



African Great Lakes Stakeholder Network Workshop:

Strengthening Capacity in Research, Policy, and
Management through Development of a Network of
African Great Lakes Basin Stakeholders



November 5-7, 2019

Entebbe, Uganda

Workshop Hosts



Lake Victoria
Fisheries Organization



National Fisheries
Resources Research
Institute

Workshop Sponsors



African Centre of Excellence in Aquaculture and Fisheries
Lilongwe University of Agriculture and Natural Resources



Great Lakes Fishery Commission



IHE-Delft: United Nations -
Institute for Water Education



Kenyan Marine and Fisheries
Research Institute

LARGE LAKES OBSERVATORY
UNIVERSITY OF MINNESOTA DULUTH
Driven to Discover

Large Lakes Observatory
- University of Minnesota



Royal Belgian Institute of
Natural Sciences



The Nature Conservancy



Tanzania Fisheries Research
Institute



Swiss Federal Institute of
Technology

The African Center for Aquatic Research and Education Workshop

Strengthening Capacity in Research, Policy and Management Through the Development of a Network of African Great Lakes Basin Stakeholders

Overview

The African Center for Aquatic Research and Education (ACARE), formed in 2017, strengthens collaboration with global freshwater experts to improve the health of the African Great Lakes (AGL).

ACARE envisions a world where millions of Africans can depend on healthy African Great Lakes for food, clean water, and reliable employment, supporting a climate of justice, equity, democracy, and peace. To do this, ACARE and its partners are creating highly collaborative systems that strengthen science to positively affect policy and management on these critical freshwater bodies.

Building on regional efforts, including the 2017 African Great Lakes Conference, led by The Nature Conservancy and the MacArthur Foundation, ACARE developed a project to create a highly collaborative network to establish a system of collaboration and information exchange on the African Great Lakes.

To build the network, ACARE held the *African Great Lakes Stakeholder Network Workshop* in Entebbe, Uganda from November 5-7, 2019. ACARE and its Ugandan hosts, the Lake Victoria Fisheries Organization and the National Fisheries Resources Research Institute, hosted freshwater experts from 18 countries, including members from each of the 10 riparian African Great Lakes countries.

Success!

- The workshop resulted in the establishment of 6 multi-jurisdictional collaborative bodies to address challenges on each of the African Great Lakes.
- Groups designed their own purpose, structure and processes, and will meet at least annually.
- Workshop attendees signed a “Statement of Support of the African Great Lakes Freshwater Stakeholder Collaborative Process”

Established Groups: Lake Edward/Albert Advisory Group; Lake Kivu Advisory Group; Lake Malawi/Niassa/Nyasa Basin Fisheries and Aquaculture Network; Lake Tanganyika-Scientific Advisory Group; Lake Turkana Advisory Group; and Lake Victoria Advisory Group

What’s Next? This network will result in:

- A bottom-up approach led by AGL freshwater colleagues, with the network and communications facilitated by ACARE.
- Research priorities and needs established by local African Great Lakes experts.
- Each lake with a long-term, comparable, and peer reviewed data that can be used to positively influence policy and management decisions.
- Advisory groups establish and harmonize research priorities on and between lakes, direct financial and research resources where most needed, and exchange information and data.

Structure

The workshop spanned three days, with a mix of plenary sessions (days 1,2, and 3) and breakout discussions (day 2), detailed in Fig. 1 below.

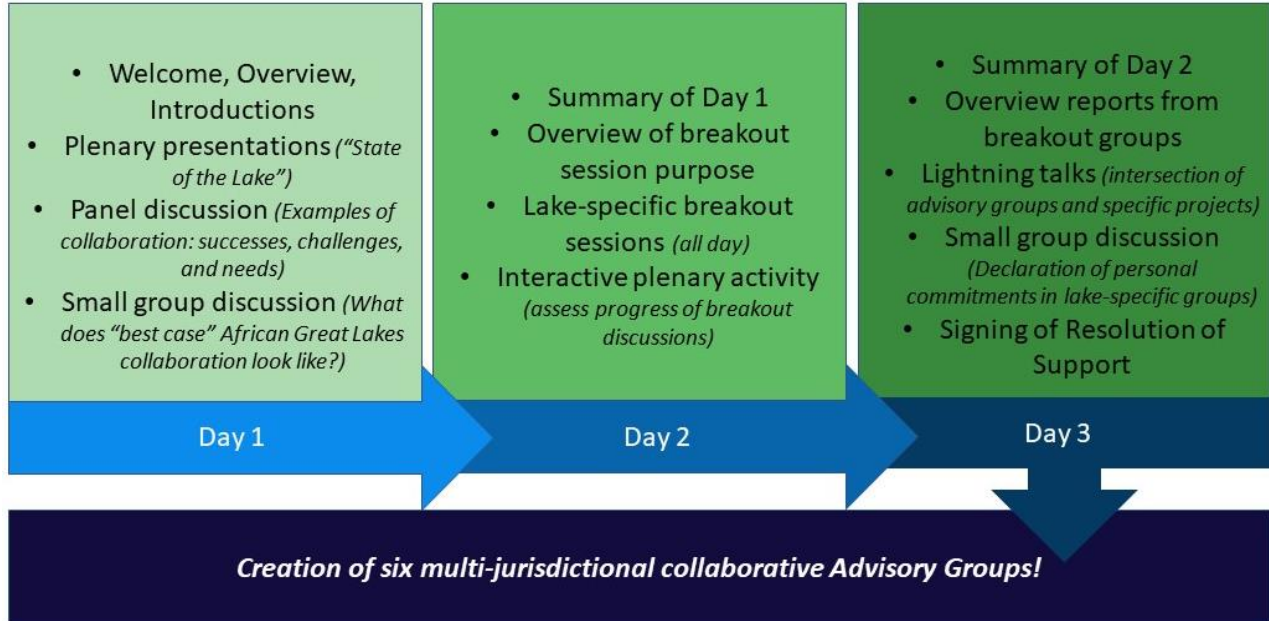


Figure 1: Workshop structure and daily activities.

What We Heard

Feedback from this workshop was generated through a series of interactive activities during the event and a post-workshop evaluation survey.

What Was

Who was there? Workshop attendees included 91 experts on large freshwater lakes from 18 countries, mostly from the 10 African Great Lakes riparian countries who are: researchers, managers, decision makers, and academics. See Appendix 1 for details.

Their attitudes:

- Some were unsure about where this workshop would lead and how it would benefit their work and the region.
- Some were sure hopeful that collaboration was the right way forward.

They arrived:

- Ready to meet colleagues working on their lake of expertise, on other African Great Lakes and on the North American Great Lakes.
- Eager to share their wealth of knowledge and aspirations for the future of the lakes and region.

