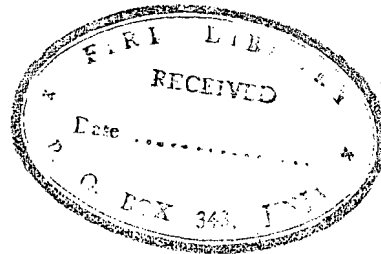


The Status of fish stocks in Lake Victoria: A Research Prospective and Way Forward



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Introduction

The status of fish stocks in a water body at anyone time is a function of several factors affecting the quantity of fish in that water body. These include:

- a) Total number (abundance) and biomass (weight) present,
- b) Growth (size and age),
- c) Recruitment (the quantity of fish entering the fishery) including reproduction,
- d) Mortality which is caused by fishing or natural causes,

Other indirect factors of major importance to the status of the stocks include production factors (water quality and availability of natural food for fish), the life history parameters of the different species making up the stocks (e.g. sex ratios, condition of the fish, reproductive potential (i.e. fecundity) etc). Changes in fish stocks do occur when any of the above listed factors directly influence aspects of growth, reproduction and mortality and therefore, numbers and standing stock (biomass). In the exploited fisheries, major research concerns regarding stocks relate to the listed factors especially:

- a) Estimates of stock abundance and biomass,
- b) The quantity of fish being caught,
- c) Where the fish are caught,
- d) Which species are caught (relative abundance),
- e) When the fish are caught,
- f) How the fish are caught.

The balance between stock abundance and amount of fish caught provides the basis for intervention. Due to the diverse characteristics of the physical water environment, fishes are in general, not evenly distributed throughout a water body. Shallow and vegetated areas tend to support higher abundance and diversity of fish species. In addition, seasonal variations in fish abundance are so strong that fluctuations in catch have to be expected at fish landings.

Since capture fisheries are a renewable natural resource, sustainable capture depends on a level of fish abundance that replaces what is taken out. This is through reproduction and growth which in turn depend on successful breeding, nursery, feeding and growth. These can be ensured through manipulation of age (size structure) targeted fish capture through mesh size restrictions, the protection of the fish habitats and maintenance of desirable water quality for the fisheries, distinct from sanitation-related water quality provision.

Therefore, beyond the figures generated, a major aim of fisheries research is to find out the nature of interaction among production and fishing factors and the response of fish populations to fishing pressure and fishing practices. Often, the results presented related to

the health of fish stocks and basic estimates of relative abundance because resource limitations preclude capacity to resolve all relevant questions and factors in the water medium. For Lake Victoria, resources have been made available to conduct trawl and hydro-acoustics surveys as well as investigations of the biological patterns of the fish. This is the reason why we generally know much more about Lake Victoria than we do about Lakes Kyoga, Albert/Albert Nile, and other fish production systems including rivers and wetlands which are also important production systems.

About FIRRI

The Fisheries Resources Research Institute exists in order to provide timely scientific guidance into sustainable fisheries management for use by the primary stakeholders: the managers of the fisheries (i.e. the fisherfolk and other investors). In addition, FIRRI provides scientific guidance for the protectors of water environment including agencies such as NEMA. It is thus important as a first step in management to recognise and apply technical opinion regarding the status of fish stocks and water environment alongside the provided national economic agenda for the fisheries sector. Short of the research input, unmanaged fisheries deteriorate to extinction and investments collapse as the law of diminishing returns takes over the wishes of the would-be beneficiaries.

So far, fisheries research on Lake Victoria can be recognised through direct contributions indicated through management of:

- a) Gill net mesh size limits for capture of target species;
- b) Restriction on the use of certain gears (nylon nets, beach seines, trawl nets, cast nets, etc) in fishing activities;
- c) Biodiversity as a component of fishery sustainability;
- d) Water hyacinth;
- e) The evolution of the Nile perch and mukene fisheries on lakes Victoria and Kyoga.

Overview of the fish production systems in Uganda

With up to 18% of the surface area covered by lakes, streams and swamps (Fig. 1), Uganda has a high potential for fish production. There are five major lakes (Victoria, the Kyoga complex, Albert/Albert Nile, Edward and George) that are the most important fish production systems.

Lake Victoria Fisheries

Uganda waters currently produce an estimated 220,000 metric tonnes of fresh fish annually using an estimated 18,450 fishing crafts (Fig. 2 and Table 1). This production does not

include the unrecorded catches that may find their way to neighbouring countries or miss recording. The production therefore, could be above 300,000mt annually.

Fish production in Uganda can be increased through exploitation of some less exploited species like in some minor lakes and swamps. The most important sources of fish are Lake Victoria (Fig. 2) about 48% in 1995 L. Kyoga (36%), L. Albert and Albert Nile (12%), Edward, George and Kazinga Channel (2%) and 2% for other minor lakes, rivers and swamps (Table 1). The annual fish production estimates of the upper Victoria Nile are not well known but a survey upstream of Upper Victoria Nile Buyala to Kikuba-mutwe and downstream at Namasagali to Bunyamira in 2000 indicated an estimated annual production of 285mt and 143mt respectively at these locations. This indicates that there is a potential of increased production beyond the 220,000mt if these fish catches were recorded.

Overall fish species composition in commercial catches

Up to 86% of commercial fish production from Uganda's lakes comprised of Nile perch, Nile tilapia and Mukene as at 1995 (Table 1). This trend has not changed much except that there is apparent recovery of haplochromines.

Table 1. Major commercial fish species in Uganda

Scientific name	Common name	% Contribution
<i>Lates niloticus</i>	Nile perch	42%
<i>Oreochromis niloticus</i>	Nile tilapia	38%
<i>Rastrineobola argentea</i>	Mukene	6%
<i>Clarias</i>	Male	1%
<i>Hydrocynus</i>	Ngassia	4%
<i>Protopterus</i>	Mamba	3.5%
<i>Mormyrus</i>	Kasulu	0.4%
<i>Brycinus</i>	Nsoga	1%
<i>Labeo</i>	Ningu	0.1%
<i>Bagrus</i>	Semutundu	2%
Others	Mostly Nkejje	2%

Of the 42% Nile perch production (Table 1), 30% came from Lake Victoria and 11% from Lake Kyoga 1% from L. Albert.

Lake Victoria and its fish stocks

Lake Victoria (68,800 km²) - is one of the African Great lakes and the second largest lake in the world. The lake is shared by Kenya (6%), Uganda (43%) and Tanzania (51%) has a 3450km long indented shoreline and its basin covers 193,000km² which extends into Rwanda and Burundi.

Till 1980s, Lake Victoria had a commercial fishery based on the native tilapiine species (*Oreochromis esculentus* and *O. variabilis*), catfish (*Bagrus docmak* and *Clarias gariepinus*), lung fish (*Protopterus aethiopicus*) and riverine breeding stocks of *Labeo victorianus* (Ningu) and *Barbus altianalis* (Kisinja). These fisheries have greatly declined and have been replaced by the establishment and expansion of the introduced species, *Lates niloticus* (Nile perch) and *Oreochromis niloticus* (Nile tilapia). The native species, *Rastrineobola argentea* (mukene) has also become important and is the basis of the light fishery that has spread to most parts of the lake.

The Status of fish stocks in Lake Victoria

On Lake Victoria fish stocks have been fluctuating since the introduction of the Nile perch and tilapiines (*Oreochromis niloticus*, *O. leucostictus*, *Tilapia rendalli* and *T. zillii*) in the 1950s and 1960s. Until the 1970s, the indigenous tilapiines e.g *Oreochromis esculentus* and haplochromine cichlids dominated the catches and subsidiary fisheries included the non-cichlid fishes such as *Bagrus*, *Clarias*, *Synodontis*, *Schilbe*, *Protopterus* and *Labeo*. Stocks of most of these species declined and others disappeared following over-fishing and subsequent establishment of the introduced tilapiines and the Nile perch.

Trends in fish stocks of Lake Victoria (Uganda)

The first lake-wide fish stock assessment of Lake Victoria was carried out during 1969-1971 before major transformations in the fishery. That stock assessment survey revealed 16 species excluding haplochromines which were suspected to make up more than 500 species.

Table 3. Estimated catch rates (kg. hr⁻¹) and biomass (m tons) of fish in the Uganda part of Lake Victoria from the 1969/1971 stock assessment survey.

Species	Biomass (m tons)	% biomass	Catch rate (kg.hr ⁻¹)
<i>Haplochromis spp.</i>	205,592		327.38
<i>Tilapia esculentus</i>	1,624		2.59
<i>T. variabilis</i>	367		0.60
<i>T. nilotica</i>	535		0.85
<i>T.zillii</i>	53		0.08
<i>T. leucostictus</i>	29		0.05
<i>Bagrus docmac</i>	14,766		23.51
<i>Clarias mossambicus</i>	10,885		17.33
<i>Xenoclaris spp.</i>	238		0.38
<i>Protopterus aethiopicus</i>	3,625		5.77
<i>Lates niloticus</i>	302		0.48
<i>Synodontis victoriae</i>	9,644		15.36
<i>S. afrofishcheri</i>	9		0.01
<i>Barbus altianalis</i>	115		0.18
<i>Labeo victorianus</i>	1		-
<i>Mormyrus kannume</i>	181		0.29
<i>Shilbe mystus</i>	54		0.08
Total	248,029		394.94

Other major findings describing the stocks are summarised below:

At least 80% of the estimated biomass was composed of *Haplochromis* species with the relative abundance of the other major species as *Bagrus docmac* (5.8%), *Clarias gariepinus* (4.0%), *Synodontis victoriae* (3.4%), *Oreochromis esculentus* (~ 2.0%). Most species in the lake were more bottom-dwelling than pelagic and species diversity and abundance decreased with increasing depth. In the fish stock assessment survey carried out between 1997 and 2000, the biomass, composition and distribution of the major commercial species were determined.

There were no trawl surveys from 1971 till recent (1997) assessments were made but based on the estimated quantity of fish from the Uganda part of Lake Victoria between 1967 and 1989 (Table 1), the following patterns can be discerned:

- a) 1967-1973: Estimated landed catch fluctuated between 32,000mt and 46,000mt;
- b) 1974-1984: There was a noticeable decline in catch over the years averaging around 15,000 mt until 1984 when it rose to about 45,000mt;
- c) 1985 - 1989: A rapid increase over the years with the catch reading a maximum of 132,000mt in 1989, and thereafter, dropping to 104,000mt in 1999. Current estimates show that in 2002, the estimated catch was about 136,000mt.

Between 1997 and 2000, trawl surveys were conducted as part of fish stock assessment in Lake Victoria. Results of this most recent exercise provide an indication of the present status of the fish stocks in comparison to 1969/71.

Table 4. A comparison of the percentage species relative abundance between two stock assessment periods 1969/1971 and 1997/2000.

1969/71		1997/2000	
Species	% Relative abundance	Species	% Relative abundance
<i>Haplochromis spp</i>	83%	<i>Lates niloticus</i>	86.5%
<i>Bagrus docmak</i>	4.2%	<i>O. niloticus</i>	9.3%
<i>Clarias gariepinus</i>	4.1%	<i>Haplochromis spp</i>	3.4%
<i>O. esculentus</i>	3.8%	-	
<i>Protopterus</i>	2.8%	-	
<i>O. niloticus</i>	0.5%	-	
<i>Lates niloticus</i>	<0.1%	-	

Fish biomass trends during the 1997 to 2000 period

Fish biomass during the 1997/2000 surveys was 142,000mt with Nile perch registering 121,000mt and Nile tilapia, 15,000mt in the 4 - 40m depth zone. For the whole of the Uganda part of Lake Victoria, the fish biomass was estimated at 307,000mt for 1997. In terms of numbers of fishes, 60% of Nile perch occurred in 4-20m deep areas. However, the results indicated that the fish biomass had declined to 266,000mt, a decrease of 13%.

According to hydro-acoustic estimates the biomass for *Rastrineobola argentea* (mukene) and haplochromine cichlids (Nkejje) did not show major changes in abundance between 1999 and 2002. In addition, there was an increase in the abundance of the *Caridina* shrimp. These trends in stocks are significant in the sense that they are likely to be a response in the reduction of the Nile perch density. This ecological change suggests that management of the current fish stocks in Lake Victoria needs to constantly reflect on the dynamics in the fish stocks and water environment.

Fishing effort trends

Analysis of the fishing effort (number of fishing boats) in the Uganda part of lake Victoria has been carried out to examine the validity of the observed trends from the stock assessment surveys and estimated quantities of fish landed. Fishing boats increased from 3470 in 1988 to 8000 in 1990 and 15,418 in 2000. Over this period (1988-2000), increase in fishing effort

resulted in a lake-wide decline in catch per unit effort (CPUE). The decline from 36mt boat⁻¹ yr⁻¹ in 1998 was accompanied by a decrease in the average mesh size of gill nets used from 203.2mm and 177.8mm to 152.4mm and below. The use of the illegal gill nets of mesh below 127mm («5"») increased from 5% in 1990 to about 19% in 2000. The overall effort of these trends has been a reduction in the average size of Nile perch and Nile tilapia landed and an increase in the number of parachute boats, indicating fishing in shallow waters.

The tilapia and light fishery for mukene in Lake Victoria

The Tilapia fishery

Following the sharp decline in catches of the native tilapiines (*Oreochromis esculentus* and *O. variabilis*) in the 1950s, the introduction and establishment of the Nile tilapia, *O. niloticus*, in Lake Victoria in the same period revived the tilapia fishery of the lake. Nile tilapia is currently the main fish for the local consumers but this fish is also increasingly becoming part of the export market.

The rapid decline in the native fishery which was caused by biological over-fishing may also lead to the same pattern in the Nile tilapia fishery in addition to other environmental (habitat) disruptions even though this species appears to be highly adapted to a wider ecological base than the native tilapiines. Historical trends in the native tilapia (*O. esculentus* and *O. variabilis*) fishery leading to that dominated by the introduced Nile tilapia have been examined from earlier reports: EAFRRO Annual Reports (1952-1966) Lake Victoria Fisheries Service records, experimental fishing data of 1993-1998, catch analysis data, trawl data of 1999/2000. Other parameters investigated include temporal distribution and stock density, breeding cycles and tropic ecology.

Since the 1970s, the tilapia fishery of Lake Victoria has been dominated by the introduced Nile tilapia that occupies all habitats previously containing native tilapiines. The highest densities of the Nile tilapia (65% of all the fish biomass) occur in shallow macrophytes-dominated habitats in less than 4m deep areas within 500m from the shoreline. In deeper (4-10m) habitats, Nile tilapia accounts for 13-32% of the fish' biomass. Nile tilapia in Lake Victoria breeds through the year with two peak breeding periods (May – June and November to December). The most important items of diet for the Nile tilapia at present comprises of animal material (45% main contents), made up largely of chironomids, *Caridina*, molluscs and other insects followed by bottom detrital material (40%) but phytoplankton and higher plant material may be locally important especially for younger fish which indicates the importance of nearshore habitats for Nile tilapia,

Coastal zone factors, abundant food sources and flexibility in the type of food eaten greatly influence Nile tilapia production and consequently its fishery. Although Nile tilapia has

successfully colonised habitats that were formerly occupied by the native tilapiines, trends in its production and biology should be continuously monitored to prevent its fishery from potentially similar collapse. Prevention of habitat degradation (e.g. removal of riparian vegetation) should be enforced through appropriate regulatory options such as the Environmental Statute and Wetland Policy. For example, since there is provision in the law for protection of 200m wide zone from the shoreline out towards open water.

