



# A review of potential sources of revenue for sustaining fisheries co-management activities in the southern Lake Malawi, Mangochi district

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*This article seeks to review and identify potential sources of funds for implementation of planned activities within a fisheries co-management arrangement in the southern Lake Malawi, Mangochi District. In this review, we use secondary sources on fisheries co-management at both national and international levels. With adoption of the co-management or participatory fisheries management as it is alternatively called in Malawi, consideration of sustainable financing mechanisms is essential for implementation of planned activities by the local fisheries management authorities and beach village committees within a decentralization framework. Potential revenue sources include development of a fisheries fund and establishment of a benefit sharing mechanism with reference to a district user fee. Other sources include fees charged for conducting fisheries research on the lake, membership fee for joining beach village committees, levies on fish marketing and fees charged for use of facilities especially jetties, store rooms and fish processing facilities on a beach. The revenue collection is recommended as one of the incentives for co-management partners to ensure implementation of activities like law enforcement, licensing, training, community outreach services and research. We recommend that the legal provisions on the establishment of a fisheries fund and revenue sharing be implemented to ensure availability of funds for the fisheries sector. In addition, the existing by-laws with outlined financing mechanisms should be approved by the appropriate authorities.*

**Keywords:** decentralization, financing mechanism, sustainability

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## Introduction

There is a global recognition on the need for countries to adopt decentralization reforms within the fisheries sector. In Africa, decentralized fisheries management with varied levels of user participation started especially in the early 1990s. These

reforms basically involve devolution of fisheries management responsibilities from the central government authorities to the resource users widely known as 'co-management' or participatory fisheries management (PFM) as is alternatively called in Malawi. The concept of co-management revolves around the idea of sharing roles and responsibilities

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among various actors but usually it is between the government authority and community institutions (Sen and Nielsen, 1996). Additionally, as Jentoft et al. (1997) observe, co-management is therefore about the inclusive right to participate in making key decisions about how to fish, when to fish, where to fish, how much fish to be harvested, and who has the ‘right’ to fish. As such, it is another form of governance aimed at addressing the difficult challenge of managing fisheries resources.

There are several factors for introduction of co-management. Commonly reported are factors such as limited budgets from the governments, global advocacy on community participation and governance, and the perception that the fisheries resources have been declining due to lack of legitimacy on the fishing regulations within the centralized fisheries management system (Hara, 1996; Knox and Meinzen-Dick, 2001; Njaya et al., 2012). The centralized fisheries management system prior to these reforms failed to sustain fisheries resources (Hara and Nielsen, 2003). In particular, enforcement of regulations under the centralised system has been a challenge for the government with very limited budgets and legitimacy for their fishing regulations. In contrast, co-management was expected to result in stronger legitimacy of the regulations and management rules (Jentoft and Kristoffersen, 1989; Pomeroy, 1995; Sen and Nielsen, 1996; Njaya et al., 2012). However, another dimension is that community involvement in fisheries management has over the past years been criticized following issues such as wrongly targeted beneficiaries at various levels including the community level (Abraham and Platteau, 2000; Hara et al., 2002; Hara and Nielsen, 2003; Béné and Neiland, 2004). In some cases, resources identified for implementation of the co-management arrangement have been incorrectly targeting a particular segment of the community such as traditional leaders and not the fishers.

Fisheries co-management in Malawi started in 1993 on Lake Malombe with Department of Fisheries (DoF) and Local Fisheries Management Authorities (LFMAs) composed of several Beach Village Committees (BVCs) as key partners (FAO, 1995; Donda, 2001, unpublished thesis; Hara, 2001 unpublished thesis; Hara et al., 2014). The LFMAs can be in form of associations are area or district level. After five years, the co-management was introduced on Lake Malawi whereby fishing communities were mobilized into 68 Beach

Management Groups (BMGs) which were later transformed into BVCs (Njaya, 2002). The government developed a legal framework for proper functioning of the BVCs (GoM, 1997; Njaya, 2007). Subsequently, the DoF devolved some of its functions including enforcement, registration and licensing of vessels and gears for the small-scale fishery (GoM, 2003). The industrial fishery is, however, still centrally controlled which is always criticized by some practitioners, small-scale fishers and traditional leaders (Njaya et al., 2006, unpublished). Despite the devolution process, there is still weak capacity at the local level in terms of manpower and necessary skills to carry out the devolved functions within the decentralization framework. This limits the ability of district authorities to effectively handle issues such as by-law formulation, community outreach programmes; development of management plans, and sanctioning of offenders. In addition, there are inadequate financial resources for implementing planned fisheries management activities at district levels.

