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Towards Effective Stakeholder Participation in Co-management through Fisheries Management Clinics

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Abstract

A study was conducted to investigate the level of stakeholder participation in co-management of Lake Tanganyika. This study was conducted in the two districts of Mpulungu and Nsama on the Zambian water front. A total of 568 respondents were sampled at 5% confidence interval and 95% levels of confidence. Data was collected using structured and semi-structured interviews and focus group discussions. Analyses were run using SPSS and Excel computer software, and Classical Content Analysis. Results of the study revealed that the fishery lacks well-informed, legitimate and transparent stakeholder authority. To enhance success of co-management endeavours, there is need of having clearer pictures of stakeholders, their influence patterns and power relations. The study recommends a framework of fisheries management clinics as a tool for effective stakeholder participation in co-management. These clinics would offer on-going advisory services and would at the same time be a preferred extension method.

Keywords: Stakeholder, co-management, influence, power, decentralization, collective action.

1. Introduction

Lake Tanganyika is one of Zambia's major fisheries. Officially this fishery is state property. In practice it is a common resource, open to all. The fishery is a valuable source of protein, income and employment for thousands of people. Commercial fishing by both industrial and artisanal fishermen primarily target the sardine-like *clupeids* and *Lates* species, though in their efforts they catch and utilize many other species^[1]. However, the lake is characterized by environmentally destructive activities that are a function of the socio-economic conditions of the riparian citizens and countries. These are the major threats to the lake's biodiversity. The recent liberalization of the Zambian economy has also greatly increased the fishery's access to market alongside increasing demand for fish against looming overfishing.

Like most countries in Sub-Sahara Africa, Zambia adopted the fisheries co-management approach to fisheries management in the 1990s with a view to improve the fisheries stocks through community enforcement of fishery management regulations^[2]. Notably management of fisheries of Lake Tanganyika have been confined to management of stocks with little or no consideration of stakeholders associated with the sector directly or indirectly such as fishers, traders, those involved in post-harvest operations and those who provide support services to the sector. Fisheries management on Lake Tanganyika is a contested terrain between the Department of Fisheries (DoF), local government, traditional authorities, fishers and other stakeholders of the fishery. Nonetheless, the fishery lacks well-informed, legitimate and transparent stakeholder authority and this is a stumbling block for sustainable use of the fishery resources.

A stakeholder is defined as "any individual, group, or institution that has a vested interest in the natural resources of the project area and/or who potentially will be affected by project activities and has something to gain or lose if conditions change or stay the same"^[3]. However, there are claims that the principle fisheries stakeholders are fishermen and their representative groups^[4]. On the other hand, others argue that in the case of fisheries management, the concept of "stakeholder" seems to imply that groups other than users (i.e. fishers) have a legitimate right to be consulted before decisions are made^[5].

The objective of this study was to assess the extent and influence of various stakeholders on fisheries co-management of Lake Tanganyika. Considering the different responsibilities of

stakeholders, this study isolated the importance of understanding needs, interests and roles among fisheries stakeholders from both government and society in order to measure their influence and extent to which they are affected by decisions in the overall governance system of the Tanganyika fishery. However, it should be borne on our minds that individuals in the same stakeholder group do not necessarily have the same stakes. Results of this study are meant to provide a forum for improvement, adjustment and development of activities for successful co-management on Lake Tanganyika.

2. Methodology

This study was conducted in the two districts of Mpulungu and Nsama accommodating 83 riparian fishing villages with 98 fish landing sites dotted along southern Lake Tanganyika on the Zambian water front. The shoreline is divided into four strata between the two districts. The shoreline is shared among six Chiefs namely; Tafuna, Chitimbwa, Nsama, Zombe, Teleka and Chomba Wakasaba. The study sampled both fishers and non-fishers using a table of number of respondents to interview [6]. A total of 568 respondents were sampled at 5% confidence interval and 95% levels of confidence in order for the results to be used to generalize to the population and to make data-driven decisions. Data about stakeholder roles, responsibilities and power dynamics was collected. The study capitalized on the existence of strata for more statistical precision by sampling proportional to strata populations. Besides respondents for the fisher and non-fisher surveys in fishing villages, 36 key

informants were also purposively sampled in the research site. To overcome the statistical weakness of non-random sampling, the researchers selected respondents who represented different perceptions and viewpoints such as fishers, business people, politicians, government officials, project personnel, etc. Data was collected using structured and semi-structured interviews, and six focus group discussions. In analysing the data, more attention was paid to attaining a basic understanding of trends and changes affecting fisheries and less on highly quantitative models. This was on the basis that some fisheries stakeholders expressed the opinion that it appears that scientists are only interested in the data but not the knowledge that underpins it [4]. Most analyses for this study were run using SPSS computer software. FGD data was analyzed using Classical Content Analysis by way of the content of discussions examined for meaning and particular implication.

