

# Coping Strategies of the Small-Scale Fishing Communities in the Midst of Marine Protective Policies in the Lake Victoria: The Power of Agency in Creating Own Life Trajectories

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**Abstract-** In consequence of what was explained as serious deterioration of fish stock and destruction of fish-breeding grounds, the government decided to enact and implement severe measures that would undoubtedly protect marine resources against destructive fishing methods. In practice, this attempt meant that, all fishers who used gears that were categorised as destructive should either stop from accessing fish from the lake or buy non-destructive gears, a condition that was seemingly impossible for many poor artisanal fishers in Tanzania. This attempt therefore compelled many who were employed in this sector to turn into other alternative means of livelihood for survival. This paper examines the strategies that have been employed by the fishing community in eking out their living as a response to restrictive measures from 2005 to date. The findings in this paper are fundamentally qualitative derived from a survey which was conducted in the Musira Island from September 2015 to June, 2016. In general terms, it was found that, a number of socio-cultural, economic, and illegitimate coping strategies were crafted out of desperation for survival as a result. Victims through their interpretation of the situation they faced and their power to manipulate it, they were somewhat able to endure the shocks initially presented by the government's intervention. The paper recommends that, for marine resource protection policies to work, before disrupting the dominant fishing livelihood strategy for people in the coast for whichever reasons, attempts to create another culturally informed and consented strategy is vital in ensuring the sustainability of protected resources.

**Index Terms-** Coping strategies, Fish resource, Power of agency

## I. INTRODUCTION

Small-scale fisheries make significant socioeconomic contributions to over 51 million people worldwide, the vast of whom live along the coast in developing countries. In Tanzania, the fisheries sector is among the most important economic sub-sectors of the economy. The sector provides substantial employment, income, livelihood, foreign earnings and revenue to the country. The industry employs more than 5,000,000 people engaged in fisheries and fisheries related activities, while more than 480,000 fisheries operators are directly employed in the sector. In 2009 the fisheries sector contributed 1.3% to GDP, the per capita fish consumption was 8.0 kilogram and about 30% of animal protein consumption in

Tanzania (National Economic Survey; [URT, 2012]). Like in other parts in the developing countries, small-scale and artisanal fishery accounts for the majority of fish catch caught by more than 43,000 fishermen in the country (URT, 2010).

Although artisanal fisheries can be subsistence or commercial fisheries, providing for local consumption or export, this category of fishers mostly fish for subsistence, involve households members (as opposed to commercial companies), use a relatively small amount of capital and energy, use lower level of technology for harvesting [include beach seines, various cast and lift nets, fishing by hook and line from shore, fish traps and weirs (large and small), and manual harvesting (seaweed, bivalves, crabs, etc in coastal zones)], have relatively small fishing vessels (if any), make short fishing trips close to shore, and mainly for local consumption. Generally, some of the relative advantages of small-scale fisheries in certain conditions include; lower running costs and fuel consumption; lower ecological impact; higher employment opportunities; higher versatility; lower construction costs; less expensive technology; and the use household members. For coastal dwellers, marine resources are very important both as source of food, supplying 90% of animal protein, and of income, fishing often being their primary occupation (Narriman, *et al.*, 2002; Wagner, 2004; Sesabo and Tol, 2005; Mwaipopo, 2008).

Even with its significant contribution to socioeconomic development, since the 1960s, marine areas in Tanzania have been prone to destructive fishing practices, such as dynamite fishing, the long-term trend of over-harvesting fish and the use of seine nets, mono filament nets, gill nets, and dragnets among others (Francis *et al.*, 2002). These and many other activities along the coast destroy important fish habitats and other living and non-living organisms within the area (ibid, 2002; Francis and Bryceson, 2001; Mohamed, 2000; Masalu, 2002; Wagner, 2004). As a response to what are referred to as destructive and unsustainable extraction methods in harvesting marine resources, the government of Tanzania established a number of regulatory frameworks to control both the access and utilisation of marine resources in an attempt to protect, conserve, and restore the species and genetic diversity of living and non-living marine resources, and the ecosystem in general for the betterment of the nation and its population, particularly, the ones residing along the coastline (URT: 1997; James T *et al.*, 2006; EAME-APT, 2008; Levine, 2003).

However, such protective measures range from temporary to permanent fencing and zoning of fishing grounds and habitats, displacing fishers from traditional land and fishing grounds, and delaying of fishing activities among others (Bennett, 2005). Suffice it to assert that these current institutional and legal frameworks in a way affect people's right of access to marine resources, and their capacity to engage in and benefit from them. Such limitations result in impoverishment, disempowerment, and marginalisation of fishing communities to varying degree (Mwaiipopo, 2008). As a result of such activities, it is estimated that more than 64,241 and 50,000 full-time and part-time fishermen respectively have largely been affected by these policies in Tanzania (Kamukala, 2014; Neumann, 1990, 1997).

This paper is therefore set to present in details ways through which coastal community members like that of Musira Island have been able to eke out their living under such a restrained terrain. It is divided into six main sections. While the introduction section provides the background of an issue which this paper is trying to divulge on, the methodology section briefly demonstrates the grounds upon which the findings and conclusion were drawn from. The third section presents the nature of the socio-cultural set-up of the island and ways through which this context compelled community members to adopt various coping strategies. The fourth section brings to light the fact that the newly adopted strategies have not been without the price, instead as a result, deep ecological damages have also been produced in the course of struggling for survival. The fifth section unveils different economic openings which community members exploited to eke-out a living on the one and the extent to which such opportunities have to some extent repositioned the gender role configuration in the island on the other hand. The last section presents the conclusion which encapsulates on the findings and also offers a suggestion on the proper approach possible if future protection and conservation measure were to succeed.

## II. METHODS

The findings in this paper are based on the study which was conducted in Musira Island in Bukoba Rural District in 2015-2016. In order to fill in the gap which was long created by quantitative studies on the subject, and also to understand even concealed processes individual use to eke out their living, qualitative data rather than quantitative, generated through in-depth interviews, narratives and focus group discussions are used in the analysis and presentation of the findings in this paper. Both qualitative and quantitative data were drawn from various key respondents who directly took part in fishing or participated in fish-related activities in the area. A sample of 75 respondents therefore was used in the analysis.

