



Strengthening community roles in aquatic resource governance in Uganda

STRENGTHENING COMMUNITY ROLES IN AQUATIC RESOURCE GOVERNANCE IN UGANDA

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INTRODUCTION

Relationships among institutions, local actors, communities and different levels of government are at the heart of efforts to improve fisheries management. When these relationships are marked by failures of coordination and persistent marginalization of poor resource users, sustainable and equitable resource management is impossible.

The Strengthening Aquatic Resource Governance project worked in three ecoregions where national economies — and particularly poor rural populations — depend significantly on natural resource management. The selected ecoregions were Lake Kariba, with a focus on Zambia, the Tonle Sap Lake in Cambodia, and Lake Victoria, with a focus on Uganda. In each region, the STARGO project aimed to build resilient livelihoods among poor, rural producers who depend on wetland and freshwater resources; generate gains in nutrition, income, welfare and human security; and reduce the likelihood of broader social conflict.

STARGO used an approach called Collaborating for Resilience to gather key stakeholders for a process of structured dialogue. In the CORE process, stakeholders work jointly to build a common understanding of problems, discuss solutions, and build commitment for actions that support resilient local livelihoods. This case study draws mainly on project experiences in the Kachanga fish landing site in Masaka District on the shores of Lake Victoria, Uganda, in a process that included exchange of experiences with two other landing sites, Kasekulo on Lake Victoria and Kisenyi on Lake Edward.

The structure of the case study report is as follows. Section 2 provides a description of the framework conditions for fisheries in Uganda: the context and characteristics of the resources, the governance and policy arrangements, and the characteristics of resource users. Section 3 focuses on conflicts in fisheries co-management in the focal communities. Building upon that discussion, Section 4 describes the community-led activities that sought to address existing conflicting trends among stakeholders through collective action, and the outcomes of these. Section 5 presents lessons learned and conclusions.

Overview of Lake Victoria resources

Lake Victoria sustains one of the largest freshwater fisheries worldwide. Located in the East African Plateau between Tanzania, Kenya and Uganda, the lake is the second-largest freshwater body in the world and the largest in Africa, with a surface area of 68,000 square kilometers.¹ Given the size of the lake and its importance to the three countries that share its resources, the institutions managing Lake Victoria fisheries face complex challenges in putting adequate multilevel governance in place.

In recent years, international demand for Nile perch from the lake, as well as population growth in the region, has significantly increased pressure on Lake Victoria's resources, affecting the vital fisheries of Uganda and its neighbors. The fisheries subsector contributes an estimated 12 percent — of which about 50 percent comes from Lake Victoria² — of Uganda's annual agricultural income³ and 3 percent of Uganda's GDP.⁴ The lake's resources are fundamental for the achievement of national development goals and for the livelihoods of approximately 1.5 million Ugandans, of whom about a third are directly involved in fishing, processing and trading.⁵

The Lake Victoria basin is among the most densely populated areas on the continent, and population growth rates continue to rise.⁶ The potential economic gains from the sector have attracted an estimated 57,000 fishers operating in the Ugandan part of Lake Victoria, a 63 percent increase between 2000 and 2010.⁷ At present, 6.7 million people, or 20 percent of the country's population, live in the ten Ugandan districts that adjoin the lake.⁸

Most of Lake Victoria's production in Uganda comes from artisanal capture fishing. However, in response to high international demand for the lake's fish, large-scale commercial operators have established about 20 fish processing plants for Uganda's part of Lake Victoria in recent years.⁹ The main products obtained from fisheries in Lake Victoria are Nile perch, tilapia, and silverfish or "mukene," an indigenous species. More than 75 percent of the Nile perch from Lake Victoria is exported, while tilapia and "mukene" are more often traded in regional and local markets.¹⁰ Studies from Kenya show that the export trade also affects the food security of a region. Local consumers with lower purchasing power can obtain only undersized or poor-quality fish rejected from the factories, contributing to protein malnutrition.¹¹



Small-scale fishers returning to Kachanga landing site, Lake Victoria

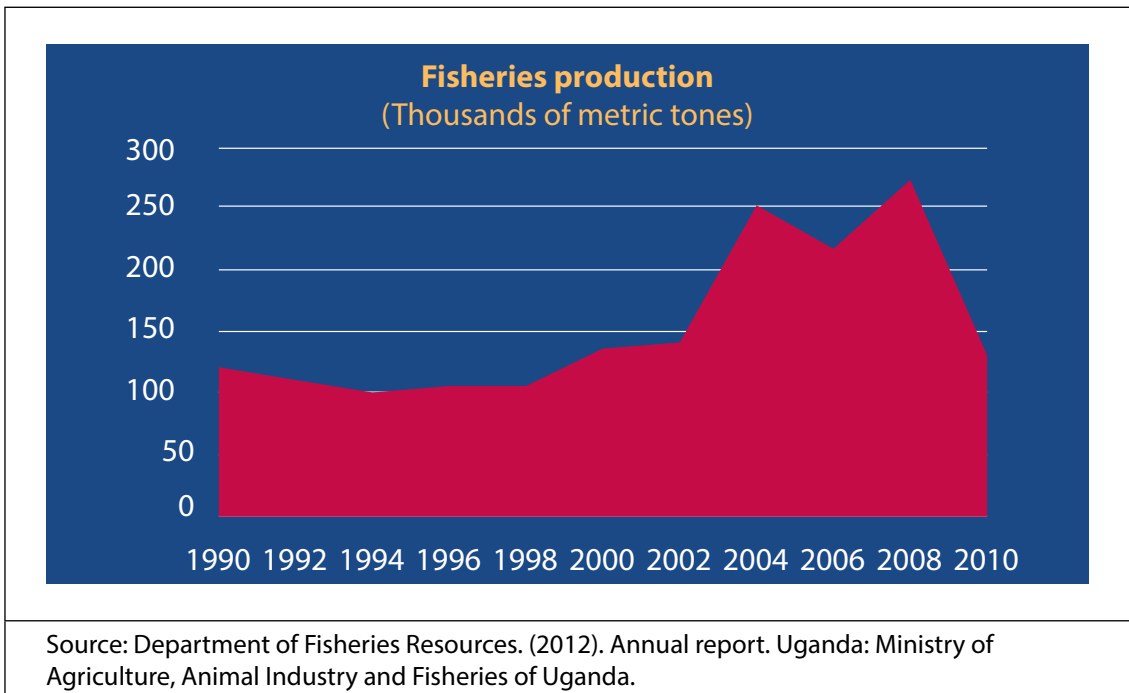


Figure 1. Fish production in Lake Victoria, Uganda

Industrial fish processors, who are predominantly foreigners, are strongly supported by national policymakers. Investment priorities are visible at the local level where fish processing plants are provided with water and sanitation to satisfy fish export regulations. This takes place in a context where there is no adequate water, sanitation or waste treatment for communities on landing sites. As a result, the communities perceive industrial fish processors and privileged community members as having strong links and privileged access to national-level actors. In Kachanga, for example, the “government,” represented by higher-level administrative officers and extension workers, was described by fishers as corrupt and as having abandoned the communities to live without basic services.