3. Results and Discussion

3.1 Stakeholder identification

Fisheries (co)-management stakeholders identified through a focus group brainstorming activity were as shown in figure 1 below. The inner circle represents those that were mostly associated with the lake resources at local level followed by those associated with the resources at district level and then those that are more associated with the resources at national level. It should, however, be noted that there could be some overlaps across associations depending upon circumstances at play.

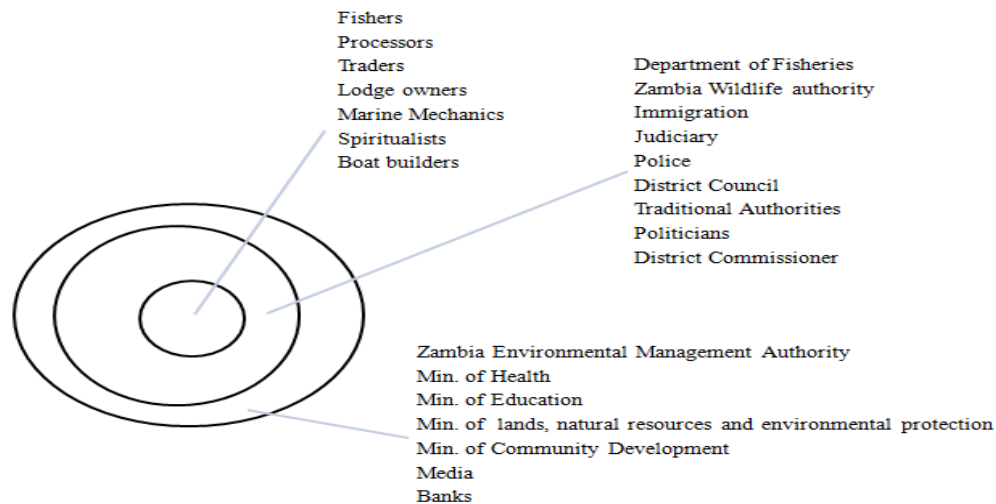


Fig 1: Stakeholders identified with fisheries of Lake Tanganyika, Zambia

The popular term 'stakeholder' encompasses a multi-level and multi-disciplinary group, besides fishers, who may possibly have an economic or cultural interest in fisheries with some not residing in geographically defined fishing communities dotted along the shores of Tanganyika. On the basis of those that can be affected by or those that can affect outcomes of the co-management intervention, 23 stakeholders were identified through FGDs and secondary sources. The stakeholders were categorically falling under one of the levels; fishing community level, district level or national level.

However, it was generally observed that the number of fisheries stakeholders, both individuals and groups with interests at stake, increased the closer one got to the shoreline [5]. Those more or less directly tied to the fate of the fisheries

of lake Tanganyika include harvest sector workers (crew members) and owners of productive equipment (gear and craft), post-harvest sector workers (processors and traders), providers of various support services (craft repair, spares, fuel, food stands, lodging, etc.), and the lake resource consumers [7]. Study findings revealed that it was more cost effective for industry players the nearer to the resource one was.

3.2 Collective Stakeholder roles and responsibilities

The FGDs lumped stakeholders into three groups pointing out that fishers and their organizations have a management assignment at stake, external agents (including NGOs/civil society organizations) are tasked to monitor management assignments at all levels while government is meant to provide

support to management assignments. Some of the government institutions (e.g. Ministry of Lands, Natural Resources and Environmental Protection) were considered external to the fishery because of the nature of their engagement in the affairs of the fishery. They did not interact directly with the fishing communities.

During the study, respondents were asked to indicate whether they were aware of particular institutional roles operating in the fishery area or not. The major roles that can, however, be broken down into several sub-roles were considered. Results revealed a similar pattern between the fishers and non-fishers (Table 1).

