Potential strategies to address fishers problems in Lake Victoria, Tanzania

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Abstract
Local fishing communities riparian to Lake Victoria in Tanzania have since time immemorial exploited and highly depended on the fisheries of the lake. However their living conditions have been deteriorating despite an increase in the income generated from this fishery. Although there are a few successful fishermen, on average most of them cannot make their ends meet. Living conditions within the riparian communities are poor due to lack of sufficient sanitary, health and education facilities, and there is a very high incidence of diseases, illiteracy and poverty. Since the fishery of the lake turned commercial in 1980's due to the boom of Nile perch *Lates niloticus*, one expects the living conditions of these fishers and indeed the riparian communities to be changing. However, the reverse is what is being observed, WHY? This has been the concern of several people and of the ongoing Lake Victoria Environmental Management Project (LVEMP). As a way of partially addressing this issue, a survey was carried out in these fishing communities between January and March 2001 in the three regions bordering the lake on the Tanzanian side. The survey was undertaken to understand how fishers' conceptualize their conditions and for them to suggest strategies to address this condition. Participatory Research Tools were employed to solicit fisher's problems from their point of view as well as solutions to the identified problems. This paper presents and discusses the results of the survey and argues that among the various strategies proposed for improving fishers conditions, formation of fishers organizations seems to be paramount. This would be the starting point for solving the numerous problems identified.

Introduction
Lake Victoria is the second largest fresh water lake in the world, with a surface area of about 68,800km^2 . The Lake is shared by the East African countries, proportionally a large share is occupied by Tanzania (51%); Uganda (43%); while Kenya owns the smallest (6%). Besides these natural features, the lake has much socio- economic importance to these three countries. For instance, it contributes a gross economic product of about US$ 3-4 billion annually (GEF 1996, RoK, RU and URT, 1995). It supports approximately 27 million people with incomes ranging between US $ 90- 270 per capita per annum. In addition to generating income, the lake provides employment to local fishermen/women (180,000) along the offshore. Others cultivate various agricultural crops and use the lakes waters for irrigation. Moreover, the lake provides marine transport within these three countries (Tanzania, Kenya and Uganda). Among the various activities going on in the lake, fishing is the leading activity (Greboval and Mannini 1992).

Fishing is dominated by three species namely Nile perch (*Lates niloticus)*, (Mkumbo, 1999) Dagaa (*Rastrineobola argentea)*, and Tilapia (*Oreochromis niloticus)* (Nsinda and Mrosso, 1999). Nile perch was introduced in the lake in 1950's. This introduction resulted in a boom of this species in mid 1980's. Since 1989 the annual production remained at a level which the local market could not absorb. In particular, it was difficult to sell the perch in the local market (Abila and Jansen, 1997). There was however a rapid increase in demand for Nile perch, which expanded beyond the three countries sharing the lake as a result of new markets in industrialized countries, especially the European Union. In order to satisfy this market, a number of fillet processing plants were established (Abila and Jansen, 1997). For example, there was a rise of the

annual catch from the lake from 146,000 tones in 1988 to 231,600 tones in 1990 (LVFO Secretariat, 1999). These industries increased the benefits, which were being derived from this water body by the local fishermen.

It has been estimated that during the 1980's an additional 180,000 jobs were created in the primary and secondary fields of the fisheries industry. Many people who had been employed or under employed were able to obtain incomes at levels they had never experienced before. No wonder that many fisherfolk nicknamed the Nile perch the saviour.

Besides these changes, there are negative impacts associated with them. These include

i. Food insecurity: the increase of Nile perch demand by the fillet processing plants increased the price of Nile perch (to about 500-600/= Tshs per kilo)[1] making it less affordable by the local communities (Bokea and Ikiara, 2000; Abila and Jansen, 1997; Jansen, 1997).
ii. Dramatic change in the composition of fish biomass in the lake

In addition to changes in fish biomass, the lake ecosystem experienced a drastic change too. These changes brought about a number of interventions that gave birth of Lake Victoria Environmental Management Project (LVEMP) (GEF 1996, RoK, RU and URT, 1995). This project aims at; Maximizing the sustainable benefits to riparian communities from using resources within the basin to generate food, employment and incomes, supply safe water, and sustain a disease free environment; Conserve biodiversity and genetic resources for the benefit of the riparian and global communities; and Harmonize national and regional management programs in order to achieve the maximum extent possible the reversal of environmental degradation.

