

THE PARADOX OF POVERTY AMIDST PLENTY IN THE FISH PRODUCT CHAIN IN UGANDA

The Case of Lake George



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LIST OF ACRONYMS

ACODE	Advocates Coalition for Development and Environment
CARE	Cooperative for Assistance and Relief Everywhere, Inc.
BMUs	Beach Management Units
CAOs	Chief Administrative Officers
CCA	Commodity Chain Analysis
DFO	District Fisheries Officer
DFR	Department of Fisheries Resources
FGDs	Focused Group Discussions
FIRRI	Fisheries Resources Research Institute
GDP	Gross Domestic Product
ILM	Integrated Lake Management
KIs	Key Informants
LAGBIMO	Lake George Basin Integrated Management Organization
LCs	Local Councils
LDU	Local Defence Units
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MoFPED	Ministry of Finance, Planning and Economic Development
NEMA	National Environment Management Authority
NWP	Nature Wealth and Power
PEAP	Poverty Eradication Action Plan
PRIME/WEST	Productive Resource Investments for Managing the Environment in Western Uganda
UBOS	Uganda Bureau Of Statistics
UWA	Uganda Wildlife Authority

ACKNOWLEDGEMENTS

This report arises out of one of ACODE's research undertakings meant to influence policy processes in biodiversity conservation through generation of policy relevant information. This research report highlights the nature-wealth-power intricacies along the fish product chain from Lake George and points out critical gaps that policy processes ought to target. Secondly, the report provides evidence showing that people that claim to derive their livelihood from Lake George are not very poor. Comparatively, they are above the internationally accepted poverty line of 1 US \$ per day. However, the quality of life that such people live and their general well-being bear all the hallmarks of poverty. Possible explanations for the observed lifestyle are given in this paper. We hope that exposition about different losers and winners from the Lake George fishery will spur policy makers and implementers in the affected region to redress the imbalances

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EXECUTIVE SUMMARY

Lake George is an important fish habitat supporting fish stocks estimated to be worth 4-5 billion shillings per year. Secondly, the economic value of fish to the Ugandan economy reached record levels in 2005 with fish exports reaching US \$143 million. Proliferation of the fish business by external market dynamics has made fishing an enviable activity. Increasingly, the fisheries sub-sector is being viewed as a potential growth sub-sector that can contribute significantly to national Gross Domestic Product (GDP) and ensure eradication of poverty especially among fishery dependent communities. Fishing has other multiplier benefits of boosting other sectors of the economy like construction, manufacturing and transport. Research evidence from the sub-sector points to the fact that, in spite of the profitable nature, many fish-dependent communities continue to be mired in relative and absolute poverty. Quality of life in such societies remains low evidenced by low incomes, low education levels, poor health and poor sanitary conditions. It is not uncommon to be told that fisher folk defecate and urinate in the lake or by the lake banks. HIV/AIDS prevalence remains high in fishing villages. A probable explanation for such trends seem to be the overemphasis on resource conservation without corresponding emphasis on the relationship between the nature of the resource, power held by each of the actors and wealth derived from the resource. Success in conservation of fish as a resource and corresponding poverty eradication among beneficiary communities depends on how policy makers and implementers balance the delicate and complex relationship between nature, wealth and power. This research found that other than the three pillars, behaviour patterns among actors in the fish product chain, notably daily lavish expenditures on sex workers and alcohol, largely account for the marginal economic successes achieved in over forty years of conservation.

The main goal of the study was to analyse why fishing communities from around Lake George have hitherto remained poor, despite their access to wealth from the fishery resource. In this report, we present the probable explanations for the degradation of Lake George fishery, describe the main actors engaged in the utilization of fishery resources as well as key factors that determine winners and losers in terms of access to, and benefit from, the resource. We argue that interventions that have not taken cognisance of the nature, power and wealth relations over the fish resource as well as behavioural characteristics of main actors, have had a dismal impact.

The study design was cross-sectional, utilising exploratory and descriptive qualitative techniques of data collection, assessment and analysis, notably Focus Group Discussions and Key Informant Interviews. The main strategy was observation of fishing activities and obtaining relevant views from the fisher folk on Lake George and making comparative nuances to selected areas around Lake

Victoria. The main actors in the fishing sectors that researchers sought to observe and interview included; the bariaas, boat owners, the casual labourers on the lake, and the business community. Researchers also got information from the lake management bodies/ institutions that wield power. These included the BMU executives, the Local Council (LC) officials, the sub-county leaderships as well as the district leaderships. Researchers also visited market places to interact with fish traders at the workplace and interview them to gain an insight into the profit margins that exist at the landing site and in the open-air markets

In this paper, we argue that notwithstanding the imperfections in use of command and control (*traditional approaches*) in managing a common property resource, a resource like fisheries, vulnerable to overexploitation will not survive if left to the forces of the market alone. We advocate for policy interventions that can balance the demands of human capital to be in line and cognizant of the growth factors of natural wealth such that both can be exploited sustainably.

The Nature, Wealth and Power (NWP) analytical framework and the Commodity Chain Analysis Methodology informed the philosophical analysis that went into preparation of the research report. The NWP analytical framework seeks to explain why previous community development interventions in many African countries in the area of natural resources conservation have failed to produce sustainable results especially in terms of ensuring the ecological integrity of the environment and natural resources while improving the economic living conditions of the targeted communities. The hypothetical drive was that pro-poor interventions have largely failed because of ignoring to address the economic structure and the power relations that provide the framework within which major resource ownership and access decisions are made.

We found that Lake George is a habitat for a variety of fish species including, even those considered to have been indigenous and now extinct in Lake Victoria. The main species caught and commercially exploited include Nile tilapia (*Oreochromis niloticus*) locally known as Ngege, *Protopterus aethiopicus* – Emamba, *Clarias gariepinus* – Emale and *Bagrus docmak* – Semutundu. There are also rare but occasionally caught species which include; *Oreochromis leucosti* – Bambala, *Barbus altianalis* – Enjunguli *Mormyrus kannume*- Kasulubani and the most quoted rare but valuable specie *Labeo forskalli/victorianus* – Eningu. The fisher folk on Lake George indicate that the rate at which they were catching *Clarias* was increasing yet the specie is known to be among the most uncommon, an indication of a poor performance of the fishery. Lake George presents a potential for fisheries resource abundance. The lake's productivity is high based on a combination of factors such as; water quality standards, nutrient abundance, and species composition. However, with extra fishing pressure, all indications point at the resource being over exploited since too many people were chasing a few fish, explaining the

notion that such a common property resource cannot be responded to by the market controls alone.

The report enumerates perceived causes for the reduction in fish catches from Lake George. These include; crocodiles which compete with fishermen for fish, climatic changes such as decrease in rainfall amounts, too much fishing pressure as a result of increased population around the lake, consumer preferences for younger and smaller fish, increasing numbers of 'unofficial' landing sites along the lake shores, farming activities taking place during rainy seasons on hill tops adjacent to the lake leading to silting, reclamation of wetlands adjacent to the lake and use of illegal fishing nets and boats.

The fish economy around Lake George was found to be male dominated. Women at the landing site were mostly in the category of *deyi-deyi* where they are providers of auxiliary services. They are also involved in activities such as trading in fish both at landing sites and markets, mending nets, setting fishing nets (with special strengthened thread), preparing and selling meals – food, porridge, tea etc. at the landing site, selling alcohol in the bars, and sometimes smoking and salting fish. Some women specialized in buying and selling 'by-catch' and sometimes acting as sex workers.

There are many actors along the fish product chain on Lake George. Some of these actors are conduits in whose hand wealth passes, often leaving no visible wealth impacts. Actors are classified into three categories, which are not mutually exclusive. There are primary actors, who extract the resource (fish) notable among whom are *barias* and boat owners, secondary actors who are engaged in post-harvest handling of fish among whom we include artisanal processors, *deyi-deyi* and traders, and tertiary actors consisting of local institutions involved in local administration such as Local Councils (LCs) and others overseeing resource extraction, handling and trade notable among whom are Beach Management Units and their committees as well as other organisations like LAGBIMO.

Other than the economic benefits, the research found that there were non-monetary benefits that were derived from fish on Lake George and shared between the different resource users or actors. These are categorised as food for food security, employment, environmental stability and the cultural heritage.

Main challenges of the fishing sector around Lake George include; poor facilitation of available management (to patrol the lake to curb illegal fishing), tendencies by fishers to over saturate the lake with nets to increase their catch chances, absence of a saving culture among the fisher folk and absence of banking facilities within close proximity of the lake which leaves fishermen with liquid cash at all times thereby abetting alcohol consumption and procurement of prostitutes. Other challenges

include conflicts in by-laws set by the different landing site managements, political interference from local politicians who do not want their political survival jeopardised through apprehension of illegal fishers and some cultural beliefs that hinder infrastructure development in fishing areas.

In the report, we highlight the fact that, in spite of declining stock, fish is still a wealth creating resource. We present evidence to the effect that some gains accrue to different actors in the fish product chain. A deeper analysis indicates a mismatch between gains received and quality of life for fish-dependant communities. To some actors like *barias* and fishmongers, the gains are not translated into poverty reduction or livelihood improvement.

In the report, we also comment on power and how it relates to access and exploitation of the Lake George fishery using a decision-making perspective. We assess the role of BMUs and LCs at fish landing sites. Beyond the two power centres, we comment on the power of other actors like LCs at the sub-county and, the district, local government chiefs, and fishery managers at the centre. Important to note is that power that is wielded by boat owners and *barias* influences resource management, ownership and distribution of gains. We underscore the fact that the increasing number of *barias* had stepped up their influence in determining the BMU chairman through voting. In essence, the BMU chairman is seen and considered to be influential in determining shared revenues of the landed catch between boat owners and the *barias*. BMU chairmen also have substantial powers over resource management, which again influence resource sharing. The non-*barias* argue that a BMU chairman, who is a *baria*, is not strong in enforcing fisheries regulations since fishing multi-practices often benefit him (*baria*) and other members of his category.

Based on the above findings, we make the following recommendations;

- Future research should elucidate more on the behavioural aspects of living in a fish-landing site. Government interventions should not focus on conservation alone but should focus on the behaviour of actors in the fish-product chain.
- Government through the Ministry of Agriculture, Animal Industry and Fisheries department must take up and champion sustainable fishing so as to assist the population to procure fish nets of the right sizes. Many fisher folk are of the view that what they need more is not training and seminars but the recommended fishing - net size which is 4.5 inches fishing nets.
- The Government through BMUs should support fisher folk like *Barias* and Boat Owners to diversify into other economic activities like rice growing so that the current pressure exerted on the lake is reduced. To the ministry in-charge of 'Bonna Bagawale' (Micro-Finance), it is important to establish Beach Banks

in Fishing villages so that a saving culture among fisher folk is cultivated. Fisher folk prefer a loan scheme that would make it easy and convenient to acquire right-sized fishing nets and life jackets. It is even better idea to give fishermen nets instead of money to buy the nets.

- Though BMUs are better positioned to protect the lake, they lack the necessary facilities like motorboat engines and fuel to do the required patrols, which abet illegality in fishing. Another weakness is absence of coordination between different BMUs on the lake. While some are vigilant in dealing with illegal fishing, others are not, yet the lake is one-ecosystem without boundaries. Therefore, the District Fisheries Officers in the three districts of Kasese, Bushenyi and Kamwenge need to cooperate, coordinate all BMU activities and be vigilant to serve and save the lake from over exploitation.
- Government through District Fisheries Officers should support less costly sensitisation programs about the role and mandate of BMUs.
- BMUs had financial difficulties yet they are mandated to provide a number of services to their communities. They are better positioned to ensure sustainable exploitation of fish. Beneficiary districts of Lake George would benefit a lot if responsible BMUs are awarded tenders to manage fish-landing sites by their respective districts. Given their vested interest in the well being and sustainable stability of the Lake, BMUs are better managers of the lake than private tenderers who may not have an appreciation of fishing dynamics and are driven by profit maximisation intentions rather than resource conservation.
- Since Lake George's potential of fish is getting overstretched without a short-term workable measure to conserve the resource, we suggest that the Ministry of Agriculture, Animals Industry and Fisheries (MAAIF) should impose 'closed seasons' (periods of no fishing) so as to allow the lake to regenerate. Before imposition of 'closed seasons', it is necessary to first carry out adequate sensitisation among local fishing communities whose lives have since time immemorial been linked to fish. They have to be accorded an appropriate frame of mind to consider alternative survival means.
- The Role and capacity of LAGBIMO - an umbrella organization that brings together actors in the management of Lake George whose membership straddles the three districts of Kasese, Bushenyi and Kamwenge. This body needs strengthening. However, given logistical and financial constraints, the organisation is constrained in as far as ensuring effective management. Though it had motorised patrol boats on some fish landing sites, they in most cases were without a constant supply of fuel. It is important to strengthen such a regional umbrella organisation in order to coordinate inter-district BMU activities.

- Given the constant conflicts between fisher folk on Lake George and UWA, whose mandate is for all wild life in the adjacent/surrounding national park, it is important to have a long standing coordination and conflict resolution mechanism. For instance, fishermen were requesting to use Butonga and Rwabitokye islands in the middle of Lake George as resting places against strong winds while UWA officers clarified that such places were being used as dens of illegal fishing activity and roasting poached game meat. We propose that with the BMU framework and LAGBIMO should put in place mechanisms to sort out emerging or prevailing conflicts.
- It is also suggested that district councillors of the three districts be trained in fishery matters soon after assuming political offices. Fisher folk noted that many politicians whose policies affect fishing activities don't appreciate the socio-economic dynamics of fishing.
- Although there was constant data collection at fish landing sites, many fisher folk expressed ignorance about the use of such data. Therefore, fishing data collected at the landing sites should be explained by DFOs, especially how it benefits fishing communities.
- Other workable recommendations include;
 - Fisheries Departments in concerned districts should enforce good fishing practices. Fortunately, it was noted that the lake is small and has rapid fish stock recovery.
 - DFOs must re-energize and strengthen baria's associations, which had since weakened but used to be a powerful voice.

We believe that the recommendations and ideas contained in this research report will go a long way in informing policy makers and policy implementers about what can be done to improve the status of fish-dependant communities, especially around Lake George.

CHAPTER 1:

1.0 SETTING THE STAGE: INTRODUCTION AND BACKGROUND TO THE STUDY

1.1. Introduction

Over the last one and half decades (1990 – 2006), the economic value of fish in Uganda has been growing and reached record levels in 2005 with fish exports earning US \$ 143 million (approximately 20% of all total exports)¹. Over the same period, the structure and scope of the actors in the fisheries sub-sector has undergone significant transformation, especially with the increasing dominance of fish processing firms and middlemen operators. Actors like transporters and ‘middle class’ business men and women have aggressively joined fish trade to tap associated profits. Proliferation of the fish business by external market dynamics has made fishing an enviable activity. Increasingly, the fisheries sub-sector is being viewed as



Fish processing for export at Lambu Fresh Waters fish factory

a potential growth sub-sector by Government of Uganda² that can contribute significantly to national Gross Domestic Product (GDP) and ensure eradication of poverty especially among fishery dependent communities.

Evidence based research emerging from the sub-sector points to the fact that in spite of the profitable nature that fishing has assumed, many fish-dependent communities continue to be mired in relative and absolute poverty³.

1 Department of Fisheries Resources (DFR); MAAIF

2 See, the Poverty Eradication Action Plan, 2004

3 Keizire, B. (2003)

The quality of life in such societies remains considerably low evidenced by very low education levels and poor health status indicators. HIV/AIDS prevalence remains high in fishing villages (3-5% higher than the national average)⁴. A probable explanation for such trends seems to be the overemphasis on resource conservation without corresponding emphasis on the relationship between the nature of the resource, power held by each of the actors and wealth derived from the resource. Success in conservation of fish as a resource and poverty eradication among beneficiary communities depends on how policy makers and implementers balance the delicate and complex relationship between the three pillars.

Findings of this research attest to the fact that behaviour patterns among actors in the fish product chain, notably daily lavish expenditures on sex workers and alcohol, largely account for the marginal economic successes achieved in over forty years of conservation and at least almost a decade of poverty eradication based planning. Using Lake George in South-western Uganda as a case study while drawing parallels from selected fish-dependant communities on Lake Victoria, extensive fieldwork was undertaken between March 20th and April 6th 2006 to explore why fishing communities remain poor despite the abundant wealth of the fisheries resource. Consequently, we present results of this research that investigated probable explanations for the degradation of Lake George fishery, the main actors engaged in the utilization of fishery resources, as well as key factors that determine winners and losers in terms of access to, and benefit from, the resource. We argue that interventions that have not taken cognisance of the nature, power and wealth relations over the fish resource as well as behavioural characteristics of main actors, have had a dismal impact. This is in terms of fostering the ecological integrity of Lake George and poverty eradication among the hitherto poor and marginalized actors.

