

Role of Beach Management Units in implementing fisheries policy: a case study of two BMUs in Lake Victoria, Tanzania.

Luomba, J.O
Tanzania Fisheries Research Institute (TAFIRI)
P.O Box 475, Mwanza-Tanzania
Email: luomba@yahoo.com

ABSTRACT

Lake Victoria management has shifted from centralized to a co-management approach where the government and other stakeholders including Beach Management Units (BMUs) share management responsibilities. In Tanzania, these BMUs were formed in 1990's under the Lake Victoria Environmental Management Project (LVEMP I) and then reformed during the Implementation of a Fisheries Management Plan (IFMP) project carried out from 2005-2010. The change to co-management was as a result of the failure of top down approach in managing the fisheries resources and thus it was assumed that with co-management fisheries management as well as poverty levels will be improved. However, the declining fish stocks and claims of poverty within fisheries communities raise concerns about the impacts of BMUs in implementing fisheries policy. This paper uses data generated from a case study of two BMUs in Magu and Ilemela districts of Lake Victoria to address these concerns. Findings reveal that BMUs have formulated regulatory measures to manage the fishery but have been ineffective in implementing some of the measures. On the other hand, BMUs have no poverty eradication schemes and lack skills tackle the challenges posed by poverty. Lack of better approach to tackle these challenges threatens the sustainability of the fisheries given that most riparian communities entirely depend on the resources for their livelihood.

Key words: Lake Victoria, fisheries management, BMU, fisheries policy, Tanzania

INTRODUCTION

Lake Victoria is Africa's largest lake with a total surface area of 68,800 sq.km. The lake has a catchment area of 193, 000 km² (Uganda 30,880 km², Kenya 42,460 km², Tanzania 84,920 km², Rwanda 21,120 km² and Burundi 13,510 km²) with a rapidly growing population of over 35 million people. The lake's water is however shared by three countries Kenya 6%, Tanzania 51% and Uganda 43%. Its fisheries is dominated by three most commercial species of Nile perch (*lates niloticus*) Dagaa (*Rastroneobola argenteae*) and Nile tilapia (*Oreochromis niloticus*). The value of catch at beach level is estimated at more than USD 550 million and an export value of USD 260 million [1]. It also source of cheap protein, employment, income and water for domestic and industrial use.

The failure of centralized management system and increase in uncontrolled and illegal fishing practices posed risks to the sustainability of the resources and the livelihoods of the people directly depended on the fisheries [2] this contributed to establishment of a co-management approach.

Co-management as a partnership arrangement in which government agencies, the community of local resource users (fishers), non-governmental organisations (NGOs), and other stakeholders share responsibility and authority for the management of a fishery [3] began in

Tanzania in late 1990's under the Lake Victoria Environmental Management Project (LVEMP) where a committee of five fishers were formed in Mwanza Gulf. This was then rolled out to other landing sites and by the year 2000 there were about 511 BMUs in all riparian districts [4]. However, these BMUs lacked a clear operational guidelines and institutional framework. This led to the reformation of the BMUs in 2006 during the Implementation of a Fisheries Management Plan (IFMP) project carried out from 2005-2010. This saw a reduction in the number to 433 for the entire lake. The reformed BMUs are now supported with the Fisheries Act No. 22 of 2003 and the Fisheries regulation of 2009 and have clear operational guidelines and institutional framework. This new arrangement was anticipated to empower local communities in exercising their new legal rights in a responsible manner by taking care of the fisheries resources, raising productivity and their incomes and improving fisheries dependent livelihoods

The National BMU guideline mandates the BMU executive committee to undertake the following tasks [5];

- a) Identify wider development interventions at Village level from the BMU plan and make financial proposals for their support by the BMU.
- b) Propose by-laws for endorsement by the District Authorities and enforce them.
- c) Assist in the collection of fisheries data on catch, effort and socio-economic information using agreed formats. Undertake Monitoring, Control and Surveillance in collaboration with the relevant authorities to reduce harmful and illegal fishing practices.
- d) Collaborate with the Director of Fisheries, TAFIRI and or Local Authority, to identify fish breeding areas on the basis of indigenous knowledge and identify and clearly demarcate them as breeding and nursery areas.
- e) Promote the improved handling and marketing of fish including construction of associated infrastructure and improved access to market information.
- f) In collaboration with the relevant authorities, ensure that harmful and illegal fish trading practices are eliminated from within the jurisdictional area of the BMU.
- g) Raise awareness of HIV/AIDS amongst BMU members and their families and attract interventions to reduce its impacts

