Conservation Fishing in Lake Victoria: Can Losers be Guardians of Fisheries Resources?

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Abstract

This paper analyzes the way in which the Lakeside communities which are victims of the transformed fishing industry in Lake Victoria, can also be guardians of the fisheries resources. The study was conducted in Kishanje and Rubafu villages in Bukoba Rural District. The data was collected from 232 individual respondents and two focus group discussions each comprised 10 participants. The results indicated that community members in the Lakeside communities perceived illegal fishing as non-existing phenomenon among them. What they see is their traditional way of fishing and the ongoing conservation campaigns are instituted to infringe upon their life system and alienate them from their bounty Mother Nature. They recognized the fisheries resources management measures as the means to safeguard the interest of the investors. From this understanding, the study revealed that the community members including the leaders entrusted to reinforce the resources management measures were not in a position to stand against illegal fishing as it was intended by the government. This study, therefore, concludes that, the losers cannot be guardians of fisheries resources, unless their socioeconomic needs are taken as part and parcel in the fisheries resources management plan.

Key Words: Illegal fishing, Participatory resources management, Conservation fishing

Introduction

Historically, the development of Lake Victoria fisheries is distinguished into 'old pre-Nile perch fisheries regime which ended up in 1975 and the 'new' regime which begun thereafter (Greboval and Mannini, 1992). In the pre-Nile perch regime up to the mid 1970's fisheries of Lake Victoria were mainly for subsistence, and were dominated by artisanal fishers whose main objective was to meet their nutritional requirements and sell the extra to the local consumers. In this regime fishery existed autonomously without external intrusion, there were no foreign investors in the fishing industry and the involvement of the three governments' was limited (Jansen, 1997). Before the Nile Perch (*Lates niloticus*) and Nile Tilapia (*Oreochromis nilotica*) were introduced in the1950s

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and 1960s Lake Victoria had a multi-species fishery of more than 500 indigenous species dominated by *haplochromines* and *tilapiin*e species (Awange and Ong'ang'a, 2006). The dominant haplochromines being small and bony had no export value, however, enabled local people to meet their dietary requirement because they were nutritious and affordable (Karanja, 2006). Other important species in the lake included *Clariasspp, Bagrusspp – catfish., synodontisspp-squaker, and Labeospp*, *Mormyrusspp-Elephant-snout and Lungfish*. In the pre-Nile perch regime most fishermen were engaged in fishing seasonally or on a part-time basis as a complement to agricultural activities, and income from fishing were distributed equitably among the fishermen (Jansen, 1997). The portion of catches was given to the fishing crew as part of their recompense and this assured food security to fishers' households (Ngaga et al., 2005).

The Nile perch regime started in the mid 1970s. The rapid proliferation of Nile perch was discerned in the Kenyan part of the lake about 15 -20 years after the fish was introduced in the lake between 1950 and 1960. The colonial fisheries officials in Uganda regarded the dominant *haplochromines* as "trash fish" therefore a need for introducing Nile perch which could feed on and convert them into more edible fish (Pringle, 2005) and contribute to food security in the Lake Victoria zone (Lake Victoria Fisheries Organization [LVFO 2016]). There was a slow increase in Nile perch biomass in the lake, however, it increased suddenly in mid- 1970s for unknown reasons (Pringle, 2005). Basically, the Nile perch regime is divided into two phases. The first phase was between 1975 and 1989; these are considered as initial years of a Nile perch regime when Nile perch did not yet gained international markets. During this period, fisheries continued to be almost exclusively operated by artisanal fishers. The food security of local communities was improved because fish supply increased and was accessed at reasonable price by non-fishing households (Abila, 2000; Greboval and Mannini, 1992). It is in this period that the fishers and consumers called Nile perch a 'savior' because of increased catches and affordability, which meant a new supply of cheap protein for people around the shorelines of Lake Victoria (Medard and Wilson, 1996).

The second phase of the Nile perch regime was marked from 1989 when Lake Victoria fishery industry under the industry was transformed from subsistence to commercialize fishing backup of trade liberalization policy. In this transformation, Lake Victoria's Nile perch (*Late niloticus*) as popularly known in Swahili and sardine (*Rastrineobola argentea)* or 'dagaa' in Swahili that constitute more than 90% of fish of Lake Victoria became global commodities

(Abila, 2000). Fish processing plants increased rapidly in three riparian countries from 19 factories in 1999 to 35 factories in 2005 (LVFO 2013), mostly processing fish for export to Europe, Middle East, Japan and USA (Abila, 2003; Jansen 1997). The increasing demand of fish in the processing factories culminated into increased fishing efforts. For example, in Tanzania alone the rise in fishing vessels went from 7953 in 1995 to 15491 in 2000 (Kulindwa, 2012) and to 28,470 in 2013 (URT, 2014). By the year 2015 there were about 60,000 fishing boats with an average of 2000 new boats entering into the lake every year.The rapid increase of fishing effort had caused a decline of fish stock in the lake, catch per unit effort dropped from an average of 50 kg in 1980s to less than 10 kg in 2015 and this signified a threat to Lake Victoria fisheries sustainability (Weston, 2015).

