch prices have been rising (Table 16).

Table 16: Average fish prices for major commercial species (Sh/kg)

Year	Nile perch	Tilapia	Mukene
1990	300	--	--
1999	1,500	1,000	--
2000	1,000		--
2001	1,800	690	310
2002	1,270	660	360
2003	1,700	1,800	936
2004	1,225	1,470	733

Sources: LVEMP 2005

4.5.2 Regional fish trade

Regional fish markets are a second category of markets for fish. Considerable information has been generated on regional trade under the LVEMP, IUCN and IFMP Projects (Odongkara *et al* 2005, Heck *et al* 2002 and Odongkara 2006b). The highlights of the findings of the studies are as follows:

i) Uganda is a major exporter of fish to the Great Lakes Region. The regional trade has been in existence for a long time especially among border communities but only became vibrant in the 1990s with the proliferation of the Nile perch and mukene.

ii) Traders are mostly organized in formal groups and companies for purposes of collectively meeting costs of transport and licensing, collective responsibility in case of a problem and quality concerns that could easily be tracked, basing on groups and companies as opposed to individuals.

iii) Most traders make on average one trading trip in a month. Number of trade trips mostly depends on catch and distance to markets and they are mostly wholesalers.

iv) The fish is distributed both through the formal as well as the illegal, unrecorded and unregulated (IUU) channels.

v) The IUUs involve immature Nile perch and Tilapia.

vi) Conflicts are often associated with cross-border fish marketing.

vii) Traders prefer the regional markets mainly due to better prices offered and presence of ready markets.

viii) The most outstanding problem to traders during fish distribution is the presence of many regulatory points for both revenue collection and size/quality assurance.

ix) Fish species exported are mainly sundried tilapia, mukene and juvenile Nile perch as well as factory by-products.

x) Data on regional fish trade is poorly kept by DFR, Local Governments and BMUs, except by the Uganda Revenue Authority.

Indications of the quantities and values of fish exported to the Democratic Republic of Congo (DRC) through Bunagana Border Post are given in Table 17.

Table 17: Export of Mukene to DRC through Bunagana Border Post, 2002

Month	Quantities (Tonnes)	Values (Shs)
June	88.4	24,600,000
July	106.88	23,800,000
August	130.2	33,050,000
September	119.48	46,213,000
October	139.92	54,661,000
November	106.68	41,338,000
December	95.76	37,087,000

Source: URA Records Bunagana Custom Border Post

4.5.3 International exports

The value of fish exports is one of the useful indicators for appreciating the economic importance of fisheries to a country. Ugandan export earnings from fisheries have increased significantly over the past decade from US$1.4 million in 1990 to US$142 million in 2005 (UFPEA 2006, UBOS 2005). Several studies by Uganda Bureau of Statistics (UBOS) show that fish and fish products were the second main foreign exchange earner. This was due to the increasing market prices arising from improved quality of fish and fish products. Table xx provides the basic information on Uganda's fish exports.

Table 18: Export performance of fish and fish products (1990-2005)

Year	Fish Export Prices* (US $/Kg)	Fish Export Quantities (Vol. mt)	Fish Export Values (US$ '000)	All Exports Val. US$ '000	Proportion of Fish to Total Exports (% Value)
1990	0.8	1,664	1,386	177,656	0.78
1991	1.1	4,687	5,313	184,263	2.88
1992	1.3	4,851	6,498	146,767	4.43
1993	1.5	6,138	8,943	201,231	4.44
1994	1.6	6,564	10,403	459,939	2.26
1995	1.1	16,046	32,262	553,938	5.60
1996	3.4	14,075	46,251	703,993	5.65
1997	2.4	11,819	27,864	594,628	4.70
1998	2.7	14,688	39,879	536,747	7.40
1999	2.6	9,628	24,837	478,750	5.20
2000	2.1	15,800	34,360	401,645	7.70
2001	2.8	28,000	78,839	451,765	17.30
2002	3.2	26,800	87,000	475,530	18.80
2003	3.5	25,080	86,088	---	16.50
2004	---	30,000	105,000	---	15.50
2005	---	36,000	143,618	---	---

Source: UBOS 2003, 2005 and UFPEA 2006
* Prices FOB Entebbe

Bahiigwa and Keizire examined the destinations of the fish products for the years 2002 and 2004. The data reveals that the EU was the main destination for chilled fillets, frozen fillets and H&G while most of the fish maws went to the Asian markets (Table 19).