The study employed five (5) focus group discussions (FGDs), these groups comprised of the following subjects; the first group comprised of thirteen (13) fishermen, the second; ten (10) mat wavers, third; ten (10) women-fishers, fourth; eleven (11) mixed group of women, and last; eleven (11) mixed group of men. The study also employed thirteen (13) in-depth interviews (Public Relation Officer-Medad Fishing Company, Village Executive Officer, Village Chairman, Village Treasurer, Chairman, [Musira Fishing Association], Mama-Mboga, Sheikh,

Retired Beach Management-Chairman, Retired Beach Management Unit member, 2 most experienced fishermen [the one who use legal and other who use illegal fishing method), employed-mother of six children, and a food vendor, and three (3) narratives (two old and experienced fishers and the Village Chairman). The sample size was determined by the ability of the researcher to manage the collected data given the nature of data collected (qualitative), limited amount of time, and resources available

## III. SOCIO-CULTURAL TERRAIN OF THE ISLAND AND THE NEED FOR INSTANTANEOUS COPING STRATEGIES

Like many other small communities in Africa, life in the Musira Island is built around a mechanical solidarity social life. Despite the heterogeneity and multidimensionality in originality and tribes, community members in the island have outshined such differences and live as a single formed community. The physical reality, social-cultural, economic, and political contexts stand at the core of this new homogeneity. The noted integration and cohesion among individual emanates from performing and sharing same economic activities, difficulties, religion, trainings, and a somewhat same life-style.

The significance and functionality of the above exemplified social relationship in Musira Island has to a greater extent been noted in times of socio-economic turbulences where it acts as one of the imperative lifeline to most community members than in normal times where it presents itself as a supplementary living strategy.

Approaches and attempts to protect marine resources, particularly, illegal fishing in the island ranges from cutting people from their daily subsistence to prosecution. The Beach Management Unit (BMU) which is comprised of both government officials and Local trained officers have been confiscating and burning fishing gears (nets), individuals have been charged in court with criminal offenses, and paying fines as a way of compensating for the damage done.

*...“in a nutshell, there are a number of punishments that we give to fishers who employ prohibited gears in the Lake or engage into businesses that contravene with the current government policies on marine resources management. For example, if you were found with illegal fishing gears, before anything else, we used to confiscate and apprehend individuals responsible. Although not required by the law but for communal approval, the charges were first presented to the village meeting and offenders required to defend themselves before the meeting. If were found guilty, the meeting normally ordered for their gears to be confiscated. But this strategy has proved failure because of knowing each other. What we have decided as BMU in collaboration with police force, is to apprehend, charge them with a criminal offence, and burn their gears. So we are very aggressive on this and people do not like us very much”... [IDI: BMU government representative]*

One important thing the Islanders share however, is their conception of the “Lake” which is considered as their only source of survival. This is because, like many islands in Tanzania, agriculture and business have hardly flourished due to soil infertility and lack of business knowledge and reliable market in most of these Islands. The preceded reality labels whoever tries to configure this thinking as an enemy of most of the Islanders, even if he/she is elevated among themselves.

*...“look around you and tell us what you see. Do you see businesses, banana trees, coffee or anything of that sort? What do you want us to do for living if not fishing? Even if the government brings the police with guns, we will continue fishing unless they evacuate us from this island by force. The lake is our farm, our shops, and our life. Have we forced them to not farm? ----and so---why do they do that to us? No one will prohibit us from fishing, no one. Not even leaders of this village”... [FGD: Fishers]*

In order to establish the implication attached to the Lake so as to understand the magnitude of the problem and consequences of protection measures, the study sought to figure out quantitatively from a few qualitative respondents used in this study the contribution of the Lake to their daily subsistence. Therefore the question intended specifically to find out the one most important function of the Lake in their opinion. The answers are as indicated in Table 1 below;

**Table 1: Contribution of the Lake Victoria to Musira Residents**

Function	Respondents	Percentage
Food	24	32.00
Income	47	62.68
Health Services	1	1.33
Clothes	1	1.33
School	1	1.33
Enjoyment	1	1.33
<b>Total</b>	<b>75</b>	<b>100</b>

Source: Field Data, 2015-2016

From Table 1 above, it was unveiled that, 62.68% of all respondents were of the opinion that the Lake was important as a source of income while 32% the amount which is almost half of the former voiced that the Lake was imperative in the provision of food.

For the case of Musira however, the most dominant food is stiff-porridge (ugali in Kiswahili) and rice, and yet, these staples are not produced in the island. For one to get his/her hand on such food he/she has to purchase it from a kiosk in the vicinity or on the mainland. Therefore, as much as respondents in the asked question above meant that the Lake provided them with food (fish), in a way, they also meant that it supplied them with cash that enabled them to purchase rice and maize-flour. Even when analysed from the social services angle, the aspect of ‘cash’ will

still come out strongly as the most important benefit obtained from the Lake.

As a result of protective measures in the island, social, cultural, and economic routines have either been reduced or shortened. A number of people, depending on their specialisations and gender have long benefited from the fishing activity in the Lake until the government among other agencies decided to intervene.

There are quite a good number of individuals who have been enormously affected by both the scarcity of fish and government’s efforts of trying to arrest the situation in the Lake. For example, the island harbors various fish-relating activities which in the end award residents with economic rewards which enable them either to purchase or access different basic needs. Particularly, in the island, there are food vendors (mostly women) who cook for a big number of bachelor fishermen, few married fishermen, and non-fishermen and women. There are also other groups of people who are specialised in repairing of canoes<sup>1</sup> and nets, construction of new canoes, fish buyers (retailers), employees (by bigger fishermen and companies), and business (Kiosk).

Furthermore, according to BMU, there are six types of fishermen in the Island as indicated in Table 2 below. All these groups of fishermen, each according to its specialization, were affected by either the stoppage or the alteration of the laws that used to guide fishing activities before new interventions in the area. Generally, in a way, all available occupations in the area were connected by the presence of the Lake and the interdependence of each group’s activity.