The Mukene Fishery

Following the decline in catches of endemic fish species and the demand by the export market for the Nile perch, *Rastrineobola argentea* (mukene) has become an important commercial fish species in Lake Victoria. It is not only prey to the Nile perch, but is now a main source of fish protein available to the rural areas. Mukene is also an important commodity in feed formulations for poultry and could become part of fish feed combinations in aquaculture. The species is ranked third in importance after the Nile perch and Nile tilapia in Uganda.

Mesh sizes of nets used in the capture of *R. argentea* on Lake Victoria have reduced from 10mm stretched mesh to 5mm in several areas. Favourite grounds for mukene fishing especially the sheltered bays are also nurseries for other fish species which are as a result caught as by-catch in the mukene fishery. The biology, ecology and the performance of the fishery has been investigated over a period stretching back to 1970 before the establishment of the Nile perch and before and after expansion of the mukene fishery in the northern waters of Lake Victoria.

The average size of mukene from the inshore waters of Lake Victoria has dropped from a mean size of over 60mm standard length (SL) in the early 1970s to 37mm SL by 2000. The species now grows faster maturing after 8 months compared to 14 months in 1988. It also currently matures at a smaller size to 36mm SL compared to 52mm SL prior to 1980s. feeding occurs mostly during daylight hours on zooplankton although at night, lake fly larvae or pupae can be ingested. The species breeds throughout the year with two peak breeding periods during the months of August and December/January..

The decrease in mean size of the populations and size at first maturity of mukene and an increase in growth rate especially in closed bays inshore are signs of local over-fishing. Once the fishery shifts away from these bays, capture of juvenile fishes as by-catch can be reduced.

Inshore waters and closed bays are nurseries for mukene and many other fish species especially the tilapia. Fishing for mukene in these areas captures up to 50% of juvenile mukene and juveniles of Nile perch and tilapia as by-catch species. Open waters away from shores contain less than 2% of the by-catch due to mukene fishing. Therefore, fishing for

mukene should be carried out in more open waters. Closed bays and shoreline areas (1,500m or less from the shoreline) should be avoided. Beach seines which can also be operated to capture mukene should be prohibited since they are operated from shoreline habitats that are also breeding and nursery areas for most species of fish.

The only method by which mukene can be exploited is through light attraction. The mesh size of mukene fishing nets is not provided for under current legislation. Moreover, using light to catch fish is illegal in Uganda. Therefore, this law which was put in place before the emergence of the mukene fishery needs revision to legalise light fishing and to set the mesh size for mukene fishing.

Fish production constraints

There have been changes in the fisheries which threaten their sustainability. Catch rates of most important and desired species on Lake Victoria have decreased due to over fishing, predation by Nile perch, and habitat degradation among other factors. Fish species diversity has declined with over 60% of the species in Lake Victoria disappearing or being reduced to negligible quantities. The pressure to the fisheries has been exacerbated by increase in fish processing plants and export of fish which have stimulated demand and caused an increase in fishing effort.

In general, the major constraints to increased but sustainable fish production are:

- a) Open access to the fisheries.
- b) Environmental degradation of water bodies and thus of fish habitat.
- c) Decline in fish stocks and fish species diversity due to excessive fishing effort (over-fishing or over-capitalization of the fisheries).
- d) Use of destructive fishing gears and methods.
- e) Capture of immature fish and introduction of exotics.
- f) The spread and impacts of exotic fish species (Nile perch).
- g) Proliferation of invasive weeds, in particular, water hyacinth.
- h) Post-harvest losses (10-30% of the catch) due to poor handling, processing and storage.
- i) Ineffective management of the fisheries due to limited community participation.
- j) Inadequate investment skills among fishers.
- k) Inadequate access to information technologies and inefficient dissemination of technology.

Recommendations

In September 2001, a Lake Victoria Stakeholder Workshop made the following key recommendations on various aspects of the fisheries:

1. Fisheries Management

All fishers should be registered and given identification cards to reduce migration from one site to another, a factor leading to theft cases.

Inappropriate fishing practices should be eliminated, and, only non-destructive selective fishing gears and methods should be allowed in the fishery.

Research to improve the performance of existing fishing gears and developing new ones to increase their efficiency was recommended.

Breeding and nursery grounds, and those critical areas for fish survival should be mapped and gazetted. A regional mechanism to control fishing effort should be established.

2. Biodiversity conservation and enhancement

There should be deliberate efforts and policy to protect endangered fish species including those used in the ornamental fish trade from becoming extinct.

It is important for non-fish biota in and around the lake (e.g. birds, reptiles, mammals and amphibians) to be determined and recommendations for their conservation made.

3. Prevention of pollution and degradation of the fish habitat

Fishers should plant trees around the lake so as to help conserve it.

Disposal of rubbish especially polythene bags into the lake should be avoided.

Rearing animals by the lake shore, bathing in the lake and washing around the lake should be stopped.

Researchers should work with other agencies to develop and promote eco-friendly and cheap handling facilities for use at fish landing sites.

There should be a massive effort to sensitise the fishing communities and other key stakeholders in participatory approaches to management of the lake's environment.

Capacity building should be developed for lake environmental management.

Environmental education should start right from childhood throughout life including household levels.

The local authorities at district, sub-county and village levels should take the lead in basic lake environment management practices and basic sanitary conditions.

4. Fish quality and safety

Government should assist in improving structures at fish landing sites

5. Co-management

Beach Management Units (BMUs) should be developed and given legal status

6. Fisheries socio-economics

Government should give priority to marketing by developing marketing strategies for fish and fish products. Fishers should be provided with credit facilities to acquire inputs at affordable costs.

7. Fisheries policies, laws and regulations

These should be examined in relation to the effect of new policies such as decentralisation and privatisation on the flow of information and management of fish stocks of shared water bodies.

All stakeholders (local communities, local and central governments) should ensure that the laws and regulations which are already in place are enforced.

There is need to have specific regulations for different water bodies especially where the target species have different population structures and where even the same species may have different characteristics.

For most of the management concerns raised by stakeholders, the Department of Fisheries Resources has made progress while those concerning information needs are addressed by Fisheries Research

8. Technology generation and dissemination

Research should be participatory and should involve stakeholders.

Research should develop data collection methods that are cost effective and community friendly. The local authorities should assist in data collection and should be trained and facilitated to help in the process. The information generated through research should be translated into local languages and research results packaged in a manner that addresses stakeholder needs. Researchers should use different appropriate media to ensure that research information reaches fisherfolk. Where practicable, some of the research discussions or workshops should be held at landing sites in order to give a more practical perspective of the issues and allow for broader participation. Science jargon should be avoided in stakeholder workshops considering the education levels of stakeholders. There is need for beneficiary and adoption assessments to determine the impact and value of scientific recommendations on stakeholders and the resources.

Capture Fisheries Research Concerns

Production constraints in capture fisheries should be used as the basis for action in various ways illustrated below:

1. The excess fishing effort has to be removed along with the use of destructive fishing gears and methods;
2. Capture of immature fish needs to be stopped by strict adherence to the recommended mesh size of gill nets (i.e. 127mm or 5 inch gill nets);
3. Community participation in management of the fisheries has to be instilled in fisherfolk communities and the recently established Beach Management Units (BMUs) need to be more sensitised about their roles;
4. While fishing regulations are known, there is need for stricter enforcement along with community participation;
5. Breeding and nursery grounds of fish should be mapped, marked out and appropriate zones gazetted and information circulated to local authorities including BMUs;
6. Pollution and degradation of the fish habitat should be controlled by responsible agencies, in particular, NEMA. This applies especially to lakeshore wetlands where a 200m buffer zone on both sides of the shoreline should be protected from drainage and structures other than fish landings;
7. Appropriate policies (legislation) should be provided to allow for harvesting of the new fisheries e.g. *Rastrineobola* (mukene);
8. Sustainable funding for both fisheries research (information gathering and analysis) and fisheries management (regulation, control and surveillance) is limited. This needs to be addressed at various levels. At the local council level, and district it is essential to provide for a fraction of revenue collected in various fishing taxes (e.g. fishing and fish trading licences) to be ploughed back in fisheries management. At national levels, it is essential to provide funding for services that provide regular information on the status of fish stocks.

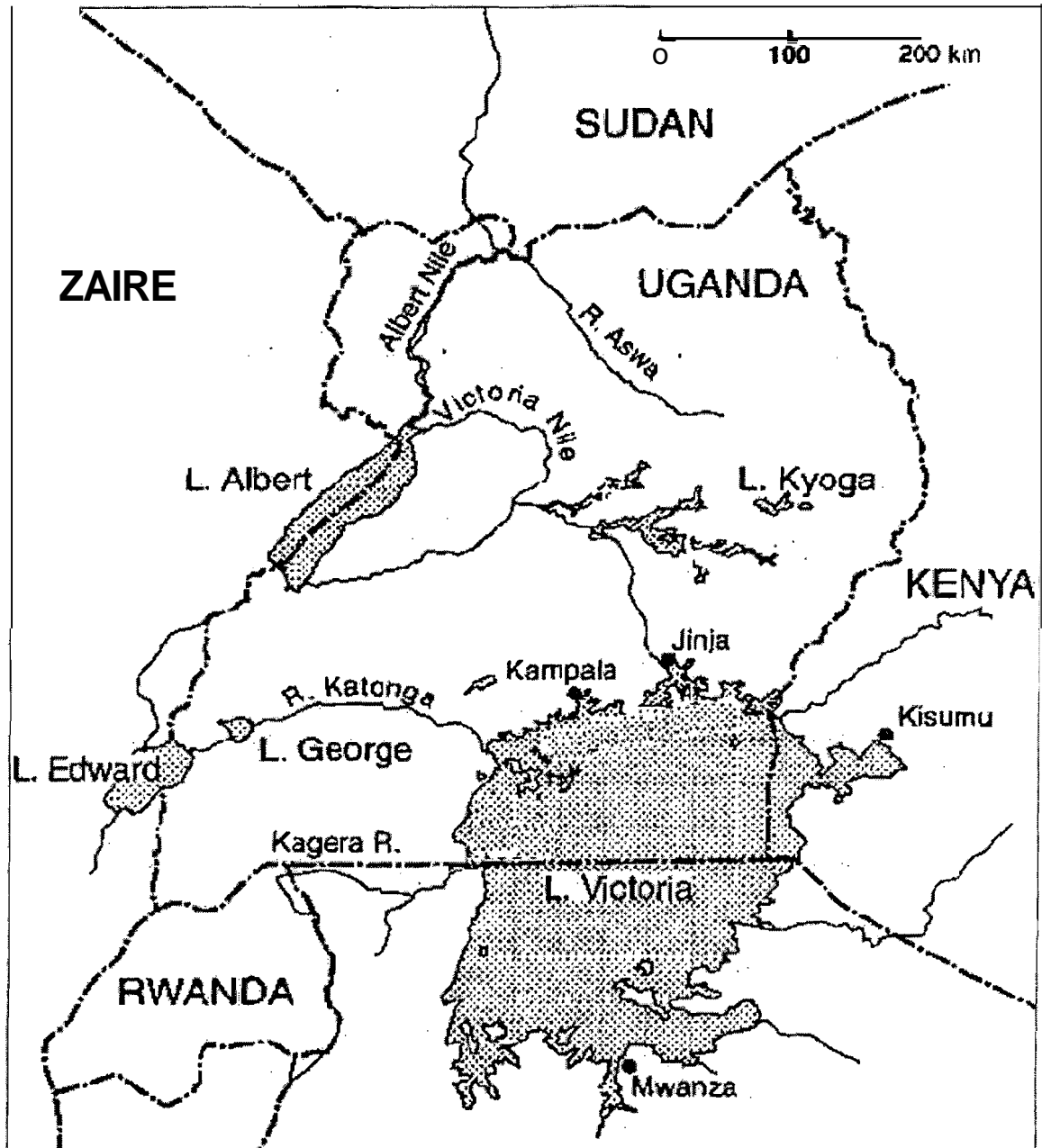


TABLE 1. TRENDS OF ESTIMATED QUANTITY OF FISH LANDED FROM LAKE VICTORIA - UGANDA, 1961-2002

Wt. '000' tonnes

Year	Victoria	Albert	Kyoga	Ed/Ge	Warnala	Albert Nile	Others	Total
1961	25.5	11.8	6.8	12.5	1		1.8	59.40
1962	23.4	12.2	13.2	12.1	2		3.6	66.50
1963	24.4	12.5	17	12	2.1		3.9	71.90
1964	24.4	10.2	18.5	10.2	2.1		5.2	70.60
1965	24.4	12.4	18.4	12.6	2.1		1.6	71.50
1966	28	13.6	19.9	10.9	4.8		4.2	81.40
1967	38.2	13.2	26.3	12.9	6.6		1.9	99.10
1968	40.5	13.5	32.5	13	7.1		3.3	109.90
1969	46.3	10.4	48.9	11.8	5.6		4.3	127.30
1970	41.7	24.2	62.1	10.5	5.3		3.9	147.70
1971	38.1	9.5	89.7	11.7	5.2	4.2	3.9	162.30
1972	33.9	10.5	95.1	12.3	4.1	4.3	4	164.20
1973	32.5	13.0	100.5	11	4.3	4.2	4	169.50
1974	24.5	13.5	105	10.5	6.5	4.0	3.5	167.50
1975	16.9	18.7	104.2	13.2	6.3	7.1	6.8	173.20
1976	11.1	12.3	145.8	12.5	4.3	4.5	2.1	192.60
1977	15.7	20.6	167	12	1.1	1.8	1.3	219.50
1978	14.2	20.6	167	11.8	1.8	5.7	1.1	222.20
1979	12	17	133	9.6	2	4.5	1.8	179.90
1980	10	13	131	7	1	3.2	7	165.90
1981	17	6	130	5	3.8	3	3	167.80
1982	13	10	138	6.9	0.5	1	6	107.00
1983	17	6	138	6	0.5	4	6	172.10
1984	44.8	6	137	6.5	0.3	3.9	5	199.20
1985	54.6	2.3	102.7	6	0.5	1.8	3.4	171.10
1986	56.8	4.9	128	6.3	0.5	2.2	4.2	202.90
1987	93.2	8.9	57.7	6.2	0.4	1.1	0.24	167.84
1988	107.1	12.5	86.75	5.9	1.1	0.6	1	214.25
1989	132.4	13.9	54.71	5.6		1.9	4	213.61
1990	119.94	19.48	94.92	5.5		1.41	39.7	245.22
1991	118.04	20.53	58.45	10.93		5.28	63.4	219.57
1992	120.4	18.7	63	10.6		8.8	2.6	224.10
1993	111.5	17.55	71.5	10.7		6.8	6.3	224.35
1994	103.04	16.4	80.2	10.8		4.8	3.7	218.94
1995	103	16	90	9		5	4	227.00
1996	106	22	81	5		0.4	4	218.40
1997	106	19	80	6		3.4	4	218.40
1998	105.2	19.1	80.2	5.6		3.5	3.5	217.10
1999	104.2	29.06	81.12	7.43		3.5	4.2	229.51
2000	133.4	19.38	55.89	5.22	5.61			219.50
2001	101.8	19.6	58.42	6.4	4.5			220.72
2002	136.11	19.38	55.58	5.22	5.6			221.89

