

Practical challenges of governing shared commons: The Lake Chiuta small-scale fisheries resources

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Abstract:

This paper seeks to identify major challenges of implementing fisheries co-management on Lake Chiuta, a shared ecosystem between Malawi and Mozambique. Despite its remoteness, fisheries resources in the small lake of about 200 km², contribute to food security and livelihoods of the local people. However, strategies of sustaining the catches have involved shifting from traditional management to a co-management arrangement with partnership of fishing community and Malawi's Department of Fisheries while the traditional arrangement remains on the Mozambican side. The Malawian fishing community represented by Beach Village Committees claim that seining destroys habitat for fish breeding and stationery gillnet set in the water. However, the seining operations are allowed on the Mozambican side, which is a source of a serious conflict in managing the fisheries resources. Consequently, a Transboundary Fish Resource Management Programme is being recommended to address the major challenges of governing the fisheries resources. Opportunities exist in form of socio-cultural aspects, as the fishing communities share the same historical background, have traditional knowledge about the resources and both countries are party to various international conventions, agreements, treaties and protocols that deal with conservation and management of natural resources. There is need to adopt an ecosystem-based management approach.

Key words: shared ecosystem, traditional knowledge, co-management, ecosystem based management, decentralization, policy and legislative frameworks

1. Introduction

Governance of the commons in form of fisheries co-management initiatives is common in various water bodies of southern Africa since 1990s (Geheb & Sarch 2002). Very few cases exist where such initiatives are self evolving. In contrast governments and non-governmental organisations introduce fisheries co-management. For example, the Malawi's Department of Fisheries introduced the participatory fisheries management programme (PFMP) on Lakes Malombe, Chilwa and Chiuta between 1993 and 1997 (Bell & Donda 1993; Hara 1997; Njaya 1998). Since mid-1990s various authorities are implementing co-management programmes in the Southern Africa like in Zambia and Zimbabwe on Lake Kariba, Mozambique along the coast and South Africa (Hachongela *et al.* 1998; Lopes 1998; Sowman *et al.* 1998; Malasha 2002;). Community

participation in decision-making processes regarding resource monitoring and control through formulation and enforcement of fisheries regulations is a key element in these initiatives. On the other hand, the state is involved in promulgation of legislative frameworks and in some cases assists the user community to enforce the regulations.

The initiation process of these co-management arrangements varies from one place to another. In some areas, the state initiated the co-management regimes while in other places user communities started the process. Consequently, outcomes like equity to resource access and efficiency in terms of cost effectiveness also vary. Evaluation studies conducted on some small water bodies such as Lakes Chiuta and Kariba show that the user community has potential to contribute to sustainable resource management with creation of enabling policy and legislative frameworks. While most of the studies centre on the institutional analysis in terms of resource attributes, behavioural patterns and decision-making processes based on the framework by Oakerson (1992), very little work focuses on the implementation of fisheries co-management arrangements in shared water bodies, which is one of the complex factors (Knox & Meinzen-Dick 2001). Nevertheless there is an emerging interest in the study of Transboundary Natural Resource Management (TBNRM) since 1990s with some countries like South Africa, Malawi, Mozambique, and Botswana already advanced in creating enabling conditions (Griffin *et al.* 1999) although the studies focus on wildlife and forestry sectors.

It is against this background that this paper contributes to the understanding of challenges that fishing communities and government authorities experience in implementing transboundary commons. Lake Chiuta provides an intriguing case in terms of what fishers in Beach Village Committees, Department of Fisheries (DoF) and local district authority experience. The paper outlines conflicts that frequently emerge between the fishing communities located along the lake on the Mozambican and Malawian sides. The conflicts relate to policy and legislative frameworks, utilization of the resources and the resource boundary that the colonial masters established. Data used in this paper is from secondary sources by reviewing literature in form of research publications and field reports.

2. The Study Area

Lake Chiuta, shared by Malawi (about 200km²) and Mozambique (around 49km²) as shown in Figure 1, lies at an altitude of 620m. The international boundary between the two countries is approximately 1,569km long (Geographer *et al.* 1971). The lake is shallow with a mean depth of 5m and has a total surface area (FAO 1994). The main inflowing streams include Lifune, Chitundu and Mpili Rivers. Depending on seasons, it is connected by a swampy channel to Lake Amaramba, from which flows Lujenda River.