Significant environmental stressors have increased the vulnerability and unpredictability of the Lake Victoria system. The main problems in the region are increasing urbanization and population growth, leading to land and wetland degradation, deforested watersheds, industrial and household pollution, eutrophication of fish habitats, and biodiversity loss, as well as water hyacinth infestation.¹²

Although there is a lack of reliable data, existing figures and observation by officers and fishers also point to a steep reduction of fish catch in recent years (Figure 1). Since 2009, productivity

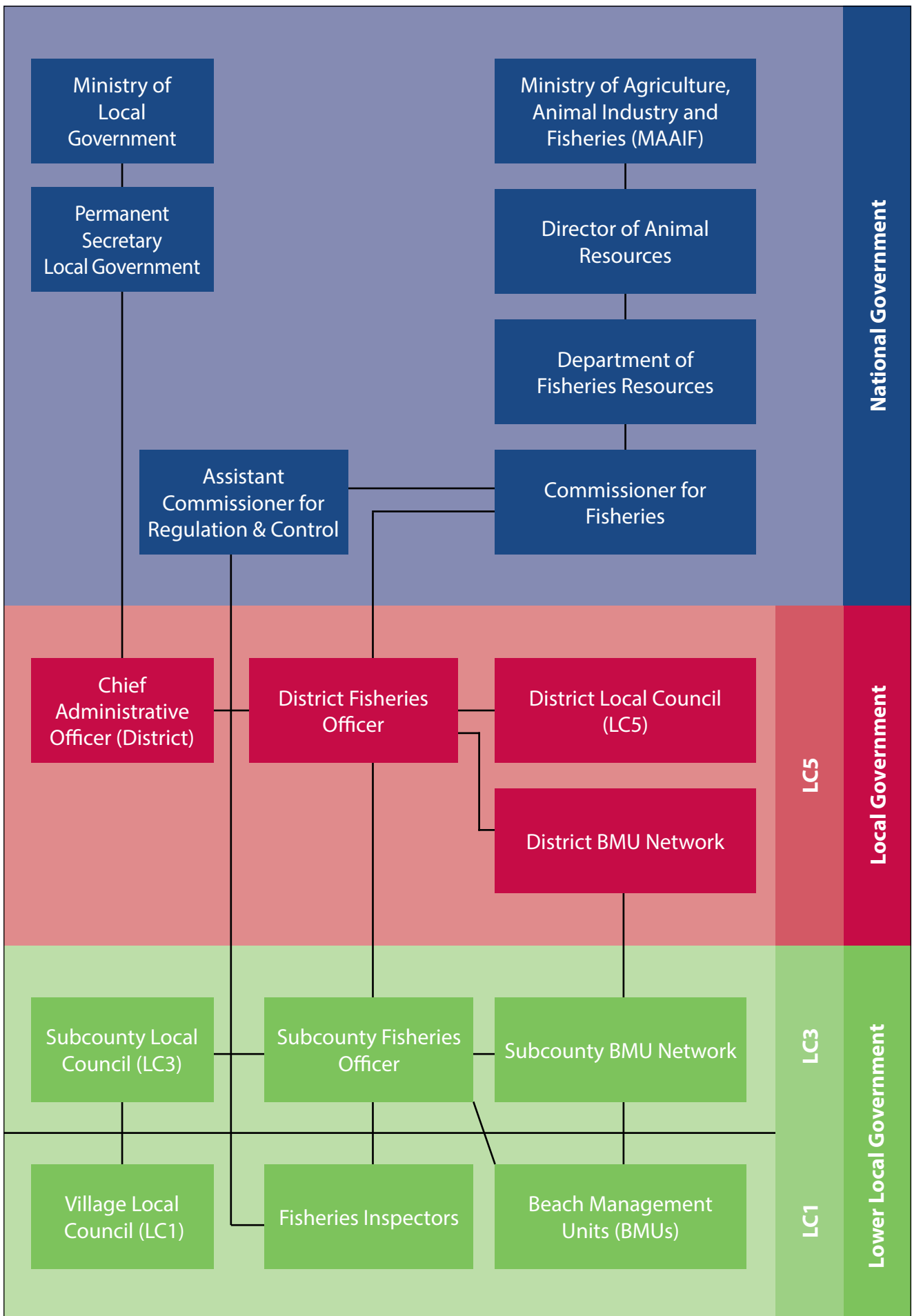
has been dropping and processing plants have been closing down or working at less than full capacity because there are not enough fish to process.¹³ The Department of Fisheries Resources attributed lower fish numbers to illegal fishing, overfishing and a degrading fish habitat.¹⁴

Overview of governance arrangements

(i) Policy framework

The main governing institutions of Uganda’s fisheries at the national level are the Ministry of Agriculture, Animal Industry and Fisheries, which retains the lead in agricultural policy, and its subsidiary, the Department of Fisheries Resources, which is in charge of safeguarding and managing the fisheries resources and has supervisory functions over all other stakeholders active in the sector. Figure 2 gives an overview of the main institutions in fisheries resource management.

At the subnational level, there are two tiers of local government.¹⁵ Specific additional responsibilities are devolved to the local council at the village level and the community-level beach management units, which are legally recognized organizations that represent the main resource users and stakeholder groups in the sector.¹⁶



Source: Authors' representation based on field research; Ministry of Agriculture, Animal Industry and Fisheries of Uganda, Department of Fisheries Resources. (2012); Ogwang, V.O., Nyeko, J.I., and Mbilinyi, R. (2009). Implementing co-management of Lake Victoria's fisheries: Achievements and challenges. *African Journal of Tropical Hydrobiology and Fisheries* 12:52–58.

Figure 2. Organizational structure of fisheries management in Uganda

Fish stocks in a large, open system like Lake Victoria are classic common-pool goods, from which users cannot easily be excluded.¹⁷ Access to fisheries resources in Uganda is determined on the one hand by formal policies and legislation, and on the other hand by de facto access and limitations imposed by relationships of power and influence between stakeholders.¹⁸

The Ugandan constitution defines fish resources as common property of the people of Uganda held in trust by the government. Access is limited to Ugandan nationals who have obtained a fishing license¹⁹ and who utilize a licensed vessel.²⁰ Licenses are issued for one year and are nontransferable. There is no stated limit on the number of boat licenses that can be issued. The Department of Fisheries Resources, however, is entitled to limit the number of licenses issued to manage pressure on the lake. In addition, the Ministry of Agriculture, Animal Industry and Fisheries imposes closed seasons through a statutory instrument.

(ii) Co-management reforms

In the second half of the 1990s, Uganda introduced a comprehensive reform establishing a strong legal and policy framework for fiscal and administrative decentralization. Following the recognition that management of fishery resources in Uganda had not allowed for input from the resource users, responsibility for agricultural extension services was transferred from the Ministry of Agriculture, Animal Industry and Fisheries to district local governments.²¹

A system of fisheries co-management was introduced in Uganda in 2003. In order to address the differences in participation between resource users and actively promote engagement of all stakeholders, beach management units were designed to represent all user groups through a quota system. Each beach management unit elects a committee made up of boat owners, crew members who do not own boats, fish processors, boat makers, local gear makers or repairers, fishing equipment dealers, managers and charterers, and fishmongers. In addition, 30 percent of all members are supposed be women, although in practice it is unclear if this provision is consistently observed.

Management authority and responsibilities are shared across government levels and beach management units. Beach management units have the right to manage fisheries resources by drafting bills that can be adopted by the subcounty local council as bylaws. Table 1 gives

an overview of the functions performed by beach management units and national, district and subcounty governments.

Governance Institution	Functions and Responsibilities
National Government	Agricultural policy planning and formulation, standard setting, regulation, technical support, and training.
Local Government District Local Council	Regulating, controlling, managing, licensing and assisting the central government to preserve the environment.
Lower Local Government Subcounty Local Council Village Local Council ²²	Provision of agricultural ancillary field services; general local environment protection; control of local fishing, trading centers, markets and landing sites; organization and promotion of local trade.
Beach Management Units	Information collection for planning and management decisions; local and lake-wide management plans; monitoring fishing activities; enforce management rules and regulations with local and national government; control of access to the lake with local government.

Source: Government of Uganda. (1997). Local governments act of 1997, chapter 243, second schedule: Functions and services of the government and local governments; Nunan, F. (2006). Empowerment and institutions: Managing fisheries in Uganda: Implementation of a fisheries management plan, Lake Victoria Fisheries Organization, Jinja, Uganda. *World Development* 34(7):1316–1332.