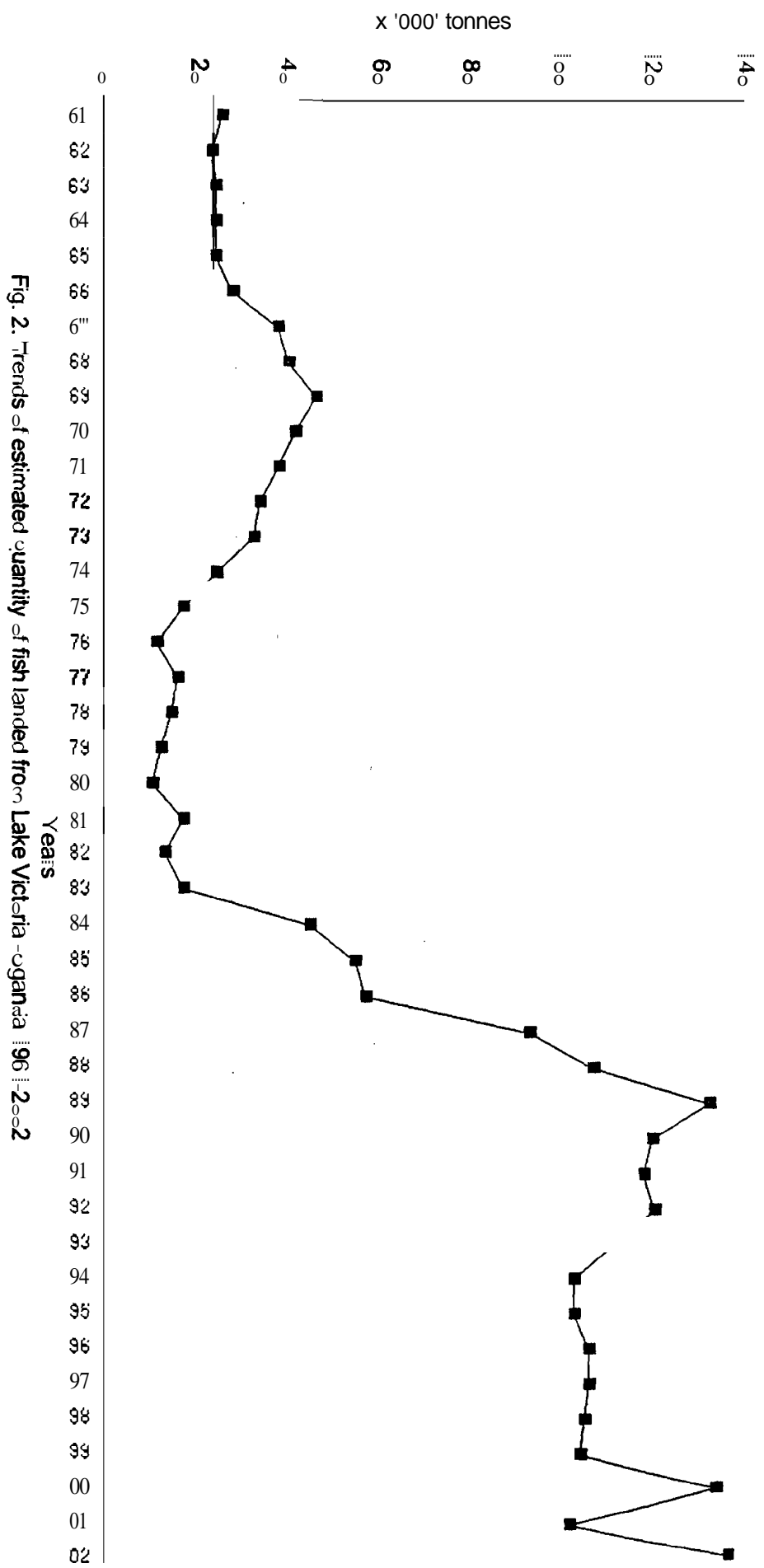


Fig. 2. Trends of estimated quantity of fish landed from Lake Victoria-Uganda 1961-2002

The Status Of Fish Stocks In Lake Victoria: A Research Perspective And The Way Forward

John S. Balirwa & J.R. Kamanyi

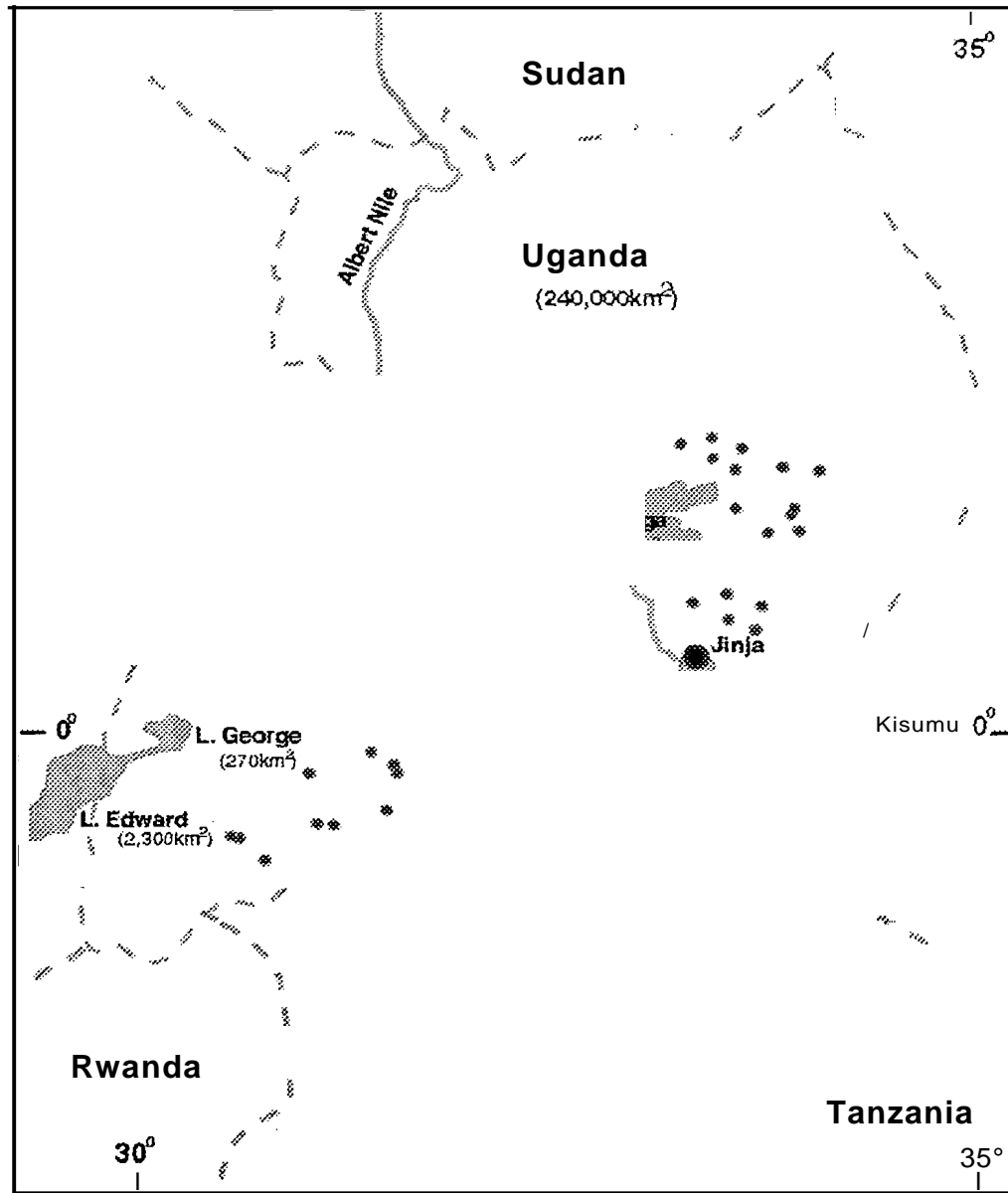
29th July 2004

FISHERIES RESEARCH

FIRRI: An institute of NARO mandated to undertake, promote and streamline fisheries research in Uganda and ensure dissemination of results

VISION: Fisher communities and stakeholders equipped with information and technologies used to increase fish production to overcome poverty and ensure a healthy fish habitat

Geographical mandate



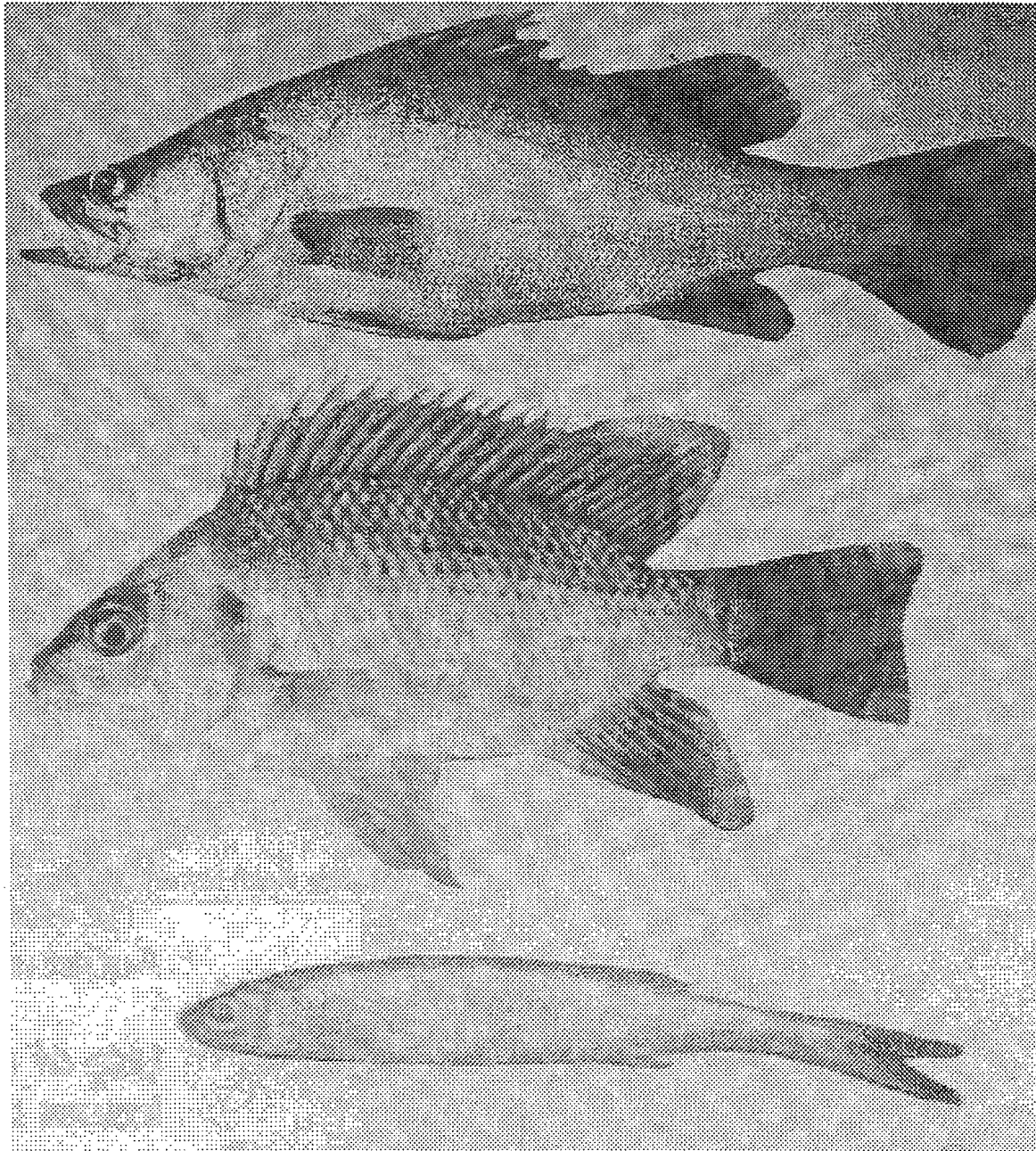
Scale 0 100 200 Km

Diversity issues

- Collapse of the native fisheries
 - Over-fishing, use of wrong gears
 - Potential collapse of some fisheries based on introduced species
 - Declining biodiversity
 - Deterioration of the lake environment (e.g. pollution, water hyacinth)
 - Declining socio-economic benefits from fisheries
 - Inaccessibility of research information and data
- ■



A catch of Immature fish



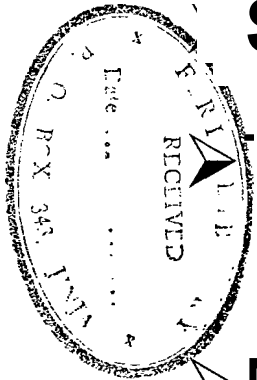
**The three
commercially
important
fishes in their
order of
importance to
investors**

Assessment of fish stocks

Basis of conclusions,

- Total number (abundance) and biomass (weight) of different fish stocks

Size of fish



- The quality of fish entering the fishery after reproduction
- Mortality (death of fish) caused by fishing or natural causes
- Production factors (water quality, the food of fish, etc)

Major research issues regarding fish stocks

- (a) Establishment of biomass
- (b) Distribution patterns
- (c) When the fish are caught
- (d) Which species are caught (relative abundance)
- (e) When the fish are caught
- (f) How the fish are caught