Although the volume of fishes from the lake increased in 1980's, the welfare of communities involved in the fishing industry has been declining and in some cases at an alarming downward trend. This caused a lot of fear for the Tanzanian government. In fact majority of local fishers have remained poor due to lack of capability to efficiently participate in the industry. As a consequence, benefits and rewards accruing to the local fishers have not matched the increases in the fish production and therefore affected their welfare. To be able to improve their welfare, a lot of efforts are needed. Among them should be to design or come up with a well-designed strategy/strategies that will allow the local communities to improve their benefits and rewards.

As part of a wider effort in addressing this issue a survey was carried out throughout the lake zone in Tanzania. This survey sought fishers' views regarding problems they face, the causes of these problems and their possible solutions. This survey followed a previous survey which focused on determining factors which influence community participation in the industry. This was thought important due to the fact that all this information would enable strategizing on how

[1] USD 1 = T.shs. 870. This was the exchange rate at the time of the survey.

to improve benefits and rewards accruing to them. This current paper discusses the views expressed by the fishers.

Methodology

The survey employed Participatory Research Appraisal (PRA) tools (IIRR 1998) such as problem ranking and problem webs. The survey was carried out in some selected beaches of Lake Victoria in Tanzania. Discussions with fishermen, traders and local processors handling different fish species were undertaken.

Sampling

Two beaches were sampled in each of the three riparian regions (Mara, Mwanza and Kagera) based on the following factors:

i. *Permanency* – a beach qualified to be selected if it is used throughout the year.
ii. *Identified landing beach* - Beaches that have been identified by The Fisheries Department as the official landing beaches (these will be gazetted).
iii. *Beach which lands commercial species*. Beaches were considered on the fact that one or all of the three commercial species (Nile perch, Tilapia and Dagaa) are landed.

Based on these factors, several beaches were listed and from this list six were randomly selected. However, due to logistical difficulties experienced in the field only one beach was studied in Kagera region. Thus the beaches selected were Busurwa, Guta, Mwabulugu, Kabangaja and Igabiro[2].

Respondents

Three categories of respondents/groups were identified for the study:

i. (i). *Fishermen* - any person who was found in the beach who goes to the lake to get fish out of the water, whether he owns and or he doesn' t own boats and or fishing nets.
ii. *Fish Processors* – Any person who was found in the beach he/she buys fish from fishermen to smoke, sundry, salt or deep-fry.
iii. *Fish traders* – Any person found in the beach who buys fresh and or locally processed fish to sell in that beach or elsewhere.

The PRA techniques

Problem ranking

This tool enables a community to identify and rank problems in order of priority by assessing their relative importance using a set of criteria. By using this technique, the community is enabled to focus their energies and resources to the most important problems. In using this technique, the community members gathered under a tree or in a room and they were asked to list all the problems they face in their area. This was written on the ground in a matrix form by

[2] Actually Kagera beaches share a lot of characteristics as was revealed in the first study preceding this one. For instance there are individual fishermen who controls these beaches. They own over 50% of the boats in these beaches, and other fishermen who are not part of their fleet must sell to him in order to survive in that beach

use of a stick by one of them. We then asked them to use leaves or sticks or stones to show the extent or scope (the number of people who are affected by the problem), the degree of impact (severity) of the problem and occurrence or regularity (frequency of occurrence). Each of these problems was assessed based on these issues (extent, degree of impact and occurrence) and a score between 1 – 5 was used for each issue. This exercise was summarized in a matrix form. The scores were added and the problem which had the highest score was considered as the major and a priority problem.

Problem Web

After identifying the major problem for each category, their causes were sought by use of problem webs. Problem web is a diagrammatic presentation of a problem, its causes and effects. It helps the community to determine the root cause and effects of the problems identified.

During this survey the problem which was identified as the major one was written down by one of the community members. We then asked them to indicate what caused the problem, the causes were written on the ground closer to the problem. The question "why?" was asked and answers written until a root cause was arrived at. An arrow was drawn from the root cause to the problem connecting all the intermediary causes. This was repeated until all possible causes were exhausted. In cases where root causes were the same, they were connected with a two-way arrow on the diagram.

Brainstorming

When the problems and their root causes were identified the community were guided through brainstorming sessions in designing strategies to address the problem. This technique helps to generate new information, perspectives and ideas or gather different opinions from several people on a certain topic in a short time. During the survey a selected group of the sampled respondents were brought together, we explained the objective and mechanics of the session. Each person was asked for their ideas relating to the topic each of the ideas was written down, sorted, classified and synthesized and an agreement was reached on a strategy to use in addressing the problem.

