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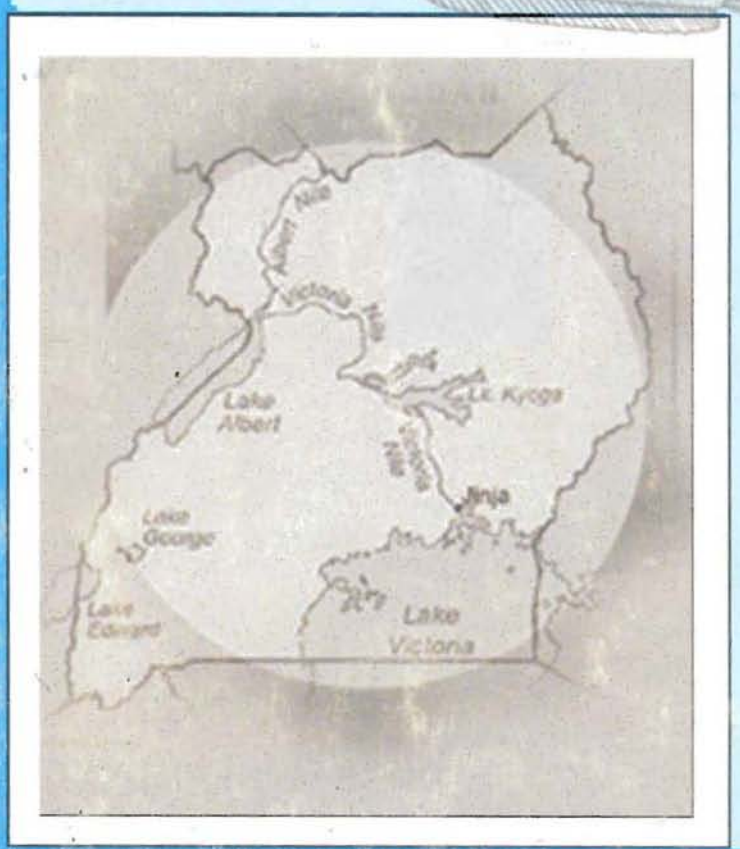
Challenges for Management of the Fisheries Resources, Biodiversity and Environment of Lake Victoria



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R. Ogutu-Ohwayo.

Fisheries Resources Research Institute

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IDRC CANADA

LAKE VICTORIA ENVIRONMENT MANAGEMENT PROJECT LAVEMP FOR MAXIMUM SUSTAINABLE BENEFITS

Challenges for Management of the Fisheries Resources, Biodiversity and Environment of Lake Victoria