What changed? When asked what changed in their thinking as a result of the workshop, 85% of respondents said they're feeling more optimistic about:



- Collaborating on projects
- Sharing research data
- African Great Lakes future
- Their own work on other lakes

Here's what participants said:

“

- I got more hopeful for the future of the lake, seeing the enthusiasm of the people working on it.
- I now feel like part of a large network working towards the same goals.
- I am thinking more optimistically about the future of African Great Lakes research.
- Coordination and collaboration are the way to go if the challenges we are facing currently are to be combatted well.
- It is possible to coordinate and work well on transboundary issues.
- I see the need for collaborative and interdisciplinary research as a long-term strategy.
- By joining the scientific networks of international scope, it is possible to conduct research that leads to collaborative development and exchange of experiences.

”

What Is

What Participants Think...

It worked! Respondent feedback indicates that the workshop format and outcomes worked well for participants. Of respondents, 89.4%:

- agree or strongly agree that workshop goals were met.
- feel this meeting helped them advance their long-term work goals.
- feel the workshop met their expectations.

We are stronger together. Collaboration is appreciated and seen as a short and longer-term solution for: research and data collection issues, and environmental, economic and social issues. Attendees commented over and over about what they learned and will continue to learn from discussions and each other's work. Participants feel that a collaborative approach, across lakes, basins, countries and even continents can be successful - now and in the future – and participants signed a letter of resolution supporting this process (Appendix 2).

Momentum is key. It's also a concern. When attendees shared concerns, many related to the difficulty of keeping this collaborative network afloat. ACARE has stepped into the role of helping individuals and lake groups stay updated, connected, and moving ahead through:

- a monthly e-newsletter that aggregates and shares updates from the advisory groups.
- opportunities ACARE develops for individuals and groups to convene and share projects and ideas, via calls and in-person events.



What Will Be

We share a vision that unites us. Participants were asked to work in a group to devise aspirational newspaper headlines to show how a successful African Great Lakes network will impact the future. The groups were made up of people from 18 different countries, a wide variety of lakes, and most of whom did not know each other. And yet, the visions from group to group were highly aligned.



Figure 2: Headlines generated by workshop participants to visualize desired outcomes from the increased collaboration and the Advisory Group process.

The Advisory Groups

Six Advisory Groups were formed during the breakout sessions. Details of results from breakout group discussions can be found in Appendix 3.



Lake Edward/Albert Advisory Group - Build on the existing collaboration across boundaries, include players working on the gaps identified, investigate issues that impact the health of the lakes and the well-being on surrounding communities and suggest solutions.



Lake Kivu Advisory Group - to enhance communication and collaboration of entities across borders and sectors that work to research and solve issues that impact the health of the lake and surrounding communities.



Lake Malawi/Nyasa/Niassa Basin Fisheries and Aquaculture Network - To enhance communication and collaboration among its members in order to conduct research and address issues that impact the health of the lake and surrounding communities, in particular with respect to fisheries and aquaculture development.

Lake Tanganyika Scientific Advisory Group - To halt and reverse (ensure sustainability of) the decline of Lake Tanganyika renewable natural resources and ecosystem services through collaboration in research, data synthesis and dissemination, education and outreach in order to support achieving the objectives of the Lake Tanganyika convention.

Pour stopper et inverser (assurer la durabilité) du déclin des ressources naturelles renouvelables du lac Tanganyika et des services écosystémiques grâce à la collaboration dans la recherche, la synthèse et la diffusion des données, l'éducation et la sensibilisation afin de soutenir la réalisation de la objectifs de la convention du lac Tanganyika.



Lake Turkana Advisory Group - Carry out both long- and short-term research on fish stock assessment, limnology, climate change impacts, food security and economic studies in Lake Turkana and its catchment/Basin. Technology such as remote sensing will be employed in studies especially in the conflict prone areas.

Lake Victoria Advisory Group - To provide research-based decision support to policy makers and resource managers for the sustainable management of the Lake Victoria Basin by: (1) Initiating, improving and encourage collaboration in research and timely dissemination of information to resource managers; (2) Driving investment opportunities to further research and collaborations; (3) Identifying sector weaknesses for capacity building; (4) Advocacy for resource sustainability; (5) Problem identification and prioritization; (6) Developing tools for decision making; and (7) Developing data sharing tools for existing data.



Major Outcomes

- Formation of six lake-specific advisory groups with leads and preliminary membership
- Signed “Statement of Support of the African Great Lakes Freshwater Stakeholder Collaborative Process” by African and global researchers
- New and strengthened relationships among researchers around each African Great Lake

Future Considerations for Improvement

Host a bigger table: Engage more people, from across sectors - including government and community groups, with an eye toward gender balance and those early in their careers.

Work on logistics: Have better French translation, ensure careful facilitator training, and be clear on what costs are covered, or not.

Upcoming Activities

Advisory groups developed specific next steps (detailed in Appendix 3). Upcoming activities planned for the groups include:

- **International Association for Great Lakes Research (IAGLR) meeting, June 2020.** Representatives from each advisory group will attend the 2020 IAGLR meeting, held in Winnipeg, Canada, to present an overview of their lake and to strategically discuss the status of their advisory group.
- **Lake Turkana Advisory Group meeting, April 2020.** The Lake Turkana Advisory Group is developing a proposal for funding for their first official Advisory Group meeting, to be held in Kalokol, Kenya, in April 2020.
- **Lake Malawi/Nyasa/Niassa Basin Fisheries and Aquaculture Network, early 2020.** The Lake Malawi/Nyasa/Niassa Basin Fisheries and Aquaculture Network is developing a proposal for funding for their first official network meeting, to be held in early 2020.
- **2020 African Great Lakes Advisory Group Meeting, November 2020 (tentative).** ACARE is actively building on the 2019 workshop to hold an all-lakes workshop in 2020, bringing all 6 advisory groups together once again to meet in both lake-specific and region-wide contexts.