Table 1: Awareness of institutional roles by fishery stakeholders ($n = 568$)

	Percentage of respondents			
	Fishers		Non-fishers	
Do the local stakeholder groups address:	Yes (%)	No (%)	Yes (%)	No (%)
Formulation of fisheries management plans?	25.6	74.4	28.6	71.4
Formulation of the constitution?	12.4	87.6	16.4	83.6
Formulation of provisional rules?	83.9	16.1	81.5	18.5
Formulation of appropriation rules?	84.4	15.6	81.5	18.5
Monitoring use of fisheries resources?	28.0	72.0	27.0	73.0
Conflict resolution?	84.7	15.3	79.4	20.6
Enforcing of graduated sanctions?	56.7	43.3	55.6	44.4

The results revealed relatively higher percentages of awareness and stakeholder attention to the following institutional roles: formulation of provisional and appropriation rules, conflict resolution and enforcing graduated sanctions. The rest of the institutional roles scored relatively higher percentages of poor awareness and insufficient stakeholder attention. This implies that the fact that many have a stake in the resource may not necessarily translate into a keen interest in fisheries management as such. Passive involvement of most stakeholders in managing the Tanganyika fishery has contributed to poor attention to major roles such as formulation of fisheries management plans and the fishery level constitution, and monitoring of use of fisheries resources, resulting in its degradation.

However the contribution of individual stakeholders varied widely. The FGDs revealed that Lodge owners and the Police performed their roles relatively well. The other stakeholders have in most cases partially performed their roles due to a variety of challenges e.g. small-scale fishers who are the definitive stakeholders have a weak political voice attributed to low literacy, poor accessibility to relevant information and low organizational development levels. Traditional authorities have relaxed their commitment following loss of sitting allowances introduced by Lake Tanganyika Biodiversity Project in 1998 and stoppage of remittance of part of penalty fees collected by VCDCs. The Lake Tanganyika area has a local radio station named after the local Lungu ceremony 'Walamo Community Radio' whose use for fisheries programs has been minimal and irregular.

DoF is by law mandated with the *de jure* management of Lake Tanganyika fishery. Its task includes promotion of sustained fish production through sound management and conservation

of fish stocks via employment of legal management tools such as regulation of mesh sizes, prohibition of destructive methods, registration of fishers, issuance of fishing licenses, etc. However, DoF laments of lack of resources in the form of human, financial and material. Operations by the DoF are also highly negatively interfered with by the local politics. The impact of Ministry of Education is not strongly felt in the management of the lake fishery since the targets are usually not the present fishers but the-would-be fishers. With adults who are engaged in fishing, they preferred working with extension personnel and not teachers.

The FGDs insinuated corrupt practices in the delivery of judgment on fisheries offenders. It also appears as though the Acts in reference during such judgment conflict. Punishment stipulated in the fisheries Act has rarely applied to offenders surrendered to courts of law. The district councils, under the Ministry of Local Government, have more of a coordinating role which apparently happens to be quite important in facilitating a vibrant management regime. Focus groups lamented that councils have lost their role of organizing annual meetings with all stakeholders involved in the co-management of the lake. Their focus is more on revenue collection (through council levies and other taxes), funds of which have not quite benefitted fisher communities. Key informants pointed out that fisheries are active at local level and for this reason therefore local Government is a vital institution in ensuring that fisheries are operating under their guidance. There are institutions that have not quite been involved with the fishers yet they have important roles to play: Ministry of community development and social welfare, NGOs and Ministry of Health. NGOs have not explored Lake Tanganyika fishery related activities with CBOs in very isolated areas of stratum V. In any case, it may not be logical to expect all potential co-management stakeholders to join the arrangement at the same time.

The study suggests that government institutions involved at all relevant scales should include facilitation of an enabling environment through the specification of policy and legislation, technical support and human resource development to foster a participatory process and linkages^[8]. External agents such as NGOs or research institutional roles and responsibilities should include capacity building, advocacy, linkages, extension and standard setting^[8]. Effective participation of key stakeholders in co-management deserves reasonable levels of empowerment. Nevertheless, any delegation of functions should involve a legally binding instrument covering aspects including specification of functions, decision rules, performance standards and resourcing and reporting requirements, so that performance is measurable and capable of being audited transparently^[9]. Key informants impress on the fact that stakeholders must be contributing at each step in the process, including not only the on-going but 'on-growing' monitoring and evaluation. On the other hand, FGDs revealed that success in performance of stakeholders will be dictated by incentives be they social, economic or political.

