



The Socio-economics and Alternative Livelihood Options of Fishers of Lake Victoria, Uganda.

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Abstract

The socio-economic status of the fishers in the Ugandan part of Lake Victoria was determined at two landing sites. Most fishers were males aged 29-38yrs while women were involved in processing and marketing. Fishing was the main source of income for more than 70% of fishers, most of whom were immigrants with only 16% being born in the lake basin. Although there was reasonable access to social services about 17% of respondents still lacked sanitation facilities. Some fishers were engaged in agriculture but 71% bought most of their food. A few respondents had acquired skills from extension services which could be applied to alternative livelihood options, of which poultry (25%), shop ownership (16%) and crop and livestock farming (16%) were the favoured options, but choices were limited by lack of capital. Government and other agencies should improve the fishers' access to capital and inform them of livelihood options to improve diversification.

Keywords: Fishers, Livelihoods, Socio-economic status, Uganda, Value addition

Introduction

Lake Victoria is the largest fresh water lake in Africa and a population of more than 35 million people live in its basin in the three Riparian States, Kenya, Uganda and Tanzania (LVBC, 2012). This population is growing at 3% per annum, one of the world's fastest growth rates (Awange and On'gan'ga, 2006), and many of them depend on the fisheries for their livelihoods. Fisheries make up 2.5% of the national GDP with Nile perch (*Lates niloticus*) and silver cyprinid (*Rastrineobola argentea*), known locally as *mukene*, being the most important species. The sector employs more than 3 million people with over 54,000 fishermen on the Ugandan sector of Lake Victoria alone. Fishing intensity has been increasing over time and signs of over-exploitation, such as a decline in fish biomass, size and age at first maturity, are becoming apparent (Matsuishi *et al.*, 2006). The decreasing catches of the Nile perch fishery, for example, is indicated by the fact that only nine out of 20 processing

plants in Uganda remain operational and these are operating below capacity (Dr. Edward Rukuunya, *pers.comm*). The *mukene* catch is estimated to be about 0.83×10^6 t but this cannot support the livelihoods of the population dependent on fishing. Poverty and unemployment levels are increasing while low technology and massive post-harvest losses, amounting to about 20% of the catch are affecting the fishery, while productivity is further reduced by the high prevalence of HIV/AIDS (10-40%). This paper assesses the socio-economic conditions of fishers and identifies alternative economic activities that could reduce fishing pressure in the Ugandan sector of Lake Victoria.

Methods

Data were collected from two of the largest landing sites on Lake Victoria in Uganda, Kiyindi and Kasenyi (Figure 1), using a questionnaire administered to fishers, including boat crew, boat owners and artisanal

processors. The study used both qualitative and quantitative methods which included semi-structured questionnaires, key informant interviews, focused group discussions and observations to collect data on the general demographics of the fishers, their sources of income and expenditure, nutrition and health facilities, sanitation and hygiene, asset ownership, alternative economic activities and many others.

Table 1: Socio-demographic characteristics of respondents from Kiyindi and Kasenyi Landing sites in percentages.

Variable	Category	Kiyindi		Kasenyi	
		N	%	N	%
Age (years)	19-28	14	35.9	7	24.0
	29-38	14	35.9	13	44.6
	39-48	8	20.5	5	17.1
	49-58	1	2.6	1	3.4
	>59	0	0	2	6.9
	No answer	2	5.1	2	6.9
Sex	Male	34	87.2	16	53.3
	Female	5	12.8	14	46.7
Marital Status	Married	28	71.8	22	73.3
	Single	6	15.4	0	0
	Divorced	4	10.3	6	20.0
	Widowed	1	2.6	2	6.7
Education level	No Education	3	7.7	8	26.7
	Primary lower	12	30.8	8	26.7
	Primary upper	7	17.9	8	26.7
	Secondary lower	14	35.9	4	13.3
	Secondary higher	3	7.7	2	6.6
	Respondent's place of birth	This village	6	15.4	5
Another village nearby	6	15.4	5	16.7	
This sub county	1	2.6	1	3.3	
This District	2	5.1	3	10.0	
Another District	24	61.5	16	53.3	