Dependence on external sources through projects funded by various development partners has been entrenched in the implementation of the co-management in Malawi. For example, several projects have been promoting co-management with financial and technical support from the World Bank and Germany Government from 1993 to 2000. Currently, the United States International Development Agency (USAID) and the Global Environmental Facility (GEF) with technical support from the Food and Agriculture Organization (FAO) are also supporting fisheries governance in Mangochi. Hara (2008) and Njaya (2008) assert that the BVCs are dependent on the DoF and donors for financial and material resources, which results in upward accountability and increases the difficulty to act independently. This is not recommended as projects are designed with specific timeframes and after closure, some of the project activities are not sustained. Availability of financial resources from external sources is considered one of threats to sustainable co-management arrangements (Ostrom, 1994; Ratner et al., 2012). In this article, we review and identify potential financing mechanisms, which if implemented, could reduce dependence on the external support for implementation of planned activities within then co-management arrangement in the southern Lake Malawi which is a suitable breeding site for *Oreochromis* species (Chambo).

## The southern Lake Malawi fishery

Lake Malawi (Figure 1) was formed millions of years ago as a part of the development of the Great Rift Valley system of Africa and is called an ‘ancient’ lake with a high biological significance (Chafota et al., 2005; Patterson and Kachinjika, 1995; Turner et al., 2001). The lake lies in the southern central Africa between 9° 30’S and 14° 30’S in the western arm of the East African rift valley and is the southernmost of the African rift lakes (Menz, 1995). Its total surface area and volume are 28,000 km<sup>2</sup> and 8400 km<sup>3</sup>, respectively and has an average depth of 292 m with a catchment area that covers around 130,000 km<sup>2</sup> (Bootsma and Hecky, 1999). The lakeshore areas support the livelihoods of over 2 million people and a diverse number of activities including tourism, agriculture, fishing, irrigation and transportation (Chafota et al., 2005; Chidammodzi, 2013).

The lake supports a highly diverse capture fishery harboring over a 1,000 species of which 650–700 species are endemic cichlids (Banda et al., 2001). Reports indicate that the number of species and genera in the lake continues to increase with new discoveries and taxonomic revisions (Konings, 1995; Turner, 1996; Ribbink, 2001). The cichlidae comprising two groups, the tilapiines and haplochromines, is the most common fish family. The increased artisanal and commercial trawl fishing has, however, resulted in the disappearance of some species and subsequent changes in species composition of catches (Banda et al., 2001). For example, the *L. mesops* fishery in Lake Malawi collapsed in the early 1970s due to heavy fishing pressure and thereafter the fisheries were dominated by the Chambo. Within the haplochromine species group, larger species such as *Lethrinops stridei* and *L. macracanthus* were also replaced by small cichlids such as *Otopharynx argyrosoma* and *Lethrinops auritus*.

Fishing is the most important economic activity on Lake Malawi contributing over 60% of the total annual landings in the country. From 1976 to 2003 catches from Lake Malawi ranged from around 20,000 t to 38,000 t. However, from 2004 to 2014 the catches increased with a range from 60,000 t to around 110,000 t. The increase is attributed to increasing catches of usipa (*Engraulicypris sardella*) (Russell et al., 2008; GOM, 2013a; Jamu and Njaya, 2011). There is no scientific

explanation for the increase of usipa but perceptions from the fishers indicate that climate change and overfishing could be some of the key reasons (Njaya, 2013). The total Chambo catches from the southern Lake Malawi reached a peak of 15,000 t<sup>-1</sup> in the 1980s but declined to 3000 t yr<sup>-1</sup> at the end of the 1990s and further to less than 2,000 t since 2009 and 1,430 t recorded in 2013 (GoM, 2014). This represents 6% of the total landings (25,498 t) in the southern Lake Malawi with *E. sardella* constituting about 68% of the catch. The recorded catch in Lake Malawi in the same year was 102,079 t while for the whole country it was 109,889 t. This implies that fish production from Lake Malawi contributed 92.9% to the national fish catch of which around 98% was landed by the small-scale fishers (GoM, 2013a, 2014).