The fishery is predominantly artisanal with fishers operating either dug-out or planked canoes for both subsistence and cash. DoF (1971) indicate that it was still not possible to carry out any fisheries work on this water body due to its remoteness. Before 1970, the annual fish production in the lake was estimated at 200 tonnes. However, from 1976 to 2003, the average annual fish production estimated on the Malawian side only is 1,500 tonnes (DoF 2003).

The dominant fish species include *Oreochromis shiranus* (*makumba*), *Tilapia rendalli* (*chilunguni*), *Clarias gariepinus* (*mlamba*) and *Barbus paludinosus* (*matemba*). Fishers use gillnets, fish traps and long lines to exploit the fisheries resources. Fishers operate seines in the Mozambican waters only which creates conflicts between the BVCs and the fishers seining in the Mozambican waters.

Before mid-1970s, the lake had almost a similar management regime for both Malawian and Mozambican territories with chiefs having powers to allow and allocate fishers on beaches located within their jurisdiction (Dissi & Njaya 1995). The fishing community operated fish traps, gillnets and long lines. However, due to abundance of the resource at that time, control of the access and effort was not necessary but was rather a way of demonstrating powers of the local authorities as Chirwa (1997:65) states:

According to Chief Chimwala, [on western Lake Malombe], the power of the chief was over his people. He was their guardian, and they gave him/her gifts of food and other items in return for his guardianship. A portion¹ of fish was always given to him as a token of appreciation.

The traditional authorities are based on a lineage system of indirect rule that was introduced in the 1940s by the colonialists (Lopes *et al.* 1998; Nhantumbo *et al.* 2003). The main responsibilities of the chiefs included collection of taxes, fees and dues as demanded by colonialists.

¹ This portion of fish (*thini la mfumu*) is locally known as *mawe*, as described by Hara *et al.* (2002).