1.2. Background to the Study

Uganda has witnessed high and sustained rates of economic growth as a result of a wide-range of macro-economic stabilisation and economic policy reforms. The GDP growth rates increased from 3.1% in 1991/2; to 8.4% in 1992/3; to 5.4% in 1993/4 and to 10.6% in 1994/5. GDP Growth rates slowed down to 7.8% in 1995/6; to 4.5% in 1996/7 and to 5.4% in 1997/8. The rates then increased to 7.7% in 1998/9, but slowed to 4.7% in 1999/00 and 5.5% in 2000/01⁵. In other words, GDP growth rates averaged at around 7% in the 1990's but slowed down to an average

⁴ Tanzam et al, (2003)..

⁵ Background to the Budget 2005/06, Ministry of Finance Planning and Economic Development, June 2006.

of 5% between 2000 and 2003⁶. Moreover, significant progress has been registered in fighting poverty since the number of people living in absolute poverty (with income below the poverty line) declined from 56% in 1991/1992 to 35% in 2000, but has since increased to 38% in 2003, largely attributable to drought, agricultural decline and insecurity. Although by the close of 2006, poverty had declined to 31%, inequality has also risen from a Gini



Appalling Housing conditions at a fish-landing site

coefficient of 0.35 in 1997/1998 to 0.43 in 2003⁷. According to the 2004-2007 PEAP, if annual GDP growth rates increase to 6%, inequality will be reduced to levels of 2000, implying that higher annual GDP growth rates are desirable.

The fisheries sector has benefited as a result of this growth rate as evidenced by the increase in trade of fish and fish products⁸. Unfortunately, the implication of a booming fish sector does not imply better standards of living for fishery dependant communities. Previous research efforts have not found much evidence of reduction in poverty levels among these communities.

It is important to note that high GDP growth rates are not always synonymous with improved social well-being of majority of the population as well as improved management of the environment and natural resources. Sustainable and stable growth rates in Uganda has been associated with environment and natural resource degradation estimated to be about 17% of annual Gross National Product (GNP)⁹. Unsustainable exploitation of natural resources directly affects the poor, whose livelihoods entirely depend on natural resources, including fishery resources.

With the introduction of Beach Management Units (BMUs) through legislation (the BMU [Fisheries Management] Rules, 2003), in the management of the fishery resource, it was hoped that levels of poverty amongst fishing communities would reduce, if the resource is properly managed. In spite of the wealth of fishery resource, fishery dependent communities have tended to remain poor. This trend in livelihood explains, to a large extent, why there is a high prevalence of poverty in such communities. Similar to other studies, this research indicates that most communities living in many fishing areas surrounding the lake are still poor,

⁶ ibid

⁷ Background to the Budget 2005/06, Ministry of Finance Planning and Economic Development, June 2006.

⁸ DFR, MAAIF.

⁹ State of Environment Report by NEMA, (2004).

regardless of government efforts to integrate them in planning for the resource.

The overarching goal of the study was to analyze why fishing communities have hitherto remained poor, despite their access to wealth from the fishery resources.

1.3. Study Premises

The underlying basis is that investments to increase the economic value of natural resources (in this case fish) *per se* might not lead to poverty eradication and environmental sustainability. The premise of the study was that the rural poor rarely benefit from commercial exploitation of natural resources such as fish. Instead, profits from natural resources are being extracted and concentrated in the hands of a few powerful intermediaries such as traders, transporters, 'tenderers', or state agents. The remaining spoils are divided among private commercial actors and government as profit, taxes, fees, fines and unofficial patronages or gifts along the path from extraction to end use.

1.4. Objectives of the Study

The objectives of the study are derived from the entire project goal, which aimed at influencing policy, decision-making to ensure that PEAP-related investments and policy decisions are better targeted at the poor by supporting sustainable ENR management. The specific objectives of the study were;

- (i) To explain why fishing communities, in spite of a steady income from fish, remain the poorest of the poor;
- (ii) To identify and describe the main actors in the fish production and marketing chain;
- (iii) To determine the income gains and/or losses that accrue to different actors in the fish production chain around Lake George;
- (iv) To identify factors that determine income gains and/or losses for different actors in the fish production chain of Lake George; and
- (v) To propose appropriate policy responses.

1.5. Study Methods

1.5.1. Study Design

The study design was cross-sectional, utilising exploratory and descriptive qualitative techniques of data collection, assessment and analysis.

1.5.2. Scope and Coverage of the Study

The main approach in doing the study was observation of fishing activities and obtaining relevant views from the fisher folk on Lake George and making comparative nuances to selected areas around Lake Victoria. The main actors in the fisheries sector that researchers sought to observe and interview included; the barias, boat owners, the casual labourers on the lake, and the business community. The study team also got information from the lake management bodies/ institutions that wield power. These included the BMU executives, the Local Council (LC) officials, the sub-county leaders as well as the district leaders. Researchers also visited market places to interact with fish traders at the workplace and interview them to gain an insight into the profit margins that exist at the landing site and in 'open-air' markets.

1.5.3. Area and population of study

The geographical area of this study was Lake George and its environs. However, selected sites around Lake Victoria were also visited with a view of collecting data for comparative purposes. To qualify for inclusion in the study sample, study areas were expected to have active fish-dependant communities. Therefore, the study team visited landing sites. The respondents included: fishermen (barias), boat owners, fish mongers of various levels, BMU leaders, transporters, LC officials, and District Civil Servants like Fisheries Officers, Production Coordinators and CAOs.

1.5.4. Sampling

Purposive sampling was applied at the level of selecting fish landing sites from the three districts that share Lake George. From Bushenyi the landing sites of Kashaka and Katunguru B were selected, from Kasese, the landing sites of Katunguru K and Kasenyi were selected. From Kamwenge district, selected landing sites were Mahyoro and Kainja. On Lake Victoria the landing sites of Lambu in Masaka district, Kigungu from Wakiso district and Gaaba were also visited.

Table 1: Number of Participants Consulted in Each Fish Landing Site

Lake Visited	District	Landing site	Number of Participants			Method of data Collection
			Barias	Boat Owners	Traders	
Lake George	Bushenyi	Katunguru B	20	5	5	3 FGDs & 3 KIs
		Kashaka	20	10	4	2 FGDs & 6 KIs
	Kasese	Katunguru K	10	5	3	2 FGDs & 2 KIs
		Kasenyi	8	10	3	2 FGDs & 3 KIs
	Kawenge	Mahyoro	30	10	4	2 FGDs & 4 KIs
		Kainja	10	10	3	2 FGDs & 3 KIs
Lake Victoria	Kampala	Gaaba	10	15	5	2 FGDs & 5 KIs
	Wakiso	Kigungu	20	10	3	2 FGDs & 6 KIs
	Masaka	Lambu	16	15	10	2 FGDs & 4 KIs

At each landing site, all actors in the fish product chain were grouped according to their unique categories for interviewing purposes. They responded to interview guide questions during Focused Group Discussions (FGDs), Key Informants (KIs) sessions and informal conversations.

1.5.5. Data collection

Techniques of data collection employed include;

1.5.5.1. Key Informant Interviews

Key informant interviews were held with 6 civil servants from the districts of Kasese, Bushenyi and Kamwenge (3 from each), 1 from Masaka and 2 from Kampala district. Also, four political leaders from the study districts were interviewed. The Chief Warden of Queen Elizabeth National Park, the Head Ranger and Chairperson of BMUs were also KIs.

1.5.5.2. Focus Group Discussions (FGDs)

At each fish-landing site, at least 3 FGDs with the three main actors were held. Each of the actors in the fish product chain constituted a separate group for the discussion. The aim of discussions was to explore in-depth information on dynamics of the fishing business and poverty. Gender perspectives were considered in constituting FGDs by balancing males and females in each group.

1.5.5.3. Review of Documents

Relevant project documents including reports, plans; background documents, journal articles and textbooks were reviewed. These provided secondary data to back up primary data collected from respondents. Review of documents also helped to identify possible perceptions of other people in other districts and Global trends about the fish product chain.

1.5.5.4. Photography

Pertinent scenes that carry key messages, which describe fishing activities, were captured as photographs and have been used in the report to illuminate textual messages.

1.5.5.5. Observation Notes

In keeping with the qualitative research paradigm, researchers were very observant. Even when they never had pre-defined structured observation formats for recording their impressions, they used notebooks to record their impressions and feelings as seen and perceived in different field environments. These notes were very handy when it came to data analysis.

Basically, raw data included; Focus Group Discussion transcripts, Key Informant interview transcripts, written notes, photographs and literature from secondary sources. The data was qualitative in nature and it had to be cleaned, re-written and summarized according to identified trends, contexts, themes and emerging impressions.

Data collected has been analysed and presented using content and thematic analysis techniques, utilizing quotations of respondent's voices and comparison across and within data. Quantitative analysis, especially of costs, values and prices of fish was performed using numerical information given by the various actors.

Qualitative data was generated through FGDs and KIs. Responses were tape-recorded, transcribed, sorted and constantly compared to generate themes, sub-themes and categories.

1.5.6. Quality Control

To ensure quality control, the following precautions were taken in the whole research; all researchers were thoroughly, carefully and comprehensively trained in fieldwork logistics like objectives of the study, content of question guides, interviewing techniques, ensuring data quality like recording responses etc. Training was undertaken before data collection.

Field editing of taped interviews and FGDs was done on spot after the interview and at the end of each successive night of the interview to ensure that all questions had been asked and make improvements on interviews for the next day. After each FGD, the research team would meet and discuss to ensure that notes recorded gave a picture of the proceedings. During the same meetings, emerging issues from the field interviews were discussed.

1.5.7. Ethical issues in the study

There were minimal anticipated risks associated with the study since it did not involve any physical manipulation of the human body. The only risk was probably inconvenience and disruption to respondents in terms of time spent participating in discussions or answering questions. To minimize any risk, the following measures were adopted.

- Informed consent of each respondent was solicited.
- Respondents were told the long-term and short-term benefits of the study.
- Respondents were told the purpose of the study, why and how they were selected.
- Refusal to participate by any respondent was respected.

CHAPTER 2:

2.0. Analytical Framework

2.1. *Nature Wealth and Power (NWP) Analytical Framework*

The NWP analytical framework seeks to explain why previous community development interventions in many African countries have failed to produce sustainable results in the area of natural resources conservation. This paradox is more felt in an attempt to ensure the ecological integrity of the environment and natural resources, while improving the socio-economic living conditions of targeted communities. Natural resources such as fish are a major source of wealth and power and are key to rural development and good governance.

The NWP framework has been used by USAID and other agencies¹⁰ to analyse the relationship between environmental management, economic concerns and good governance in Africa; mainly in Namibia, Madagascar and Mali. The NWP analysis recognises that the natural, economic and governance dimensions of resources is critical to developing appropriate management systems.

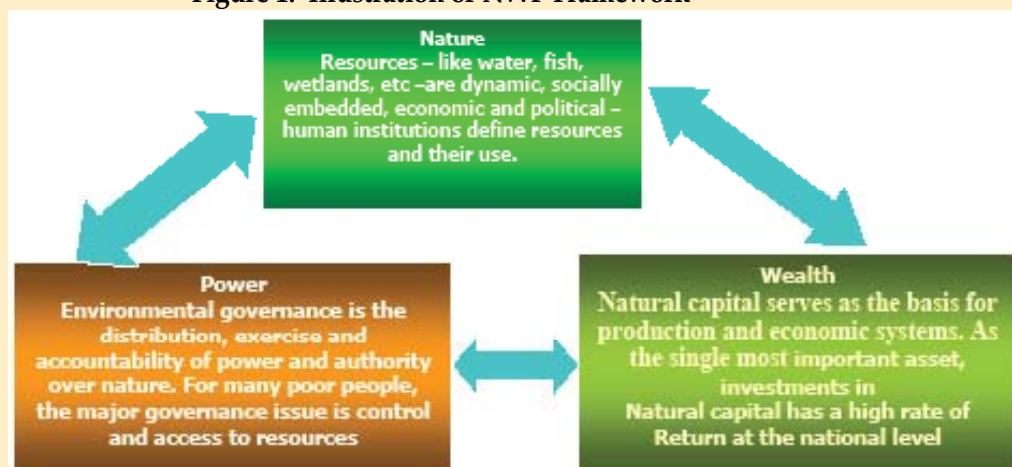
Lake George fishery resources are central to the livelihoods of nearly 5% of Ugandans. Access and control over fish from the lake is a major governance issue, especially for the lake-dependant communities. It is the 'bread and butter' issue on which democracy must deliver. This is because Lake George provides an important source of livelihoods, particularly for people involved in fisheries, and of revenue for Local Governments. The range of uses of the lake and associated rivers include; water for domestic and industrial use, wetlands (seasonal fishing, purification of water coming into the lake, papyrus and sustaining wildlife), and fishing (around 50% of those living at landing sites depend on fishing as their primary source of income).

These benefits are shared by local governments and fisheries stakeholders (fishing crew, boat owners, fish mongers and processors, etc.) and those that provide services to the fishing community. It is no wonder therefore that during campaigns in the 'run-up' to elections of 2006, dynamics around Lake George were essential catchwords for people aspiring to join political offices.

10 CIFOR (Centre for International Forestry Research) and WRI (World Resources Institute (2004)

Figure 1: Illustration of NWP Framework

Figure 1: Illustration of NWP Framework



Source: USAID, (2004)

In all earnest, the application of NWP analytical framework in this study sought to achieve an understanding of gains from the fish production chain from Lake George. In the nature axis of the framework, the concern was not only the physical make up of the resource alone, but also the information and knowledge systems and their management¹¹ that are critical for sound natural resources management. On the other hand, the wealth axis of the study was about the more strategic decisions on economics of natural resources management. It entailed an attempt to understand the fish market and reasons for observed poverty in spite of fish-related wealth. Lastly, the power axis looked at understanding the power structures that govern fishing around Lake George in an attempt to understand how power relations affect benefit sharing among different actors.

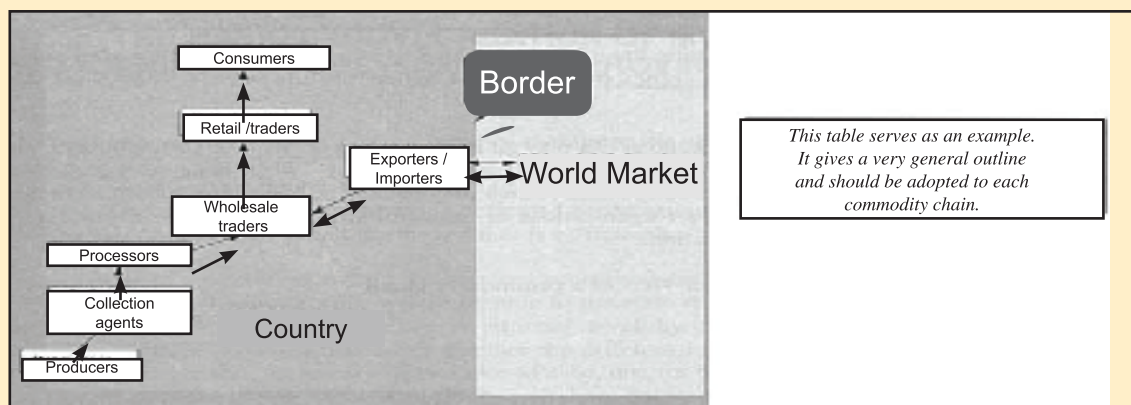
2.2. Commodity Chain Analysis (CCA)

The study also borrowed a lot from the Commodity Chain Analysis (CCA) methodology. A commodity chain is a series of interlinked exchanges through which a commodity and its constituents parts pass i.e. from extraction or harvesting through production, transformation, transport, distribution, wholesale, retail and end use. Commodity chains serve as conduits through which commercialised

¹¹ Knowledge management is defined as an attempt to support more systematically the transfer, exchange, and synthesis of accumulated wisdom in natural resources management, not just through a compilation of facts and “best practices,” but also through bringing together those with expertise and experience into a broader community, that can share information and evaluate its utility organically without requiring major donor investment.

natural resources like fish and its constituent products are ushered from the waters to their final consumers, whether rural, urban or 'international'¹². CCA is a method of analysing how and for whom such market conduits operate. It is a tool for understanding who benefits from the natural resource, how they benefit,

Figure 2: Illustration of the CCA



Source: FAO, 2000

and how those patterns of benefit distribution might be changed. By tracing the interactions along natural resource's commodity chain, one can establish the dynamics of control and maintenance of access to the economic benefits.