**Table 2: Categories of Fishermen in Musira Island**

Types of Fishermen	Number	Percentage
Who own fishing gears, vessel & engines	30	10.49
Who own fishing gears only	18	6.29
Who own fishing vessels only	21	7.34
Who are employed by fellow Local countrymen	122	42.66
Who are employed by foreign/Local Companies	84	29.37
Who own engines only	11	3.85
<b>Total</b>	<b>286</b>	<b>100</b>

Source: BMU Data Base in Musira Island, 2015-2016

This is also to assert that the impacts of restrictive measures in the island cut across to almost all age groups depending on the nature of activity performed by these individuals. This on the other hand has made it so difficult for the

<sup>1</sup>A canoe is a small wooden narrow boat, typically human-powered, though it may also be powered by sails or small electric or gas motors. Canoes are usually pointed at both bow and stern and are normally open on top, but can be decked over. In its human-powered form, the canoe is propelled by the use of paddles, usually by two people. Paddlers face in the direction of travel, either seated on supports in the hull, or kneeling directly upon the hull. Paddling can be contrasted with rowing, where the rowers usually face away from the direction of travel and use mounted oars (though a wide canoe can be fitted with oarlocks and rowed). Paddles may be single-bladed or double-bladed. See Robert, 2000

socio-cultural institution to provide and cater for all the affected groups unlike in the old times whereas only the vulnerable who could otherwise not reach subsistence level because of old age, invalidity, sickness, death, unemployment, maternity, lack of factors of production, employment injury and pregnancy were taken into account (Albrecht, 1984). However, in making sure that no community member breathe the last breath and continues to subsist, it had to adjust and adapt to new mechanisms that would somewhat ensure their survival.

Due to the Islanders' nature of production, similarity in activities, and inherent interdependence of activities conducted by community members, the prevailing socio-cultural organisation could not improvise and absorb instantaneously the shock of unemployment as compared to shortage of food supply as it would have been in the organic society<sup>2</sup>.

The problem was further intensified by the fact that most of the Islanders do not have a tendency of saving for tomorrow or at-least prepare for worst case scenarios. The phenomenon is primarily because of believing that the Lake was their farm with natural fruits, what is needed is the energy to reap it. The other reason is the nature of their farm which presents a very precarious environment to their survival.

*...every day we are faced with death in the water. We use poor fishing facilities, fish during strong winds and waves, travel far in deep water, and confronted with ghost in order to get fish. Therefore for us, life is very unpredictable. We do not plan for tomorrow; we only care about now and today. I can assure you, if you ask how many of us here have at least Tshs 10,000 in his pocket or at home, you will find not more than two if you are lucky or none, ---am I lying guys? Tell him...*  
[FGD: fisherman]

*... No, you are not, that's why here in the island we highly depend on GOD for survival, and most of us do not get sick like people in the mainland...*[FGD: Aged-fisherman]

In most cases the assistances are based on kin relationships, although some are based on alliance, on friendship or on systems of mutual help. However, for the case of Musira, assistance is mostly based on mutual help, moral support, and compassion probably because of the nature of religion (Islam) guiding most of the occupants as was attested in the FGD by the Leader (Imam) of the only religious institution (Mosque) in the vicinity;

*... "here in the island, we regard ourselves as people of one GOD (Allah), even though some few of us are not*

*Moslems. We do not segregate, be it in bad times or in good times. For Muslims, giving or helping those in needy is not a request but rather an obligation from Allah. Here we live with people of different ethnic backgrounds, even with Rwandese and Burundians. When someone is in trouble, we do not care about where he came from though some community members have depicted such behaviour. What we do is to help that particular individual depending on the type of problem is confronted with"...* [FGD: Imam]

In an attempt to cope with difficulties presented by government's interventions in the area, some socio-cultural activities had to change and some had to be invented in order to cope with a new reality.

#### IV. THE NEW ADOPTED LIVELIHOOD STRATEGIES IN THE ISLAND: PREVIOUS SOCIO-CULTURAL MECHANISMS RE-DEFINED

Lending out fishing gears and vessels to fishermen is the common phenomenon in the fishing arena (Becha, 2008; Sesabo and Tol, 2005; Wagner, 2004). Many community members who are involved in the fishing activity in the Lake do not have all the necessary equipments to allow them to engage into the fishing business independently. Most of them depend on each others' strength except for the few who own all the necessary fishing facilities and are able to engage others by either employing or lending them.

Before implementation of government strategies, especially, that of burning and confiscating of undesired fishing nets and gears, the number of fishermen who owned fishing gears was 85 compared to the current number of 18 fishermen. Most fishermen who did not have fishing gears used to borrow from those who owned. The price for lending these equipments ranged from Tshs 20,000 to Tshs 35,000 per catch depending on the type and condition of gears and nature of negotiations with the owner. According to the Village Executive Officer (VEO), this amount was reasonable and so far had not generated any complaint from fishermen. This situation facilitated many who had no equipments to benefit from this arrangement through employment in different fishing-related activities in the area.

*... "not only here, visit all the islands around, you will find only a few people who have gears and boats as their own property. Most of the fishermen depend on these few for survival, and also, these few rich people depend on these many for survival, so it is a two way traffic though not a win-win situation"...*[FGD: Fishermen]

Nevertheless, in a period that would have seemed to be a booming season for the few owners who have survived the sweep by taking advantage of big pool of gearless population by increasing the renting amount, the opposite was evident in the island. The renting amount decreased drastically from the former amount to about Tshs 10,000 to Tshs 15,000 per catch at the moment. This was to allow many who could still afford to borrow continue with fishing activities. Furthermore, the reduction in amount was never without conditionalities. It was agreed in a meeting of all equipment owners that whoever

<sup>2</sup> Organic solidarity comes from the interdependence that arises from specialisation of work and the complementarities between people, the type of development which occurs in "modern" and "industrial" societies. This is a social cohesion based upon the dependence individuals have on each other in more advanced societies. Although individuals perform different tasks and often have different values and interest, the order and very solidarity of society depends on their reliance on each other to perform their specified tasks. Organic here is referring to the interdependence of the component parts. Thus, social solidarity is maintained in more complex societies through the interdependence of its component parts (e.g., farmers produce the food to feed the factory workers who produce the tractors that allow the farmer to produce the food). Study this concept more in Morrison K (1983). Formation of Modern Social Thought, London. Thousand Oaks. New Delhi: SAGE

wanted to borrow the equipments was supposed to double his working force unlike in the former. In addition to this new arrangement, each vessel was compelled to bring at least one “sadoline” (small plastic bucket) or two kilogrammes of fish in each catch depending on the type of fish they were fishing and nature of the catch (big or small). The above amount was set for good catches. This scheme was devised by community members in trying to help those who were greatly affected (HIV/AIDS families, elderly people, and orphans) by government’s attempt by denying them an opportunity to earn a living in their one and only farm. These were those who once participated either directly or indirectly in any of the fishing-related business.