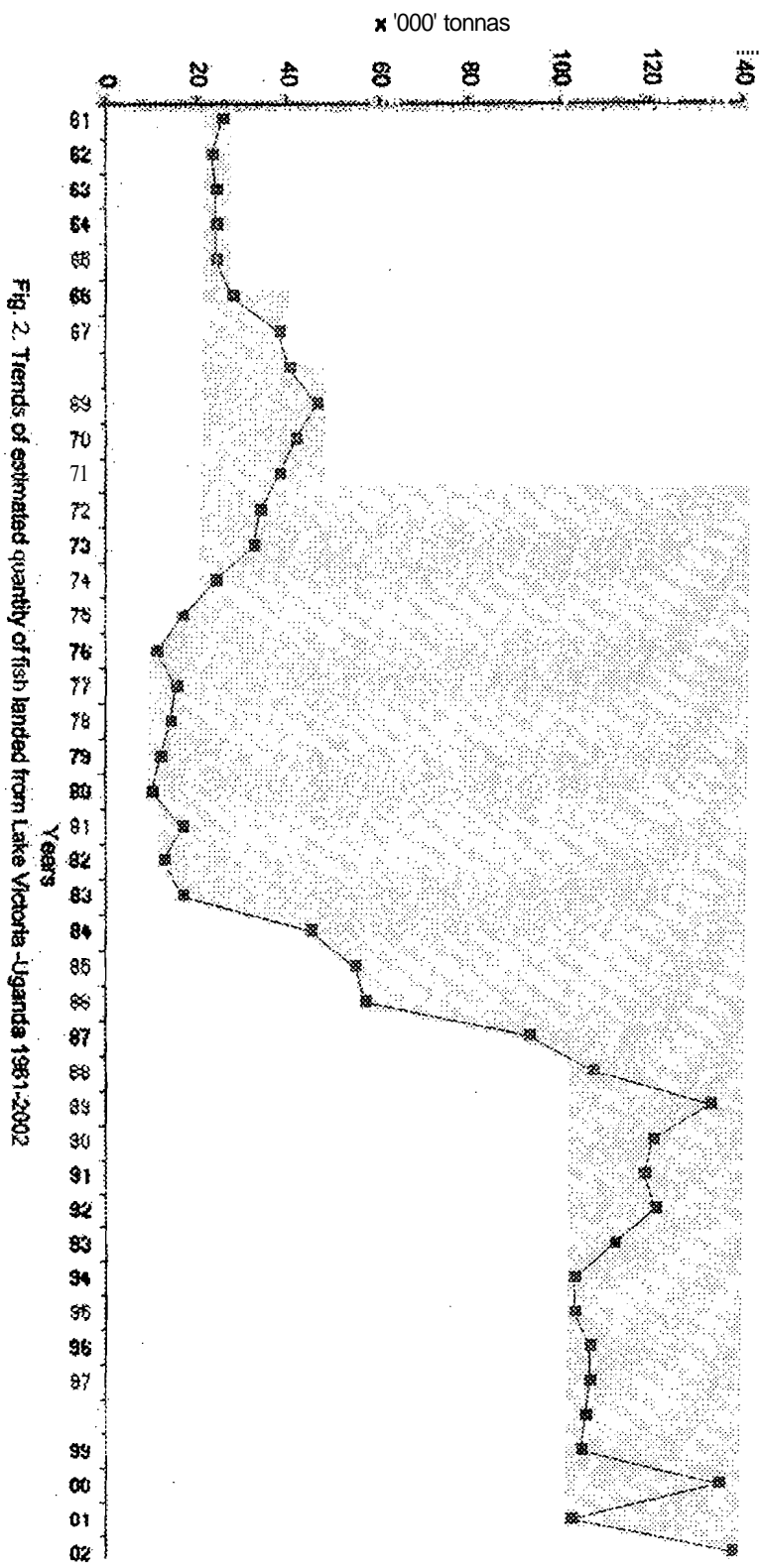
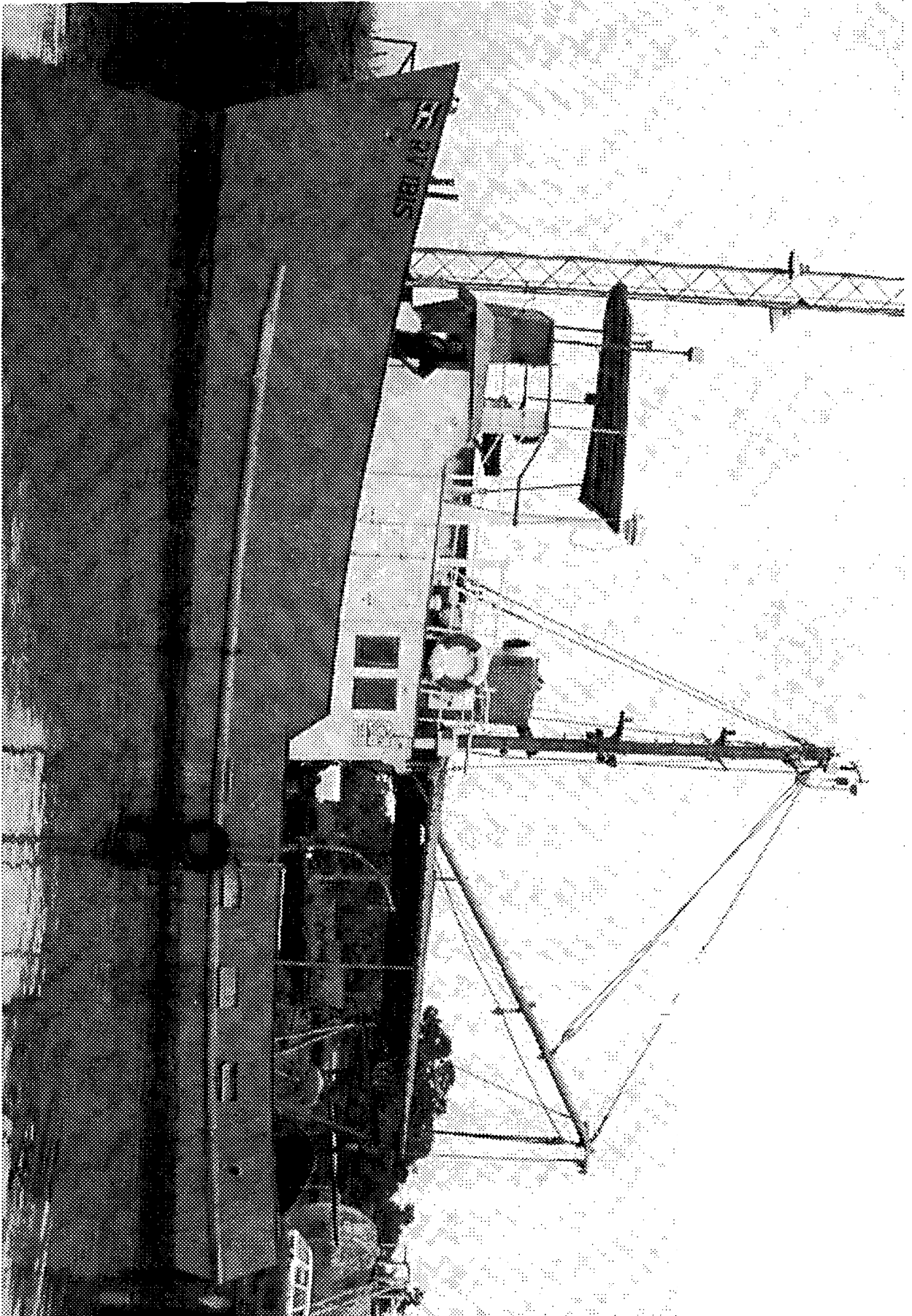


Fig. 2. Trends of estimated quantity of fish landed from Lake Victoria-Uganda 1961-2002

Results of lake Victoria Stock Assessment studies

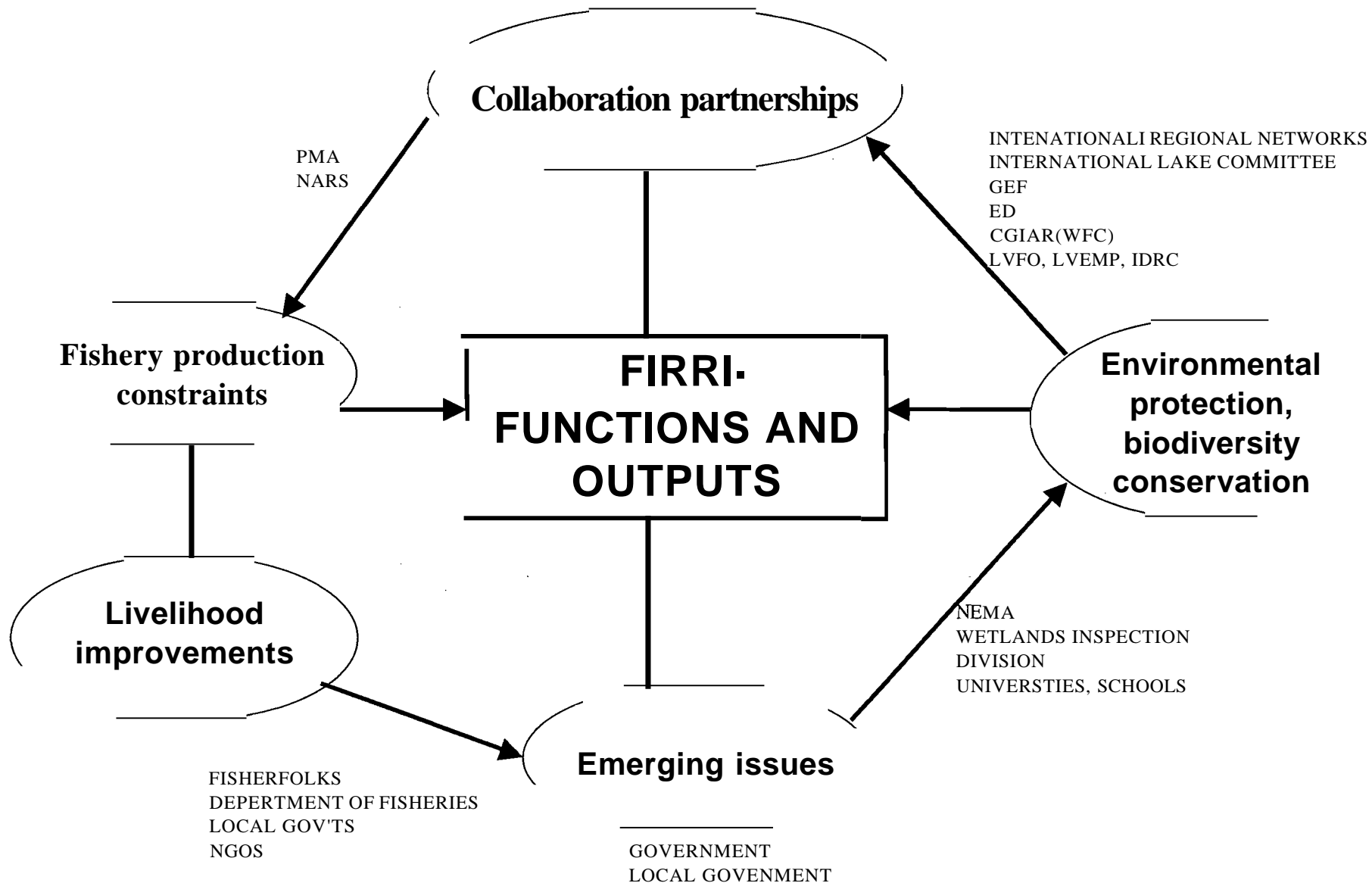
1969/1971 and 1997/2000 studies
(figures in %age relative abundance
in relation to biomass)



R/V "IBIS" Belonging TO FIRRI JINJA

	1969/1971	1997/2000
<i>Haplochromis</i>	83%	3.4%
<i>Bagrus docmak</i>	4.2%	<0.5
<i>Clarias gariepinus</i>	4.1%	<0.5
<i>O. esculentus</i>	3.8%	<0.0
<i>Protopterus</i>	2.8%	<0.1
<i>Lates niloticus</i>	<0.1%	86.5%
<i>O. niloticus</i>	<0.5%	9.3%
Biomass (in m tons)	248,029	307,000

Stakeholder analysis



Stakeholder analysiscont'd

main interest:

INFORMATION

▶ CURRENT SITUATION

DATA

▶ TREND DATA + ANALYSIS

ADVICE

▶ DESIRED ACTION

MONITORING

▶ SYSTEM STABILITY & BENEFIT SUSTAINABILITY

CAPACITY BUILDING

▶ FISHERFOLK, INSTITUTIONS etc

**Conclusions for management derived
from stakeholder consultations
(2001/2002)**

1 Fisheries Management

All fishers should be registered and given Identification cards to reduce migration from one site to another, a factor leading to theft cases

- (a) Inappropriate fishing practices should be eliminated and only non-destructive selective fishing gears and methods should be allowed in the fishery
- (b) Research to improve the performance of existing fishing gears and developing new ones to increase their efficiency was recommended,
- (c) Breeding and nursery grounds, and those critical area for fish survival should be mapped and gazetted. A regional mechanism to control fishing efforts should be established

2 Biodiversity Conservation and Enhancement

- (a) There should be deliberate efforts and policy to protect endangered fish species including those used in the ornamental fish trade from becoming extinct
- (b) It is important for non-fish biota in and around the lake (e.g. birds, reptiles, mammals, and amphibians) to be determined and recommendations for their conservation made.

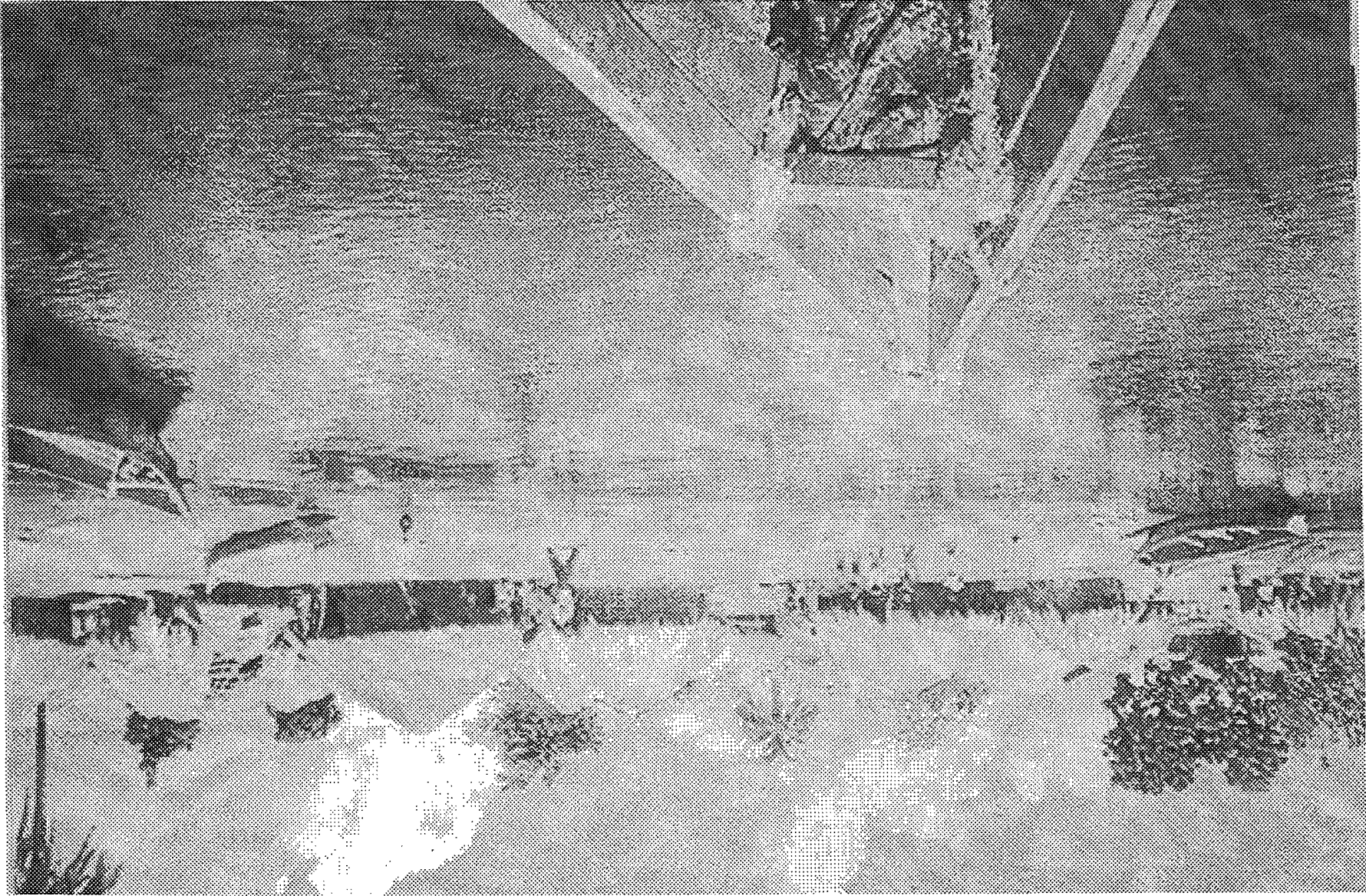
3 Prevention of pollution and degradation of the fish habitat

- (a) Fishers should plant trees around the lake so as to help conserve it
- (b) Disposal of rubbish especially polythene bags into the lake should be avoided,
- (c) Rearing of animals by the lake shores, bathing in the lake and washing around the lake should be stopped
- (d) Researchers should work with other agencies to develop and promote eco-friendly and cheap handling facilities for use at fish landing sites,
- (e) There should be a massive effort to sensitize the fishing communities and other key stake holders in particular approaches to management of the lake's environment,
- (f) Capacity building should be developed for lake environmental management,
- (g) Environmental education should start right from childhood through out life including house hold levels,
- (h) The local authorities at district, Sub-county and village levels should take the lead in basic lake environment management practices and basic sanitary conditions

4 Co-management

- (a) Beach Management Units (BMUs) should be developed and given legal **status**

A typical BMU of fisher communities



THE FUTURE OF FISHERIES RESEARCH

MAJOR DETERMINANTS:

Socio-economic development

Population growth

Ecosystem management

Information Resources

Lines of Research

Aquatic systems

Aquatic system impact

-Production systems

-Natural resources management and biodiversity

-Water quality (pollution and eutrophication)

Environmental impact assessment

-Environmental biomanipulation

Commercial aquaculture

Geo-referenced spatial-guided outputs

Cont'd...