3.3 Stakeholders, towards a common goal

Fisher and non-fisher perception of stakeholders working towards a common goal was assessed in order to contribute to the understanding of joint stakeholder influence on co-management of the Tanganyika fishery. The perception was also used as a proxy to understand their relationships. Findings revealed that some stakeholder groups possessed more powers due to their privileged representation in the co-management

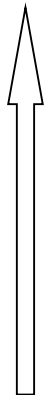

regime. This means that such groups are capable of making their views more forcible than others and the small scale fishing communities commonly suffer power inequalities. While acknowledging that stakeholder relationships were not up-to-date, the study revealed 77.3% of the respondents indicating that stakeholders can work together toward collective action if well mobilized and coordinated. However, FGDs revealed that stakeholders can only work toward a common goal on condition that there are good relationships among them as would be observed from trust, mutual respect and understanding. Good stakeholder relationships are viewed as being fundamental to the core business of the co-management intervention, aiming at improving the stocks of Lake Tanganyika fishery. These relationships should involve locally affected communities or individuals and their formal and informal representatives, local government authorities,

politicians, civil society organizations and groups with special interests, such as the academic community and others. Collective empowerment enhanced by education and training efforts is more likely to reduce social stratification [10] and allow balanced levels of power relations.

3.4 Stakeholder influence and decision

A multi-disciplinary focus group completed a matrix in Table 2. This was useful in understanding the extent to which the Lake Tanganyika fishery management stakeholders are influential in decision-making as well as how much they are affected by decisions regarding (co-)management of the lake. The level of influence on decisions increases along the horizontal axis on a scale from 0 to 4. Similarly the level of being affected by decision increases along the vertical axis from 0 to 4.

Table 2: Stakeholder matrix of influence

	Affected by decision	4	-	- Traders - Processors - Mechanics - Boat builders	- Fishermen - Fisher organisations - Lodge owners	- DoF - ZAWA - Council
		3	-	-	- TAs	-
		2	-	-	-	-
		1	- Local banks - Spiritualists - Min. of Com. Dev. - Min. of Educ.	- Judiciary - Police - Immigration - DC	- Media	- Politicians - ZEMA - MLNREP
			1	2	3	4
		 Influence on decisions				

From the matrix, it is possible to identify four areas where the stakeholders fall by way of sub-dividing the table into four equal portions: 1) highly influential and highly affected by decision; 2) highly influential and lowly affected by decision; 3) lowly influential and highly affected by decision; and 4) lowly influential and lowly affected by decision.

The huge number of stakeholders, as identified, may be raising expectations that cannot be met. In their view, key informants and FGDs claimed that local stakeholders have relatively little influence on policy compared to some external agents that have relatively easy access to policy-makers. The fact that lodge owners were important stakeholders in the co-management was not previously recognized. Understanding the interdependencies between the management and these lodge owners has potential to lead to significant policy changes pertaining to co-management on Lake Tanganyika.

With external stakeholders such as ZEMA and MLNREP, it is often difficult to map their influence. They are government agencies responsible for natural resources, and are advocates of resource management. For the time being, those in row 1, column 1 are latent stakeholders as they have not had, at least until time of investigation, any crucial influence. Some might even be in danger of losing their stakes in the management of Lake Tanganyika. However, a well-balanced representation of stakeholders is suggested as it tends to facilitate a politically neutral process.

3.5 Stakeholder satisfaction

Satisfaction with benefits, delegated powers and cross-level interactions among fishers and non-fishers was assessed. Levels of satisfaction with regards benefit sharing (54%), delegated powers (59%) and cross-level interactions (54%) were generally above average among the fishers and non-fishers. These one-on-one interview results were heavily criticised by FGDs during field analysis of the data. They claimed that these were more theoretical than practical. For example, they argued that interaction could only be between fishing communities and the local fisheries officers, benefits may only be localised around district centres while power indisputably remains with government. However, this study revealed that up to 65% of benefits accrued to the entire community while DoF enjoyed up to 27% with other stakeholders enjoying as little as 0.5% (Figure 3). Although a huge benefit accrues to the entire community, FGDs revealed that distribution still remained unequal among strata or villages. Some of the cited benefits included community schools, self-help roads, health posts, morner’s shelter, drying slabs, etc. There is need to develop guidelines that support equitable distribution of benefits that accrue from responsible management of fisheries and ecosystems, e.g. small-scale fishers and the other fisheries stakeholders including men and women should be rewarded from such developments as community-based tourism and small-scale cage aquaculture. Due attention to social and economic development is a necessary condition to ensure that stakeholders, especially the small-scale fishing communities are empowered.

