

# Institutional and Policy Framework in the Governance of Capture Fisheries and Its Bearing on Co-Management: Experiences from Zambia

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## 1. Introduction

The management of capture fisheries mainly focuses on the sustainable production of fish resources (Arthur 2005). It is in line with this strategy that the concept of fisheries co-management was introduced on open access fisheries such as Lake Bangweulu fishery. Open access fishing is a condition where access to fish harvesting on a fishery is unrestricted (OECD 2001), while capture fishing is the manner in which fish is captured directly from its natural habitat. Co-management can broadly be defined as a participatory arrangement where management responsibilities are shared between the government and fishing communities (Nielsen et al. 2004). It is assumed that effective governance and sustainable fisheries management can only be achieved through stakeholder participation and partnerships. Evidence to date indicates that stakeholder's involvement in fisheries management can significantly contribute to maintaining or restoring ecological integrity and community well-being (Til and Banda 2002). However, multi-stakeholder partnerships in fisheries co-management are challenged by weak institutional and policy frameworks that fail to improve local livelihoods and achieve sustainable fisheries management in poor communities.

The chapter explores how failure to establish a strong institutional framework and supportive policies has led to conflicts between partners and lack of support by some partners of the co-management initiative. It further examines the appropriateness of a fisheries policy focused on conservation in a poor fishing community. The information generated from this research shows how strong partnerships in co-management can contribute to the achievement of Sustainable Development Goal 17 (SDG 17), and how the lack of strong partnerships can lead to its failure. The SDG 17 emphasizes the critical importance of partnerships for sustainable development, based on the assumption that partnerships organize a wide range of stakeholders in the sharing of knowledge, expertise, technology and additional resources towards achieving the

global development agenda (Kaustuv et al. 2018). There has been confusion around the means of implementation and how to effectively engage different stakeholders, in the process of transformation for sustainable development (Horan 2019).

Co-management calls for partnerships between various stakeholders that would foster effective and sustainable management (Armitage et al. 2007). This demands for appropriate institutional frameworks with well-defined roles for partners, and a working relationship between them that interlinks the various partners (Stewart 2004). However, studies have shown that multi-stakeholder partnerships are often challenged by the nurturing of a working relationship based on trust, mutual respect, open communication, and understanding among stakeholders (Overseas Development Institute 2003), and this can often lead to mistrust and suspicion between facilitators and local communities. Unless a relationship of mutual trust between various stakeholders is established and maintained, it is unlikely that even the simplest co-management regime can survive (Pomeroy et al. 2001).

Partnerships in fisheries co-management are challenged by weak institutional and policy frameworks that fail to improve local livelihoods and achieve sustainable fisheries management in poor communities (Njaya 2007). There has been little information available to help achieve sustainable fisheries management in poor communities of developing countries, as the introduction of co-management in some poor communities such as Bangweulu has been looked upon with suspicion by the local communities, and there has been resistance towards its introduction and progression. This kind of experience can be viewed as a crisis of governance (Louisa et al. 2011; Acheson 2006). Therefore, there is a need to establish ways of nurturing strong partnerships, based on trust, mutual respect, open communication, and understanding among stakeholders.

The primary objective of the current fisheries policy in Zambia, similar with other developing countries, is not that of uplifting the living standards of impoverished fishing communities through appropriate strategies. Its focus is on increasing fish production and promoting sustainable utilization of fisheries resources, thereby contributing to the economy through the generation of employment, income and improved availability of fish (The Ministry of Agriculture and Cooperative 2004). With this approach, the focus is too broad with less consideration of local community development. The consideration of local community development would address issues of poverty and underdevelopment, by means of extending the potential benefits of fisheries resources to poor rural fishing communities.

This chapter explores how the failure to establish strong institutional frameworks and supportive policies can lead to conflicts between partners and lack of support by

some partners of the co-management initiative, hence posing challenges on achieving SDGs. It also shows ways in which strong partnerships for sustainable development can be formed.

The chapter has been divided into six sections. Section one introduces the research area, while section two covers the conceptual framework, section three the research methodology that was used, section four presents the findings, section five discusses the findings, and section six draws conclusions of the chapter.

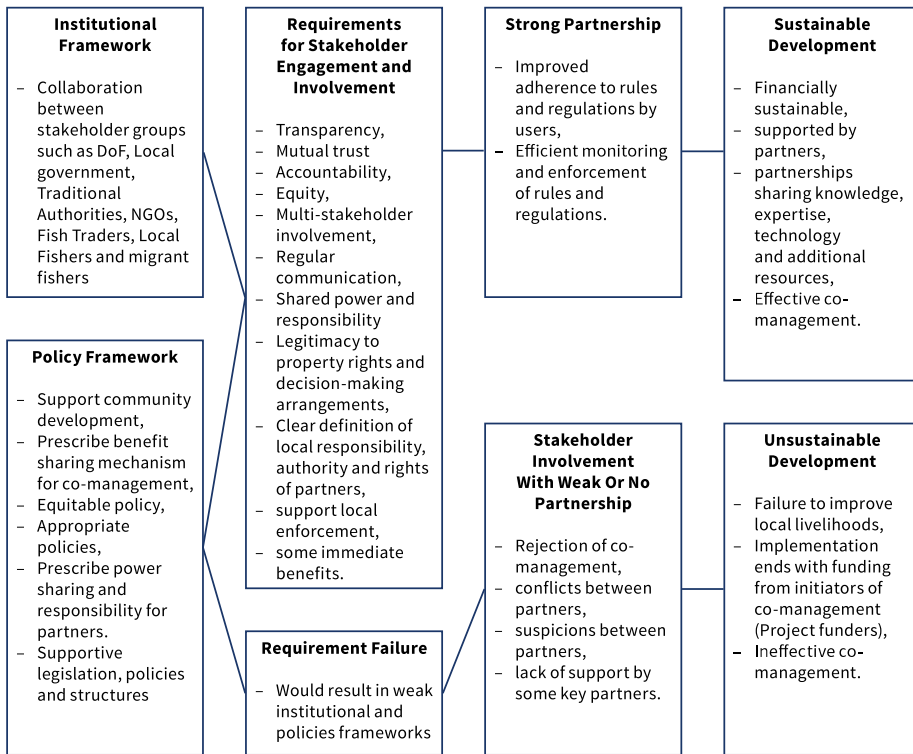
## **2. Conceptual and Theoretical Framework**

Co-management can broadly be defined as the sharing of responsibility and authority between the state and resource-users, but often involves collaboration between various stakeholders, including different government agencies, non-governmental organizations (NGOs), research organizations, private enterprises and civil society organizations (Louisa et al. 2011; Carlsson and Berkes 2005). While co-management now attracts widespread attention around the world, its practical implementation frequently falls short of expectations (Melissa et al. 1999). Lying between two management strategies, the centralized control and community-based management systems, co-management covers a broad spectrum of management arrangements. Co-management in itself is not a single strategy to solve all problems of fisheries management, but provides a set of alternative management strategies appropriate for certain areas and situations (Izadian 2005). It is therefore important to have a more comprehensive understanding of co-management based on the challenges experienced in the actual implementation which have been experienced in recent years. Understanding this would highlight the suitable approaches for achieving SDGs through partnership transformation. The main issues to address are the types of partnerships needed to achieve sustainable management, and how these partnerships can be enabled and ensured (Horan 2019).

In this study, co-management is conceptualized as a participatory form of fisheries governance that could be effective through transparency, mutual trust, accountability and fairness during policy formulation planning, implementation and sharing of benefits, and should have an effective institutional framework. Co-management is an arrangement where the power and responsibility to manage a fisheries resource is shared between user groups, NGOs, traditional authorities and government (Donda and Njaya 2007). Co-management cannot work effectively without supportive policies and legislation. According to Pomeroy et al. (2001), for co-management initiatives to be successful, the basic concern of government action is to establish supportive legislation, policies and structures. Policies and legislation need to clearly spell out jurisdictions and control for co-management.

This would provide legitimacy to property rights and decision-making arrangements for effective management. It would define and clarify local responsibility and authority. Not only that, but it would clarify the rights and responsibilities of partners, support local enforcement and set up accountability mechanisms that would provide stakeholders with legal rights to organize and make arrangements related to their needs (Pomeroy et al. 2001). The local communities expect to see a transparent system, with accountability and immediate benefits if they are to actively participate in fisheries management (Berkes 2010). These should be observed at policy formation, planning and implementation levels of fisheries management. The ideal governance system would only be achieved once good policies are in place with a supportive legislation. At this point, the objectives should be clear and acceptable to all stakeholders and all of them ready to support the management efforts. This would create an enabling environment that would lead to sustainable fisheries management and, thereby, the attainment of SDG 2, which seeks to end hunger, achieve food security and improve nutrition, as well as SDG 17, which is aimed at strengthening the means of implementation and revitalizing the global partnership for sustainable development. Co-management initiatives in most developing countries have been supported by international development agencies whose partnerships need revitalization through successful program outcomes and impacts. It would also contribute to attaining SDG 15, which is aimed at promoting peaceful and inclusive societies for sustainable development and building effective, accountable and inclusive institutions at all levels. Therefore, building strong co-management partnerships would positively contribute to various SDGs both directly and indirectly. The research conceptual framework is shown in Figure 1.

