

Inter-Sectoral Governance in Inland Fisheries: Lake Victoria

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Abstract

The diverse uses of Lake Victoria, East Africa, and the scale of the lake, bordered by three countries and covering 68,000 km², mean that many government sectors and non-governmental actors are involved in the governance of the lake and impact on the fisheries. Inter-sectoral interaction happens at all levels but is not always frequent or well-coordinated – it may depend on the availability of funds and willingness of government officers and other actors to interact and work together. Examples of conflict and cooperation within and beyond the fisheries sector are provided, leading to the identification of opportunities to further and deepen collaboration between sectors.

1. Introduction

Fisheries tend to be governed in a sectoral way, with dedicated government departments, ministries and officers, and sectorally-defined and operated systems. However, the natural and social systems involved in fisheries do not exist and act in isolation of other components of the systems (Kooiman et al. 2005; Jentoft and Chuenpagdee 2009). Among other factors, fish are affected by water quality and temperature, plant growth and other animal species. People are affected by broader governance systems and their livelihoods are affected by decisions made in relation to water, agriculture and infrastructure, amongst other policy areas. This is particularly the case in inland fisheries, where the impacts of land-based activities have a significant effect on water bodies. For Lake Victoria, there are many areas of activity rooted in government sectors and local livelihoods that interact significantly, including agriculture, forestry and water management (LVBC 2007). The diversity of activities and the geographical scale of Lake Victoria and its fisheries make inter-sectoral governance a significant and complex challenge.

2. Lake Victoria Fisheries and Their Governance

Lake Victoria is the second largest freshwater body in the world, with an area of 68,000 km², bordered by Kenya, Tanzania and Uganda, with the lake share respectively being 6%, 51% and 43% (see Figure 1 and Photo 1). The catchment area is estimated to be 193,000 km², serving

around 30 million people, with 200,000 fishers active in the fisheries and an annual catch of 800,000 t whose value is approximated at US\$ 590 million (LVFO 2016). There are three main commercial fisheries on the lake: Nile perch (*Lates niloticus*), Nile tilapia (*Oreochromis niloticus*) and the sardine-like dagaa (*Rastrineobola argentea*). These serve different markets, mainly international for the Nile perch and domestic and regional for the Nile tilapia and dagaa. The introduced species of Nile perch and Nile tilapia (in the 1950s and 1960s) led to a fishing boom in the 1990s, accompanied by the plummeting of stocks of the native cichlid species. This boom led to the commercialization of much of the fishery, with negative consequences for local processors and traders. There has therefore been some controversy about the fisheries, though within the countries there is much appreciation of the economic and livelihood benefits that have flowed from the introduced species and the commercialization of the fisheries. Over the last decade, increasing concerns have been raised about the sustainability of the Lake Victoria fisheries, particularly of the Nile perch, with the scale of the fishing effort and prevalent use of illegal gears and methods seen as threatening the future of the fisheries. Weak governance and enforcement has also contributed to this situation (SmartFish 2015).



Figure 1. Location of Lake Victoria in East Africa (Source: @2016Google)



Photo 1. Around 50% of landing sites are on islands in Tanzania and Uganda

Interest in Lake Victoria has always been dominated by fisheries. Even before the independence of the riparian countries, the diverse fisheries of the lake attracted more attention than any other activity (Graham 1929). This in essence defined the manner in which the lake has been perceived (Table 1). Literature on the lake indicates that the first regulations ever enacted for the lake, the Fish and Crocodile Laws in Kenya and Uganda and the Fisheries and Trout Protection Ordinance of the Tanganyika Territory (1950) (former Tanzania), targeted the fisheries.