From the economic side of the industry, the nation statistics of the riparian states of Lake Victoria mark this transformation as a noticeable benchmark of the substantial contribution of the fishing industry to the national economy than any period before. This was through increasing foreign currency earnings and other income to the country (Mgale & Nikusekela, 2017). The fish export data indicate the increase in foreign currency earnings in the three riparian countries from US$ 329.8 million in the year 2008 to US$ 341million in 2012 (LVFO, 2013). In Tanzania, the record shows a steady increase from US$ 8.3 million in 1992 to US$ 10.1 million in 1995. The rapid increase was in 1996 where it spurted up to US$ 49.5 million and in 2003 it increased up to US$ 112 million (Njiru et al., 2008). The 2013 data show the growth to US$ 124.5 million (URT, 2014).

Being a lucrative business, fishing attracted many people into the industry, even those who were not traditionally fishers, from the three riparian countries and other neighbor countries such as Congo, Rwanda, Burundi, Malawi and Zambia (Weston, 2015). The increase of new entrants in the industry with improved fishing gears and the continuation of traditional fishers from lakeside communities with their traditional methods of fishing caused gratuitous fishing pressure in the lake and threatened to deplete fish resources which are dependable biological resources within and outside the riparian states for food and income generation. In response to the deteriorating trend of Lake Victoria biodiversity resources Tanzania like the other partner riparian state of the lake adopted and implemented measures for fishing to ensure a sustainable use of the lake biodiversity as predetermined in Article 6 of the Convention on Biological Diversity [CBD] Ogutu, 2001). Accordingly the government had established various conservation measures which involved the formulation of policy, decree

and regulations in order to trim down illegal and unsustainable fishing practices (Mgale & Nikusekela, 2017). It was up to 1998, the government of Tanzania applied top down approach to conserve Lake Victoria fisheries resources (LVFO, 2005). The implementation of CBD begun around 1993, whereby various traditional fishing methods such as the use of beach seines and gill nets with small sized meshes from 2" to 4" was declared illegal (Bulayi, 2001).

The barn of beach seines and mesh size restrictions went concurrently with the transformation of the fishery industry in Lake Victoria. The two incidences sandwiched local fish consumers because the commercialization of fishing industry facilitated the taking out of considerable quantities of fish to global markets, which would otherwise be available to local consumers (Abila, 2000). Secondly, competition for fish among fish processing factories raised their price (Ngaga et al, 2005:37), therefore poor local consumers could not afford to purchase fish as often as they had in the past (Abila, 2000; Jansen, 1997; Onyango, 2001). Furthermore, the legalization of traditional fishing methods deprived the majority of artisanal fishers the dependable source of income (Abila, 2000).

As the victims of the transformed fishing industry and the fisheries management measures, the poor artisanal fishermen and local fish consumers turned to illegal fishing and consumption of juvenile Nile perch as their own refuge. With all the government control attempts gill nets of small mesh sizes less than 5 inches were still used in Lake Victoria by local fishermen (URT,2005). The trend in the increase of illegal fishing proved failure of top bottom approach which vested all the responsibilities of monitoring, control and surveillance to Ministry of Natural Resources and Tourism (Bulayi, 2001). The government of Tanzania in an attempt to counteract the weakness of direct command and control of central government in managing the fisheries resources instituted a community based approach in 1998 (LVFO, 2005). In this approach lakeside communities have been involved in fisheries management programmes including law enforcement, surveillance and other campaigns in order to restrain the illegal fishing practice through formal groups known as beach management units [BMU] (Burayi, 2001, Eggert and Lokina, 2009). However, despite the formation of BMUs to trim down illegal fishing, the practice remains unabated and the communities, including members of BMUs are aware of the practices in their areas (Dausen, 2017). The current estimate indicates the rate of illegal fishing in Lake Victoria is ranging from forty to sixty percent, which are amongst the highest estimates in the world (Stop illegal fishing, 2016), thus

signifying ineffectiveness of community based approach in fisheries resources management.