However, the increased pressure on the fishery resources, illegal fishing practices and growing concern that fisheries community are the poorest despite the increased earnings accrued from the sector over the last decade have generated divergent opinions on the impact of co-management in fisheries management. In some studies [6] reported that BMUs have been effective in the elimination of illegal fishing methods, collection of revenue on behalf of the local government and have actively participated in the fisheries decision making processes. They further stated that the involvement of the resource users in the management has not only empowered them but also improved their livelihoods. However, [7] found that co-management has failed to control migration of fishers while [8] pointed out that unlike the traditional or customary institutions the BMUs have not been able to tackle the challenges of overfishing and illegal fishing practices because their formation was not grounded on the socio-cultural environment in which they exist. Drawing from experiences of co-management in Africa, [9] report little evidence on the effectiveness of co-management in sustainable fisheries. These arguments provides impetus for studying BMUs and therefore this paper addresses these concerns by using data generated from a case study of two BMUs in Magu and Ilemela districts of Lake Victoria, Tanzania.

STUDY OBJECTIVES

The broad objectives of the study were to assess fishers' attitude towards specific functions and activities of the BMUs that regulate fisheries, and focus on poverty reduction among the fisher communities.

METHODOLOGIES

The survey involved two independent but complementary techniques in generating information a) desk study/literature review- where relevant published and unpublished literature from journal articles, reports and government documents were sought, and b) field surveys- in two BMUs in Magu and Ilemela districts where fisheries stakeholders groups (boat owners, crew members, artisanal processors and traders) and community leaders were interviewed through qualitative and quantitative techniques employing the use of structured questionnaires and Key Informant Interviews (KIIs). The variables studied related to BMUs performance in regulating fisheries and activities which are pro-poverty alleviation. From the survey a total of 70 respondents, Sixty-two (boat owners, crew, artisanal processors and traders and fish agents) responded to the questionnaire and eight representatives of local BMU and village leadership were interviewed through KIIs.

RESULTS

Concept of poverty and fishers' social demographic status

World Bank [10] conceptualize poverty as composing low income of less than \$ 1.25 a day, inability to acquire the basic goods and services necessary for survival with dignity, low levels of health and education, poor access to clean water and sanitation, inadequate physical security, lack of voice and insufficient capacity and opportunity to better one's life while [11] describes absolute poverty as a condition characterized by severe deprivation of basic human needs, including food, safe water for drinking, sanitation facilities, health, shelter, education, and information.

In Tanzania, poverty is viewed in terms of low daily income of less than \$ 1, inability to respond to uncertainties, inability to access health care, less education and lack of capital and human assets. In an attempt to measure the impact of BMUs in reducing poverty among the fishers, the following variables were studied; establishment of income generating activities, enrolment in savings and credit groups, education level, ownership of assets, frequency of getting food and sources and levels of income.

Education as an important indicator of poverty shows that literacy level among the fishers is high where 77% of those involved in the fisheries have attained primary education, 16% secondary education and 7% have no formal education. However, there are 14% and 6% of the females compared to 4% and 16% of males with no formal and post primary education respectively. This is similar to findings by [12] and is not surprising given the low enrolment rate of girls compared to boys in secondary schools over the years [13].

On assets ownership, generally fishers own assets such as land, house and livestock but not bank accounts Fig 1. However, comparison on assets ownership across the fisheries categories indicate that boat owners and fish traders are more advantaged than other categories in the fisheries and this can be attributed to low income earned by crew and the fact that most artisanal processors in the fisheries are women who are culturally deprived of assets ownership in these communities [12].