Table 1. Functions and responsibilities of actors in fisheries governance at multiple levels

Overview of resource users

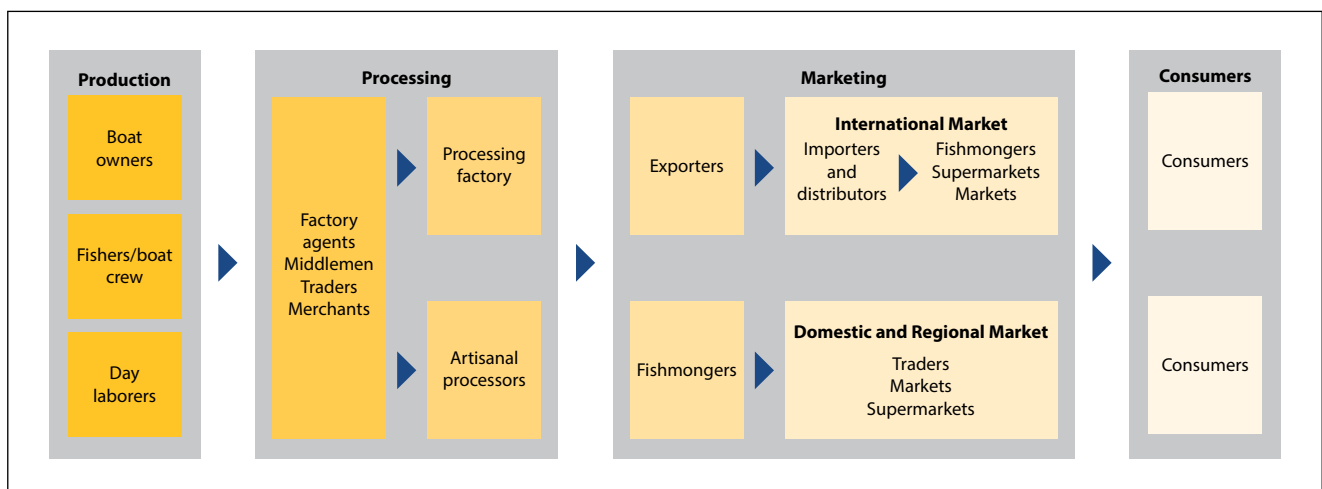
The landscape of fisheries actors in Lake Victoria encompasses a wide range of interest groups: large-scale processors; fishers; boat owners; owners, managers, and charterers who lease or rent out vessels; artisanal fish processors; fishmongers; boat makers; local net and gear makers and repairers; and fishing equipment dealers. The groups vary in their socio-economic status and in the level of influence they exert.

Boat crew members and women typically have lower levels of income and education than boat owners. Boat owners and individuals in the industry who hold office in the local council or the beach management unit executive committee tend to be better off and better educated. Figure 3 visualizes the main groups along the fish value chain.

As property owners with valuable assets, boat owners are a powerful group of stakeholders in the local fishing industry. Fishing of tilapia and Nile perch is mostly carried out with relatively small wooden boats powered manually with paddles, although a few boats have engines. Community leaders of the fish landing sites visited and local Department of Fisheries Resources officials also own boats. As the leaders have monitoring and enforcement powers, there is a potential conflict of interest when it comes to imposing penalties for use of illegal fishing methods.

When fishers land their catch, they sell it to fish traders or to factory agents. Fish traders tend to collect smaller amounts of fresh fish — mainly tilapia and silverfish — that they re-sell to local markets and other traders, who transport the product to regional markets. Processed fish is handled mostly by female fish processors, who employ frying, drying and smoking techniques. Factory agents — another powerful group with high status in the communities — buy Nile perch from smaller handlers and deal directly with plants that process fish for export to the European Union, Australia, the United States and the Middle East.

Gender is a significant factor influencing income levels and types of activities carried out in the fish value chain. Gender roles and cultural prohibitions against fishing disadvantage women economically, as fishing is the quickest way to acquire assets.²³ Although some women now own boats or act as factory agents, the majority of women are only involved in low-income occupations as fishmongers and fish processors. Gaps in state delivery of health and sanitation services also increase the unpaid labor of women — since they are the main caregivers — and reduce their availability for paid labor. Given the high mobility of fishers, many women are the sole income providers for their families, as they have no access to the fishers' earnings when the fishers are away, and fishers' income is irregular even when at home. Women's highly restricted options for livelihood alternatives, credit and entrepreneurship affect the economy and the society as a whole.



Source: Authors' representation based on interviews in the three case study landing sites; STARGO consultation process; Benkenstein, A. (2011). *Troubled waters: Sustaining Uganda's Lake Victoria Nile perch fishery*. South African Institute of International Affairs (SAIIA) Research Report 9. Governance of Africa's Resources Programme. Retrieved from <http://www.saiia.org.za/research-reports/troubled-waters-sustaining-uganda-s-lake-victoria-nile-perch-fishery.html>

Figure 3. Fisheries value chain in Lake Victoria, Uganda

CHALLENGES AND CONFLICTS IN THE LAKE VICTORIA CO-MANAGEMENT SYSTEM

Financial challenges

Funding is an essential component of successful decentralization as envisioned in the co-management system. However, all fisheries revenues are currently allocated through a time-consuming process that involves several steps. This means that the Department of Fisheries Resources has no ability to immediately deploy funds and respond to emergencies. A bill proposed to give the Department of Fisheries Resources increased discretion over its funds and a quicker rollout of monies was not approved by the Ministry of Agriculture, Animal Industry and Fisheries, and no other measures have been taken to address the budgetary rigidities.

In the studied communities, conflicts over funding available to the districts to manage fisheries were one of the main institutional tensions identified by the stakeholders.²⁴ There was a general lack of funds and spending discretion at the local level. Local authorities had the mandate to develop bylaws to help raise revenue, but many lacked the capacities to do so. At the same time, approximately 88 percent²⁵ of transfers from the central government consist of conditional grants, which are paid to local governments to finance programs in specific sectors “with different conditions for access, management, utilization, reporting and accountability.”²⁶ According to the Uganda Local Government Finance Commission, the conditionality attached to these grants has made management complicated and time-consuming.²⁷

In one of the studied communities, this problem was compounded because the conditional grants for the agricultural sector were not specifically intended for fisheries. By earmarking transfers, the central government effectively prioritizes nonfisheries sectors. A district fisheries officer described the problem of not being able to spend agriculture-earmarked grants because the fisheries subsector was not a sub-budget line for which the grant could be disbursed.

Shortfalls in funding to local government entities have impaired their adaptive capacity and ability to respond to the demands of local communities. In the fish landing sites, some fisheries officers received no allowances from the district or subcounty administration to carry out their jobs. Many did not have a way to pay for their transportation to the landing sites, which they are required to inspect several times each week. Although the government had provided officers with motorcycles to carry out their tasks, these reached the end of their useful life span and no allowance for fuel or maintenance was provided.

Conflicts between communities and institutions

The government response to market demand for fish has been a largely export-oriented approach that favors investment in services such as water provision and sanitation for fish processing plants. However, when fish processing plants were located in communities where the minimum standards of public service provision were not being met, as was the case in Kachanga, community members felt abandoned by the government and acted in confrontational ways.

Fishers and news media reported verbal and physical confrontations between individual fishers and Department of Fisheries Resources staff, as well as between individual fishers and beach management unit officials. The problems occurred when authorities enforced rules to control or limit the access of communities to fisheries resources through imposed licensing, taxes or prohibitions on illegal fishing gears, and fishing in proscribed zones. Both fishers and Department of Fisheries Resources staff had been injured and killed during enforcement operations. In February 2013, the Ministry of Agriculture, Animal Industry and Fisheries suspended all fishing in Maguye District due to high levels of violence and threats against fisheries officers.²⁸

Community members also felt strongly that enforcement processes were being applied selectively for financial gain by the beach management unit and Department of Fisheries Resources officials. According to reports from both the Uganda Radio Network and community members, unofficial payments had become a routine procedure for resolving cases of arrest and confiscation of property.²⁹ In one of the landing sites, the research team spoke to a woman who traded undersized — and therefore illegal — smoked fish. The local fisheries officer requested bribes in exchange for the freedom to continue her income-generating activities. This practice transgressed the regulation put in place to avoid depletion of resources, thus threatening the resource, and put her in a situation where she saw herself as forced to pay a high bribe in order to keep her source of livelihood.

