DISTRIBUTION OF ECONOMIC BENEFITS FROM THE FISHERIES OF LAKE VICTORIA

By

Konstantine O. Odongkara[1], Richard O. Abila[2] and Paul O. Onyango[3]

[1] Fisheries Resources Research Institute (FIRRI) P.O. Box 343 JINJA, Uganda
[2] Kenya Marine and Fisheries Research Institute (KEMFRI) P.O. Box 1881 KISUMU, Kenya
[3] Tanzania Fisheries Research Institute (TAFIRI) P.O. Box 46 SHIRATI, Tanzania

This paper is published in: *LVFO (2005). The State of the Fisheries Resources of Lake Victoriaand their Management: Proceedings of the Entebbe Regional Stakeholders' Workshop. 24-25 February 2005, Entebbe, Uganda. ISBN: 9970-713-10-2 (Pp 124-131).*

Key words

Economic benefits, Disparities, Distribution, Equity, Poverty, Gross domestic Product

Abstract

The Lake Victoria fishery contributes immensely to the socio-economic development of the riparian states. The East African Community has designated the lake basin as an 'economic growth zone', with the potential to develop into a major economic region. The fisheries are vital in creating employment opportunities, mostly rural-based, thereby helping to reduce rural-urban migration. Fish is also a rich source of animal protein for human consumption and provides raw material (fishmeal) for processing animal feeds. The fish industry contributes to GDP and has continued to be an important source of foreign exchange earned from fish exports. Besides, the fish industry contributes to the national and local government revenues through levying of various taxes, levies and license fees. The sector has also contributed directly and indirectly to the improvement of physical infrastructure and social facilities, such as roads, schools and hospitals, particularly in remote fishing communities.

Based on current stock estimates, the lake has the potential to yield fish valued at over US$ 800 million annually on a sustainable basis. Further processing and marketing the fish in the local and export markets could provide opportunity to

generate additional earnings. Currently, however, only about 500,000 tonnes of fish is landed annually, with an average landing value of approximately US$ 600 million.

However, the distribution of these benefits at the regional, national and individual levels is often not equitable. High disparities in distribution of benefits is considered undesirable as it creates a sense of social injustice among the beneficiaries; can be an obstacle for self-sustaining growth; is a limitation in uplifting the resource users out of poverty; leads to low compliance to fisheries regulations and hinders attaining sustainable fisheries exploitation. The paper assesses the distribution of economic benefits from the fisheries, using selected indicators. It reveals disparities in the benefits at the regional as well as at the local levels, with more benefits accruing to the upper levels of the fish marketing chain.

The disparities are attributed to unequal distribution in production assets such as capital, skills and credit facilities; free-market price determination mechanisms; inadequate access to market and other useful information; limited investment horizon and opportunities among fishers; inadequate policies to deal with disparities in distribution and insufficient data for distribution analysis to feed into the policy process.

In order to streamline distribution, the paper proposes, among other things; establishing suitable savings and credit schemes, empowering BMUs to organise fishers for marketing, improving market information flow through electronic and print, operationalising the Fish Levy Trust Fund for infrastructural and social facility development, improving policies and improving data availability.

INTRODUCTION

The Lake Victoria fishery contributes immensely to the socio-economic development of the riparian states. The East African Community has designated the lake basin as an 'economic growth zone', with the potential to develop into a major economic region. The fishery is vital in creating employment opportunities, mostly rural-based, thereby helping to reduce rural-urban migration. Fish is also

a rich source of animal protein for human consumption and provides raw material (fishmeal) for processing animal feeds. The fish industry contributes to GDP of the riparian states and has continued to be an important source of foreign exchange earnings through fish exports to the regional and international markets. Besides, the fish industry contributes to the national and local government revenues through the various taxes, levies and license fees. The sector has also contributed directly and indirectly to the improvement of physical infrastructure and social facilities, such as roads, schools and hospitals, particularly in remote fishing communities.