While management arrangements made by government agencies often lack the local knowledge and experience of fishers and other user groups, these groups often lack the scientific and legislative knowledge that government agencies can provide to effectively manage the fisheries resources (Pomeroy et al. 2001). Therefore, managing fisheries resources on a cooperative basis involving all the stakeholder institutions has often proved to be a preferable alternative to government or local level management systems (Watt 2001). A good institutional framework would bring about institutional collaboration and participation of stakeholders that would lead to the good governance of capture fisheries.



**Figure 1.** Conceptual framework on how to build strong partnerships for sustainable development. Source: Own illustration.

Government involvement in fisheries management has the benefit of contributing unbiased views and opinions concerning fisheries management issues, whereas fisheries resource users are more likely to be capable of making more equitable regulations than (ECA 2007). The local fishers and other resource users are intimately involved in the industry, and they are in a better position to respond to the special needs, demands and interests of individual fishers and other user groups. Therefore, there is little chance that fisheries regulations will succeed, unless the fishers and other fisheries resource users actively support them (Donda and Njaya 2007; Ostrom 2010). If government regulations are not supported by the fishers and resource user, they will find ways to bypass them, and the government will incur costs in monitoring and law enforcement. The fishers and resource users are more likely to respect the rules and regulations if they are involved when making them (Watt 2001; Ogwang et al. 2009).

In terms of the appropriateness of the fisheries policy and legislation, the fisheries policy, management rules and regulation need to be suitable for the local conditions. The policy and legislation are only appropriate if they promote accountability, transparency and equity between all stakeholders (Donda and Njaya 2007). In this case, it would be accepted and supported by the stakeholders, and is considered as a form of good governance. In this chapter, the appropriateness of the fisheries policy refers to the perception of user groups over the suitability of the fisheries policy in terms of management rules and regulation for the sustainable management of fisheries resources. This is measured in terms of its provisions for accountability on decision makers, transparency through communication and equitability of rules and regulations between stakeholders.

There is need for fruitful dialogue between stakeholders (Pomeroy et al. 2001), a strong political will in support of co-management, effective fisheries management rules, stakeholder involvement in decision making, and either decentralization, deconcentration or devolution of management authority and responsibility to local communities. According to Armitage et al. (2007), the distribution of authority and responsibilities among the various partners in fisheries management needs to be understood for the governance of capture fisheries to be effective. The participation of all stakeholders during the implantation of co-management helps to empower local communities with some authority and responsibilities (Arthur 2005). For it to work effectively, the Traditional Authorities should also be empowered with some authority and responsibilities. There must be a clear conflict resolution mechanism (Pomeroy 2007). Regular communication between stakeholders is vital during the implementation stage, as it helps to show transparency and bring about the mutual understanding of issues between stakeholders. A sustainable fisheries management system ought to be able to generate its own funds, plan for its activities, implement them, monitor and control fishing activities for the benefit of all stakeholders (Njaya 2007). However, those preparing the appropriate laws to manage a fisheries rights system must be prepared for a process of ongoing change and consequent amendment, as the system requirements are continuously evolving (Stewart 2004).

Responsibilities and power can be shared between central government and local communities in the form of co-management. The sharing of governance responsibilities through stakeholder participation and ability to learn from experience are among the growing trends in environmental management (Berkes 2010). However, experiences from a number of African countries highlight challenges that relate to transparency and accountability, initiation processes, membership, scale, and power struggles (Njaya 2007). The approach to achieve good governance of fisheries

resources must be open and transparent, coherent and integrative, inclusive and communicative, as well as equitable and ethical. Transparency can greatly contribute to the legitimacy and acceptance of decisions and therefore compliance (Arthur 2005). The implementers of such arrangements must be accountable, efficient and responsive (Uhlendahl et al. 2011). Overall, co-management should be self-sustainable, as it is part of a broader worldwide trend of indigenous people making contributions of their knowledge and methods to environmental governance (Norman 2011).

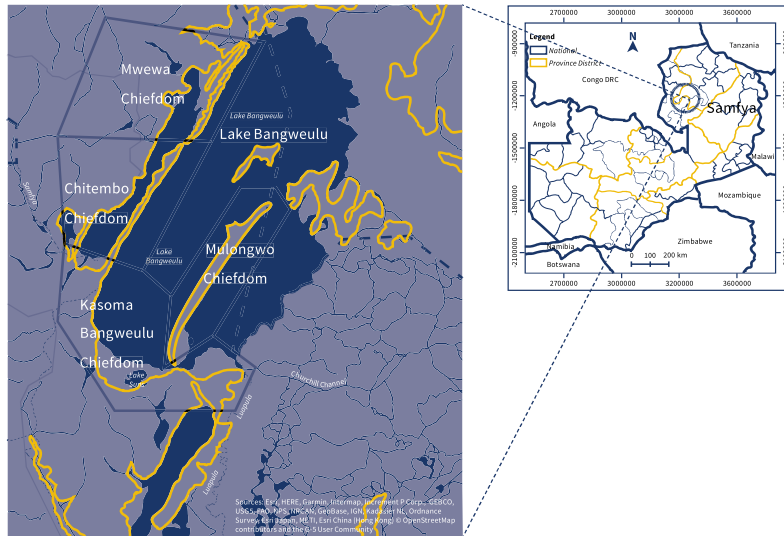
### **3. Materials and Method**

#### *3.1. Location of Research Area*

The study was undertaken from fishing communities around Bangweulu fishery in the Samfya district of Luapula province. Bangweulu is a complex lake found in the northern part of Zambia ( $10^{\circ}15' - 12^{\circ}30' \text{ S}$  and  $29^{\circ}30' - 30^{\circ}30' \text{ E}$ ), made up of five inter-connected lakes; Chifunabuli, Walilupe, Kampolombo, Kangwena and the main Lake Bangweulu. The Chambeshi River, which is the supplier of water to the lake, enters Lake Bangweulu through the swamps in Nsamba area from the north-eastern direction, while Luapula River outflows the Bangweulu in the southern direction. The permanent swamp on the eastern part of the lake is one of the largest in Africa, covering over 5000 km<sup>2</sup>, taking up 16% of the Bangweulu, which reduces to 10% in the dry season. Figure 2 shows the location of Lake Bangweulu on the map of Zambia and the location of chiefdoms sampled.

The major economic activities around the Bangweulu area were fishing and arable farming (Central Statistics Office 2013). Over  $\frac{2}{3}$  of the Bangweulu fishery falls under Samfya district, which has a population of 174,906 (Central Statistics Office 2013), with over 15,000 people either directly or indirectly connected to fishing and the fish trade (Mbewe 2007b). There are 13 taxonomic families of fish species, of which more than 10 species are commercially exploited (Kolding et al. 2003). There have been general concerns that the fish stocks are heavily exploited (Til and Banda 2002).

Location of Lake Bangweulu on the map of Zambia and the location of chiefdoms sampled.



**Figure 2.** Map of Zambia showing the location of Lake Bangweulu (bottom right), and main map showing the location of chiefdoms that were sampled. Source: Own illustration.

### 3.2. Study Design

In order to understand the institutional framework and explore the appropriateness of the fisheries policy in poor communities, the researcher made a case study for the Bangweulu fishery. The research took a qualitative and quantitative approach to explore the institutional frameworks and the appropriateness of the fisheries policy for co-management. Interviews were conducted with traditional authorities, government officials from the Department of Fisheries (DoF) and local government, officials from an NGO involved in the management of capture fisheries Programme for Luapula Agricultural and Rural Development (PLARD) and household heads within the fishing communities in the study area. A purposive sampling design, which adapted stratified systematic sampling, was used to select respondents. This sampling approach was used in order to only target major players in fisheries management for every stakeholder group. According to Oliver (2014), purposive sampling is a form of non-probability sampling, with which decisions concerning the entities to be sampled are made by the researcher, based upon a variety of criteria that may need specialist knowledge of the research issue, their capacity



and willingness to participate in the research. In this case, the researcher chose the institutions to be sampled, the officials to be targeted for interviews, and traditional leaders to be interviewed, based on their knowledge and influence over the issue being studied. A stratified sampling approach was used to ensure that there is proportional distribution of the samples within the sample frame. According to Bryman (2004), stratification helps to avoid the overrepresentation of some groups being sampled. The proportional stratified sampling method helped to distribute the samples according to the number of individuals in every sub group. Groups with a larger sample such as community groups had a larger sample compared to DoF, while DoF also had a larger sample compared to PLARD. A systematic sampling design was used at community level, in order to avoid biasness by the researcher who might end up sampling more fishers at the expense of a randomly distributed community sample approach. It helped to bring about a true distribution of the community members (local stakeholders). Systematic sampling ensures that there is no overrepresentation of large or small groups in the sample, but rather distributes the groups of all sizes in a generally uniform manner as it is in the sampling frame (Bhattacharjee 2012). The secondary sources used included book reviews of journal articles, reports, books and legislative documents.