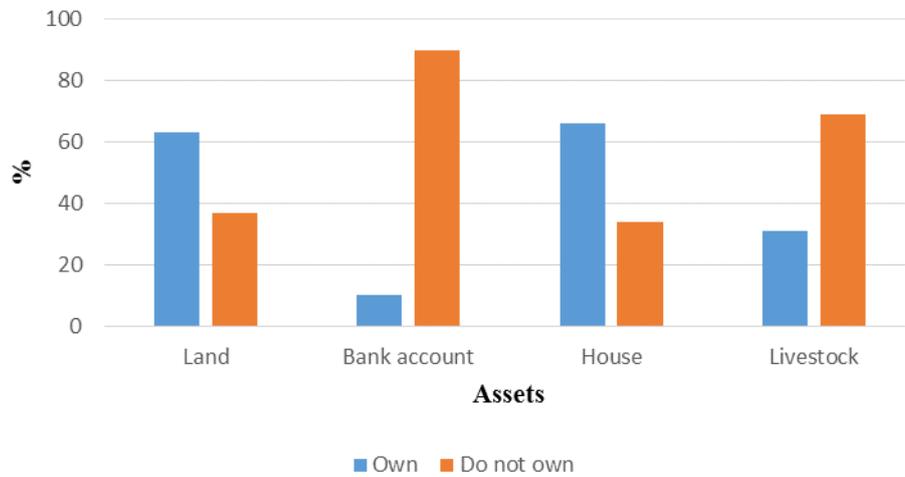


Fig 1 Fishers access to ownership of assets

Social characteristics at landing sites

Information on availability and accessibility of social services and facilities within the fishing communities' show that some social services or facilities such as electricity and piped water are not available and this is a case in most rural areas given the disparity between urban and rural areas [12].

Table 5: Existence of social facilities and services at the landing site

Social facility/service	Status
Access road	Available
Public transport	Available
Piped water	Not available
Electricity	Not available
Shops	Available
School	Available
Health facility	Available
Credit facility	Informal savings groups
Main source of income	Fishing

Disease prevalence

Rural communities including fishing areas are often vulnerable to water borne diseases and HIV/AIDS and other health risks either due to inadequate health facilities/services within the landing site or fishers awareness on health and hygiene. Responses from the survey reveal that at least each household have had one member of the household affected by one or more of the following diseases; typhoid, bilharzia, diarrhoea, typhoid and malaria in the last one year

Access to food and drinking water

Getting food to eat is not a problem among the fishers as 68% of fishers usually get their meals three times a day while 32% only get two meals a day. Majority 70% of those having two meals a day are crew members and this could be due to their fishing trips schedules. On source of water for drinking 69% get water from shallow wells, 16% from water taps and 15% from the lake. Though information whether or not they boil the water before use was not asked it is difficult to verify the safety of the water but going with the finding that at least one member of the respondents household has suffered from water borne diseases in the previous years it is likely that they might be drinking untreated water.

Source of income

Fishers were asked on the main source of income for their household and 86% indicated fisheries, 13% farming and 1% petty businesses. This also concurs with responses from KIIs indicating that main income activity is fisheries. However when asked about the number of income sources majority (53%) of fishers indicated to have one source of income, 37% have two sources while 10% have three sources of income. Comparison between occupation and sources of income show that over 50% of crew, fish traders and processor with exception of boat owners have one source of income. While none of the fish processors have a third source of income.

BMUs efforts in poverty reduction

In reducing income poverty among fishers, the BMU executive committee is supposed to identify wider development interventions at Village level from the BMU plan and make financial proposals for their support by the BMU. Results indicate that BMUs do not have program to address the challenges posed by poverty and are neither advocating for their members to join the savings schemes at the landing site. Inability of the BMUs to initiate

development projects could be due to lack of skills and expertise to come up with any income generating project that can be a poverty reduction strategy.

BMU performance in regulating fisheries

The National BMU Guideline mandates the BMU to regulate the fishery through enacting by-laws/rules that protects the fish breeding areas as well as controlling illegal fishing practices. The BMUs are also required to assist in collecting fisheries data on catch, effort and undertake Monitoring, Control and Surveillance in collaboration with relevant authorities to reduce harmful and illegal fishing practices. Fishers were asked to rate performance of BMUs in undertaking a number of activities. Over 60% of fishers indicated BMUs to be effective in formulating laws, arresting and prosecuting offenders and keeping inventories. However, BMUs ratings are low in data collection and development of self- help projects Table 1

Table 1: Fishers rating on BMUs performance

Activity	No	Very effective	Somehow effective	Not effective
		(%)	(%)	(%)
Formulating by laws	62	90	10	0
Patrolling fishing grounds	62	18	44	38
Prosecuting offenders	62	76	22	2
Confiscating bad gears	62	61	31	8
Resolving conflicts	62	95	5	0
Arresting offenders	62	79	18	3
Collecting revenues	62	63	21	16
Conducting meetings	62	10	73	17
Data collection	62	27	60	13
Keeping inventory	62	81	16	3
Initiating development projects	62	16	57	27

DISCUSSION

Results on fishers' social demographic characteristics such as literacy level, ownership to assets, accessibility and availability to social services, and access to food and drinking water reveals substantial improvement in access and availability and when compared to other rural set up there is no difference [15]. However, disparities exist when compared to urban areas and this is expected given different development projects between urban and rural areas [14]. The improvement of fishers' access to social service and facilities is a manifestation that some social development is taking place within the fisheries communities though there are still exist some who cannot afford these services.