Conflict at the community level

(i) Power imbalances between user groups

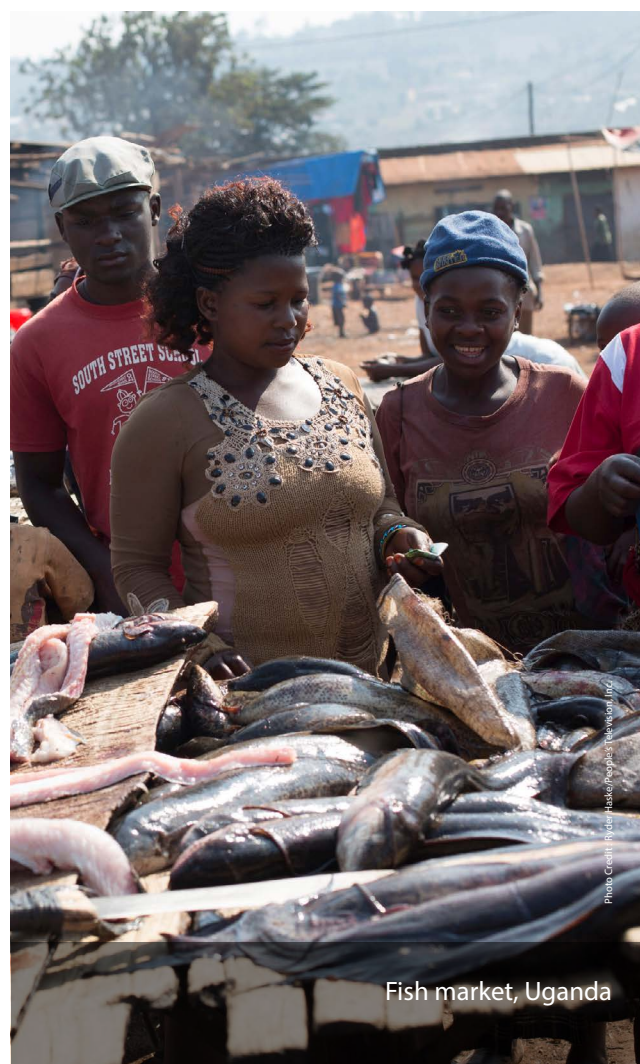
Power hierarchies have played a key role in shaping the practices of different resource user groups in Lake Victoria fisheries. Socio-economic standing and gender have often determined access to resources and power in decision-making processes. While the fisheries co-management regime put in place a quota system to ensure representation of disadvantaged groups in beach management units, the members of these groups often lacked capacities for effective communication and advocacy for their interests. In practice, fisheries decision-making processes were still dominated by wealthy male boat owners, a situation which caused tensions with fishers and made collaborative management of fisheries resources difficult.

There were further hierarchical distinctions within disadvantaged groups. Fishers — who were almost exclusively men — had inadequate access to credit and few savings, but fishers who were boat crew members had generally better options for upward mobility, individual earning possibilities and control over assets than women, day laborers and other poor community members. As a consequence, boat crew could more easily become boat owners. Although women play a key role in the fisheries industry as traders and processors, most women continued to be marginalized from effective participation in decision-making due to historical precedents: lack of assets, poor education, lack of confidence, and most importantly, their exclusion from higher-income earning activities.

(ii) Conflict within resource user groups

Horizontal tensions among fishers in Lake Victoria were mainly centered on illegal fishing, theft and destruction of fishing gear. Theft of fishing gear was widespread and often had serious consequences, reducing household earning capacities and affecting fishers' ability to prepare for future shocks. Fishers were aware of the link between illegal fishing practices and reductions in the amount and size of fish they catch, but felt that they lacked alternatives for income generation.

Demand for undersized fish in regional markets has resulted in further tensions between fishers and a range of actors, including middlemen engaged in this banned trade, powerful interest groups interested in large-scale cross-border export of immature fish, national authorities setting new regulations to curtail the trade, and local authorities expected to enforce such regulations. The fishing of undersized fish and conflict over control of the trade affect the sustainability of livelihoods for fishers and other resource users.



Fish market, Uganda

The approach and context

The STARGO process consisted of a series of scoping consultations, focus group meetings, preparatory workshops with community stakeholders, and a larger multistakeholder dialogue workshop with government actors from village to district levels (see the box on the next page), followed by monitoring and evaluation visits.

During scoping, team members spoke with staff of the Lake Victoria Fisheries Organization, the National Fisheries Resources Research Institute, the National Environmental Management Authority, the Ministry of Agriculture, Animal Industries and Fisheries, and the Ministry of Water and Environment, as well as with Department of Fisheries Resources researchers and officers who were responsible for fishing permits, inspection and enforcement of fisheries regulations. The team also consulted members of beach management units, district officials, and district, subcounty and village local council leaders, as well as the National Association of Professional Environmentalists and the Advocates Coalition for Development and Environment.

The dialogue process brought together communities from three landing sites. The Kachanga landing site on the shoreline in Masaka District was the main site for engagement, while Kasekulo landing site on the island of Kalangala provided a contrasting case. Both landing sites faced similar challenges of overdependence on the declining fisheries resources of Lake Victoria, limited alternative income opportunities and economic hardship. However, in contrast to Kachanga, Kasekulo has been the site of a series of development interventions by international and bilateral agencies, which have provided it with a playground, a primary school, a clinic, public toilets and piped water.

Participants from Kachanga reported that National Agricultural Advisory Services and the Department of Fisheries Resources had provided training on fisheries conservation. Some international NGOs and civil society organizations had also provided training

and support to AIDS sufferers. However, Kachanga community members felt that these interventions had made little difference to their situation. Kasekulo and Kachanga thus had sharply contrasting levels of institutional conflict and of engagement with external stakeholders. The attitudes of Kasekulo community members were also markedly less antagonistic than the attitudes of Kachanga community members toward the Department of Fisheries Resources, the beach management units and local government actors.

The third community, Kisenyi landing site on Lake Edward, is considered a relative success story in terms of local collective action, due to its well-run credit and savings association through which the beach management unit is able to raise revenue and provide credit to its members. The beach management unit from Kisenyi also works well with the village local council and the Department of Fisheries Resources. This beach management unit was brought into the process to share experiences and strategies with the other two sites.

Makerere University researchers stayed in weekly telephone contact with local extension officers and visited the sites on a quarterly basis to administer monitoring and evaluation questionnaires on socio-economic status, health and sanitation, as well as to discuss progress and outcomes with selected local authorities, extension workers, the Department of Fisheries Resources, beach management units and community members.

The analysis in the following section focuses on the Kachanga site, where the bulk of the activities took place.

Applying the CORE dialogue process

The project used a model called Collaboration for Resilience, or CORE, to organize a structured process of dialogue to support institutional innovations that address local conflicts.³⁰ The CORE approach aims to gather all the relevant stakeholders for a given domain of resource competition. The stakeholders work jointly to build a shared appreciation of the challenges, debate alternative responses, and build commitment for actions that support local livelihood resilience.³¹

The process began with a one-day workshop in February 2012. Twenty people — including village local council authorities, fisheries officers, village fisheries inspectors, fish traders, fish processors, boat crew, boat owners and beach management unit officials — were present from the fishing communities of Kasekulo in Kalangala District and Kachanga in Masaka District. Most of the workshop was held in Luganda, the local language.

The workshop activities introduced the CORE approach and prepared community participants to select priorities for common action. The research team facilitated mixed groups of stakeholders to engage in resource mapping to discuss the resources and geography of the area, stakeholder mapping to identify and understand various actors, and a problem tree analysis to identify root causes, effects and potential solutions to the challenges.

While the mixed-group discussions were useful, women and boat crew members were less vocal than boat owners and it proved critical to create channels of communication beyond the formal dialogue. Side conversations allowed women to express their concerns about sanitation, which they were unwilling to raise directly during the workshop. Finding an alternative space for women to speak out led to human and environmental health becoming a primary focus for action planning in Kachanga.

The second workshop, a three-day event with 39 participants, aimed to establish a common vision among a wider group and to develop action plans for implementation. National and district-level Department of Fisheries Resources officers and district officials joined fish traders, fish processors, boat crew members, boat owners and beach management unit committee members from Kachanga, Kasekulo and Kisenyi to share their knowledge about risks and opportunities around fisheries activities. Participants mapped the past, present and future of sustainable fisheries, eventually coming to a shared vision of a clean site with healthy people. As part of the ongoing dialogue, local council, beach management unit and Department of Fisheries Resources officials also held meetings with the industrial fish processing factory manager in Kachanga.