*...“in December 2005, the government sent its people here to investigate and question people on the different ways they use in fishing, their problems, profits, and the kind assistance they would need to be given from the government. Fishers were excited as they were promised to be assisted through provision of loans and modern fishing equipments. In February 2006, early in the morning we got the message from the Village Chairman that we were all needed at the ground for special announcement from government officials. It was in that meeting that it was announced that all people operating in the Lake were henceforth prohibited from using seine net, beach-seines, mosquito-nets, gillnets, monofilaments and many others (a long list was posted outside the office of the Village for people to read). Since that day, life in the island changed drastically. This is because the announcement touched almost the biggest section of this community who directly and indirectly depended on these abandoned equipments for survival. Hence, this was a tragedy of the entire community and not just fishermen. The Leadership of the Village thought therefore that it was wise to hold a meeting in an attempt to brainstorm what to do. This is where a request to those who had non-prohibited equipments to lower the amount and other related conditions were tabled, discussed, and agreed upon”... [IDI: BMU-Chairman]*

Lending of fishing gears for such a small amount did not ensue without challenges. As a result of this amount, many fishermen had wanted to borrow these few gears in vain. Consequently, the time for lending was therefore adjusted from one month to two weeks to allow others also to lend. This attempt also necessitated many fishermen to start thinking of “saving” for the future, a phenomenon that hardly existed in the past. Fishermen who had not had an opportunity to borrow were compelled to save the money until after two weeks when their fellow colleagues had finished their tenure. This circle was determined, controlled, and monitored by the Fishers Association in the island to avoid illicit attempts.

*...“before government interventions, I used to work every day and get at least Tshs 5,000 everyday. As you can see, I was still sleeping before you came in because of having nothing to do. I am now supposed to wait for about eleven days for my turn to get another Tshs 50,000 for fourteen days (two weeks) if I am lucky. I, and other five members*

*of my family are forced to use not more than Tshs 3,000 per day, otherwise we won’t make it”... [IDI: 18 years old-Depended Fishermen]*

The other socio-cultural phenomenon that came to light is that, there were also few fishermen who were employed in the fish companies around the island even before the interventions. These include, Andiphance, Medad, and Kagera Fishing Company Ltd. These companies own and control big fishing vessels, heavy-duty engines, highly advanced gears, and nets which permit them to extract big catches unlike their counterparts. They also buy all fishes which ranges from an average of 0.5 kilogrammes and above from local fishermen. However, in order for them to harvest more, local expertise is highly desired. Thus, experienced and energetic people with a desire to be employed in these companies have long been absorbed. In addition, some few non-fishermen from the island, especially, women have been absorbed in these industries particularly in the cleaning department. The difference between the former and current arrangements is that, companies have now decided to hire two categories of workers. The first category (original) is the one that receives wages on monthly basis and the second that receives their wage on a daily basis. This adjustment was meant to absorb the many who have remained jobless as a result of recent government’s intercession in the island.

According to Public Relation Officer of Medad Fishing Company, after a noted sharp increase in crimes and HIV/AIDS in the island which was clearly aggravated by the state of joblessness in the area, the company felt obliged to include a reasonable number of youths (men and women) in its employment list as part of its Cooperate Social Responsibility (CSR). This was until the management was asked in village meeting to try to assist some of its members even at the lowest pay possible.

*...“since this industry started in 2004, it has succeeded to employ many young people around it. However, the significant increase was noted in 2006 and 2007 when we were requested by the Regional Commissioner and the village leadership of Musira Village to assist its community members, especially, women to get employment at the company instead of considering people from the mainland. It was explained in the meeting that women and young people have now started to engage into abominable acts namely; prostitution and theft because of lack of employment. Since then, we have been trying to accommodate many Islanders not only from Musira but also other surrounding islands because of the nature of their difficulties which cut-across. However, we are forced to pay them very low wages because of their hugeness in number, but I hope we are making the difference”... [IDI: PRO Medad Fishing Company]*

The concept of ‘Life’ was another aspect that further aggravated the difficulties people faced. Life on the island is built around the concept of today and not tomorrow so much so that all aspects of life that intend to prolong it have very much been compromised. Spending as much as you can, regular and abnormal drinking, polygamous life and, prostitution has been

some of the prevalent characteristics of life at the coast. These are some of the noted aspects of life that have long been practiced at Musira Island. These and some other practices in the island require a substantial amount of money to maintain and sustain. It is quite unfortunate that such practices have long dominated many fishermen's lives notwithstanding the cautiousness of the prevailing social organisation. For example, according to Village Chairman, a number of jobless, women and girls from the mainland migrate to this island for prostitution purpose each year. However, following the demise of what was conceived as illegal fishing practices which led to a limited supply of food and little or no cash among others in households, serious measures such as selling of alcohol (local brew) to men from 6:00 pm up to until 8:00 pm was adopted. Furthermore, prostitution business and prostitutes were prohibited and threatened of being chased away if they did not stop respectively. All these measures installed by the village government (VG) were on the one hand to ensure limited spending on the part of men and protection of vulnerable members of the households namely women, children, and elderly people on the other.

*...“life in the island is different from other places. When we are not fishing we do not have anything very important to do. After a tiresome and risky journey of fishing in the lake the whole night, you would want to relax your mind ready for the next day. The only things you can find for relaxation are women and alcohol. Therefore you choose either alcohol or women or both depending on your pocket”... [FGD: Fishers]*

*...“when someone wants to spend his/her money on something, it is difficult to restrict him from doing that and by so doing; you will be invading his/her freedom. Although things like local brew “gongo” and women do not cost much here, you find man spending even his last cent on these items instead of on his family”... [VEO: IDI]*

The study also noted an attempt by canoe-owners to diversify their fishing facilities into other income generating activities, particularly in the transportation sector. The dominant fishing vessels in the island are local canoes powered by humans and the ones powered by motor (sometimes referred to as boats by natives). Most of fishermen however, use the former method in fishing due to the costs one should incur to purchase the latter. Canoes are an important part of Musira culture, having been used for exploration, fishing and travel between and around the islands for social and economic purposes. In particular, both types of canoes in the island have predominantly been used for fishing activities for centuries.