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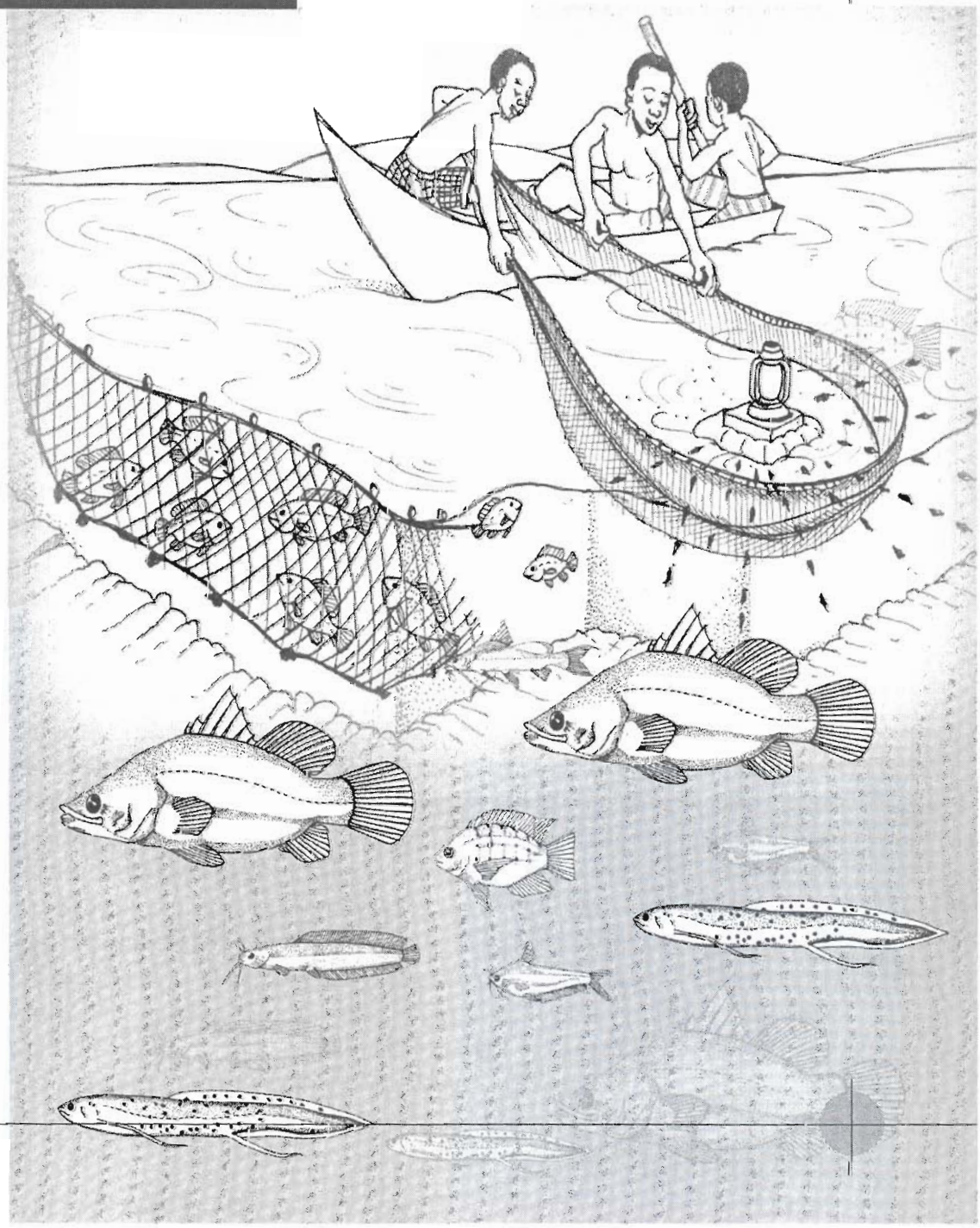
CHAPTER NINE 9

Fisheries Socio-economics, Management, Policy and Legal Framework



9.1. The Socio-economic and Cultural Structures of the Fisherfolk Communities

P. Namisi and M. Kyangwa

Introduction

Fishing communities that have exploited the resource for generations constitute the main stakeholder groups in the fisheries of Lake Victoria. Several studies have examined Uganda's Lake Victoria fishing communities and characterised key stakeholders at community level over the last decade (SEDAWOG 1999a and b; Geheb 1997; FCSEP 1997; Kitakule 1991).

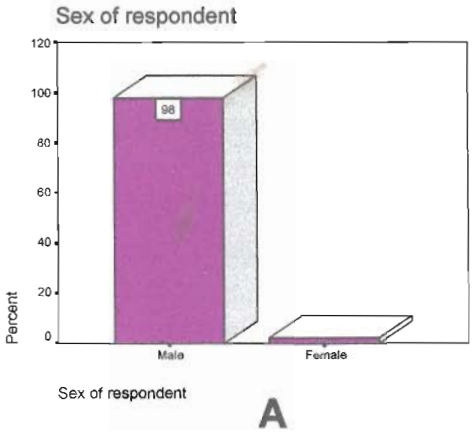
The communities are made up of scattered settlements at the shores and on islands. The categories of people living in these communities include fishers who consist primarily of large numbers of male youths who provide labour to boat and gear owners. There are resident and non-resident fish traders who after securing their supplies at the beaches, depart for their market destinations. In addition, there are fish processors, mostly operating traditional and improved smoking kilns. Many other people, dealing in provisions and supplies also stay at the beaches, their activities depending on the level of fish catch. The fishing communities of Lake Victoria, Uganda, include auxiliary livelihood activities such as boat building, net repairing and transportation; bait supply and beachside kiosks, video halls and retail shop business. Other economic activities are brick making, charcoal burning/wood trade, farming and livestock keeping.