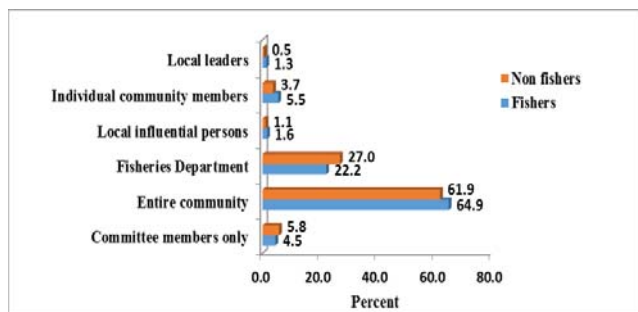


Fig 3: Respondent perception of proportions of benefits for managing fishery resources

To take an oversimplified example, if cross-level interactions and delegated powers are of equal importance to stakeholders, a strategy that emphasizes benefit sharing on the basis of effective management will raise the importance of benefit sharing expectations to the targeted set of stakeholders. Fishers and non-fishers showed a similar pattern that pointed in the same direction as to who benefits with what percentage. This somewhat explains the level of interaction between fishers and non-fishers in understanding the direction of benefit. Horizontal and vertical two-way information flow linkages are necessary for successful implementation and sustainability of co-management regimes. This should, however, be alongside systems of institutions that delegate power and are truly interactive [11]. The relative importance of stakeholder satisfaction attributes reflects strategic decisions within the local co-management set up.

3.6 Conditions for community participation

To answer the question “do the local institutions provide enabling conditions for community participation by having the factors stated in Table 3 below?” the respondents indicated whether each of the factors/conditions were either: not existing; existing, but not effective; existing and effective; or existing and very effective. The majority of the fisher respondents indicated that enabling conditions existed but were not effective in fostering community participation. A huge percentage of non-fishers revealed that enabling conditions to foster community participation did not exist. Operational institutional arrangements and control of encroachment were highly said not to exist by both fisher and non-fisher respondents. In agreement with interview results, FGDs revealed that there were a total of less than 15 active VDCs out of 83.

Table 3: Enabling conditions for community participation (n = 568)

Enabling conditions	Fisher/Non fisher responses in %			
	Non-existence of conditions	Exist, but not effective	Exist, effective	Exist, very effective
Operational institutional arrangements	59.1/65.1	34.8/31.7	6.1/3.2	0.0/0.0
Management plan in line with Fisheries Policy	32.5/53.4	54.9/41.3	10.3/3.2	2.4/2.1
Property rights of the resource by the community	38.0/52.4	43.3/37.6	15.8/6.9	2.9/3.2
Control of fisheries management and utilization	29.8/49.7	52.5/41.3	14.8/6.3	2.9/2.6
Control of encroachment	41.4/56.6	37.5/34.9	13.7/3.7	7.4/4.8

The current Fisheries Act No. 22 of 2011 supports creating an environment of cooperation and consultation with other public institutions so as to enable the other public institutions to perform their functions that impact on the Fisheries Act, within the context of the Act and the ambit of their respective powers and functions. Nevertheless, in line with the existing *laissez-faire* policy towards the industry, artisanal fishers, for example, fish anywhere along the lakeshore and own as many fishing nets as they wish. Stakeholder roles are designed in such a way that they do not deviate from the principle Act. In the light of involving fishers in the design, key informants suggest that the principal Act be translated into major vernacular languages. This is so because if co-management initiatives are to be successful on Tanganyika, basic issues of government policy to establish clear supportive legislation, rights and authority structures must be addressed by all stakeholders. In its policies and legislation, government needs to spell out extent of jurisdiction and control, provide legitimacy to property rights and decision-making arrangements, and clarify the rights and responsibilities of the various partners [10]. At the local level, complementary by-laws should be passed to enhance co-management efforts. This would provide the legal basis for participation as their absence undermines their legitimacy. This also creates a forum for power-sharing and accountability.