In the end, stakeholders agreed that addressing development priorities of health, access to education and reducing poverty were fundamental to improving welfare. Participants discussed how poverty and limited opportunities led to theft and unsustainable fishing, and felt that addressing these threats could aid in managing resource competition. The group selected health, sanitation and hygiene as areas that had serious impacts on environmental health, and especially on water resources. Over the long term, participants agreed to establish health facilities, including a health worker stationed at each landing site.



Community dialogue in Kachanga village

Kachanga landing site

Kachanga landing site is located on the mainland in Bukakata Subcounty, Masaka District. Permanent dwellings have only been permitted in Kachanga since 2009, after which the population increased to an estimated 1,000 people. Kachanga is a very young community, with an average age of 24.5 years. While the vast majority of community members extract livelihoods from the fisheries industry, Kachanga has more variety in livelihood sources than the other two communities, with about 15 percent of survey respondents owning small-scale retail businesses and about 7 percent practicing subsistence farming away from the landing site.

Kachanga has a larger presence of migratory influxes than Kishenyi and Kasekulo. The majority of respondents had stayed at the fishing site for at least three years, but a large number relocate periodically to other landing sites in search of higher fish catches. The rapid turnover of people on the landing site affects the performance of beach management units, reducing their capacity to manage collective actions. Until 2010, beach management leaders were trained in adult literacy, bookkeeping, record keeping and environmental management through capacity-building programs funded by the European Union. The leaders were expected to pass on their skills and knowledge to community members, but when leaders and fishers relocated to other sites, institutional memory, skills and knowledge were lost and social cohesion was disrupted.

The perception of the fishers toward the Department of Fisheries Resources, beach management units and public authorities

was quite negative. During interviews, fishers reported that the Department of Fisheries Resources focused too strongly on enforcement actions such as burning illegal fishing nets. Local governments and the Department of Fisheries Resources tried to raise revenues through fishing licenses and fees, but the community members violently rejected any charges, claiming that they saw no reinvestment of revenues in the landing sites. Many community members also thought that the subcounty and district government and beach management units were not effective in lobbying for funding or planning local development and so were not able to respond to urgent needs for a school, clinic, water and sanitation.

From the governance side, the main challenges identified in Kachanga were related to two parallel challenges. On the one hand, local government and fisheries management institutions were described as having a low level of influence on the practices of the community. On the other hand, government agencies were described as weak in their ability to recognize and respond to community priorities. While participants recognized the larger need to improve governance and management of Lake Victoria fisheries, the community members in the dialogue workshop felt strongly that more immediate needs in the communities should be higher priorities for local action. Fishers, fishmongers and processors felt that the beach management unit and Department of Fisheries Resources had informed them about impacts of catching immature fish, fishing in breeding grounds and overfishing, but that they could not put this knowledge into practice due to limited alternative income opportunities.



Poor sanitation is a leading cause of childhood disease in Kachanga village



Public latrine and biogas facility, built by community initiative, Kachanga village

Photo Credit: Ryder Hase Peoples Television, Inc.

Action priorities in Kachanga

The concerns that women expressed in side conversations were subsequently validated in the full dialogue, shifting the focus of planning toward priorities that had gone unaddressed — in this case, community sanitation and health. During the mixed-group dialogues, community members and Department of Fisheries officers described conflicts between local council members and community members over lack of cleanliness in the latrines and areas surrounding the landing site, poor maintenance and overcrowding of the latrines, fines imposed on community members for open defecation, which they frequently refused to pay, and complaints from the fish factory to the local council and Department of Fisheries Resources about the lack of cleanliness on the landing site and its effect on water quality, human health and fish hygiene. None of the respondents had latrines in their households and almost all — 93 percent — got their drinking water from the lake. Poor sanitation caused illness, was a major environmental threat to water resources, and was a fundamental stumbling block in the enhancement of livelihoods at Kachanga.

Priority outcomes, action areas and activities were agreed upon by ranking issues that the communities needed to address in order to achieve the better future they all imagined.

Actions identified included the following:

- Monthly community sensitization meetings.
- Waste management, including provision of garbage collection gear.
- Posters to promote awareness of sanitation and hygiene.
- Capacity building for health workers.
- Training in environmental health and sanitation.
- Improved access to clean water.
- Construction of ecosanitary latrines.

In response to the priorities set by the community, the initiative provided seed funding to construct and maintain a public latrine and biogas facility. The action addressed environmental pollution through fecal contamination to land and water resources, which affected fisheries, human health and fisheries exports.



Building the communal kitchen in Kachanga village

Outcomes

The research team conducted outcome evaluation visits during 2012 and 2013 using a combination of household surveys and individual and focus group interviews that included both those directly involved in the initiative and others from the area who were not directly involved. These visits documented improved sanitation and health at the landing site, a perception of reduced conflict, and a perception of improved relations among fisheries stakeholders that indicated progress toward addressing other challenges of resource management and local governance. Significant outcomes include the following:

Reductions in sanitation-related disease.

Before the sanitation facility was built, laboratory tests showed high levels of contaminants such as salmonella in both fish and humans. Subsequent monitoring has shown that the prevalence of disease went down significantly as a result of improved sanitation following construction of the public latrine. In April 2012, 59 percent of the respondents reported diarrhea cases in their households in the month preceding the survey, compared to 18.3 percent in July 2013 after the latrine was built. During the evaluation visits, community members also expressed an expectation that improved sanitation at the site and reduced fish contamination would lead to better health — particularly for children — and reduced spending on health costs, with corresponding boosts in household health and nutrition.

Improved capacity for collective action and innovation.

A strong core team of community members, members of beach management units and local council officials was active throughout the planning and implementation. Some are now members of the newly established Kachanga Sanitation Facility user committee, which manages the budget, sets the fee for users and makes decisions about use. The user committee has gone on to construct a communal kitchen that uses the biogas from the facility as fuel to boil water and cook. The same collection of leaders is now pursuing support from government and outside agencies to address the lack of a clean water source for drinking and domestic use, the final step in a complete sanitation system. Likewise, one particular local change leader who had attended the dialogue workshop mobilized other community members to join him in building a corral for confining cattle and reducing the pollution to the village environment. The cattle owners paid a fee for keeping the cattle and the waste could be sold.

Increased legitimacy of community leaders.

After the success of the initiative to install the latrine, local leaders gained a new level of legitimacy and respect within the community. This credibility increase has led to further collective action by the local leaders to fence off the facility, preventing unauthorized access by community residents and preventing damage from livestock. The fence was constructed using funds contributed by the entire Kachanga community. The financial contributions were made possible by the new legitimacy of the local leaders as effective service providers.

Support from higher levels of government.

This new legitimacy and commitment to collective action has garnered interest from different government agencies and local political leaders. The Ministry for Water and Environment has consulted Kachanga community representatives about its plans to extend and complement the project activities in Kachanga by providing water and waste treatment services. Masaka District Council Head Stephen Kalungi lent his support and commented on the unique character and results of the community-led initiative.

Reductions in conflict. Regular, constructive communication has led to a reduction of institutional conflicts. Before the construction of the sanitation facility, the local council chairperson had described heated altercations between local

council members and community members when the local council tried to stop open defecation in the lake and the areas surrounding the landing site. There were also problems between households who used the existing latrines and those who would not. After the facility came into use, the local council members reported that such conflicts had decreased. Department of Fisheries Resources staff also felt that they were working better with fishers in Kachanga than before the dialogue process.

Community readiness to demand accountability. The community was alert to signs of possible corruption on the part of the contractors hired to build the sanitation facility. In response to concerns, the organizers decided to make public the accounts so that the community could see which money was available and how it had been spent. The accusations of corruption turned out to be unfounded, but the fact that the community felt able to express its concerns and that the organizers responded demonstrates an increase in communal capacity to require accountability from those in charge.