In line with multiple reforms that have happened over the past two decades in Uganda, notably; decentralization, liberalization, and community-based natural resources management, the study sought to elucidate the obvious increase in local participation and benefit sharing in the fishery control management and use. In the fishery sector, one of the key reforms has been the inception of BMUs. These reforms were expected to have measurable effects on distributional equity of fishing benefits to communities.

In CCAs, there is a special focus on the market, price, quantities and performance. There is also analysis of relations of power sources, uses of power and effects of exercise of power in a socially differentiated environment. The focus is also on political institutions and how they affect the existence and functioning of markets, with attention to differentiate market agents engaging in competitive as well as collective or collusive action. It also looks at regulatory environment (both state and non-state forms of control). Such dynamics were looked at in this study.

Following a CCA approach, the distribution of profits for different actors in the Lake George Fish Sector through an analysis of margins and market shares was measured. At each point of income concentration, the mechanisms that actors use to gain and maintain their benefit were identified and explained. Through an analysis of profit distribution along production and marketing chains, there was

¹² A Handbook for defining and setting up a food security information and early warning system (FSIEWS), (2000)

an attempt to discern the role of environmental and other regulatory policies and frameworks in shaping distributional proceeds.

The only limitation of the methodology was a tendency to overlook the larger economic setting in which the commodity chain of fish was situated. For instance, decisions taken by various actors in the commodity chain are not based solely on factors within the fish chain alone. The extraction, distribution and sale of fish are part of a very complex socio-economic system. The interaction of broader socio-political and technological factors is important yet difficult to sieve out in the narrow CCA of fish from Lake George.

CHAPTER 3:

THE DYNAMICS OF NATURE, WEALTH AND POWER ON LAKE GEORGE FISHERY

3.0. Nature of the Lake George Fishery

3.1. Natural Resource Base of Lake George



*The Research Team on the Waters of Lake George at
Kainja Fish landing Site*

Lake George is shared between the districts of Kasese, Kamwenge and Bushenyi. There are six official landing sites on Lake George, with another two on the Kazinga Channel. The Lake George basin supports a population of about 13,000 people¹³, most of whom, live within the Queen Elizabeth Protected Area, parts of the Queen Elizabeth national park and the Kyambura game reserve.

Lake George is renowned both for its high productivity and its flagship bird species such as the Shoebill *Balaeniceps rex*. Over the years the lake has attracted a lot of international attention. It was part of the International Biological Programme in the late 1960s. Becoming Uganda's first Ramsar site was a further recognition of the importance of the lake as a centre for biological diversity¹⁴.

3.2. Physical location of Lake George

Located in Western Uganda, Lake George lies in the western branch of the Great East African Rift Valley. It is a small shallow lake with a mean depth of 2.5m and maximum of about 4m. It has a water surface area of 260km² with a catchment area of 9,700km². The lake lies astride the equator at an altitude of 914m above sea level. The lake lies between 0:05-0:05S, and 30:02-30:18E.

¹³ Computed from the population of the sub-counties surrounding the Lake. Based on UBOS (2002) Population Report. With the current population of Uganda estimated to be 28,195,754 up from 24.4. Million people in 2002, the population around Lake George is more likely to have also increased proportionately.

¹⁴ BirdLife International, NatureUganda

3.2.1. Ecological characteristics of the Lake

Numerous rivers, most of which originate from the Ruwenzori Mountains, feed Lake George. Some of the major river inflows include Rumi, Mubuku and Nsonge from Rwenzori and Mpanga and Dura from the northeast. The outflow is the Kazinga Channel, which drains toward Lake Edward.

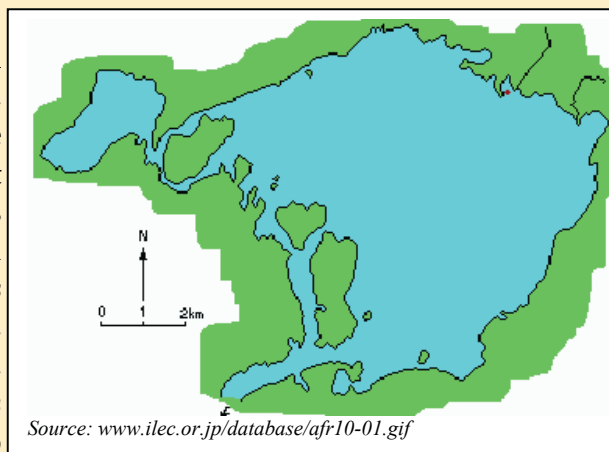
The northern lakeshore is lined with extensive permanent swamps of up to 21 km long and 14km wide that occupy more than half the area designated as a Ramsar Site under the Ramsar Convention's List of Wetlands of International Importance in 1988. Most of the in-coming rivers pass through these permanent swamps. The lake has a single outlet, the Kazinga Channel, which drains to the southwest and runs for 36km into Lake Edward, a lake shared between Uganda and the Democratic Republic of Congo¹⁵

In hydrological terms, Lake George is remarkably stable. Despite its very shallow depth, seasonal changes in water levels are less than 1 metre from the shoreline, with highest levels occurring in May-June and November-January, shortly after the two seasonal peaks of rainfall. Water fluctuation levels are very low. About 75% of the lakeshore is within the boundaries of the Queen Elizabeth Protected Area (QEPA), under the management of the Uganda Wildlife Authority (UWA). This has implications for use of the lake and for the livelihood strategies of the people living at the fish landing sites'. The Rwenzori Mountains are an imposing feature of the basin, influencing the local climate and flow of water to the lake.

The lake supports commercial fisheries, whose fleet size has been controlled by central Government through licensing since the 1950s.

Sketch Map of Lake George

Lake George is a habitat for a variety of fish species including, even those considered to have been indigenous and now extinct in Lake Victoria. The main species caught and commercially exploited include Nile tilapia (*Oreochromis niloticus*) locally known as Ngege, *Protopterus aethiopicus* – Emamba, *Clarias gariepinus* – Emale and *Bagrus docmak* – Semutundu. There are also



15 Integrated Management of Lake George, Uganda: The Lake George Basin Integrated Management Organization (LAGBIMO) <http://p15166578.pureserver.info/ilm/docs/nrmgt/LAGBIMO%20Paper.pdf>

other rare but occasionally caught species which include; *Oreochromis leucostictus* – Bambala, *Barbus altianalis* – Enjunguli *Mormyrus kannume* – Kasulubani and the most quoted rare but valuable species *Labeo forskalli/victorianus* – Eningu. The fisher folk on Lake George indicate that the rate at which they were catching *Clarias* was increasing yet the species is known to be among the most uncommon, an indication of a poor performance of the fishery¹⁶.

3.2.2. The Science of Lake George's Productivity

Lake George is naturally eutrophic resulting in an increased algae bloom, with a very high phytoplankton biomass which results in low water transparencies. The lake maintains an extremely high rate of primary production throughout the year which is attributed to the rapid uptake of nutrients derived mainly from organic decomposition in the mud. The high rate of uptake is maintained by frequent, usually daily, disturbance of the bottom mud by winds due to the shallowness of the water. It is probable that the high rate of production has persisted with little seasonal variation since the origin of the lake in its present form and climatic regime are stable. The most remarkable feature of the lake compared with other tropical lakes is the high productivity coupled with the overall stability of the biomasses of its organisms. This, in turn, is due to the shallowness of the lake, its stable water level and the frequent winds in all seasons, which circulate nutrients from the mud more or less continuously¹⁷.

3.2.3. Nature of Lake George

Lake George presents a potential for fisheries resource abundance. According to research done by the Fisheries Resources Research Institute (FIRRI), and traditional knowledge indicate that the lake's productivity is high; based on a combination of factors such as, high water quality standards, nutrient abundance, and species composition. However, with extra fishing pressure, all indications point at the resource being over exploited since too many people were chasing a few fish, a suggestion that the management of a common natural resource cannot be responded to by the market controls alone. According to traditional knowledge, catching of Emale for example, indicates that nearly all the Tilapias often caught with nets were getting finished hence the decision to resort to this hard-to-catch and self-preserving Emales.

¹⁶ Balirwa, J. S et al (2003): Biodiversity and Fisheries Sustainability in Lake Victoria Basin

¹⁷ Integrated Management of Lake George, Uganda: The Lake George Basin Integrated Management Organization (LAGBIMO) <http://p15166578.pureserver.info/ilm/docs/nrmgt/LAGBIMO%20Paper.pdf>

Communities around the lake appreciate that the lake is 'a God given' natural resource. They further point out that the lake is for every one and that the government is holding it in trust of the people. They further believe that the lake belonged to their fore fathers who managed it well. However, some members of the community thought that the lake is for the residents that live near by it. This explains why there are contradictions in perceived access and management of the lake. For example, to join fishing activities on the lake, one must first report his intentions to the chairperson, Local Council One (LC1) and the chairperson of the local BMU. On the basis of such a practice, some residents of fishing villages think that the resource belongs to community members that wield power.

On all the landing sites visited, fishing communities pointed out with concern the worsening rate at which the productivity of the lake was reducing. The lake was described as having been a rich and a renewable resource, which their fore fathers used sustainably. This was no longer the case, as the rate of fish catches was continuously declining. The lake was metaphorically compared with a garden which when cultivated one season after another finally loses productivity.

Notwithstanding the imperfections in use of command and control and traditional approaches in managing a common property resource, a resource like fisheries which is vulnerable to overexploitation with dangers of possible collapse, will not survive if left to the forces of the market alone. This requires policy interventions that can balance the demands of human capital and growth factors of the resource (fish). It is vital to have such a balance if there is to be sustainable exploitation of the resource.

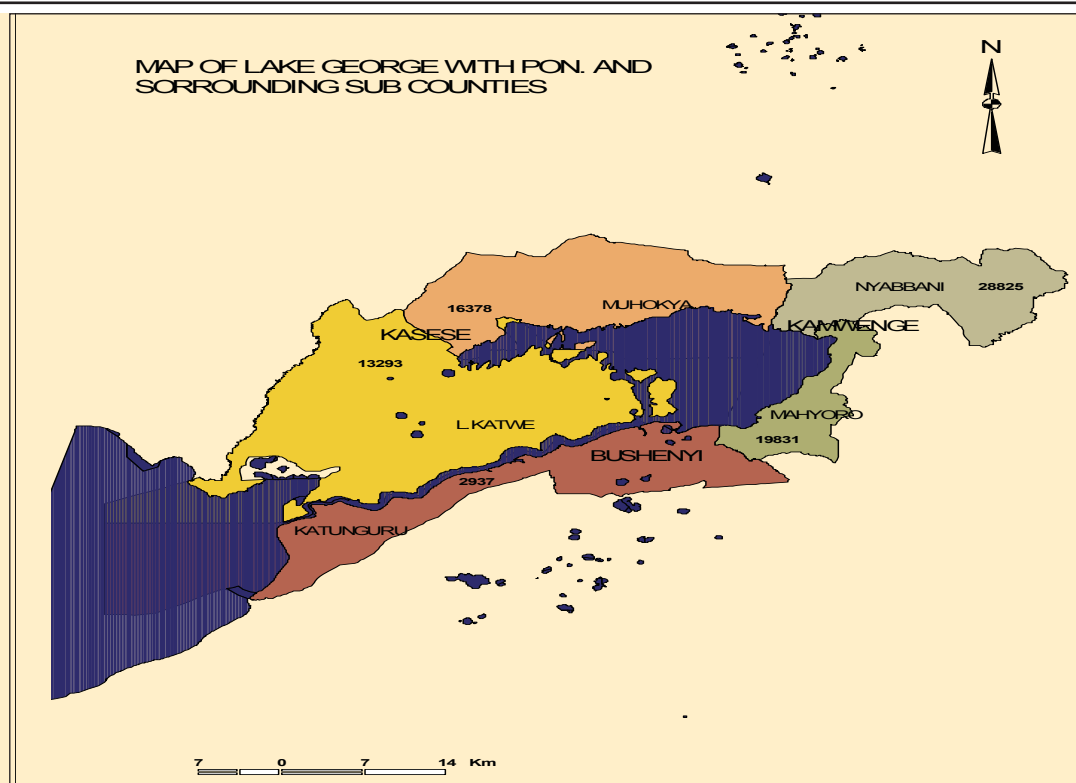
3.2.4. Population whose Livelihood Depend on Lake George

Lake George directly or indirectly supports the districts of Kasese, Bushenyi, and Kamwenge whose entire total sub counties' population is 81,264 as shown on the Table 2 and Map 2. It is a major source of direct livelihood for most people. What is sad to note is the fact that a substantial segment of people in communities that depend on the lake fall in the category of the 'poor' yet the lake is a great source of wealth. Data available from UBOS indicates that 39.6% of people in Mahyoro sub-county - Kamwenge district, 46.5% in Muhokya and Lake Katwe sub-counties in Kasese district and 58.2% in Katunguru Bushenyi district are considered poor people.

Table 2: Population by Parish, Sex, Household Number and Average Household Size of Sub-Counties around Lake George

DISTRICT	County		Population			
	Sub-county					Average
	Parish	Households	Male	Female	Total	Household Size
KAMWENGE						
	Mahyoro	4,646	9,763	10,068	19,831	4.3
	Bukurungo	628	1,333	1,376	2,709	4.3
	Kitonzi	952	1,973	2,158	4,131	4.3
	Mahyoro	1,843	3,705	3,708	7,413	4
	Nyakasura	854	1,951	2,036	3,987	4.7
	Nyakera	369	801	790	1,591	4.3
	Nyabbani	6,283	13,749	15,076	28,825	4.6
	Kanara	1,204	2,478	2,752	5,230	4.3
	Nganiko	1,090	2,684	2,872	5,556	5.1
	Rwenjaza	1,473	3,272	3,618	6,890	4.7
	Rwenkubeebe	1,124	2,530	2,758	5,288	4.7
	Rwenshama	1,392	2,785	3,076	5,861	4.2
KASESE						
	L.katwe	3,169	6,651	6,642	13,293	4.2
	Hamukungu	464	819	693	1,512	3.3
	Kabirizi	407	1,009	933	1,942	4.8
	Kahokya	1,319	3,372	3,764	7,136	5.4
	Kasenyei	317	477	387	864	2.7
	Katunguru	477	762	657	1,419	3
	Mweya	185	212	208	420	2.2
	Muhokya	3,352	8,006	8,372	16,378	4.9
	Kahendero	749	1,379	1,233	2,612	3.5
	Kibiri	729	1,985	2,197	4,182	5.7
	Muhokya	571	1,212	1,206	2,418	4.2
	Kilembe	594	1,566	1,551	3,117	5.2
BUSHENYI						
	Katunguru	1,033	1,602	1,335	2,937	2.8
	Kashaka	224	332	290	622	2.8
	Katunguru	188	339	312	651	3.5
	Kazinga	222	384	360	744	3.4
	Kishenyi	399	547	373	920	2.3

Source: (UBOS, 2002) Uganda National Housing and Population Census, 2002.



Source: (UBOS, 2002) Uganda National Housing and Population Census, 2002.

3.2.5. Perceived Causes of Reduced Fish Catches from Lake George

The reasons for reductions in the productivity of the lake seemed to vary from one individual to another. The introduction of crocodiles into the lake by UWA, was largely believed to be one of the major causes of the decrease in the quantity of fish catches.

Climatic changes such as decrease in rainfall amounts were mentioned as being responsible for the reduced food for fish. The expectation was that rains would bring nutrients as well as refill the lake. Fishing communities noted that water levels were greatly receding, as evidenced by a number of indicators such as, the expansion of the shoreline among others.

This was said to be a result of reduced rainfall in the area.



A photograph showing receding water levels at Mahyoro Fish landing site (Water used to reach at the platform Slab

Furthermore, due to the reducing water levels, fish had nowhere to breed from thus greatly reducing fish catches.

The fishing pressure as a result of increased population around the lake has led to a reduction in fish catches. Respondents recognized the fact that the lake was a static resource, which does not grow, yet the population dependant on it was growing at a high rate.

'Kashaka landing site... used to support about 100 people, but now there are more than 500 people. (Participant FGD Kashaka landing site on 20/03/ 2006)'

How do fishermen explain their apparent poverty?