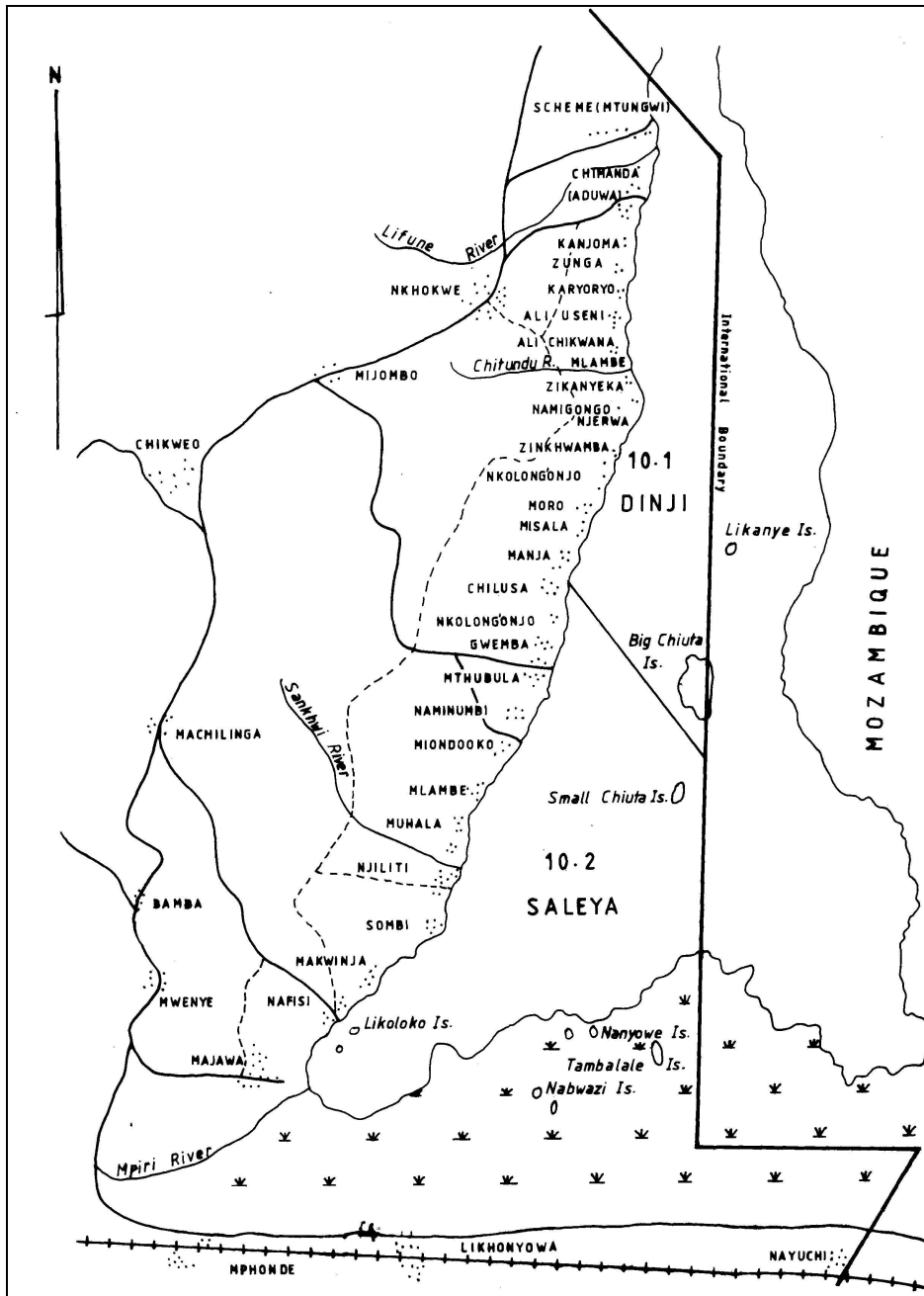


Figure 1: Map of Lake Chiuta

By 1970s, Malawi shifted more towards a centralised regime when a catch data recording system was introduced on Lake Chiuta. By this time, there were less than five seines operating on the lake. By mid-1990s a co-management arrangement was introduced after the user community approached DoF for support to evict over 300 seine fishers who were operating on the lake. The fishers formed Beach Village Committees (BVCs) and reviewed the fishing regulations (Njaya 2002).

On the other hand, chiefs still have powers to control access to fisheries on the Mozambican side, although there is one agricultural extension worker who is involved in fisheries management. With these varied management regimes on the lake, there have been conflicts mainly due to prohibition of the seines on the Malawian side.

3. Co-management and Transboundary Natural Resource Management: A Review of Concepts

The emerging interest in community-based natural resource management (CBNRM) initiatives supports an argument for involving communities in Transboundary Natural Resource Management (TBNRM), which are not only for maintaining ecological conditions, but also facilitate dialogue between respective communities. In some areas, the TBNRM initiatives serve to reduce conflicts between the communities (SLSA 2003).

TBNRM is defined as 'any process of collaboration across boundaries that increases the effectiveness of attaining natural resource management or biodiversity conservation goal(s)' (van der Linde et al. 2001:10). The approach covers a wide continuum of TBNRM activities ranging from transboundary co-management or community-based natural resource management and transboundary community protected areas (TBPAs) to large-scale natural resource management integrated in regional economic development. It is now becoming a focus of new donor-funded projects in natural resource management (Katerere et al. 2001; Wolmer 2003). The formal TBNRM initiatives are grouped into four categories. These include: transfrontier conservation areas (TFCAs) like Maloti/Drakensberg which straddles the 300km-long border between Lesotho and South Africa; transboundary natural resources management areas (TBNRMAs) like ZIMOZA initiative which involves Zimbabwe, Mozambique and Zambia; regional authorities like Zambezi River Authority (ZRA) and protocols and international conventions such as the Convention for International Trade in endangered Species (CITES) (MBERU 2002:114).

There has been a traditional management of natural resource involving TBNRM from the time immemorial. People have survived on farming, harvesting forestry products and aquatic resources (MBERU 2002). During that time, communities living near borders used the resources without any reference to the international borders. In addition, communities could utilise resources that are now part of protected areas such as forestry, national parks, and sanctuary areas.

Community participation refers to an active involvement of individuals or groups in an activity (Campbell & Townsley 1996). If management is to succeed, fishers must support management efforts through formulation and enforcement of rules (Wilson et al. 1994). However, the degree of user group involvement may differ from one country to another (Jentoft & McCay 1995).