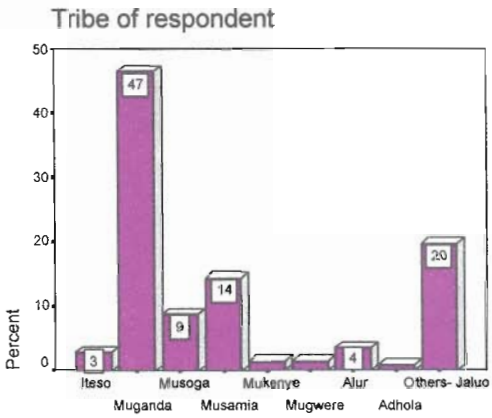
The developments that presently characterize the fisheries and the fishing communities are a result of situations and opportunities created by changes in the fisheries of Lake Victoria over the last two decades (Reynolds and Greboval 1988; Harris 1992). There has been expansion in size of fishing communities, resulting from population growth rate, estimated at 2.5% per annum (MFPED 1999). There has not only been greater diversity in the ethnic composition but the fishery has also seen the entry of new comers, bringing with them both improved harvesting skills and greater capital. The fishing community has also steadily increased from 10,572 fishers in 1970 to 34,889 by 2000. The number of canoes has equivalently increased (currently about 19,300) with about 82% propelled by paddles, 13% powered by outboard engines and the rest use sails (FSTF 2001). These changes represent a threat of excessive fishing effort hence becoming one of the main management challenges on the lake.

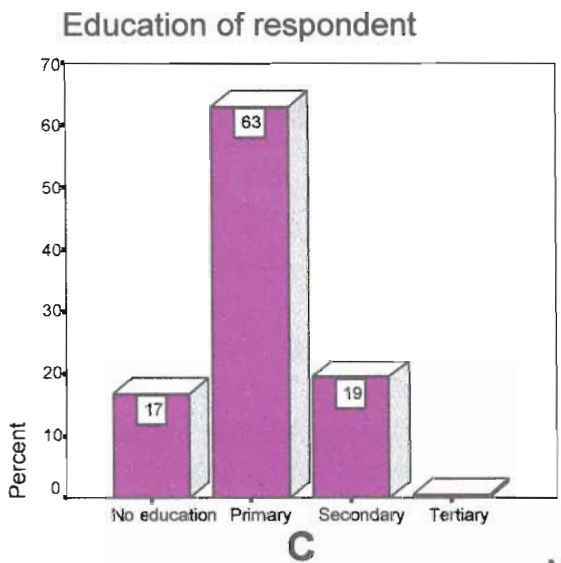
Characteristics of fishers

Fishing on Lake Victoria is a male youth dominated occupation Fig. "A". However, participation of women owning boats has become increasingly prominent (SEDAWOG 1999b; Namisi 2000; 2002, Kyangwa 2003) but still males (98%) especially of mean age 30 years dominate the fisheries. Most fishers are married (70%) Fig. "D", and have families (74%) Fig. "E", with an average of 9 members (a maximum of 54 members was also recorded). The mean for the period most fishers have stayed at landing sites is 9 years; although most fishers had been at a landing site for only 1 year and the maximum of 50 years was also noted.

The fishers on the Uganda part of Lake Victoria constitute a wide range of ethnic tribes with Baganda (47%) dominating followed by Samia (14%), Basoga (9%), Alur, Iteso Bakenye, Bagwere and Adhola respectively Fig "B". Other tribes are the Jaluo and Banyaia from Kenya who constitute a big portion of the other twenty percent, the rest of the small groups include Banyankole, Banyarwanda and Bagisu from Uganda. Fishers generally have limited formal education and lack specialized training, which greatly limits their alternative livelihood opportunities Fig. "C." For instance most fishers had primary (53 %), Secondary (19 %) and tertiary (1 %) education respectively (Namisi 2002). However, the fishing communities also operate on the basis of Indigenous Knowledge (IK). Some of the IK has been handed down from previous generations but there have been considerable local innovations in response to needs of the changing fisheries.