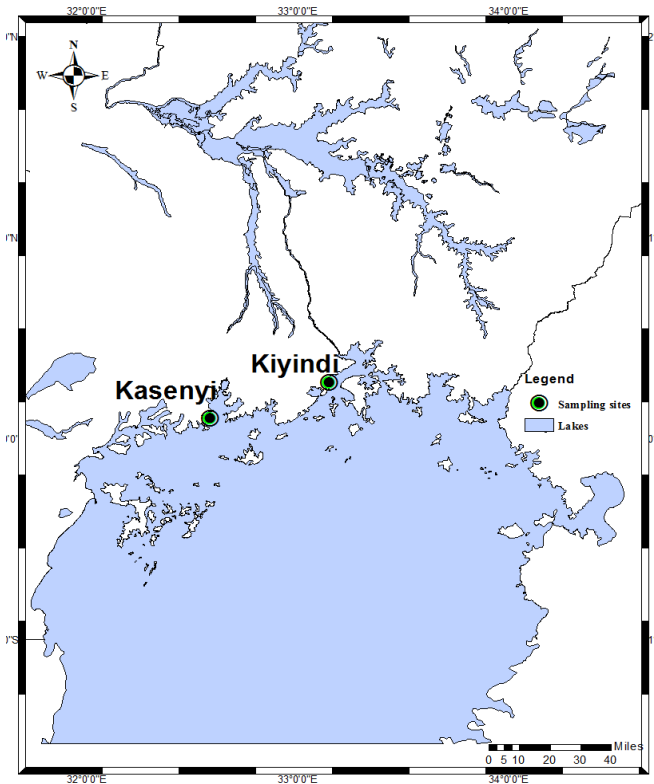


Figure 1. Location of Kasenyi and Kiyindi Landing sites, on Lake Victoria

Results

Demographic characteristics

A total of 69 respondents were sampled, 39 from Kiyindi and 30 from Kasenyi landing sites, and 72% of them were males aged 29-38 years. These were found to dominate the fishing ventures at both landing sites while their female counterparts were mainly boat owners and fish processors (Table 1). There was an average of five people in each household and the majority (72.5%) of the fishers were married, followed by those who were divorced. The educational level of most respondents was low with most of them (66.7%) only having primary education. The majority of the respondents were immigrants with only 16.3% reported to have been born at the landing sites.

Incomes and expenditures

All respondents reported that fisheries were their major source of income, in the order of boat crew (86%), artisanal processors (74%) and boat owners (73%). The daily average incomes from fisheries activities varied during low and high catch seasons, with boat owners earning the most followed by the artisanal processors, while crew members earned the least (Table 2). The respondents spent a significant amount of their income on food (33.8%) and leisure (19%), while other major expenditures included investments (13.7%), children's education (13%) and savings (8.6%).

Table 2: Average daily incomes from fisheries activities in Uganda shillings (3,600 UGX = US\$1.00). Source: 2013 survey data.

Category	Income during low catches	Income during high catches	Fish as a proportion (%) of total income
Crew member	22,000	68,000	86
Artisanal processor	15,000	22,800	74
Boat owner	31,000	188,000	73

Nutrition

Most of the respondents bought food (71.4%), with only 28.6% obtaining food from their fields or gardens. Fish was the main component of the respondent's diet being eaten, on average, four days a week making up around 33% of their diet. The respondents and their families consumed an average of 0.9 kg of food per day.

Access to social services

Both landing sites had access roads that enabled vehicles to reach them easily to deliver and retrieve goods. Respondents reported that health facilities were readily available although private health facilities and medical personnel were four times more numerous than government-owned facilities. Private health facilities were located nearer the landing sites (within 1 km) than the government facilities (within 2 km). Most (97.2%) of the respondents had access to clean drinking water although 1.4% drank water drawn directly from the lake. Similarly, most (82.2%) of the respondents had access to sanitation although some still disposed of wastes directly into the lake (6.9%), the bush (6.9%) or in polythene bags (2.8%).

Asset ownership

Assets owned by respondents were mainly fisheries-related, including items such as outboard engines, fishing boats and fishing gear. Land was the most valuable of the non-fisheries assets, followed by business vehicles, brick-built houses and others (Table 3). Land owned by respondents at both landing sites was generally located at least 35 km away from their

area of fishing operations. Almost all of them possessed a mobile phone, television set and radio.

Table I: Productive non-fishing assets at landing sites (average values). Note: 1 acre = 0.405 ha; values are Uganda shillings x 1000. Source: 2013 survey data.