The idea of active participation of local resource users and communities in development and management is not a new idea as it has been part of the development process in certain parts of the world since 1960s (Pomeroy 2003). WHAT (2000) state that traditional and informal governance systems for fisheries have been historically practised in many African countries. The traditional leaders had authority to control access and fishing operations.

Co-management refers to an arrangement between a central authority and resource user groups (Sen & Nielsen 1996). The user groups have to be more actively involved in fisheries management if the regime is to be both effective and legitimate. A key function of co-management is for the state to use its authority and power to contain and channel fisheries conflicts (Wilson 2003).

A concern has been raised in terms of lack of democracy in co-management programmes that involve chiefs (Lowore & Lowore 1999). In some cases there are limited consultations made with the fishers and that chiefs. Another criticism is that co-management is often related to a “fox in the hen house” metaphor and the free-riding effect (Jentoft et al. 1997). This means that the local community may abuse their rights as custodians of the fisheries resources and some who are not taking part in the co-management arrangement may just enjoy reaping benefits realised from investment by others.

Effective common property regimes have the ability to exclude outsiders (Hanna 2003). In situations where an elite group or politically powerful fishers attempt to access the resources, the local community should seek support from the government for protection of their rights or to institute sanctions to illegal fishers (Knox & Meinzen-Dick (2001). This is the case of Lake Chiuta, whereby the local fishers sought support from DoF to have their rules formally recognised.

Decentralisation refers to any act in which a central government systematically and rationally transfers its powers, authority, and responsibility to local government structures or lower level institutions such as provinces or districts and community associations or user groups (Ribot 2002; Pomeroy & Viswanathan 2003). Democratic decentralisation reforms give an opportunity for a shift from project-based to legally supported popular participation. Such reforms, as Ribot (2002) observe, demand necessary resources for scaling up these popular participation initiatives across national boundaries. Pomeroy (2003) observes that in many countries, government programmes and projects stress formation of local organizations and autonomy to handle some aspects of fisheries management. Rarely, however, is adequate attention given to the establishment of administrative and policy structures that define the legal status, rights, and authorities essential for the effective performance of local organizations.

4. Lake Chiuta fisheries co-management: implementation challenges

4.1 Boundary and membership

This paper refers to a community that includes fishers and traditional leaders. It also recognises a need for resource boundary and membership as key issues necessary for an effective co-management regime. Definition of a resource boundary is one of the fundamental aspects to reduce conflicts and facilitate membership that may result in exclusion of some appropriators (Ostrom 1990; Knox & Menzie-Dick 2001; Pinkerton 2003). In the case of Lake Chiuta, the physical features of the lake forms the geographical boundary of the ecosystem. Beacons are the main features that form the political boundary line. Donda (1998) also observe that Lake Chiuta has physical boundaries determined by the position of the lake.

Geographer (1971:7) explains changes that have been made to the alignment of Malawi-Mozambique border on Lake Chiuta (see Box 1).

Box 1: Boundary changes that affected Lake Chiuta between 1899 and 1954

The 1 569km boundary sector between Beacon 1 (15° 5' 606.77", 35°49'36.74"E) on the left bank of the Malosa river and Beacon 17 on the shore of Lake Nyasa initially was demarcated [in] 1899 in accordance with the Anglo-Portuguese treaty of June 11, 1891. From Beacon 7F the boundary extends in a straight line to Beacon 8 forming a prolongation of the line previously delimited from Beacon 8 to Beacon 10. Thus, the boundary between Beacon 7F and 10, located at the southeast corner of Lake Chiuta, consists of a single straight line. In accordance with the 1911 rectification, the boundary from Beacon 10 followed the eastern shore of Lake Chiuta until it reached Beacon 11 at the eastern edge of the marsh between Lake Chiuta and Lake Amaramba. Article 4 of the Anglo-Portuguese Agreement of November 18, 1954, re-delimited the boundaries in Lake Chiuta between Beacons 10 and 11.

[Therefore] the frontier on Lake Chiuta shall be a straight line drawn from Beacon 11 running due south to its intersection with the prolongation westwards of a line drawn along the geographical parallel of Beacon 10, as described in Exchange of Notes of May 6, 1920.