- Fish is the only source of income yet buying things for day to day livelihood like food and fresh water is very expensive;
- Their Expenditure is more than our income (house rent, firewood etc);
- When we get money, we spend it because we are sure that we will get more the next day;
- Many of us are illiterate;
- We need a Beach Bank of some sort; to help us save money we earn; and
- We do not know how much we earn for instance in a week.

Furthermore, respondents reported that the population was not a major factor, but rather poor fishing methods. Consumer preferences are said to contribute to over exploitation of the lake. An illustration was given, of selling 'Emmale'. Emmale caught using a 4.5 inch net would normally be sold at Ushs 1,000 but it was revealed that an individual businessman or consumer, would prefer to buy many small 'Emmales' for Ushs 1,000 than buying one big one for the same amount of

money. The consideration was that some homes had many family members who need to have a share of the whole fish. It was considered wiser in such a case to buy smaller but many fish than buying one big one. This was therefore a push factor for the barias to use the small sized nets, since they would be sure of ready market for the fish.

The increasing numbers of illegal landing sites on the lake is another factor responsible for the reduction in the fish catches from lake George. Community members that have land neighbouring the lake were reported to have created their own small and 'unofficial' landing sites instead of using the legally established ones. Since illegal sites are difficult to monitor, a lot of illegal fishing activities such as use of small-sized nets takes place on such sites.

More factors enumerated as contributing to the reducing fish catches include; farming activities taking place on hill tops adjacent to the lake leading to silting during rainy seasons thereby destroying some of the fish breeding areas. Silting of the lake is further worsened by reclamation of wetlands adjacent to the lake for rice growing. Not only are the fish breeding areas affected but also the quality and the amounts of water in the lake necessary for fish production and survival.

In an effort to increase fish harvests amidst the reduced catches, fishermen were noted to have devised means of using illegal fishing nets and boats. This has further led to over exploitation of the lake. Some of the illegal fishing methods were *ponda ponda* (tycoon) and carrying out two fishing rounds twice in 24 hours.

3.3. Main Actors in the Lake Goerge Fishery

There are a number of actors along the fish product chain on Lake George, and quite often, majority of them act as conduits of wealth, often leaving no visible impact. The actors can be classified into three categories, which are not mutually exclusive. There are primary actors, who extract the resource (fish) from the lake, notable among whom are fishermen and boat owners, secondary actors who are engaged in post-harvest handling of fish. Examples of secondary actors include artisanal processors, Deyi-Deyi¹⁸ and traders. The last category are tertiary actors who consist of local institutions involved in local administration such as Local Councils (LCs), overseers of resource extraction, handling and trade notable among whom include Beach Management Units (BMUs) and their committees as well as other organisations like LAGBIMO.

Understanding the relationship between the various actors and the resources, the nature of wealth distribution among actors and the distribution of power and decision making authority are essential pre-conditions for establishing a management regime. Such a regime should be able to respond to the current rates of resource degradation and achieving poverty eradication among fishing communities.

3.3.1. Fishermen/Barias

The fishermen, who are locally and commonly known as “Barias” and hereafter referred to as Barias, constitute a group of exclusive individuals, mostly male by gender who go on the fishing boats for actual fishing activity. They are the actual fishing crewmembers. They constitute a majority of the active people in a fishing community. Many of the Barias claim to have been born and grown up in fishing villages while others report that they ended up in the business as ordinary job seekers from far off places. The number of Barias has soared steadily thereby creating fishing pressure on the natural resource. On average, there are normally

¹⁸ From the word ‘hawking’ or ‘kutembeva’ – in Swahili meaning to be on a constant move

2-3 barias on every fishing boat. Not all barias in a fishing village can access a fishing boat everyday due to their large numbers. By virtue of their work, which is replete with risks (such as drowning, piracy, attacks by wild animals, extreme weather conditions etc), barias spend their daily incomes lavishly, on sex workers and alcohol. Their lack of frugality is based on their false belief that the lake has infinite resources. As a result of their wasteful lifestyles, they possess characteristics of poverty. Unlike in the past, Barias vote and can be voted to be part of the BMU committees. According to the BMU Statute, Barias constitute 30% of the BMU committee.

3.3.2. Boat Owners

Boat owners are men and women who use their money to invest in the fishing business. They invest their funds in purchasing fishing boats, boat engines, fishing nets and all other minor equipments required to support the fishing activity. They bear the risk of any kind in the invested capital and meet almost all the operating costs in the fishing business. They employ the barias as fishing crew who go onto the boats for a fishing activity. Some boat owners are former leaders of the landing site committees that were later replaced by BMUs. In some cases, boat owners are former barias, while others still act as barias on their own boats. According to the BMU statute, the representation of boat owners on the BMU Committee is 30%.

Owning a boat is a business that provides for at least a substantial daily income, unless there are no catches at all on a particular day. Once barias bring the catch, boat owners normally take 50% of it and leave the remaining 50% to be shared between the two or three barias. However, this sharing arrangement differs from one landing site to another.



FGD with Boat Owners at Kasaka fish landing site

3.3.3. Fish mongers

These are categories of individuals (men and women) who buy fish as soon as



*Fish Mongers at Katerera market, Bunyaruguru,
Bushenyi district*

it is delivered at the landing site, and sell it to different markets benefiting from the difference in prices. Depending on the location of the markets, fishmongers commute from one landing site to another buying fish and selling to different markets or other buyers. Their role, as a service, is to make fish available from landing sites to fish markets. This category of actors wields power especially by their ability to mediate between the demand and supply dimensions of fish which can, in its own form, influence the wealth status of this category.

3.3.4. Artisanal Processors

This is a category of mainly women involved in small-scale fish processing by sun drying, smoking or salting and selling to fishmongers. Their role is mainly to add value and benefit from the price differences between raw and processed fish. In some cases, such processors act as fish mongers/traders as well. In most cases (especially if this debate is extended to Lake Victoria fishery), majority of artisanal processors fry 'Mugongo wazi' (industrial rejects) which makes a big shift in their (traditional) processing technology. On Lake Victoria, very few are still engaged in erstwhile traditional fish processing since fish volumes have drastically fallen in favour of industrial processors.

3.3.5. Transporters

This is a category of business people (virtually all men) who provide auxiliary service to fish traders. They offer transport services to the fish trade business and like other actors, their business depends on the volumes of fish traded. Transporters in the context of Lake George are low scale who use a pick-up, a motorcycle or a bicycle. On Lake Victoria however, and specifically for Nile perch trade, transporters double as fish mongers. They buy from the fishermen and sell to fish processing plants and benefit from the difference in prices. Often, they are able to dictate fish prices at the landing sites, as fish has limited shelf-life. As a result of this, the transporters are in position to dictate price differences between landing

sites and at final destination. Besides, it is noteworthy that the final fish prices are also a function of the prevailing fuel prices.

3.3.6. The 'Deyi-Deyi'

The 'deyi-deyi' is a category of individuals (mostly young men and women) at landing sites, who provide auxiliary services during the fishing landing and selling business. They neither participate in active fishing nor trading, but they live and survive on doing petty jobs and providing ancillary services such as selling tea and food to fishermen and other landing site communities. They provide other services such as off-loading fish from boats, cleaning and drying of nets. They at times buy fish from the boat and re-sell it at a profit of 10-50 Uganda shillings thus acting as low scale middlemen. Most members of this category are the indigenous people of the area, and their employment depends on the seasonality of the lake. If the harvest is good, then the 'deyi-deyi' are able to earn more from the services they render. This is not a dominant group in the fish chain and is not captured in the chain analysis. Within the fish product chain, this is the group with the least power and who gain least from the fishing activity due to their informality. They can be members of the BMU assembly but their position is not represented on the BMU committee.

3.3.7. Beach Management Units (BMUs)

BMUs are community-based management organisations, legally set up at landing sites instituted to provide a co-management role of the fisheries resource¹⁹. Notable actors that constitute these organisations are boat owners, fishing crew, fishmongers or traders, and other fish stakeholders at respective landing sites. All members at a fish-landing site make up a BMU assembly, which elects a BMU committee to spearhead the core management of BMU activities. The representation of members on BMU committee is stipulated in the BMU Statutory instrument No. 35/2003 as 30% boat owners, 30% fishing crew, 10% fishmongers and 30% other stakeholder groups (listed in the BMU Statutory Instrument, including fish processors, boat makers, local gear makers or repairers, fishing equipment dealers, managers, and chatterers). For gender purposes it is stipulated that women should constitute at least 30% of the BMU committee. According to the regulations, a BMU executive has, *inter alia*, powers to recommend fishers for boat licences and fishing permits, collect revenue, enforce fishing rules and regulations, discipline its errant members (e.g. illegal fishers or those using illegal/destructive fish gear). BMUs are legally empowered to prosecute all persons flouting fishing rules and regulations and/or failing to do/satisfy any of the above requirements.

19 The Fishing (Beach Management) Rules, Statutory Instrument No. 35, 11 July 2003

3.3.8. The Local Councils (LCs)

The Local Council (LCs) is the lowest level of local administration unit in the community, which are linked structurally to the village, parish, sub-county, districts and the central government. The LC provide administrative services on behalf of government. Their chairpersons are democratically elected and they, in turn, appoint deserving men and women on their executive committees. Their services often supplement BMUs services such as support to fisheries enforcement by Local Defence Units – an arm of the LC structure. However, on some landing sites, power conflicts are reported between LCs and BMUs, owing to a blurred demarcation line separating the powers of the LCI from a BMU at the local community level.

3.4. Fisheries, Livelihoods and Employment

A large population of Uganda is dependant on fish and fishing for their livelihoods and survival. It is estimated that 1.2 million people derive their livelihoods from fisheries in Uganda. However, there is no precise and explicit information regarding the number of people whose livelihoods depend on Lake George fishery. Nevertheless, there is no doubt that a substantial proportion of the population in Lake George basin derive its livelihood from fishing.

The biggest group of the people employed on the lake were found to be those working as barias, and 'deyi-deyi' since each boat has to be run by at least two barias. The boat owners are few, considering the investment capital needed to start the business. Some boat owners were also found to work on their own boats as barias.

Table 2: Numbers of Registered Actors in the Fish Chain in the Study Area

Landing site	Number of boat owners	Number of boats	Number of Barias	Deyi-deyi	Registered Traders
Katunguru-K	46	30	160	100	40
Kasenyi	48	30	192	150	30
Katunguru B	37	30	150	160	50
Kashaka	72	48	200	100	40
Kayinja	57	57	200	150	30
Mahyoro	58	74	200	120	50
Kigungu	40	130	260	120	50

Compiled by the research team

The forms of employment for the different actors in the fish production and marketing can be categorised as either, formal, informal, seasonal or permanent. Being a boat owner for instance was found to be a formal and permanent employment. This was considered so due to the fact that regardless of the reduced catches, the boat owner had to earn some money, because of the fact that his/her

boat has gone to the water. Boat owners were considered rich people in the communities since they had income at least every day.

The barias, who were the majority on the landing sites, had seasonal form of employment. Their large numbers and the limited number of boats explain this. The opportunity to be employed on the boat depended on one's relationship with the boat owner. If one was able to catch more fish, he increased the chances for the boat owners to select him for another fishing activity.

The Deyi-Deyi's kind of work is informal and varying according to the prevailing circumstances on the lake. Different activities are carried out by this category people. Their activities range from cleaning the boats, tying nets, providing catering services to the fishing crew, acting as middle men of some kind to small scale processing among others. Some of the deyi-deyi operate businesses without any capital like selling the 'by-catch'²⁰ at the landing site to earn about Ug Shs 10-50 from each. This can be through an informal arrangement between the deyi-deyi and the baria. The work of the deyi-deyi is also considered as seasonal since their involvement depends on the level of catches.

Fish traders were permanently employed but their level of involvement largely depended on the catches. Fish from Lake George is sold at the landing sites to



A Female fish Trader organising fish in basket containing ice blocks at Katunguru K fish landing site before leaving for the market place

local consumers, and to traders who take the fish to nearby trading centres and markets. The study established that some of the fish is loaded onto trucks and transported to markets in Democratic Republic of Congo (DRC).

3.5. Gender Roles in the Fishery

The industry was found to be generally male dominated. Discussions revealed that the involvement of women in the fishing sector was a recent

phenomenon, as dictated by a number of factors.

²⁰ Very tiny fish that gets trapped in the net, also called kampola-mpolas

*"In the past, women were not so much engaged in the fishing business. They concentrated more on making crafts from which they earned a living. It was after the realization that there was a lot of pressure being exerted on the swamp that the community decided to stop the crafts making business. Women then started to engage in fishing"*²¹

There were no women on the landing site that were working as barias. Being a baria was said to be exclusively a men's job.

*"We think that women are not supposed to go into such dangerous water – in the way they are created, they are a bit weak yet this is a very strenuous and physical job"*²²

Most women at the landing site were in the category of deyi-deyi and were involved in providing auxiliary services. They were involved in activities such as trading in fish both at the landing sites and the markets, mending nets, setting fishing nets (with special strengthened thread), preparing and selling meals – food, porridge, tea etc at the landing site, selling alcohol in the bars found at landing sites, and sometimes smoking and salting fish. Some women specialized in buying and selling 'by-catch' and sometimes acting as sex workers.

3.6. Well-Being Indicators of People around Lake George

Fishing villages are highly populated. Majority of residents were born in such villages. There were very few immigrants. Fishing communities were considered to be poor, lacking some of the basic needs for human survival. Discussions with the barias and the boat owners

Voices from the field

"...bye-laws are passed by the district, but people there don't know fishing...if such bye-laws are to be passed, one of us should go to explain what we need...you find like the chairman doesn't know nets..." (FGD at Mahyoro fish landing site, 26/3/06).

"our colleagues farming in the hills...when they dig, soil runs into the lake...in road construction, the soil is washed into the lake...accumulating to about 10 meters...this affects breeding ground for fish..." (An FGD at Kayinja fish landing site, 24/3/06).

"...government is not fair, it comes and grabs from us...it takes money but they are yet to put here a public latrine...all the money that is collected here...is just eaten... my father and our family opened up this site... that is why I dug up that hole to prove that soil here is not porous as leaders claim...people here are too poor - you see someone putting on torn trousers and you want money from him ...you are cheating him... at least cant they deceive us with small loans, and give something to Barias so that they can grow cotton, or other crops..." (An FGD at Mahyoro fish landing site, 26/3/06).

"...if given free nets, ..we would make sure that no one uses the wrong fish nets...in this lake, fish used to die due to its high density but not any more now...this is due to an increased population of people chasing it around..." (An FGD at Katunguru Kasese fish landing site, 19/3/06).

"...Barias were no bodies before the BMUs. At least now we are even represented on the boat owners' committees. We can air our views..." (An FGD at Katunguru Bushenyi fish landing site, 19/3/06).

²¹ FGD of barias, Katunguru Landing site

²² Baria, Kainja Landing site

indicated that poverty among the fishing communities was worsened by the steady decline in fish catches. Low incomes, low education levels, poor health and sanitary conditions generally characterized fishing communities. It was not uncommon to be told that fisher folk defecate and urinate in the lake or by the lake banks.

A sample carried out at Kayinja landing site in Kamwenge district indicated that eight out of the twenty five persons (32%) that participated in the FGD owned their own houses. Other members of the group discussion were living in rented but poor and dilapidated houses. Three out of the twenty five people had studied up to secondary school level. These factors were believed to contribute to their low levels of income.

Health conditions at the landing site were found to be unfavourable considering the life styles of these fishing communities. Discussions revealed that in many of the landing sites, barias or fishermen were prone to diseases such as HIV/AIDS and other sexually transmitted diseases i.e. gonorrhoea and other diseases such as bilharzias, malaria and other water-borne related diseases. This also incapacitates the fishing communities' abilities to save the little incomes they earn.

Most barias, boat owners and fish mongers had not attained primary education at all. On the other hand, most of the participants in these group discussions could not read and write mainly in the native Runyakitara language. Some of the landing sites had no schools for both primary and secondary education. In a few places where they existed, children were being forced to go to school because they preferred going fishing for money rather than attending school.

Almost all fishing communities had no health facilities in close vicinity. In some landing sites, there were some makeshift clinics which were managed by non-professional or poorly trained health workers and run as small-scale businesses rather than providing quality health services and yet, these communities were centres of disease outbreaks such as bilharzias and malaria.

All the fishing communities on Lake George had no access to tap water. The main source of water supply was the lake itself. Such water was used for bathing, washing clothes, cooking and in many cases, fishermen drunk it un-boiled. At the same time, there were no well-defined pit latrines and other forms of facilities. In places where they existed, they were used by a few while others preferred defecating in the nearby bushes and sometimes in water itself. The sanitary facilities on all landing sites, therefore, were poor and this exacerbated problems of disease outbreaks.