Besides these tools, Semi structured questions and Focus group discussions were also used to complement the three techniques above.

Results and discussion

This section presents the results for three categories interviewed. These are fishermen, traders and local processors. The survey was carried out between January and March 2001 in five beaches around the Lake beaches in Tanzania as shown in table 1.

Table 1: Basic Characteristics of the beaches studied

BEACH	REGION	DISTRICT	TYPE OF	NUMBER OF	NUMBER OF

			FISH LANDED	BOATS¤	FISHERMEN¤.
Busurwa	Mara	Bunda	NP, D, T	95	301
Guta	Mara	Tarime	NP, T	90	299
Mwabulugu	Mwanza	Magu	NP	50	120
Kabangaja	Mwanza	Mwanza	D	70	200
Igabiro	Kagera	Bukoba	NP, T	130	350

NP – Nile perch
T - Tilapia
D - Dagaa
¤ Data based on estimation by those interviewed on the day of survey

Problems Perceived by the Fishermen, Their Causes and Strategies to Solve Them

The prioritized problems (Table 2) for the fishermen in each of the beaches surveyed are discussed below. While the table presents problems ranked 1 to 6, in this paper discussion focussing on problems ranked as number one.

Inadequate education

Generally many fishermen lack secondary education, a high percent of these fishermen are primary school leavers. This is also reported by SEDAWOG[3] (2000) and Onyango (1999). There is inadequate education in fishing and environmental education, which has led to the problems related to low awareness in fishing activities. This lack of education is evidenced by the fact that fishermen normally lack vision in their fishing activities. To them getting fish is more important. Fishermen also lack education about marketing their products.

Table 2: Problems of the fishermen as they were being ranked when the discussion were conducted

PROBLEM RANK	NAME OF BEACHES				
	BUSURWA	**GUTA**	**MWABULUGU**	**KABANGAJA**	**IGABIRO**
1	Inadequate education	• Dishonest Agents • Lack of cooperation • Lack of education	Theft of fishing gears	• Poor Gears • Poor Environment • Market Instability	• Market Instability • Inadequate health facilities • Low Price • Employers harassment
2	Low fish catch	Poor gears	Market instability	Inadequate capital	Gears too expensive
3	Gears too expensive	Gears too expensive	High taxes resulting from privatizing the beaches	-	Theft
4	Theft	Theft	Gears too expensive	-	Impact of water currents on fishing

[3] This is an acronym used to refer to Socio-economic data working group of the Lake Victoria Fisheries Research Project. LVFRP is a fisheries research project (majorly stock assessment) funded by the European Union (EU)). This project ends in November 2001.

					gears
5	Market instability	-	Inadequate capital	-	-
6	Change of weather	-		-	-

Causes

Belief: Fishermen believe that fishing activities do not require formal education. In fact in some societies (Urk in Netherlands), fishermen have made fishing a way of life. These fishermen have inherited fishing equipment from their parents, they are also making their children grow with this understanding. In the Lake Victoria, some fishermen's life begins and ends in fishing, without fishing life is not complete[4].

Inadequate extension services: In Tanzania the law enforcers who are District Fisheries Officers or other staff from the Fisheries Division are supposed to offer extension services. The extension services are quite inadequate due to the fact that these officers are few comperaed to the volume of work in all the districts within the riparian regions. The other problem is caused by the fact that the same officers are supposed to be law enforcers. Philosophically it becomes very difficult for one person to play two contrasting roles of extension service provider and law enforcer.

Polygamy: Some of the fishermen marry more than one wife, and a wife must at least have one or two children, as a result they cannot manage to send them to school because of fees.

Inadquate number of fishing colleges:– There are only three colleges in Tanzania[5]. These are inadequate to offer the much needed fishery education especially vocational training which is probably more needed by the majority of fishermen. In addition to this, these colleges do not have regular programs, which target fishermen. The focus of the running programs is directed to the department of fisheries and the processing sector.

Strategies

i. There is need to establish an independent, effective and efficient extension service. Extension service should be made autonomous from the Fisheries Department. It is proposed that an extension unit be created as an independent directorate under the Ministry of Natural Resources and Tourism, it should cater for fisheries, game and wildlife and forestry requirements under the ministry. This unit should operate from the central government.

ii. Fishing colleges should open their doors to fishermen, they should design tailor made courses to target fishermen, fish traders as well as local fish processors. In addition, these colleges should introduce mobile education services so as to be able to reach a wider population of the fishers.