3.7 Stakeholder Conflicts

The collaborative initiative on Tanganyika attracted conflict and confrontation in the process of its implementation. For instance, fish inspection for quality assurance caused quite some conflict between DoF and Department of Veterinary because the task is a mandate for both. Conflicts have arisen between fishers and enforcers (DoF) over catching small fish called ‘mutununu.’ Mutununu is a collective term describing a combination of several species that are caught together. This term refers to both juvenile and adult fish that are caught usually using prohibited methods and sometimes illegal gear e.g. drag nets such as beach seines and mosquito nets that cause destruction of the benthic biogenic habitat diminishing the probability of re-colonization. The bone of contention lies in that the fishers claim they target adult fish that grows to smaller sizes and that the juveniles of species that grow to bigger sizes are a by-catch. This ‘by-catch’ in principle diminishes the abundance of such species that constitute the target for prescribed gear. Fishers often challenge experts to come up with a way to harvest these small species. The experts seek defence in arguing that much of such small species might only be of economic importance as ornamentals but not consumption. Locals, however, insist that these are tasty fish that they will not be denied access on the basis of economics. In support of the fisher claims that the small fishes are tasty, the Nutritionist at Department of Agriculture pointed out that “denying the locals an opportunity to consume whole fish (including the bones) would indirectly be blocking a source of calcium and other essential nutrients in their diets.” Efforts to curb prohibited methods of fishing have not been an easy task at all. This has been made even more difficult following discretionary powers of the traditional authorities to dictate implementation of certain undertakings that are in their favour. For example, the representative to traditional authority whose jurisdiction covers two strata instructed that a specified number of beach seiners should be left to continue fishing for the Chief’s supplies of fish. This is surely against the current Fisheries Act where drag nets such as beach seines are

prohibited. Local enforcers understand the destructive nature of these gears on both the fish and their ecosystem, and are against their use. However, operators of these gears have the full support of the TA and that has made it very difficult to control their destructive activity.

Generally most fishers have been against the use of generators in fishing on assumed claims that light generated thereof is so strong that it attracts too much fish to the net. There are fears that this can quickly deplete the lake resources. In line with this thought and against use rights allowing everyone to fish anywhere, Chief Teleka of the Thabwa at one point dismissed the Lungu people from his chiefdom for challenging him that 'gen-sets' were only a new technique but not destructive. This was rather tribal. Nevertheless, it has ever been difficult to challenge the powers of TAs in the midst of the saying that 'no one is above the law.'

Every fishing village has a head, an over seer of all village affairs. Some heads have been powerful and supportive of co-management initiatives. Such heads have had impact on positive achievements. Groups of fishers that are against strict rule have normally ganged up to incite election of another head, a common practice among the Tabwa tribe dominant in stratum four of the lake fishery. They would usually line up a few bad things in support of their demand and present them to the Chief who facilitates elections to usher in a new headman. Although this weakens the ability of headmen to perform to their full potentials for fear of dismissal and consequent humiliation, FGDs insisted that community members need to identify their own representatives in order to prevent illegitimate representatives who may not speak for their communities. This would contribute to a feeling of ownership by community members over resource management processes. However, headmen need to be protected by law if their contribution is to be appreciated.

The role of Chiefs in fisheries co-management sometime conflicts with those of the central government executed through DoF. Chiefs may not have interests in preserving fish stocks ^[12]. For example, late senior Chief Tafuna's representative often granted access to the fishery in order to have access to revenues for personal gain and yet co-management demands the presence of leaders guided by collective interests. Certain Chiefs hold a strong feeling that co-management arrangements challenge their privileges. This has compromised their sense of ownership and resource stewardship. In Malawi, for example, it was noted that beach village committees (BVCs) were not occupying a power vacuum and that some of their roles and functions infringed on the powers, authority and economic privileges of the traditional leaders such as village headmen ^[13]. This resulted in a situation where migrant fisherfolk now paid informal taxes to both the village headman and members of the BVCs. This could lead to failure in observing exclusive user rights to resources.