Productive Assets	Kiyindi		Kasenye	
	Number	Value	Number	Value
Land (acres)	6	40,000	4.5	4,860
House, brick & iron roof (rental)	1	6,000	1	2,500
House, grass-thatched (rental)	2	325	0	0
House, not brick, iron roof (rental)	0	0	1	15
Vehicle (business)	1	7,500	1	2,750
Motorcycle (business)	1	2,075	1	3,500
Bicycle	1	166	1	166

Alternative economic activities

Thirty-two of the 69 respondents engaged in other livelihood activities such as crops (34.4%), livestock (28.1%), informal employment (18.7%), poultry (9.4%), non-fish trading (3.2%) and casual employment (6.3%). However, the livelihood options that were most preferred by respondents, if given the opportunity, were poultry (24.9%), owning a shop (16.3%), and modern crop and livestock farming (15.5%). A significant proportion of respondents, 48.7% and 37.9% from Kiyindi and Kasenye respectively, did not intend to seek any occupation other than fishing. The respondents considered that the major obstacle to livelihood diversification was the lack of initial capital. Adding value to fish was available alternative source of income for many fishers, especially those dealing in the small pelagic *mukene*, currently available in abundance. Processing of *mukene* greatly increased its value (Table 4) but the problems of poor post-harvest handling and processing still contribute to low returns from this species.

Table 4: Average value per kg (UGX) of processed *mukene*.

Processed Product	Value
Sun dried on ground	2,000
Sun dried on racks	5,000
Smoked	10,000
Deep fried	10,000
Powdered	70,000

Discussion

Fishing at both sites was male dominated as a result of local cultural values and gender stereo types (Medard *et al.*, 2001). As in other studies, women were mainly involved in value-addition activities like fish processing, and only a small number owned fishing equipment (Lwenya *et al.*, 2009). The relatively youthful age of fishers (29-38 years) in the Lake Victoria Basin was reported from other fishing communities (Mbilungi *et al.*, 2014), probably because this is the age best able to handle the physical demands of fishing.

Most of the respondents were married which is the norm for this age group in Ugandan society. However, divorce was frequent owing to the transient nature of fishing, which imposes strains on marriage. As elsewhere in Uganda (Namisi, 2005) most respondents were literate although their educational level was low, making it difficult for them to adopt new technologies and adhere to fisheries regulations. There were large numbers of immigrants who settled around the lake in search of a livelihood, especially after the Nile perch upsurge that began in 1980 (Namisi 2005, Nilson *et al.*, 2007; Drimie *et al.*, 2009). This accounts for the heavy resource depletion noted by Odada *et al.* (2004) and Ogello *et al.* (2013), and frequent calls have been made for the provision of alternative livelihood options for fishers.

While all respondents reported fishing as their major source of income, crew were more dependent than other fisher groups. This is because their daily activities involve preparing gear for the next fishing expedition in the morning, casting the nets in the evening and withdrawing the catch early in the morning. This leaves them with very little time to do any other work. In contrast, boat owners were less dependent since their role is the initial investment, and administrative duties such as fuelling-up the boats and dividing the catch according to agreed percentages to pay off their crew. The large income gap between

fisher categories, especially the boat owners and their crew, was also reported by Bwathondi *et al.* (2001). The high resource dependency reported during this study raises questions about the future sustainability of the industry and emphasizes the need to promote alternative livelihoods to ensure income continuity for fishers, as suggested by Kangalwe *et al.* (2008). Fishers spent a significant amount of their income on food and leisure leaving less for investment and savings, this affects their future since the catch is steadily declining (Matsuishi *et al.*, 2006). Although these landing sites had increased access to social services, the fact that about 17% of respondents lacked adequate sanitation exposes them to the risk of water borne diseases such as dysentery, diarrhoea, bilharzia and cholera that are widespread in the region (Muyodi *et al.*, 2009).

Not surprisingly, most of the assets owned by respondents were mainly fisheries related since they are a requirement to carry out their fishing activities, their major source of income. Their non-fishing assets included productive assets like housing, land and vehicles which can provide an alternative source of income. Consumptive assets, such as the cost of leisure was identified as the second item of expenditure.

A few respondents had acquired benefits like savings, loans and sharing profits. Such groups can assist communities by aiding communication, providing physical, financial and emotional support, gender empowerment, and promoting leadership although their success in the Lake Victoria fisheries is hampered by distrust and lack of finance. Those fishers who acquired knowledge and skills through extension services from government and non-government organizations were better able to adopt alternative livelihood options. Some were already engaged in activities like crop growing, livestock farming, informal employment, poultry, non-fishery trading and casual employment as noted elsewhere around the lake (Namisi, 2005). These activities provided a cushion against hard times because fishing had become less dependable and sometimes more unpredictable than before.

Many of the respondents had no intention of seeking an alternative livelihood source but rather planned to remain fishing. They have mostly been fishing for a long time and saw no reason to change. Many of these fishers are very mobile and move elsewhere when the catches fall, seeking other sites

where they are better. This highlighted some of the challenges in promoting alternative livelihoods. Government and other agencies that deal with fishers should avail grants and incentives that would provide capital to enable those fishers who wish to diversify. Fisheries managers should also sensitize fishers about alternative livelihood options to fishing to aid the diversification process.

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