Dishonest agents

The processing plants have introduced go-betweens, between fishermen and the plants who are known as agents. These agents are not trustworthy, they always hide vital market information such as the prevailing factory prices and the quantity required. This enables them to offer very

[4] Personal observations made during a visit to Urk in Netherlands in 2000 and experience gained while working in the fisheries of Lake Victoria Tanzania.

[5] These colleges are; Nyegezi Fresh Water Fisheries College, Kunduchi and Mbegani Fisheries Colleges.

low prices to the fishermen, in many cases half or less than half of the prices offered by factories (Owino 1997).

Agents also cheat the fishermen through weighing scales, these scales are faulty and fishermen loose between 15-25% weight for each kilo of fish. Sometime, agents take fish from fishermen on credit for several days, and records are written on exercise books. No copies are left with the fishermen for future reference. In case the exercise book is lost, the agent will pay according to what he remembers. The other problem is that there is no formal contract between fishermen and the agent. Thus, the agents can rarely be sued for a breach of contract. Fishermen on the other hand have no opportunity of legal address in the case of disputes.

Causes

The relevant government authority do not periodically check the weighing scales, in addition, there is lack of knowledge on legal actions fishermen can take once they identify a faulty scale.

Greediness: The agents are so greedy to quickly accumulate income without considering the impact of their activities.

Lack of cooperation: There is apparent lack of cooperation between fishermen as such they cannot protest against low prices offered by agents.

Strategies

i. A system should be set to regularly check all weighing scales by the relevant government authority, as is done for weighing scales used in shops and other businesses.

ii. Fisheries managers should be responsible to take legal actions against all agents using faulty weighing scales.

iii. Fishermen should form co-operative union. This union will among other things help in selling fish to the processing plants. When this is done then, the faulty weighing scales will be eradicated.

Lack of cooperation

Many fishermen operating in Lake Victoria Lake Victoria particularly in Tanzanian act individually and or independently. This is so because fishing in the lake historically or basically was for subsistence although occasionally it would be bartered with agricultural goods (Owino, 1999) and subsistence fishing did not require formal group activity. The transformation of the fishery to commercial state (Namisi, 2000) did not change the perception of the fishers from operating individually to groups. Individual fishermen with the ability to acquire fishing equipment resorted to employing crewmembers who do the actual fishing. These crewmembers do not cooperate. Due to differences in incomes, cooperation was not seen as important in

fishing activities especially by the fishers until theft of gears and frequent deaths[6] of fishermen had occurred.

Causes

i. There is low awareness on the benefits of the co-operation and how to legalize the groups.

ii. Self-confidences on individual performance. Fishermen console themselves with the fact that given the conditions under which they operate, they are not likely to do any better. Thus they have developed some sort of confidence in their performance level. This condition proves the idea of poor extension service mentioned above offered to these fishermen. Such services could have opened their minds to appreciate their abilities and various opportunities of cooperating in order to improve their status.

iii. Stereotype views about the earlier co-operative societies, for example agricultural co-operative societies that collapsed because of poor fund management, dishonest officials, and formation of groups without firm foundation. As a result fishermen have negative attitudes towards co-operative societies.

Strategies

i. Fishermen proposed that extension services should be strengthened.

ii. Fishermen proposed that they should be compelled to form association/ co-operatives by an act of the minister concerned. The minister should enact a law that compels all fishermen in the lake belong to an association. Such associations and or co-operatives should comprise fishermen and not non-fishermen.

iii. Organizations have created good results especially in improving fisher's status. Practical examples include fishing cooperatives in Japan, Producers Organizations in Netherlands and United Kingdom (Langstraat, 1999; Phillipson, 1999). Indeed besides addressing fishers benefits, organizations embedded on the collective action theory (Ostrom, 1990) enhances management of the resource. In Finland the Fisheries Act of 1982 recognized the importance of fishers organizations both socially and economically and thus introduced fisheries region (these are organizations that allows for the cooperation of all persons and groups interested and involved in fisheries management). This was an improvement of the original voluntary groups which were later made compulsory by law for all fishermen (Sipponen 1999). Such cooperation is very crucial for co-managing Lake Victoria (Geheb and Crean, 2000; Onyango 2001b)

[6] Frequent deaths were experienced as a result of the lucrative fishing which attracted people who had no experience even in swimming. The beach residents came together and set up by-laws. One such by-law which is similar in almost all beaches across the Tanzanian side is that, if a fisherman dies in the lake, all fishermen would not go fishing until the dead were found. This was a starting point for cooperation.