APPENDICES:

1. Participants
2. Signed Resolution of Support
3. Breakout group results



Appendix 1: Workshop participants

| Advisory Group | First Name | Last Name | Affiliation |
|---------------------|--------------|---------------|--|
| Albert/Edward | Joseph | Matunguru | University of Burundi, Doctoral School/LEAF II Project (DRC) |
| Albert/Edward | Mulongaibalu | Mbalassa | Official University of Bukavu |
| Albert/Edward | Herbert | Nakiyende | National Fisheries Resources Research Institute |
| Albert/Edward | Joyce | Nyeko | Department of Fisheries Resources, Uganda |
| Albert/Edward | William | Okello | National Fisheries Resources Research Institute |
| Albert/Edward | Maarten | van Steenberg | Royal Belgian Institute of Natural Sciences |
| Albert/Edward | Oscar | Wembo | Ruwenzori State University (DRC) & Mbarara University of Science and Technology |
| Kivu | Charles | Balagizi | Goma Volcano Observatory |
| Kivu | Hyangya | Lwikicha Beni | Unité d'Enseignement et de Recherche en Hydrobiologie Appliquée, Dpt. de Biologie/ISP-Bukavu |
| Kivu | Fabrice A. | Muvundja | Université Catholique de Bukavu |
| Kivu | Deogratias | Nahayo | INES-RUHENGERI |
| Kivu | Natacha | Pasche | Swiss Federal Institute of Technology Lausanne |
| Kivu | Edouard | Rugema | Shema Power Lake Kivu Ltd |
| Kivu | Kisekelwa | Tchalondawa | ISP of Bukavu |
| Malawi/Niassa/Nyasa | Geoffrey | Chaluva | University of Malawi - Polytechnic |
| Malawi/Niassa/Nyasa | Jose | Halafo | National Institute of Fisheries Research |
| Malawi/Niassa/Nyasa | Carlos | Jonasse | National Institute of Fisheries Research |

| | | | |
|-------------------------|----------|-----------------|--|
| Malawi/Niassa/ Nyasa | Geoffrey | Kanyerere | Deputy Director - Fisheries Research |
| Malawi/Niassa/ Nyasa | Jonathan | Kihedu | Tanzanian Fisheries Research Insitute |
| Malawi/Niassa/ Nyasa | Peter | Limbu | The Nature Conservancy |
| Malawi/Niassa/ Nyasa | Ben | Ngatunga | Freelance Ichthyologist |
| Malawi/Niassa/ Nyasa | Maxon | Ngochera | Malawi - Fisheries Department |
| Malawi/Niassa/ Nyasa | Antonio | Pegado | National Institute of Fisheries Research |
| Tanganyika | Els | Dekeyser | KE Leuven |
| Tanganyika | Lloyd | Haambiya | Ministry of Fisheries and Livestock, Zambia |
| Tanganyika | Cyprian | Katongo | University of Zambia |
| Tanganyika | Beatrice | Marwa | Lake Tanganyika Authority |
| Tanganyika | Pascal | Masilya | CRH-UVIRA (DRC) |
| Tanganyika | Huruma | Mgana | Tanzania Fisheries Research Institute - Kigoma |
| Tanganyika | Ritha | Mlingi | Kigoma Regional Secretariat |
| Tanganyika | Nshombo | Muderhwa | Centre de Recherche en Hydrobiologie CRH Uvira |
| Tanganyika | Pascal | Mwapu Isumbisho | URGEHA-ISP/Gombe, DR Congo |
| Tanganyika | David | Nahimana | University of Burundi |
| Tanganyika | Gaspard | Ntakimazi | University of Burundi |
| Tanganyika | Harris | Phiri | Department of Fisheries, Zambia |
| Turkana | Abebe | Getahun | Addis Ababa University |
| Turkana | Jeppe | Kolding | University of Bergen |

| | | | |
|----------|------------|---------------|---|
| Turkana | James | Last | Kenya Marine and Fisheries Research Institute |
| Turkana | John | Malala | Kenya Marine and Fisheries Research Institute - Lake Turkana Station |
| Turkana | Kevin | Obiero | Kenya Marine and Fisheries Research Institute/African Center for Aquatic Research and Education |
| Turkana | Mulugeta | Wakjira | Jimma University, Ethiopia |
| Victoria | James | Barasa | University of Eldoret |
| Victoria | Robert | Kayanda | Lake Victoria Fisheries Organization/African Center for Aquatic Research and Education |
| Victoria | Lily | Kisaka | Lake Victoria Basin Commission |
| Victoria | Mary | Kishe | Tanzania Fisheries Research Institute |
| Victoria | Julius | Manyala | University of Eldoret |
| Victoria | Modesta | Medard | World Wildlife Fund |
| Victoria | Shigalla | Mohongo | Lake Victoria Fisheries Organization |
| Victoria | Hillary | Mrosso | Tanzania Fisheries Research Institute |
| Victoria | Chrisphine | Nyamweya | Kenya Marine and Fisheries Research Institute |
| Victoria | Richard | Ogotu-Ohwayo | National Fisheries Resources Research Institute |
| Victoria | Alfred | Otieno | University of Eldoret |
| Victoria | Edward | Rukuunya | Ministry of Agriculture, Animal Industry and Fisheries |
| Victoria | Anthony | Taabu Munyaho | National Fisheries Resources Research Institute |
| General | Christian | Albrecht | Justus Liebig University Giessen |
| General | Gertrude | Atukunda | National Fisheries Resources Research Institute |



| | | | |
|---------|-----------|-----------------|--|
| General | Robert | Baluku | Uganda Wildlife Training Institute |
| General | Dorothy | Birungi | Makerere |
| General | Alan | Brooks | Pact Inc. |
| General | Erik | Brown | Large Lakes Observatory - University of Minnesota Duluth |
| General | Tallent | Dadi | Helmholtz Centre for Environmental Research - UFZ |
| General | Patrick | Doran | The Nature Conservancy |
| General | Robert | Egessa | National Fisheries Resources Research Institute |
| General | Andrew | Gemmell | United Nations |
| General | Stephanie | Guildford | Journal of Great Lakes Research |
| General | Bob | Hecky | Journal of Great Lakes Research/African Center for Aquatic Research and Education/Great Lakes Fishery Commission |
| General | Senne | Heeren | Katholieke Universiteit Leuven |
| General | Scott | Higgins | Interational Institute for Sustainable Development |
| General | Ken | Irvine | IHE-Delft |
| General | Jess | Ives | African Center for Aquatic Research and Education |
| General | Ted | Lawrence | African Center for Aquatic Research and Education |
| General | Stella | Mababazi | Dept. of Fisheries |
| General | Matt | McCandless | Interational Institute for Sustainable Development |
| General | Serges | Migabo Ndongwa | CRH-Uvira |
| General | Evans | Miriti | University of Nairobi |
| General | Aline | Munundu Mangaza | CRH-Uvira |

| | | | |
|---------|-----------|--------------------|---|
| General | Déo | Mushagalusa Ciruza | CRH-Uvira |
| General | Fidel | Muterezi Bukinga | CRH-Uvira |
| General | Noella | Nabintu Bugabanda | CRH-Uvira |
| General | Angela | Nankabirwa | National Fisheries Resources Research Institute |
| General | Margaret | Nanyanzi | Dept. of Fisheries |
| General | Mark | Olokotum | National Fisheries Resources Research Institute |
| General | Hisham | Osman | World Bank |
| General | Zacharia | Shitote | University of Eldoret |
| General | Stephanie | Smith | African Center for Aquatic Research and Education |
| General | Yeneneh | Teka | US Embassy - Ethiopia |
| General | Dave | Ullrich | Great Lakes Fishery Commission |
| General | Erik | Verheyen | RBINS |
| General | Anthony | Vodacek | Rochester Institute of Technology |
| General | John | Walakira | National Fisheries Resources Research Institute |