Of all the Lakes in the region, Lake Victoria is known for its strong rapids. Usually, mornings and evenings are windy seasons, and unfortunately, this is the time when many Islanders and Non-islanders make their journey either to or from the island. Again, during the rainy season which is between April to June and November through-out December, the Lake normally become a raging torrent with rapids and cracking waves, making it far too dangerous to make a journey by canoe not to mention it being slow, wet, and uncomfortable.

Notwithstanding its simplicity and the risks it presents, canoes have now become the most dependable means of transport for many in the island unlike in the old days (five years back) where boats used to be the chief means of transport. These canoes carry people from the island to the Mainland either to seek for daily manual labour or to work in different sectors where they have secured employments after the cessation of the former only at the rate of Tshs 250 per person as opposed to five years back when they used to pay Tshs 4,000 for the same service by boat.

According to a mother of six children who was compelled to seek for employment outside the island, the transport was neither comfortable nor safe but convenient and cheap.

*“Traveling in the Lake by the canoe needs strong courage. Whenever you are in, you feel like sinking or overturning anytime, but you persevere. Travelling especially during the night is even more scaring. The canoe takes long time in the water; sailors sometimes disappear outlandishly, often times you get wet because of the wind and waves, and sometime the sailor is forced to go-around to escape terrible waves, so indeed, it is bumping ride. One thing I like about this transport though is that, it is never expensive and it is always there waiting for passengers unlike in the old times when boats were used. I work in the hotel in town, and normally, I finish at 10pm and the last canoe leaves at 11:30 pm. So if you ask me, it is very helpful”... [IDI: An employed mother of six children from the Island]*

Therefore, instead of confining their canoes for fishing activities alone, owners decided to diversify the horizon of business by including also an aspect of transportation on their menu. This again was made possible due to the fact that, confiscation of gears implicated and affected more people who were using canoes for fishing other than boats. This approach therefore was a strategy for the owners to continue subsisting economically.

Further, religion in the island was found to be one of the social enabling factors for people to earn their living. Historically, the first people to settle in the island were the Arabs who were denied an opportunity to stay in Kamachumu village in Muleba District. This was because of the sudden deaths of three people of the same family whom apparently one of them had fought with one of the Arabs over a piece of land back in 1968. In the struggle to look for a permanent place to stay, one old man (Arabian) who used to live alone and do his fishing activities in the island offered them a chunk of land where they began to multiply in numbers. Apart from their ethnic background, religious inclination was one important attribute that bonded this population. As a result, many immigrants when they reach in the island, they are confronted with one of the most difficult decisions, that is, either to acquire new or remain with their ascribed religious statuses.

Religion guides, informs, and defines the nature of relationship people should have with each other in the vicinity. Further, it somewhat dictates who should and who should not be assisted and the kind of obligation one has over each other. It might not be explicit, but belonging to the Christian religion

might cost an individual not to access or get the assistance he/she deserves in times of need.

...“people in this island live like brothers and sisters as it directed by the word of GOD, and it is expected that everyone abides by the Islamic principles. Whoever does the opposite contravenes with the fundamentals of the Islamic religion. We usually treat and help people according to Allah’s principles”... [FGD: Imam]

According to an old woman whose specialty was to dry Nile-Perches by smoke before their disappearance, had it not been for the food and money she got from the Mosque to start the tea-selling business, life would have been so difficult for her. This is considering the fact that she had lost her entire family members through the canoe accident on their way to Kelebe Island for the wedding. Normally each Friday after the prayer, the Leader conducts the fundraising where members donate whichever amount and property for the Mosque to help the needy.

#### V. NEWLY ADOPTED ECOLOGICALLY THREATENING LIVELIHOOD PRACTICES IN THE COURSE OF STRUGGLING FOR SURVIVAL

Illegal fishing practices which include the use of illicit fishing gears like gillnet, monofilaments, and beach seines were among the reasons for the introduction of serious and prohibitive measures in the fishing arena. These and other many practices have been blamed for plundering its fish stock at an alarming rate and destroying fish-breeding grounds in general. Whereas the above was true and probably merited the attention of both repressive and ideological state apparatuses, the failure to divert the attention of desperate fishermen from these instruments made the situation even more devastating.

A sudden raid on fishermen’s highly dependable livelihood strategy gave rebirth to a precarious fishing practice that had long been abandoned in the area. The use of poison, especially, agricultural pesticides was once a common practice in the island. However, this practice failed to co-exist with other now branded illegal fishing practices because it was discouraged by community members who slightly got affected by the practice in its initial stage, and again, it did not even receive an implicit go ahead from fishermen themselves.

After the eradication of what was envisaged as cheap by fishermen but destructive means of fishing by the state, some fishermen reverted into an old method which required no better fishing techniques, no advanced fishing gears, no capital except for the canoe, energy, and courage as it was aptly explained by one of the fishermen who use that particular method in fishing;

...“we, fishermen who are using this method are not proud of it and we do not use it regularly; it is just that we are faced with life difficulties. This is the easiest and effortless way of getting fish from the lake if you do not have all the necessary equipments. The only thing you need is the boat, to be healthy, and the gallon of a solution made of sleeping pills (Piriton solution). This is not actually the poison as BMU calls it because humans

also use it. The difference is that we spill it in the water and for humans drink it”... [IDI: Fisherman using illegal fishing method]

This fishing technique is still not accepted by Islanders but somewhat tolerated. Fishermen who use this technique are well known and yet no serious measures have been taken against them, including that of reporting them to BMU officials or revealing them during village meetings. This again could also be due to the reality that fish obtained through this method are carefully prepared and dried with salt to remove the poison. These are not sold within the island but shipped either to Mwanza or Bukoba Town Regional market.