Table 19: Comparison of fish exports to various regions (2002-2003)

	FORMS AND BY-PRODUCTS EXPORTED							
	Chilled Fillets (%)		Frozen Fillets (%)		H& G (%)		Fish Maws (%)	
REGION	2002	2003	2002	2003	2002	2003	2002	2003
EU	98	90	26	34	98	91	30	10
USA	0	6	1	3	0	0	0	0

Japan	0	0	18	8	0	0	0	0
Asia	0	0	14	6	0	0	70	90
Middle East	2	3	14	27	2	8	0	0
Australia	0	1	16	18	0	0	0	0
Africa	0	0	6	3	0	1	0	0
Others	0	0	5	1	0	0	0	0
Total	100	100	100	100	100	100	100	100
Product contribution to total vol.	45	49	46	47	7	3	2	1

Source: Bahiigwa & Keizire, 2003.

1

a) Factory fish prices

Analysis of fish procurement data by Nyeko (2004) reveals that the price paid by the factories for fish depends on supply and demand of fish for exports and prices received by the factories from the export markets. Episodes of fish bans between1997 and 2000have depressed prices (Table xx). Furthermore, in 2003 there was a price decrease following increased supplies of fish on the market. The factories procured more fish from October to December at a much lower price leading to low income for fishers. Apart from the monthly variations of prices paid to agents, there is also price variation between factories and even within the same factory as the price paid to agents from different beaches varies. The price variation between factories could be due to competition for fish while the reason for internal variations within the factories is not clear. It could be attributed to the quality of fish at the time of delivery to the factory. Prime quality fish gets a higher price as compared to fish with some bruises.

4.6 FISH CONSUMPTION

In Uganda, fish is eaten in different forms, species and comes from different sources. According to (FAO, 2005) consumer attitudes and preferences towards food and specifically fish in Uganda are conditioned by factors in the physical and cultural environments of different ethnic communities. These factors affect both levels of consumption and tastes for various products.

Tilapia and Nile perch are the most widely available fish in Uganda; fresh or processed, they are almost universally accepted and appreciated within the country's fish-eating population. Although it is probably the tilapia or "ngege" that is most liked of the two, Nile perch has

proven to be highly popular with consumers. Table xx gives the per capita fish consumption data for Uganda. The data shows that Uganda fish consumption is still low, compared to the 50kg consumption level recommended by WHO.

Table 20: Average annual per capita fish consumption in Uganda

Year	Per capita consumption (Kg/yr.)
1998	10
1999	7
2000	7
2001	12
2002	10
2003	10
2004	10
2005	10

Source: LVEMP 2005

4.7 REVENUES

The literature on contribution of fisheries to public revenues was examined the aspects covered included revenues sources and levels, who was benefiting, types of payments by fish exporters, contribution to GDP, fleet sizes and description of the fisheries.

4.7.1 Revenue sources and levels

Bahiigwa *et al* (2003) outlines the different sources and levels of revenues generated from the fisheries stakeholders at different levels. At Central Government level, the report identifies two main instruments, namely the industrial fish processing license and the health inspection certificate fee.

a) Industrial fish processing license

The industrial fish-processing license in Uganda is issued annually by the DFR to all fish processing firms. The current annual charge is Ushs 500,000 (equivalent to US$ 256) for each operating processing factory.

b) Health inspection certificate

DFR is mandated to certify the quality and safety of fish, especially for export. All the fish destined for the export market is certified by issuing a health inspection certificate after conducting quality and safety tests on samples of every consignment or batch of the fish. The certificate is issued at a charge of Ushs 2,000 for every consignment.