3.7. Why Fishing Communities are Characteristically Poor

The PEAP adopts a multi-dimensional concept of poverty, where deprivation in terms of health, nutrition and educational standards are taken as seriously as low income. It also recognises insecurity and social exclusion as dimensions of poverty, following findings on poor people's own perceptions. The latest surveys suggest that the distribution of income poverty is very different from that of multi-dimensional poverty in Uganda, though many policy makers still think about poverty mainly in terms of income.

Fishing communities generally possess poverty characteristics. These include poor housing structures, lack of basic health and sanitary facilities, poor infrastructure development, low education levels among others. The communities are further



Photograph of housing at Kainja fishing village

characterised by having no land, since the bigger percentage of the population is in the Queen Elizabeth Protected Area. Of the six landing sites visited, four of them are a part of Queen Elizabeth protected Area. There is thus hardly any other economic activity carried out by the people in these communities apart from fishing. This was found to be a source of conflict, between UWA and the fishing communities. Since it

was evident that fish production had gone down, communities that are entirely dependant on fish were bound to be poor as they did not have any alternative sources of livelihood.

A rich person according to these communities was described as "one with at least two or three boats". In one of the fishing villages visited, Katunguru, Bushenyi district for example, only one person belonged to this category. The rest of the community was described as belonging to the 'poor' category. Not that these individuals did not earn any living sufficient to get them out of poverty, but their small incomes coupled with some behavioural aspects exaggerated this problem.

*"the daily income of a Baria may approximately be Ug. Shs.10,000/= BUT their problem is that they spend this money within a day especially on over-drinking alcohol. Secondly, there's no food security at the landing site – we have perpetual food shortage. Most Barias at this site never bother to educate their children"*²³

²³ Boat owners view 23/03/06

“the explanation is poor use of the income earned – (fishermen over drink alcohol, they indulge in running prostitutes and they perceive the lake as their bank – where they can go any time and get money)”²⁴

The poverty problem is further exacerbated by the tendency of each fisher to trade their fish as individuals. This leads to exploitation, since they cannot form themselves into groups to control market prices. There are said to be lots of middle men in the fish production and marketing chain, all of which gain from the fish thus reducing on the would-be income of the fishermen. Some of these middlemen could be done away with if the fisher folk formed themselves into organised groups.

3.8. Saving Culture in Fishing Communities

Fishing communities visited had not been trained about saving money. There was a common tendency for fisher folk to think that they have constant income from the lake and therefore no reason for saving. The fishing communities have an assurance of constant food (in form of fish) and this does not motivate them to save. However, the culture of saving is not helped by the distances that an individual who wishes to deposit money in the bank has to travel. Communities therefore recognize the need for a beach bank in which they can keep their money.

3.8.1. Barias and Poverty

Barias revealed that they are forever in debts – they are reported to have been getting many advance payments from many boat owners which they had to repay by going to the lake to fish. The barias’ argument is that even when indisposed or weak, hence unable to go to the lake; they still need basic necessities like food and medicine. Therefore, they beg boat owners for advance payments in such situations with the hope of paying when they go out to the lake and make a good catch. Secondly, barias report that they do not fear taking advance payments because they are used to getting a daily income and are sure that when they go to the lake, they will be able to get some catch though the reality is that, a good catch is not a guarantee.

On one of the landing sites visited, the barias had organised themselves into an association where each boat made a daily contribution of one ‘ngege’ worth US\$1,000/=. It was however revealed that the money was not saved and translated into anything useful since the barias occupation was such that they would often be sick and all their money would be spent on treatment.

On three of the fishing landing sites visited, fishermen used to have a saving mechanism through a rotational revolving fund scheme. However, this scheme

²⁴ FGD Participant at Kainja fish landing site 24/03/06

failed due to the mobile kind of life style that fishermen live. It was reported that some fishermen would be given money after which they disappeared with it. This discouraged many from entrusting people with their money.

The barias further revealed that they do not make savings because proceeds from the lake are very low and mostly spent on daily up keep. However, the idea of having a beach bank was thought about by all the fisher folk as a good possibility especially if they could be allowed to deposit even as little as Ug. Shs. 200/= per day.

3.8.2. Boat Owners and Poverty

Though this is a full time employment, some factors were perceived to still hold this category of actors among the poor. Among these is the fact that fish catches had gradually been reducing over the years. The fact that there was an upper ceiling beyond which the number of boats on the lake could not officially go limits boat owners from expanding their businesses. Secondly, the limitation on the number of boats per landing site limited the chances of those who wanted to own more boats or join fishing activities.

Fishing communities also raised concerns that compared to the other farming sectors like crop growing and animal keeping, the fishing sector had not gained as much attention as other sectors. There is therefore need for the government programs to focus on these groups.

“Fishermen do not benefit from any government. No government has put efforts towards the development of the economic livelihoods of the fishing communities, as has been the case with other agricultural sectors such as the crop growing and the animal rearing communities”²⁵

3.8.3. The Deyi- Deyi and Poverty

In terms of employment, they are informally employed because their number is usually more than the available services required. This therefore means that on some days of the months they are unemployed. This probably increases their vulnerability to poverty. The levels of education in this category of actors are very low. Majority of them have not studied beyond primary school level.

3.9. Distribution of Non-Monetary Benefits from Lake George

It is noteworthy that other than economic benefits, there were non-monetary benefits that were derived from fish on Lake George and was shared between the different resource users or actors. These are categorised as food and food security, employment, environmental stability and the cultural heritage.

²⁵ FDG in Mahyoro 26/03/06

Food and food security: As a food, fish is an important and cheap source of animal protein which is necessary in improving the health status of the people. Therefore, once fishery activities are over exploited and illegal fishing methods are not controlled, the resource base is bound to be degraded. Respondents reported widespread degradation of the resource base, which had resulted into less fish catches thus affecting the food security levels around Lake George. Most importantly, as fish becomes more expensive, reduced fish catches are likely to affect the nutritional status of poorer sections of the fishery-dependent communities.

Employment: Traditionally, fishing provides employment for larger sections of the population living within the lake regions. However, owing to a number of factors such as use of illegal fishing methods, environmental degradation, increased fishing pressure, among others, the lake was reported to be becoming less dependable as a source of employment for sustainable livelihoods. Nevertheless, it is important to observe that unemployment rates affect the poorer segments of the population more since they have fewer alternative means of employment. In fact the poorer they become, the more they exploit the fishery resources as a survival strategy thus accelerating the degradation of the aquatic environment.

Cultural Heritage: Since time immemorial, the fisher folk who are traditional inhabitants of the fishing area, consider the lake as a cultural heritage. This is evidenced by the fact that it becomes not only a source of livelihood but a symbol of identity rooted deep in their traditional cosmology. However, owing to national demographic trends, forces of modern state formation and the commercialisation of fisheries resources, particularly in the past two decades, there has been an influx of 'outside' people entering the fisheries sector. As a result, the local inhabitants accuse the 'outsiders' of being responsible for the introduction of illegal fishing methods that are destructive to the local aquatic environmental cultural heritage.

3.10. Challenges Facing Lake George Fishery

Even when different structures like BMU, LCs, and LAGBIMO etc. are in place to control and manage the lake, they, in a way, have not been very successful. A number of challenges were cited as having incapacitated the management structures in their efforts to manage the resource and to ensure its sustained use.

The available management structures are poorly facilitated to do what is expected of them. For example, the BMUs were meant to patrol the lake to curb illegal fishing. However, most of the landing sites visited, did not have a motor boat to use, and even those which had were constrained in obtaining fuel to carry out these activities. This failure had given an opportunity to members of the community whose land borders the lake to create their own (private) fish landing sites around the lake. These encourage poor fishing methods and promote illegalities leading

to indiscriminate fishing, which eventually leads to the depletion or extinction of rare species of fish.

In an effort to increase fish catches amidst scarcity, fishers tend to over saturate the lake with nets, in order to increase their chances of getting fish. It was revealed that although each boat is supposed to have a maximum of 30 nets. However, a boat would carry between 100 and 120 nets at the time of fieldwork for the study. It was further revealed that nets are laid in the waters both during the day and night, which could not give fish opportunity to reproduce and grow.

The money earned by the fishing population would have helped them get rid of poverty, but they never had a saving culture. Therefore fishing communities remained mired in poverty justifying the need to remain on the lake for survival. The absence of banking facilities within close proximity further discourages saving. Fishermen spent their incomes on drinking alcohol and procuring services of prostitution.

As a result of decentralisation, there was a lack of a central control body to harmonise the activities and interests of the various landing sites on the lake. There are conflicts in by-laws set by the different landing site managements, and their enforcement mechanisms. A body like LAGBIMO would be an option to resolve such differences, but this was reported to be a young organisation and therefore unable to take up such challenging tasks.

There is also political interference from local politicians who do not want their votes and political survival jeopardised through apprehension of illegal fishers. They ended up affecting the performance BMUs. For instance, some local politicians discouraged arrests of people found using illegal fishing nets.²⁶

Some cultural beliefs hinder infrastructure development in the fishing area. Most landing sites were found not to have latrines or toilets. For instance the fishing community at Mahyoro landing site is reported to have rejected use of Eco-san toilets due to the presence of Moslems in the community. Unfortunately, a pit latrine could not be dug at the landing site due to the areas' porous soils.

Respondents also noted with concern that although many researches had been done in the area, they had not been translated into any actions. It was also revealed that many researchers have not taken the initiative to report back to the communities to present their findings. This was causing research fatigue among the communities, and lack of interest to participate in research.

²⁶ As a result, some illegal fishers are protected by local politicians

CHAPTER 4:

4.1. Wealth Axis in the Fish Production Chain

In spite of declining stocks, fishery is still a wealthy resource. Exploitation of existing stocks in value terms still constitutes a factor in poverty reduction among fish dependent communities. A wealth map answers the fundamental question of why fishing communities remain poor²⁷ despite the natural wealth as translated into landed values of fish catch. In fact, fishing communities are the main channels of wealth and therefore should demonstrate characteristics of this wealth. For every fish sold, for example, it passes through the hands of a fisherman and a boat owner leaving different levels of revenue in both hands.

4.2. The Wealth of Lake George Fishery

The value of the output of the natural resource or capital is an indicator of wealth of that capital. For this case therefore, the value of fish landed is the assumed wealth of the resource in a given period. Although the added value of other multiplier effects are computed as part of the total wealth, this study only assumes the value of annual fish landings as the natural wealth of the fisheries resources of Lake George in a given year. The analysis is extended to look at the extent to which this wealth is shared amongst a section of actors and how the sharing is reflected in the poverty levels of these actors in the Lake George fishery.

²⁷ In usage of the word 'poverty', we adopted the PEAP's multi-dimensional concept of well-being and poverty. In that sense, poverty impacts do not focus only on aggregate income of households that fall below the poverty line of US\$ 1 per person per day. There is instead concern about how such income is shared within the household, and the consequences for what are recognized as robust indicators of general well-being among household members, such as the infant and maternal mortality rates and the nutritional status of children (from Development Assistance Committee, OECD (2001) *The DAC Guidelines: Poverty Reduction*, Paris: OECD)

Table 3: Estimated Landed Value of Fish from Lake George 1950-2005

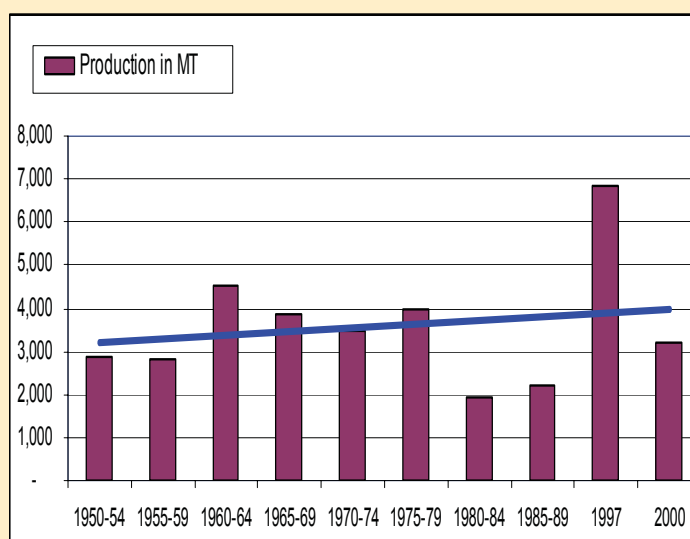
Year	Metric tones	Est. price Ushs/Kg	Est. Value Ushs '000
1950-54	2,850	100	285,000
1955-59	2,800	150	420,000
1960-64	4,550	100	455,000
1965-69	3,850	350	1,347,500
1970-74	3,500	420	1,470,000
1975-79	3,950	500	1,975,000
1980-84	1,950	700	1,365,000
1985-89	2,200	1,000	2,200,000
1997	6,850	1,000	6,850,000
2000	3,200	1,200	3,840,000
2001 est.	3,500	1,100	3,850,000
2004 est.	3,580	1,300	4,654,000
2005 est.	3,650	1,500	5,475,000

Source: Adapted from Kamanyi, J.R. and P. Mwene Beyanga (1991) and projected to 2005.

Figure 3: Trends in and catches of fish from Lake George (1950s - 2000)

From the estimated figures, it can be seen from Table 3 and Figure 3 that the total wealth of Lake George is in the region of Ushs 4-5 billion annually. Any improvement in the collection of catch statistics will show that this value is even much higher.

In spite of this actual and potential wealth, the socio-economic status within fishery-dependent communities reflects a different reality. The



Generated by researchers from table 3

main conduits of this wealth, especially fishermen or baria and boat owners, are strikingly poor basing on the national poverty standards. Although there have been no disaggregated quantitative data on the poverty status of fishing communities, qualitative poverty assessment studies²⁸ indicate that poverty is prevalent amongst fishing communities.

²⁸ Mainly done by the Ministry of Finance, Planning and Economic Development (such as Ministry of Finance, Planning and Economic Development - MoFPED (2002): Second Participatory Poverty Assessment Report. Deepening the Understanding of Poverty), Fisheries Resources Research Institute (FIRRI), and the Department of Fisheries Resources.

The question therefore is; how is this wealth reflected in the poverty status of fish dependent communities of Lake George? The analysis of wealth among some actors shows that some gains accrue to different groups in the fish product chain. There is also an indication of a mismatch between gains received and quality of life. To some actors like the barias and fishmongers, the gains are not translated into poverty reduction or livelihood improvement.

Table 4: Gains and Margins Accruing to a Fisherman/Baria

<i>Operating costs – variable:</i>	Ushs per Day on a worse fishing day	Ushs per month	Ushs per Year	% of costs	%ge of landed value	Ushs per Day on a good fishing day
User fees (paid to tenderers)	500	15,000	180,000	11.1%	2.0%	500
Fuel & oil for fishing boats	-	-	-	-	-	-
Payment to barias labour (wages)	1,000	30,000	360,000	22.2%	4.0%	1,000
Sub-total variable costs	1,500	45,000	540,000	33.2%	6.0%	1,500
<i>Operating Costs – fixed</i>		-				-
Baria's permit	14	420	5,040	0.3%	0.1%	14
Loan pay-back	3,000	90,000	1,080,000	66.5%	12.0%	3,000
Sub-Total fixed	3,014	90,420	1,085,040	66.8%	12.1%	3,014
Capital costs		-	-			-
Sub-Total Capital	-	-	-		0%	-
Total Costs	4,514	135,420	1,625,040	100%	18%	4,514
Revenue from total Sales:	25,000	750,000	9,000,000		100%	70,005
25% share of the baria	5,875	176,250	2,115,000			17,126
Profit (loss)	2,861	85,830	1,029,960			14,112
Profit (loss) as %ge of landed value	11.4%	11.4%				20.2%

Data Collected and analysed by researchers

The study observed that the value of daily catches of fishermen on Lake George ranges between Ushs 0 – 140,000/= per day per fishing boat. There are periods when boats land with no catches and sometimes with high catches. In the worst case scenario, the value of catches would stabilize at Ushs 25,000 per day. As indicated before, the sharing arrangement of the landed value between the boat owner and barias differs from landing site to another and as has been noted, every boat has an average of two crew members as barias. In most cases however, boat owners and fishermen share the landed value in the ratio of 2:1:1. With associated costs, the fisherman/baria is able to earn a net income of Ushs 2,861 per day, a figure that is over and above poverty line indicator of US\$1 per person per day. In the best case scenario and which is always the case, the daily average value of catches is approximately Ushs 70,000 per boat. Using the same sharing arrangement Ushs 70,000 earns a baria Ushs 14,000 per day. Note that sharing is done after deducting the general costs such as payments of user fees to the tendered services, annual barias permit and some payment as barias wages. The computed daily, monthly and annual earnings for baria is therefore net income. These earnings represent 11% and 20.2% of the landed value (or wealth of the resource) in the worst and best case scenario respectively. Using this analysis of earnings, the barias in the Lake George fishery are by no means poor. They only possess characteristics of

poverty and this explains the common statements that fishing communities are among the poor in the country.