Theft/robbery
There is rampant theft and robbery of gears and engines in the lake. The problem affects both, fishermen and their crews. Once their gears have been stolen, they have to start afresh and this hinders their development. Other effects include risk in loosing their lives, this is because some are killed when robbers attack in the lake or they loose some parts of their body. Gear theft has also been noted as a problem affecting fishermen (Geheb and Crean, 2000)

Causes
Harassment of some fishermen who have modern gears. Some crewmembers claimed that they are forced by their employers to steal other's gears once their employers' gears have been stolen.

Jealousy between fishermen because of the gains from fishing. Some fishermen steal others' gears in order to stop them or to make them unable to make gains.

Strategies
Fishermen agreed to initiate cooperative union, and each member contribute some money to purchase engine for surveillance. Through their union they would ensure security of their nets and engines.

Market instability

Market is a very important tool through which to allocate resources in the most efficient way. It can however be used to misallocate resources especially when forces of demand and supply are not allowed to operate freely as required. This is what is currently being experienced in the Nile perch fisheries of Lake Victoria (Gibbon, 1999). The market problem to fishermen is two fold in Lake Victoria; low prices of fish and market in-availability.

Low Prices of fish
FAO (1996) noted that prices are marginally influenced by local circumstances and depend more on the conditions imposed by international markets. However for Lake Victoria Nile perch, there is a high price elasticity of demand when Nile perch production is mainly for local consumption (Greboval 1989). At significantly high levels of production, however, Nile perch price tends to rise and be more stable because of the geographic expansion of the market. There is also evidence on the issue that the value of the dollar as well as frequent bans on fish exports have had impacts on fish prices. However to a large extent local fish prices have been set by fish filleting factories (Namisi 2000). This makes all fishermen to be price takers and these prices set at the factories are by themselves very low for instance they range between Tshs. 750-1500 (i.e. USD 0.9 – 1.7) (I USD = Tshs. 870). This is the price that the filleting plants buy the fish. The agents who buy the fish from the fishermen reduce this further to more than half claiming that the difference meets transport costs. In some beaches, there is an arrangement where fish landed by crewmembers are bought by fish collectors, these fish collectors then transport the fish to a second category of collectors who work on behalf of the agents. These second collectors have a direct link with the agents. This arrangement makes fish prices to be very low especially to the

crewmembers who work all through the night. This is so because at each level of sales, the person involved desires to make a profit.

Causes

Lack of competition: In some beaches like those in the western part and some Islands of the lake, a certain system has erupted where some fishermen monopolize fishing in a beach. They operate over 50% boats in that beach. In addition to this, they have the means to transport their fish to the processing plants in Mwanza. This implies that other fishermen in the beach must adhere to their terms and conditions if they want their fish to be bought. The consequence of this is that the monopolists buy the fish from other fishermen at very low prices. It has actually been discovered that processing plants undertake their fishing through such a system.

Dishonest Agents: Agents always hide information about prices to fishermen, because there is a big communication gap between fishermen and processing plants. They always take advantage of this gap by lowering the prices of fish. Usually they buy fish at a very low price almost half or less than half of the price offered at the filleting plants.

Involvement of processing plants in fishing: The involvement of processing plants in fishing narrows the fish market of local fishermen. The processing plants fulfills their demand for fish by involving in direct fishing, if their fishing efforts cannot provide enough raw materials then they buy the difference at very low prices usually Tshs 250- 500/= per kilo of fish.

Strategies

i. Fishermen agreed to initiate a co-operative union in order to strengthen their economic position and be able to participate in price determination. With such a union they can build up their position and start fish filleting so as to be able to compete effectively with the current filleting plants. They however proposed that education about co-operative union should be provided to them. Again this calls for extension service.

ii. Fishermen suggested that the government should set minimum prices of fish product per kilo as it always does for agricultural products. Although fishermen would want to see government involvement in the market, this is not in line with the conventional economic theory which argues that markets allocate resources most efficiently when there is least government interference. However this is an indication of their inability to effectly participate in the industry.

iii. Fisheries management should select only few beaches for landing in order to control the price difference. From this proposal it appears that fishermen are not fully informed of the efforts the Fisheries Division are making towards gazzeting official landing beaches which have already been identified. Again the need for extension service.

iv. Processing plants should advertise their buying price of fish per kilo in mass media radio, Television and Magazines just like it is done for agricultural products.