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MANUAL OF STANDARD OPERATING PROCEDURES FOR FISHERIES MONITORING CONTROL AND SURVEILLANCE (MCS)

Introduction

Legal Basis for Fisheries Monitoring, Control and Surveillance

1. The Constitution of the Republic of Uganda (1995) provides for the protection of natural resources by the state on behalf of the people of Uganda. The fishes (ichthyofauna) are important aquatic living natural resource that must be protected, developed and utilized in a sustainable way for the benefit of present and future generations.
2. The substantive law that regulates the fisheries in Uganda is the Fish Act, Cap. 197 and other subsidiary legislations. The principal legislation makes provision for the control of fishing, the conservation of fish, the purchase, sale, marketing and processing of fish, and matters connected therewith.

Mandate on Capture Fisheries Management

3. To promote, support, guide and enforce responsible fisheries exploitation, so as to ensure improved quality and increased quantity of fishery produce and products for domestic consumption, food security and export by involving participation of stakeholders and beneficiaries at all levels.

Explanation

4. Rational exploitation and responsible dealership in capture fisheries resource is important if the benefits accruing from the industry are to be maximized and sustained. The markets are largely dependent on illegal fish and are the main driver for irresponsible and unsustainable exploitation of fisheries common

property resources. **Illegalities prevail** often with the knowledge of other fishers, traders and take place in presence of officials responsible for law enforcement. The fishing grounds and fish landing sites are principal supply side infringement areas with respect to fishing gears, methods and documentation. Fish markets, fish processing establishments and fish in transit on roads and borders are key demand side infringement areas with respect to immature fish peddling and pre-requisite documentation. Enforcement action can only be effective as deterrence when stakeholders at different levels understand the need and rationale for such action., Reduction in illegalities will see fish production increase to meet demands for domestic consumption and export with resultant poverty reduction in fishing communities.

MCS Objectives

5. The objectives of fisheries MCS are:

- i. To ensure a sustainable harvest (catches) of fish in lakes and rivers through promoting adherence to fisheries laws and regulations by those involved in harvest and transactions of fish and fishery products;
- ii. To promote inter-agency and community participation in fisheries management (co-management) through joint and synergistic enforcement action;
- iii. To minimize the harvest and trafficking of immature fish and reduce excessive exploitation of certain stocks to allow for stock resilience and increased production in order to meet demands for domestic consumption and export through stringent enforcement of fisheries regulations;
- iv. To harmonize fisheries management regimes with local governments and other agencies of government; and, to reduce Illegal, Unregulated and Unreported (IUU) fishing and fish smuggling;
- v. To disrupt large scale transactions and trafficking in contraband fish and fishery products from the demand side.

Scope and Objectives of the Manual

6. This manual will serve as a guide to all agencies at central and local government levels enlisted to enforce the legal requirements for compliance by those who catch, sell, transport, process and market fish and fisheries products.
7. It describes specific powers for enforcement officers, modalities and procedures for application of the powers during MCS operations as provided for under the Fish Act and subsidiary legislations. Checklist for documentation required for operators transacting fishery business and applicable legal reference to match with physical evidence for infringements are provided.
8. The manual is a practical tool intended to assist authorized officers from the Department of Fisheries Resources (DFR); Local governments; Uganda Police Force (land and water), UPDF Marines, ISO, ESO, Revenue Protection Services, Public Prosecutors, Immigration, Resident District Commissioners, URA, Informers etc who encounter fisheries malpractices. It will help in the apprehension, prosecution and conviction of offenders country-wide in a variety of places such as fish landing sites, customs boarder ports/posts, roads, lakes, establishments, markets etc. It is expected that the Standard Operating Procedure will bring about a harmonious working relationship, enhance efficiency and effectiveness of MCS operations between DFR, local governments and other agencies.

The objectives of this Manual are to:

- (i) Give effect and promote similar understanding in interpretation regarding powers provided in the Fish Act and *modus operandi* for field operatives and local governments;
- (ii) Ensure harmonized conduct of MCS operations by the different authorized officers and law enforcement agencies in the field;
- (iii) Ensure consistent and harmonious performance of all stakeholders and inter-agency task forces committed to enforcement of fisheries laws and regulations.

This enforcement manual covers MCS operations in the following areas targeted:

- a) Fishing grounds;**
- b) Fish landing sites on Lakes and Rivers;**
- c) Fish transport Vehicles and Vessels;**
- d) Fish Markets;**
- e) Fish processing Establishments;**
- f) Border points / Exit port on land, water and air;**
- g) Fish Gear manufacturing Plants/Shops;**
- h) Fish in transit.**

FISHERIES MONITORING CONTROL AND SURVEILLANCE IN UGANDA

CHAPTER ONE

1. Fisheries Monitoring Control and Surveillance (MCS)

The purpose of an operational MCS system is to conserve and manage the national fisheries by ensuring that resource users or operators in the industry comply with applicable laws and regulations fully and expeditiously.

The fisheries are artisanal with myriad fishing operators clustered in various water bodies around numerous fish landing sites/villages conducting fishing operations using boats and various fishing gears and methods. The operational MCS at community, local governments and central government level must ensure that:

- a) Only licensed fishers using legal gears and methods operating from gazetted or registered fish landing sites should land fish of sizes allowable;
- b) Fishers comply with applicable laws and regulations or have their permits and licenses cancelled;
- c) Operators of fish collecting vessels and trucks deal in fish that meet legal requirements and not contraband fish and fishery products;
- d) Processors and dealers or sellers of fish and fisheries products comply with legal requirements and relevant or applicable permits and licenses;
- e) Only bona fide operators conduct business.
- f) Suspects must be apprehended and prosecuted to deter would be offenders and promote adherence to fisheries laws.
- g) Generally and without prejudice, ensure all relevant provisions of the Fish Act are complied with.

CHAPTER TWO

2. The Fish Act and Powers of Enforcement

2.1 Authority to Enforce Fisheries Laws

The Fish Act invests the power of enforcement in the **authorized officers**. An authorized officer in the Fish Act includes a fisheries officer, a chief magistrate, a magistrate of any grade, a police officer of or above the rank of corporal or any employee of the Fisheries Department authorized in writing in that behalf by the Chief Fisheries Officer (Section 2(f) of the Fish Act refers).

2.2 Powers to Arrest Suspects

The applicable provision in the Fish Act is in Section 23 which states ".... When any person is seen or found committing an offence or is reasonably suspected of having committed an offence against this Act, **any authorized officer** may demand his name and address and if he refuses to give such information or fails to give such information to the satisfaction of the authorized officer, or if the latter has reasonable grounds for believing that unless arrested the offender may escape or cause an unreasonable amount of delay, trouble or expense in being made answerable to justice he **may arrest** him forthwith....". **Authorized Officers have powers to arrest.**

2.3 Powers of a Public Prosecutor

The applicable provision in the Fish Act is in Section 24 which states "....In any prosecution for an offence against this Act any **fisheries officer may**, subject to the express directions of the Director of Public Prosecutions, **have and exercise all the powers of a public prosecutor appointed under the Criminal Procedure Code....**".

2.4 Powers to Inspect and Search

The applicable provision in the Fish Act is in Section 25 which states "Whenever any authorized officer **suspects** that any person has committed an offence against this Act he may **inspect and search or authorize any person subordinate to him to inspect and search** any baggage, package, vehicle, vessel, engines, tent, premises or property belonging to or occupied by such person or to anyone in his employment, and ". **Authorized Officers have powers to Search and Inspect by law so established.**

2.5 Powers to Seize and Detain

The applicable provision in the Fish Act is in Section 25 which states " if there is found as a consequence of such search any fish, dried fish, fish product, vessel, engine, net, line, basket or appliance appearing to have been obtained or to be possessed in contravention (sic) of this Act, he/she will have it... **seized and detained** under the provision of section 38 of this Act...". **Authorized Officers have powers to Seize and Detain by law so established.**

2.6 Powers to Halt Aircraft, Vehicles and Vessels

The applicable provision in the Fish Act is in Section 26 which states "...Any authorized officer **may enter** upon or into any land and **may halt** and enter into **any aircraft, vehicle or vessel** for the purpose of carrying out the provisions of this Act or of preventing or detecting offences against this Act". **Authorized Officers have powers to halt and board by law so established.**

2.7 Powers to Measure and Check Fish and Fishery Products

The applicable provision in the Fish Act is in Section 30 (a) which states "Any authorized officer may.... weigh measure and check any captured fish or any dried fish or fish product and the **person in charge of such fish shall on demand produce such fish** to the authorized officer for that purpose....."; **Authorized Officers have powers to measure and check fish or fishery products by law so established.**

2.8 Powers to Seize and Destroy Vessels and Fishing Gears

The applicable provision in the Fish Act is in Section 30 (b) which states ".... Any authorized officer may....Seize and destroy any vessel, the interior overall length of which is no greater than 28 feet, net, longline, basket trap, appliance found on the shore beside, or in the water of, any waters where either the use thereof or fishing is prohibited under this Act. Authorized Officers have powers to Seize and Destroy certain vessels and prohibited gears without court order by law so established.

2.9 Powers to Sell Seized Fish and Fishery Products

The applicable provision in the Fish Act is in Section 30 (c) which states "... Any authorized officer may....Seize any fish, dried fish, fish product, which he reasonably believes to have been caught or to be possessed in contravention of the provisions of this' Act, or any rules made there under Any such fish, dried fish, fish product so seized shall be sold in such manner as the authorized officer may think fit and the proceeds of such sale shall be paid into court (Provided that no person shall be subject to any liability on account of his neglect or failure to exercise the powers conferred by this paragraph...)". Authorized Officers have powers to Sell seized fish and fishery products without court order by law so established.

2.10 Powers to Seize and Detain vessel, gears or appliance

The applicable provision in the Fish Act is in Section 30 (d) which states " Any authorized officer may Seize and detain, subject to the orders of a court, any vessel, engine, net, line, basket or appliance found either unattended or in possession of any person in such circumstances, other than in the circumstances shown in paragraph (b) of this section, as to lead to a reasonable suspicion that use it for the purpose of the capture of any fish in any manner contrary to the provisions of this Act;"

2.11 Powers of COLrt

2.11.1 Automatic liability on Conviction

The applicable provision in the Fish Act is in Section 30(c) which provides that: "..... fish and fishery products seized shall:

- (i) be **forfeited** to the Government in the event of any **person being convicted** of any offence against this Act any rules made there under in regard to the capturing of such fish or in the event of such person being unknown and no claim being made thereto within two months of the payment into court;
- (ii) Be handed to the person who captured such fish where the person who captured such fish is known and either no person is prosecuted or the person prosecuted is discharged or acquitted....."

2.11.2 Liability on COLrt Order

The applicable provision in the Fish Act is in Section 30 (d) which provides that: "...the court may order any... (seized/detained) vessel, engine, net, line, basket or appliance...:

- (i) To be **disposed** of in such manner as the court may think fit in the event of the court **convicting** any person of any offence in relation to which such **vessel, engine, net, line, basket** or appliance was seized Provided that where the person convicted is not the owner of the vessel, engine, in relation to which the offence was committed no order shall be made in respect of such vessel, engine, unless the owner has been given opportunity of being heard;
- (ii) To be returned to the owner in the event of no person being **prosecuted** within a reasonable time or where the person being prosecuted is discharged or acquitted by the court;

- (iii) To be forfeited to the Government where the owner thereof is unknown and no claim is made thereto within two months of their being detained..."

CHAPTER THREE

3. Standard Operating Procedures for Enforcement

3.1 Procedures for Authorization

The Fish Act bestows automatic authorization to enforce applicable provisions on fisheries officers, chief magistrates, magistrates of any grade and police officers of or above the rank of corporal. However, fisheries officers in local government are extension workers as devolved from the center (Local Governments Act, 1997: Second Schedule, Part 2(5)). Regulatory service (i.e fisheries law and order) remains a mandate of the central government (Schedule 6, Constitution 1995).

The Chief Fisheries Officer delegates the enforcement function to fisheries officers in local government through issuance of Authority Cards (ACs). Fisheries Officers in local governments who wish to enforce regulations must apply in writing through their District Fisheries Officers (DFOs) and Chief Administrative officers (CAOs) to the Chief Fisheries Officer.

The Chief Fisheries Officer also issues Authority Cards to contracted or inter agency employees of the DFR with specific task to enforce the provisions of the Fish Act. They must produce ACs at all times during opening encounter with suspects before an enforcement action or during encounter with operatives from other agencies and local governments.

The contracted operative employee Authorized Officers (AOs) under the DFR must obtain authorization for movement out of headquarters to undertake an operation or contact an officer of a rank not less than a Senior Fisheries Officer. The DFR Regulatory

services will keep a **Record** of authorized movement of operatives. Local government operatives may obtain authorization from the Resident District Commissioner using similar adopted format.

Informers are not authorized officers and may only inform the authorized officers to take action in case of suspected infringement. They are expected to provide information to enable surveillance of fisheries malpractices. The Chief Fisheries Officer vets informers based on available information registered and directed to operate covertly.

The Chief Fisheries Officer maintains and updates a **register** of all Authority Cards issued out including passport size photos of authorized officers.

3.2 Procedures for Arrest of Suspects

In the event that the authorized officer sees or find a person committing an offence or reasonably suspects based on surveillance or inter-agency information sources that he/she has committed an offence against this Act, he/she should:

- a) Introduce him/herself to applicable local government officials and law enforcement agencies and sign in;
- b) Introduce himself to the suspect by shOWing his/her authority card;
- c) Politely demand the name and address of the suspect; and
- d) Ask for relevant information and documentation related to the activity leading to suspected infringement for verification;
- e) Take measurements of fish, fishing gears or both to ascertain legal size compliance;
- f) if he/she refuses to give such information or fails to give such information to the satisfaction of the authorized officer; or
- g) if the AO has reasonable grounds for believing that unless arrested the offender may escape or cause an unreasonable amount of delay, trouble or expense in being made answerable to justice he **may arrest** him forthwith or cause arrest by linking with other law enforcement agencies;

- h) if suspect resists arrest, reasonable force may be applied commensurate to the magnitude of resistance;
- i) the AO hands over arrested suspect along with exhibits to the nearest police station and makes a statement on suspected infringement by specifying the charges;
- j) the AO notes down the reference number of the case being lodged;
- k) the receiving police officer acknowledges the receipt of suspect and exhibits and affixes a stamp;
- l) a case lodged with the police by the Center may not be handled or reversed by a local fisheries AO unless it is so directed in writing by the Chief Fisheries Officer or his authorized representative.