### *3.3. Target Population*

The target population was that of traditional leaders, government officials, officials from PLARD, and heads of households within the fishing communities. Data were collected through interviews, observations and focused group discussions (FGDs) with the Village Fisheries Management Committee (VFMC) members and fishers. The collected data were then coded and analysed using SPSS version 15. The qualitative information from interviews and FDGs was arranged in themes and analyzed using NVivo 10. The research was carried out in the Samfya district of Luapula Province, a district covering the largest area of the lake fishery.

### *3.4. Sampling Design*

The sample was divided into five (5) groups made up of; (i) institutions of government (DoF and local government), (ii) an NGO involved fisheries management in the study area PLARD, (iii) traditional authorities, (iv) members of the VFMCs and (v) individual household heads and fishers in communities around the lake fishery. The sample was divided as shown in Table 1.

The target communities were chosen according to Village Fisheries Management Committee (VFMC) zones formed by the DoF. The VFMCs were composed of

12–17 villages per VFMC. These divisions were based on the argument that some villages were too small to form a representative VFMC. Some villages were as small as two households. Ten (10) communities that were VFMCs were sampled in this research, out of 51 VFMCs on the fishery. This was because the researcher was informed that over 20 VFMC areas were hostile towards outsiders enquiring on fisheries management, due to lack of trust in the facilitators, to a point where two communities even violently chased some officials involved in the introduction of co-management. For safety reasons, the researcher only managed to sample two (2) communities where the introduction of co-management was rejected. The sampled communities were evenly spread across four chiefdoms; Kasoma Bangweulu, Chitembo, Mwewa and Mulongwe chiefdoms. VFMCs have only been formed on fishing communities around the lake. Purposive sampling was used in order to cover communities close to the lake, where most locals depend on fishing and stakeholders directly involved in local governance. Three (3) communities were sampled per chiefdom, with 10 households per VFMC area, making a total of 30 respondents per chiefdom. A total of 120 household interviews were successfully conducted.

**Table 1.** Summary of stakeholders sampled.

Stakeholder	Partners	Contributions	Number Sampled	Targeted Respondents
DoF	PLARD, VFMCs, Traditional Authorities, Local Government and Community Members	<ul style="list-style-type: none"> <li>- Enforcement of the fish ban.</li> <li>- Facilitation of fisheries co-management.</li> </ul>	3	1 provincial Fisheries officer 2 District fisheries officers
Local Government	DoF	<ul style="list-style-type: none"> <li>- Make by-laws</li> </ul>	1	1 officer responsible for area development
PLARD	DoF and VFMC	<ul style="list-style-type: none"> <li>- Fund and facilitation for co-management programs</li> </ul>	2	PLARD 1 officer in charge of fisheries at provincial level and another 1 at district level.
Traditional Authorities	DoF, VFMC and Community Members	<ul style="list-style-type: none"> <li>- Arrange for community meetings</li> </ul>	4	3 Chiefs and 1 Sub-chief
VFMC members and facilitators	PLARD, Traditional Authorities, DoF and Community members	<ul style="list-style-type: none"> <li>- Work with DoF in fisheries management</li> <li>- Sensitize local communities on fisheries management</li> </ul>	33	30 VFMC members through FDGs and 3 community VFMC facilitators through Semi-Structured Interviews (SSI).
Local Communities	Traditional Authorities, DoF, VFMCs and Local Government	<ul style="list-style-type: none"> <li>- Adherence to rules and regulations of fisheries management</li> <li>- Support co-management</li> </ul>	120	Household heads

### *3.5. Data Collection*

Data from traditional leaders and officers from DoF, Local Government and PLARD were collected through one-on-one SSIs. Data from community members were collected through SSI, and focus group discussions (FGDs) with VFMCs and fishers; four (4) FGDs involving VFMCs members and two (2) involving migrant fishers who were excluded from the co-management arrangement, as there were no VFMCs formed on their fishing camps. One FGD was conducted in each of the four chiefdoms. These were as follows; 2 FGD with VFMC members from Mundubi Village Fisheries Management Committee (VFMC) in Chitembo village and Musumba VFMC in Kasoma Bangweulu chiefdom, and the other 2 with local fishers in Masanta area under Mwewa chiefdom and with migrant fishers in Isenga Fishing Camp on Mbabala Island in Mulongwe chiefdom. Data were collected from their localities in both cases. Field data were collected between November 2012 and February 2013 and the experiences learnt from the research are valuable in the transformation to strong partnerships for sustainable development, in line with SDG 17. The failure to form strong partnerships has continued to be a challenge in fisheries management in poor communities worldwide and the analysis of experiences would help draw a solution to this problem.

### *3.6. Data Analysis and Interpretation*

The collected data were subject to content analysis through coding. All data collected using the various research methods were transcribed and typed up for analysis. Qualitative data collected through FGDs and SSI were entered into the QRS NVivo 10 application, which arranged them in themes to show which method was used to obtain them and clearly labelled their origin. They were then interrogated and divided according to the formation, implementation and outcome phases of partnerships. Because the interview was also structured around questions that asked about institutional frameworks, policy and challenges at each partnership phase, answers were interrogated for content. Within each partnership phase, patterns were identified between respondents and their responses, and codes were assigned to these patterns. Relevant pieces of data were then placed under these codes and assimilated to gain a full picture of partnerships. Where conflicts arose in the data, these were noted and treated as data in itself. Each conflict was considered in terms of its origin and the phase of the partnership that is being discussed when it arises. Conflicts were used to highlight issues such as breakdowns between partners or differences in opinions, and understand their role in partnership success. Frequencies and percentages of responses were tabulated and used to

make conclusions. The Statistical Package for Social Sciences (SPSS) was used for computation.

### *3.7. Data Validity and Reliability*

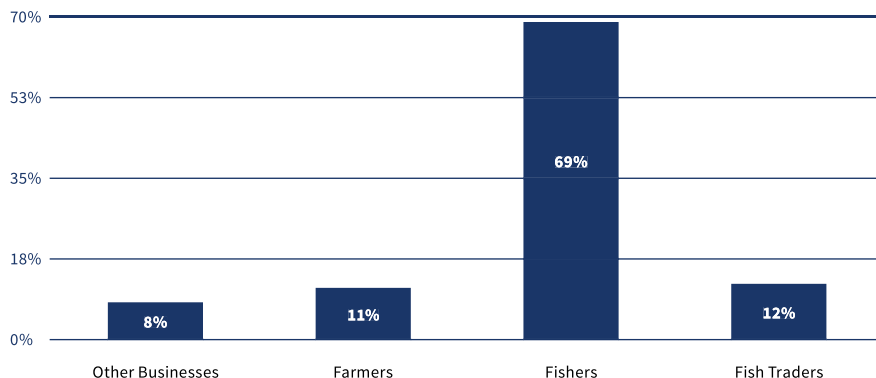
The validity of data conveys how adequately a measure used in research captures the phenomenon under investigation (Bryman 2004). Both reliability and validity are needed to assure adequate measurement of the constructs of interest (Bhattacharjee 2012). Reliability of data reflects the consistency of results across different measurements, and this was used to test how reliable the outcomes were. Validity concerns in this study were addressed through the refining of all data collection tools to the best possible standards. Extrapolations based on rough estimates were avoided, hence preferring not to provide quantitative data in cases where the reliability of figures left much to be desired. Observed differences in results should be due to a genuine difference in the sample and not because of the unreliability of the data collection techniques or the researcher. The study used was valid and reliable, as it targeted all the stakeholders who were identified as being part of the fisheries management in the area, whether active or inactive. The use of a combination of data collection methods helped to ensure reliability.

### *3.8. Limitations of the Study*

The researcher faced limitations in terms of finances. The Bangweulu fishery is vast, and the transport costs were high. This limited the area covered by the researcher, but the data still gave a true representation of the situation on the ground. Some household respondents were against fisheries management, and hence refused to be interviewed. Fisheries management system was a contentious issue in the Bangweulu fishery, especially on the control of the size of fishing gears. Some of the communities were hostile and did not welcome the researcher. As mentioned by Mbewe (2007b), there is a lot of resentment and suspicion from fishers towards researchers or anyone they think is associated with DoF. Therefore, the researcher had to be skillful in order to overcome these limitations.

## **4. Results**

The household interviews composed of 84 men and 36 women, bring the total to 120 respondents. The majority of participants were fishers (69%), as shown in Figure 3.