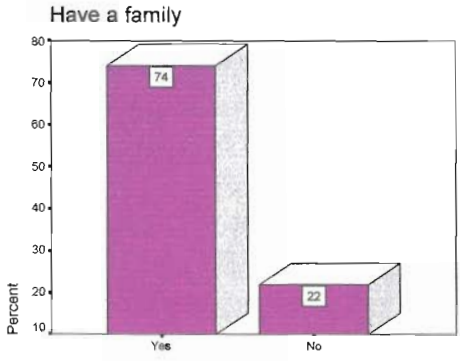




Source: Namisi, 2002

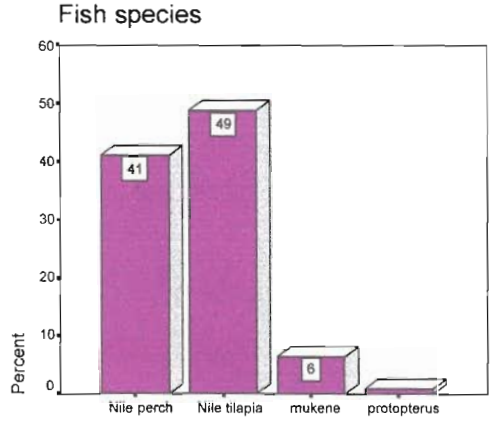
Challenges for Management of the Fisheries Resources, Biodiversity and Environment of Lake Victoria

Fig. 9.1.1. Socio-demographics of Fisheries



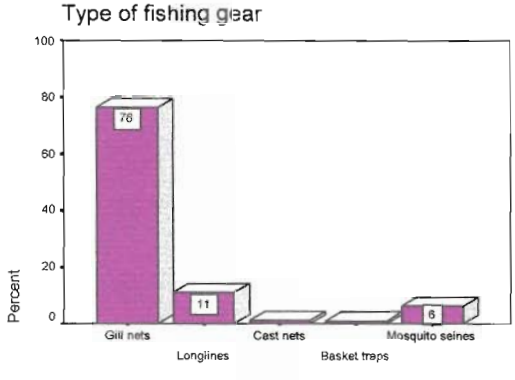
Have a family

E



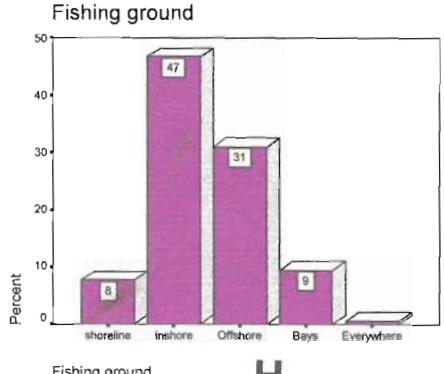
Fish species

F



Type of fishing gear

G



Fishing ground

H

Fishing on Lake Victoria involves boat owners and renters who hire crew members to do the actual fishing. Youthful men (crew) do the fishing for fishing unit (boat) owners who await the return of their boat(s) on beaches where they will check on catches, oversee catch sales and payment of the crew, and consider input needs such as costs for fuel, net or boat repair (SEDAWOG 1999b; Kyangwa 2003). An average of three crew work on a boat. The most common method of paying crew is to divide the catch value into agreed portions after deducting the cost of expenses (SEDAWOG 1999). Those who rent boats do so from absentee owners. With the development of the fishery many of those who own boats on the lake have little or nothing to do with fishing communities (Harris 1992). In some cases the boats are owner-operated with additional support crew.

Most fishers use the Ssese type canoes followed by parachute and dug-out canoes. Most of these boats are made from hard woods such as 'Mvule', Nkoba and Nongo (FSTC 2001). Outboard engine mainly used to move to distant waters targeting Nile perch. Most boats used oars/paddles and sails and concentrated their fishing activities close to the shores where (Fig F & H) they targete tilapia and *mukene*. The implication is that most boats cannot be used to exploit resources beyond a certain range, creating a tendency for local over fishing of the resource.

Various types of fishing gear are used on the lake although gill nets are the most commonly used Fig. "G". Other gear types include longlines, beach seines, mosquito seines, basket traps and handlines subject to the managerial regulations. Most fishers target tilapia.

Fishers expressed dissatisfaction with the status of their fishing activities in a survey carried out in 2001 (Odongkara *et al.*, 2000). Scarcity of fish and poor access to appropriate fishing equipment, due mainly to their high costs was thought to be the main cause. Widespread use of illegal gear among Ugandan fishers is attributed to poverty, creating inability in the fishers to acquire the recommended gear (Odongkara *et al.*, 2000). The resulting low catch reinforces the poverty among the fishers in a vicious circle of low catch, illegal gear and poverty.