Table 1. Historical timeline of Lake Victoria governance

Time	Institution/Regulation/Organization
Before 1900	Use of Beach seines as fishing gears by traditional communities
1908	Introduction of gillnets as preferred fishing gears Fish Protection Ordinance
1927	First lake wide fisheries survey by Graham
1933	5 inch minimum mesh size of gillnet introduced
1947	Formation of Lake Victoria Fisheries Service (LVFS) Issuance of fisheries licenses by LVFS Formation of East Africa Freshwater Fisheries Research Organization (EAFFRO)
1953	Issuance of licenses by LVFS extended to cover Tanzanian waters
1960s	Tanzanian Fisheries Division established Kenya's Fisheries Department Uganda's Fisheries Commission Fish and Crocodile Laws
1970s	First Fisheries Act in Tanzania enacted Decentralization of fisheries management to district level
1980s	Establishment of Fisheries Research institutes in the three countries
1990s	Fisheries Policy in the three countries Introduction of Co-management in the lake
2000	Formation of Lake Victoria Fisheries Organization (LVFO) Bringing in of additional state agents (Police and Judiciary) Local Government taking central role in the governing of Lake Victoria fisheries Private sector brought on board Civil society taking active role in the governance of the lake's fisheries

The organizations that existed in the 1960s to 1980s implemented their activities with minimal coordination at the lake level. Neither did they establish common goals or develop common plans on how to govern; management rather than governance took centre stage. It was not until the late 1990s that coordination was improved through the activities initiated and funded under the World Bank and Global Environment Facility supported Lake Victoria Environmental Management Programme Phase I (LVEMP). Part of the coordination efforts in the 1990s was to re-establish a lake-wide fisheries organization, the Lake Victoria Fisheries Organization (LVFO), as the Lake Victoria Fisheries Service listed in Table 1 had been disbanded in 1960. LVFO was formed in 1997 under the remit of the East African Community (EAC), with a

Secretariat for the organization based in Uganda. The Secretariat serves the core structures of the organization, comprising the Council of Ministers and Executive, Fisheries Management and Scientific Committees. The committees are made up of directors, or their delegated representatives, of the national fisheries directorates and national fisheries research institutes. From 2010, representatives of fishing communities and the private processing industry dealing with Nile perch (see Photo 2) joined the Executive Committee, as part of the adoption of a co-management approach. The mandate of the LVFO is to promote the sustainable management and development of fisheries and aquaculture in, among other areas, Lake Victoria.

The development of a co-management approach began in the late 1990s with LVEMP support, with the formation of community-based Beach Management Units (BMUs) to enable resource users to participate in the management of the fisheries, working with government and other stakeholders. Different approaches to the structure and operation of the BMUs were taken by each country and so harmonization of the co-management approach was facilitated by the LVFO through the EU funded Implementation of a Fisheries Management Plan (IFMP) project in the 2000s.

In January 2016, the LVFO Council of Ministers approved the incorporation of the Republic of Burundi and the Republic of Rwanda into the Convention of the LVFO, reflecting the expanding membership of the EAC. South Sudan joined the EAC in March 2016 and the Democratic Republic of Congo is also keen to join the EAC. The expanding membership of the EAC and hence LVFO is expected to lead to a change in the name and remit of the LVFO, with potential consequences for the governance of the lake fisheries.



Photo 2. Loading Nile perch into a refrigerated lorry for transfer to a processing plant

3. Inter-Sectoral Nature of Lake Victoria Fisheries

The fisheries of Lake Victoria have multiple relationships with other sectors at all levels. These relationships stem from activities within the wider Lake Victoria Basin as well as on and around the lake itself. Activities that impact the lake and its fisheries particularly include agriculture, urban development, forestry and hydropower.

Agricultural production is the main economic activity of the basin, with a range of cash and subsistence crops. Agriculture intersects with fisheries in multiple ways but the main two areas of intersection are: sources of employment and income, and the pollution of the lake from chemical fertilisers and pesticide use. People enter the fisheries having become frustrated at the lack of income from agriculture, both related to the level and frequency of income. In addition, many people engaged in fisheries also farm land (Geheb and Binns 1997). The increasing population and increased livelihood activities associated with agriculture and urbanization have brought pollutants to a level that has affected fish catches and fish biodiversity. Algal productivity has increased two fold since the 1960s and algal biomass has increased more than four times. Industries located in the major cities riparian to the lake, such as Kampala and Jinja in Uganda, Mwanza, Musoma and Bukoba in Tanzania and Kisumu in Kenya, have been discharging their effluents into the lake (Okedi 2005). Populations in these cities have equally discharged their waste into the lake. The cities have remained the main point sources of pollutants into the lake. Some studies have shown that Mwanza Gulf, Murchison Bay, Napoleon Gulf, Winam Gulf and around Kisumu areas have been major hot spots of pollution loading into the lake (Kling et al. 2001; Abila et al. 2006).