Equally, the records from the Kagera Fisheries Office indicated an increasing trend of revenue collection from the penalties to the defaulters of fisheries regulations which signified an increasing level of illegal fishing (Figure 1). From this background the study, therefore, seeks to identify if the community members who are contextually losers due to transformed fishing industry can really participate in fisheries resource conservation meaningfully.

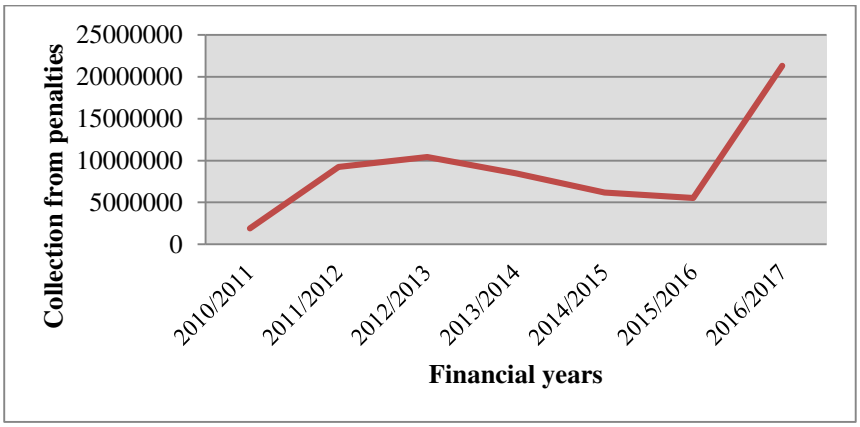

Figure 1. Penalties to the defaulters of Fisheries regulations in Kagera Region
Source: Kagera Fisheries Department

Objectives of the Study

The general objective of the study was to examine the loss of fish resources by the community due to transformed fishery industry in Lake Victoria. The specific objectives of the study were (1) to assess the level of illegal fishing in the study area (2) to examine community perception on illegal fishing and (3) to evaluate community's knowledge on fish conservation

Methodology of Study

The Study Area

This study was conducted in Kishanje and Rubafu villages which are located along the shore of Lake Victoria in Bukoba Rural District (see Figs.2). Then two sub-villages were selected purposively from each village to represent lakeside communities. The four selected sub-villages were Bweza A and Bweza B from Kishanje Village and Kishenge and Mukoko Sub-villages from Rubafu village (see Figure 3). The village governments of the two villages were

identified to have BMU sub-committees therefore registering the areas where community based fisheries management is practiced.