Personal savings continue to be the main source of capital within the community and very few operators have taken advantage of formal credit, mainly from the Poverty Alleviation Project, Micro Finance Schemes, *entandikwa* (a political credit fund) and private individuals in that order (Namisi 2002). The latter loans are associated with problems of high interest rates, short repayment periods and occurence of calamity during the loan period e.g the theft of gear which leads to poor repayment. Migration in search for better catch or market remains a common practice among fisherfolk and complicates all the steps taken to improve their condition.

Infrastructure and facilities in support of fish production are poor except at few gazetted beaches especially handling Nile perch for export, such as Busiro in Bugiri District, Bwondha in Mayuge, Masese in Jinja, Katosi and Senyi in Mukono, Ggaba in Kampala, Kasenyi, and Kigungu in Wakiso, Ggolo in Mpigi District, Dimmu and Lambu in Masaka and Kasensero in Rakai. The result of a frame survey carried out in 2000 (FSTC 2001) indicated that only 123 landings are directly accessible by an all-weather road and; only urban-based landings (16 landings) of Jinja, Kampala, Wakiso, and Masaka have access to electricity and only 56 landings had a fish shed. There were 34 jetties and 80 stores at landings on the lake. Boat and net repair yards were found at 249 landing sites mainly among the fishing communities of Mayuge, Kalangala and Mukono districts.

Fish handling was still poor among fishers with much of the fish caught just placed in open boats with no box containers or ice in the boats, there was only a limited use of ice by some Nile perch fishers. The most common method of fish preservation practiced by fishers was "covering the fish with leaves and keeping it in the shade" (SEDAWOG 1999).

Characteristics of Lake Victoria fish traders

Both men and women carry out trade in fish although in the past, it was dominated by females (SEDAWOG 1999a). Fish trading just like fish production is dominated by young people of average age 30 years, most of whom are married and have attained some formal education.

Fish traders fall into a number of categories: the local traders who sell their fish in local markets not more than a kilometre from the beach and who are mainly beach residents; the long-distance traders who sell to distant towns away from the beach; the regional traders who sell to markets within the region such as Kenya, DRC and Rwanda; and the factory agents who buy for filleting factories (Geheb 1997). Traders can also be categorized according to the assets they own or use, e.g bicycle traders, boat traders and truck/pickup traders. Boat traders deliver fish from distant beaches and islands, which have not yet developed infrastructure and facilities (roads, weighing shades) in support of fish marketing, especially the Nile perch fishery. Most traders, especially women, do not own any trading assets and usually hire space on trucks/pickups or boats to deliver their merchandise to markets.

Trade in fresh fish is dominated by men, while more women are involved in processed (sundried/smoked) forms. Some traders deal in more than one species of fish although a majority deals exclusively in one species. Besides fish, some traders also deal in fish products such as the swim bladder from Nile perch for export to Asian countries. There is the trade in factory by-products (heads, frames,

fats, trimmings and skins) at inland markets and roadside points that has become increasingly prominent (Odongkara *et al.,* 2003).

Supplies of fresh fish are obtained directly from the fishers while some wholesale traders of mukene and other processed fish species get their supplies from middlemen. Traders dealing in fresh fish make more trips to markets than those who deal in processed fish. Due to high competition, some traders have supply arrangements with fishers such as provision of fishing inputs and credit. This is very common with factory agents. The system of selling fish varies between species. Mukene is sold in troughs or tins (SEDAWOG 1999a). Tilapia is sold in bundles or per head and sale may occur by auction and mutual agreement, although in terms of kilograms it ranges from U. shs 500-1000 per kg and varies from beach to beach and in different regions of the lake (Odongkara *et al.,* 2002). Nile perch is weighed direct from boats and placed into truck containers, iced and transported to fish processing factories and a kilogram ranges from U. Shs 1,500/- to 2,300/- (Odongkara *et al.,* 2002). The rate of reject of Nile perch is due to spoilage, however, has gone down probably due to good timings for landing catches and increased demand. The presence of chilled transport facilities at some beaches has bean a source of conflict between Nile perch and non-Nile perch traders. Artisanal traders (mostly women processors) have resorted to dealing in Nile perch rejects and juveniles while some have shifted to other species because of lack of supplies (SEDAWOG 1999b; Geheb 1997).