**Figure 3.** Distribution of sampled population through household interviews.  
Source: Own illustration.

Data collected revealed that some fishers practiced small scale farming during the rainy season when the fish ban is in effect, bringing the total number of farmers interviewed to 11%. Only eight percent (8%) of the respondents depended on other sources of income, such as tailoring, selling groceries and carpentry. Twelve percent (12%) of household respondents were members of the VFMCs in their area. All the participants showed profound dependence on the fishery in one way or another. Four chiefs were interviewed and 6 officials from PLARD, DoF and the local government, plus 3 VFMC community facilitators. Four FGDs conducted involved the following groups; local fishers, migrant fishers and VFMCs. The FGD with local fisher had 8 participants; the one for migrant fishers had 10 participants, while the FGD with Mundubi VFMC had 9 participants. The FGD with Musumba VFMC had 6 participants. Data collection was carried out as it was planned in the methodology.

#### 4.1. Institutional Frameworks

Generally, there were no local community level institutions for the governance of capture fisheries operating in the Bangweulu fisheries, apart from VFMCs formed by DoF. Although DoF offices are there at district level, it had no representation at chieftdom and village community levels. According to the Provincial Fisheries Officer, there has been an effort to form and use VFMCs in the management of the fishery, and DoF had an upper hand. The co-management promoters (DoF and PLARD) planned for 81 VFMCs, but only managed to form 51 VFMCs. VFMCs were formed as a partnership link between the promoter of co-management and the local

communities. Once active, VFMCs were to work with other stakeholders in sensitizing local communities on fisheries management, and participate in fish ban patrols.

#### *4.2. Stakeholder's Engagement and Involvement*

As a starting point for co-management, DoF identified the stakeholders and invited them for a stakeholder workshop in Samfya in 2010, to form the co-management partnership. The stakeholder identification and invitation process was entirely done by the DoF and other stakeholders did not participate in policy formulation for co-management. The stakeholders identified were PLARD, local government, traditional authorities and local fishing community members. The introduction of co-management at community level started with the engagement of community facilitators, who were trained for 5 days in public relations, facilitation techniques, fisheries co-management, and familiarized with the Fisheries Act of 2011. The facilitators were recruited from the local fishing communities and assigned to work in the same communities they came from. At community level, the promoters (DoF and PLARD) started with the introduction of co-management to the chiefs, then the sensitization of the headman after approval from the chiefs. The headmen then organized for community meetings in their villages. The mobilization of local communities was also done with the help of the area's political councilors. The headman introduced the community co-management facilitators during the first village meetings, where no officials from PLARD or DoF and chiefs were present. The meetings focused on the introduction of co-management facilitators. This was then followed by the first sensitization meeting by DoF and PLARD officials, and VFMCs were formed during the first or second sensitization meetings if the community accepted it. Most of the respondents felt that the formation of VFMCs was too quick as it did not allow for the locals to fully understand what was being introduced. A one- or two-days meeting was not enough. Moreover, a number of fishers missed the meetings, as it was during the fishing period when some fishers were out fishing.

Some of the chiefs were of the view that co-management was not well introduced. According to 75% of chiefs, co-management should have started with first making the laws and by-laws that support stakeholder participation, followed by the sensitization of stakeholders to help them better understand co-management. This should then be followed by a consultative meeting involving all stakeholders, starting with the leaders before the communities are even involved. The next step should have been the sensitization of local communities and the formation of VFMCs to help fisheries management once they have understood. According to some of the fishers,

local communities were threatened with a prolonged fish ban period of 3–5 years. They were of the view that the promoters should have taken a friendlier approach when introducing co-management.

4.3. Institutional Collaborations, Trust and Accountability

As a way of incorporating local communities in fisheries management, VFMCs were formed in some communities. The involvement of partnership formation for fisheries co-management proved to be a challenge based on the local community’s perception of the roles played by each given stakeholder in the partnership, as shown in Table 2.

**Table 2.** The major role of institutions as perceived by the household heads.

Name of Partners	Fish Ban Enforcer	Promotes Local Development	Fish Levy Collectors	No Relationship	Promotes Fisheries Management	No Idea	Oppressors of Local Communities	The Foreign Investors Who Have Bought the Lake
DoF	100%	-	-	-	-	-	-	-
PLARD	2%	2%	-	3%	69%	9%	7%	8%
Local Government	2%	95%	3%	-	-	-	-	-
Traditional Authorities	12%	73%	-	-	15%	-	-	-
VFMC	-	-	-	-	100%	-	-	-

The information presented in Table 2 shows that all the household heads perceive the DoF as only playing the role of fish ban enforcement. In the case of PLARD, the majority (69%) perceived PLARD as mainly being involved in promoting fisheries management through VFMCs and working in close partnership with DoF. In the case of local government, the majority (95%) of respondents perceived local government as the promoter of local development through the area councilor, with none of the respondents perceiving them as partners in fisheries management. Most of the respondents (73%) considered traditional authorities mainly as promoters of local development, and only a few associated them with fisheries management. All respondents perceived VFMCs’ as promoters in fisheries management. The role played by each institution had an influence on the quality of relationship with local communities, as shown in Table 3.

**Table 3.** The quality of relationship between DoF, PLARD, Local Government, Traditional Authorities and VFMCs with Local Communities.

	Good	Neutral	Bad	No Idea
DoF	13%	24%	63%	-
PLARD	21%	31%	39%	9%
Local Government	91%	7%	2%	-
Traditional Authorities	87%	13%	-	-
VFMC	20%	39%	17%	14%

The majority of respondents (63%) indicated that the relationship between DoF and the local communities was bad, as DoF is just there to enforce the fish ban, and especially visible during the fish ban period when DoF is enforcing the ban. In the case of PLARD, 39% of respondents indicated that the local community's relationship with PLARD was bad, due to its association with DoF; 31% indicated that it was neutral, while the remaining 21% indicated that it was good. However, the majority (91%) perceived their relationship with local government as good, while the relationship with traditional authorities was very good. The relation with VFMCs was neutral, as they were seen as being more a part of the community compared to the others.

#### 4.4. Appropriateness of the Fisheries Policies and Legislation

The views of DoF, PLARD, traditional authorities and local government on the appropriateness of the policy varied, as these institutions enjoy different powers, responsibilities and privileges. Appropriateness refers to what is being considered as accountable, transparent and equitable by the partners involved, as well as the wellbeing of the fishery. Their responses on whether the policies and legislation were appropriate for effective fisheries management are shown in Table 4.

As presented in Table 4, most of the respondents from DoF, PLARD and local government (83%) were of the view that the policies and legislation were appropriate for the effective management of the fishery; what was lacking was implementation. On the part of the traditional leadership, 50% of chiefs were of the view that the policies and legislation were inappropriate, as there was no role given to traditional leaders who govern these communities. They were not even involved in the policy formulation process. As for the community members, the majority were of the view that the policy and legislation was inappropriate, as it had no provision for community development, but was just meant to conserve fish.



**Table 4.** Views of key stakeholders on the appropriateness of the fisheries’ policies and legislation.

Group Interviewed	Appropriate	Inappropriate	No knowledge of Policies and Legislation
DoF	83%	17%	-
PLARD	100%	-	-
Traditional Leaders	25%	50%	25%
Local Government	100%	-	-
Local Communities	7%	68%	25%

#### 4.5. Fisheries Management System

The respondents from each stratum presented their views on who manages the lake, and these were categorized in order to see if co-management was taking place. The percentages on responses from respondents were then obtained. The percentages of key institution respondents for each category are presented in Table 5.

**Table 5.** The managers of the lake according to the various stakeholders.

	DoF	Traditional Leaders	DoF and Traditional Leaders	No One	Co-Managed by Various Stakeholders (In Partnership)
DoF, PLARD and Local Government	67%	-	-	-	33%
The Chiefs	75%	-	25%	-	-
Community Household Heads	42%	4%	51%	3%	-

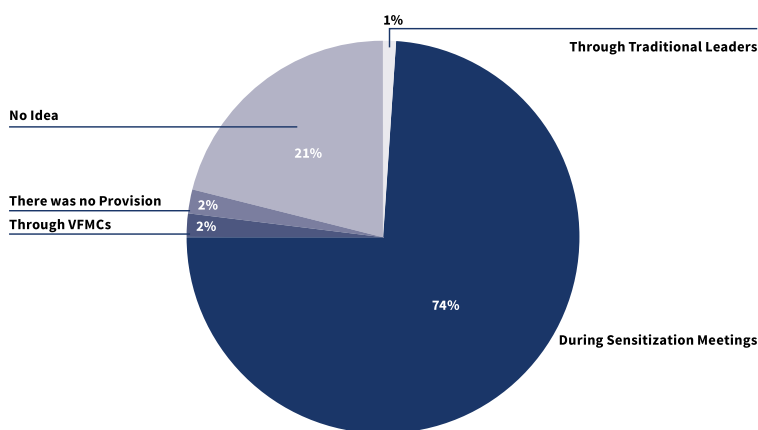
The results showed that 67% of respondents from DoF, local government and PLARD indicated that the lake fishery was being managed by DoF alone. In the case of traditional leaders, the majority of chiefs (75%) indicated that the DoF manages the lake alone, and only 25% indicated that traditional authorities were involved in fisheries management. The majority of household heads (51%) were of the view that the fishery was managed by both the DoF and traditional leaders; 42% indicated that DoF is managing the fishery alone. However, findings also revealed that some traditional leaders have had an influence on the implementation of management rules, as indicated by 51% of house hold respondents.