Appendix 2

STATEMENT OF SUPPORT OF THE AFRICAN GREAT LAKES FRESHWATER STAKEHOLDER COLLABORATIVE PROCESS

Members of this African Great Lakes Stakeholder Workshop, held in Entebbe, Uganda, November 5-7, 2019, recognize

1. These African Great Lakes (AGL) known as Lake Albert, Lake Edward, Lake Kivu, Lake Malawi/Nyasa/Niassa, Lake Tanganyika, Lake Turkana, and Lake Victoria are critical freshwater resources that millions of people depend on to realize their own vision of livelihoods, justice, equity, democracy, and peace;
2. These AGL are adversely affected by the well-recognized environmental issues which negatively affect the biological, ecological, economic, and socio-political aspects of these vastly important resources;
3. That some past efforts to address these environmentally degrading issues, and the resources themselves, are often done in a manner not adequate to positively change policy and management of these resources; and, thus,
4. Enhanced processes of collaboration between freshwater experts from the riparian countries (Burundi, DR Congo, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Uganda, and Zambia) are required to strengthen scientific and other informational approaches so that positive policy and management of these large freshwater resources can be enacted.

Through a process facilitated by the organization African Center for Aquatic Research and Education, we the members agree to support ACARE in its efforts to facilitate the collaborative processes of freshwater experts on the AGL and globally.

Signed by individual workshop participants

Appendix 3: Lake Advisory Group Breakout Discussion Outcomes

Breakout Discussion Structure

A pre-workshop survey asked participants for input on important issues on their lake, existing challenges, and potential opportunities. The resulting information was provided to breakout group leaders to inform their state of the lake presentation and form the baseline for breakout discussions.

Each breakout group was given some structure around the goals and objectives of the breakout discussion but was given freedom to address those goals and objectives how they saw fit. Support was provided for the facilitators and group as needed, but the final outcomes were products of the breakout group participants.

After assessing whether an advisory group of some sort was needed on the lake(s) in question, each group was tasked with discussing and developing the following points:

- Advisory group purpose
- Missing players
- Advisory group structure, roles, and leadership
- Resources needed for success
- Next steps and annual plan
- Research priorities (if time allowed)

During the breakout discussions, groups focused on different aspects of this list of outcomes. Details for each point for each lake (where discussed) are given below.

Advisory Group Purpose

Each breakout group was tasked with discussing and deciding on their ‘purpose’.

Lake Edward/Albert Advisory Group - Build on the existing collaboration across boundaries, include players working on the gaps identified, investigate issues that impact the health of the lakes and the well-being on surrounding communities and suggest solutions.

Lake Kivu - to enhance communication and collaboration of entities across borders and sectors that work to research and solve issues that impact the health of the lake and surrounding communities.¹

¹ Lake Kivu’s specific priorities include:

- Standardization of research protocols** on the lake (sample the same on both countries) in order to make the results comparable for the concerning lake.
- To **identify lacking information and (knowledge) gaps** in the scientific research on LK
- Build technical capacity** and acquire equipment
- Training** of the people / human resources
- Act as a frame to **promote research and education** (project proposals, fundraising, etc)
- Sharing data** on a common platform and dissemination
- Make **recommendations for policy** making
- Ensure a **new generation is trained** properly and **promote the inclusiveness (gender balance)**.



Lake Malawi/Nyasa/Niassa Basin Fisheries and Aquaculture Network - To enhance communication and collaboration among its members in order to conduct research and address issues that impact the health of the lake and surrounding communities, in particular with respect to fisheries and aquaculture development.²

Lake Tanganyika Scientific Advisory Group - To halt and reverse (ensure sustainability of) the decline of Lake Tanganyika renewable natural resources and ecosystem services through collaboration in research, data synthesis and dissemination, education and outreach in order to support achieving the objectives of the Lake Tanganyika convention.

Pour stopper et inverser (assurer la durabilité) du déclin des ressources naturelles renouvelables du lac Tanganyika et des services écosystémiques grâce à la collaboration dans la recherche, la synthèse et la diffusion des données, l'éducation et la sensibilisation afin de soutenir la réalisation de la objectifs de la convention du lac Tanganyika.

Lake Turkana Advisory Group - Carry out both long and short term research on fish stock assessment, limnology, climate change impacts, food security and economic studies in Lake Turkana and its catchment/Basin. Technology such as remote sensing will be employed in studies especially in the conflict prone areas.

Lake Victoria - To provide research-based decision support to policy makers and resource managers for the sustainable management of the Lake Victoria Basin by: (1) Initiating, improving and encourage collaboration in research and timely dissemination of information to resource managers; (2) Driving investment opportunities to further research and collaborations; (3) Identifying sector weaknesses for capacity building; (4) Advocacy for resource sustainability; (5) Problem identification and prioritization; (6) Developing tools for decision making; and (7) Developing data sharing tools for existing data.

Missing Players

Lake Albert/Edward

- Water researchers - to conduct water quality studies
- Agricultural researchers - due to siltation from farm lands affecting the lakes
- Oil and Gas representatives
- Uganda Wildlife Authority/IUCN
- Universities - they are the center for research through their students
- Fishers

-
- I. **Enhancing research mobility and to share experience** between other lakes (and advisory groups) and within LK.
 - J. **Facilitate knowledge** and transfer new technology to the riparian **communities**/Research oriented towards the needs of the community
 - K. **Evaluate** and use the traditional knowledge

²Specifically, the Lake Malawi/Nyasa/Niassa Basin Fisheries and Aquaculture Network will undertake the following tasks:

- A. Determine the current the status of the lake through baseline surveys, which may entail desk reviews and field surveys;
- B. Share knowledge and experiences about best management practices for fisheries and aquaculture development in the basin;
- C. Positively influence the development of fisheries and aquaculture in the basin using science, stakeholder consultation, civic education, community engagement and other strategies; and
- D. Propose measures for building resilience of the local communities to adverse impacts of climate change.
- E. Prioritize research focus and needs on Lake Malawi/Nyasa/Niassa Basin fisheries and aquaculture development; and
- F. Establish collaborative, cross-basin projects between lakes and across sectors, e.g., Lake Tanganyika Advisory Group, Lake Victoria Advisory Group.