Fish is transported to inland markets where it is offloaded and placed on racks for sale. Apart from ice containers that transport fish for factory processing, the rest of the transport are in poor hygienic state (see Plates 9.1.1 and 9.1.2). Traders face a problem of maintaining the freshness of fish while in transit. Most of those whose markets are close to beaches require no preservation. Very few traders use ice, which is sometimes supplied by filleting factories. Other problems traders face include: poor access roads, lack of transport and lack of supplies.

Few artisanal traders still exist at beaches due to competition from factory agents and increasing cost of fish coupled with harassment from various law enforcers since some of them deal in juvenile fish. However, they are an important stakeholder group in community fisheries management since they sometimes finance fishing operations, influence market size of fish and can contribute cash to finance BMU activities.

Characteristics of Artisanal Fish Processors

Artisanal fish processing methods involve smoking using raised kilns or pits, salting and sundrying especially of tilapia and Nile perch rejects and sundrying of mukene. Both women and men process fish. Nile perch rejects are got from factory agents while fishers are the suppliers of other fish products for processing. Women dominate

Plate 9.1.1. At a local market Nile Perch and Tilapia fish for sale to the local people

Plate 9.1.2. Fish being offloaded at a landing site on Lake Victoria.

the sun drying of mukene. Mukene is exclusively processed before it is utilized as food for human beings or animals. Another common method of fish processing is deep-frying especially of juveniles (Nile perch and Tilapia that are eaten as snacks by the busy beach community. Some processors deal in more than one species of fish although most processors deal exclusively in one species (SEDAWOG 1999a). Much of the salted and sundried tilapia is destined for the market in the Democratic Republic of Congo (DRC) while some smoked products are for the Kenyan market. Substantial amounts of fish factory by-products (heads, frames and skins) are processed at Ggaba Fish Landing and Busega Market for export to DRC (Odongkara *et al.*, 2003).

Artisanal fish processing has been one area that has been affected by international fish trade manifested by the presence of few artisanal traders at beaches. They are faced with competition from factory agents who buy fresh Nile perch at higher prices. Some have also resorted to processing Nile perch rejects and juveniles of both Nile perch and tilapia. However, they are an important stakeholder group in community fisheries management since they can influence the sizes of fish processed and contribute cash to finance BMU activities.

Characteristics of fish consumers

Most people in fishing communities consume fish and the very few people who do not, attribute it to taboo and allergy. In a study (SEDAWOG 1999), it was found out that a large proportion (40%) of fish consumers had average family sizes of 5-7 members and ate fish on a daily basis. This is particularly common among people who are involved in fishery activities such as fishing, trading and processing other than those who are involved in non-fishery activities at the beach. A number of studies (SEDAWOG 1999a; Nyapendi *et al.*, 2001) have found that most fishing community members mentioned tilapia as their favourite fish species. Mukene is less preferred for consumption by the fisher communities. Fish is mainly consumed in fresh form as wet fish (83%, N=294) (SEDAWOG 1999a). In the event that fish is not available, beans and vegetables were mentioned as the main substitutes to fish (SEDAWOG 1999a).

Due to the widespread poverty, there has been low purchasing power among fish consumers, especially those employed in non-fishery activities making them unable to afford the large mature fish. Domestic demands for fish at beaches has, therefore, become characterized by the high consumption of juveniles of Nile perch and Nile tilapia. This market, molded by the high level of poverty, has encouraged many producers to use undersized gear meshes in their fishing operations, a situation that threatens the sustainability of the fisheries and therefore a challenge to fisheries management.