Source: Geographer (1971:5)

The local Malawian fishers have their own version of the story as to how the boundary changed. The Lake Chiuta Association Chair indicated that:

In the past, a Portuguese named Katsabola arrived on the Mozambican side of Lake Chiuta. At that time the whole lake was within Malawi (then Nyasaland). He built a school and clinic, which could serve both Mozambicans and Malawians. Having procured a powered boat, he asked our Government if he could use it on the lake. He was positively granted that permission which necessitated re-alignment of the boundary into the lake.

The Mozambican fishers also agree with the story as one fisher stated:

The position of the boundary was not where it is now. The boundary was within Mozambique, where chipilara (beacon) is, but after arrival of Katsabola the boundary was re-aligned into Lake Chiuta.

This common understanding about the boundary re-alignment could be an issue on the shared lake although it was not highlighted during a meeting² attended by fishing communities from both Malawi and Mozambique in 2002.

Membership is recommended for implementation of common property regimes that govern management of smaller or medium water bodies (Pinkerton 2003; GTZ 2001). This means that Lake Chiuta falls within the smaller-sized category although no specific size is given. Definition of a membership may depend on several factors such as where a fisher comes from, in form of gear ownership as gillnet, seine or fish trap or by belonging to a user group such as BVC. Licensing is another form of defining membership, although its implementation mainly focuses on revenue collection. In small-scale fisheries, registration and licensing are just more or less formalities in Malawi as applicants are not normally denied access to the fishery even if the water body is over-fished (Lowore & Lowore 1999). In this case, rights of exclusion for Malawi's fisheries are not well defined. Furthermore, Townsend et al. (1996:312) contend that 'the problems of management of an open-access resource are caused by the absence of the right to control the resource.'

4.2 Decentralisation process in Malawi and Mozambique

A decentralisation process in Malawi started in mid-1990s. In terms of fisheries, the devolved functions include extension services, enforcement, and licensing of vessels and gear. Despite progress being made towards the devolution of tasks to local district assemblies (DAs) and user groups such as BVCs, there is still a long way to go. There is need for by-law formulation for empowerment of the BVCs, signing of management agreements between DoF and BVCs and resource boundary establishment and development of management plans. There is also need to fit the BVCs into the decentralised structures like Village Development Committees (VDCs), Area Development Committees (ADCs) and DAs.

In Mozambique, amendments to the Mozambican Constitution that promoted a regime based on democratic principles and multi-party politics was introduced in 1990. On the decentralisation process, Nhantumbo *et al.* (2003:6) argue that this has not been implemented as expected.

The granting of more autonomy to lower levels of government came to be seen as one of the avenues to improving the state's capacity to deliver basic services and re-establish the legitimacy of government institutions at the local levels. The approach therefore follows the orthodox 'bureaucratic decentralisation' discourse.

In both countries there is a problem of spontaneous formation of parallel structures for development projects alongside the traditional ones, which create

² These were highlighted during the First Lake Chiuta Common Management Development Strategy workshop held in August 2002.

conflicts. For example, where BVCs were formed, the process did not take into account the already existing institutional arrangements through which conflicts can be resolved.

4.3 Policies on fisheries co-management

Malawi has since 1999 put in place enabling conditions for the implementation of CBNRM (Box 2) through reviews of the fisheries policy and legislation. However, implementation of the legal instruments has been slow mainly due certain gaps that need attention such as community empowerment.

Box 2: Supporting CBNRM policies in Malawi

National Environment Policy of 1996: Following the National Environmental Action Plan that was launched in 1994, the National Environment Policy (NEP) was developed to provide an overall framework against which relevant sectoral policies such as fisheries, forestry, wildlife, water and land can be reviewed to ensure their consistency with the principles of sustainable development. Among others, the policy seeks to promote co-operation between Government, local communities, women groups, non-governmental organisation and the private sector in the management and utilisation of the natural resources and the environment.

National Fisheries and Aquaculture Policy of 2001: It represents an integrated policy framework for both fisheries and aquaculture in Malawi. The policy goal generally aims at “maximising the sustainable yield from the national waters of Malawi and man-made water bodies through a participatory fisheries management (PFM) approach.

Fisheries Conservation and Management Act 25 of 1997: This came into force in 1997 after the proposed Fisheries Conservation and Management Bill was enacted in Parliament. The Act has Part III that deals with “Local Community Participation”. It also highlights the importance of signing a fisheries management agreement between the DoF and Fisheries Management Authority (FMA).