The management rules and regulations were created by central government with no participation of the local communities. The locals expressed the view that the rules were not fair to them, as they were meant to oppress them. Their main concern

was that the size of fishing gears declared legal on the fishery would reduce their catches and income levels. They further indicated that even the strict enforcement of rules would not stop them from practicing illegal fishing activities.

#### 4.6. Communication between Stakeholders

All the respondents from DoF stated that meetings with local communities were irregular. Stakeholder meetings have not been arranged, as the institutional structures (Zone Fisheries Management Committees and the Fisheries Management Committee at district level) have not yet been formed. As a result, there were no scheduled communication arrangements between DoF and other stakeholders, except for PLARD. Communication only took place when need arose. The local government indicated that the only communication on fisheries management with DoF was through the District Development Coordinating Committee (DDCC) meetings. However, a respondent from DoF indicated that they were supposed to be having periodic meetings with the traditional leaders, but that was not the case. They were only scheduled meetings between the VFMCs and the community facilitators. The household heads were asked to state the channel of communication that was used to present their views and concerns to the promoters of the fisheries co-management system. The results of their responses are shown in Figure 4.



**Figure 4.** Channels for the presentation of community views and concerns about co-management. Source: Own illustration.

Most of the household head's respondents (74%) were of the view that the presentation of local community views and concerns was only done once, during the co-management sensitization meetings.

According to 50% of the chiefs, they captured the views and concerns of the local people through the headmen, and presented them to the government through the area councilor. The headmen collected the information through interaction with their subjects and not through community meetings. The other 50% of traditional leaders stated that they have been excluded from co-management; hence, they do not play any role in fisheries management. There was no direct connection with DoF for them to present these views and concerns.

## **5. Discussion**

### *5.1. Overview of the Institutional Framework*

It was found that the DoF is in charge of all fisheries management activities, and responsible for the formulation of all fisheries management policies, with very little involvement from other stakeholders. At community level, the traditional authorities were not empowered to actively participate in fisheries management. The institutional framework created by the Bangweulu fisheries co-management promoters was limited to a small number of actors. These included the DoF, PLARD and VFMCs. The migrant fishers were left out, despite the fact that the whole process was designed to control their activities. Moreover, the seasonal migration of fishers is the most common source for conflicts on fisheries and need to be controlled (Wilson 2003; Allison and Badjeck 2004). There were no VFMCs in fishing camps, where migrant fishers spend most of their time. The exclusion of key stakeholders such as traditional authorities and fishers in fisheries co-management has often resulted in the weak co-management practice that lacks transparency and legitimacy (Arthur 2005; Pomeroy 2007). As argued by Njaya (2007), this leads to general non-compliance to rules and regulations by resource users, such as by lack of adherence during the fish ban period, continuous use of illegal fishing gears and mesh, as well as fishing without licenses. Therefore, the exclusion of some stakeholders led to a weak partnership, with no support for the arrangement. Communities whose VFMCs were left out need to be included as they could play an important role in fisheries management. Their exclusion could lead to co-management failure and lack of sustainable fisheries management (Malasha 2007).

Managing fisheries resources on a cooperative basis in partnership with other stakeholders has often proved to be a preferable alternative to government managed systems (Watt 2001; Carlsson and Berkes 2005; IUCN 1996). Partnerships and

stakeholder involvement in fisheries management has the benefit of contributing unbiased views and opinions concerning fisheries management issues, whereas fisheries resource users are more likely to be capable of making more equitable regulations than the government (ECA 2007). The local fishers and other resource users are intimately involved in the industry, and they are in a better position to respond to the special needs, demands and interests of individual fishers and other user groups. Therefore, there is little chance that fisheries regulations will succeed unless the fishers and other fisheries resource users actively support them (Donda and Njaya 2007). If government regulations are not supported by the fishers and other resource users, they will find ways to bypass them, and the government will incur costs in monitoring and law enforcement. The fishers and other resource users are more likely to respect the rules and regulations if they are involved when making and implementing them (Watt 2001). This calls for the inclusion of the migrant fishers in the co-management partnership.

#### *5.2. Stakeholder Engagement and Involvement in Partnerships*

The stakeholder engagement and involvement process should be transparent, in order to have a well-represented stakeholder distribution (Arthur 2005). Although DoF identified the stakeholders, the process was not transparent and seen as equitable by some stakeholders. None of the stakeholders knew how that identification and inclusion process was undertaken. As a result, some stakeholders, such as traditional authorities, fish traders and migrant fishers were left out. This negatively affected their support and lowered the chances of partnering with them. According to Haambiya et al. (2015, p. 83), “the Zambian government has underestimated the capacities of fishing communities to manage local fisheries resource systems to meet their needs”. The key stakeholders such as fishers and traditional authorities should have participated in the formation of the policy that supports co-management so that their concerns are considered from the beginning. This could have led to a policy that is inclusive and fair for them. The key stakeholders should have had an input at policy formulation, planning and implementation levels. This would bring about transparency, equity and accountability, and all parties would be held accountable for the decisions made (Arthur 2005; Berkes and Doubleday 2007; Pomeroy 2007). Furthermore, consultation should be done after the sensitization of stakeholder on the whole co-management arrangement. This is because they cannot make valuable contributions over something they do not understand well.

Experience has shown that local users have no interest in the success of management initiatives when they are not involved in any aspect of the planning

for a new project or initiative, and worse when they can directly or indirectly act to undermine it (Ostrom 2010; COFAD 2002). The co-management participant must feel that the rules in place are equitable, and there must be the sharing of costs and benefits in a manner that the benefits outweigh the costs (Pomeroy et al. 2001). The fishers must understand, recognize an incentive and agree to the co-management arrangements before the process begins so as to support the initiative throughout. Co-management cannot work unless the fishers and other fisheries resource users actively support it (Donda and Njaya 2007). Therefore, the failure to identify and involve some stakeholders at an early stage contributed to a weak partnership arrangement on the fisheries, as well as a lack of support from some stakeholders.

### *5.3. Institutional Collaborations, Trust and Accountability*

Since the late 1980s, various forms of fisheries co-management initiatives have been implemented in some of the major fisheries, in many developing countries including Zambia. The initiatives have mostly been funded by international organizations such as SNV, from Netherlands and PLARD, an NGO funded by the Finnish government. These are global partnerships meant to help developing countries to develop. However, most of these initiatives have not been successful, as there has been no continuity and progress on the output and outcome of such programs and projects. Once the project and programs' funding ends, so does the progression and implementation of the co-management operations in most communities. This has been the case for co-management in the poor fishing communities of Zambia such as the Bangweulu fisheries, and can be considered as an 'aborted devolution' (Malasha 2007). For co-management to work, the sharing of authority and responsibilities should be accompanied with matching resources (Pomeroy et al. 2001). It was observed that, while institutional frameworks may be established, effective collaboration should be there in order to build capacity among stakeholders, while at the same time, develop trust and accountability between them. It is important to note that there is a difference between stakeholder involvement and partnership. A stakeholder may be involved just for approval or consultation purposes, while the partnership is an agreement to work together. The institutions involved in co-management should form partnerships where they agree on the roles of each partner in the arrangement, as well as establish the rules and regulation of their operations in accordance with the law. In this case, an institutional framework would be established where the leaving of a partner can be filled or replaced by other partners.

The involvement of VFMCs in fisheries co-management has proved to be a challenge in some fisheries, because of the type and quality of relationship between the local communities and the promoters of co-management, as was the case with Lake Bangweulu fisheries. The local communities perceive the DoF as just being fish ban enforcers, and this affected the relationship between DoF and local communities. As a result, the quality of relationship between them was generally bad, especially during the fish ban period. The fishers viewed DoF as:

“An enemy who is just there to deny the locals access to a resource that is God given”. (Statement recorded during FGDs, February 2013)

With this notion, local communities cannot trust DoF, as an enemy cannot work to improve their living standards. With such a bad relationship between them, it was not easy for the local communities to trust DoF, and that is why the actions of DoF were looked upon with suspicion. Hence, the locals viewed co-management as a move by DoF to effectively enforce the rules on the fishery and not help local communities. This is not far from the truth, as the Bangweulu co-management arrangement was mainly designed to help DoF enforce the rule, and local communities would only benefit from the increase in fish stocks, which would not happen immediately. The local communities expect to see immediate benefits if they are to actively participate in fisheries management (Berkes 2010). Therefore, the DoF should consider directing its management efforts towards establishing and improving the working relationship with the fishing community, to be able to give advice based on sound scientific investigations.

Although the traditional authorities and local government supported the introduction of co-management through the mobilization of fishing communities, they had no role apart from giving DoF permission for co-management activities, meaning that there was no partnership between DoF, traditional authorities and local government. The governance system did not hold DoF accountable for its action to the traditional authorities, local communities and other stakeholders, except PLARD as the cofounder and funders of the co-management initiative. Therefore, it is not just a matter of involving the stakeholder in co-management, but establishing strong relationships of mutual trust if sustainability is to be achieved. The facilitators should also be held accountable to all stakeholders including the weak ones, if they are to be supported. As alluded to by Wilson et al. (2010), co-management programs will be stronger and more likely to succeed if partnerships are made between stakeholders that are seen to be trustworthy, transparent in their operations, and operating cooperatively and equitably.