It is also evident that the BMUs have been effective in enacting by-laws/rules to manage the fisheries and according to fishers' perception the BMUs have achieved some impact in regulating fisheries such as controlling illegal fishing practices and improving landing site hygiene. This findings supports [6] that there are some achievements realized by BMUs, and could also be the reason why [9] report that co-management have not been effective in fisheries management and [7] assertion that BMUs have failed to control migration of fishers.

On addressing poverty, the BMUs have not been effective in addressing the challenges of poverty as none of the sampled BMU had developed any developmental project for her members. The BMUs also lack any savings schemes through which the members can get soft loans and establish livelihoods project. The informal savings schemes existing among fishers are operated by fishers themselves and are mostly common among women and those dealing in sardines.

It is critical to note that the inability of the BMUs to conduct meetings, collect data, initiate projects and patrol fishing grounds, coupled with the lack of savings and investment culture among many fishers have severe impact on the livelihood of the local resources users on poverty reduction and stock sustainability where majority of fishers depend on fisheries for their household income. These shortcomings can be attributed to the fact that BMUs were largely supported and capacitated by the IFMP project and once the project ended there have been very little support from the government and other stakeholders in terms of capacity building and mentoring and also the new BMUs leadership comprises individuals without training and skills to implement the fisheries policy [6]. The BMUs are also constrained by lack of working tools/equipment, inadequate capacity to enforce measures and awareness, and lack of supporting from other stakeholders among others.

CONCLUSION

Based on the fishers perception it is evident that the BMUs have formulated by-laws/rules and fishers too are aware of the importance of this regulatory measures in the management of the fishery. However, some of these measures have not been implemented to the satisfaction of the fishers and this is expected given that co-management process is inherently adaptive and relies on systematic learning and progressive knowledge accumulation for improved fisheries management. There is need for continued support from the government and other stakeholders to make the co-management work for the sustainable utilization of the fisheries resources.

ACKNOWLEDGEMENT

The author acknowledges United Nations University-Fisheries Training Programme (UNU-FTP) for the short course scholarship through which the study was undertaken. The willingness and active participation of the local communities and village leadership who provided valuable information is highly appreciated.

REFERENCES

- LVFO. (2013). *Regional Frame survey Report*. Jinja: LVFO.
- Medard, M and Geheb, K. (2000). Fisheries Management in the social domain: perspective from Tanzania Lake Victoria fishery. In K. Geheb, *The Co-management Survey: Co-Managerial perspective for Lake Victoria's fisheries* (pp. 116-134). Jinja: LVFRP
- Pomeroy., R. and Berkes., F. (1997). Two to tango: the role of government in fisheries co-management. *Marine policy*, 465-480.
- Hoza., R.B and Mahatane., A.T. (2001). Establishment of collaborative fisheries management in Tanzania part of the Lake Victoria. *LVEMP Tanzania Scientific Conference* (pp. 234-248). Dare-s salaam: LVEMP.
- URT. (2005). *National Guidelines for Beach Management Units*. Dare-s salaam: Government of United Republic of Tanzania
- Ogwang' V.O., Nyeko, J.I and Mbilinyin, R. (2009). Impelementing Co-management of Lake Victoria's Fisheries. *African Journal of Tropical Hydrobiology and Fisheries*, 52-58.
- Nunan, F. (2010). Mobility and Fisher folk livelihoods on Lake Victoria: Implications for vulnerability and risks. *Geforum*, 776-785.
- Onyango, P.O and Jentoft, S. (2007). Embedding co-management: Community-based Fisheries Regimes in Lake Victoria, Tanzania. *International Conference on Community Based Approaches to Fisheries Management* (pp. 38-42). Dhaka: The World Fish center
- Hara, M., and J. Raakajer Nielsen. (2003). Experiences with fisheries co-management in Africa. In J. R. D.C Wilson, *The Fisheries Co-management Experience: Accomplishments, Challenges and Prospects*. Kluwer Academic Press, Dordrecht.
- World Bank. (2009). *LVEMP II Project Appraisal Document*. New York: World Bank.
- Onyango, P., Mrosso, H and Mwanahamisi, S. (2005). *The Socio economic Baseline Survey for Lake Victoria Tanzania*. Jinja: Unpublished report
- Sen, A. (1983). 'Poor relatively speaking'. *Oxford Economic Papers*, 153-169.
- NBS. (2012). *The Status of Economic Growth in Tanzania*. Dar-es salaam: URT.
- URT. (2012). *Fisheries Annual Statistics*. Dare-s salaam: Ministry of Livestock and Fisheries Development.
- URT. (2012). *Poverty and Human Development Report*. Dare-s salaam: Government of Tanzania.