The capture fishery can be categorised into large-scale commercial, small-scale commercial and subsistence (Banda et al., 2001, 2007). The large-scale commercial fishery that involves trawling and purse seining is mechanized and dominant in the southern Lake Malawi. A census conducted in 2012 showed that 22 licenced industrial fishing units were operating in the southern Lake Malawi (GoM, 2013b). The small-scale commercial fishery includes all fishers that use engines of less than 20 horsepower or no engine to catch fish intended primarily for sale. The 2012 frame survey (census) showed that 1,663 gear owners and 11,315 fishing crew were counted in the southern Lake Malawi (GoM, 2013b). The census also registered beach seines, open water seines, gill nets, fish traps, long lines and hand lines. Aquarium trade which involves the exploitation and sale of Mbuna for export also exists in the area.

The declining fish catches especially Chambo in Lake Malawi especially the southern part, has attracted various studies and policy reviews. Environmental degradation and weak capacity to enforce fishing laws have also been noted as contributory factors to the declining trend of the fisheries resources. Adoption of the co-management was therefore recommended as a viable strategy for sustainable exploitation of the fisheries resources in all the lakes in Malawi including Lake Malawi (FAO, 1993). The Chambo Restoration Strategic Plan (2004–2015) was developed with a focus on strengthening the fisheries co-management. However, implementation of the strategy was not satisfactory due to various factors some of which are weak capacity to implement the planned fisheries activities like

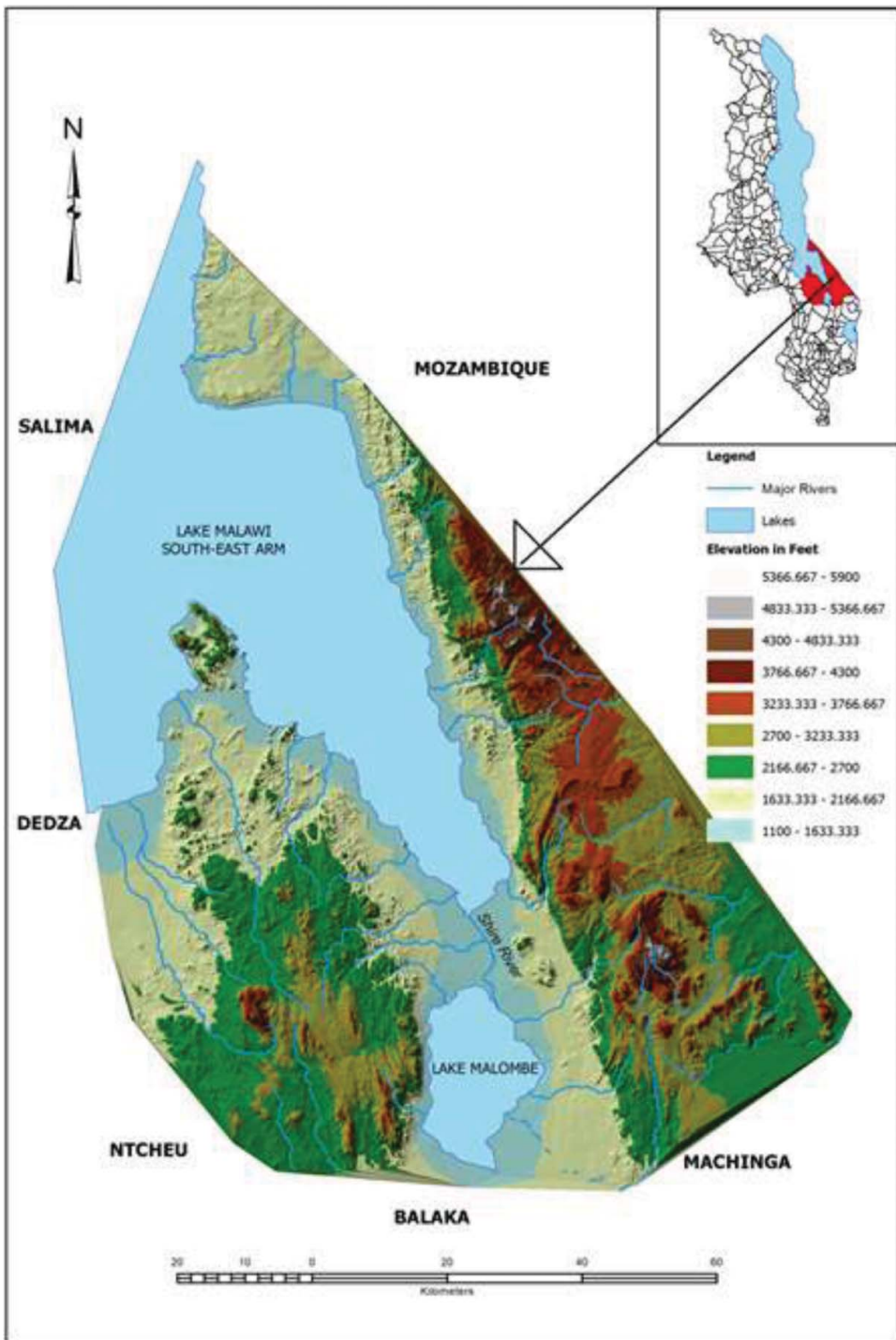


Figure 1. Map of the southern Malawi (SEA and SWA).

enforcement within the co-management arrangement and limited financial resources.