The study attributes the failure of these initiatives to weak partnerships resulting from the following; weak institutional frameworks, inappropriate policies, lack of collaborations, trust and accountability among stakeholders. Only a few countries have formal frameworks for enabling and ensuring effective partnerships (Beisheim 2007; Horan 2019). Otherwise, most countries rely on a voluntary, bottom-up ad hoc approach to partnership formation (Horan 2019; Martens 2007). Therefore, understanding the experiences on fisheries such as Lake Bangweulu would help in developing a strong partnership for effective co-management, which would lead to sustainable development.

#### *5.4. Appropriateness of the Policies and Legislation*

Fifty percent (50%) of the chiefs (traditional authorities) on the Bangweulu fishery indicated that the fisheries policy and legislation were inappropriate, as they have failed to define the roles that traditional authorities should play in fisheries management. The policy was silent on the role of traditional authorities and other stakeholders in a decentralized set-up. It has been argued that traditional authorities can play a major role in fisheries management (Mbewe 2007a; Wilson et al. 2003). However, the role of traditional authorities in the Bangweulu fishery was found to be ambiguous. This contributed to the ineffectiveness of the co-management arrangement on the fishery. As suggested by Malasha (2007), there is a need to clearly spell out the role that the traditional authorities are going to play in fisheries management for the fishery to be effectively governed. However, this should be done with caution, as traditional authorities can sometimes take advantage of the system for their own benefit at the expense of other stakeholders (Béné et al. 2008). For the co-management initiatives to be successful, initiators should not only establish supportive legislation, policies and structures, but should clearly spell out jurisdictions and controls that would define and clarify the rights and responsibilities of partners (Pomeroy et al. 2001). This would support local enforcement and setup accountability mechanisms that would provide local communities with the legal right to organize and make arrangements related to their needs.

Decentralization is normally perceived as one possible solution for the improvement of rural population livelihoods, and as a mean of poverty alleviation (Béné et al. 2008). Although the decentralization of fisheries governance and management was adopted in practice where the resource users would be more directly responsible for the resources in their administrative areas, the fisheries policy and Act of 2011 did not state the decentralization levels and functions of DoF at national, provincial and district levels. One of the objectives of the decentralization policy

was to empower local communities by devolving decision making and functions with matching resources from the center to the lower levels, in order to improve efficiency and effectiveness in the delivery of services (Government of the Republic of Zambia 2002). However, this part was lacking in the Fisheries Policy and Act of 2011, hence leaving a situation where fisheries governance and management were still centralized. While decentralization transfers some authority and responsibility to lower levels and subordinates, the arrangement still concentrated authority in the hands of higher authorities, and thus accountability was still left with central government (Government of the Republic of Zambia 2002).

Despite the fisheries policy being in support of participatory management, it failed to address the issue of sustainability. Funding is very critical to the success of any institution and its sustainability. However, VFMCs had no well-defined arrangements for income generation. Although DoF expressed the view that local government was not cooperative in terms of willingness to share fisheries levy with local communities, the local government was working in accordance with the Local Government Act, which had no provision for the sharing of revenues with local communities. Hence, there was no basis for sharing the local government's revenue from fish levy with VFMCs or DoF. This has been the experience in many African countries, where there has been no effective integration of the small-scale fisheries in the agenda of the local authorities, apart from the taxes levied by the local governments (Béné et al. 2008). The policies and legislation should explicitly state how the co-management institutions would raise funds for their operations, and how revenues generated by the fishery would contribute to both local development and fisheries management. There is the need to come up with legal prescriptions for benefit sharing for co-management participants. The revenues collected from fish levies and fishing licenses should be shared with local communities, so that the fishery would have a way of generating funds for its own development. The community's share of the benefit can be used for community development projects, which would, in turn, uplift the living standards of the locals and reduce their dependence on the fishing. Therefore, the fisheries policy and legislation should clearly prescribe the benefit sharing mechanism from co-management.

The failure to define the role of local government in the fisheries policy and legislation makes it difficult for DoF to govern fisheries at district level. Local government is one of the key stakeholders for enhancing governance, development and poverty alleviation at local community level (Ministry of Local Government and Housing 2009). The local government has the responsibility to mobilize and allocate public resources, in order to effectively meet local development



objectives, as well as support the implementation of national programs (ibid.) It is therefore inappropriate for the fisheries policy to give authority to DoF, minus explicitly stating how power and responsibilities will be shared with other stakeholder actors in order to promote accountability among them.

The research showed that the main problem faced in the management of fisheries in poor communities is the lack of alternative livelihood and incentive to help fishing communities to adapt to the new management arrangement and develop their communities. The fisheries policy should provide for incentives that would help gain the support of local communities, while at the same time promote the performance of community structures for fisheries management, and ensure their sustainability. Hutton and Nigel (2003) introduced the term “incentive-driven conservation”, as a way to motivate local communities to conserve wild living species. The Fisheries policy lacked a benefit sharing arrangement from fish levy that would give local communities some incentives. The incentive can be obtained from the fisheries levy, fishing licenses and boat registration fees.

### *5.5. Fisheries Management Systems*

The co-management arrangement was inactive, as controls on the fisheries were only there for three (3) months, which was the official fish ban period on the recently identified fish breeding areas. After that, no permission is required for the use of the fishery, except on fish breeding areas where breeding was prohibited. This led to an open access fishery, with no permission required for users. Most of the fishers did not obtain fishing licenses and DoF could not enforce this law. The law on the acquisition of fishing license for commercial fishers has been there for a very long time, but not effective on the Bangweulu, just about 4 fishers obtained fishing licenses out of over 15,000 fishers in 2011 (Department of Fisheries 2011).

The management rules for the lake fisheries were entirely made by the DoF, and VFMCs would only help to enforce these. The rules included restrictions on the size of fishing gears and mesh, as well as fishing methods. However, the restrictions on some fishing methods and size of fishing gears and meshes were hardly followed by the fishers, who disagree with most of them (Kolding et al. 2003). Just about one fifth of the fishing gears used were technically legal (Kolding 2011). There has a lot of under-reporting or concealment of those using illegal fishing gears (Mbewe 2007a). According to Kolding (2011), the fishing methods and gears used on the Bangweulu appear not to have changed much in recorded history. Therefore, the fishers are adapted to catching a high variety of predominantly small fish, which have been declared illegal by DoF. The fishers prefer to use the small sized mesh nets, which

have been declared illegal than the legal large sized nets, as the smaller varieties of fish were more commercially viable and easier to catch. As indicated by Kolding (2011), the most viable fish varieties on the Bangweulu fishery are small and caught using illegal gears. The Department of Fisheries (2011) also indicated that the smaller mesh sized nets (illegal nets) were more effective than the larger (legal) mesh sized nets on the Bangweulu fishery. However, the DoF argued that the predominant use of smaller mesh size nets on the fishery was dangerous on the fish stock, as more juvenile fish are captured before breeding (Department of Fisheries 2011). If not controlled, this can lead to overfishing. Hence, management strategies need to be found based on regulating mesh size for the fishing nets while, at the same time, benefitting all stakeholders. It is important to note that many fishermen and their families rely on fishing for their income, with no alternative, and are ready to ignore a government-mandated ban. Hence, there is a need for partnership between the government and local fishing communities, along with other agencies that can work with the communities to develop alternative livelihoods, as this would result in a holistic, implementable and viable solution (Darian et al. 2018).

Rule breakers were punished through the confiscation of fishing materials, payment of a fine or imprisonment. The use of stiff punishment on law breakers by the government when one is found guilty failed to deter fishers from engaging in illegal fishing activities. Instead of discouraging illegal fishing activities, this approach encouraged some fishers to do more illegal fishing. According to Mbewe (2007a), most fishers on the Bangweulu mainly use hired labor in their fishing activities compared to self-employment, or using family members without necessarily hiring them. Most fishers in the area hired fishing materials and equipment like boats, fishing nets and bicycles for transportation. Once a fisher is arrested and the fishing materials confiscated, the owners of the items continue counting the days and charging the fisher until these items are returned. In a case where the confiscated items are auctioned, the fisher is expected to pay the owner for the number of days that the items were not returned, plus the cost of the items. This punishment then puts the fisher in a position where he is indebted to the owner of the items confiscated, and hence needs to do more illegal fishing in order to payback the owner. According to Pomeroy et al. (2001), the rules should be simple so that those affected by them can easily understand and comply. Compliance is determined by the individual fisher's perspective of fairness and appropriateness of the law and its institutions.