- Civil society
- Managers
- Decision/policy makers
- individual key experts

Lake Kivu

- High priority:
 - ISP Bukavu
 - OVG
 - Methane extraction plants
 - University of Rwanda
 - UOB
 - LKMP
- Medium priority:
 - Cooperative de Pêche (every district! Rwanda)
 - Coopérative des pêcheurs (to be created for each province in DRC)
 - REMA
 - Divisions provençale de environnement (2) (DRC)
 - Divisions provençale de pêche, agriculture, élevage (DRC)
 - Rwanda Agriculture Board
 - Divisions provençale de energie & ... hydrotiques (DRC)
 - Rwanda water and forest authority (RWFA)
 - RMB (Rwandan mining, petroleum and gas board)
 - National consul for science and technology (NCST) - inclusion for financial resources
- Low priority:
 - Rwanda Water and Sanitation Cooperation
 - Forces navales
 - Société civile et environnementale
 - FEC (federation des entreprises du congo)
 - Mekeo Rwanda
 - Rwanda Marine
 - Divisions provençale de transport (DRC)
 - Association des transporteurs au LK
 - Commission environnementale assemblée provençale de nord et sud-Kivu

Lake Malawi/Niassa/Nyasa

- Tanzania:
 - Researcher/TAFIRI Director - to advise on research matters
 - Lake Nyasa Basin representative - Concerned with catchment management and therefore management of water health
 - University representative
 - Regional secretariate representative
 - Co-opted Lake Nyasa expert



- Malawi:
 - Representative from national water resources authority
 - Fisheries department
 - Land resources
 - Environmental affairs
 - Academia
 - Co-opted: council for non-governmental organization (CONGOMA) and local communities
- Mozambique:
 - Ministry of sea inland water and fisheries
 - Fisheries research institute
 - National directorate of Environment of the Ministry of Land and Rural Development
 - Water resources administration
 - Local government representatives
 - Co-opted local communities, mining department representative, tourism, National Agriculture Investment Plan (NAIP)

Lake Tanganyika:

- Local NGOs
- Private sector
- University research centers
- Technical committees (ALT; comités techniques)
- Local communities (Leaders d'organisations de pêcheurs locaux)
- Gens de Kalemie et de Moba (en RDCongo, compte tenu de l'immensité de la cote à couvrir)

Lake Turkana:

- Ethiopia:
 - Ministry of Water Resources
 - Ministry of Agriculture
 - Universities close to Lake Turkana
 - Ministry of Environment
- Kenya:
 - Ministry of Environment and Mineral Resources
 - Ministry of Agriculture, Livestock and Fisheries
 - Research Institutes, e.g., KMFRI and National Museums of Kenya
 - University (e.g., Moi and Turkana University college)
 - Local NGOs (Friends of lake Turkana, Omo-Turkana Research Institute, Turkana Basin Institute)
 - Ministry of Fisheries (3 county representatives)
 - International NGOs (e.g., Turkana Basin Institute)
 - Tourism
 - Local stakeholder and community organizations - Beach Management Units

Note: the Lake Turkana group agreed to continue with the current members plus the inclusion of Dr. Dorothy Wanja Nyngi from the National Museums of Kenya, noting that the larger the group of representatives, the more ineffective the teams can be.

Lake Victoria:

- Makerere University (Head of fisheries training)
- Indigenous knowledge holders

Advisory Group Structure, Roles, and Leadership

Lake Albert/Edward Advisory Group

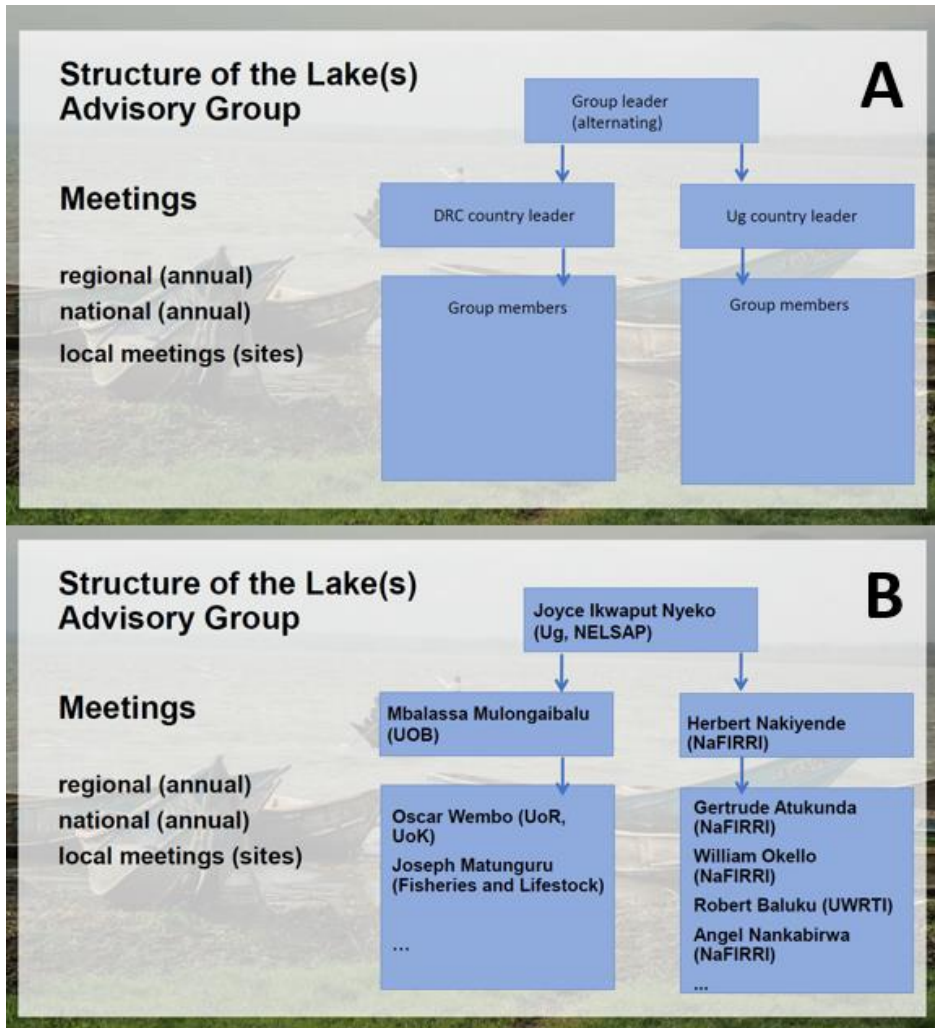


Figure 1: General structure of the Lake Albert/Edward Advisory Group (A), and current members in the described roles (B). The Lake Albert/Edward Advisory Group will cycle through regional, national, and local meetings, bringing in external experts to those meetings to supplement Advisory Group members as necessary (e.g., agriculture researchers, universities, petroleum sector, civil society, managers, policy makers)