It has also been agreed that fish processing factories would pay a levy of US$ 0.20 per kg of fish exported. It is understood that once the proposed National Fisheries Authority comes into effect, a sustainable funding system would be put in place, to supplement resources from the constrained national treasury.

At the Local Government level, Bahiigwa *et al* (2003) identifies six sources of revenues as follows:

a) Fishing vessel license

The right to fish requires an annual fishing vessel license issued on behalf of DFR by the District CAOs. Until recently the license cost Ushs 12,000 for small planked canoes without

an engine and Ushs 17,000 for a vessel with an engine. However, recent reforms have resulted in substantial increases in license fees as indicated by Table 21 below:

Table 21: License fees for fishing on Lake Victoria as of 1st January 2005.

Category of vessel	Citizen vessels License fees (Ushs)	Citizen vessels License fees (US$)	Non-citizen vessels License fees, (Ushs)	Non-citizen vessels License fees (US$)
Vessels of less than 5 metres long	20,000	11	200,000	111
Vessels of 5-11 metres long	30,000	17	500,000	278
Vessels of over 11 meters long	50,000	28	1,000,000	556

Source: (LVFO, 2005),

b) Fishing permit

The fishing permit, although contained in the principal fisheries law, has not been widely enforced until recently. The annual charge is Ushs 5,000, paid by crew members.

c) Fishmongers license

This is a fish-trading license with a range of values depending on the district and the geographical extent of trading operation. Until recently, annual license fees for traders operating within a single district ranged from Ushs 5,000-15,000 for small-scale traders. High fees were charged for vehicle trading between districts. All fishmongers' license fees were increased under a new statutory instrument.

d) Marketing permits

Marketing permits are required by all traders in secondary and higher markets. The charges for the permits vary across the country and between different sized markets. At the primary markets at fishing landing sites, market fees are also charged but these are paid under a system of tendering tax collection by the district governments.

e) Fish landing fees

A daily landing charge is applied by local governments at all designated fish landing sites. The charge is about Ushs 500 per boat. This charge is collected using tendering of the tax collection system.

f) Tender charges

The service tendered is tax collection. Boat landing fees, market fees and other associated taxes are collected by private tender holders who pay Local Governments an agreed tender price fixed in their bid for the tender in return for the right to collect specific taxes on behalf of local governments. The profit of the tender holder is the amount over and above the reserved price of the landing site and costs of tax recovery.

The implication of charges on landings may result in a long-term reduction of the number of fishermen from the fishery as a result of increased costs. In the long run the higher costs resulting from the charges will be offset by the increased average catches arising from, presumably, higher levels of fish stocks. In the short run however, the charges will probably not drive away many fishermen. Also in response to the charge on catch, fishermen will be tempted to increase their fish prices in a bid to cover the increased costs (Keizire, 2002).

4.8 SUMMARY OF GAPS

Table 22: Summary of gaps

Type of information	**Information gaps**
Production and GDP	• GDP contribution of Lake Victoria. • Monthly and annual catch values of Lake Victoria (time series).
Processing	• Quantities of major fish species processed (time series data)
Marketing	• Marketed quantities of major fish species. (Time series). • Fish prices time series for other species • Fish exports by species.
Employment	• Distinction of employment numbers of fishers (crew & boat owners). • Gendered proportions of employees in fish factories, marketing and their earnings. • 'Ill-fare' occupational hazards
Poverty levels and Livelihoods	• Poverty levels of other segments in the industry. • Poverty levels in processing factories.