A fair strategy would only be met with the participation of all the stakeholders and a focus on community development. As argued by Kolding (2011), it is very unlikely that the strong enforcement of the legislation would yield any positive

results for either the fishers or the fishery. While the DoF is busy looking for ways to effectively enforce the law, the fishers strongly resist them, and claim that the rules and regulations would reduce, and not improve their catches, and that the majority of the fish targeted will not be caught using legal fishing gears. The strong enforcement of these restrictions would decrease pressure on the heavily exploited fish species on the fishery. Therefore, the fishers are not ready to support the co-management initiative, as it would enforce these rules and regulations, thereby reducing their catches (Ostrom 2010).

The fisheries policy and legislation should be revised to leave room for differentiation between the various fisheries within the country. In this way, specific regulations, adapted to the prevailing conditions in each individual fishery, can be designed. For the Bangweulu fisheries, some illegal fishing gears such as seine nets can be legalized, until further analysis is done on the effects of the small mesh sizes on the fishery, as most fish species are too small for the prescribed meshes, hence the DoF should tolerate these methods. This can only be amicably resolved through a co-management partnership involving various key stakeholders.

#### *5.6. Communication between Stakeholders*

Regular communication and dialogue between partners are critical for the successful governance of capture fisheries, as they bring about transparency in the implementation process (Pomeroy et al. 2001). Regular communication also helps to monitor and control activities, as it gives the implementers an opportunity to make informed decision. However, the Bangweulu fishery co-management partners lacked regular communication arrangements. There were no scheduled communication arrangements between institutions that have a stake in the fishery. Since DoF was the only active member involved in the management of the fishery, the lack of arrangements to communicate with other partners shows that DoF was not accountable to these the partners over its actions. According to Uhlen Dahl et al. (2011), the implementers of such arrangements must be accountable, efficient and responsive. This led to a situation where there was no formal channel for the presentation of views and concerns of the local people. As indicated by 74% of household heads, the local community's views and concerns were only presented to DoF during the co-management sensitization meetings, and this was one of the rare meetings between DoF and local communities. Hence, the local communities had no say on the management of the fishery. The DoF only informed the communities on the fish ban enforcement, mainly at the beginning of the fish ban period. This was being done through posters, and the use of the Zambia Information Service AV announcers who would go around the communities announcing the same.

Although some of the chiefs captured the views and concerns of the local people through the headmen and presented them to government through the area councilors, the views may not give a full reflection of the community's views and concerns, as the community members were not aware that they should report their concerns through their traditional leaders. The local community's views and concerns were only captured informally by the headmen (traditional leaders), mainly through interactions, and not through community meetings. There was also disconnect in communication between chiefs and DoF as chiefs report to area councilors, who have no direct communication with the DoF. Local government was not actively involved in fisheries management, unless if bylaws were to be made. Hence, local government had no communication arrangements with other stakeholders in the fishery. They only communicated with other stakeholders through the District Development Coordinating Committee (DDCC) meetings. However, the DDCC was ineffective because it was a composition of various ministry personnel operating at district level with diverse interest.

Effective co-management calls for continuous dialogue and understanding between stakeholders (Donda and Njaya 2007). Since the VFMCs were not having meetings with the local communities, they were not a channel of communication that could represent the local people, as they were not having the local people's views and concerns, but their own personal views and concerns. Therefore, poor communication can be a recipe for weak partners or mere stakeholder participation.

## **6. Conclusions**

Achieving SDG 17 is an interesting task at both a national and international level, particularly as the successful implementation of this goal transforms the implementation of the entire SDGs. It is placed at the center of SDG implementation, and emphasizes building a multi-stakeholder partnership for the SDGs. There has been a mismatch between the types of partnerships required for transformation to achieve SDGs and the voluntary partnership approach in management. Therefore, achieving the implementation of SDG 17 as framed requires strong institutional frameworks with deliberate policy strategies that strengthen nationally focused partnerships as the case of co-management. It was found that a well-defined institutional framework should be set up to guide the operations of the co-management initiative, which has to be supported by the policy and legislation. Each partner should have well defined roles and responsibility owed to other partners. Partners should be able to incur costs and derive benefit from the initiative if it is to be sustainable. As is the case for local governments, they should be able to see the

benefits of sharing revenue from the fish levy with the co-management group. It was observed that there should be a high level of corporation and transparency between partners, in order to develop support from other stakeholders. The fisheries policy and legislation are inappropriate for effective governance in poor communities if it lacks consideration of local community needs. The main objective of the fisheries policy in Zambia was to conserve fisheries resources and promote sustainable fishing practice. The initiative was not meant to uplift the living conditions of the fishing communities; hence the arrangement has failed to attract the support of local fishers and proved to be a weak link in the partnership. Although the local communities would benefit when fish stocks increase in the long run, they need to be helped with alternative livelihoods for them to support and effectively participate in fisheries co-management. There can be no effective co-management in poor fishing communities if alternative livelihoods are not provided. Co-management should be designed in such a way that it should be able to uplift the living standards of the local communities and benefit all the stakeholders. Both the policy and co-management arrangements lack a benefit sharing mechanism to promote local community development. Fishers would not support new restrictions on the fishery as such a move would deepen their poverty levels. There is a need to change the policy focus to a more community development centered approach as it could be more sustainable than that with a conservation focus.

The critical importance of strong partnerships cannot be emphasized enough to enable collective action with the full participation of all relevant stakeholders. It is important to note that having a greater mixture of stakeholders' representation in fisheries management committees will lead to stronger co-management partnerships. Co-management programs should involve various stakeholders that are seen to be trustworthy, transparent, operating cooperatively and equitably. This would lead to stronger partnerships that would ensure sustainability of such an initiative.

A good partnership approach for the successful implementation of co-management in poor communities should ensure the following;

- The institutional framework should promote strong partnerships with well-defined roles among partners, as this goes beyond the involvement of stakeholders.
- The partnerships should be made in such a way that all partners should be able to derive mutual benefits acceptable by each given partner.
- The policy on fisheries management should focus on uplifting the livelihood of local communities, while at the same time conserving fish.
- The promoters of co-management should involve the local fishing communities in identifying alternative livelihoods, so that the locals can support co-management. This does not necessarily mean providing incentives in the form of handouts,

but supporting different avenues like rural entrepreneurship, market linkages, agricultural development, formation of some business development association, capacity building in local development ventures and the provision of capital, using credit facilities.

These measures can be used to develop sustainable co-management partnerships that would contribute to the successful attainment of SDG 17. The strong arrangement would help erase hunger and eliminate poverty in poor fishing communities.

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## References

- Acheson, M. James. 2006. Institutional failure in resource management. *Annual Review of Anthropology* 20: 117–134. [CrossRef]
- Allison, Edwaed H., and Marie-Caroline Badjeck. 2004. *Fisheries Co-Management in Inland Waters: A Review of International Experience*. Rome: Department for International Development, Food and Agriculture Organization.
- Armitage, R. Derek, Berkes Fikret, and Doubleday Nancy. 2007. *Adaptive Co-management: Collaboration, Learning and Multi-Level Governance*. Vancouver: UBC Press.

- Arthur, Robert. I. 2005. *Developing, Implementing and Evaluating Policies to Support Fisheries Co-Management*. London: Marine Resource Assessment Group.
- Beisheim, Marianne and Ellersiek Anne. 2007. *Partnerships for the 2030 Agenda for Sustainable Development; Transformative, Inclusive and Accountable?* Berlin: Stiftung Wissenschaft und Politik.
- Béné, Christopher, Aaron Russell, Belal Emma, Baba O. Malloum, Isaac Malasha, Friday Njaya, Solomon I. Ovie, Aminu Raji, and Mamane T. Na-Andi. 2008. *Governance Reforms: A Review of Small-Scale Inland Fisheries Experiences in Lake Chad and Zambezi Basins*. Cairo: WorldFish Centre.
- Berkes, Fikret, and Nancy Doubleday. 2007. Adaptive Co-management and Complexity: Exploring the Many Faces of Co-management. In *Adaptive Co-Management: Collaboration, Learning, and Multi-Level Governance*. Edited by Derek Armitage, Fikret Berkes and Doubleday Nancy. Vancouver: UBC Press.
- Berkes, Fikret. 2010. Devolution of Environment and Resource Governance: Trends and Future. *Foundation for Environmental Conservation* 37: 489–500. [CrossRef]
- Bhattacharjee, Anol. 2012. *Social Science Research: Principles, Methods, and Practices*. Tampa: Creative Commons Attribution, Available online: [http://scholarcommons.usf.edu/oa\\_textbooks/3](http://scholarcommons.usf.edu/oa_textbooks/3) (accessed on 20 June 2018).
- Bryman, Alan. 2004. *Social Research Methods*. Oxford: Oxford University Press.
- Carlsson, Lars, and Fikret Berkes. 2005. Co-Management; Concept and Methodological Implications. *Journal of Environmental Management* 75: 65–76. [CrossRef] [PubMed]
- Central Statistics Office. 2013. *2010 Census of Population and Housing*; Lusaka: Central Statistical Office.
- COFAD. 2002. *Back to Basics: Traditional Inland Fisheries Management and Enhancement Systems in Sub-Saharan Africa and Their Potential for Development*. Eschborn: Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH.
- Darian, Stibbe, Stuart Reid, and Julia Gilbert. 2018. *Maximising the Impact of Partnerships for the SDGs: A Practical Guide to Partnership Value Creation*. Oxford: The Partnering Initiative and UN DESA.
- Department of Fisheries. 2011. *Department of Fisheries; The Lake Bangweulu Fisheries Annual Report*, Unpublished Annual Report. Samfya. (Unpublished report).
- Donda, Steve, and Friday Njaya. 2007. *Co-Management in Malawi: An Analysis of the Underlying Policy Process*. Lilongwe: WorldFish Centre.
- Economic Commission for Africa (ECA). 2007. Relevance of African Traditional Institutions of Governance. *Africa Spectrum* 42: 557–68.
- Government of the Republic of Zambia. 2002. *The National Decentralisation Policy, Towards Empowering the People*. Lusaka: Cabinet Office.