Community members in discussion with local fisheries officer, Kachanga village

Similarly, since the dialogue process brought higher-level leaders into the village, community members were able to meet and challenge the district council chairman about funding allocation decisions. The community used the laying of the foundation for the sanitation facility, which was attended by leaders, as an opportunity to bring up local development prospects with the district council. This demonstrates that the dialogue process helped give the community members a precedent and a framework for asking district council officials for additional commitments.

Scaling. Following meetings with the United Nations Human Settlements Program, UNICEF and the German Society for International Cooperation, the project team made plans to share lessons learned about community engagement in operations and maintenance of communal facilities. Makerere University has also extended and deepened its partnership with Kachanga community as part of its long-term research on ecohealth and diseases in emerging livestock systems. In 2014, Makerere University began development research activities in Kachanga to improve the acceptability among users of biogas and manure from biodigesters within the framework of the African Capacity Building Network on water and sanitation, together with partners from Ethiopia and Cameroon.

The other two sites are also building on the dialogue process. In Kasekulo, where stakeholders made plans to improve income through value-addition activities by reducing rates of post-harvest loss, stakeholders began networking with development partners, including the Icelandic Development Authority. In Kisenyi, where stakeholders decided to support fishers to earn income from activities away from the water, the beach management unit organized training in beekeeping and honey processing by the National Agricultural Advisory Services, and discussions are underway with the Uganda Community Tourism Association to provide support on ecotourism activities.



Fisher returning to the Kachanga landing site, Lake Victoria

The STARGO initiative enjoyed support from policy, community and private sector players. Given the short period of project implementation, it is too early to judge the lasting impacts on the behaviors and interactions of key stakeholders or the longer-term implications for governance. Yet initial outcomes are promising. The initiative faced considerable challenges in the broader institutional and governance context, a history of disputes and mistrust, and deficiencies in the most basic government services. The evaluation of outcomes shows changes in the perceptions of institutional relations and communication between the actors at the community level and between the Kachanga community and the district council. Key lessons include the following:

Addressing basic community needs can be a precondition for engaging poor resource users in natural resource management at larger scales.

In all three communities consulted, community representatives and management institutions chose actions they felt would directly reduce economic poverty and so indirectly reduce resource competition in their communities. Supporting the livelihood security and basic needs of the fishing communities proved essential to securing local participation in longer-term resource-management efforts.

Inclusive dialogue can catalyze collective action and increase local participation in decision-making processes.

The CORE process creates a space for less powerful stakeholders to have a voice. Emboldened by seeing their priorities take hold, formerly less powerful community members took on advocacy and project leadership roles, actively participating in planning for the community sanitation facility alongside local authorities. Community mobilization led not only to reduced incidence of sanitation-related disease, but also to increases in the legitimacy, confidence and connections of local leaders — both men and women — to address other shared challenges, including water pollution and fisheries management. Government officials at different levels, development agencies, and other communities have taken notice, looking for ways to replicate the process of inclusive dialogue that laid a foundation for collective action.

Channeling support directly to local organizations can help build community capacity to partner in co-management activities.

For the district council, the project provided a welcome partnership and badly needed resources for services delivery. The local council and beach management unit have gained credibility for engaging with the community concerns during the dialogue by raising funds, taking a leading role in the development process, and contributing logistical support. For example, the district council expedited the building permit approval process and provided trucks to transport the building materials. Rebuilding trust took time, but did develop as co-management institutions demonstrated readiness and capacity to respond to local priorities. It was particularly meaningful for local actors to see their input taken into account in revenue allocation decisions.

Multistakeholder dialogue can help build accountability of public authorities.

The CORE process can enable communities to gain capacity to collaborate with and demand accountability from authorities. In Kachanga, the district council has committed to maintain the sanitation facility and is sending the district water officer to carry out regular inspections. This public commitment provides community members a point of reference to hold the district council accountable in the future. The Ministry of Water and Environment has also included members of the Kachanga Sanitation Facility user committee in a new multistakeholder forum for planning delivery of water services to the landing sites of Bukakata Province. Membership in this forum means that Kachanga community members can be informed about and give input into a regular planning process for services delivery at the subcounty level.



Local council leader (Right), Kachanga village

Attention to women’s voices and decision-making roles can open new pathways to institutional change. Observing gender inequities and other power imbalances can lead to creative adaptations to include all voices in the dialogue process, such as using informal consultations prior to or on the sidelines of a multistakeholder workshop. Supporting individual change agents in government, civil society and the private sector who are prepared to advocate for women’s voices and concerns can help shift institutional priorities to address needs of women as well as men.

Strengthening governance requires identifying local champions of change and investing in their leadership. Multistakeholder dialogue can help identify effective local champions of change who may lack formal authority. The initiative to improve local sanitation in Kachanga was catalyzed by a new coalition that included the head of the village council, members of the beach management unit, and others who did not previously have formal roles but took on leadership of the new Kachanga Sanitation Facility user committee.

Those in formal leadership roles at the start lacked the ability to launch collective action and even had difficulty getting other villagers to attend meetings. This highlights the importance of distinct capacities — to sense and probe the interests of diverse stakeholders, to convene dialogue, and to gather others around common actions — that help local champions achieve an extended power of influence.

CONCLUSION

Lake Victoria fisheries are facing severe environmental stresses. Stocks are declining in a context of quickly increasing population and growing demand for the lake's resources. Rising competition between the users is putting conservation goals and rural livelihoods at risk. While Uganda's co-management policy framework is well-developed, key resources for implementation are lacking, enforcement is poor, and the relations between stakeholders are unequal. Poor rural resource users face significant challenges to effectively participate in fisheries decision-making.

This case study demonstrates the progress that can be made using a collaborative approach to catalyze community actions in difficult circumstances, even over a relatively short time period. Multistakeholder dialogue can bring to light the sources of conflict, pinpoint governance challenges, and identify opportunities for institutional collaboration to address community needs. At the same time, the process can help build trust, confidence in collective action and public accountability.

Yet strengthening aquatic resources governance to equitably manage resource competition and secure resilient livelihoods requires much more. Support is needed to build institutional capacities for effective policy implementation and service delivery, align the incentives of enforcement and extension agencies with the goals of sustainable resource management and community development, and strengthen the assets and voice of poor households to enable them to more effectively pursue their own development initiatives.



Fishers arriving at Kachanga landing site, Lake Victoria

- ¹ Vos, K., Isabirye, M., Deckers, S., and Poesen, J. (2011, November 21–24). *Characteristics of rainfall and surface runoff in the Lake Victoria catchment, Uganda*. Paper presented at the International Conference Soil Science Society of East Africa, Busitema University, Jinja, Uganda.
- ² NARO [National Agricultural Research Organization] and MAAIF [Ministry of Agriculture, Animal Industry and Fisheries]. (2000). Fish farming project. Regional data tables. Baseline survey. Uganda: National Agricultural Research Organization and Ministry of Agriculture, Animal Industry and Fisheries; Ogutu-Ohwayo, R. (2000). The biology, ecology and impact of Nile perch, *Lates niloticus* in Lakes Victoria, Kyoga and Nabugabo and the future of the fisheries. In National Agricultural Research Organization, Fisheries Research Institute Uganda (Ed.), *The biology and ecology of Lake Victoria fishes: Their development and management*. Jinja: National Agricultural Research Organization, Fisheries Research Institute.
- ³ Vos, K., Isabirye, M., Deckers, S., and Poesen, J. (2011, November 21–24). *Characteristics of rainfall and surface runoff in the Lake Victoria catchment, Uganda*. Paper presented at the International Conference Soil Science Society of East Africa, Busitema University, Jinja, Uganda; World Bank. (2013). World development indicators databank. Washington, D.C.: World Bank. Retrieved from <http://data.worldbank.org/indicator>
- ⁴ World Bank. (2006). Uganda – Lake Victoria Environmental Management Project: Implementation completion report. Washington, D.C.: World Bank. Retrieved from <http://documents.worldbank.org/curated/en/2006/06/6940203/uganda-lake-victoria-environmental-management-project>; Nyeko, J.I. (2006, August 21–24). *Overview of fisheries and aquaculture resources: Uganda*. Data presented at the Workshop on Fisheries and Aquaculture in Southern Africa: Development and Management, Windhoek, Namibia.
- ⁵ Allison, E.H. (2005). The fisheries sector, livelihoods and poverty reduction in eastern and southern Africa. In: F. Ellis and H. Ade Freeman (Eds.), *Rural livelihoods and poverty reduction policies*, pp. 256–273. London: Routledge.
- ⁶ World Bank. (2013). World development indicators databank. Washington, D.C.: The World Bank. Retrieved from <http://data.worldbank.org/indicator>
- ⁷ Benkenstein, A. (2011). Troubled waters: Sustaining Uganda’s Lake Victoria Nile perch fishery. South African Institute of International Affairs (SAIIA) Research Report 9. Governance of Africa’s Resources Programme. Retrieved from <http://www.saiia.org.za/research-reports/troubled-waters-sustaining-uganda-s-lake-victoria-nile-perch-fishery.html>
- ⁸ CountrySTAT. (2013). Uganda: Projected mid-year population by district, sex and year. Retrieved from <http://countrystat.org/home.aspx?c=UGA&ta=226SPO101&tr=26>
- ⁹ Department of Fisheries Resources (2012). Annual report. Uganda: Ministry of Agriculture, Animal Industry and Fisheries of Uganda.
- ¹⁰ Lake Victoria Fisheries Organization. (2013). State of fish stocks. Retrieved March 13, 2013, from http://www.lvfo.org/index.php?option=com_content&view=article&id=48&Itemid=54
- ¹¹ Abila, R.O. (2003). Fish trade and food security: Are they reconcilable in Lake Victoria? FAO Fisheries Report No. 708. Retrieved from <http://www.fao.org/docrep/006/y4961e/y4961e0d.htm>