Lake Victoria is estimated to produce 500,000 tonnes annually, valued at US$ 600 million, with export value of US$217 in 2001 (LVFO, 2005). Based on current stock estimates, the lake has the potential to yield fish valued at over US$ 800 million annually on a sustainable basis. Further processing and marketing of this fish in the local and export markets can generate an additional value of about US$ 57 million.

Various goals have been considered to guide the utilization of Lake Victoria's fisheries resources. These goals derive from the definition of the concept of sustainable development in relation to fisheries, as provided for in the Agenda 21 of the Rio Conference. The Millennium Development Goals (MDG) of the United Nations provide for reduction in the number of people in extreme poverty and suffering hunger by half by the year 2015, eliminating gender disparity, ensuring environmental stability and developing global partnership for development, among others. Relevant elements of the Code of Conduct for Responsible Fisheries (CCRF) are also incorporated into national fisheries development and management plans (FAO 1995). At the regional level, the development strategies of the East African Community (EAC) identify Lake Victoria and its basin as an "economic growth zone" to be exploited in a co-ordinated manner to maximize economic and social benefits and at the same time provide environmental management and protection. LVFO's mission statement spells out its goal for Lake Victoria as "restoring and maintaining the health of its ecosystem, and assuring sustainable development to the benefit of the present and future

generations" (LVFO 1999). The draft Lake Victoria Fisheries Management Plan (FMP) seeks to contribute to development of sustainable fisheries by establishing a viable system for the management of the lake fisheries (LVFRP 2001). These goals are re-echoed in the national development programs and fisheries policies of the individual riparian states as spelt out in the Policy Mandates and Organizational Review Report for Kenya, the National Fisheries Policy for Uganda and the National Fisheries Sector Policy and Strategy Statement for Tanzania (MAAIF 2004, MARD 2000, MNRT 1997).

However, available information highlights the concern that the distributions of the benefits from the lake are not equitable within the riparian states, between communities, households and individuals.

Problem statement

There has been concern that the benefits from the fishery of Lake Victoria are not fairly distributed among the players. High disparities in benefits creates a sense of social injustice among the parties concerned, especially since fish is viewed as a common resource to be exploited for the common good of the people. The danger with such disparities is that they can be an obstacle to self sustaining growth of the region and may be a limitation in the uplifting of resource users out of poverty. Often they lead to low compliance to fisheries regulations by the fishers and hinder attainment of sustainable fisheries exploitation.

Effective interventions to address these problems requires sufficient information on the extent of the disparity, the people affected and their status, the types of benefits accruing from the system and how these are distributed among sub-sectors, gender and individuals and their policy implications. This paper, therefore, sets out to provide the necessary information by addressing a selection of key questions reflected in the study objectives.

Objectives

The overall objective of the paper is to provide information to facilitate formulation of policy to address disparities in the distribution of economic benefits from Lake Victoria. The specific objectives are as follows:

i) To identify the main economic benefits from the fisheries of Lake Victoria.

ii) To explain the concerns with disparity in distribution of the benefits.

iii) To show how the benefits are distributed between the riparian countries of Kenya, Uganda and Tanzania.

iv) To show how the earnings are distributed between boat owners and crew, between the sub-sectors and by gender.

v) To identify the challenges in ensuring equitable distribution of economic benefits on Lake Victoria.

vi) To recommend the way forward in improving the distribution of benefits.

METHODOLOGY

The information presented in this paper has been generated through different methods. Secondary data search was conducted by reviewing records of fishery related institutions at the local, national, regional and global levels. Literature review was carried out, involving reports from various studies in the region. Expert consultations were conducted with key informants at the different levels.

Definition of economic benefits

Generally, the benefits to the region, riparian states, communities, households and individuals accruing from the fisheries can be grouped under the following categories:

i) Economic
ii) Social
iii) Institutional, and
iv) Environmental

This paper is concerned with the economic benefits. These are defined as the gains in relation to wealth acquisition and its distribution to the nations, households and individuals.