Membership to the BMU was again another approach fishers used to access fish in the Lake. BMU is a community management organization composed of stakeholders in a coastal community whose main functions are geared towards sustainable management, conservation and protection of marine and coastal resources in their locality in collaboration with the Government (URT, 2009). Specifically, the Unit is responsible to enforce respective legislations (Fisheries, Forestry and Beekeeping, Land Use, Environment, etc), prepare by-laws that supplement the implementation of the national laws above, ensure beach sanitation and hygiene, and collect fisheries data/information and dissemination to relevant stakeholders. Others include educating other stakeholders on the negative impact of illegal fishing practices and other environmental issues that affect the marine and coastal resources and the general environment, prepare and implement economic sub-projects, and ensure security of the people and property. Finally, the Unit is in charge of undertaking Monitoring, Control and Surveillance (MCS) in collaboration with the government authorities and other responsible stakeholders (Ibid, 2009).

However, in spite of its significance, membership to the Unit is said to be voluntary but with qualifications (URT, 2010). For one to qualify as a member of the unit, he/she has to be a resident of coastal community but also meeting the following criteria; a member should be a Tanzanian; should be a fisher, a fish trader, a fish processor or any fisheries stakeholder; should be a resident of the coastal village/fish landing site for at least one year; should be ardent conservator of the fishery resources; could be males and females above 18 years of age. In addition, traditional leaders in the villages/beaches with the above qualifications are highly recommended to join the units in order to exploit their experience for best achievements on fishery resources management; should be honest, trustful, team player, self motivated, and ready to work in a group; should be ready to work on voluntary basis (there is no remuneration); and leaders should know how to communicate (read and write) in Kiswahili.

Reflecting on above qualifications, it is the State that is left to define who should and should not be in a unit. Further, the cost of guarding the now known as confiscate community highly dependable resources for the government is free. Importantly, the social organisation that creates the individual and defines, assigns roles, and statuses to community members is left out of the script. These and many other operational weaknesses have made it difficult for BMU strategy to thrive.

Ideally, the concept of BMU emanated from above (government) after experiencing both administrative and

financial difficulties on the ground in managing and controlling coastal resources. Persuading people to participate in managing the little, state controlled (legal framework in place), and liberalized resource without providing a recourse is untenable.

Traditional systems of management and other community-based organizations have always existed at the fish landing beaches even before the introduction of BMU (Scheinman, 2006). Unlike the current, the old sprung from the social organisation itself. These were guided by the culture of the community which stands at the core of their success. Leaders of community were entrusted to organize and manage community resources on behalf of community members and not on behalf of the state which the current is actually doing.

For a mechanical and glued community like Musira that takes care of and protect each other for survival, becoming a member of BMU is creating either enmity with the rest of the community or an opportunity to help your community members to exploit limited resources for endurance. There has been a long misunderstanding among BMU members, and the local BMU members have been blamed for this state of affairs. This feeling stemmed from the fact that, there was lack of flow and sharing of information among members of the unit. Government officials were blaming the locals for not cooperating fully and for not reporting incidences of fishing misconduct despite the BMU office in the island being raided and their boat and motor vandalised.

*...“BMU is the government property but includes also members of our community, especially, those doing fishing activities. Most of these members however, are those who were greatly affected by what the BMU actually does. It is difficult for these members to apprehend or report his uncle, cousin, brother, or neighbor when he is found doing things that are prohibited by the BMU. If he does that he will be mocked and isolated by community members. Besides, BMU membership rotates each year, if you report your fellow today, tomorrow you or your family member will also be reported. So what you do is to keep quite or pretend you have not seen him....I know this is not right but it is difficult”... [IDI: BMU retired member]*

During the in-depth interview with one of the fish-traders in the island, it was revealed in confidence that, using ring-nets in fishing is not as rewarding as using seine-nets or other gears that have been prohibited. As a result of the shortage of gears that qualify for the stipulated sizes of fishes to be harvested, those who either used their own or hired the gears and boats were forced to include/employ many clue members to help them survive. However, the amount of catch was never enough to satisfy all members, pay costs for lending, and bring some for the rest of community members. Therefore, the only way possible was to fix the deficit by allowing fishers to use both methods but with caution.

*...“in the second meeting with government officials, the village meeting blamed the government for coming out with a sudden and harsh condition of stopping almost all fishermen from accessing the Lake. Therefore, the*

*meeting asked for at least six months for the government condition to be effected or a phased approach that would start with the few who have most destructive gears. However, they were informed that, that was a policy and they could not do anything about it. This did not impress the congregators and the leadership in general. We could not put all people out of business at-once, so we somewhat allowed them to access the lake using less destructive gears but with the condition of using it for one catch only”... [IDI: Village Treasurer]*

During this study, it was unveiled by the Village Chairman that, for ages, life in the island has been a peaceful and harmonious one, until recently when cases of petty and somewhat grand thefts among community members have been reported. It was further revealed that, much of these incidences have been due to lack of appropriate and sustainable means of earning a living in the island. For instance, theft of fishing gear on Lake Victoria is an old problem that was there even in the early 1970s [for example, Jansen (1973) mentioned it in his report]. Such cases, though, were isolated and not in a scale that could have an impact on the overall fishing activities. In any case, the existing norms in the fishing community ensured that gear thieves received adequate sanction to deter them from repeating the crime as it was explained during the FGD by group of fishers.

*...“stealing a boat or fishing net to fishers is like killing the lives of about 10 to 15 households. Most of those who steal such equipments do not have families and mostly come from outside this island. Stealing of fishes is tolerated, but stealing of fishing equipment, especially, fishing nets, is dangerous. If caught, you can be chased away from this island”... [FGD: Fishers]*

The increased demand for fish, particularly, Nile perch in the 1980s on the one hand and the desperation for survival as a result of government interventions fuelled by ego on the other, especially, in late 1990s throughout 2000s provided enough incentives for fishers to invest in illicit activities including the renaissance of gear theft. Gear theft is now recognized by the fishing community as one of the most serious management problems in the Lake Victoria fishery (SEDAWOG, 2012).

In recent times, there have been even more serious cases of violent robberies on the lake, where outboard engines have been stolen from fishermen at gunpoint. Fishers from different landing-sites namely; Musira (Island), Nyamukazi (Mainland), Nyabesinga (Island), Ntoro (Mainland), Igabiro (Mainland), Kelebe (Island), Makibwa (Island), and Nyaburo (Island) have been pointing fingers at each other on the same. Brutal cases however are linked to fishermen from Uganda.