- ¹² Johnson, J.L. (2009). Climate change and fishery sustainability in Lake Victoria. *African Journal of Tropical Hydrobiology and Fisheries* 12:31–36; Odada, E.O., Olago, D.O., Kulindwa, K., Ntiba, M., and Wandiga, S. (2004). Mitigation of environmental problems in Lake Victoria, East Africa: Causal chain and policy options analyses. *Ambio* 33:1–2, 13–23; SIDA [Swedish International Development Cooperation Agency]. (2004). Strategic conflict analysis: Lake Victoria region. SIDA Department for Africa.
- ¹³ Kjaer, A.M., Muhumuza, F., Mwebaze, T., and Katusiimeh, M. (2012). *The political economy of the fisheries sector in Uganda: Ruling elites, implementation costs and industry interests*. Copenhagen: Danish Institute for International Studies.
- ¹⁴ Department of Fisheries Resources. (2012). Annual report. Uganda: Ministry of Agriculture, Animal Industry and Fisheries of Uganda, p. 4.
- ¹⁵ Local councils at district and subcounty level (see Table 1).
- ¹⁶ Department of Fisheries Resources. (2012). Annual report. Uganda: Ministry of Agriculture, Animal Industry and Fisheries of Uganda.
- ¹⁷ Ostrom, E., and Schlager, E. (1992). Property-rights regimes and natural resources: A conceptual analysis. *Land Economics* 68(3):249–262.
- ¹⁸ Nunan, F. (2006). Empowerment and institutions: Managing fisheries in Uganda: Implementation of a fisheries management plan, Lake Victoria Fisheries Organization, Jinja, Uganda. *World Development* 34(7):1316–1332.
- ¹⁹ Government of Uganda. (1951). Fish act, chapter 197, reviewed in 1964 and 2000. Republic of Uganda, art. 6(1). Retrieved from <http://www.ulii.org/ug/legislation/consolidated-act/197>
- ²⁰ Government of Uganda. (1951). Fish act, chapter 197, reviewed in 1964 and 2000. Republic of Uganda, art. 11. Retrieved from <http://www.ulii.org/ug/legislation/consolidated-act/197>
- ²¹ Friis-Hansen, E., and Kisauzi, D. (2004). Uganda: Evolution of the extension-farmer relationship. In W.M. Rivera and G. Alex (Eds.), *Extension reform for rural development. Privatization of extension systems: Case studies of international initiatives*. Agriculture and Rural Development Discussion Paper 9(2). Washington, D.C.: World Bank; Mangheni, M.N. (1999, October 26–27). *The relevance and effectiveness of agricultural extension services to the needs of smallholder farmers in Uganda*. Paper presented at a World Bank/Economic Policy Research Center Conference on Assessing Outcomes in the Context of the Comprehensive Development Framework, Kampala, Uganda; Bashaasha, B., Mangheni, M., and Nkonya, E. (2011). Decentralization and rural service delivery in Uganda. IFPRI Discussion Paper 01063. Development Strategy and Government Decision. Washington, D.C.: International Food Policy Research Institute.
- ²² Village local councils are set up in selected villages only.
- ²³ Nunan, F. (2006). Empowerment and institutions: Managing fisheries in Uganda: Implementation of a fisheries management plan, Lake Victoria Fisheries Organization, Jinja, Uganda. *World Development* 34(7):1316–1332.
- ²⁴ Kabenge, H. (2012). Community workshop report. Unpublished project internal report.
- ²⁵ Uganda Local Government Finance Commission. (n.d.). Transfers to local government. Retrieved from <http://www.lgfc.go.ug/transfers.php#two>

²⁶ Ibid.

²⁷ Ibid.

²⁸ Fishing suspended in Mayuge. (2013). *Uganda Radio Network* Retrieved from <http://ugandaradionetwork.com/a/story.php?s=49519&PHPSESSID=a2b70f1370b2f18a1aa1d99ce709a34e>

²⁹ Councilors vote for removal of fisheries officers over extortion. (2013). *Uganda Radio Network*. Retrieved from <http://ugandaradionetwork.com/a/story.php?s=51549>

³⁰ Ratner, B.D., Mam, K., and Halpern, G. (in press). Collaborating for resilience: Conflict, collective action, and transformation on Cambodia's Tonle Sap Lake. *Ecology and Society*; Ratner, B.D., Burnley, C., Mugisha, S., Madzudzo, E., Oeur, I., Kosal, M., Rüttinger, L., and Adriázola, P. (2014). Dialogue to address the roots of resource competition: Lessons for policy and practice. Program Report. Collaborating for Resilience.

³¹ Ratner, B.D., and Smith, W.E. (2014). Collaborating for Resilience : A practitioner's guide. Guidance Note. Collaborating for Resilience.

BIBLIOGRAPHY

Abila, R.O. (2003). Fish trade and food security: Are they reconcilable in Lake Victoria? FAO Fisheries Report No. 708. Retrieved from <http://www.fao.org/docrep/006/y4961e/y4961e0d.htm>

Allison, E.H. (2005). The fisheries sector, livelihoods and poverty reduction in eastern and southern Africa. In: F. Ellis and H.A. Freeman (Eds.), *Rural livelihoods and poverty reduction policies*, pp. 256–273. London: Routledge.

Azfar, O., Kähkönen, S., and Meagher, P. (2001). Conditions for effective decentralized governance: A synthesis of research findings. Working Paper 256. Center for Institutional Reform and the Informal Sector. Maryland: University of Maryland.

Bashaasha, B., Mangheni, M., and Nkonya, E. (2011). Decentralization and rural service delivery in Uganda. IFPRI Discussion Paper 01063. Development Strategy and Government Decision. Washington, D.C.: International Food Policy Research Institute.

Benkenstein, A. (2011). Troubled waters: Sustaining Uganda's Lake Victoria Nile perch fishery. South African Institute of International Affairs (SAIIA) Research Report 9. Governance of Africa's Resources Programme. Retrieved from <http://www.saiia.org.za/research-reports/troubled-waters-sustaining-uganda-s-lake-victoria-nile-perch-fishery.html>

Constitution of the Republic of Uganda. (1995, amended 2005). Retrieved from http://www.parliament.go.ug/new/images/stories/constitution/Constitution_of_Uganda_1995.pdf

Councilors vote for removal of fisheries officers over extortion. (2013). *Uganda Radio Network*. Retrieved from <http://ugandaradionetwork.com/a/story.php?s=51549>

CountrySTAT. (2013). Uganda: Projected mid-year population by district, sex and year. Retrieved from <http://countrystat.org/home.aspx?c=UGA&ta=226SPO101&tr=26>

Department of Fisheries Resources. (2012). Annual report. Uganda: Ministry of Agriculture, Animal Industry and Fisheries of Uganda. Retrieved from <http://www.agriculture.go.ug/userfiles/DFR%20ANNUAL%20REPORT%202012.pdf>

Ellis, A., Manuel, C., and Blackden, C.M. (2006). Gender and economic growth in Uganda: Unleashing the power of women. World Bank Directions in Development Series.