Although not much has been done to resolve conflicts discussed in this paper, those relating to differences between local and migrant fishers have usually been resolved at village level. Those beyond the powers of VDCs and village heads have usually been referred to DoF, police and/or the court though fishers usually have a low level of trust with government propelled institutions. However, it is argued that conflicts are not necessarily negative because they may cause more equitable power relationships to emerge, correct bad practices or contribute to policy improvement ^[14].

3.8 Management clinics

In order to address the shortfalls in stakeholder participation, the framework of fisheries management clinics was proposed. It entails establishment of points central to various stakeholders where they should be encouraged to provide data/information relating to aspects that would contribute to effective management of the fishery. More importantly, the framework adopts a 'hybrid approach' based on a combination of state intervention and implementation of community-based management systems. The study isolates benefits, power and interaction as key elements towards effective stakeholder involvement, greater public acceptance of decisions and more willingness to comply with rules-in-use. Management clinics would offer an on-going advisory service and would at the same time be a preferred extension method. It is expected that these clinics will result into improved stakeholder partnering for fulfilment of co-management obligations such as improved sharing of data and information, and enhanced access to information enabling stakeholders to address management problems effectively.

Besides, with availability of information, DoF will be better placed to do position papers to help law makers respond to policy issues evaluated against objectives on a regular basis and hinge on the development of solutions to complex fisheries resource problems. This will facilitate development of intelligent fishery management plans for different areas as a result of the varying fishing and livelihood strategies. On the other hand, since the co-management knowledge base will be enriched with stakeholder inputs, there will be continuous re-assessment of the management plans and this will allow for rapid responses to declines in fish stocks and changing culture. However, for the success of these clinics, there is need to apply sufficiently coherent and continuous effort at all levels in order to avoid derailment by short-term political excitement. Evaluation of the stakeholder participation process is a necessary condition if we are going to learn from experience in order to facilitate effective participation in decision-making on matters that impact the stakeholders themselves. Co-management of the fishery will then be implemented through an adaptive management approach and strengthened on an ongoing basis that will be sustained by a robust analysis of the fishery. In terms of programme sustainability, the government should have a crucial role.

4. Conclusion and Recommendations

Twenty three stakeholders were identified on the basis of those that can be affected by or those that can affect outcomes of the co-management intervention on Lake Tanganyika. However, although some stakeholders are by law mandated with the *de jure* management of the lake fishery, passive involvement of most stakeholders has contributed to poor attention to major roles such as formulation of fisheries management plans and monitoring of use of fisheries resources, resulting in resource degradation. While some stakeholder groups possess more powers due to their privileged representation in the co-management regime, 77% of the respondents were hopeful that stakeholders can work together toward collective action.

The stakeholder matrix of influence and decision clearly showed that stakeholder influence on decision is at varying levels. Allocation of benefits and delegated powers, and cross-level interactions is heavily contentious among stakeholders. The introduction of the collaborative initiative on Tanganyika attracted conflict and confrontation in the process of its implementation hence the need to develop guidelines that

support fair play and equitable distribution.

The study revealed numerous shortfalls in stakeholder roles and responsibilities, influence on policy and decision, empowerment, relationships, collective action, accountability, etc. This has compromised efficient and effective co-management of fishery resources on Lake Tanganyika. Therefore the current ineffective (co-)management is partly a result of poor governance and a *laissez-faire* engagement of relevant stakeholders.

In order to address the afore-stated shortfalls, this study recommends a framework of fisheries management clinics as a tool for effective stakeholder participation in co-management. There is need to have networks of stakeholders with strong linkages facilitating understanding and sharing of information. This entails that all stakeholders would jointly learn, evaluate, innovate and manage together a co-management system that continuously renews itself. In order for management powers to be applied appropriately and by the right stakeholders, there is need to improve relationships among stakeholders. Nonetheless, all actors should play their respective complimentary roles if the lake's management goals are going to be achieved.

Roles and responsibilities of all stakeholders need to be clearly defined in the management and decentralization plans. The National policy and legislation on fisheries should provide a framework for co-management in which local governments and communities are supported with capacity development programs that enable them to assume their rights and responsibilities. Capacity development is a necessary condition for creating knowledge, empowerment and enablement for effective participation in decision-making through extension education.

5. Acknowledgement

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