*...“last month we had a meeting of all fishermen-leaders of nine landing-sites which are highly affected by motor (boat-engine) theft. The main agenda was to resolve the heated conflict between us and also to come up with a solution to curb it. The meeting did not go well because leaders in the mainland were accusing fishermen in the*



*islands of conspiring with the thieves”... [IDI: Chairman-Musira Fishers Association)*

The BMU in the area is aware of such cases but appears ill equipped to stop gear theft since they do not have the capacity to confront armed robbers on the lake. At the same time there is no Police unit specifically trained to combat theft or robbery on the lake.

The immediate vicious consequence of gear theft is that many fishermen who have lost nets have become jobless. They cannot earn an income to support their families, making them food insecure. The community has on the other hand pinned the blame on the inefficiency of government to protect the fishermen. As a result, some fishers have now been retaliating by employing beach seines and mosquito seines.

*...“this government is so funny. While it orders fishermen not to use destructive gears it fails to protect us from notorious thieves from the mainland and Uganda who invade us on the Lake and steal our motors. What it cares about is fishing license and fees but not our lives.....its medicine is in the kitchen boiling. That’s why I am saying, people will never stop using destructive gears until the government cares for them”... [FGD: Fishermen]*

Furthermore, there have been cases of theft of clothes, poultry and electronic devices such as phone, televisions, and radio from the mainland by people from nearby islands such as Musira. These and some other easily snatched properties are kept in the islands and then brought back after sometimes to be sold in the mainland for a very little amount of money for food.

## VI. FINANCIAL AND ENTREPRENEURIAL EXITS: AN INVASION OF MEN’S FARM

In fisheries, men and women often have distinct roles. For instance, in marine fisheries, usually only men go out to fish, but women are often involved in trading and processing. Collection of intertidal resources (clams, urchins, and octopus) for subsistence is usually the domain of women, and provides an important additional protein source for households (FAO, 2004). Children also often engage in fisheries at this subsistence level.

However, in recent years, the fish trading and marketing sectors of the fishery, which have traditionally been dominated by women, have witnessed enormous incursions by male entrepreneurs in the island (Medard, 2000). This move has to some extent hindered the participation of women in eking-out their living in the fishery field.

One old tourist woman from Switzerland visited the island in 2008 as part of her expedition. She was given a traditional woven bag as a souvenir by a group of four women who were waving as part of their evening activity. After she left, the tourist established a link with the group through one of the Evangelical Lutheran Church-Tanzania (ELCT) officials in Bukoba. The group was asked to name the kind of assistance they needed to enhance their business. However, instead of concentrating on their waving business, they agreed on starting the fishing business which in their opinion was more rewarding and fast

moving. The tourist agreed to their proposal and assisted them with the fiber fishing boat, engine, and nets.

During the FGD with the group members, the chairperson revealed that, although the group had gained respect because of how it has been able to endure and achieve in the men’s field. However, the group relies, and is dependent on men for many things, including the provision of advice and mechanical services, which has on the other hand caused them trouble in their operations on a number of occasions.

*...“our lack of technical knowledge about fishing equipment has added to our problems and forced us to rely on men. For example, after our boat, along with an outboard engine, had been purchased, it was only with time that we noticed that the engine was too large for this size of boat. As a result, fuel consumption was unnecessarily high”... [FGD: Group Chairperson]*

It was further learned that, some of the men in households where group members belonged had demanded full involvement in the women’s fishing activities. They also wanted to participate in the selection of crew members, engine operators, and financial accountability. They wanted to know the exact income from the women’s group, and hence, interfered with the planning and operations of investment as it was revealed by the group Treasurer in the FGD;

*...“men usually question us on how much we get from our group. As a leader however, it is hard to provide such information as it is immoral and it is against my leadership ethics----One time I had to sleep outside for not revealing that information. I almost broke my marriage because of group funds. My husband forced me to give him Tshs 100,000 for his court case which again he lost”.... [FGD: Group Treasurer]*

*...“another exceptional case was one in which a chairperson’s husband demanded the control of our outboard engine because his wife was the chairperson of the group. When the engine was brought to the group, they scheduled a period for testing, and the engine was passed on to the chairperson’s husband for the task. After two days of testing, the man disappeared with the engine amongst other gears for two weeks. Neither of his wives knew where he had gone. Finally, the group held a meeting, which resulted into the resignation of the chairperson”.... [FGD: Group Member]*

With all the above problems among others, this group has triumphed most of the prevailing socio-cultural hurdles in the island and managed to provide for their households and contributed to others through employment. The group has four (4) permanent and nine (9) non-permanent members who are employed to assist in cleaning, fishing, and sometimes drying the fishes. It is a norm for the group not to include their husbands in their business except for their sons. The biggest share of the catch is usually sold directly to the nearby fish Industry (Medad Fishing Company) which offers them a good deal as compared to retail selling. Group members have also managed to open up a

small shop in the island where many people get services even on a credit arrangement.

## VII. SUPPLEMENTARY ECONOMIC LIFE-LINES IN THE VICINITY

Whilst waiting for the fishermen to buy their food, food vendors who are usually the women keep themselves busy by weaving mats from local materials which they will sell in the market. Mat weaving activity has now been strengthened and small organizations formed. So far, there are two groups of women who are performing this kind of activity.

Women's weaving groups called "Tweyambe" and "Goshoka" have enabled their members to earn extra income by selling woven mats to tourists in the island or by bringing them to the market in Bukoba Town. The former has ten (10), while the latter has seven (7) members. There is also a good number of women who are not in groups who are doing the same activity. Weaving is regarded as an additional livelihood activity that enables women to continue other activities such as looking after the family whilst also being able to earn additional income.

*... "this was never a well paying activity in the island. We used to do it just for fun in the evening and because most of our chairs and beds are mat-made. We did not bother to decorate them; we just weaved for the purpose of using it ourselves. However, today, weaving of mats and baskets is a lucrative business. We still wave for our uses but most of them are now sold in town. Each month we sell about 35 to 40 baskets for about Tshs 5,000 to Tshs 7,000 each depending on the size and style. We spend Tshs 50,000 for materials and colour, the rest we divide it among ourselves. I for one do not ask for money from my husband anymore"...* [FGD: Chairperson-Tweyambe Group]

The other livelihood strategy that people (both men and women) in the island are engaged in is vegetable and crop growing. This study noted that, with few vegetables grown in the area however, high demand existed. The establishment of vegetable growing was able to tap into this ready market. Households were able to grow enough vegetables for their own needs as well as a surplus to sell in the market.