Market in-availability
The market problem is serious in some beaches. There are no agents or factory representatives in those beaches to buy the fish from the fishermen, as a result the fishermen sell their fish to the nieghbouring countries (smuggling) like Kenya and Uganda. When the authorities enforce the laws then these fishermen lack market for disposing their fish. The result of this is that the fish is either given away to villagers at very low prices or given free to relatives in order to avoid spoilage.

Causes
Long distance: As many processing plants are located in Mwanza region, it becomes difficult for some fishermen to reach them. The road conditions (most of the roads leading to the beaches are murram roads) are impassable during rainy season. The effect of this is that some processing plants are not ready to incur high transport costs for collecting fish from far beaches. This therefore makes fish landed at such beaches to sell at very low prices.

Strategy
Infrastructure especially roads to these areas should be improved.

Inadequate health facilities
Fishermen claimed that this is a very serious problem to them, and that a large part of their incomes are spent on medical services. This inadequacy has also led to diseases such as bilharzia, diarrhea, headache, and sexually transmitted diseases (STD) (Onyango 2000a). Fishermen are affected with STD's because they don't use condoms.

Causes
Lack of dispensaries or hospitals and or clinics within the beaches. Actually in all the beaches visited only one beach was four kilometers a way from a government dispensary. Others were either void of any medical facility or un-properly stocked drug shops.

There are inadequate medicines in chemist shops that make such medicines to be very expensive to be afforded by fishermen.

Strategy
In some beaches, fishermen agreed to initiate a union through which they would construct dispensaries around their beaches.

Employer harassment
The problem seemed to be serious in some beaches, and issues that are considered by crewmembers as harassment are: lack of time to rest, fishermen allowed to get only reject fish for consumption and sometime are even forced to buy them, fishermen can be suspended without any reason and or notice, they do not have sick leave. Given the fact that they are paid on a daily basis, if one falls sick and doesn't go to work, then he would not get paid for that day.

Causes

Employers are money driven and do not consider any social and or health issues of their employees.

Strategies

i. Laws must be formulated and implemented to protect the crewmembers.

ii. There must be an open contract that will identify all responsibilities and rights of the crewmembers.

iii. Problems their perceived causes and strategies for traders

The prioritized problems for the traders (Table 3) are discussed below.

Table 3: Problems of traders

PROBLEM	NAME OF BEACHES				
	BUSURWA	**GUTA**	**MWABULUGU**	**KABANGAJA**	**IGABIRO**
1	-	Poor Equipment	• High taxes • Inadequate Capital		Low Price
2	-	Inadequate Capital	• High transport costs • Lack of Education		• High transport costs • Poor Equipment
3	-	• Low prices • Poor roads	Low fish supply		Inadequate capital
4	-	Faulty weighing scales	Poor Equipment e.g. containers, wheel barrows, etc		Market instability
5	-	• High taxes • Restrictive regulation and rules	Low price		

Poor equipment
Traders need storage equipment in order to keep their fish in a better condition which would be preferred by their customers. Some of these traders have to travel long distances to sell their fish to local markets, many of them use bicycles to transport the fish to these markets. Due to the fact that they lack good storage equipment and in addition to poor transport facilities, they are forced to sell their fish at low prices in order to avoid spoilage. This has also been noted by SEDAWOG (1999).

Causes
They have inadequate funds to purchase such equipments to support their activities. This leads to low profits and savings.

Strategies
Owners of the processing plants should assist such traders by providing various equipments on credit in turn to fish supply.
Government, NGO's, Banks and Financial Institutions should give financial support to traders at fair conditions.

Taxes
The problem affects majority of the traders. They claim that they pay double tax on the same product. When they buy fish at the beach, they pay a tax for each Kilo of fish they buy. When they go to the markets, they are also charged a tax at the market. This makes them operate their activities at marginal profits. For instance a trader is supposed to pay between Tshs. 6- 10 /= per kilogram (depending on the district) as a tax when he/ she buys, fish from fishermen again he/she is going to pay when she/he reaches the market place. This amount differs from one district to another as the district councils set them.