Fisheries Conservation and Management Rules of 2000: This document spells out fisheries rules and their subsequent penalties. It also elaborates on duties of BVCs and association and outlines conditions of fisheries management one of which is the need for a management plan.

Local Government Act 42 of 1998: It makes provision for DAs to take responsibility for management of forests, fisheries and wetland within a district, including the formulation and enforcement of by-laws relating to natural resource management. The traditional authorities are ex-officio members of the DAs.

Nhantumbo *et al.* (2000:7) observe that CBNRM is still ‘evolving in Mozambique, in terms of approach and depth; therefore, a model best suited for conditions in the country have yet to be completed.’ The authors further indicate that the CBNRM is the strategy for the social objective that is stipulated in the Forestry and Wildlife Policy, which aims to have greater involvement of local communities in the management of natural resources and ensure that they derive benefits from such resources. A fundamental implementation framework of this strategy is outlined in the Land Law, which establishes that communities can have access to land delimitation process and acquisition of Land Use Certificate.

In terms of the fisheries sector, Mozambique formulated the Fisheries Law 3 of 1990, which regulates exploitation of fisheries resources (Box 3). Lopes *et al.*

(1998) indicated that the socio-political change (since 1975) and the devastating civil war affected the livelihoods of the fishers. This led to a shift of the management regime towards a centralised approach from a community-based approach by giving mandate to the Fisheries Administration (*Administração Pequeira*) to control and manage the fisheries resource. However, since 1993, there has been an interest in community participation. The main concern is that the government does not grant any official rights to the fisher representatives, rather they are considered as the most efficient way to collect taxes.

Box 3: Approved policies affecting the use of natural resources

Land: Land Policy of 1995, Land Law 19 of 1997, Land regulations 66 of 1998 and Technical appendix to the Land Law of 1999.

Environment: Environmental Law 20 of 1997, Regulation for Environmental Impact Assessment 76 of 1998.

Forestry and Wildlife: Policy and Strategy for Development of Forestry and Wildlife 8 of 1997, Forestry and Wildlife Law 10 of 1999 and Forestry and Wildlife Regulations of 2002.

Agriculture: Agrarian Policy of 1995, Agricultural Sector Investment Programme, with a Forest and Wildlife National Programme adopted in 1998 (including a component in support of government initiatives towards the implementation of Community-Based Natural Resources Management (CBNRM)).

Water: Water Policy 7 of 1995.

Fisheries: Fisheries Law 3 of 1990.

Source: Nhantumbo et al. (2000:2)

On a historical perspective, Lopes *et al.* (1998) state that after independence in 1975, management of fisheries resources was mandated to *Administração Marítima* in Mozambique. This organization is responsible for monitoring and controlling the artisanal sector. Nevertheless, due to the structural adjustment programmes that Mozambique adopted from 1980s brought in a restructuring process of the institutional arrangement with establishment of the *Instituto de Investigação Pesca de Pequena Escala* (IDPPE), which aims at promoting small-scale fisheries development. In response to global changes, in 1994 the Ministry of Agriculture and Fisheries (MAP) has a further institutional change. This sectoral difference could also contribute to how policies are formulated as it can be shown that Mozambique places much emphasis on the coastal resource management, as *Serviços Provinciais de Administração* (SPAP) is the only branch that has field staff in all coastal districts and none in inland fisheries. In this case, Lake Chiuta appears not to be on the high priority in terms of relevant fisheries technical expertise rather than using agricultural staff as those based at Mecanhelas.

4.4 Rules and regulations

Two types of fisheries management systems exist in many fishing communities. An informal management system, which is developed and implemented by a community of resource users, often coexists with a centralised fisheries management system. Often outsiders to the community are not aware of informal systems as these are not easily observed or understood. An informal management system refers to a 'rights-and-rules system collectively sanctioned by fishers' (Pido et al. 1996). Table 1 outlines the regulations for Lake Chiuta.

Table 1: Fishing regulations for Lake Chiuta

Rule/Regulation	Malawi	Mozambique
1. Permissible gear types: (a) Gill nets (b) Fish traps (c) Long lines (d) Beach seine (e) Open water seine (<i>nkacha</i>)	Allowed Allowed Allowed Prohibited Prohibited	Allowed Allowed Allowed Allowed Allowed
2. Minimum mesh size for gill nets was set at 69 mm	Allowed	Not yet set
3. Closed season for seines – 1 November to 30 April	Not applicable as seines are prohibited	Yes

Based on the regulations, it is evident that the main source of conflict is on the seining operations. Seines are allowed on the Mozambican side and yet they are prohibited on the Malawian side. To address the problem there is need for continued dialogue between the two fishing communities.