Fishing suspended in Mayuge. (2013). *Uganda Radio Network* Retrieved from <http://ugandaradionetwork.com/a/story.php?s=49519&PHPSESSID=a2b70f1370b2f18a1aa1d99ce709a34e>

Friis-Hansen, E., and Kisauzi, D. (2004). Uganda: Evolution of the extension-farmer relationship. In W.M. Rivera and G. Alex (Eds.), *Extension reform for rural development. Privatization of extension systems: Case studies of international initiatives*. Agriculture and Rural Development Discussion Paper 9(2). Washington, D.C.: World Bank.

Government of Uganda. (1951). Fish act, chapter 197, reviewed in 1964 and 2000. Republic of Uganda. Retrieved from <http://www.ulii.org/ug/legislation/consolidated-act/197>

Government of Uganda. (1997). Local governments act of 1997, chapter 243, second schedule: Functions and services of the government and local governments.

Homer-Dixon, T.F. (1999). *Environment, scarcity and violence*. Princeton: Princeton University Press.

Johnson, J.L. (2009). Climate change and fishery sustainability in Lake Victoria. *African Journal of Tropical Hydrobiology and Fisheries* 12:31–36.

Kabenge, H. (2012). Community workshop report. Unpublished project internal report.

Kjaer, A.M., Muhumuza, F., Mwebaze, T., and Katusiimeh, M. (2012). *The political economy of the fisheries sector in Uganda: Ruling elites, implementation costs and industry interests*. Copenhagen: Danish Institute for International Studies.

Lake Victoria Fisheries Organization. (2013). State of fish stocks. Retrieved March 13, 2013, from http://www.lvfo.org/index.php?option=com_content&view=article&id=48&Itemid=54

Lebel, L., Anderies, J.M., Campbell, B., Folke, C., Hatfield-Dodds, S., Hughes, T.P., and Wilson, J. (2006). Governance and the capacity to manage resilience in regional social-ecological systems. *Ecology and Society* 11(1):19.

Mangheni, M.N. (1999, October 26–27). *The relevance and effectiveness of agricultural extension services to the needs of smallholder farmers in Uganda*. Paper presented at a World Bank/Economic Policy Research Center Conference on Assessing Outcomes in the Context of the Comprehensive Development Framework, Kampala, Uganda.

Minister Nankabirwa accused of recruiting parallel BMU officers. (2013). *Uganda Radio Network*. Retrieved from <http://ugandaradionetwork.com/a/story.php?s=50806>

NARO [National Agricultural Research Organization] and MAAIF [Ministry of Agriculture, Animal Industry and Fisheries]. (2000). Fish farming project. Regional data tables. Baseline survey. Uganda: National Agricultural Research Organization and Ministry of Agriculture, Animal Industry and Fisheries.

Nsubuga, L. (2013, June 4). Three months fishing ban imposed on Mukono District. *Uganda Picks*. Retrieved from <http://www.ugandapicks.com/2013/06/3-months-fishing-ban-imposed-on-mukono-district-87591.html>

Nunan, F. (2006). Empowerment and institutions: Managing fisheries in Uganda: Implementation of a fisheries management plan, Lake Victoria Fisheries Organization, Jinja, Uganda. *World Development* 34(7):1316–1332.

Nunan, F., and Scullion, J. (2004). Lakes and livelihoods: Integrated co-management in Uganda. Integrated Lake Management (ILM) Project Publication. London: Department for International Development. Retrieved from <http://p15166578.pureserver.info/ilm/docs/general/Lakes%20and%20Livelihoods.pdf>

Nyeko, J.I. (2006, August 21–24). *Overview of fisheries and aquaculture resources: Uganda*. Data presented at the Workshop on Fisheries and Aquaculture in Southern Africa: Development and Management, Windhoek, Namibia.

Odada, E.O., Olago, D.O., Kulindwa, K., Ntiba, M., and Wandiga, S. (2004). Mitigation of environmental problems in Lake Victoria, East Africa: Causal chain and policy options analyses. *Ambio* 33:1–2, 13–23.

Ogutu-Ohwayo, R. (2000). The biology, ecology and impact of Nile perch, *Lates niloticus* in Lakes Victoria, Kyoga and Nabugabo and the future of the fisheries. In National Agricultural Research Organization, Fisheries Research Institute Uganda (Ed.), *The biology and ecology of Lake Victoria fishes: Their development and management*. Jinja: National Agricultural Research Organization, Fisheries Research Institute.

Ogwang, V.O., Nyeko, J.I., and Mbilinyi, R. (2009). Implementing co-management of Lake Victoria's fisheries: Achievements and challenges. *African Journal of Tropical Hydrobiology and Fisheries* 12:52–58.

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge: Cambridge University Press.

Ostrom, E., and Schlager, E. (1992). Property-rights regimes and natural resources: A conceptual analysis. *Land Economics* 68(3):249–262.

Ratner, B.D., Burnley, C., Mugisha, S., Madzudzo, E., Oeur, I., Kosal, M., Rüttinger, L., and Adriázola, P. (2014). Dialogue to address the roots of resource competition: Lessons for policy and practice. Program Report. Collaborating for Resilience.

Ratner, B.D., Mam, K., and Halpern, G. (in press). Collaborating for resilience: Conflict, collective action, and transformation on Cambodia's Tonle Sap Lake. *Ecology and Society*.

Ratner, B., Meinzen-Dick, R., May, C., and Haglund, E. (2013). Resource conflict, collective action, and resilience: An analytical framework. *International Journal of the Commons* 7(1):183–208.

Ratner, B.D., and Smith, W.E. (2014). Collaborating for Resilience : A practitioner's guide. Manual. Collaborating for Resilience.

Saxena, K., Paul, S., and Goel, P.R. (2010). *Decentralisation in Uganda*. New Delhi: National Council of Applied Economic Research. Retrieved from http://www.ruralgov-ncaer.org/images/product/doc/13_400450990_DecentralizationinUganda.pdf

SIDA [Swedish International Development Cooperation Agency]. (2004). Strategic conflict analysis: Lake Victoria region. SIDA Department for Africa.

Smoke, P. and Winters, M.S. (2011). Donor program harmonization, aid effectiveness and decentralized governance. Local Governance and Decentralisation Paper.

Steffensen, J. (2010). Local government organization and finance: Uganda. In A. Shah (Ed.), *Local governance in developing countries*, pp. 93–134. World Bank Public Sector Governance and Accountability Series.

Uganda Local Government Finance Commission. (n.d.) Transfers to local government. Retrieved from <http://www.lgfc.go.ug/transfers.php#two>

Vos, K., Isabirye, M., Deckers, S., and Poesen, J. (2011, November 21–24). *Characteristics of rainfall and surface runoff in the Lake Victoria catchment, Uganda*. Paper presented at the International Conference Soil Science Society of East Africa, Busitema University, Jinja, Uganda.

World Bank. (2000). Natural resource management. Washington, D.C.: World Bank. Retrieved from <http://info.worldbank.org/etools/docs/library/110135/nrm.pdf>

World Bank. (2006). Uganda – Lake Victoria Environmental Management Project: Implementation completion report. Washington, D.C.: World Bank. Retrieved from <http://documents.worldbank.org/curated/en/2006/06/6940203/uganda-lake-victoria-environmental-management-project>

World Bank. (2013). World development indicators databank. Washington, D.C.: World Bank. Retrieved from <http://data.worldbank.org/indicator>

WWF [World Wildlife Fund]. (2013). What is an ecoregion? Retrieved from http://wwf.panda.org/about_our_earth/ecoregions/about/what_is_an_ecoregion/

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