3.3 Procedures for Designation of Fisheries Officers as Public Prosecutors

The Chief Fisheries officer to yearly compile names of fisheries officers who may meet minimum requirement for designation as Public Prosecutors. Candidates attend a short course in public prosecution at the Law Development Center. The Chief Fisheries Officer writes to the DPP and request for designation of the officers as Public Prosecutors. The **fisheries officer may**, on directions of the Director of Public Prosecutions, **have and exercise all the powers of a public prosecutor appointed under the Criminal Procedure Code.**

3.4 Procedures for Inspection and Search

Whenever any authorized officer **suspects** that any person has committed an offence against this Act he may **inspect and search or authorize any person subordinate to him to inspect and search.** He/she should:

- a) Introduce him/herself to relevant local government officials and law enforcement agencies and sign in;
- b) Introduce **him/her** self to the suspect by showing authority card;
- c) Politely demand his/her name and address; and

- d) Ask for relevant information and documentation related to suspected infringement for verification;
- e) politely ask suspect to open baggage, package, vehicle hold, vessel hold, tent, premises or property belonging to or occupied by such person or to anyone in his employment; and
- f) conduct systematic search for suspected infringement with participation of the local officials;
- g) take sample measurements randomly to verify and cross check for material bridge;

3.5 Procedures for Seizure

Following procedures in 3.4 above, if there is found as a consequence of such search any fish, dried fish, fish product, vessel, engine, net, line, basket or appliance appearing to have been obtained or to be possessed in contravention of the Fish Act, the fore mentioned items are **seized and detained** under the provision of section 30(c) of the Act. **A Seizure Form** issued in triplicate to that effect where suspects are not arrested with original to the suspect and copies to the Police and DFR as circumstances dictate.

3.6 Procedures to Halt Aircraft, Vehicles and Vessels

3.6.1 Halting Aircraft

Based on surveillance information or a tip off from informers on the ground or information from inter-agency sources on suspected infringement verified as reliable;

- a) The chief Fisheries Officer contacts the responsible aviation authority communicating the nature and gravity of suspected infringement and its implication;
- b) the Chief Fisheries Officer states to the aviation authority the powers under the Act;
- c) the CFO may through flight control coordination halt an aircraft after exchange of notes with relevant aviation authorities;
- d) Inspection for infringement should not last for more than 30 minutes;

3.6.2 Halting Vehicles

Based on surveillance information or a tip off from informers on the ground or information from inter-agency sources on suspected infringement or the frequency of occurrence of infringement:

- a) The Authorized Officer shall inform the Resident District Commissioner, DPC and DISO for support to erect a roadblock after communicating the nature and gravity of suspected infringement;
- b) In case of hot pursuit, the AO shall seek the assistance of the nearest Police outpost or highway patrol and inform the relevant authority retrospectively within 48 hrs;
- c) the AO may use the assistance of inter-agency armed personnel to man the roadblock for a specified period;
- d) the vehicles are halted and the driver/relevant party informed of suspected liability under the Act and request for boarding the vehicle for search and inspection;
- e) Inspection for infringement should not last for more than 2 hours;
- f) Vehicles found to have infringement under the Act are requested under escort to park at the nearest police station or where expediency demands, escorted to the DFR after filling in with the police.

3.6.3 Halting Vessels

Based on surveillance information or a tip off from informers in the islands, fish landing sites, near shore or offshore fishing grounds or information from inter-agency sources on suspected infringement or the frequency of occurrence of infringement in the waters including smuggling of fish:

- a) The Authorized Officer shall inform in writing an officer at or above the rank of Senior Fisheries Officer, or the Resident District Commissioner, DPC and DISO to mount on-water patrols;
- b) the AO shall use the assistance of inter-agency armed personnel to conduct on-water patrols for a specified period;

- c) On sighting the suspected vessels, the AO announces through the public address system the identity of the enforcement party on patrol and a demand for the crew to halt and prepare for boarding
- d) A smaller vessel attached to the mother patrol boat conveys the AO to halted vessel for boarding while mother vessel provides cover;
- e) the vessels are boarded and the crew informed of suspected liability under the Act and requested to provide relevant documentation (licenses/permits) for verification;
- f) Inspection for infringement should not last for more than 1 hour;
- g) Vessels found to have infringement under the Act are towed or escorted to nearest landing site preferably having a police station;
- h) Vessels less than 28 feet may be destroyed depending on prevailing circumstances and suspects with attendant gears remanded at the nearest police station or arrested as per 3.2 above.

3.7 Procedures for Measurement and Checking of Fish and Fishery Products

3.7.1 Fresh Fish

Fresh fish is very perishable and may be subject to contamination or cross contamination by authorized officers during enforcement verification action for infringement (immature fish and safety inspection). The chances of contamination arising from an Authorized Officer are reduced by following the procedures below:

- a) It is mandatory that the person in charge of a consignment or batch of fresh fish should produce such fish to the authorized officer on demand;
- b) The AO must maintain minimum hygiene requirements such as washing hands with detergents, clean gumboots, closely cropped hair or head gear etc;

- c) The AO must utilize the Fish Inspectors Guide/Manual described under Fish (Quality Assurance) Rules, 1998 to assist in the process of inspection;
- d) Locate a clean platform for off loading fresh fish before sample measurement;
- e) Make sure there is enough ice to maintain the cold chain between seizure and measurement period with the ice to be provided by the suspected party;
- f) Use tape measures or measuring board and measure fish length from nostril to tail end for as many a sample as deemed representative (about 100/0);
- g) Measurement must be concluded within a reasonable time after offloading of the fish.

3.7.2 Dried/Cured Fish or Fish Product

Dried/cured fish is perishable but has a much longer keeping time than fresh fish especially when it is salted. The following procedure is best suited:

- a) It is mandatory that the person in charge of a consignment or batch or sacks or bails of dried fish to produce such fish or fishery product to the authorized officer on demand;
- b) The AO must maintain minimum hygiene requirements such as washing hands with detergents, clean gumboots, closely-cropped hair or head gear, gloves etc;
- c) Off load the fish and open up the containment. Locate a clean flat surface for sample measurement;
- d) Use tape measures or measuring board and measure fish length from nostril to tail end for as many a sample as deemed representative (about 100/0);
- e) Measurement to be concluded within reasonable time after offloading of the fish.

3.8 Procedures for Seizure and Destruction of Vessels and Fishing Gears

3.8.1 At Sea

The suspected infringement vessel halted and boarded as per 3.6.3 above. The suspects transferred to patrol vessel and informed of the prohibited nature of their operation e.g. illegal fishing gears/methods or transporting fish without licenses or permits, immature fish liability etc. Photograph should be taken for material evidence of the infringements and boat size measured. The transom of the infringement vessels less than 28 feet may be removed and vessel sunk in offshore deep waters. Infringement nets are raked and cut into pieces using sharp instruments or otherwise destroyed.

3.8.2 On land

Procedures for inspection and search followed as per 3.4 above. The local authorities and suspected party or parties informed of the prohibited nature of their operation e.g. illegal fishing gears/methods or transporting fish without licenses or permits, immature fish liability etc. Photograph may be taken for material evidence of the infringements and boat size measured. The infringement vessels under 28 feet destroyed physically beyond repair. Infringement nets burnt or cut using sharp instruments and invariably destroyed. A public address to sensitize other would be offenders are recommended for promoting compliance to the rule of law in fishing and fish trade. A few responsible local persons should be requested to sign off the exercise as witnesses.

3.9 Procedures for Selling Seized Fish and Fishery Products

Procedure for seizure followed as per 3.5 above. The authorized officer may sell **Seized fish, dried fish, fish product caught or possessed in contravention of the provisions of the Fish Act**, or any rules made there under. Measurements to determine infringement described in 3.7 above or other such evidence objectively verifiable are recorded in the presence of credible

witnesses. A police officer preferably CID officials offer the best witness during sale of proscribed fish and fishery products. It is standard procedure to separate immature from mature fish for immature fish liability. Immature fish is given freely to public institutions e.g. schools, hospitals, barracks, prisons etc. through Court order (section 30(d)i Fish Act) and official receipts with verifiable addresses filed. The mature fish may be sold through simple auction and due diligence exercised. The proceeds are paid into law courts and receipts obtained in lieu of the exhibits. The official document is issued to purchasers.

3.10 Procedures to Seize and Detain Unattended vessel, gears or appliance on reasonable suspicion

Procedure as per 3.5 above except that the Authorized officer must apply for Court Order (section 30(d)).

3.11 Prayer to Court on Conviction

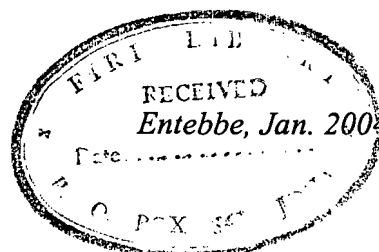
The prosecution should pray that after conviction for fisheries offences that the seized items should be **forfeited** to Government where the convict is a **habitual offender** in addition to imprisonment with no option of a fine;

CHAPTER FOUR

4. Checklist for Regulatory Requirement and Documentation

Operational fisheries monitoring, surveillance and control requires prudent checking of documentation mainly in the following key staging areas:

- (a) Fishing grounds within territorial waters
- (b) Fish landing sites
- (c) Roads -
- (d) Markets
- (e) Border ports



- (f) Processing establishment
- (g) Fishnet manufacturing establishments

The Checklist below is a useful guide for Authorized Officers and inter-agency partners to verify applicable documentation for authenticity, completeness and conformance.

4.1. Checklist for Fishing Ground during On-water Patrol

- a) Valid license for fishing (Section 5 of the Fish Act);
- b) Vessel license (5.I No. 73 of 2001 Part I);
- c) Special license for fishing (Non Citizens) (5.I No. 73 of 2001 Part I);
- d) Check for Prohibited Fishing Gears (51 No. 61 of 2002);
- e) Check for Prohibited Fishing methods (51 No. 61 of 2002);
- f) The size of the boat related to Vessel license (51 No. 73 of 2001 part I);
- g) Check for fish size (immature fish) as per 5 I No. 40 of 2002;
- h) Container boats banned from crossing international waters of Lake Victoria (Directive by Council of Ministers, LVFO);
- i) Immigration status and work permits for non-citizens.

4.2. Checklist for Fish Landing Site Operations

As in 4.1 above with the following additional requirements:

- a) Fish mongers license for local fish traders;
- b) Vehicle inspection certificate (issued by DFR - Central jurisdiction);
- c) A local health certificate from the local fish inspector at landing site (issued by designated local fish inspectors);
- d) Fish Movement Permit matching recorded quantity of fish being carried - excess is a breach (51 No. 73 of 2001).

4.3. Checklist on Roads

- a) Specific License for fish truck from the District of Origin (51 NO. 73 of 2001 (Part I)) matching with Logbook tonnage;
- b) Check for fish size (Immature Fish as per 5 I No. 40 of 2002);
- c) Check Immigration Status and work permits (Non Citizens)
- d) Check for Fish Movement Permit (51 No. 73 of 2001)
- e) Certificate of Vehicle Inspection (Quality Assurance Rules 1998).
- f) All licenses must be in their original form and exhibited at every place of business.

4.4 Checklist for Processing Establishments

- a) Check for the validity of Industrial Processing License
- b) Check for fish size (Immature fish S.I No. 40 of 2002)
- c) Immigration Status and work permits (non-citizens);
- d) Check for Fish Movement Permit (51 No. 73 of 2001);

4.5. Checklist for Exit Ports (Boarders):

- a) Check for Immature fish (51 no. 40 of 2002).
- b) Check for Export license by Species/Product type
- c) Check for Valid **Fish Health Certificate** (issued by the DFR, **Central** jurisdiction) - **Invalid if issued by any district official;**
- d) Check for Specific License (SI No. 73 of 2001 Part II)
- e) Check for Import and Export Permit for live fish, their eggs or progeny into the country (Sec. 12 (i) Fish Act Cap. 197);
- f) Check for Vessel/Truck Approval Certificate by DFR (Central);
- g) Check for Fish Movement Permit (51 No. 73 of 2001).

4.6. Checklist for Fish Markets

- a) Check for Fish monger's license;
- b) Check for Movement Permit (51 No. 73 of 2001);
- c) Specific license for Fish truck (SI No. 73 of 2001);
- d) Check for immature fish as per 51 No. 40 of 2002.

- h) Setting standards on MCS Operations;
- i) Training and sensitizing fishers, dealers and inter agency personnel's on technical matters;
- j) Receiving reports from inter-agency partners.

6.3. Uganda Police Force

In the Fish Act, an authorized officer includes a Police officer of or above the rank of Corporal. The force is expected to play its legal role to reduce fisheries criminal practices and promote adherence to the rule of law (Fish Act). It should also assist the DFR in restoring order in the fishery industry.

6.3.1 Role of Police Marines

Police Marines should undertake fisheries law enforcement task as their normal call of duty to provide for law and order in territorial waters. In the context of Inter-agency fisheries operational MCS, the following would optimize synergistic relationship and teamwork with DFR:

- a) Exchange of information on infringements and combining resources to prevent, deter and eliminate such infringements;
- b) Collaborating with the DFR at all times while handling fisheries related matters;
- c) Providing security during operations against fisheries malpractices;
- d) Impound, arrest, seize any suspect or exhibit as per the Fish Act;
- e) Charge and process prosecution of suspects contravening the Fish Act;
- f) Control piracy in liaison with other agencies.

6.3.2 Role of Police Patrols | Mobile Police and CIO

Police Patrols are already routinely deployed on various routes where dealers involved in various criminal enterprises trafficking fish and fishery products. **Police Patrols should undertake checks on trucks dealing in fish as part of their normal call of duty to provide for law and order.** Most of the officers are authorized under the Fish Act. In the context of Inter-agency fisheries operational MCS, the following would optimize synergistic relationship and teamwork with DFR:

- a) Carry out Patrols and on spot checks on all roads to curb trafficking in illegal fish and fishery products;
- b) Check specifically for immature fish and illegal gears in transit;
- c) Check for documents regarding non citizens working in the fishing industry;
- d) Seize (impound) in collaboration with DFR.
- e) Carry out investigations where necessary;
- f) Share information on fisheries infringements, arrests and convictions.

6.4. UPDF (UPDF Marine), ISO and ESO.

The UPDF is a peoples' army' supposed to protect the state, its people, property and natural resources. The institution has been and continues to be an effective partner to DFR. The latter has powers but is a civilian service. Under the inter-agency arrangement, the different institutions within the UPDF have an important role to play in fighting fisheries malpractices and guard against illegal exploitation of the national fisheries resources by other powers outside Uganda. Some of the key roles are:

- a) Safe guard and conduct surveillance along water frontiers to check against illegal exploitation of the fisheries resources by foreigners on Lakes Victoria, Albert and Edward;
- b) Reinforce compliance in areas where administrative structures are weak, corrupted or insecure;
- c) Provide security'€Over to DFR during MCS Operations;
- d) Impound and seize infringements and exhibit in collaboration with DFR;

- e) Production of suspects and exhibits to Police for further processing and legal action;
- f) Providing information related to fisheries malpractices.

6.5. Uganda Revenue Authority (URA)/CUSTOMS/SRPS

Customs handle goods (Cargo) imported, exported or on transit through the territory of Uganda. Goods or cargo handled must be bona fide legal consignment with requisite documentation. **Contraband** goods such as **immature fish on transit and illegal importation of prohibited fishing gears** should not be cleared by Customs. It is recognized that custom posts are exit and entry points for Uganda. The jurisdiction for whatever fish and fisheries products leave and enter is with the DFR as the Competent Authority and not local governments unless specifically delegated in writing. Customs is delegated full powers to lead and assist the Inter-Agency MCS with the following:

- a. Check for compliance of fishing gears that are being imported in the country. The law (S.I No. 61 of 2002) requires written clearance by the Chief Fisheries Officer for such imports;
- b. Check Cargo for contraband fish especially immature fish exports as per the SOP and inform DFR or inter-agency operatives of the suspected infringements;
- c. Check and verify authenticity of Fish Export Health Certificate presented at exit points **(Issued by Central Inspectors from DFR only and not district personnel)**;
- d. Check for Export license from Ministry of Trade specifying species of fish and nature of fish and fishery product (smoked, salted, fresh etc) for conformance with NEL;
- e. Check for Specific license issued by District of origin;
- f. Check for Fish Movement. Permit;
- g. Share records of transactions in fish and fishery products;
- h. Provide protection services for fisheries revenues.