## Potential revenue sources

In this review, we identify three main sources generating revenue for supporting co-management activities in the southern Lake Malawi. The sources include establishment of a fisheries fund, district user fees and charges on the use of landing facilities.

### Fisheries fund

Several revenue sources to support implementation of the co-management activities are outlined in the Fisheries Conservation and Management Act of 1997 (GoM, 1997). The legislation makes provision for establishment of a fisheries fund whose sources of income may include subventions by parliament and grants that refer to funds donated by some agencies for the purpose of managing fisheries resources, and fisheries fund as shown in Part III, Section 9 (2) of the Act. So far, no grant or bonus has been made to support BVC activities because the fund is not yet established; yet this funding mechanism could provide a dependable way of generating funds for the co-management activities and could be an incentive for the co-management partners.

### District user fees

The Fisheries Conservation and Management Act of 1997 also provides for district user fees which is a proportion of amount of money collected in form of fees or levies for use by a particular district in which the money was collected and the rest goes into the central government's account. In Malawi, fishing licenses are issued to the small-scale fishers operating gill nets and seines while trawl nets and ring nets are for the large-scale fishers based on designated fishing areas. The large-scale fishers are also required to pay registration fees for their fishing units prior to their fishing operations in a particular financial year which is from 1 July to 30 June. The license fees are reviewed from time to time based on factors like inflation. However, all the license fees collected are deposited into the central government's account without any proportion left for the local government.

During the by-law formulation process from 2005 to 2006, the stakeholders also emphasized the

need to include district user fees as a source of funds for the PFM activities (Njaya et al., 2006 unpublished). The district fees would be collected annually by the BVCs and deposited into Mangochi District Council's account. They suggested that the district user fees should be in form of the following: fishing permits for the small- and large-scale fishers, gear licensing paid by the small-scale fishers on an annual basis based on gear type; boarder fees collected from fish traders going out of Mangochi district; beach fees paid by migrant large- and small-scale fishers, fish processors and traders at the beach on a daily basis; and market fees which are levies collected from fish traders at council markets. During the policy review meetings, some participants (GoM, 2012) proposed that licensing should also be extended to other fishing gears like fish traps and long lines considering that they are used to harvest fish from lakes and rivers. While in the past the fishing gears were used for subsistence, the participants argued that nowadays they are operated for commercial purposes hence need to be licensed.

Other revenue sources could include fees charged on registration of boat builders and fisheries research. Every year a boat builder is supposed to pay a certain fee to the district council for operating within Mangochi. This is on top of business permits that are issued by other relevant authorities. Considering that Lake Malawi has attracted a number of research projects since the 1950s (Lowe, 1952; Hara, 2001, unpublished thesis), it is important to charge any researcher applying for a research permit within the southern Lake Malawi. While conducting research has been basically without pay or just started to charge a research fee, a certain proportion of the fees should go into the district council's account for implementation of planned co-management activities. The research agenda should be scrutinized and where possible findings be made available to the district councils and LFMAs.

### Hiring out of facilities

Charges on the use of beach facilities can be another potential source of revenue. The revenue can be generated by hiring out certain facilities like jetties, cold rooms, ice plants, storage rooms, and fish processing facilities including solar tent driers and energy saving smoking kilns. The facilities can be hired out to fishers, fish processors and traders in various places along the beaches of the