At the national level, the economic benefits include:

i) Production, and its contribution to GDP, through primary, secondary and tertiary activities within the fisheries.

ii) Balance of trade as given by the difference between foreign exchange earnings and expenditures in fisheries, compared to the national levels.

iii) Public revenues less public expenditures in fisheries, compared to national budgets.

iv) Employment and job creation as indicated by the numbers directly and indirectly involved in the fisheries.

v) Food supply, given by the per capita fish quantities as well as the contribution of fish to animal protein at the national level.

At the household level, economic benefits include:

i) Earnings from fish production, processing, marketing and ancillary activities.

ii) Jobs accessed by communities by category of activities.

iii) Fish consumption as contribution to food security and protein intake.

At the individual level, the benefits are very much the same as at the household level. However, distinction needs to be made concerning access to the benefits by gender and age group.

RESULTS

Regional distribution of economic benefits

The major types of economic benefits are distributed between the riparian states in various ways. These distributions are to some degree related to the

proportions of water surface area of Lake Victoria within the different countries, namely Kenya 6%, Tanzania 51% and Uganda 43%. However, there are other factors influencing the distribution of economic benefits as discussed later in the paper.

Table 1 provides the indicators of distribution of the economic benefits between the riparian states, namely Kenya, Uganda and Tanzania. The highlights are as follows:

i) Production values relate closely to distribution of the lake between Uganda and Tanzania. However, in the case of Kenya, it is rather out of proportion with the water area within the country. Cross border fishing, fish trade and variations in fish prices are among the factors influencing production values of the countries.

ii) Contributions of fisheries to GDP data show similarity between Uganda and Tanzania but is much less in Kenya. This shows that fisheries contribute much less significantly to the national economy in Kenya than in the other riparian states.

iii) Recent frame surveys show that Tanzania has the highest number of people engaged in fishing, followed by Kenya and Uganda has least.

iv) Foreign exchange earnings are highest in Tanzania, followed by Uganda and then Kenya. However, it was not possible to make a comparison on the Balance of Trade due to lack of data on import of fishery inputs and repatriation of profits by investors in fish processing.

v) Per capita fish consumption is comparable between Uganda and Tanzania but much less in Kenya. This is attributed to the population size relative to fish catch.

vi) Similarly, contribution to animal protein is least in Kenya compared to Uganda and Tanzania. This shows that there could be more important sources of animal protein in Kenya than in the other two countries.

Distribution of earnings by sub-sector

Different people are involved in different activities within the fisheries. Differences in the earnings accruing from fish production, processing and marketing are indicated by Table 2. The table generally shows the following:

i) Fishing earns highest incomes to the operators, followed by fish processing while fish trading earns least.

ii) Within fishing, motorized fishing generates more earnings than non-motorised fishing.

iii) Among processors, those engaged in sun-drying earn more that those in smoking.

iv) In fish trading, earnings of bicycle operators and market stall-holders realize similar earnings.

As a result of inadequate data, other sub-sector enterprises could not be compared.

Distribution of earnings by type of fishers

As mentioned above, different types of fishers earn different levels of income, depending on the facilities influencing the prices they receive and the species they target. Table 3 gives indications of the disparities in earnings of fishers of different species operating at beaches served with different transport facilities. The table reveals that: truck beaches are sources of higher earnings to fishers than non-truck beaches, mostly due to the more readily available market and higher prices of fish. However, there is little impact on the earnings of tilapia fishers as much of it is ferried away by bicycles rather than trucks.

Figure 1 shows disparities in earnings by species targeted. The figure shows that fishers of Nile perch earn highest incomes, followed by those of dagaa while fishers targeting tilapia earn the least.

Distribution of earnings between boat owners and crew

An important distinction occurs in fishing between the boat owners and the crew. Fishing unit (boat) owners provide the investment, management and maintenance of the fishing units, also taking the risks involved. They normally await the return of their boat(s) on beaches where they check on catches, oversee catch sales and payment of the crew, and consider input needs such as fuel, net or boat repair. An average of 3 crew members work on a boat. The most common method of paying crew is to divide the catch value into agreed upon portions after deducting the expenses.