Lake Kivu Advisory Group

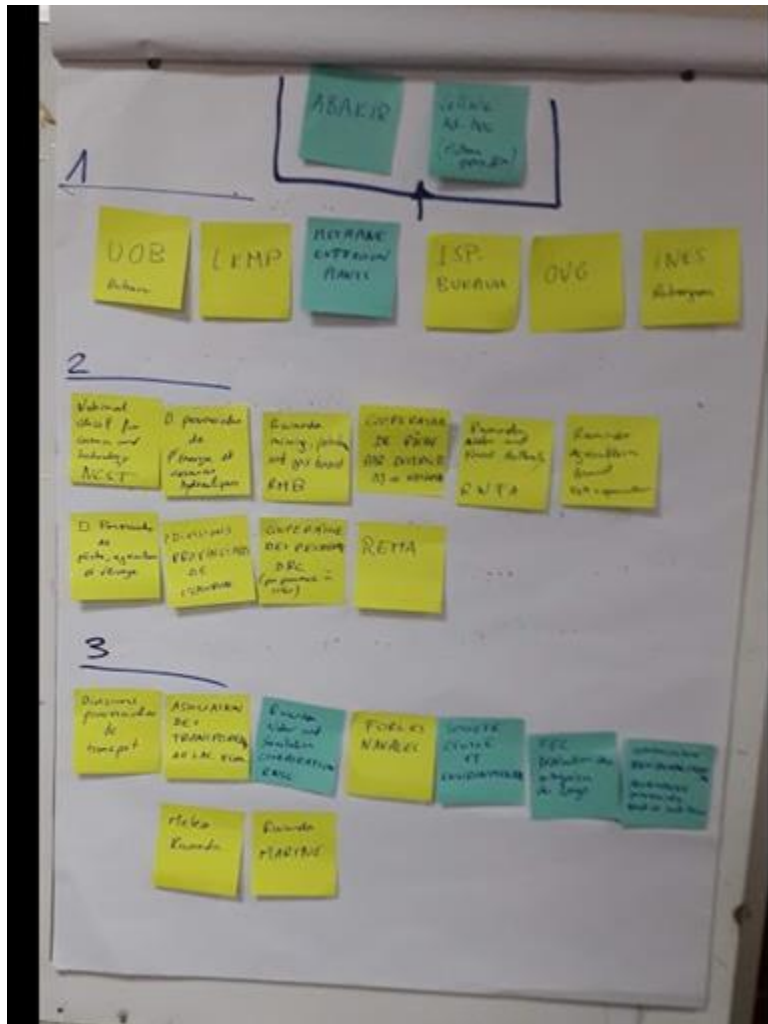


Figure 2: Lake Kivu Advisory Group tiered structure.

Proposed Lake Kivu Advisory Group roles:

- Coordinator of the group
 - Deputy coordinator for the scientific questions
 - Deputy coordinator for the administration and finances
 - Office coordinator of the external relations and public relations (communication)
 - Secretary rapporteur / reporter
 - Deputy secretary / reporter

Lake Malawi/Nyasa/Niassa Basin Fisheries and Aquaculture Network

The Lake Malawi/Nyasa/Niassa Network will comprise three Lake Basin Committees, one for each country. Composition of Lake Malawi/Nyasa/Niassa basin fisheries and aquaculture network structure will be similar across lakes. The adoption of the name Lake Malawi/Nyasa/Niassa basin fisheries and aquaculture network, rather than Lake advisory group was based on unresolved structures among the

countries sharing the lake. Given this background, instead of having advisory groups uniting all the three countries together, each country will have a separate technical committee referred to as Lake basin committee for their lake area of jurisdiction.

Each of the Lake Basin Committees will comprise the following people: Chair, Vice, Secretary, Members, and Coopted Members, depending on the nature of the issue under consideration.

Country Focal Points:

- Malawi: Associate Prof. Geoffrey Chavula;
- Mozambique: Director of fisheries research institute;
- Tanzania: Director general TAFIRI

Each of the three Lake Basin Committees will be anchored at the country secretariat, housed in a government ministry/department in order to strengthen their operations and visibility/impact.

Malawi

- A. National Water Resources Authority (NWRA): Water resources assessments and monitoring (both surface water and groundwater resources), catchment protection through catchment management committees, and issuance of water rights (e.g., water abstraction, effluent discharge);
- B. Fisheries Department: Fisheries and aquaculture management and research;
- C. Department of Land Resources: Catchment protection, promotion of good land husbandry practices in the basin of Lake Malawi/Nyasa/Niassa, including soil and water conservation. Note that Malawi now loses 29 tons of soil per hectare per annum;
- D. Environmental Affairs Department: Protection of the environment, conducting Environmental and Social Impact Assessments (ESIA) of developmental projects; and promotion of climate change resilient communities;
- E. The Academia and Research Institutions: University of Malawi, Lilongwe University of Agriculture and Natural Resources (LUANAR), Monkey Bay Fisheries Research Center, etc. These institutions will be responsible for conducting fisheries and aquaculture research.

Tanzania

- A. Representative of TAFIRI, Kyela Office: Advise on research matters;
- B. Representative of the Lake Nyasa Basin: Advise on catchment management, and hence the health of the lake;
- C. Representative of the Academia: Advise on research;
- D. Representative of the Regional Secretariat;
- E. Co-opted Lake Nyasa Expert;

Mozambique

- A. Ministry of Sea, Inland Waters and Fisheries: Management of water and fisheries resources;
- B. Fisheries Research Institute: Research;
- C. National Directorate of Environment of the Ministry of Land and Rural Development: Environmental protection and management of land resources;
- D. Water Resources Administration: Management of water resources;
- E. Representative of the Local Government.



Co-opted Members

These will join the network as and when the need arises:

- Local communities* (may be should be included in the main committee);
- Mining Department Representative;
- Department of Tourism;
- NAIP (National Agriculture Investment Plan); etc.

The Lake Tanganyika Scientific Advisory Group (LT-SAG)

Members of the LT-SAG will include the Lake Tanganyika Authority (included at a technical level).