- Haambiya, Lloyd, Kaunda Emmanuel, Likongwe Jeremy, Kambewa Daimon, and Muyangali Kagoli. 2015. Local-Scale Governance: A Review of the Zambian Approach to Fisheries Management. *Journal of Agricultural Science and Technology* 5: 81–92. [CrossRef]
- Horan, David. 2019. A New Approach to Partnerships for SDG Transformations. *Sustainability* 11: 4947. [CrossRef]
- Hutton, M. Jon, and Leader-Williams Nigel. 2003. Sustainable Use and Incentive-Driven Conservation: Realigning Human and Conservation Interests. *Oryx* 37: 215–225. [CrossRef]
- IUCN. 1996. Resolutions and recommendations: World conservation congress. In *Resolutions and Recommendations*. Montreal: IUCN Publication.
- Izadian, B. 2005. *Essential Training for A Better Fisheries Integrated Management*. Tehran: Harbours Department—Fisheries of Iran.
- Kaustuv, Chakrabarti, Bharat Dahiya, Carme Gual, Thomas Jørgensen, Akpezi Ogbuigwe, Mahesti Okitasari, Arnau Queralt, Charles W. Richardson, Orlando Sáenz, Kazuhiko Takemoto, and et al. 2018. *Approaches to SDG 17 Partnerships for the Sustainable Development Goals (SDGs)*. Barcelona: GUNi Group of Experts in SDGs and Higher Education, Available online: [www.guninetwork.org](http://www.guninetwork.org) (accessed on 27 June 2020).
- Kolding, Jeppe, Ticheler Henne, and Chanda Banabas. 2003. The Bangweulu swamps—A balanced small-scale multi-species fishery. In *Management, Co-management, or no Management? Major Dilemmas in Southern African Freshwater Case Studies*. Edited by Jeppe Kolding, Ragnhild Overa Nelson and Paul A.M. van Zwieten Eyolf Jul-Larsen. Rome: Food and Agriculture Organization, vol. 2, pp. 34–66.
- Kolding, Jeppe. 2011. *A Brief Review of the Bangweulu Fishery Complex*. Unpublished Report Prepared for the Bangweulu Wetlands Project. Bergen: University of Bergen.
- Louisa, Evans, Nia Cherrett, and Diemuth Pems. 2011. Assessing the Impacts of fisheries co-management interventions in developing countries: A meta-analysis. *Journal of Environmental Management*, 1–12.
- Malasha, Isaac. 2007. *Governance of Scale Fisheries in Zambia*. Lusaka: WorldFish Centre.
- Martens, Jens. 2007. *Multi-stakeholder Partnerships—Future Models of Multilateralism?* Occasional Papers, Dialogue on Globalization. Berlin: Friedrich-Ebert-Stiftung (FES).
- Mbewe, Martin. 2007a. *The Roles of Traditional Leadership and Communities in Community-Based Natural Resources Management in Zambia*. Lusaka: Environment and Natural Resources Management, Ministry of Tourism, Environment and Natural Resources.
- Mbewe, Martin. 2007b. *Lake Bangweulu “Complex” Fishery Frame Survey Report*. Lusaka: Central Fisheries Research Institute (CFRI).
- Melissa, Leach, Robin Mearns, and Scoones Ian. 1999. Environmental Entitlements: Dynamics and Institutions in Community-Based Natural Resource Management. *World Development* 27: 225–47.



- Ministry of Local Government and Housing. 2009. *Medium Term Expenditure Framework (MTEF) Budgeting Manual for Local Governments in Zambia*; Lusaka: Government of the Republic of Zambia.
- Nielsen, Jesper Raakjær, Poul Degnbol, Kuperan K. Viswanathan, Mahfuzuddin Ahmed, Mafaniso Hara, and Nik Mustapha Raja Abdullah. 2004. Fisheries Co-management—An institutional Innovation? Lessons from South East Asia and Southern Africa. *Marine Policy* 28: 151–160. [CrossRef]
- Njaya, Friday. 2007. Governance Challenges for the Implementation of Co-Management: Experiences from Malawi. *International Journal of the Commons* 1: 137–53. [CrossRef]
- Norman, Philip. 2011. *Crown and Iwi Co-Management: A Model for Environmental Governance in New Zealand?* Auckland: University of Auckland Policy 701.
- OECD. 2001. Review of Fisheries in OECD Countries. Glossary. Available online: <https://stats.oecd.org/glossary/detail.asp?ID=990> (accessed on 29 June 2020).
- Ogwang, O. Vincent, Nyeko Ikwaput Joyce, and Mbilinyi Radhmina. 2009. Implementing Co-management of Lake Victoria’s Fisheries: Achievements and Challenges. *African Journal of Tropical Hydrobiology and Fisheries* 12: 52–58. [CrossRef]
- Oliver, C. Robinson. 2014. Sampling in Interview-Based Qualitative Research: A Theoretical and Practical Guide. *Qualitative Research in Psychology* 11: 25–41.
- Ostrom, Elinor. 2010. Moving Beyond Panaceas: A Multi-tiered Diagnostic Approach for Social Ecological Analysis. *Environmental Conservation* 37: 451–63. [CrossRef]
- Overseas Development Institute. 2003. *Multi-Stakeholder*. Kuala Lumpur: Global Knowledge Partnership Secretariat (GKP).
- Pomeroy, Robert S., Brenda M. Katon, and Ingvild Harkes. 2001. Conditions affecting the success of fisheries co-management: Lessons from Asia. *Marine Policy* 25: 192–208. [CrossRef]
- Pomeroy, Robert. 2007. Conditions for Successful Fisheries and Coastal Resources Co-management: Lessons Learned in Asia, Africa, and the Wider Caribbean. Adaptive Co-management: Collaboration, Learning, and M. In *Adaptive Co-Management: Collaboration, Learning and Multi-Level Governance*. Edited by D. Berkes Fikret and Doubleday Nancy Armitage. Vancouver: UBC Press.
- Stewart, Christine. 2004. *Legislating for Property Rights in Fisheries*. Rome: Publishing Management Service.
- The Ministry of Agriculture and Cooperative. 2004. *National Gricultural Policy (2004–2015)*. Lusaka: Government of the Republic of Zambia.
- Til, J. B., and M. G. Banda. 2002. Co-managing the Bangweulu fishery. In *Strategies for Wise Use of Wetlands: Best Practices in Participatory Management; Proceedings of a Workshop Held at the 2nd International Conference on Wetlands and Development, Dakar, Senegal, November 1998*. Edited by Gawler Meg. Gland: IUCN, pp. 37–42.

- Uhlendahl, Thomas, Salian Pritam, Casarotto Claudia, and Doetsch Jakob. 2011. Good water governance and IWRM in Zambia; challenges and chances. *Water Policy* 13: 845–62. [CrossRef]
- Watt, Peter. 2001. *A Manual for the Co-Management of Commercial Fisheries in the Pacific*. Caledonia: Secretariat of the Pacific Community.
- Wilson, Douglas Clyde. 2003. Conflict and Scale: A Defence of Community Approaches in Fisheries Management. In *The Fisheries Co-Management Experience: Accomplishments, Challenges and Prospects*. Edited by Douglas Clyde, Nielsen J. Raakjær and Degnbol Paul Wilson. Dordrech: Kluwer Academic Publishers, pp. 193–209.
- Wilson, Douglas Clyde, Ahmed Mahfuzuddin, Delaney Alyne, Donda Steve, Kapasa K. Cyprian, Malasha Isaac, Muyangali Kagoli, Njaya Fridah, Olesen Thomas, Poiosse Ernesto, and et al. 2010. Fisheries Co-Management Institutions in Southern Africa: A Hierarchical Analysis of Perceptions of Effectiveness. *International Journal of the Commons* 4: 643–62. [CrossRef]
- Wilson, Douglas Clyde, Nielsen Jesper Raakjaer, and Degnbol Poul, eds. 2003. *The Fisheries Co-Management Experience: Accomplishments, Challenges and Prospects*. Dordrecht: Kluwer Academic Publishers.

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