southern Lake Malawi and the revenue generated can be channeled to the LMFAs, BVCs and the district council. For example, revenue from the storage rooms, solar tent driers, and smoking kilns can be deposited into an account belonging to the BVCs under a particular LFMA or area or district fisheries association while funds from use of jetties, selling of ice can be deposited into the district council's account. However, a huge investment capital is needed to establish the centralized fish landings centers and this is where investment projects can be proposed for funding by the DoF and district council. Sources of revenue have high potential to sustain the planned fisheries activities and with prudent use of the financial resources, cost recovery from the fisheries sector in Mangochi can be achieved. Development of the centralized fishing landing centers will also entrench a rights-based fishery (Charles, 2001). It is a fact that that regulating fishing in the southern Lake Malawi has been a problem for the past decades, hence some reforms including implementation of a rights-based fishery should be considered. Quotas for certain fishing zones based on particular areas can be estimated by the research division of the DoF on an annual basis. What will be crucial is the monitoring part which will demand designated places for landing the fish be equipped with weighing scales and fish monitors within BVCs or employed by the District Council. Every fisher will be required to register, license his fishing gear and pay all fees regarding the use of any facilities on a beach. All landed fish will be weighed and recorded on specified days allocated to each fisher within the area and once the quota is reached they should suspend fishing until the next season. If well enforced, this arrangement will regulate fishers joining the fishery and also the fish catch from the fishery. In this context, both the small- and large-scale sectors should be decentralized hence be regulated by the Mangochi District Council. The DoF should provide necessary policy guidance through research by regularly assessing the stock biomass and estimate the total allowable catch (TAC) for each fishing area belonging to particular LFMAs with funding from both the central and local governments.

There are however, some socio-economic implications on the proposed revenue generation mechanisms. During the regional community consultations for policy review and FAO Voluntary Guidelines on the Small-scale Fisheries some

participants expressed fear that fish prices may be increased due to the introduction of the levies (GoM, 2010). It was also argued that compliance to such payment of levies would be low and the stakeholders further indicated that all the increased costs of fish prices due to the levies along the fish value chain would be transferred to the consumers. While these fears and arguments may be justifiable, it is necessary to understand the long-term benefits that may accrue from implementation of such revenue collection mechanism. Economists will need to determine taxation levels in a way that would not push the fish prices to exorbitant levels.

The introduced levies from the beach to markets for the District Council will be justified if proper mechanisms are considered. For example, based on the communal needs, the funds may be used for implementing projects on sanitation and health along the beaches and in markets. The decision to propose the projects should be made in a transparent manner with participation of all relevant stakeholders. Satisfaction of the stakeholders will ensure willingness to pay for various taxes in form of licenses and permits. On the other hand, management of the fisheries resources with consideration of the ecosystem approach to fisheries (FAO, 2009) and the rights-based fisheries will contribute to achieving equity and sustainability of the resource utilization.

## Conclusions

This article has emphasized the need on finalizing certain legal provisions of the fisheries legislation that were meant to financially support implementation of planned co-management activities. Specifically, issues about district user fees, fisheries fund and subventions from the legislature should be pursued to enable district councils and user committees generate funds to meet their administrative and operational costs. Apparently, both the legal framework and proposed fishing by-laws for Mangochi outline mechanisms for generating funds. There is no way a community or organization can operate without funds. The transfer of power and authority to district councils within a decentralized framework needs to be accompanied by proper financing mechanisms. If the government itself fails to meet its operational costs it can be a serious situation for the communities on their own to do that without assistance.

Considering that there are now councilors in place, the draft by-laws that were developed in

2007, the process for their approval should be considered a priority. The by-law formulation process provides a step further towards effective implementation of the southern Lake Malawi PFM that started over two decades ago. For sustainability of the co-management reforms, we recommend the following: Mangochi district authority to approve the draft by-laws; working out a cost-effective implementation mechanism; finalizing and implementing management plans for the southern Lake Malawi; establishing a fisheries fund for benefit sharing and providing a legal recognition for operations of the local fisheries management units.

However, there are several issues to be considered for implementing the proposed financing mechanisms. First is weak capacity of DoF and other stakeholders to understand and implement the legal provisions. There are cases whereby policy and legislative reviews are done without taking stock what has been implemented or achieved with the pieces of legislation at hand. We therefore recommend that coordination between DoF and Ministry of Justice be strengthened and a monitoring plan on the implementation of legislative frameworks be developed. Second is the issue of capacity of the Mangochi District Council to understand implementation of the fishing by-laws on financing mechanisms and benefit sharing in within the decentralized fisheries management. Furthermore, limited capacity at various levels to implement decentralization with financial management matters at the district council is an issue. Hara (2008) notes that district councils lack managerial and technical capacity to take over authority for service delivery and some district councils are bureaucratic which leads to delays in disbursement of funds to the communities. In some cases, there is fear that that resources might be misallocated or misappropriated due to weak systems, poor management and changes in funding priorities that might not be in line with specific donor policies, procedures and preferences.

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