6.6. IMMIGRATION DEPARTMENT

The Immigration Department is charged with the responsibility of monitoring and formalizing stay and exit of persons in the country. The fishing industry is beset by foreigners entering Ugandan territory daily to engage in productive fishing enterprise and not trade. A large number of non-citizens have not been naturalized but have settled within the country at fish landing sites. This presents special problem for the fragile resource often wantonly exploited unsustainably by these foreigners. It is expected that the Immigration Department could contribute to inter-agency efforts by undertaking the following:

- (a) Check and issue work permits to foreigners in fishing and fish processing in collaboration with local governments and DFR;
- (b) Check for illegal Immigrants involved in fisheries related activities e.g. transporting, fishing, processing, selling and marketing

6.7. DIRECTORATE OF PUBLIC PROSECUTION

Prosecution presents a special challenge in the fight to curb fisheries malpractices. Convicted offenders have walked out of courts with meager fines even when there is the option for imprisonment. A lot of effort and resources are spent tracking offenders. Lack of deterrent sentence demoralizes operatives who may be forced to use excessive force on suspects in frustration. This state of affairs needs redress through a new principal law in the long term. Current efforts must be directed at sensitizing State Attorneys and Prosecutors to realize the gravity of fisheries offences that may lead to collapse of an important natural resource. The DPP is an important Inter-agency partner and could undertake the following:

- a) Assist in quickening the prosecution procedures;
- b) Assist in providing deterrent punishment to offenders in fisheries related matters;
- c) Legal guidance and advise at different levels of inter agency operations.

6.8. MINISTRY RESPONSIBLE FOR TRADE

Bona fide trade in fish and fishery product within and outside the country must be encouraged. However, traders must know regulatory requirements that underpin trade in fish and fishery products. There is also the need to balance national food security concerns, demands for fish raw material for industrial export processing and the increasing regional demands. It is advisable that export licenses for Nile Perch and Nile tilapia are issued only with clearance from the DFR. The following are areas where support is required:

- a) Responsible Issuing of Export and Trading licenses taking into account concerns above;
- b) Provide to DFR and other Inter-agency operators the list of exporters of fish and fishery products by species, type and destination of licensed dealers;
- c) Blacklist convicted dealers from obtaining new licenses or cancel licenses for such dealers based on information from DFR and other Inter-agency operators;
- d) Collaborate with DFR in advisory of net manufacturers and importers of the legal requirements compliance.

CHAPTER SEVEN

7. Coordination of Inter-Agency Operations

The need for team work for effective inter-agency operational MCS at all levels of fisheries governance is critical enforcement of fisheries laws. A two tier Fisheries Task Force at national level is proposed; Policy and Operational. Operational Task Forces are proposed at district, sub-county and community level. The Minister will appoint the taskforces administratively or by legal instrument.

7.1 National Interagency Taskforce for Fisheries (NITAF)

This is the topmost **Policy** organ of the inter-agency taskforce consisting of heads of institutions comprising the inter-agency.

Its members are:-

- | | |
|--|-------------|
| a) - Minister of state, Fisheries | Chairperson |
| b) - Commissioner Fisheries | Secretary |
| c) - Permanent Secretary, MAAIF | Member |
| d) - Permanent Secretary, Ministry of Finance - | Member |
| e) - Permanent Secretary, Ministry of Internal Affairs | Member |
| f) - Inspector General Police | Member |
| g) - Army Commander | Member |
| h) - Director General ISO | Member |
| i) - Director General ESO | Member |
| j) - Director Public Prosecution | Member |
| k) - Chief Registrar Court of Judicature | Member |
| l) - Solicitor General | Member |
| m)- UFPEA Representative | Member |

7.2 National Interagency Operational Taskforce (NIOT)

This Organ comprises technical operatives from institutions composing the inter-agency. They should have the ability to mobilize resources, give technical guidance and advise to lower interagency taskforces. Members to consist of:-

- | | |
|--|------------|
| a) Commissioner Fisheries - | (Chairman) |
| b) Assistant Commissioner Fisheries R&C(Secretary) | |
| c) Assistant Commissioner Investigations (URA) - | Member |
| d) Commissioner Trade - | Member |
| e) Commissioner Immigration - | Member |
| f) Commissioner Police (ops) - | Member |
| g) In charge SRPS - | Member |
| h) Commander UPDF Marine - | Member |
| i) Commander Police Marine - | Member |
| j) Director Public Prosecution - | Member |
| k) Director Operations, ISO - | Member |

7.3 NIOT Operational Sub-Committee

7.3.1 General OPS

This sub-committee of NIOT comprises *operatives* from institutions composing the inter-agency. They report to NIOT and guides' command and control of inter-agency operations. Members to consist of:-

- | | |
|---------------------------------------|-------------|
| a) Director Operations, ISO - | (Chairman) |
| b) Asst Commissioner Fisheries R&C | (Secretary) |
| c) Asst. Commissioner Police (ops) - | Member |
| d) Asst. Commissioner Police (Crime)- | Member |
| e) In charge SRPS - Ops | Member |
| f) Commander UPDF Marine - | Member |
| g) Commander Police Marine - | Member |
| h) Director Public Prosecution - | Member |
| i) Director Operations, ISO - | Member |
| j) O/C ISO Maritime Security- | Member |

7.3.2 URA

- | | |
|---|-----------|
| a) Assistant Commissioner <i>Investigations</i> (URA) | Chairman |
| b) Head, FIT Dept. of Fishing Methods and Gear Tech. | Secretary |
| c) Head, Chemist Section, URA | Member |
| d) Chemist Section, URA | Member |
| e) Fishing Gear Technologist, DFR | Member |

7.3 District Interagency Taskforce for Fisheries (DITAF)

This Organ comprises district operatives from institutions *relevant* and connected to the inter-agency resources. The RDC, who supervises and monitors central and local *government* activities and *oversees* security in a 'district, will Chair the DITAF. The task force should *have* the ability to mobilize operational resources from the central *government* or district. The district taskforce should link and give technical guidance and advise to lower interagency taskforces. Members to consist of:-

a) Resident District Commissioner -	(Chairperson)
b) Chairman LC V-	Member
c) Chief Administrative Officer -	Member
d) District Fisheries Officer (Secretary) -	Member
e) District Police Commander -	Member
f) District C.LD -	Member
g) DISO -	Member
h) District Revenue Officer (URA) -	Member
i) District Immigration Officer -	Member
j) Resident State Attorney-	Member

7.4 Sub-County Interagency Taskforce for Fisheries

a) Sub-county chief	Member
b) Chairman LC III	Chairman
c) GISO	Member
d) Sub-county Fisheries Officer -	Secretary
e) Chairperson BMU	Member
f) In-charge Local Admin. Police -	Member
g) In-charge Police Post	Member
h) In-charge LDU,	Member

7.5 Beach Management Units (BMU)

The Fishing (Beach Management) Instrument, 2003 provides linkage with inter-agency operatives at local level. All operatives are required to cooperate with BMUs and use the institution for continuity of enforcement during their absence.

8. General

All kinds of unconstitutional malice to individual suspects such as torture or molestation or favors against the law at all levels during fisheries MCS operations are prohibited. Extortion of money or favors from resource users, dealers and others engagement in the fishery industry by operatives of any kind in exchange for favors is prohibited. The DFR will at no account associate with such incidences. Operatives who engage in such willful act do so at their own risk and are not immune to disciplinary action and prosecution.

FISHERIES POUCY & PROCESSES
LAW ENFORCEMENT-PROTECTING
FISHERIES RESOURCES THROUGH
INTER AGENCY ACTION AND
INVOLVEMENT OF COMMUNMES

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Department of Fisheries Resources

<p><i>Do we have a National Interest in our Fisheries?</i></p> <p>The answer is yes. The fisheries sector is vital to Uganda's national interest given its' huge contribution to export led growth in the economy and domestic substitution. Assuming that this interest can be projected to the EAC level, then the single largest inland fisheries of the world on lake Victoria is critical to regional interest as a shared resource. The danger, however, is that of an informed intervention at the regional level may set back gains already achieved under the Lake Victoria Fisheries Organization (LVFO). The onset of the Customs Union will guarantee free trade and movement of goods and services across riparian borders including trade in fish and fisheries products. The current policy not to export un processed fish under Negative Export List (NEL) will be phased out. It is assumed such trade would be <i>bona fide</i> or legal through declaration and passage in gazzeted Custom points. However, the harvest or exploitation of fish must follow the law governing fishing to ensure sustainability of lake wide fisheries. A free for all fishing unlimited across borders and responsibility for none is not an option. It would not be in line with the EAC principal of <i>subsidiarity</i> and would face the natural resource management anathema of <i>tragedy of the commons</i>.</p>	<p>Whereas fish does not know boundaries or jurisdictions, humans do. The management of fisheries is about mainly control of human excesses that impact negatively on the resource as objectively defined. A weak fisheries management regime at national and regional levels will invariably lead to collapse of important stocks and livelihoods that go with it. It is in the national and regional interest to OJltivate and nature effectiVe and efficient fisheries institutions and processes.</p> <p><i>What Policies, Institutions and Processes are desired?</i></p> <p>The government has elaborated the National Rsheries Policy 2004. It provides for an Authority to manage effectively fisheries at national level. It takes into account decentralization, privatization, liberalization, co-management and has a strong poverty focus. A draft Bill has been elaborated and is being processed to repeal the current Fish Act and provide for more effective powers of management and wider policy paradigm. It is expected that districts that share water bodies will form Lake Management Organizations (LMOs) akin to Lake George Basin Management Organization (LAGBIMO) and Lake Kyoga Basin Management Organization (LAKIMO). The LMOs are expected to elaborate Lake Management Plans informed by science and approved at national level. The District fisheries management offices would be strengthened to play coordination</p>	<p>and supportive roles to LMOs above and Beach Management Units at grass root. There would be decremental role in policing functions and more of partnership and stewardship in an environment of shared responsibilities as agreed.</p> <p><i>Any International Agenda?</i></p> <p>Uganda has a stake in the global heritage and is legible to license fish vessels in the high seas as a non port state outside the Exclusive Economic Zones (EEI). It does not do so now due to lack of capacity. However, it has been engaging effectively in international fisheries negotiations under FAO for sustained exploitation of global fisheries resources where it must have future long term interest. It is implementing International Plans of Action (IPOAs) for Capacity and IUU (Illegal, Unregulated and Unreported) fishing. The latter has been elaborated for Lake Victoria and approved in May 2004 by the LVFO Council of Ministers. It subscribes to the universally accepted Cord of Conduct for Responsible Fisheries (CCRF). Uganda is recognized in the continent as a major inland fisheries power. It will host the meeting for the Committee of Inland Fisheries of Africa (CIFA) in October 2004.</p> <p>Uganda spear headed the conception of the ADB funded project to ensure sustainable management of the shared fisheries on Lakes Albert and Edward with riparian state of Democratic Republic of Congo (ORe). It will continue to participate effectively in global negotiations concerning fishing subsidies and fish trade under FAO.</p>
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FISHERIES POUCY & PROCESSES.
LAW ENFORCEMENT-PROTECTING
FISHERIES RESOURCES THROUGH
INTER AGENCY ACTION AND
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Department of Fisheries Resources

<p><i>Why Regulate Fisheries atal/?</i></p> <p>Some people OBJECT to fisheries regulations. However, regulations are meant to ensure that there is fair play while exploiting a common fisheries resource. One fish caught illegally by a person is one less for another and many fish less for the future. If you think of 164 lakes in Uganda and a multiplicity of rivers and streams leave alone valley dams where fisheries exist, then you appreciate the need for <u>Inter-Agency</u> action in fisheries protection. There are additionally 56 districts representing 56 local jurisdictions for fisheries management. This means there could be 56 Ordinances for fisheries control if local governments where effective. There probably exist over 1,000 fish landing villages each of which could have a different fisheries bye-law in their jurisdiction.</p> <p>Who are authorized to enforce?</p> <p>There also exist many persons authorized to enforce laws under different jurisdiction. The army looks for outlaws or rebels and secure national borders. The intelligence services conduct surveillance on all including infiltrators especially in porous water boundaries. URA looks for smuggling and collects revenue. The police generally look for any lawbreaker whether on land or water or air.</p>	<p>The Local defense Units looks after local insecurity whether on land or water. The Fisheries Officers look for fisheries outlaws. The common denominator is that all these agencies use tax payers money. They can cooperate, share information on a need to know basis as well as logistics to establish synergy. When you are doing your work, and you witness illegality concerning another jurisdiction such as fisheries, why not report! It does not cost you much.</p> <p>How do we promote synergy?</p> <p>In order to facilitate coordinated law enforcement, the different jurisdictions and agencies need to work together. Several jurisdictions enforcing regulations with different mandates have sometimes caused confusion, duplication of effort and general law enforcement chaos. It is for this reason that the Department of Fisheries Resources elaborated the Standard Operating Procedures for Inter Agency Monitoring, Control and Surveillance (SOP-MCS). It recognizes the different jurisdictions and agencies involved at local, district and national levels. It seeks to establish synergies with communities as well as MCS committees at sub-county, district and national levels in order to</p>	<p>Coordinate inter-agency fisheries enforcement actions. The committee will allow transfer and sharing of information between agencies or authorities at all levels. The whole framework is bound together by the National Fisheries Policy.</p> <p>The Department of Fisheries Resources to date has supported various agencies with modest on-water logistics. The agencies supported include UPDF, SRPS and ISO Maritime Security in the spirit of synergy. The MCS- SOP was developed in consultation with different agencies including the Uganda Police Marines, UPDF Marines, SRPS, ISO Maritime, DFR, District Fisheries Officers as well as the DPP's office.</p> <p>How can you help?</p> <p>Citizens have a role in reporting illegalities. Vigilantes are authorized in the Penal Code to arrest smugglers. Vigilantes are carders of concerned citizens who care and take action to uphold the law. The Fisheries Law provides that the Court will award informers from proceeds got from conviction of illegal entrepreneurs. The communities through their Beach Management Units (BMUs) have been empowered and can arrest suspects under the BMU Statutory Instrument. So why not save the Fisheries? But how can you help save the fisheries to ensure responsible exploitation? You do that by first getting sensitized.</p>
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FISHERIES LAW ENFORCEMENT-
 PROTECTING FISHERIES
 RESOURCES THROUGH INTER
 AGENCY ACTION AND
 INVOLVEMENT OF COMMUNMES

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 Contact: Commissioner for Fisheries

Department of Fisheries Resources

Inform Authorities, why not?

Know about lawbreakers or illegal doers habitually operating in your neighborhood. Lawbreakers threaten the future of the fisheries by destroying young fish. When young fish of today are finished there will be no adult fish to reproduce tomorrow. The fisheries that God gave us will collapse. The investments in fisheries will also collapse. The livelihood of poor people who depend on fishes will be no more. Protecting fisheries is everyone's job and is in everybody's interest.