The LT-SAG will be made up of:

- 4 thematic technical groups of the LTA (Fisheries, Water Quality, Biodiversity and Socioeconomics) from the four countries = 16
- 1 group leader and country representation committee (National) + NGOs + Community
- 1 group leader and thematic area representation (Regional) + NGOs + Community
- **Other roles:**
 - Communication and Liaison personnel
 - Grants and Funding personnel

**group leader should be rotated among the countries*

Currently, the following members were identified as Regional Country Representation

- Burundi: Prof. Ntakimazi Gaspard
- DRC: Déo Mushagalusa Ciruza
- Tanzania: Ismail Kimirai
- Zambia: Lloyd Haambiya
- **Regional Level leader:** Ismail Kimirai

Lake Turkana Advisory Group

The Lake Turkana Advisory Group would include a rotational chairperson (Figure 3), and 50-50 representation from each Kenya and Ethiopia. However, the group should be kept small for efficiency. Two women should be added to the group.

Regular meetings would rotate between the countries, and a note-taker/secretary should be recruited within each country. New members should be added from time to time.

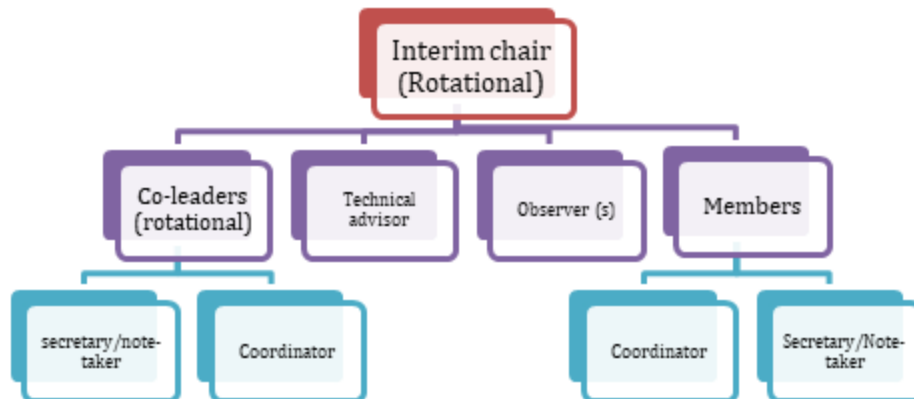


Figure 3: Lake Turkana Advisory Group structure.

Lake Victoria

The Lake Victoria Advisory Group developed the following roles and role responsibilities. Specifics on how roles connect and who currently fills them are given in Figure 4.

A. Convener

- a. Convenes the group
- b. Work with the secretariat to generate and circulate the agendas
- c. Coordination and linkages
- d. Engage the governments and other stakeholders
- e. Chair the meetings
- f. Focal person with ACARE, other advisory groups and regional institutions
- g. Resource mobilization
- h. Develop a resource mobilization strategy
- i.

B. Co-convenor

- a. Deputizes and takes over the roles of the convener in the absence of the convener
- b. Helps/ assists the convener in fulfilling his/ her responsibilities

C. Secretariat

- a. Take records of the meetings
- b. Keep official records
- c. Send out and receive correspondence
- d. Help in mobilizing and taking custody of resources

D. Policy committee (Policy makers and resource managers)

- a. Identify and submit research and information gaps
- b. Receiving and synthesizing policy briefs
- c. Engage/ interface with policy makers and managers
- d. Resource mobilization



E. Scientific committee

- a. Develop a harmonized research strategy on Lake Victoria
- b. Synthesizes scientific information and production of periodic report
- c. Advise and guide on producing guidelines and standard operating procedures
- d. Prepare research framework/ researchable proposal
- e. Identify research gaps especially emerging issues
- f. Analyze existing research agenda in the different research institutions

F. Communication and dissemination committee

- a. Prepare policy briefs
- b. Dissemination of scientific findings

G. ACARE

- a. Facilitate the convening of the advisory group members and inter advisory great lakes committees
- b. Facilitate the development data sharing tools
- c. Mobilize resources from development partners to facilitate research

NB: Annual election, 1 term for the entire committee leaders; Convenor to preside over the voting of the next committee

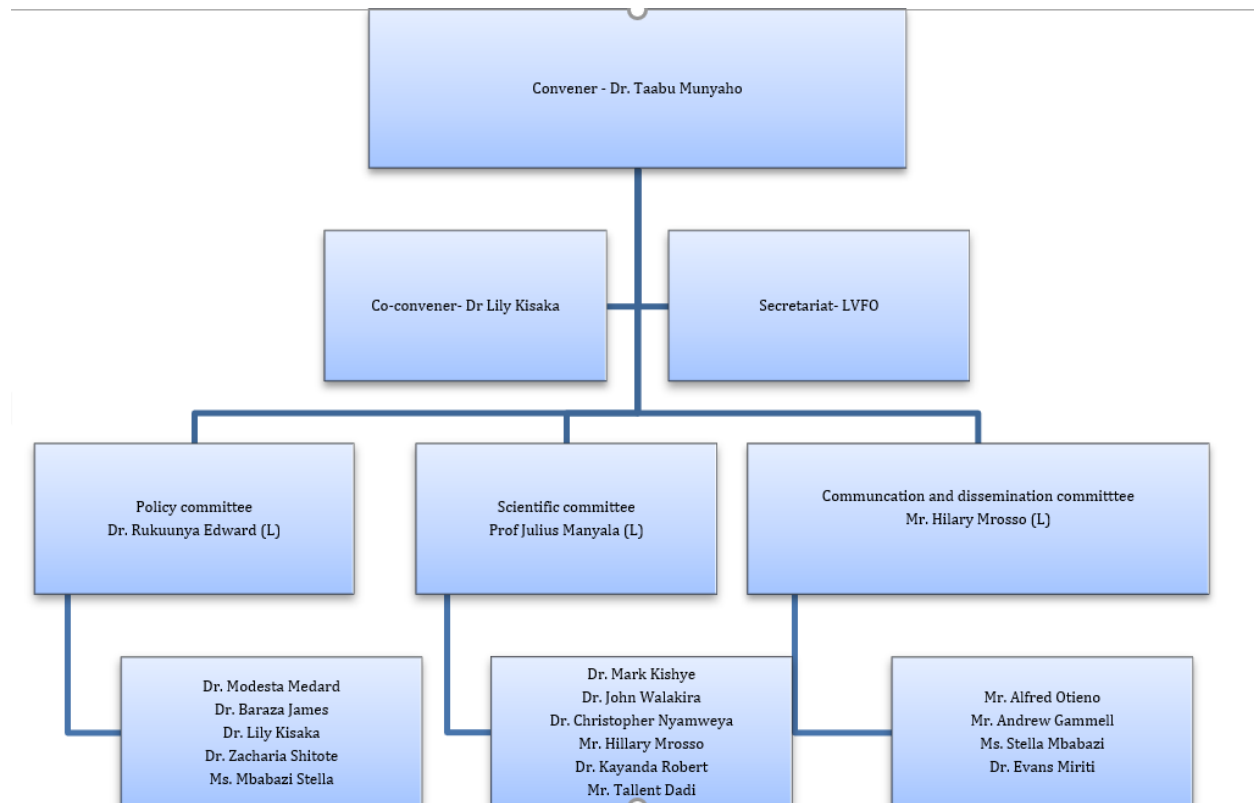


Figure 4: Structure of the Lake Victoria Advisory Group, with current member roles.