Following the above analysis and considering the baria's net daily income of Ushs 2,861, it represents an equivalent of 85,000 per month. This money is higher than the salary of a driver or messenger working in a government civil service. Moreover, a government driver or messenger who earns an average of Ushs 70,000 per month has to incur other costs on food and accommodation. A baria is better off than a government driver or messenger and yet government drivers are not considered among the poor, or at least do not possess poverty characteristics. The fishermen on Lake Victoria, on the other hand are much better off than fishermen on Lake George. This is because the value of a unit of fish from Lake Victoria is higher than a similar unit from Lake George. Ikwaput (2004)²⁹ computed the annual income of a baria from Lake Victoria as Ushs 3 million translated into a monthly income of 250,000 per month.

Table 5: Gains and Margins Accruing to a Boat Owner

<i>Operating costs - variable:</i>	Ushs per day	Ushs per month	Ushs per Year	% of costs	%ge of landed value	Best case scenario
User/tender fees	500	15,000	180,000	16%	2.0%	500
Fuel & oil for fishing boats	-	-	-	-	-	-
Labour on nets	200	6,000	72,000	6%	0.8%	200
Sub-total variable costs	700	21,000	252,000	22%		700
<i>Operating Costs - fixed</i>						-
Repair & maintenance boats	200	6,000	72,000	6%	0.8%	200
Threads for tying nets	333	10,000	120,000	11%	1.3%	333
Labour for tying 30 nets	1389	41,667	500,000	44%	5.6%	1,389
Boat license	58	1,750	21,000	2%	0.2%	58
Income tax	61	1,833	22,000	2%	0.2%	61
Sub-Total fixed	2,042	61,250	735,000	65%		2,042
<i>Capital costs</i>		-	-			-
Boat	417	12,500	150,000	13%	1.7%	417
50 nets of 4.5" (@ 5,000)	695	20,850	250,200	22%	2.8%	695
Sub-Total Capital	1,112	33,350	400,200			1,112
Total Costs	3,153	94,600	1,135,200			3,153
Revenue from total Sales:	25,000	750,000	9,000,000		100.0%	70,000
50% share of the Boat owner	12,150	364,500	4,374,000			34,650
Profit (loss)	6,955	208,650	2,503,800			29,455
Profit (loss) as %ge of landed value	28%	28%	28%			42%

Data Collected and analysed by researchers

²⁹ Ikwaput J. N (2004): Co-management and Value Chains: The role of Nile perch Exports in Poverty Eradication in Lake Victoria Fishing Communities. Reykjavik Iceland.

The analysis on earnings amongst the actors in the Lake George Fishery is extended to the boat owners under the similar conditions used in the analysis of barias. In the fishing business, the boat owner's main investment capital is on nets and boat. Boat owners also incur costs associated with depreciation of capital (boats and nets). Other costs include the operating capital of repair and maintenance of boats and payment of government taxes. Fishermen on Lake George do not use engines and therefore do not incur costs on fuel. The other costs incurred include payment of user fees which also constitute other forms of operating costs. In the worst case scenario and deducting total costs from the 50% share of the landed value, the boat owner earns a net daily income of Ushs 6,955, translated into a net monthly income of Ushs 208,650 and net annual income of Ushs 2.5 million representing approximately 28% of the landed value – the assumed wealth of the resource in that year. This income is equivalent to an average salary of primary teacher. Using this figure, the boat owners are by no means wealthier than barias whose income is only 11.4% of the landed value. In the best case scenario where an average daily landed value goes as high as Ushs 70,000, the boat owners daily income goes as high as Ushs 29,455 representing a monthly income of Ushs 883,650 annual income representing 42% of the landed value higher than the barias of 20.2%. This income is higher than a government civil servant in scale of U3. The earnings of the boat owner reflect the invested capital; therefore, fishing to them is a business and not a means of survival.

Table 6: Gains and Margins Accruing to a Fishmonger

<i>Operating costs – variable:</i>	Ushs per Day	Ushs per month	Ushs per Year	% of costs
Raw material fish [10kgs of fish]	10,000	300,000	3,600,000	77%
Sub-total variable costs	10,000	300,000	3,600,000	77%
<i>Operating Costs – fixed</i>				
Transport from L/site to market	3,000	90,000	1,080,000	23%
Local taxes - landing site				
<i>license fees (fish movement permit)</i>	28	833	10,000	0.2%
<i>medical form (by health inspector)</i>	4	125	1,500	0.0%
<i>beach license</i>	28	833	10,000	0.2%
Local taxes – market				
<i>market dues</i>	500	15,000	180,000	4%
<i>other costs/stall hire etc</i>	1,000	30,000	360,000	8%
Sub-Total fixed	3,060	91,792	1,101,500	23%
<i>Capital costs</i>				
Sub-Total Capital	-	-	-	
Total Costs	13,060	391,792	4,701,500	100%
Revenue from total Sales:	15,000	450,000	5,400,000	
Profit (loss)	1,940	58,208	698,500	15%
Profit (loss) as %ge landed value	8%	8%	8%	

Data Collected and analysed by researchers

The fishmongers on the other hand earn relatively lower than the baria and boat owner. The net profits of the fishmonger are in the region of 8% of the landed value compared to 11.4% and 28% for barias and boat owner respectively. But their income is on average almost equal to poverty index of US\$1 per person per day.

Table 7 is a summary of the annual margins amongst the three actors in the fish production chain. It can be deduced from their earnings that none of these is expected to reflect any signs of poverty based on their daily, monthly and annual earnings.

Table7: Annual Earnings & Margins of Selected Actors in the Lake George Fish Chain (worst case scenario)

Earnings	Boat owner		Baria		Fish monger	
	Daily	Annual	Daily	Annual	Daily	Annual
Total earnings ('000 Ushs)	12.1	4,374	5.9	2,115	15	5,400
Margins/Profit (Loss)['000 Ushs]	6.9	2,504	2.9	1,030	2	699
Profit (loss) as %ge of landed value	28%		11%		8%	

Data Collected and analysed by researchers

The boat owners, followed by the barias, are the wealthier category of individual among the landing site based actors on Lake George fish chain as represented by distribution of net income and as a percentage of net assumed wealth.

Despite these levels of wealth, some boat owners possess characteristics of poor people but at the same time, they own land and properties in their village locales. They pay school fees for their children and are able even to invest in buying more boats.

4.3. Poverty in Fishing Communities – A Fisherman’s Perspective

Despite the wealth, fishermen and especially barias remain poor. They do not have any investment structures. They spend all their daily income because they are sure of money from the next day’s catch. However, they have a different perception as to why they remain poor.

Fishermen claim that ignorance is a big contributor to poverty. For instance, they consider the Lake to be an infinite source of resources and thereby justifying their reckless and extravagant way of living. It is noteworthy that there are two categories of barias; those with families who are forced to make some savings and those with no families and are therefore not committed to any form of relationship and tend to be extravagant. Barias claim that with little education, they can hardly plan for the future. The fishermen attribute their poverty to bad fishing practices, which they think reduce the amount of fish caught.

The fishermen also claim that their poverty is accelerated by both human and natural factors. They understand that bad fishing methods is a reason why fish catches are declining and the low catches is the reason why they are poor. They also attribute the declining catches to other natural and environmental factors. The silting of the lake as well as effluent discharge by Kasese Cobalt factory into the lake are reported to be affecting the lakes' productivity and therefore less catches.

4.4. Saving Culture

Some barias acknowledge that they receive money on a daily basis but the absence of banking services at the beaches was the reason they could not save part of the day's income. However, the distance an individual has to travel to deposit money in the bank also demoralizes the culture of saving. The banking procedures are also cumbersome and these procedures are less known to fishermen. The communities thus recognize the need for a beach bank with which they could keep their money. On the



Barias Fish and Fishmongers in business at Katunguru B

other hand they argue that the bank should be located just between the landing site (where cash is exchanged between the buyers, the boat owner and themselves) and the bar where money will be spent on alcohol and prostitutes.

Some barias have no idea how much they earn weekly and their projections for daily earnings vary a lot. Fishermen and boat owners also indicate that the buyer, because of the fact that fish is perishable and the fishermen do not have the means to preserve the fish determines the price of fish. This compels them to sell fish at a price given to them (in many cases) by the only buyer available. Fishermen, interestingly, claim that businessmen like buying the small fish because of their high demand by many low-income earners.

There were also concerns that limited competition in fish trade leaves the fishermen to accept the price offered by a single fish trader who travels a long distance to buy fish. If such a trader failed to buy, the fish would go bad. This meant that buyers offer any price they wish to the fishermen and therefore believe that the wealth of fish goes to the businessmen. There is also one route/road to the main road.

Throughout all the discussions with fishing communities, concerns were raised that barias as well as boat owners had not been trained in making savings. There was a tendency for people to think that they are assured of constant income from the lake and thus see no reason for saving. The communities are assured of constant food and this also does not motivate them to save.

Risk: It is noted that a fisher faces a lot of risks on water. When they land ashore, they psychologically feel that they have been given 'a lease of new life in a new world'. Therefore, they are inclined to 'celebrate' their triumphant return by drinking with friends and sleeping with women thereby ending up with no saving.

Fishers have no role models at landing sites (unlike those working in other sectors such as agriculture, trade/business in urban and rural areas) to positively influence their habits. At landing sites, practically all fishers are trapped in the same 'cage' of subsistence livelihoods.

Job insecurity: Barias also report that at times, their attempts at initiating a saving culture is sabotaged by their bosses' (boat owners) paying a small fraction (say, one-third of his daily share) of accumulated earnings. The barias are noted to consume the one-third convinced that the remaining amount would be paid once they declare to their bosses that they have no money. However, boat owners are noted to change priorities whenever in possession of money. They sometimes claim that they use the barias money to buy a new boat engine instead of paying off the debt since the new engine would guarantee the baria a job. Unfortunately, if by coincidence it happens to be a bad season when the baria's catches diminish, boat owners occasionally get annoyed and, in turn, dismiss Barias' services. In such cases, a baria would never recover his money. Thus, without job security, barias could not plan for the future.

4.5. Tendering Systems

Districts are noted to be awarding tenders to private individuals to collect revenue from the fishing activities. Fishing communities pay in form of landing fees that are charged per boat at every landing site. Such fees ranged from US\$ 400 to US\$ 500 at the time the study was done. This fee has to be paid by the barias, whether they get any catches or not. At times, this is not fair as it is widely accepted that the number of fish catch had generally gone down. To some of the barias, the system is viewed as exploitative and not putting into consideration the possibility that one may land at the site when they have not caught any fish.

The system is unfair as it only benefits one individual who wins the tender, rather than the whole community. Suggestions were made to the effect that if BMUs were well organized to collect revenue, they would bid for the tenders. This would

be more advantageous, in a sense that MBUs would understand the individual needs of the fisher folk when collecting the revenue. Secondly, BMUs would get the profits from the collected revenue and plough them back into the community better. However, there is consensus among respondents that tenders would fetch more money if given to outsiders or private individuals compared to BMUs.

Fishing communities when asked about why they did not apply or tender for the collection of revenue from the fish landing sites. The answer was that Most BMUs were reported neither to have won any tender nor managed any business before. Important of all is that the allocation of tenders in districts is an exercise fraught with bureaucratic and corrupt tendencies. Ultimately, tenders to manage fish landing sites are often won by outsiders, whose primary target is not to plough back the money into helping the communities but to maximise profits.

Fisher folk report that unlike the farmers who receive loans, successive governments and micro-credit institutions have neglected them. Local fishers were found to have the knowledge but often times it would be disregarded. If mechanisms could be put in place to ensure that the BMUs could win tenders, they would be in a position to be financially self-sustaining and effective in ways of work.

Although monies collected through tenders from fishermen is remitted to the district, fishing communities are not aware of any way in which they were benefiting. A few individuals know that a certain percentage of the collected revenue comes back to the landing site, but they are not aware of what this money is being used for. Many are not aware of the percentage that accrues to them from tender collections. Others reported that 25% of collections from fish movement permits is remitted back but consumed by BMU chairmen. Interestingly, some members of communities were arguing that even if the BMUs won the tenders, the profits would be shared amongst the BMU committee members only and therefore, the situation would remain the same.

4.6. Sharing of Proceeds from the Lake

Sharing of benefits from the lake starts with the barias and the boat owner. Discussions from the six landing sites visited indicate that systems used to share the proceeds differ from one landing site to another. Various costs are incurred and payments made before the barias and the boat owners share the proceeds. General costs fisher folk (barias and boat owners) would incur to enter and run a fishing business were averaged to be around;

- A boat costs at least UShs 150,000
- A 4.5 inch net costs UShs 4,000 per net
- Threads for tying nets UShs 50,000
- Labor for tying nets UShs 700 per net
- Boat license UShs 22,000 per annum

● Income tax	UShs 40,000 per annum
● Tenderer's fee UShs	500 or UShs 400 per landing
● Fisher man's permit	UShs 5000 per annum

Such costs incurred in the business are factored in the way the barias and the boat owners share the proceeds. At Katunguru landing (Kasese) site for example, it was discovered that if a baria was to catch fish worth UShs 50,000, the boat owner would first deduct UShs 2,000, for boat fees, then the baria would also pay a landing fee of UShs 500 and make a small contribution to the baria's saving bag of UShs 500. The remainder of the proceeds would be divided into two between the boat owner and the baria. Two barias operating one boat end up sharing the other half. Discussions however revealed that when the catches are not good, the boat fee would not be deducted.



Fish from Lake George

In other areas however, proceeds from the day's catch are divided by at least the three actors i.e. the boat owner, and the two barias. Regardless of the initial costs that are incurred by the boat owner to start the business, the barias feel that they are always cheated since they subject their lives to risks when they spend nights on the lake. It was also argued that boat owners never compensate barias in case they get any accidents on the water..

Out of the money obtained from the tenders at the sub-county level, 25% goes to the Local Council 1 (LC1), 5% to Local Council 2 (LC2), and another 5% goes to Local Council 4 (LC4). The sub county was retaining the remaining 65% for its other development programs. From the money obtained from the fish movement permits, 75% would be shared by the sub-county and 25% was supposed to be remitted to the BMU.

The business men/women who buy/sell fish from the landing site also incur costs in running their businesses. These include;

License fees (fish movement permits)	UShs 10,000 per year
Medical form, given by the health inspector	UShs 1,500 per year and
Beach license	UShs 10,000 per year

Due to the increased scarcity of fish, the prices in some instances are determined through auctioning, where prices would be at times much higher than they can possibly fetch from the markets. The fish which had lost its freshness and considered “bad” fish would be purchased from the landing site and taken to the market while some would be locally processed by sun-drying, salting and/or smoking

The fisheries department was mentioned as one of the sectors that contribute greatly towards the district’s and sub county’s local revenues. However, the consultant’s observations and discussions with the communities reveal that little if any is ploughed back to the communities that fetch revenues. For example, one landing site of Mahyoro in Kamwenge District does not have a latrine at the landing site, and neither do they have a slab where they could wash fish and sell fish from yet they contribute on a monthly and daily basis to the sub-county and district revenues.

In general, some of the reasons advanced by fishing communities for their level of poverty seemed genuine while others were not. The net income earned by these groups on a daily, monthly and yearly basis is sufficient to take them out of poverty. It looks likely therefore that nature, wealth and power issues aside; behavioural aspects explain why fishing communities are entangled in a vicious cycle of poverty. Transforming these communities will require a combination of interventions mainly focusing on shifting the behaviour of these communities and cultivating a culture of saving and investment.

CHAPTER 5:

5.0. Power and Governance Issues on Lake George Fishery

5.1.1. Policies/guidelines in place to manage Fisheries



Institutional power – A meeting of fisher folk at Mahyoro fish landing site

The policies for management of fisheries resource stem from the overall national policy for poverty reduction, the Poverty Eradication Action Plan (PEAP). The management of Lake George fishery is guided by the National Fisheries Policy (2004) and regulated by the relevant provisions in the Fisheries Act 1997 and the Fish (Beach Management) Rules 2003. The key provisions within the Local Government Act of 1967, which were

revised in 2005, support these rules and regulations. At the landing site level, BMUs provide governance over the fisheries resource. Furthermore, Local Councils (LCs) wield power over governance beyond natural resources. Beyond the two power centres are councils at the sub-county and, the district, local government chiefs, and fisheries managers at the centre.