Causes
The only reason given was privatization of beaches. Since the beginning of this millennium, most district councils who have control over these beaches sought to improve incomes from these beaches, privatization was thought to be an efficient way to do this. Individuals of groups tendered to collect taxes from these beaches and deliver to the district councils. The result was that those who won the tenders have not honestly followed the regulations on amount to charge. In addition traders who used to evade taxes can now not evade paying.

Strategies
Tax payment should be reviewed in order to avoid double taxes. This has been considered under the Fish Levy trust study by the Fisheries Division (report forth coming).

Inadequate capital
Most traders operate with capital ranging from T.shs. 5,000 – 50,000. This makes them unable to purchase the basic equipment necessary for the trade SEDAWOG (1999) also noted this problem.

Causes

Poverty: *:* The initial investment capital which these traders invested was low hence minimal returns. Other causes include; poor means of transport such as use of bicycles compounded by poor roads, since they need to travel for a long time to the market place; for instance, in some cases the fish is transported for over 10km, thus by the time the fish reaches the market it is already bad.

Barter trade: In some areas the trade is barter. That is, when traders take their fish to the market, customers may not have money to purchase the fish, in turn they exchange their fish with other goods such as maize, cassava, beans, and the like; which are of less value compared to the fish they have.

Restrictive conditions for getting credits from financial institutions: Traders fail to get credits from financial institutions such as Banks because of too much restrictions and conditions, for instance, assets for securities like land, house, which some of them do not own and or if they own, they do not have the necessary documents to prove ownership.

The only available sources are the NGO's who provide credit and saving services. Even some district councils provide the loans but at very low levels. These do not increase their capital but only keeps them in the business.

Strategies

i. They suggested that credits should be given with fair conditions

ii. They all agreed to initiate a co-operative union. They however request for education on how to operate and control such union.

Problems their perceived causes and strategies for processors

Table 4: ***Problems of the local processors.***

PROBLEMS	NAME OF BEACHES				
	BUSURWA	GUTA	MWABULUGU	KABANGAJA	IGABIRO
1	Inadequate capital	Dangerous wild animals e.g. hippopotamus and crocodiles Corporation Health	Lack of corporation	-	Low fish supply
2	Low fish supply	Inadequate capital	Inadequate capital	-	Inadequate inputs
3	Market instability	Low fish supply	Low fish supply	-	Low purchasing power
4	-	-	Poor tools eg kilns Market instability	-	-
5	-	-	Inadequate skills and techniques in frying	-	-

			and smoking		

Inadequate capital

This problem affects many local processors like smokers, salters, sun-driers, and fryers. These people lack enough funds and as a result they fail to buy enough fish for processing. This makes them to depend on rejects only for processing. In addition, they still use traditional kilns, which are made out of mud to process their fish.

Causes

Poverty is the major cause of this problem. They started their business with little capital hence poor returns too. This is compounded with a very big list of expenditure items.

Inadequate education: Most of the processors lack education on how to run their business. As a result they are not able to find different markets far from the beach in addition to increasing their profits. Due to inadequate education they are not competitive too.

Lack of information about capital sources: Most of the processors are not aware that there are different organization, which could help them to increase their capital such as banks, NGOs, government, etc

Strategies

Processors noted that the strategy to solving their problem is to corporate in order to bare cost of operations so as to improve their capital.

Processors also requested for elementary business education.

Dangerous wild animals

In some beaches like Guta this problem is very serious. These wild animals like hippopotamus and crocodiles kill people and some of the processors have lost part of their bodies.

Causes

i. Expansion of settlements makes these animals to lack enough space.

ii. Currently there is no Game Officer stationed at this place to check on such animals.

iii. Superstitious believes that these animals belong to some villagers.

Strategies

The concerned Ministry should provide them with a permanent Game Officer at the beach.

Cooperation

Generally many processors operate their processing activities independently. This lack of corporation has made them unable to increase their capital. As a result they have continued to operate their business with the capital ranging between 1,000/= to 10,000/=Tshs.

Causes

Low awareness on cooperation: they are not adequately informed and mobilized to form groups. They are aware that groups can help them, however they still do not know how to go about forming such groups.

Strategies

There is a need to have an effective and efficient extension services within the fishery division to handle this low awareness.

Processors unanimously agreed to initiate cooperative unions so as to solve their problems.