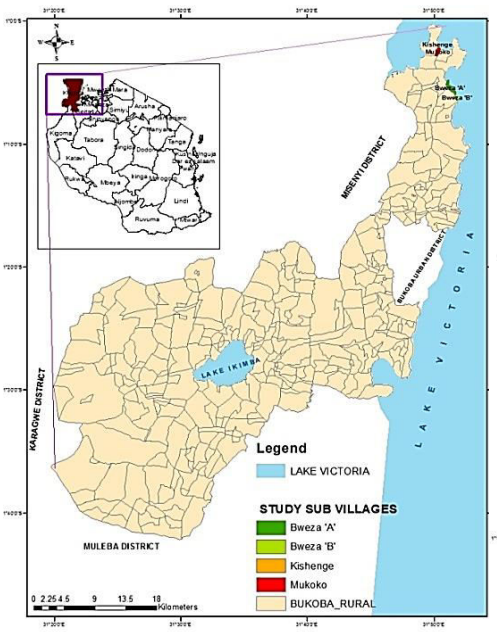

Figure 2: Bukoba Rural District

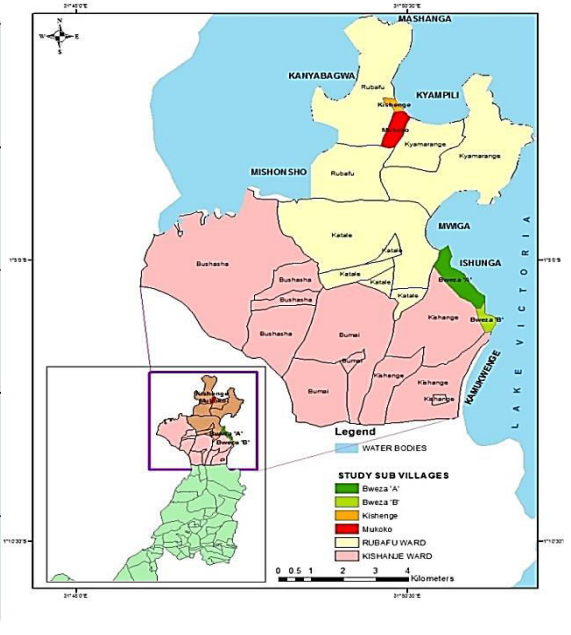

Figure 3: Kishanje and Rubafu wards

The study applied census type of survey therefore 188 households which is equal to the total number of households in the four surveyed subs-villages were involved in the study, while random sampling was applied acquisition of boat owners' sample. Census survey was applied to households because the total number of households was manageable, also comprised of households with heterogeneous characteristics. Thus, the census was identified as an appropriate way for accurate and reliable results (Surbhi, 2016). For boat owners, random sampling was applied because of homogeneity of respondents, all were fishers. Purposive selection was applied to obtain key informants, including regional and district offices responsible with fisheries management, fish processing plant managers, experiences fishers, ward and village leaders and factory agents. In total the study involved 232 respondents as presented in Table 1.

Table 1 Compositions Individual Respondents

Category of Respondents	Interviewed number
All Heads of Households	188
A sample of Boat owners	31
Key informants: District Officers (3); Regional Officers (2) Processing plant managers (2); Ward Extension Officer (1); Experienced/Retired Fishers (2); Village government leaders (2); and Factory Fish buying agents (1)	13
TOTAL	**232**

The study applied cross-sectional design and the data was collected by using structured interviews, in-depth interviews, focus group discussion, observation and documentary review. Different methods were employed in order to capture both quantitative and qualitative data from diverse sources. The quantitative data from close-ended questionnaire was analyzed by using a Computer Statistical Package for Social Sciences (SPSS version 20.0) software. Content analysis was used in processing the vast amount of qualitative data collected through individual interviews, focus group discussions, open ended questionnaires and photographs.

Results and Discussion

Social, Economic Characteristics of Respondents

In the study area, 78.7% of the households were headed by males, and 21.3% by females. The ages of heads of household respondents ranged from 19 to 97 years and the mode was 45 years. However, the results indicated that the majority of heads of households (62.8%) were less than 50 years old. This indicated that the community is dominated by a young generation. This signified that there was a short life expectancy in the study area. On marital status, 70.2% were married, 13.8% were widowed while divorced and singles were 6.9% each. The average household size stood at 4 persons. This indicated that in the study area the size of household is lower than district, regional and national average household size, which stood at 4.4, 4.7 and 4.8 for district, region and national respectively (URT, 2013).

The level of education ranged from no formal education to higher Education. The findings indicated that the majority of respondents r, 83.5% had primary school education and 10.6% had no formal education. It also indicated that 4.2 % of respondents had secondary ordinary education and 0.5% had advanced secondary education. Meanwhile, 1.6% of respondents had higher education.

The education level education indicated low employability of most respondents in jobs which needs skilled people, therefore high dependence on environmental resources for livelihood sustenance.

Income among the study population

The peasantry was identified as a primary source of income to76. 1% and the second source of 19.1% of households, while fishing was a primary source of income for 14.4% and the second source of 12.2% of households. The third was barred as the first source for 2.7% and the second source of 3.2%. Other primary sources were business, employment, restaurant, boat construction and repair, construction works and remittances with 6.8% combined**.** The findings show that the income of heads of households varied from Tshs.5000 to 2,500,000 per month. This indicated high income disparity among the respondents. The income of peasants ranged from Tshs. 5000/= to 180,000/= per month, while for the fishermen varied from Ths.60, 000/= to 2,500,000/= per month. The findings revealed that fishers have more monthly income than farmers. However, it revealed also a wide income gap among the fishers on the basis of their fishing capacity, whereas incomes of the owners of the fishing gears were much higher than the incomes of the crews.

Fish Consumption in the Study area

In the study area, 85.6% of households buy fish direct from the landing site and 14.5% get fish from fishmongers. The dominant commonly fish species consumed was Nile perch by 76.1%, sardines 22.9% and (1%) hyplochromines. The findings revealed that due to commercialization of the fishing industry, all mature Nile perch of the size from 50cm and above were no longer accessible to the local consumers because of increased demand for the fish processing plants. It was identified that 30.8% of households were not able to consume mature Nile perch because of unavailability caused by processing factories, while 44.1% reported not to eat mature Nile perch because of soaring prices caused by competition from fish processing plants. It was identified that, because of fish scarcity and inaccessibility due to price increase, local markets were supplied with juvenile Nile perch. The findings revealed that about 50% of the households eat Nile perch of the size between 20- 30cm, 20% eat of the size from 31-40 cm (Handplam size), 23% eat less than 20cm while 7% eat of the size from 41 to 49 cm (known as undersize).