Nevertheless, the income from these activities is relatively small and so is not going to result in the complete disengagement of marine livelihood activities by those engaged. Furthermore, of late, this venture has experienced some theft of vegetables, most notably, spinach and tomatoes which are highly demanded and have a somewhat high value in the market relative to other plants. This demonstrates the vulnerability of this new adopted livelihood. This was attested during the in-depth interview with a vegetable grower in the island, famously known as "Mama-Mboga".

*... "unlike other types of things and stealing, vegetables do not make noise and requires no effort when stealing it. At first, I used to think probably people were stealing it for food because of lack of fish, but when I found two terraces of spinach have been cleared, then I knew this*

*was serious because someone must be selling it. I and my colleagues have already reported these incidences to office of the Village Executive Officer"...* [IDI: Mama-Mboga]

Food vending is yet another but old survival strategy that existed even before government interventions in the island. The only difference between the old and new arrangement is that, in old times this used to be a full-time job unlike today where this has now turned into a part-time job as was elucidated by one of Mama-Lishes during the FGD.

*... "i have been doing this work for more than fifteen years now. I remember I used to help my mother to cook since morning up to evening. Most of my mothers' friends and many others used to do this business. Out of almost twenty huts around the coast which used to do this business on permanent basis, we are only three now, other five are doing it as a part time job"...* [FGD: Mama-Lishe]

Food selling is one of the lucrative businesses in the island. There are four groups of women who do this kind of business. There are those who sell tea and bites in the morning, those who sell lunch (rice, bananas and ugali) in the afternoon, those who sell porridge, coffee and ginger-tea in the evening, and very few who provide all the above mentioned services under one roof (hotel) who do this business on full-time basis. This business has been possible and long sustained due to the fact it is informed and favoured by the culture of most coastal communities.

*... "eating is part and parcel of our tradition. Above all, eating in one's home is never a crime, instead, one gets blessed by inviting people, and especially the underprivileged ones to come and eat in his home. Therefore, for us, it does not matter so much where you have eaten, whether in the hotel or to a food vendor, but what matters is that you have not starved your family and you have eaten the food prepared by your wife. Therefore, you might find a man eating even hundred times from other places but as long as he has fulfilled the above requirements no problem. Everything you find in the area was created by GOD (Allah) for a reason. These vendors depend on us for survival; therefore, we cannot abandon them even if we have families. It is through such people where we get blessed and continue to get fish"...* [IDI; Village Chairman]

Last but not least, poultry keeping was another alternative used by some community members to eke-out an existence in the island. Traditionally, ducks and chicken keeping has long been part and parcel of the African culture (Ellis, 1998). More often than not, these have been used for ritual purposes and food during special occasions such as, festivals, cultural celebrations, and when visited with special guests (Ibid, 1998). On the other hand, keeping poultry for sale was never explicit. This happened only in a few occasions when one (usually head of households) was in need of money (usually sold at a very low price), or wanted to exchange it for something else.

In an attempt to cope with the short supply of fish for food because of the decreasing in number of fishermen and catches on the one hand, and the introduction of fish industries due to liberalization policies around the coast which offer attractive price for fishermen as compared to the local market on the other hand, the large section of the community now depend of vegetables and poultry for food.

The above state of affair has necessitated them to seriously start investing in poultry, especially, chicken and ducks. However, their dire need for poultry for food, unfortunately, coincided with the high demand of the same from nearby tourist hotels namely; Spice Beach, Kolping, and Walk-Guard Hotels. This business has now completely changed the original definition of poultry keeping in households as it was revealed by the wife of a now renowned poultry-seller.

*... "if you want to pick a fight with my husband, try to ask him for the amount of money that is beyond Tshs 1,000 and tease or ask him to allow you to slaughter one of his poultry, even during religious celebrations. We do not remember the last time we tasted chicken-meat in this house".... [FGD: Male and Female]*

Spice beach hotel is well known in town for a delicious grilled duck meat. Among other sources, the hotel depends on the surrounding villages and Musira Island for this food. The hotel offers a special price (Tshs 10,000-15,000) for well-built and muscled ducks, and unfortunately, most of them come from the islands apparently because of the kind of food they get fed with.

Conversely, chicken meat was highly needed by all three hotels. However, two hotels, that is, Walk-Guard and Kolping bought chicken which weighed from 1kg and above. When this study was being conducted between, one kilogramme of chicken meat was bought at the price of between Tshs 6,500 to Tshs 7,000 by these hotels depending on the season. This condition has on the other hand compelled them not to sell immature chicken. Generally, poultry was one of the most important sources of income to some individuals and households in the island.

## VIII. CONCLUSION

From above findings therefore, it can generally be concluded that, it is obvious that the government and other civil society organizations which champion for structural preeminence in constraining the individuals ignored the power of the agency before the structures. It was expected that, BMU among other regulatory agencies would have restricted people who use illegal fishing methods from accessing the Lake in favor of what these structures have predefined for Musira community. However, it is evident from the findings that, regardless of the power of structures, individuals were free to interpret, influence, and act with their understanding in order to survive.

Even with new livelihood strategies in place, life in the island has never been the same. In order to get their hands on identified socio-cultural, economic, and illegal lifelines, one has to engage into profound mental gymnastics, and sometimes accompanied with social and economic risks. Therefore, for marine resource protection policies to produce desired outcomes

attempts to create new culturally informed and consented strategy is vital in ensuring the lives of community members in place on the one hand and the sustainability of protected resources on the other.

## ACKNOWLEDGEMENT

The author acknowledges the contribution of various respondents who took part in the study and reviewers who reviewed this paper and made comments, recommendations and insights that have greatly assisted in improving the manuscript, although they may not agree with all of the interpretations/conclusions of this paper. In particular, the author thanks Dr. Ajali Mustafa and Haji Chang'a who provided insights and edited an earlier version of the manuscript respectively.

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