	• Earnings from other activities related to fishing. • Household income estimates of Lake Victoria fisher communities. • Opportunities within other activities apart from fishing. • Benefits of fishers' incomes-shops, bars at landing sites.
Consumption	• Monthly per capita consumption of fish. • Fish as a proportion of fish meals.
Revenues	• Time series totals on different revenue sources
Policies	• Management policies • Industrial policies • Trade tariffs

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusion

As the fisheries sector continues to support the livelihoods of many people as well as contribute to Uganda's economy; it becomes increasingly important to consider ways and means to sustain the fisheries resources. One of the main strategies that have been employed in most developing countries is provision of information, particularly on major water bodies, to enable fisheries planners, managers and other stakeholders base their management decisions and recommendations.

It is, therefore, important that the subsequent socio-economic surveys address the information gaps identified as shown in the table above in order to improve understanding of the fisheries in the future.

5.2 Recommendations

There is need for continued Monitoring Control and Surveillance activities on major water bodies, particularly Lake Victoria as this will help improve and update information and statistical data on specific parameters for monitoring changes in the fisheries resources in Uganda.

The Government should devise strategies for improving statistical information and recording at border points especially for fish and fish products destined for foreign markets.

This could be achieved through creation of statistical reference points with fully developed databanks on country exports stationed at the various border points and major outlets.

The capacity of market officers, beach executives and statistical officers in the country needs to be enhanced in order to improve statistical handling, particularly for fisheries related statistics at beach, local and national levels. This would significantly improve data collection, handling and utilization at market, beach and national levels especially on fish and fish products.

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Appendix 1: Country Profile for Uganda

Demographic Information and Population

Uganda is an east African country located astride the equator and lying between Latitude 4o12'N and 1o29'S and Longitude 29o34'E and 35o0'W. It has a total surface area of 214,038 sq km of which 197,097 sq km is under land and 43,941sq km is area under water and swamps. Temperatures and rainfall range between 15-30ºC and 700 - 2,000mm/year respectively. The country's estimated population grew from 24.3 million in 2000 to 29.9 million in 2006 with an annual growth rate of 3.1% and 3.6% respectively (UBOS, 2006).

General Economy and Sectoral Growth

Overall, the economy recorded higher economic growth during the financial year 2003/4. This was achieved because of continued macro economic stability and recovery in the food crop sub sector due to adequate and timely rains (UBOS, 2006). The table below summarizes the most important economic indicators and contribution to GDP by sector. During the financial year 2003/4, the economy registered a growth rate of 6% compared to 5.2% that was registered in 2002/3. The overall GDP growth rate has been driven by better performance of the agricultural sector, which has grown by 5.2% in 2003/4 compared to a lower growth rate of 2.3% in 2002/3.

Table xx: GDP Growth and Sectoral Growth (2000-2006)

	2000	2005	2006
GDP (current US$)	5.9 billion	8.7 billion	9.3 billion
GDP growth (annual %)	5.6	6.6	5.3
Inflation, GDP deflator (annual %)	3.8	7.8	6.7
Agriculture, value added (% of GDP)	37.3	32.7	31.7
Industry, value added (% of GDP)	20.3	24.8	24.6
Services, etc., value added (% of GDP)	42.4	42.5	43.7
Exports of goods and services (% of GDP)	11.2	13.1	13.8
Imports of goods and services (% of GDP)	23.0	27.2	30.7

Source: World Development Indicators Database, 2007

Priority Sectors in the Economy

The sectors that have been identified as being key contributors to economic growth are agriculture (cash crops, food crops, livestock, forestry and fishing), mining and quarrying, manufacturing (formal and informal) and electricity and water. Others are Hotels and restaurants, transport and communication (road, rail, air and support services and posts and telecommunications) and community services (general government, education, health, rents and miscellaneous) (UBOS, 2005). The table xx below shows the percentage growth rates of these key sectors from 2000 to 2004:

Table xx: Percentage Growth Rates of Key Sectors in the Economy

Industry Group	Period (Years)				
Monetary	**2000**	**2001**	**2002**	**2003**	**2004**
Agriculture	2.7	6.6	3.6	5.1	0.5
Mining and quarrying	12.3	7.6	11.3	-5.4	18.1
Manufacturing	3.7	9.7	3.0	3.3	9.4
Electricity and water	8.7	7.9	3.0	6.1	7.3
Construction	3.0	7.8	12.0	9.6	16.6
Wholesale and retail trade	2.5	7.8	4.4	5.9	6.1
Hotels and restaurants	18.0	14.9	14.9	13.1	4.0
Transport and communication	8.4	11.0	14.2	19.3	20.6
Community services	5.1	4.8	4.8	3.9	5.1
Total Monetary	4.3	7.4	5.8	6.4	6.9
Non Monetary					
Agriculture	5.0	2.6	-1.0	4.9	-2.3
Construction	3.4	3.4	3.4	3.4	3.4
Owner-occupied dwellings	8.0	7.0	6.5	6.0	6.0
Total non monetary	**5.4**	**3.3**	**0.4**	**5.1**	**-0.7**
Total GDP at basic prices	**4.6**	**6.5**	**4.6**	**6.1**	**5.3**

Source: Uganda Bureau of Statistics (UBOS)

The Poverty Status in Uganda

National definition of poverty

Households whose real expenditure per adult equivalent falls below a given level- the poverty line- are considered poor. The poverty line used in Uganda is an absolute, not a relative one; it measures the level of expenditure needed to secure basic food consumption needs (taking in to account regional variations in food prices) and a corresponding level of non food consumption (UNEP/NEMA, 2004).

Proportion of people living in poverty and trends

At the moment, it is believed that about 38% of the people in Uganda depend on US$1 or less for their livelihood daily. During the 1990s, income poverty fell dramatically. The proportion of Ugandans whose expenditures fell below the poverty line fell from 56% in 1992 to 44% in 1997/8 and even faster to 34% in 2000. These changes were driven mainly by increases in average income, rather than by redistribution. Since 2000, income poverty trends increased from 34% to 38% between 2000 and 2003 (PRSP 2004/5 - 2007/8).

Sectors most affected by poverty

The proportion of people below the poverty line varies across major sectors of the economy. In 2002/3, about 84% of all people engaged in the agricultural sector (both crop and non-crop agriculture) fell below the poverty line compared to 81% in 1999/2000. 28% of those engaged in the manufacturing sector fell below the poverty line in 2002/3 compared to 23% in 1999/2000. In the construction sector, about 23% fell below the poverty line in 2002/3 compared to 20% in 1999/2000. In the trade sector, the proportion of people below the poverty line reduced from 13% in 1999/2000 to 17% in 2002/3 while proportions in the services sector reduced from 15% to 13% in the years (PRSP 2004/5 - 2007/8).

Explanatory Factors

Why poverty fell between 1992 and 2000

- High rates of consumption growth (5.3% annually per capita) reflecting the fast rates of GDP growth in the early and mid 1990s.
- Increased world prices, in part due to the liberalization of agricultural marketing.
- After 1997, agricultural growth was healthy which increased rural incomes.
- Public expenditure was also increasing during those years.

Why poverty has risen since 2000

The increase in poverty since 2000 is of concern to policy makers. The pattern is a result of a number of factors:

1. *Slow growth in agriculture*;

Agricultural growth during 2000/03 was disappointing except in the livestock sector. This has contributed significantly to the increase in poverty.

2. *Decline in farmers' prices;*

Uganda's terms of trade have been declining since the coffee boom in 1994. This has seen a dramatic fall in the prices of several agricultural exports, hence a decline in agricultural incomes.

3. *Asset distribution;*

According to the PEAP (2004/05), there are signs that the distribution of assets as well as incomes became more unequal during the late 1990s.

4. *Fertility and mortality;*

The high rate of fertility is another structural factor tending to increase poverty in Uganda. Poor households tend to have more children and therefore their assets are subject to greater subdivision across generations.

5. *Insecurity;*

Even if the level of insecurity is constant, some areas such as the east have experienced an increase in security-related poverty, partly because of distress migration from disrupted parts of the north.