In relation with the size of fish consumed locally the results indicates that about 93% of households were consuming fish of less than 41cm and therefore caught by illegal fishing gears. According to fisheries, regulations no gill nets with less

than six inch mesh size were allowed for fishing, therefore, had it been the regulations were observed no fish of less 41 cm could have been caught. This stood as an indicator of continuation of illegal fishing in Lake Victoria.

Illegal Fishing

As it has been discussed above, the majority of households (93%) in the study area were depending on illegal fishing for the fish they consumed. Furthermore, upon a review of the Council's documents, it was revealed that a fisheries census that was conducted by the Bukoba District Council in September 2016 revealed the existence of thousands of illegal fishing gears along the shores of Lake Victoria. This included 120 beach seines, 2120 pieces of monofilament, 4 cast nets, 18 scoop nets and gill nets less than six inch mesh sizes 17983 pieces. During in depth interview with the team leader of Kagera Regional surveillance, monitoring and control Unit reported that they worked tirelessly to impound illegal fishing gear for many years now but the rate of increase is growing up daily.

It was observed that illegal fishing was an open secret among the lakeside communities and people were facilitating it in various ways and even illegal fish were sold openly (Plate 1). The study identified that beach seines, monofilaments, undersize gill net were manufactured locally within the community and the manufacturers were known. Women were facilitating beach seining by weaving strong grass- rope for pulling seines and it is an open business within the community (Plate 2). Monofilaments were prepared at home for the next fishing with no fear (Plate 3). The findings showed that illegal fishers feared people from outside the community, but not from within and they had their own signals to alert each other to ensure that no one is caught once they see a stranger in the community. Generally illegal fishing was observed to be a community secret and they were ready to safeguard it by whatever means.

Plate 1: The sale of juvenile Nile Perch at Bweza 'A' landing site

Plate 2: A woman in the study area weaving a grass rope for pulling beach seines

Plate 3 Monofilament prepared at home for the next fishing trip

The findings revealed that even the BMU sub-committee members in the village and the village leaders were quite aware of the fishing practices conducted in their village but they were unable to intervene to the situation, firstly because of fear of losing their positions and secondly in order to avoid getting into conflicts with their own people who some of them were their relatives. Furthermore, the discussion with one of the community leaders revealed that, even the leaders were beneficiaries of illegal fishing, especially with access to fish as two of them responded that:

> *"... You know there are things which need to be handled with care. Sometimes we need to use our normal wisdom. For example to stand out to prevent the traditional ways of fishing (illegal fishing) is like to commit suicide because without them there is no one who can eat fish including myself. So why should I kill myself and my children in that way?"(**A village government member in the study area**)*

> *"... Myself, I am not a fisherman, but some of my relatives and friends are. I surely tell you the question of illegal fishing is difficult to solve. It is like a battle with your own community. Although not all people are fishing, but I don't think that you can find a household which is not benefiting from illegal fishing by getting affordable fish. What can you do in such situation? (...) Nothing. (**A BMU sub-committee member in the study area)***

The above narrations by community leaders indicated that illegal fishing was conducted in the collaborative way among fishers, leaders and community members. It was also identified that most of the time BMU committees are

dormant and become active when the district or regional surveillance teams come for patrol. It was further reported that some leaders are not faithful and that once they get notification on patrol operations, they normally inform the illegal fishers not to fish for the particular day or ask them to hide their illegal fishing gears. On this matter, a retired fisher from Kishanje ward said that "*BMUs are there symbolically but nothing is performed by them"*

Community's Perceptions on Illegal Fishing

Community's perception on illegal fishing was tested by using likert sacle and the results were as presented in Table 2.

Table2. Community's Perception on Illegal Fishing

Statement	*Agree*	*Strongly agree*	*Neutral*	*Disagree*	*Strongly disagree*
The use of beach seines is one of illegal fishing practices	37(20)	9(5)	9(5)	34(18)	99(53)
The use of monofilaments and gillnets with small meshes is illegal fishing	38(20)	8(4)	13(7)	31(16)	98(52)
The decline in fish stocks is caused by increased beach seining and small sized gillnets	34(18)	5(3)	17(9)	32(17)	100(53)
The decline in fish stock is caused by increased fish demand in the fish processing plants	137(73)	8(4)	31(16)	6(3)	6(3)
Decline in fish stock is caused by small scale fishers	30(16)	5(3)	15(8)	28(15)	110(59)
Decline in fish stock is caused by large scale fishers	133(71)	15(8)	25(13)	5(3)	10(5)

Numbers in brackets are percentages

On the basis of the columns for disagree and strongly disagree, the results show that, the majority of community members (71%) perceived that the use of beach seines, monofilament nets and gillnets with small meshes is not illegal fishing. In relation with agree and strongly agree column a, bout (83.5%) of the respondents associated the decline in fish stock in Lake Victoria with the increased number of large scale fishers due to increased fish demand in the processing factories.