Lake Victoria is surrounded by numerous forests in the three countries. In Uganda, forests around Lake Victoria start from Jinja township and continue westwards along the northern shore of the lake, down the western shore and towards Tanzania. In Tanzania, forest are scattered all around the lake in the west, south and east. In Kenya, forest is found around the Kericho area and some parts of the western area. Deforestation affects run-off and water flows reaching the lake, as well as sedimentation and subsequent increases in eutrophication, with consequences for fish breeding and stocks (Sitoki et al. 2010). Fisheries and forests also interact through the use of timber for the construction of boats, as Lake Victoria fisheries are artisanal, with locally-made timber boats, as shown in Photo 3, the use of timber for house construction and provision of fuelwood and charcoal for cooking and smoking fish.

Lake Victoria is also critical to the Kiira and Nalubaale Hydropower Dams (formerly known as the Owen Falls Dam) in Uganda and the downstream Bujagali Dam, also in Uganda, which began operation in 2012. The dams have led to controversies in the region due to alleged over-release of water, leading to mistrust between the riparian nations and concern about the impact of falling water levels (Lubovich 2009).



Photo 3. Wooden artisanal boats make up the Lake Victoria fisheries fleet

4. Conflict Within and Beyond Fisheries

Examples of conflict within and beyond fisheries can be found in border areas, particularly in relation to islands where the sovereignty is contested, and between fisheries-focused BMUs and village government. Conflict has at times arisen due to fishers moving across country boundaries in search of better catches and prices and not always securing the right permits and licenses to operate within the fisheries of the country they have migrated to (Heck et al. 2004). The main border area conflict has existed since 2004, when Uganda deployed forces in the area of Mgingo Island, declaring the island to belong to Uganda, disputed by Kenya (Shacka 2013). Discussions are still ongoing in 2016 between Kenyan and Ugandan officials to resolve this transboundary dispute (Baraza 2016), which has greatly affected the lives and livelihoods of fisherfolk in the area.

Conflict between BMUs and village government has on occasion arisen due to competition for power and resources at the beach level. Relations between BMUs and village government differ between locations, with examples of both conflict and cooperation. Formally, in Tanzania, BMUs report to the Defence Committee of the Village Council; there are no formal reporting arrangements in Uganda and Kenya to village government. In all three countries, the BMUs report to, and are supported by, the local level fisheries officer. Although the fisheries officers are employed by the local governments (County or District and lower levels), they also report to the departments of fisheries at the national level. The BMUs are therefore also seen as being part of the national fisheries department infrastructure, which creates challenges for decision-making and authority at the local level. Instances of conflict between BMUs and village governments or chiefs often revolve around illegal fishing activities. Some fisherfolk have accused village government members of engaging in, or turning a blind eye to, fisheries illegalities, at times leading to conflict between BMUs and village government. However, there are also examples of cooperation between BMUs and village government, for example in keeping beach areas clean, providing fish marketing facilities and working on sanitation projects.

5. Inter-Sectoral Cooperation

Inter-sectoral cooperation is challenging but necessary at all levels of governance. This section considers the practice, potential and challenges for inter-sectoral cooperation at multiple levels of governance: community-based/village, decentralised and national level, and lake-wide and basin.

At the village and decentralised government levels, cooperation between sectors takes place to an extent through development planning and budgeting processes and through cross-cutting committees, as they relate to planning and environmental management. However, there remains much scope for further cooperation and coordination. At the local, community-based level, cooperation between committees or groups associated with different government sectors (fisheries, water, local government, forestry, for example) may take place informally, but is not necessarily formally encouraged or required. Such groups include environmental management committees, water user associations and savings and credit groups, as well as BMUs, with membership coming from the communities themselves. Although there may be cooperation

between these structures based on personal relationships and/or informal coordination by decentralised government, because of the prevalence of separate reporting and support relationships associated with different government sectors, and lack of coordination and cooperation at national levels, such cooperation is likely to be limited and not as effective as it could be.