Table 4 gives the average proportions within which the net earnings from fishing operations are shared between boat owners and crew members. It should be noted from the table that although on average the earnings are shared equally between boat owners and crew, the share for crew has to be divided between 3 crew members, on average. That leaves each crew member with little earnings, thus explaining why the crew are among the poorest group within the fisheries.

Distribution of Nile perch value along the market chain

In order to assess the distribution of gains from Nile perch by the various players involved, prices were examined along the Nile perch market chain as presented in Table 5. The table shows that there is no evidence of undue disparities in the earnings of any particular group along the chain as fishers, middlemen and processing plants are paying/receiving prices which are moderately different.

Contribution to national economies

Fisheries have made important contributions to the social and economic development of the riparian states through linkages and externalities. In the absence of data, comparison is not possible. However, some of the areas of contribution are highlighted in Table 6. The table shows that development of the

fisheries has stimulated development in the areas of industrialization, infrastructure and social facilities.

Challenges in achieving equity in distribution of benefits

In order to identify the challenges in overcoming the disparities in benefit distribution, the major underlying factors were identified and analysed. They included:

i) Unequal distribution in production assets of fishermen, fish processors and traders. These include capital, equipment and skills.

ii) Free-market price determination mechanism, where the poor are subjected to unfavourable trading conditions and low prices.

iii) Inadequate access to sufficient market and other useful information, limiting the opportunities and choices among fishers.

iv) Lack of fishers' organizations to strengthen their market bargaining power and support their activities.

v) Limited investment horizon and opportunities among fishers, which hinders their capability to re-invest the surplus earnings from the fisheries most profitably.

vi) Lack of access to credits especially to fishermen to enable them improve on their operations and invest in alternative income sources.

vii) Lack of appropriate savings avenue and a savings culture among fishers for better utilization of earnings and saving for the future.

viii) Poor physical infrastructure to the fishing villages that limits the market for fish and results in low prices to the producers.

ix) Inadequate post harvest handling facilities and skills to ensure quality maintenance for better market and prices.

x) Inadequate policies to deal with inequitable distribution of benefits, for the good of the disadvantaged groups.

xi) Insufficient data and skills for distribution analysis to support the policy process.

CONCLUSIONS AND RECOMMENDATIONS

The main economic benefits from the fisheries of Lake Victoria at the regional level are production and contribution to GDP of riparian states, employment, foreign exchange earnings, contribution to diet. At the household and individual levels, the benefits take the forms of earnings, employment and consumption.

Disparities in income distribution is considered undesirable because it creates a sense of social injustice among the beneficiaries; can be an obstacle for self-sustaining growth; is a limitation in uplifting the resource users out of poverty; leads to low compliance to fisheries regulation and hinders attaining of sustainable fisheries exploitation.

Based on the findings presented above, disparities have been observed in the benefits between the riparian countries of Kenya, Uganda and Tanzania. Furthermore, earnings are inequitably distributed between the fisheries sub-sectors, between different fishery enterprises and between boat owners and crew. Due to insufficiency of gender disaggregated data, the distribution of benefits by gender was not conclusive. Factors responsible for the disparities have been identified.

In order to re-dress disparities, the following interventions are recommended:

i) Develop suitable savings and credit schemes run by micro-finance institutions, which are tailored to suit working conditions of fishermen.

ii) Empower BMUs to organise fishers for marketing as well as fisheries management.

iii) Improve mechanism for market information flow, covering prices, quantities landed at various beaches and number of buyers, through radio announcements and weekly newsletters produced by the Fisheries Departments/Divisions.

iv) Operationalise the Levy Trust Fund and utilize part of it for infrastructural development and provision of landing facilities such as fish banda, holding facilities, portable water and latrines..

v) Make provisions for fishermen to be trained in financial management and investment skills.

vi) In order to maintain quality, fishers' organizations should collect fish from their members by use of insulated boats, and provide them with ice.

vii) Improve policies at the national and regional levels to ensure that high disparities in the distribution of economic benefits do not arise.

viii) Improve data availability and analysis skills to support the policy process that ensures equitable distribution of the benefits from lake Victoria.