5.1.2. Powers of the Fisheries Officers

The BMU rules confer power to BMUs over ownership and management of the fishery resource. They have the powers to enforce rules and apprehend the culprits on behalf of the Chief Fisheries Officer. Their capacity to enforce rules, however, is limited by inadequate financial resources. Institutionally, fisheries management at the centre is vested in the Department of Fisheries Resources (DFR) under the Fisheries Act. At district level, DFR links with the District Fisheries Office under the office of the Chief Administrative Officer to manage fisheries resources. At community level, fisheries management is undertaken by the Beach Management Units.

5.1.2.1. Performance of BMUs

The BMU chairperson his/her selected committee members carry out patrols over the lake so as to catch fishers using illegal fishing methods. However, BMU enforcement expeditions to Lake George were reported to be frustrated and undermined by the selfish and counter measures of other BMUs constituted by individuals who are less keen and vigilant on combating illegal fishers and destructive fishing gears. Strict BMU chairpersons are reported to be hated by their counterparts from other landing sites, especially if they were vigilant and thorough in doing their work. In some instances, this has resulted into fights on the water as the pro-conservation chairmen battle it out with their counterparts who support and/or promote illegal fishers. It is beyond doubt that illegal fishing methods/gears accelerate resource depletion as many fish flies are killed before maturity. This leads to a reduction in fish catches and dwindling incomes, hence deepening poverty levels in fishery-dependent communities. Therefore, BMU chairmen need to be empowered and facilitated as they execute their enforcement role by providing them with logistics and security (police/LDU escorts) for protection. Fishers informed the research team that during 'Yassin's patrols'³⁰ there was plentiful of fish in Lake George. Even when Gen Kazini³¹ stopped fishing activities on the lake as he battled ADF rebels, the lake regenerated with fish as result of the temporary closure.

Fishermen were asked to compare the work of the BMUs with the time when the lake was centrally managed by the fisheries department. They revealed that under the past 'command-and control' method, the fishermen would know when the person in charge would come to carry out patrols on the lake, and would thus ensure that they did all their illegal activities before this person would arrive. However, with the BMU officials that are always on the lake, if sufficiently empowered, they were reported to be right people to enforce the laws and regulations regarding the use of the lake.

5.2. Power Relations between the Different Actors

It is critical to understand the relationship between the various actors and the resource as well as the nature of wealth distribution among actors and the distribution of power. Together with decision-making authority, these are essential pre-conditions for establishing a fish management regime that responds to the current rates of resource depletion and achieving poverty eradication among fishing communities.

³⁰ Yassin was the head of the *Operation Save Samaki*, an enforcement expedition to rid the lakes of illegal fishing and trade activities on behalf of the Department of Fisheries Resources.

³¹ General James Kazini was the overall commander of the Uganda People's Defence Force (UPDF) that fought the anti-government rebels of the Allied Democratic Force (ADF).

5.2.1. BMUs and LCs

The BMUs and the Local Councils work together to ensure proper management of the lake. When one intends to start fishing activities on the lake, they have to make their intentions known to the LC I, and then to the BMUs. It was also mentioned that the LC I defence secretaries usually assist the BMU chairmen whenever they are carrying out patrols on the lake. It was noted that in some places, the working relationship between the BMUs and the local council was good, while in other fishing landing sites, there was friction between the two bodies. At Lambu fish landing site (Lake Victoria) for instance, a conflict was reported between the local BMU and the LC I as the latter tried to impose on the barias an extra charge of 5,000/= per month. The BMU committee refused to endorse the decision on the strength that the barias were already overburdened with taxes.

At the sub-county level (LC III), it was observed by the research team that BMUs around Lake George did not generally enjoy good working relations as depicted by the failure of the former to remit the 25% accruing from sales of the Fish Movement Permits. The failure to remit such monies frustrates and undermines the development of fishery development infrastructure along the landing sites thus worsening the working conditions and poverty levels of the local fishers. A case in point was the failure of one of the sub-counties (LCIII) to provide funds for the construction of a latrine at the landing site. As a consequence, this led to poor hygiene conditions as people resorted to defecating in the bushes and in the lake.

Information obtained indicates that there is substantial revenue remitted to LC-III and district local governments from different taxes and charges such as; user charges in form of tender fees, market dues, boat licenses and fisherman's permit. The previous analysis indicates that these fees amount to 2% of the value of landings. Not only were the communities expected to receive services in return for the taxes they pay, but also local government regulations require that a proportion (25%) of the collected revenue be remitted back to LC I. However, the reality in a number of visited communities reveal that power wielding LC-III and local governments hardly remit the 25% to the LC1 and in a few cases where this was done; LC1 officials did not disclose the amounts.

5.2.2. BMUs and Local Politicians

Respondents observed that their fore fathers were able to use the lake sustainably, considering the fact that their children and grand children would benefit from the same resource base. Discussions pointed out the role of politics in the over-exploitation of the lake, whereby local politicians are reported to only consider their immediate benefits and use their positions to exploit the lake. A case was mentioned where, at the beginning of 2006, local politicians who opportunistically

feared the impact lake patrols would have on the voting patterns banned all patrols on the lake. It was reported that during that season, a lot of illegal fishing took place that led to over-exploitation of the fishery resources. It is significant to note that political interference in the BMU activities demoralises BMU leaders and undermines their enforcement functions. A number of instances were given where local politicians freed arrested illegal fishers and those caught using destructive fishing methods as a way of gaining 'political capital' at the expense of nature and people's livelihoods. As a consequence, use of illegal and destructive gear had resulted into reduced fish catches and a corresponding reduction in fish-related incomes among the fishing communities.

5.2.3. BMUs and Barias

One of the emerging power struggles between barias and other actors is related to their numerical strength and therefore, ability to determine who becomes a BMU chairman. The BMU chairman is seen and considered to be influential in determining the shared revenues of the landed catches between the boat owner and the barias. The chairman also has substantial powers over resource management, which again influences resource sharing. The non-barias argued that a BMU chairman, who is originally a baria, is not strong in enforcing fisheries regulations since, after all, the fishing malpractices often benefit him (baria) and other members of his category. The research team was informed of BMU committee members who condoned illegal fishing activities, if they have any intentions of contesting for the BMU posts in the future. In this connection, there is collaboration between the barias and the BMUs to allow the former carry out their illegal fishing activities if BMU committee members are to be voted back to office.

Therefore, it is through condoning illegal and destructive fishing methods that fishery resources have been depleted resulting into smaller catches and correspondingly smaller incomes. Besides, this has a spiralling effect as it intensifies the catch of immature fish, which further destroys the resource base thus entrenching the poverty syndrome.

5.2.4. Barias and Boat Owners



An FGD with Boat Owners at Kasenyi fish Landing Site

Power, as wielded by boat owners and barias, influences resource management, ownership and distribution of gains. Power in this case is a function of each individual's inputs into the business. The boat owner, being the owner of the fishing gear and thus the employer of the baria, commands more power and thus benefits from the business. It is important to note that the advent of the BMUs reduced the powers of the boat owners. However,

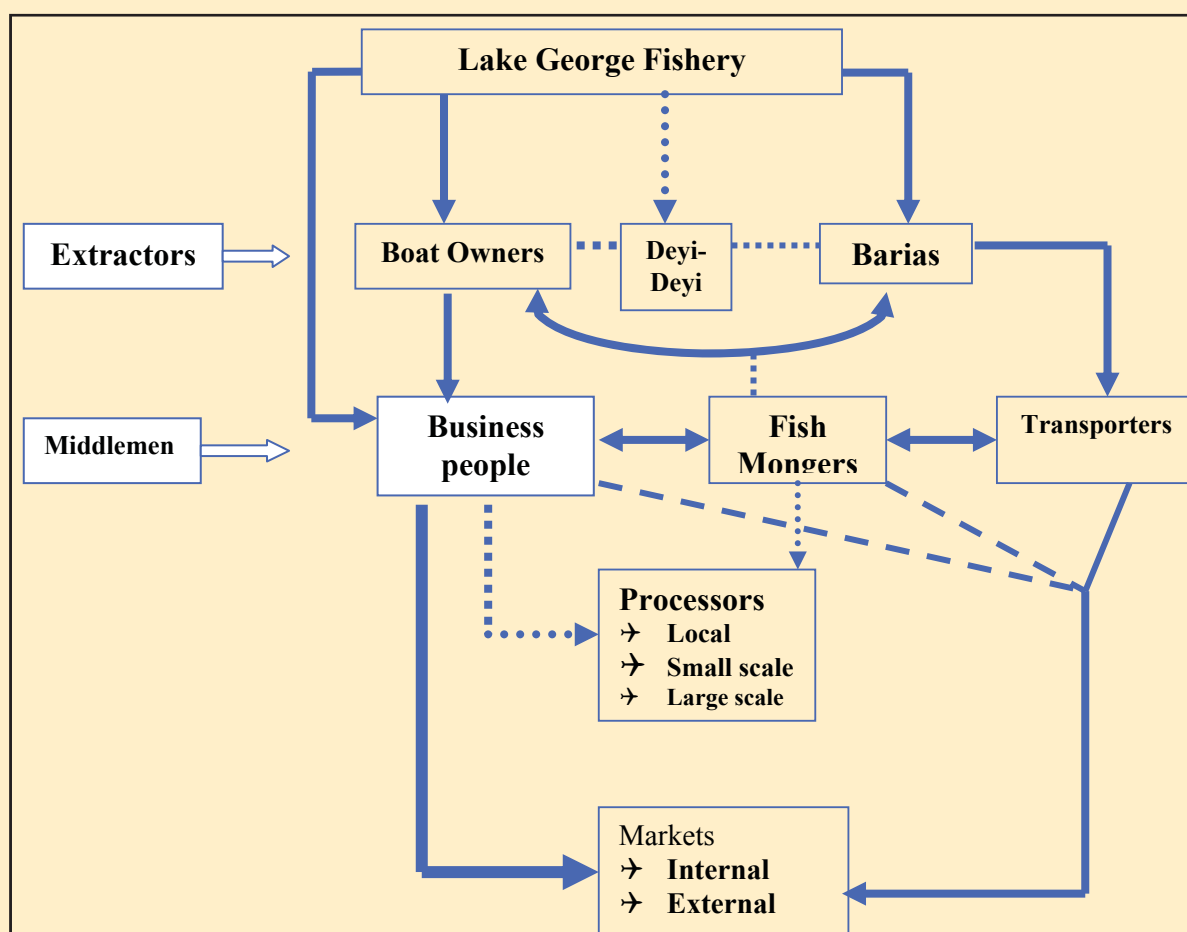
being the owners of capital, boat owners still wield sufficient power since they can hire and fire Barias.

Furthermore, it was found that the ascendancy into BMUs positions of power by Barias eclipsed the traditional leaders-Gabungas- (most of whom were boat owners) who used to be custodians of fisheries activities. Therefore, some respondents were of the view that traditional leaders wield a wealth of knowledge about the management of the lake since they had stayed and lived on the lake longer than any other category. Notwithstanding the Gabungas' experience and knowledge, the new democratic system of having all stakeholders on the landing site represented in a BMU is a superior arrangement.

5.2.5. Sharing Arrangements

The sharing of revenue from the catch was found to be by mutual agreement between boat owners and barias. This sharing arrangement was often uniform on a particular landing site, but would vary from other landing sites. In spite of this formal sharing arrangement, some barias tend not to declare all the catch but sell it to on the lake fish traders and/or unofficial landing sites. This unfair advantage to the boat owners helps the barias to get more income though it is still not translated into a change in their wealth status. With skewed power relations between the different participating categories in resource distribution, there was bound to emerge inequities in fish- related income distributions.

Figure 4: Illustration of Linkages between Actors and Levels of Power on Lake George Fishery



Constructed by researchers of this study

5.2.6. Barias, Boat Owners and Resource Conservation

Being owners of capital, boat owners have a natural propensity to conserve resources and hence engage in legal and acceptable fishing methods. On the other hand, barias argue that they are better law enforcers since they do not own anything and thus will not try to protect the interests of their property, for example the wrong sized fishing nets. While both categories put forth good arguments of practising pro-conservation fishing, the research team established that the two groups exaggerated their innocence. Out of greed for increased incomes against the background of a diminishing resource base, boat owners and barias resort

to using illegal and destructive fishing methods and practices to out compete. Besides, the 'open access' property regime prevailing on the lake is far from being an optimum environment to mitigate against destructive fishing.

5.2.7. Challenges Facing the BMUs

Some BMUs were found to have been facilitated by the district to carry out patrols on the lake to ensure that the recommended fishing gear are used for fishing as well as ensuring that no unlicensed boats and barias operate on the lake. However, these efforts were found to have always been frustrated by the fact that not all the BMUs are logistically and financially facilitated to carry out these patrols. For example, some BMUs have no motorboats to use to patrol the lake. The following statement can best reflect the state of affairs at the district;

*"Can you imagine the DFO has only been provided with 2,000.000/= for a whole year to do his job!' As a production officer (over all co-ordinator), I have been allocated only 1,700,000/='. 'So, how much can we achieve?' Most of the district budget is constituted by conditional LGDP and internally generated funds go to fund political and administrative allowances"*³²

Logistical and financial resources aside, it was further noted that the failure of other BMUs to perform arise out of greed and selfishness on the part of the committee members which drives them to participate in and/or abett illegal and destructive fishing practices. Therefore, while BMUs on some landing sites are vigilant in carrying out their due activities, those of other landing sites are not fully committed to perform the job. Overall, the fisher folk appreciates the emergence of BMUs as a forum for them to have a say in the management and decision making on issues concerning the lake. However, it is noteworthy that successful management of the lake resources requires a concerted effort by all BMUs of all the landing sites.

5.2.8. Fish Policies and Guidelines

Fishing communities are aware and appreciates the fishing policy that advocates for the use of at least a four and a half inch fishing nets. However, fishermen continue to default on observance of these regulations. The major reason advanced for their refusal to adhere to the policy is that when such nets are used, few or no fish at all would be harvested yet they sometimes would have taken advance payments/loans from boat owners for which they had an obligation to pay back. Discussions revealed that some of the BMUs and District Fisheries Officers are weak. This requires a lakewide regulatory body which can uniformly enforce fishing regulations if the resource is to be sustainably utilized.

³² Key informant, Kamwenge district, 27/03/06

5.2.9. Administrative Rules Governing Fishery Resources

It was observed that as a consequence of the Decentralization Policy, the three local district administrations of Kamwenge, Kasese and Bushenyi assumed the managerial duties that had in the past belonged to and exercised by the Central Government. Although decentralisation, in theory, brought power closer to the people, it had, in the case of Lake George tended to aggravate resource use conflicts among actors. For instance, each district has the powers to make decisions and its bye-laws to be operationalised in its territorial jurisdiction. Not infrequently, inter-BMU conflicts had been reported as one or more BMU in different districts enact rules that contradict the Fish Act (1967). A case was given where BMUs in Kamwenge district were making bye-laws authorising the use of 3 inch nets while Kasese district BMUs were insisting on using 4 inch nets. This contradiction in the by-laws would definitely result into resource use conflicts. It was also noted that the existing BMU structures could not adequately adjudicate a conflict between fishers resident in two or more districts. As one respondent inquired,

“If some one from Kasese has a problem with some one from Kamwenge over the lake, where does he report to? No where”³³

It is important to note that failure of the BMU structure to adequately resolve inter-district fishing disputes exerts a big toll on resource utilisation and management. There is need to harmonise the activities of all the BMUs in the three districts surrounding Lake George by strengthening LAGBIMO.

5.2.10. Tenders

The research team established that tenders for revenue collection at fish landing sites go to individuals who were said to be outsiders. BMUs were said to have never won any tender in spite of the fact that the local residents conversant with the fishery constitute them. The fishermen are obliged to pay to the tenderer, 500/= Uganda Shillings per landing regardless of if one has caught fish or not. This was considered unfair owing to the fact that the fish catches were not high. Therefore, fishers suggest that if the BMUs could be awarded the tenders, they would be in a position to consider those fishers that have not caught fish on a particular day so that they do not charge them landing fees. Moreover, the would be profits of a tender holder would be used by BMUs committees to administer BMU activities such as enforcement of regulations. However, the respondents also recognized the fact that BMUs would not fetch as much money as would be expected if the tenders were won by a private company or individual as the BMUs would compromise a lot.