Poachers

Illegal fishing is known as "Poaching". Illegal dealers or traders in fish are also poachers. Fisheries Authorities work hard to stop the poachers. If dealers in immature fish follow the law, there will be no market for small fish and, no claim of "harassment". If there is no market for small fish, fishermen will catch bigger legal size fish. The fisheries will be there tomorrow and for generations to come. People will make money today and for generations to come too, creating more wealth and prosperity. You need to know regulations and by-laws of the area you are fishing. If you are in a border area, say near Kenya or Tanzania (Lake Victoria); or Democratic Republic of Congo (Lake Albert and Edward), know the boundaries.

If you want to fish across, get the license for fishing applicable in the neighboring countries.

You will be in jail in a foreign country if you do not have their permission. Conversely, report foreigners fishing in our waters. They too need to get a license that gives them permission to fish in Uganda. Uganda loses more than US\$60m in illegal fishing by foreigners. The fish they take away is neither reported nor recorded in Uganda. You cannot plan properly if you do not know

how much fish is taken out of the water. Again, protecting Uganda fishes is every one's job and is in everybody's interest. You may also interest yourself in laws regulating fisheries in you neighborhood. Keep an open eye for those who may destroy it for you and others yet to be born.

Act Now!

You need to get involved. Inform on those who cannot abandon their illegal ways. Report greedy citizen poachers to law enforcement officers near you. Form vigilante groups against smuggling as authorized in penal code. Make a difference where you live. If many citizens heed, then there will be a future for fisheries in Uganda.

Who wants to tell there grandees what a Ngege used to look like or Nile perch? We are currently endeavoring to tell you how Ningu used to look like! ACf NOW!

**SENSITIZATION WORKSHOP FOR HON. MEMBERS OF PARLIAMENT,
CIVIC AND POLITICAL LEADERSHIP ON MONITORING, CONTROL AND
SURVEILLANCE PROGRAMMES FOR LAKE VICTORIA ON 29TH JULY
2004 AT COLLINE HOTEL, MUKONO**

BY

**F.X.M KIZZA
ASSISTANT COMMISSIONER FOR FISHERIES
IIC REGULATION AND CONTROL**

1. INTRODUCTION

Uganda is richly endowed with abundant fish diversity, which have various socio economic benefits. Fishing is one of the economic activities and is as old as mankind. Fishing simply means harvesting of aquatic wildlife i.e. fisheries based on natural production and recruitment. In this regard, it is clear that humans have had for thousands of years a major impact on fish stocks, their diversity and the health of their supporting ecosystems.

2. OBLIGATIONS TO PROTECT THE FISHERIES RESOURCES

The National Objectives and Directive Principles of State Policy, as provided for under Objective XIII of the Constitution of Uganda 1995 stipulates that the State shall protect important natural resources, including land, water, wetlands, minerals, soils, fauna (fish) and flora on behalf of the people of Uganda. An other binding factor is derived from Objective XXVII clause iv whereby the State including local governments shall ensure the conservation of natural resources and promote the rational use of natural resources so as to safeguard and protect the biodiversity of Uganda.

As you maybe aware, various government organs through enabling laws, ordinance and by-laws have entrenched constitutionalism. In the case of fisheries, the Ministry of Agriculture, Animal Industry and Fisheries through the Department of Fisheries Resources is directed by the Fish Act, CAP 197.

This is supported by a number of subsidiary legislation including international and regional conventions and treaties. The National Fisheries Policy is another cardinal instrument whose goal is to ensure increased and sustainable fish production and utilization by properly managing capture fisheries without affecting the health of the ecosystems; promoting Aquaculture, reducing post-harvest losses; and eradicating poverty.

3. CHALLENGES AND CONSEQUENCES

ISSUES	CONSEQUENCES
<i>Increasing human population growth whereas water bodies are inelastic</i>	<ul style="list-style-type: none"> ○ Increasing fishing pressure, food insecurity and unemployment, etc
<i>Over fishing aggravated by use of destructive gear and methods</i>	<ul style="list-style-type: none"> ○ Fish depletion leading to an environmental hazard ○ Loss of biodiversity and national heritage prestige ○ Loss of income, employment, foreign exchange and curtailed multiplier effects. ○ Loss of investment (white elephant phenomenon), hence underrating credibility of government ○ Use of fish poisoning leads to en-masse extermination of biota ○ Use of seine nets (Kokota) interferes With the breeding and feeding of fish and renders the substatum barren, etc
<i>Pollution</i>	<ul style="list-style-type: none"> ○ Eutrophication ○ Introduces contaminants into fish which in the long run may affect the health of the consumers and the fish itself ○ May lead to economic sabotage ○ Devastation of nature, etc
<i>Infestation and rapid spread of water hyacinth</i>	<ul style="list-style-type: none"> ○ Hydroelectric plant obstruction ○ Obstruction of water ways, breeding and feeding grounds offish ○ May proliferate vectors ○ Obstruction of the operations of fishing equipment ○ Obstruction of water treatment processes, etc
<i>Inadequate information on fisheries resources</i>	<ul style="list-style-type: none"> ○ Leads to speculations that fish resources are infinite, bountiful, dying from old age and since fish is speechless and doesn't exhibit a physical response to distress, therefore can be exploited indefinitely/indiscriminately!!

	<ul style="list-style-type: none"> D Leads to inadequate understanding of the fisheries potentials and dynamics hence leading to poor policy formulation, planning and development (total neglect, "milking cow without feeding saga")
<i>Inappropriate regulatory framework</i>	<ul style="list-style-type: none"> D Limited scope of stakeholders limits participatory approach in fisheries management hence leading to laxity, command and control, and increased breaches etc. D Compromises effectiveness of the laws D May not "bite" but brings about a "scare" D Lack of community participation and also uncooperation from resource users D Suffocates good will D Viewed as a pretext for not participating effectively in the fisheries management D Escalates habitual crimes
<i>Inadequate funding</i>	<ul style="list-style-type: none"> D Collapse of the fishery D Economic drain of resources outside the country e.g. U\$ 60m lost to Kenya and U\$ 30 to DRC/Rwanda D Unsustainable fishery leads to poverty, environmental degradation, poor livelihoods and poor returns D Corruption and decay of moral "fibre" D Poor service delivery (no superior equipment for hot pursuit) hence a mix of unverifiable measures from various uncoordinated players

4. INTERVENTIONS

- 4.1 The Fish Act, CAP 197 has a number of supplementary instruments to address the challenges for the new millennium. Equally effective and catalytic is the newly approved National Fisheries Policy e.g. paramilitary status and sourcing and expending funds at source.
- 4.2 LVEMP started in 1997. It had 7 sub-components:- provided conditional grants as well as transport logistics to local government fisheries staff; provided micro-projects to communities; procured waterborne transport for MCS; created awareness on fisheries management; restored EU - market through laboratory analyses etc.

- 4.3 The strategic intervention: H.E the President spearheaded the nationwide increase in production and foreign exchange earnings. DFR was funded for fish-fry distribution; increased fish inspection and quality assurance capacity; and increase MCS operations e.g. "Save Samaki Operation"
- 4.4 "Operation Clean" is yet another strategic intervention in curbing fisheries malpractices. The interagency cooperation (Uganda Police, ISO and Fisheries) is being used to execute the operation. See Appendixes 1 and 2 for results and analysis respectively.
- 4.5 There is a ongoing overhaul of the Fish Act Cap 197. It is expected that all the current odds will be addressed to stand the test of time for the future generation.
- 4.6 The Fisheries Development Project funded by African Development Bank will be providing patrol vessels for all the major water bodies to curb fisheries malpractices
- 4.7 Lake Victoria Fisheries Organisation/EU Project (Implementation of Fisheries Management) is currently running in the EAC Partner States. A joint patrol vessel and joint patrols are provided for.
- 4.8 Lake Victoria Development Programme - it is a regional project, which is focussing on the development aspects in the Lake Victoria basin. It is proposing to have a Lake Victoria commission to address all disciplines/activities.
- 4.9 Empowerment of the lake dependant communities will hopefully strengthen the partnersllip between the centre and communities to Protect and conserve the fisheries resources to fulfill the constitutional obligations. The executive committees of BMUs shall enforce the Fisheries Act and shall have the powers of search, seize and destroy illegalities and arrest offenders. Training courses for BMUs on the skills, law and prosecution will be conducted for the Lake Victoria region.

S. MCSPROGRAMMES

- (i) The ongoing amendment of the Fish Act CAP 197 shall bestow paramilitary status to the MCS unit, and the under funding shall to a certain extent be addressed. In addition, the District Fisheries Office shall be mandatory in every district and the attendant functions have been prescribed one of which is ensuring the sustainability of the fisheries resources.

- (ii) The current fisheries co-management concept is being implemented widely. BMU institutions are in place and have been used as building blocks for the lake wide association to form common organizations of lake riparian districts for the express control of the lake resources e.g. LAGBMO and LAKIMO (see Annex III). MCS operations (self policing) stand out prominently
- (iii) DFR has an established Fisheries Regulation and Control Unit, in which enforcement (virtually MCS) is one of the main activity such as fish markets/lake patrols; curbing the illegal unrecorded and unregulated (rUUs) contra-band cross border fishing/fish trading; and searching, 'seizing and arresting offenders. Occasionally prosecution is undertaken.
- (iv) The interagency cooperation in another alternative approach to MCS. All relevant security organs, RDCs and local governments are by proxy authorized to enforce Fisheries Act. The harmonized Standard Operating Procedure (SOP) guidelines have been developed for the operationalisation of this interagency cooperation.
- (v) The Strategic Intervention Programme provides funds for MCS operations especially on Lake Victoria. The "**Save Samaki Operation**" was one of the products and both print and electronic media were used to sensitize the members of the pubic. Currently the "**OPS CLEAN**" is ongoing to fill the vacuum and the results are so far encouraging.

6. CONCLUSION

As constitutionalism is a topical issue to-day, let it be seen also to cause adherence to the protection and conservation of the fisheries resource for the present an future generations. The synergies that will arise from the concerted efforts of the Hon. Members of Parliament, the Resident District Commissioners, the Political and civic leadership of local governments, shall to the best of my knowledge, achieve the desired goal of safeguarding the fish diversity. Let therefore no vacuum or absence of fisheries management be entertained, but let our presence and actualization of fisheries management be manifested as our unity and strength for the good of mankind.

I

TABLE OF STATISTICAL SUMMARY RESULTS 22nd JUNE _19th JULY 2004

TYPES OF ILLEGAL GEARS	1 st WEEK	2 ^{na} WEEK	3 ^{ra} WEEK	4 th WEEK	TOTAL
Beach Siene Nets (Kokota)	132	539	948	600	2219
Monofilament nets (Kamba magi)	583	652	2345	2730	6310
Under/Size Nets	5873	15688	22604	16055	60220
Cast nets	160	145	39	-	344
Bautatu Canoes	105	770	693	744	2312
Under/Size Hooks	5904	29379	27450	1700	65433
Disguised as Seine Nets (Mukene nets)	42	05	-	-	47
Suspects convicted	15	14	17	-	46
Tonnage offish (Kgs) seized	17	4	19	01	41

II

SUMMARY OF (OPS CLEAN) ACTIVITIES INCLUDING NUMBER OF NETS **RECOVERED**, THEIR VALUE, EARNINGS BY FISHERIES AND REVENUES DENIED TO THE CO'UNTRY AS A **RESULT** OF THE ILLEGAL ACTIVITIES.

ITEM	IMPOUNDED/ SEIZED/ DESTROYED ITEM	QTY	EST. TOTAL VALUE OF DESTROYED ITEMS (Shs)	INCOME GENERATED FROM USE OF ILLEGAL IMPOUNDED, SEIZED AND DESTROYED ITEM (Shs)	EST. INCOME IF IMMATURE FISH WERE ALLOWED TO MATURE TO 2KGS (DENIED REVENUE) (Shs)
1.	KOKOTA	2219	1,109,500,000=	22,190,000,000=	321,133,680,000=
2.	MONOFILAMENT	6318	315,900,000=	18,954,000,000=	
3.	UNDERSIZE NETS	60220	240,880,000=	12,044,000,000=	160,426,080,000=
4.	CAST NETS	344	10,320,000=	1,376,000,000=	2,476,800,000=
5.	UNDER SIZE HOOKS	65433	6,543,300=	2,044,750,000=	

,I



THE CONSTITUTION
OF
LAKE GEORGE BASIN
INTEGRATED MANAGEMENT
ORGANIZATION (LAGBIMO)

Be it adopted by the Parties on
this 24th day of January 2003



THE CONSTITUTION
OF
LAKE KYOGA
INTEGRATED MANAGEMENT
ORGANISATION (LAKIMO)

Be it adopted by the Parties on
this 19th day of February 2004



THE REPUBLIC OF UGANDA

MINISTRY OF AGRICULTURE,
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ENTEBBE, UGANDA

FISH 368/01

In any correspondence on
this subject please quote No.

19th July, 2004

The Director
FIRRI
P.O. Box 343,
JINJA

*cc: Dr. Nubwizi
Dr. Odongkara
Director to
NSRF
[Signature]
22/7/04*

RE: SENSITISATION WORKSHOP ON FISHERIES MANAGEMENT FOR LAKE VICTORIA.

The Ministry is organising a one and half day awareness-raising seminar for district officials around Lake Victoria. Each district will be represented by LCV Chairperson, RDC, CAO, Secretary for Production and District Fisheries Officer.

The purpose of the Seminar is to sensitise the technical and political officials on the need for setting up BMUs on Lake Victoria and to agree on a way forward. During the same workshop, the Department will also share with the officials the results from the Frame surveys that have been held on Lake Victoria and their implications on fisheries management and development. The idea of a lake-wide management organisation similar to LAGBIMO on Lake George and LAKIMO on Lake Kyoga will also be introduced.

Members of Parliament from around Lake Victoria have also been invited to attend this workshop together with staff from FIRRI and LVFO.

The Workshop will be held at Colline Hotel, Mukono on 29th July 2004.

Dick Nyeko
For: PERMANENT SECRETARY

WORKSHOP AGENDA

Time	Activity	Facilitator
28 th July	Travel to Mukono/Accommodation at or near the workshop venue.	
29 th July		
08:00 - 08:30	Registration of participants	DFR Secretariat.
08:30 - 8:45	Workshop Objectives	CFF
8:45 - 9:00	Remarks by NES LVEMP	
9:00-9:15	Remarks by ES LVFO	
9:15 - 9:45	Official Opening of the Seminar by Minister, MAAIF	PS MAAIF
09:45 - 10:00	Background to fisheries management and fisheries policy developments	Commissioner Fisheries
10:00 - 10:30	Reactions to opening remarks	DFR 1
10:30 - 11:00	Morning Break	Hotel Mgt.
11:00- 12:00	Presentation of the BMU Guidelines	J.lkwaput
12:00 - 13:00	Discussions on the BMU Set up and operations.	DFR2
13:00-14:00'	Lunch Break	Hotel Mgt.
14:00 - 14:30	Status of the Fisheries' Stocks'	Director FIRRI
14:30 - 15:00	Summary of Frame Survey Results	Jackson/Levi
15:00 - 16:00	Discussions	
16:00 - 17:00	Afternoon Tea break	Hotel Mgt.
17:00- 17:30	Presentation on MCS programme for L. Victoria	Me. Kizza
17:30 - 17:45	Discussions	DFR+ ILM
30 th July		
8:30- 9:00	Registration and Group Formation	Rhoda/Joyce
9:00 - 10:30	Group Discussion on the way forward for Lake Victoria Fisheries Management	DFR
10:30 - 11:00	Tea Break	Hotel Mgt
11:00-12:30	Group Presentations and Discussion	PS MAAIF
12:30- 12:40	Summary of Way forward	Rapportour
12:40- 13:00	Closing of the Seminar	MOS (F)
13:00 - 14:00	Lunch and Departure	