ACKNOWLWDGEMENT

The support provided by LVEMP and LVFO in producing the paper is appreciated. The authors are also grateful to Ms Valeria Mushi of the Fisheries Division, Tanzania and Mr. Boaz B. Keizire of the Department for Fisheries Resources, Uganda for reviewing the paper and making useful comments.

References

Abila, R.O., 2000: The development of the Lake Victoria fishery: A boon or bane for food security? Socio-economics of the Lake Victoria Fisheries. Report 8. IUCN Eastern Africa Programme.

Dhatemwa, C.M. and M. Masette, 2002: The Study of Fish Landing Beaches And Investment in The Fishery Of Lake Victoria. Submitted to Lake Victoria Fisheries Organisation, Jinja

EAC (East African Community), 2000: The Treaty for the Establishment of the East African Community, Arusha. AC:GTZ,2000 xiv, 111p; 230mm. (EAC Publication, No 1) ISBN: 99987-666-01-9

EPRC (Economic Policy Research Centre), 1999: Environmental impacts of trade liberalization and policies for the sustainable management of natural resources: a case study on Uganda's fisheries sector. UNEP. United Nations. New York and Geneva.

FAO (Food and Agriculture Organisation) Various records

FAO (Food and Agriculture Organisation), 1995: Code of conduct for responsible fisheries, Rome.

FAO (Food and Agriculture Organisation), 1999: Fishery country profile, Uganda. FAO Fisheries Department. FID/CP/UGA Rev.1.

FIRRI (Fisheries Resources Research Institute), 2002: Economic profiles of selected landing sites on Lake Victoria

FIRRI (Fisheries Resources Research Institute), 2003: Survey of the Regional Fish Trade

Keizire, B.B., 2003: Significance of fisheries to the economy; document to support the the Poverty Eradication Action Plan (PEAP): November 2003. Kampala, uganda

LVEMP/LVFRP (Lake Victoria Environmental Management Project/ Lake Victoria Fisheries Research Project): Lake Victoria fisheries frame surveys 2000, 2002

LVFO (Lake Victoria Fisheries Organisation), 1999: Strategic Vision for Lake Victoria (1999-2015)

LVFRP (Lake Victoria Fisheries Research Project), 2001: Lake Victoria Fisheries management plan. Technical Document No 16.

MAAIF (Ministry of Agriculture Animal Industry and Fisheries). 2004: The National Fisheries Policy.

MARD (Ministry of Agriculture and Rural Development), Kenya. Fisheries Department. Policy Mandates & Organisational Review Report. December, 2000.

MFPED (Ministry of Finance, Planning and economic Development), 2001: Background to the Budget, 2001/02. (Enhancing Economic Growth and Structural Transformation).

MNRT (Ministry of Natural Resources and Tourism) The United Republic of Tanzania. National Fisheries Sector Policy and Strategy statement, December 1997.

Odongkara, O.K. 2001: Poverty within the fisheries: Indicators, Causes and Interventions. Jinja, Uganda.

SEDAWOG (Socio-economic Data Working Group), 1999: Marketing study. LVFRP Technical Document No. 2. LVFRP.TECH/99/02.

Wegoye J. and M. Kaidhiwa 2001. Economic viability of fishing enterprises on Lake Victoria basin, Uganda to improve the income of conditions of artisanal fishermen.