Conversely, during focus group discussions,where participant were asked to explain on the incidences of illegal fishing, their responses revealed that illegal fishing was perceived differently by local fish consumers as well as small scale fishers on one side, and policy implementers (Conservers) on the other side. While the conservers were talking about illegal fishing, local consumers and small scale fishers recognized it as tradition fishing or "the so called illegal fishing". This was in the context that what is called illegal fishing is their traditional way of fishing which was practiced from the time of their forefathers and nothing was going wrong in the lake and there was no fish scarcity and people were enjoying living near by the lake as narrated by a participant during FGD that:

> *"Since I was a youth until today I—am among the old men of this village—I had been a fisherman throughout. What is termed as illegal fishing is what we are used to. Here at Kyampili, there was a big camp of people using beach seines. We were getting enough fish, and people were eating and enjoying living around the lake. How then do they tell us it is an illegal thing?"* ***(Male, retired fisher 72 years old, from Kishenge sub-village)***

The majority of the respondents perceived that the current challenges facing fisheries in Lake Victoria are caused by the growth of fish export trade that influenced many people to enter into fishing with advanced gears hence depletion of fish stock. Small scale fishers claimed that, because they use weak fishing gears cannot sail far instead they were fishing in the buffer zones so less impact can be caused by their fishing practices. Therefore, they associated illegal fishing with large scale fishers who were fishing in the deep waters by using more advanced fishing gears, which are capable of catching even the spawning fish that cannot be found in shallow waters. People perceived illegalization of their traditional ways of fishing as the means of alienating them from the gifts of their mother nature for the benefits of the investors. The general perception of the community was that the lake was sold to investors

who are directing the governments of the riparian states to prevent the local people from disturbing it.

On the other side the findings revealed that the majority of respondents 166 (88.3%) acknowledged that "the so called illegal fishing" is what they rely on for acquiring affordable fish in their household. They regarded 'the so called illegal fishing' as their refuge against fish scarcity and inaccessibility caused by growth of fish export trade. Local consumers looked at it as the means of their survival of without which they think they could have suffered as one of local consumer narrated that "*... To us the so called illegal fishing is like our god, if not that I think most of us could have died. Where can you get a fish with your 500/=, 1000/= if not at the beach seines?" (***A male participant from Bweza B***)*

Participants in FGDs were asked if they were not seeing the great destructions on marine resources caused by illegal fishing, especially beach seines and one participant responded that:

> *"... According to them there are distractions because they catch very young fish which I could be left to grow, we could have been catching them by hands, but what should we do in this situation of fish scarcity and skyrocketing prices... yes, it is surely bad, but I can say is a friendly evil" (***A male FGD participant 43 years old from Kishenge sub-village**)

> *"Generally the problem is known to all of us, be it illegal fishers or consumers of illegal fish, but this is what we can afford for our nutrition and as a source of income, therefore no side can blame the other"(***A male FGD participant from Bweza A sub-village**)

The majority of the participants were aware of the distractions caused by illegal fishing, even though reluctantly most of them admitted the negative effects on the marine resources. However, they also conceded that the negative effects they knew, such as the destruction of breeding grounds were not felt in their daily lives but it was as they hear from the conservers. Nevertheless, because it was the matter of death or survival, they had to continue unless other alternatives are found to enable them earn income and excess fish. This revealed that the question of illegal fishing was not socially constructed by the local community other than being a superimposed construct by the conservation agents and this impeded community's compliance with conservation campaigns.

The community regards 'illegal fishing' as a friendly evil as they count the costs of stopping it being higher than the cost of continuing with it in their lives.

This finding concurs with the finding by Mutarubukwa (2008), in the study about the impact of poverty on forest resources conservation with case of Iramba District. The study revealed that the conservation bylaws in place were against the practical life of people's livelihood requirements, therefore, lacked support from the community members and their leaders. This supports earlier statement by Ramphal (1990) that with all the knowledge about the consequences the poor destroy their environment in order to survive.