Local Community Leadership and Level of organization of Stakeholder Groups

The existence of community based institutions at beaches that can participate in fisheries management is one factor in getting resource users participate in resource management. Traditionally, fishing communities had operated under the leadership of a head fisherman (*Gabunga*), with his committee (Kyangwa 2003). Basically the Gabunga committee was concerned with mobilisation for community work and resolving conflicts among fishers. However, in 1999 at the peak of the rampant fish poisoning practice in Lake Victoria, there came into existence Taskforce Committees as a way of involving communities in fighting the practice (Kyangwa 2003). These local committees were established at nearly all beaches and were able to contribute to the successful fight against fish poisoning. Having largely achieved its objective, the committees' mandate were extended to cover the control of other types of fishing malpractices. They were later to become a permanent feature in management of the lake and came to be known by various names such as, Landing Management Committee (LMC) and Co-management Committee (CC) (Odongkara *et al.*, 2002, Kyangwa 2003). The committees have been involved in various fisheries management activities such as fish inspection, taking of statistics, enforcement of regulation, conflict resolution, registration of fishers and gears and setting bye-laws governing hours to go in and out of the lake. The committees resolve cases among community members and refer those beyond their jurisdiction to the Local councils (LC). On many beaches, these committees do not own any facilities such as office and patrol boats and their work is voluntary (Kyangwa 2003). The executives of the committees come into office through community elections and consist of a chairperson, vice chairperson, secretary, treasurer and secretaries for defense and environment/production. The Fisheries staff is the technical advisor to the committee.

The committees have representation of other stakeholders such as traders, fishers and LC. It also enjoys strong collaboration with the Department of Fisheries Resources (DFR) at the beach level and the most available authority at the beach. However, some officials are corrupt, others are not actively involved in the day to day activities of the committee, lack facilitation and facilities like offices and patrol boats, lack training in fisheries management and leadership skills and fear ostracisation by the community in case of severe punishment (Kyangwa 2003). However, on a positive side a new law has been enacted and Beach Management Units (BMU) is a harmonized name that has been adopted to refer to committees of the above nature in the new statute, the Fish (Beach Management) Rules, statutory instrument 35 (GoU 2003). The law empowers BMUs to participate in fisheries management, clearly defines duties office bearers, procedure of elections, tenure of office and funding of the committee's activities. This will help in mitigating the problems previous community based institutions have been facing in fisheries management.

There also exist fishers' CBOs/NGOs at beaches on Lake Victoria working to co-ordinate and represent the interests of the communities. The most notable one is the Uganda Fisheries and Fish Conservation Association (UFFCA). UFFCA is the main fishermen organization, established to develop the participation of fishing communities in the effective management and development of the fisheries resources. The role of UFFCA is said to be complementary, acting as a partner in development with Ministry of Agriculture Animal Industry and Fisheries (MAAIF), the Local Governments and the Donor Community. The Association has involved the community members in developing community-based programs on the major water bodies of the country. Since 1976, UFFCA is reported to have been educating the fishing communities on improved technologies of fish handling, processing and storage. It has also been working closely with research institutions to assist in disseminating to the clients whatever technologies and information are generated by research, making use of its structure at the grassroots (Kamuturaki 1998). Other CBOs/NGOs that have made contributions towards mobilisation of fishing communities are Uganda Fisheries Development Union (UFDU) and women groups, notably Katosi Women's Fishing and Development Association.

Conclusion

The major stakeholder groups found in the fishing communities are the fishers, traders, processors and others involved in subsidiary activities. Fishers are a majority at beaches, have knowledge about lake-based activities and indigenous knowledge that gives them an advantage to be fully represented on community-based institutions such as Beach Management Units (BMUs) that have a key role to play under co-management arrangement. However, they are poorly organized and their migratory nature further complicates their participation in resource management.

There has been notable development in the socio-economic characteristics of stakeholder groups, local leadership and in the level of organization of the fishing communities resulting from the situations and opportunities created by the changes in the fisheries of Lake Victoria over the last two decades. Notable among these has been a sharp increase in diversity of the ethnic groups and the large inflow of new comers into the fisheries business encouraged by the open access nature of the fisheries and the economic gains that accrued from a boom in fisheries. There has also been a change in the gender roles, with more men processing fish and women owning boats. It is important to understand the characteristics of these communities and the changes that have occurred for the development of better management plans given the fact that involvement of communities in management of the resource has improved in recent times.

Recommendations

Activities that degrade the environment and deplete the fisheries resources should be checked through mass awareness, sensitisation and educational programs. The presence of local leadership is a great opportunity for good governance and has been strengthened and supported by the enactment of the new law. However, the level of organization among fishers, traders and processors is still poor. They need to be mobilised and educated on the benefits of being organised. Elections should be held such that each group can have leadership for advocacy of their interests and representation on BMUs for effective participation in resource management.