There is also some degree of cooperation and collaborative working in fisheries enforcement, which brings together several sectors and institutions, including the judiciary, local government, the police, BMUs and central government. These institutions are required to work together with each playing their assigned roles. However, individual interests in these institutions have led to a lack of integration, coordination and cooperation. For instance, BMUs are required to report illegal fishing practice to the District Fisheries Officer who is then required to liaise with the prosecutor at the police department to charge the illegal fisher in a court of law. The magistrate should then decide on the case in relation to the evidence presented. In practice, however, BMUs rarely report illegal fishers because they may be reluctant to see their community members jailed or fined. In addition, BMUs have become discouraged by the practices of corrupt fisheries officers and police officers who take bribes in exchange for confiscated gears or for the continuation of illegal fishing, with the charge being never presented in court. Local politicians have, at times, discouraged enforcement by BMUs and fisheries officers, not wanting to upset their potential voters, particularly during election periods.

At national level in the three countries bordering the lake, there is limited coordination and cooperation between departments/ministries. Ministries of water, environment and fisheries, for example, may collaborate in relation to certain activities and donor-supported projects, but do not have formal arrangements to enable cooperation.

Inter-sectoral cooperation at the lake-wide and basin level is encouraged through the Lake Victoria Basin Commission (LVBC), formed by the EAC in 2001. The LVBC is tasked with the harmonization of policies and laws within the EAC member countries in relation to environmental management, which should be in support of economic development and poverty reduction. Their remit is therefore wide-ranging. Although both the LVBC and LVFO are institutions of the EAC, there are no formal linking arrangements between them. Whilst the LVFO is made up of the fisheries departments/ministries, the LVBC is linked to the national ministries of water, environment or natural resources. The activities of the LVBC are largely driven by externally supported projects, such as the World Bank funded LVEMP. The first phase of LVEMP took place between 1997 and 2005 and the second phase between 2009 and 2017, with support from the Global Environment Facility and Government of Sweden, as well as the World Bank. The aim of LVEMPII is to improve the collaborative management of transboundary natural resources and management of pollution and environmental degradation hotspots in the basin. Although fisheries are part of the LVBC remit, and a number of projects and activities are funded by LVEMP, coordination and cooperation is limited by lack of a formalised relationship between the LVBC and LVFO and lack of coordination of plans and budgets at the national level.

An example of cooperation around the lake, but beyond fisheries, is the Lake Victoria Region Local Authorities Cooperation (LVRLAC), which is an organisation that brings together local authorities around the lake to promote environmental management and social development. The organisation is active in providing a space for cooperation between local authorities though this is, to an extent, limited by funding secured from external sources.

6. Moving Towards Inter-Sectoral Cooperation

Key areas where cooperation could also be encouraged are through:

- 1) Greater coordination of the formation of, and support for, community-based structures between government sectors so that there is less demand on community members and a more holistic approach taken.
- 2) Decentralised government planning and budgeting processes, involving multiple sectors and taking an inter-sectoral perspective.
- 3) More formalised structures could be created, such as working groups, to encourage cooperation between sectors at the national level of government in line with the framework of the Comprehensive Africa Agriculture Development Programme (CAADP)
- 4) Greater cooperation between lake-wide and basin structures such as the LVFO, LVBC and LVRLAC.

The fisheries of Lake Victoria are strongly affected by activities, policies and plans in many other sectors, yet there is little evidence of formal inter-sectoral cooperation and coordination. Where and when cooperation and coordination does take place, it is supported by projects and is for a specific purpose and may be short-term. Awareness of inter-sectoral linkages amongst stakeholders is apparent through initiatives such as the LVEMP I and II, the creation of LVBC, and the yet to be operationalized at the lake level, Comprehensive Africa Agriculture Development Programme (CAADP). The latter is a declaration by Heads of African states and governments on accelerated agricultural growth and transformation for shared prosperity and improved livelihoods, in which fisheries are recognised (African Union 2014). However the geographical scale of Lake Victoria and the diversity of sectors and actors impacting on Lake Victoria make inter-sectoral governance a significant challenge. Inadequate resourcing to government sectors and non-government actors contributes to there being limited collaboration and cooperation, with much inter-sectoral cooperation being dependent on project funding. Greater communication and identification of common goals and objectives may assist in developing more coherent governance in the absence of resources to secure strong inter-sectoral governance.

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