Community's Perceptions on Conservation Fishing

During focus group discussion participants were asked to give their views on the on going campains on conservation fishing. Concerning conservation fishing, FGD participants saw what is currently considered legal fishing as being illegal, since fishing is currently conducted throughout the year as opposed to the past, when the lake was allowed to rest for some months. Moreover, fishers were fishing by seasonally shifting from one fishing ground to another. According to them, this practice gave the chance for fish to spawn undisturbed. However, due to the increased demand for raw materials in processing plants, fishers are currently hunting fish throughout the year because investors are not ready to periodically close their factories. In this regard, one participant at Mukoko stated the following:

> *"When it comes to conserving the lake, we were at the front line. We were fishing by shifting from one beach to another according to particular seasons. In some seasons we were able to fish here at Kyampili, from January to March. And from April to June we could shift to Mashanga and Nyabishekuro, and some would go to Mwiga. Starting from mid-June to July, we were resting to avoid strong winds and gave the chance for fish to increase. Many fishermen would resume from October to January. Therefore, the lake was spared for some months, and this was the same even to fishermen from Kamukwenge. Today, fishing takes place from January to December; I think this is what should be termed as illegal fishing* ***(Male, 83 years old, from Mukoko).***

It was further reported during FGDs that the 'illegalization' of their traditional ways of fishing, and the ongoing campaigns about fishing had no meaning rather than safeguarding the interest of investors at the price of local

community's health and lives. They claimed that the government is valuing money than her people who are suffering from malnutrition because of fish scarcity. On this, an FGD participant complained that:

> *"..Here I will answer you according to your perception about illegal fishing, but there is no such thing in our community. What happens is like the contradiction existing between konyagi (Industrial produced alocohol) and gongo (locally produced alcohol), which are the same things. The government prohibits the drinking of gongo for the sake of protecting the industries where it gets tax. They tell us that gongo is illegal and dangerous, while they encourage the use of Tanzania konyagi, which is produced in the formal industries. In fact, the two are the same thing. So the same applies to fish. The government needs factories in order to collect taxes, and that is why they call our subsistence fishing illegal fishing". (**Male, small-scale fisher, from Bweza 'A')***

In relation to that, FGD participant posed a question that:
*"If the so called conservation fishing is for safeguarding fishery resources, why other species such as clarias and synondonts are fished pre-maturely as baits for fishing Nile perch and no one is raising voice including those calling themselves conservers?''(***A female FGD participant at Mukoko Sub-Village***)*

The question was relayed by the researcher to one of the Kagera regional surveillance team and the answer was that *"there is no regulation for protecting other fish species apart from Nile Perch and Nile Tilapia"* On this case the officer referred to Fisheries Regulation Act (Cap. 279) section 58 of the 2009 which categorically specifies the allowable sizes for fishing for Nile perch and Nile tilapia. The question on whether conservation fishing is for ecological purposes or economic purpose lacked the straight answer from the Regional Fisheries Officer. Generally, the communities' views on conservation fishing were that the move was for economic gains rather than ecological motives and it is inclined to investors' interest at the cost of foregone interests of the community who are bonefide beneficiaries of the resource.

Conclusion

In relation to the findings of this study, the general observation is that the process of fisheries resources management in Lake Victoria is lacking social justice consideration in its implementation. The study identified little protection

of human rights and equity in the process of fisheries resources management. This deprived the local communities the rights to participate in the utilization and enjoy the benefits of conservation fishing. As a result local consumers were opting for illegal fishing to ensure that they get fish diet and raise income to the fishers. This study, therefore concludes that, the losers cannot be guardians of fisheries resources, unless their socio-economic needs are taken as part and parcel in the fisheries resources management plan. Furhermore, it recommends that fisheries development managers need to take into consideration the needs of local communities in instituting various fisheries resources management programmes in order to attract their positive participation. Also a portion of income raised through fish export to be re-invested in the lakeside communities especially in aquaculture projects to reduce over dependence on wild fishery. Moreover, exportable size limits to be set within the allowable fish sizes for fishing so that local consumers can get access to legalized fish.

References

Abila , R.O (2003). Fish trade and food security: Are they reconcilable in Lake Victoria? Kenya Marine and Fisherman Research Institute. Kisumu, Kenya.