5. A framework for transboundary natural resource management

There are recommended steps considered when implementing a TBNRM arrangement (Knox & Meinzen-Dick 2001, van der Linde et al. 2001 and Lanjouw et al. 2001). In adopting the International Gorilla Conservation Programme (IGCP), Lanjouw et al. 2001 outlined three phases which are referred to in this paper (Box 4).

Box 4: Phases of developing a TBNRM

Phase I: Field-based coordination and collaboration: This phase focuses on harmonisation and coordination of management approaches, and development of field-based informal mechanisms for collaboration. These approaches and mechanisms respond to the objectives of transborder cooperation. This phase emphasises regular communication between field staff and management staff of the ecosystem, sharing information on resource monitoring and joint planning and implementation of activities.

Phase II: The existence and use of the harmonised approaches in the respective countries will facilitate the second phase of the strategy, which is formalisation of the transborder collaboration and harmonised policies. The second phase, however, is dependent on a minimal level of political support among the respective official governments. It is believed that improved management of the shared ecosystem is a function primarily of field-based collaboration, rather than official agreements.

Phase III: A final phase could involve the signing of a formal agreement between or among the respective governments to establish a TBNRM area. The agreement should outline in its preamble the legislative background of the TBNM, define its purpose, describe the parties and the endorsing partners, and define the ecosystem area and its structures (a joint commission or other mechanism) and modes of operation.

Source: Lanjouw et al. (2001: 23)

According to phases of developing the TBNRM, we can conclude that Lake Chiuta is mostly in Phase I since most of the on-going activities include consultations between the two parties as a way of reducing conflicts.

5.1 Opportunities

Several opportunities exist that can facilitate introduction of the TBNRM arrangement on Lake Chiuta at a community level. These include socio-economic issues, policy and political aspects, decentralisation, dependence on the resource and dialogue.

5.1.1 Socio-cultural issues

In terms of ethnicity, majority of the people around the lake are Nyanja, Yao and Lomwe. They share a common history, language, socio-cultural values, and traditions. Many practices on land tenure systems, marriage traditions, and initiation ceremonies are also common among the villagers around Lake Chiuta. Considering that many Malawians came from Mozambique and some of them have intermarried during the past decades, it means that it is possible to have a common level of understanding on resource management between the two fishing communities. Griffin *et al.* (1999) assert that TBNRM facilitate movements of the people across borders for trading of fish and other commodities can strengthen cultural ties and traditions, which might have been affected by the political boundaries.

Recognition of traditional powers by both Malawi and Mozambique offers an opportunity for a sustainable TBNRM framework that is built upon the on-going CBNRM arrangements with incorporation of local knowledge. Hara and Nielsen (2003) contend that traditional structures in Africa play significant roles in terms of resource management as they serve as a link between the user community and the government. Traditional authority (TA) structures in the southern Africa are considered a legacy of colonialism. After independence many African countries continued with the traditional authority structures but a review of their duties included control over their villages including settling disputes and allocating customary land. In Mozambique, their customary powers were revoked in early 1990s, but recently the government has begun to recognise the role of the leaders.

When fisheries co-management started in Malawi in 1993 there was little recognition of the roles of the TAs in the regime. This created power struggle between the TAs and BVCs which necessitated the need to incorporate into the

committees. The new structures were developed to be in line with the devolution process that recognizes a cluster of community-based organizations (CBOs) and then VDCs, ADCs up to DAs.

5.1.2 Policy issues

Both Malawi and Mozambique are implementing co-management programmes in various water bodies. Natural resource policy reforms in Malawi started in 1990s with emphasis on community participation mainly due to fiscal constraints and seeking ways of regulating access. In this context, recognition was given to environmental management as an essential element in sustainable economic development by establishing the Environmental Affairs Department (EAD) in 1991. The National Environmental Action Plan (NEAP) was completed in 1994 following the 1992 UNCED Earth Summit held in Rio de Janeiro. The Government of Malawi (GoM) approved the National Environmental Policy (NEP) and the Environment Management Act (EMA) in 1996 (GoM 2002).