Annex 1: Tables

Table 1: Distribution of selected economic benefits by state

Types of benefit	**Distribution**		
	Kenya	Uganda	Tanzania
Production (US$ Mill.)	115	156	180
Contribution to GDP	0.5%	1.5%	1.8%
Employment of fishermen (2002)	54,163	41,674	80,053
Foreign Exchange Earnings (US$ Mill)	50	88	112
Per capita Fish Consumption (Kg/year),	5	12	12
Contribution to Animal Protein (1994-97)	10.6%	29.7%	32.6%
Balance of Trade	N/A	N/A	N/A

Sources: FAO records, MAAIF, MARD, MNRT LVFRP, LVEMP, Bureau of Statistics.

Table 2: Average monthly earnings by sub-sector

Sub-sector	Earnings (US$)
Fishing	
Motorized	257
Non-motorised	110
Processing	
Smoking	179
Sun-drying	126

Trading	
Bicycle trader	25
Market stall-holder	24

Source: Odongkara 2001

Table 3: Average earnings (US$) by target species

	Nile perch fishers	Tilapia fishers	Dagaa fishers
Truck beach	473	97	296
Non- truck beach	384	102	93

Source: FIRRI 2002

Table 4: Share of earnings from fishing

	Boat owners	Crew members
Proportion of net earnings	50%	50%

Source: FIRRI 2002

Table 5: Prices received along the Nile perch market chain

	Fishermen	Middlemen/ Factory agents	Processing plants (FOB fresh fish equivalent)
Price (US$/kg)	1.0	1.1	2.1

Source: Various records

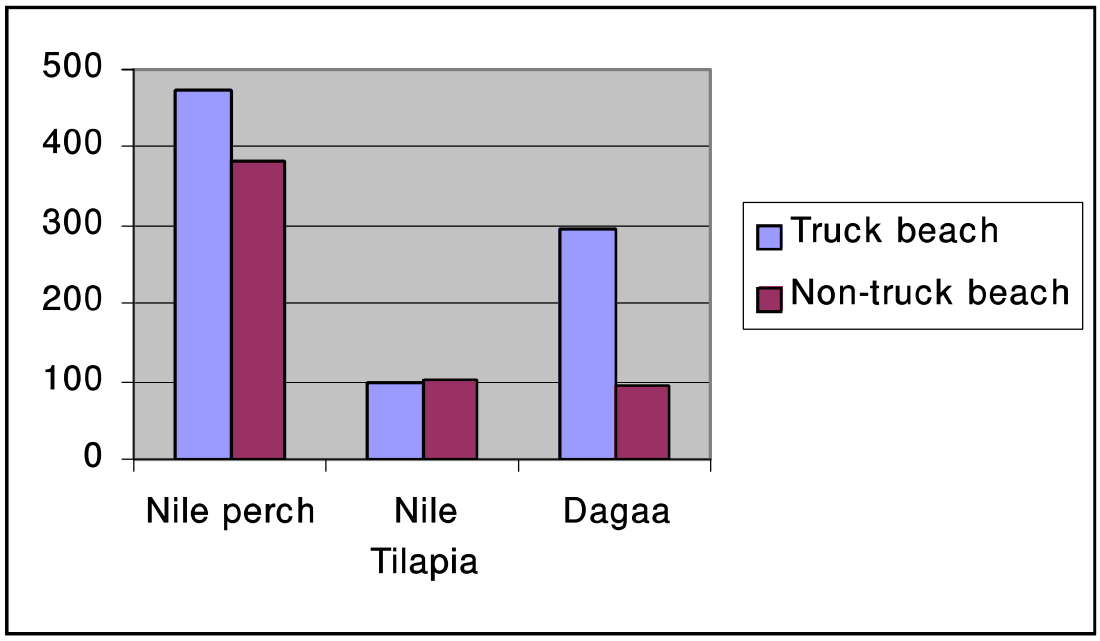
Table 6: Key areas of national contribution of fisheries

Industrialisation	**Infrastructural**	**Social Development**

	Development	
US$ 150 million investments in fish factories	Rural infrastructure (roads, landing facilities, water supply etc)	Schools, health centres and recreational facilities

Annex 2: Figures

Figure 1: Mean monthly incomes of fishing enterprises by species (US$)



Source: FIRRI 2002