Health

This problem is too serious to all local processors; because majority of them are still use traditional kilns, which are made out of mud, and use firewood as source of energy, which affects their health. Major diseases which processors suffer are cough, headache, eye problems, and dizziness.

Causes

Lack of education on improved kilns: Local processors claimed that they lack education on how to use and build improved kilns

Inadequate capital: They are not able to buy improved equipments and inputs for their processing activities like improved kilns.

Lack of dispensaries: The absence of dispensaries in many beaches, cause local processors to lack health services and medical advice on how to take precautions when they are conducting their local processing activities.

Strategies

i. Government and NGOs should provide education on how to make and use the improved kilns.

ii. They all agreed to initiate a corporation of credits and servings so as to raise their capital

iii. Health sector should provide services frequently

Low fish supply

This is a problem which has also been noted by fishermen (SEDAWOG, 2000) and confirmed by biologists (Tweddle and Cowx, 2000). It is a major problem to the local processors, because it leads to lack of fish for processing. These local processors either have to compete with the processing plants or have to depend on fish rejected by these plants. They also have to compete with local consumers who buy the fish fresh. Due to this competition they get very low supply of fish. This means that they use very low capital at the time there is no supply of fish.

Causes

Climatic conditions: Changes in the weather leads to frequent fluctuations in the supply of fish.

Processing plants*:* The fishermen give first priority to processing plants. The rest is sold to local processors. The fish sold to local processors are the rejects or juveniles fish of low quality.

Illegal fishing methods*:* Although there are rules, which stipulate fishing in what season and areas, the type of fishing gears acceptable and the type or size of fish, which can be caught, there are those who still use illegal fishing techniques. These techniques reduce or lead to a daily declining marginal low catches of fish and as a result processors lack fish for processing.

Strategies

Beach Management Units (BMUs) formed across the lake should make sure that all regulations are enforced.

CONCLUSIONS

The results from this survey point out several things, among them is that local fishers are not in control of their natural resources. This is not because they do not want but they have been pushed to this situation due to the economic situation in which they have found themselves. Many of them have generated benefits and rewards in terms of employment and income, equally some have been sidelined for instance local processors. Secondly, there is an uncoordinated fishers activities among themselves. The fishers are unorganized to the extent that exploiting them becomes very easy. In addition this has made it very difficult for them to participate effectively in controlling the market so as to generate higher profits. Due to this fact, agents have erupted and are over exploiting them by offering low prices. However it is worth noting that fishers are willing to cooperate and this is very important. Thirdly, extension service is inadequate. This has accelerated poor performance by the fisher and also hindered them from increasing their benefits and rewards. In order to reduce existence of these problems if we cannot solve them, there's need to look at two major issues; extension service and organizing fishers into formal groups.

RECOMMENDATIONS

i. Establish a Directorate of Extension Unit under the Ministry of Natural Resources and Tourism

The role extension service can play in not only soliciting for support towards sustainably utilizing the lake resources has been underestimated. This has resulted into combining this role with a contrasting one of law enforcement. As already pointed out, extension is crucial in increasing benefits and rewards to the fishers. Namisi (2000) notes in his work that there's need to invest in information sharing and education of the local fishing communities. He further notes that education is very important for a society whose culture and life has directly depended on fish for many years.

Thus it is recommended that an independent extension unit should be established in Tanzania. This unit should be formed as a Directorate under the Ministry of Natural Resources and Tourism. It should cater for the ministries all departments and Institutions.

ii. Mobilize fishermen to form fisher's organizations

Formation of a fisher's organization in Lake Victoria is now an inevitable fact. Besides the advantage such an organization will generate for the fishers, the lake's resources is also bound to benefit. This is so because the already noted decline in fish resources has been caused by among other things human activities which includes use of illegal fishing techniques. Although this has been addressed through forming Beach Management Units across the lake, not all interest groups have been included in these units, moreover these units operate within the structure of the government (Onyango, 2001b), they are not autonomous to make independent decision and the benefits to be derived from these units are not immediate to the fishers, as such they may be less effectiveness as anticipated. In order to create effective system autonomy of the fishers is very necessary. .

It is therefore recommended that one, a law should be enacted to induce all fishermen in Lake Victoria to belong to an association. Secondly such an association should either be based on a district/regional level other than beach level. It would be very easy to deal with fishers groups than to deal with them individually. The suggestion here is that fishermen, traders and processors should each form an association. The three associations should combine to form an umbrella association either at the district and or regional level

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