Appendix 2: **Work schedule**

Activity	**Person resp.**	**24-28 Jul**	**31 – 4 Aug**	**7 – 18 Aug**	**21 Aug – 8 Sept**	**11 - 29 Sept**
Int. lit review	CDS					
Develop methodology	CDS					
Comments on lit review, methodology and concept note	SE RWG PM, SE					
Finalise methodology	CDS					
Regional lit reviews and data collation	SE RWG SE					
Gap filling/key informant interviews	SE RWG SE, CDS					
Scenario testing and report writing	CDS, SE SE RWG					
Production of fact sheet	CDS, SE, RWG					

Appendix 3: Appendix 3: Summary of output variables and data sources for assessment of contribution of fisheries to the economy

Issues	Variable categories	Indicators	Units	Possible source
Importance and contribution of fish to the national and local economy and poverty alleviation	Fish consumption	Per-capita monthly fish consumption Fish as a proportion of animal protein	Kg/month/year % of animal protein that comes from fish	Past studies
	Catch rates	Effort levels Yield levels	Number of fishing gears Kilogram	National statistics/ CAS
	Contribution to employment	Number occupied in the fisheries (direct, and secondary, e.g. processing, marketing and gear sectors)	Number	Frame survey, livelihoods survey
	Contribution to GDP	Proportion of fisheries in GDP	Shs	National statistics/ CAS/Export statistics
	Contribution to foreign exchange earnings	Proportion of net national foreign exchange earnings from fisheries	US$	Export statistics
	Contribution to balance of payments			
	Contribution to poverty alleviation	Proportion of fishers below the poverty line	%	Survey / PRSP monitoring
Impacts of fish export on domestic market and food security	Fish exports	Average monthly export quantities	Kg/tones/ month	Export statistics
	Fish prices	Average monthly fish prices at beach, domestic market and export levels.	Shs	Fish marketing study
	Incomes of fishers and traders	Per capita monthly incomes of fishers and traders	Shs	Fish marketing study
	Fish availability: fish for animal feed; variation in prices; competition for frames and dagaa: tilapia and domestic/ regional markets	Average monthly quantities of fish on the domestic markets		CAS and export statistics?

Issues	Variable categories	Indicators	Units	Possible source
	Fish consumption	Per capita monthly fish consumption		Fish consumption study?

Appendix 4: Topic Guide for the Key Informant Interviews

CONTRIBUTION OF LAKE VICTORIA FISHERIES TO ECONOMIC GROWTH, POVERTY REDUCTION AND DEVELOPMENT

Topic Guide for the Key Informant Interviews

Date: _____

Name of Interviewer: _____

Name of Institution: _____

The objective of the study is to assess the contribution of Lake Victoria fisheries to the national economy and to poverty reduction through fish consumption, contribution to employment, earnings, GDP and foreign exchange earnings. The purpose of this visit is to assess what information is collected and used by the different institutions and how this can be improved.

1. You are requested to indicate the types of information collected by your institution, its coverage of fisheries and the use to which it is put, indicating any limitations encountered.

Type of information	**Fisheries coverage**	**Utilisation of information**	**Limitations**
1. PRODUCTION Questions: What kind/type of information do you collect on production? **Gaps** Quantities, values (Nile perch, Tilapia, Mukene) Contribution to national economy Factors	Questions: What is the coverage of fisheries in all the production information collected? OR Do you collect information on quantities, values and national contribution of major fish species?	Questions: What do you use the information collected on fisheries production for?	Questions: What are some of the limitations you face in the collection of fisheries information on production?