³³ FGD Participant, Kayinja, 24/03/06

Members of the local fishing communities mentioned that the monies collected from the fishers go to the district, but they are not aware of any way in which they benefit from this money. A few individuals, however, said that they were aware that a certain percentage of the collected revenue was supposed to be brought back to the landing site, but they were not aware whether it was being remitted.

5.2.10.1. Delays in Giving Licences and Permits

Some landing sites reported delays in the issuance of fishing licences and permits, which to some extent hamper the monitoring and control of fishery activities on the lake. One DFO acknowledged this problem but promised that since a tender to supply such documents had been identified, they would be availed to the fishers as soon as possible. In the meantime, fishing was going on unregulated, as it should be if all fishers were issued with fish permits and boat licences.

5.2.10.2. Institutional Conflicts in Management of Resources

5.2.10.2.1. UWA vs DFR: A case of Queen Elizabeth Protected Area

In this section, we report on the interplay between nature (environmental management), wealth (economic concerns) and power (governance) in exploitation of Lake George basin resources, mainly of fish and wildlife.

Queen Elizabeth National Park gazetted a stretch of about seven kilometres along the Kazinga Channel sanctuary as a fish-breeding area. Unfortunately, this reduced fishing grounds available for fisher folk on the lake³⁴, thus prompting a conflict of interests between the UWA and DFR. One respondent complained to the research team thus;

“The money we pay for the fisherman’s licence does not tell us that there is need to consider part of the Channel as a breeding area... the licence is for fishing along the whole of Kazinga channel... Unfortunately, If you are caught by UWA fishing in the fish breeding grounds of the Channel, you are either killed or if you are lucky, you are imprisoned for one year as a poacher...”³⁵

Local fisher folk who have been staying with the natural resources (wild life) for a long time felt cheated when they were prohibited from exploiting the resource, yet outsiders poached the animals. They reported that in a case a fisher was caught

³⁴ UWA has gazetted off 7 kilometres of the Channel

³⁵ FGD, Participant, Katunguru K, Kasese district, 23/03/06

fishing in the prohibited area, he would often be arrested, beaten, his fishing gear and boat confiscated for one month and sentenced to a prison term of three years. On the other hand, if a poacher was caught, he would be sentenced to one month. They castigated the tendency of the UWA wardens to turn arresting fishers into a 'business' of extracting bribes to be released by demanding as much as 300,000/= Uganda Shillings. The fishermen pointed out that the management of UWA is making their work hard as they harass them even when they have not got them in the wrong. They further expressed the need to use two islands of Rwebitookye and Butonga in the middle of Lake George, to anchor in case of strong winds on the lake.

5.2.10.2.2. Conflicts between the Park and the Fishermen

The chief warden of Queen Elizabeth national park informed the research team that arrests of illegal fishers is done in collaboration with BMUs. He noted, that it was not in the interest UWA to enforce the Fisheries Act. Therefore collaboration was based on mutual understanding. He noted that the two islands where illegal activities take place in the Channel were part of the park. He mentioned that apart from illegal fishing around the islands, they also served as hideouts for illegal boats³⁶ and undersized nets. He explained that the hideouts are illegally created by lawbreakers who take refuge there running away from their criminal activities. He noted that in most cases these fishers are found engaged in illegal activities such as roasting game meat, cutting poles/trees and/or preparing nets³⁷. Additionally, some fishers are often caught with "poachers' tools" (guns, wires, nails etc.)³⁸. This increases suspicion and hence arrests since such tools are not part of a fisherman's standard gear. Besides, he observed that fishnets entangle and disorganize boats carrying tourists along the channel.

The chief warden said that the Park had entered into agreement with the local government whereby certain areas came under the jurisdiction of the Park. The research team informed the Chief Warden of fishers' complaints including crocodiles eating fish and human beings. The chief warden was of the view that he had no special interest in protecting fishers against crocodiles since that was an occupational hazard

The chief warden disputed the fishers' excuse that they use landing sites on the islands in order to escape from heavy winds on the channel. He argued that the section of the channel mentioned did not suffer from strong winds. The chief warden informed the team that in order to avoid conflicts, they stopped local

³⁶ In local language, such nets are called 'number zero'.

³⁷ That fishers prepare nets in hideouts is an indication that these are illegal and small in sizes.

³⁸ These are used to trap wild animals

people from cultivating crops since UWA would not be in a position to compensate farmers against losses in case of crop destruction by wild animals. Besides, the areas seen by local people as cultivatable land are sanctuary areas where crop production was regulated under UWA's mandate.

The research team observed that there was need on the part of UWA and the DFR to iron out matters that affect fishermen operating on the Kazinga Channel. The local fisher folk argue that the gazettement of the Channel by UWA reduced their fishing grounds by about seven Kilometres. Moreover, the fish permits given to the fishers allow them to harvest fish along the entire channel. This practically leads to loss of fish catches and hence worsens the socio-economic livelihoods of the local people.

5.2.11. Fisheries Co-management

Co-management entails the integration and application of both scientific and traditional knowledge to conserve and manage fisheries resources, by allowing the devolution of much of the decision-making and data collection to the communities living in the area (Gallaughier and Vodden, 1997; Johannes, 2001; Phelan, 2003; Lydon and Langley, 2003). Co-management is not a regulatory technique but should be conceived *"as flexible management structure in which action in participation, rule-making, conflict management, power-sharing, leadership, dialogue, decision-making, knowledge generation and sharing, learning, and development among resource users, and stakeholders and government is provided and maintained"* (Pomeroy, 1998:72). Fisheries co-management forms part of integrated lake management and empirical evidence demonstrates that centralized approaches to fisheries management have not prevented fish stocks from declining and livelihoods being threatened. To this end, fisheries co-management approaches are being proposed extensively in Uganda to improve fisheries governance, resource productivity and livelihoods.

Initially, fishing communities were not involved in fisheries management or setting rules and regulations nor were there any efforts to harness and build on the knowledge and experiences of the local fisher folk. Also, communities are not powerful enough to demand for quality services that could help reduce their income poverty. Since the Beach Management Unit legislation is in place, there is a massive opportunity to reduce poverty amongst these resource dependent communities by adopting a management model that puts fisher folk at par with other stakeholders including Government. With active involvement of fisheries communities in management of the resources upon which their livelihoods depend, it is expected that illegal and harmful fishing practices will be reduced; resource productivity will increase resulting in higher fish catch and incomes.

5.2.12. Traditional Knowledge

Various concerned parties like ILM, CARE, LAGBIMO had put in efforts to save the lake but this had been in vain. Discussions with fisher folk revealed that the lake is dying off, and there were indicators to support this. The number of catches were gradually reducing to the extent that at times the fishermen did not catch any fish, in some cases. According to the fisher folk, the intervening parties had insisted on holding seminars to train the fishermen about the right fishing methods which were dreadly known to the local communities. They were born near the lake and had been fishing for their entire life time. This complaint is epitomised by the following statement,

“Seminars cannot benefit fishermen, even long before education came; people were well knowledgeable of the dynamics of the lake”³⁹

The research team contends that co-management should not only allow fishers to participate in the management of their resources, but must necessarily harness the local/indigenous knowledge of the local resource users.

The fishers argued that the best way to support them save the lake would be by assisting them to buy the right nets rather than to ‘train’ them in the right fishing methods. They pointed out that it was rather expensive to buy, for instance, six-inch nets as they are generally poor. If given assistance in buying the right sized nets, the fishermen claim that they would take the initiative to ensure that no one uses the wrong nets. The research team partly concurred with the local fishers that their local/indigenous knowledge has not been fully tapped in searching for sustainable management of the fisheries resources.

5.2.13. Local Fishing Communities and Conservation Efforts

5.2.13.1. Regulation of Fishing Time

The research team noted that to some extent, the fisher folk make conservation efforts in order to make fishing activities sustainable. For instance, on some landing sites, fishers were retiring from fishing at 9.00 a.m. and would go, sleep and resume their activities in the evening. The fishers assured the research team that such a measure reduced the intensity of fishing activities on the lake.

5.2.13.2 Participation in Enforcement Patrols

Some other fisher folk reported that they participate in BMU lake patrols to enforce the use of legally accepted fishing gear.

³⁹ FGD participant, Kasese district, 24/03/06

5.2.13.3 Limiting the number of boats on the lake

Fishers informed the research team that they accepted a proposal of limiting the number of fishing boats on the lake. For instance, there were 30 registered fishing boats at Katunguru B landing site owned by 46 people (boat owners). This implied that some boats are owned jointly meaning that the number of boats can be limited but owned jointly. This has the potential to reduce the pressure on the lake and its resources.

5.2.13.4. Rules and regulations

Fishermen assured the research team that they follow rules and regulations, and those who fail to abide by them were arrested, disciplined and/or punished accordingly in the courts of law. They said that they police one another and concede that while the rules are apparently restrictive in the short run, they have proven to be beneficial to everybody.

With the introduction of BMUs, there had been efforts to conserve the resource. BMUs are charged with overseeing the management and use of the resource at the landing sites. The introduction of membership fees (for one to be a member of a BMU) is also considered as a means to conserve the lake. Boat licenses and fisherman's permits also served as a means to regulate access to the waters.

Some BMUs had been facilitated by the district to carry out patrols on the lakes to ensure that the recommended nets are used for fishing as well as ensuring that the licensed vessels and bariaas are on the lake. However, these efforts have always been frustrated by the fact that not all the BMUs are facilitated to carry out these patrols.

CHAPTER 6:

6.0. Conclusions and Recommendations

6.1. Conclusion

From the analysis of wealth aspects in the commodity (fish) chain, it is evident that fishermen are not poor based on their daily income. Behavioural aspects in the fish product chain, notably lavish expenditure on sex workers and alcohol explains why these actors are poor despite daily earnings which are above 1 US \$ per day per person. This to some extent explains why previous community development interventions in many African countries have failed to produce sustainable results in the areas of natural resource conservation.

Investments to increase the economic value of natural resources (in this case fish) *per se* might not lead to poverty eradication and environmental sustainability. Wealth arising from Lake George is not little. In spite of the fact that fish is an important resource with potential for wealth creation, the socio-economic status within fishery-dependent communities on the lake reflects a different reality. The main wealth conduits, especially Barias and Deyi-Deyi, are characteristically poor. The overemphasis on resource conservation without corresponding emphasis on the power, economic relations and behavioural patterns among the actors largely account for the perceived marginal successes. Barias who are the biggest group of actors on Lake George in particular and all fishing communities in general have work routines that are replete with risks such as drowning, piracy, attacks by wild animals, extreme weather conditions etc. As a consequence, they spend their incomes lavishly. Their inability to save and invest part of their daily incomes is backed by a false belief that the lake has infinite resources. It is such wasteful lifestyles that render such actors to appear as characteristically poor.

The Lake George experience explains why fishing communities of other Lakes mainly in Uganda remain poor despite the several interventions in conservation and wealth of the fisheries resources.

6.2. Recommendations

- Future research could elucidate more on the behavioural aspects of living in a fish-landing site. Government interventions should not focus on conservation of the natural resource alone but should also focus on the behaviour of the actors.
- Given the high population of fishermen on Lake George and declining fish stocks and in an effort to survive, the lake-dependent population tended to use unauthorised fish gear to maximise their catches. Unfortunately, the

end-result is over-fishing the lake. Sensitisations through seminars to train the fisher folk on the lake about appropriate fishing methods is conceptually not helpful since they indeed have a wealth of knowledgeable about the lake and fishing. The Government through the Ministry of Agriculture, Animal Industry and Fisheries must take up and champion sustainable fishing so as to assist the population to procure fish nets of right sizes. Many fisher folk were of the view that what they needed more was not training and seminars but right-sized fishing nets.

- An increasing population within different landing sites threatens Lake George resources. Too many people were chasing a few fish in the lake, hence compromising the nature of the natural resource. A solution that should be taken up by government through BMUs is to support some fisher folk like Barias and Boat Owners to diversify to other economic activities like rice-growing so that the current pressure exerted on the lake is reduced.
- To the ministry in-charge of '*Bonna bagagwale*' (Micro-Finance), it is important to establish Beach Banks in Fishing villages so that a culture among fisher folk of saving is cultivated. Fisher folk's concerns about the need for a manageable loan scheme would also be addressed in such an arrangement. The type of loans that would be helpful in fishing communities are those that would make it easy to acquire right-sized fishing nets and life jackets. It may even be a good idea to give fishermen nets instead of money to buy nets.
- Though BMUs are better positioned to protect the lake, they lacked the necessary facilities like motor boat engines and fuel to do the required patrols which abetted illegality in fishing methods and over-fishing. Another weakness was absence of coordination between different BMUs on the lake. While some were vigilant in dealing with illegal fishing, others were not, yet the lake is one-ecosystem without boundaries. Therefore, the concerned District Fisheries Officers in the three districts of Kasese, Bushenyi and Kamwenge need to cooperate, coordinate all BMU activities and be vigilant to serve and save the lake from over exploitation.
- It was found out that many people in the fishing villages who were supposed to be members of the BMU assembly did not understand the rules and regulations governing BMUs. For instance, very few people appreciated the fact that BMUs had the right to have more meetings than the stipulated minimum in the BMU guideline. They were also not sure of the percentage (25%) of money that each BMU was entitled to from the Fish movement permits fees. Therefore, government through DFO's should support less costly sensitisation programs to these fishing communities.

- BMUs had financial difficulties yet they are mandated to provide a number of services to their communities. They are better positioned to ensure sustainable exploitation of fish, the natural resource. Beneficiary districts of Lake George would benefit a lot if responsible BMUs are awarded tenders to manage fish-landing sites by their respective districts. The innovation would provide to BMUs the much-needed money to enable execution of their mandate. Given their vested interest in well being and sustainable stability of the Lake, BMUs are better managers of the lake than private tenderers who do not have a good appreciation of fishing dynamics and are driven by profit maximisation intention rather than a mix with resource conservation.

- Since Lake George's potential of fish is getting overstretched without a short-term workable measure to conserve the resource, it is a worthwhile undertaking for government to initiate a consultative process of putting in place "closed seasons" so as to allow the lake to regenerate. In addition to closed seasons. There is a need for sensitization of local fishing communities in sustainable resource (fish) use and management.

- The Role and capacity of LAGBIMO - an umbrella organization that brings together actors in the management of Lake George, - and whose membership straddles the three districts of Kasese, Bushenyi and Kamwenge should be strengthened. However, given logistical and financial constraints, the organisation was not able in ensuring effective management of the lake. Though it had motorised patrol boats on some fish landing sites, they were at times not doing their mandated roles due to lack of a constant supply of fuel. Therefore, it is important to strengthen such an inter-district organisation in order to coordinate inter-district BMU activities. LAGBIMO is a better body to enforce fishing standards on the lake because it is free from political interference.

- Given the constant conflicts between fisher folk on Lake George and UWA, whose mandate is for all wild life in the adjacent/surrounding national park, it is important to have a long standing coordination and conflict resolution mechanism. For instance, the fishermen's request to be given permission to use Butonga and Rwabitokye islands in the middle of the lake as resting places against strong winds looked genuine until UWA officers clarified that such a place was being used as a den of illegal fishing activity and roasting poached game meat. We propose that with the BMU framework and LAGBIMO, mechanisms be established to sort out emerging any prevailing conflicts.

- It is also suggested that district Councillors of the three districts be trained in fishing matters soon after assuming political offices. It is important to note that the turnover of those political leaders is high because of the political processes of limited terms of service and seeking re-election. Therefore, after every round of voting, the new group of district leaders should be trained. Fisher folk noted that many politicians whose policies affect their activities did not appreciate the Social- economic dynamics of fishing as an economic activity.
- Whereas it may be of value to have a representative of fishing communities at the district to articulate fisheries issues as suggested by the respondents, our feeling is that the 'ball is in the court' of such communities who elect their representatives to elect people who can voice their concern.
- Although there was constant fishing data collection at fish landing sites, many fisher folk expressed ignorance about the use of such data. Therefore, fishing data collected at the landing sites should be explained by DFOs, especially how it benefits fishing communities.
- Other appropriate recommendations include;
 - Fishery Departments in concerned districts should enforce good fishing practices. Fortunately, it was noted that the lake is small and has rapid fish stock recovery.
 - The fisher folk, especially baria need serious sensitisation for purposes of cultivating and developing a saving culture. This is the challenge for fishery managers in the three districts
 - DFOs must re-energize and strengthen baria's associations, which used to exist and provide a powerful voice but had weakened.

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