In terms of the fisheries sector, Malawi has the National Fisheries and Aquaculture Policy (NFAP) of 2000 and the Fisheries Conservation and Management 27 of 1997 with specific sections on participatory fisheries management and international co-operation in fisheries. These legal instruments create an enabling condition for a TBNRM framework.

In Mozambique, such an opportunity also exists through the Fisheries Master Plan (FMP) that was approved by the Government in October 1994. The document outlines priorities and strategies for development to be pursued in subsequent years. The FMP emphasises on the involvement of fishers in formulating and enforcing regulations (Lopes et al. 1998).

In 1984, both countries signed a Permanent Joint Commission on Cooperation (PJCC) between Malawi and Mozambique, which can facilitate implementation of the proposed Lake Chiuta transboundary co-management. They are also parties to various international conventions, agreements and protocols that deal with management of natural resources such as the 1992 Convention on Biological Diversity (CBD) and Food and Agriculture Organisation (FAO) Code of Conduct for Responsible Fisheries. Of particular importance is the Southern Africa Development Community (SADC) Protocol on Fisheries in 2001, which can legally facilitate introduction of the transboundary fisheries co-management. However, van der Linde et al. (2001) recommend that it may be necessary to start implementing a TBNRM initiative even if not all enabling conditions are in place, as it may take time and the process can be difficult. In support of this point Lanjouw et al. (2001:37) state that 'it is unrealistic to consider that a TBNRM area needs to be formally designated before regional collaboration can take place.' They recommend that collaboration can be at a lower level, as higher political levels will need a larger set of preconditions, which can derail any further progress.

5.1.3 Governance reforms and co-management

Like most of the African countries, Malawi and Mozambique are decentralising their authority in the management of natural resources. Since TBNRM is an approach that demands democracy, Griffin *et al.* (1999) advocate stakeholder involvement which should occur at all stages of the process, particularly during decision-making stages. In this context, centralised approach to the formulation of the TBNRM arrangement is not necessary but rather the local fishing community should actively participate as they are in most cases sharing the same culture and traditions.

5.1.4 Willingness for dialogue

A meeting that was organised in 2002 for the two fishing communities and the continued exchange visits between the district officials from both countries demonstrates willingness of the local communities in solving their problems and determining their destiny. Practitioners expect that a TBNRM framework based on mutual understanding of the communities would be efficient as it involves building upon existing resource management systems and institutions (Griffin *et al.* 1999).

6 Conclusion

There are several challenges and opportunities of co-management that implementing partners experience in shared ecosystems. It is possible to develop a TBNRM with participation of the local community, although a minimum intervention of central governments may be required at a later stage for policy issues. This community-level process ensures active participation and understanding of necessary issues and policies affecting the resource users thereby achieving sustainable development. What is even more interesting is the fact that the fishing community initiated the co-management regime on Lake Chiuta. WHAT (2000) and Pomeroy (2003) observe in that the idea of active participation of local resource users and communities in development and management is not a new idea as it has been part of the development process in many African countries.

The resource users on the Malawian side of Lake Chiuta have capacity to exclude outsiders mainly the migrant seine fishers. The local fishers sought support from DoF to have a legal basis of their rule to prohibiting seines. This agrees with Knox and Meinzen-Dick (2001) as they note that in some situations the local community can seek support from the government for protection of their rights.

While it is important to define a resource (Ostrom 1990; Knox & Menzie-Dick 2001; Pinkerton 2003), there are some challenges in situations where the boundary is re-aligned without informing the local communities about its justification, as was the case with Lake Chiuta. These may appear less important

issues but if grounded in the traditional context, they may be recognised as recipes for conflicts.

Finally, the process of establishing a transboundary fisheries co-management that started in 2002 largely falls in Phase I according to phases outlined by Lanjouw et al. (2001). Both fishing communities need to continue sharing information and ideas on how to cooperate and reduce conflicts. It is also recommended that a management plan be drawn up to agree on specific measures governing exploitation of Lake Chiuta fisheries resources. A formal agreement will follow in Phase II whereby harmonisation of policies will take place and thereafter Phase III will consolidate the whole process.

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