Abila R.O. (2000). The development of the Lake Victoria fishery: A boom or bane for food security? IUCN Report No.8. Nairobi, Kenya

Awange J.L and Ong'ang'a, O (2006). Lake Victoria: Ecology, Resource, Environment. Springer, ISBN 10 3-540-32574-3.The Netherlands. Available at http://www.jlakes.org/ch/web/3-540-32575-1.pdf

Bulayi,E.M(2001). Cooperative Fisheries Management for Lake Victoria. United Nations University-Fisheries Training Institute. Iceland

ausen,N (2017). SPECIAL REPORT: How illegal fishing is killing factories in the Lake Zone. Available at http://www.thecitizen.co.tz/news/how-illegal-fishing-is-killing-factories-in-the-lake-zone/1840340-3505226-w099xe/index.html

Eggert, H and Lokina, R.B (2009).Regulatory Compliance in Lake Victoria Fisheries.Environment and Development Economics.Cambridge University Press.DOI. 10.1017/S1355770X09990106

Greboval, D. and P. Mannini (1992)."The Fishermen of Lake Victoria: Review of Basic Data", UNDP/FAO Regional Project, Inland Fisherman Planning RAF/87/099/-WP/16/92, FAO, Rome.

https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1440-1770.2008.00363.x

Jansen E. G. (1997).Rich fisheries – Poor fisher folk.Some preliminary observations about the effects of trade and aid in the Lake Victoria fisheries. IUCN report no. 1, September 1997. Nairobi, Kenya: The World Conservation Union (IUCN).

LVFO (2013): Lake Victoria Fisherman Organization. Revised Nile Perch Fisherman Management Plan (NPFMP2) for Lake Victoria Years 2014-2019.

LVFO (2016). Lake Victoria Fisheries: An Introduction. Available at http://www.lvfo.org/index.php/lvfo/lvfo-secretariat/5-lake-victoria-fisheries-an-introduction .Accessed on 26th December 2016.

Medard, M and Wilson, D.C (1996).Changing Economic Problems for Women in the Nile Perch Communities on Lake Victoria. A paper presented at the Annual Meeting of the Society for Applied Anthropology, Baltimore, MD 27-31 March, 1996.

Mgale,Y.J and Nikusekela, N.E (2017).Decline in Fish Stock and Livelihood of Small-Scale Fisheries in Shores of Lake Victoria, Tanzania .*International Journal of Applied Agricultural Sciences* 2017; 3(4): 87-91 http://www.sciencepublishinggroup.com/j/ijaas doi: 10.11648/j.ijaas.20170304.11 ISSN: 2469-7877 (Print); ISSN: 2469-7885 (Online)

Mutarubukwa, S.T (2008). The Impact of Poverty on Forest Resources Conservation in Tanzania: A case of Iramba District. Unpublished MA Thesis submitted at the Open University of Tanzania.

Ngaga, Y., Mwamfupe, D., Sokoni, C.H (2005). Mainstreaming Poverty – Environment Linkages in the European Union's Development Assistance in Tanzania.Consultancy Report Submitted to World Wide Fund for Nature (WWF) WWF–MPO Washington D.C. and WWF-TPO, Dar es Salaam

Njiru, M., Getabu, A., Jembe, T., Ngugi, C., Owili, M., Van De Kaap, M (2008). Management of the Nile tilapia (Oreochromisniloticus (L) Fishery in the Kenyan Portion of Lake Victoria, in Light of Changes in its Life History and Ecology.

Ogutu, O.R (2001). Efforts to Incorporate Biodiversity Concerns in Management of the Fisheries of Lake Victoria East Africa.Availabl at https://www.researchgate.net/publication/228487891

Onyango, P. 2001. Co-Management: a solution or an alternative management for Lake Victoria fisheries? Paper presented at the Inaugural Conference of the Center for Maritime Research (MARE), August 2001.

Pringle, R.M (2005). The Nile Perch in Lake Victoria: Local Response and Adaptations' Africa, 75 (4), pp.510-538.doi 10.3366/afr.2005.75.4.510

Ramphal, S .1990: Common index and glossary to the Brandt, Palme, and Brundtland Report of the Independent Commissionon International Development, Disarmament and Security. Commonwealth Secretariat. London.

Stop Illegal Fishing (2016). Illegal Fishing on Lake Victoria. How joint Operations are making an Impact: Case Study Series no. 12. December, 2016.

Surbhi, S (2016). Difference between Census and Sampling. Available at: https://keydifferences.com/difference-between-census-and-sampling.html

URT, (2005). The National guidelines for Beach Management Units, Dar-es-Salaam, Tanzania

URT (2013). 2012 Population and Housing Census: Population Distribution by Administrative Areas. Dar es Salaam

URT (2014).Ministry of Livestock and Fisheries Development. Fisheries Development Division Annual Statistics Report – 2013

Weston, M (2015). Troubled Waters: Why Africa's Largest Lake is in Grave Danger? .http://www.slate.com/articles/news_and_politics/roads/2015/03/lake_victoria_is_in_grave_danger_africa_s_largest_lake_is_threatened_by.html