Resources Needed

Lake Edward/Albert Advisory Group:

- Travel expenses for regional, national and local meetings
- Travel expenses to visit decision makers in respective capitals
- Communication tools to disseminate findings to local communities (leaflets, posters, projectors)
- Specific funding for key research
- Link the network to existing institutions so that financing is possible even without external support.

Lake Kivu:

- Need for computers, at least for the head roles (6), external disk drives for making backups the information
- Investment in a decent cloud (dropbox, googleDrive, etc.), so all the data can be kept somewhere safe in case a pc would crash
- A decent internet connection that is reliable and available all the time
- Travel expenses for meetings and Operating costs
- Allowances for all head members (no figures decided)
- Available budget for awarding small grants
- Venue and catering costs for annual meeting

Lake Malawi/Nyasa/Niassa Basin Fisheries and Aquaculture Network:

- Financial resources;
- communications tools (e.g. information platform such as a website);
- office space for the Secretariat;
- hiring venues for meetings;
- a small token of appreciation for the individual who will “manage” information; and
- air time for mobile phones; etc.

Lake Tanganyika Scientific Advisory Group:

- Funding for meetings
- Funding for joint projects

Lake Turkana Advisory Group:

- Facilitation of meetings/infrastructure for online video conferencing
- Meeting space in both countries: Vehicle hire, Venue costs, Accommodation costs
- Travel resources for group members (Vehicle/Flight)
- Linkages with partners who can support the construction of an operation centre on the Ethiopian side of the lake to minimize travel time from Jimna/Adis. Improve facility in Kalokol
- Basic Research equipment for monitoring studies especially on the Ethiopian side



Lake Victoria:

- Strategy for regular communications and communications tools
- Travel resources for advisory group meeting
- Information and communications management (IT expert)
- An office, meeting space

Next Steps

Advisory groups identified next steps to be undertaken over the following months.

| Lake(s) | Timeframe | Action |
|---------------------|--------------|--|
| Albert/Edward | | No specific steps identified |
| Kivu | Immediate | Nominate committee members |
| | | Nominated members should immediately inform and convince their respective institutions to welcome the initiative in their working space, and quickly start making contacts with all potential institution members to nominate their focal points |
| | One month | Assign roles of deputy secretary |
| | | Write a paper explaining what LKAG will do |
| | Two months | Define the tasks of the committee in an early stage |
| | | Inform potential institutions |
| | Three months | Institution appoint a focal point |
| | | Identify the individual tasks of each member of the committee |
| | | Invite individuals where the approval of the institutions is not necessary |
| | One year | Annual meeting with the whole group |
| Malawi/Niassa/Nyasa | Undefined | Inform the selected individuals about the network, and convening the first briefing meeting |
| | | Establish linkages between activities at national lake level to the lake wide level |
| | | Undertake activities at national and lake-wide level |

| | | |
|------------|----------------|---|
| | | Establish linkages between activities at national lake level to the lake wide level |
| | | Coordinate the three national contact persons through ACARE: (a) Malawi: Associate Prof. Geoffrey Chavula; (b) Mozambique: Director of fisheries research institute; (c) Tanzania: Director general TAFIRI |
| | | Share, harmonize and implement research priorities among the nations |
| | Three months | Set up Secretariat |
| Tanganyika | Undefined | Write the statutory instruments for the operations of the advisory groups (Draft statute) |
| | | Meeting of regional and national committees |
| | | Identify participants for the national focal point, with the help of the LTA |
| | | Write down rules for the advisory groups or Management guidelines |
| | | Assess the status of the trends within Lake Tanganyika e.g. registration of the number of people involved |
| Turkana | April 2020 | Reconnaissance meeting in Kenya (Kalokol) to build synergies and share information* <i>*Meetings to be held in Kenya and Ethiopia on a rotating basis</i> |
| | September 2020 | Reconnaissance meeting in Ethiopia (Omorate) |
| Victoria | | No specific steps identified |



Priorities

The Lake Turkana and Albert/Edward groups developed preliminary research priorities, as detailed below:

| Advisory Group | Priorities |
|--------------------|---|
| Lake Turkana | <ul style="list-style-type: none"> • Research is our first priority • Baseline data on the Lake's current status (Hydrology/Limnology, Stock Assessment) • Economic valuation on the Omo delta • Innovative ways for data collection including use of remotely sensed data, catch monitoring program using fishermen • Develop protocols for standardized data collection for both countries • Planned set up of a small research Centre at the Ethiopia's side of the lake to ease the operations that have been planned for. |
| Lake Albert/Edward | <ul style="list-style-type: none"> • Food-web and biodiversity of the lakes relatively unknown • Remote sensing system for African Great Lakes • Causes of invasive aquatic weeds on the lakes • How aquatic weeds can be converted into useful resources such as biogas • How the different sizes of small pelagic fishes can be harvested • Gazetting of breeding areas • Pollution studies on these lakes versus the increasing population • Baseline data to inform management about oil exploration in the Nile Basin lakes • Socio-economics studies to inform livelihood options • Hydro-meteorological stations on the Lakes • Inventory on the information available for both lakes • Demarcation of national boundaries • Conduct trans-boundary research for law enforcement • Dissemination of research results • Research should inform when and where to catch specific fishes • Hydrological information • Environmental and socio-economic aspects of cage aquaculture on the lakes • Post-harvest losses in relation to the small species (an analysis is needed to come up with sustainable methods of post-harvest handling) • Mapping the value chain of fisheries |

Additional Points

Lake Malawi/Nyasa/Niassa Basin Fisheries and Aquaculture Network

It was noted that all the three riparian countries support the idea of inter-jurisdictional cooperation. And this cooperation is guaranteed by the SADC Water Division through the SADC Protocol on Shared Watercourses of 7th August 2000, and the Zambezi Water Commission (ZAMCOM), established in 2014. Although the SADC Water Division and ZAMCOM were mentioned as neutral institutions which would facilitate the process of inter-jurisdictional cooperation, the group agreed to include ACARE as a key facilitator in establishing the network.

The group noted that members of the network needed to meet regularly in order to discuss issues pertaining to the management and operations of the Lake Malawi/Nyasa/Niassa Basin Fisheries and Aquaculture Network.