Type of information	**Fisheries coverage**	**Utilisation of information**	**Limitations**
2. INCOMES Questions: What kind/type of information do you collect on incomes? **Gaps** Sources, levels, distribution Poverty levels, livelihood strategies	Questions: What is the coverage of fisheries in all the information collected on incomes? OR Do you collect information on sources, levels, distribution of incomes of people in the fisheries sector?	Questions: What do you use the information collected on fisheries incomes for?	Questions: What are some of the limitations you face in the collection of fisheries information on incomes?
3. PROCESSING Questions: What kind/type of information do you collect on processing? **Gaps** 1Outputs, inputs	Questions: What is the coverage of fisheries in all the processing information collected? OR Do you collect information on outputs and inputs of artisanal processors?	Questions: What do you use the information collected on fisheries processing for?	Questions: What are some of the limitations you face in the collection of fisheries information on processing?
4. MARKETING Questions: What kind/type of information do you collect on marketing? **Gaps** Nile perch, tilapia, mukene Destinations, quantities, prices	Questions: What is the coverage of fisheries in all the marketing information collected? OR Do you collect information on destinations, quantities and prices of (Nile perch, tilapia and Mukene)?	Questions: What do you use the information collected on fisheries marketing for?	Questions: What are some of the limitations you face in the collection of fisheries information on marketing?

Type of information	**Fisheries coverage**	**Utilisation of information**	**Limitations**
5. EMPLOYMENT Questions: What kind/type of information do you collect on employment? **Gaps** Production, processing & marketing Gender aspects	Questions: What is the coverage of fisheries in all the employment information collected? OR Do you collect employment information on fisheries production, processing, gender aspects, and marketing?	Questions: What do you use the information collected on fisheries employment sector for?	Questions: What are some of the limitations you face in the collection of fisheries information on employment?
6. CONSUMPTION Questions: What kind/type of information do you collect on consumption? **Gaps** 1Nile perch, tilapia, mukene 2Levels, per capita; distribution	Questions: What is the coverage of fisheries in all the consumption information collected? OR Do you collect information on Nile perch, tilapia, and Mukene levels and per capita consumption?	Questions: What do you use the information collected on fisheries consumption patterns for?	Questions: What are some of the limitations you face in the collection of fisheries information on consumption?
7. REVENUES Questions: What kind/type of information do you collect on revenues? **Gaps** Types, sources, amounts	Questions: What is the coverage of fisheries in all the revenue information collected? OR Do you collect fisheries revenue information on types, sources and amounts?	Questions: What do you use the information collected on fish revenue data for?	Questions: What are some of the limitations you face in the collection of fisheries information on revenues?

Type of information	Fisheries coverage	Utilisation of information	Limitations
8. INDUSTRIES Questions: What kind/type of information do you collect on industries? **Gaps** Nile perch, by-products, tilapia, mukene Employment, wage bill	Questions: What is the coverage of fisheries in all the industries information collected? OR Do you collect fisheries industries information on by-products (Nile perch, tilapia and Mukene), employment and wage bill issues?	Questions: What do you use the information collected on fish industries for?	Questions: What are some of the limitations you face in the collection of fisheries information on industries?
9. EXPORTS Questions: What kind/type of information do you collect on exports? **Gaps** Nile perch, tilapia, mukene. Regional, international. Policies, taxes Contribution to foreign exchange earnings.	Questions: What is the coverage of fisheries in all the exports information collected? OR Do you collect information on major fish species exports and contribution, taxes, and international policies?	Questions: What do you use the information collected on fish exports for?	Questions: What are some of the limitations you face in the collection of fisheries information on exports?
10.Policy Formulation Questions: What kind/type of information do you collect on policy formulation? **Gaps** Management policies Industrialisation policies Trade policies	Questions: What is the coverage of fisheries in all the policy formulation information collected? OR Do you collect employment information on fisheries management, industrialisation and trade policies?	Questions: What do you use the information collected on policy formulation in fisheries for?	Questions: What are some of the limitations you face in the collection of fisheries information on policy formulation?

2. What suggestions do you have to improve on your information collection and utilization?

_____
_____
_____
_____
_____
_____

3. How is the foreign exchange earned from fish exports used for the benefit of the country?

_____
_____
_____
_____
_____
_____

Thank you