

## **Personal Bio–Data**

Name : Akoll Peter [PhD (Vienna); MSc (Delft); BSc (MAK)]  
Sex/Nationality : Male, Ugandan  
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## **Education**

Dr. Akoll received a PhD (Natural Sciences; Aquatic Eco-Parasitology) from University of Vienna, Austria in 2011 with research focus on “Ecology and pathology of helminths of Tilapia (*Oreochromis niloticus* L.) in Uganda”; MSc. Environmental Science (Limnology and Wetland Ecosystems from UNESCO – IHE, Institute for Water Education, Delft, The Netherlands in 2005 with research on “Prevalence and pathology of protozoan and monogenean parasites from fry and fingerlings of cultured *Clarias gariepinus* (Burchell, 1882) in Uganda” and BSc. Fisheries and Aquaculture from Makerere University, Uganda in 2003

## **Other specialised Trainings**

He also has a certificate in Bioinformatics and Genomics from The National Sciences Foundation, The Howard Hughes Medical Institute in 2014; certificate in Aquatic Disease Diagnostics and Control from Inland Institute of Aquatic Animal Health Research Institute, Department of Fisheries, University of Kasetsart, Bangkok, Thailand in 2009 and certificate in Fish Pathology from Department of Veterinary Public Health and Animal Sanitation, Faculty of Veterinary Medicine, University of Bologna, Italy in 2007

## **Employment:**

**2019 – To date: Senior Lecturer:** Department of Zoology, Entomology and Fisheries Sciences, College of Natural Sciences, Makerere University,

**2012 – 2019: Lecturer:** Department of Zoology, Entomology and Fisheries Sciences, College of Natural Sciences, Makerere University,

**2009 – 2012: Teaching Assistant:** Department of Zoology, Entomology and Fisheries Sciences, College of Natural Sciences, Makerere University,

**Teaching Subjects:** General Parasitology, Aquatic Microbiology, Limnology, Fish Anatomy, Aquatic Diseases, Parasite Physiology, Epidemiology, Immunology, Pathology of infections

## **Research Interests**

Dr. Akoll has conducted research in Aquatic Ecosystems with over 15 years of experience focusing two areas: 1) Aquatic organisms’ disease and 2) microbial-driven spoilage/contamination of fish. Under health, Dr. Akoll focuses understanding the a) host–pathogen relationships under changing environmental conditions with emphasis on host responses, pathogen diversity, epidemiology as well as prevention and control including pathogen resistance in African catfish and Nile tilapia. With regard to microbial-driven fish contamination, spoilage and management, he has contributed to developing problem-based innovations to support fisheries and aquaculture sectors, including designed a two-person operated small pelagic fish hauling technology – MAKHAUL; designed and demonstrated raised-rack drying platforms for improved post-harvest handling and processing techniques to ensure safe and quality fish.

## **Research projects**

- Coordinator - Erasmus+ Programme: Makerere University and University of Natural Resources and Life Sciences, Vienna funded by EU under the Key Action 1 – Mobility for learners and staff in Higher Education 2022 - 2024
- Co-Investigator of the project “Towards Responsible Antibiotics use and Antimicrobial Resistance Management in Uganda’s refugee camps and hosting communities” (Dec 2021 – Nov 2024) with funding from the International Society for Infectious Diseases (ISID) & Pfizer (ISID-Pfizer) 2021 Grant Challenge
- Co-investigator – “Efficient technologies for harvesting and processing of small fishes and management of light-fishery generated waste in lakes Victoria and Albert, Uganda”. (Dec 2021 – Nov. 2024) funded by National Agriculture Research Organisation (NARO) under Competitive Grant Scheme (CGS)
- Project Scientists – “DisPersal of AntIbiotic Resistance and antibiotics in Water ecosystems and Influence on liveStock and aquatic wildlife (PAIRWISE)”. European Union’s Horizon 2020 research and innovation programme, Joint Transnational Call 2020.
- Principal Investigator – Complementary approaches to strengthen COVID-19 preventive measures among fishing communities (May – November 2020) with funding from COVID-19 Special Fund; Makerere University Research and Innovations Fund. Developed the MAKHUAL fish hauling technology
- Overall Coordinator – Capacity building in Biosciences to accelerate East African Community integration (2019 – 2023) with funding from Germany Development Bank (KfW) through Interuniversity Council for East Africa
- Coordinator Makerere University – Collaborative training in fisheries and aquaculture in East, Central and Southern Africa, COTRA (2017 – 2023) funded by Intra-Africa Mobility Scheme, EU. <http://cotraintra-africa.org/>
- Overall Coordinator – Strengthening regional capacity in research and training in fisheries and aquaculture for improved food security and livelihoods in Eastern Africa – STRECAFISH (2015 – 2018) funded by the Austria Development Cooperation through Austrian Partnership Programme in Higher Education and Research for Development (APPEAR). <https://strecafish.mak.ac.ug/>
- Principal Investigator – Enhance adoption and productivity of commercial Agriculture within the Lake Victoria Basin through Agro–Enterprise–Mix (2014 – 2017) - funded by National Agriculture Research Organisation (NARO) under the Competitive Grant Scheme (CGS)
- Co-Principal Investigator – Enhancing food crop and fish productivity through integration of aquaculture and irrigated agriculture – IAIA (2012 – 2014) with funding from VLIR-UOS South Initiatives

## **Publications**

- Abaho, I., Masembe, C., **Akoll, P.**, & Jones, C. L. (2022). The use of plant extracts to control tilapia reproduction: Current status and future perspectives. *Journal of the World Aquaculture Society*. 53:593–619. <https://doi.org/10.1111/jwas.12863>
- Alal G.W., Barasa J.E., Chemoiwa E.J., Boaz Kaunda-Arara B., **Akoll P.** and Masembe C. (2021) Genetic diversity and population structure of selected lacustrine and riverine populations of African catfish, *Clarias gariepinus* (Burchell, 1822), in Kenya. *Journal of Applied Ichthyology*, 37(3): 1– 12. <https://doi.org/10.1111/jai.14167>
- Tibihika, P.D., Curto, M., Alemayehu, E. Waidbacher H., Masembe C., **Akoll P.** and Meimberg H. (2020) Molecular genetic diversity and differentiation of Nile tilapia (*Oreochromis*

- niloticus*, L. 1758) in East African natural and stocked populations. *BMC Evolutionary Biology*, 20, 16. <https://doi.org/10.1186/s12862-020-1583-0>
- Gichana Z., Liti D., Drexler S., Zollitsch W., Meulenbroek P., Wakibia J., Ogello E., **Akoll P.** and Waidbacher H. (2020) Effects of aerated and non-aerated biofilters on effluent water treatment from a small-scale recirculating aquaculture system for Nile tilapia (*Oreochromis niloticus* L.) *Die Bodenkultur: Journal of Land Management, Food and Environment*, 70 (4) 209 – 219. <https://doi.org/10.2478/boku-2019-0019>
- Gichana Z., Meulenbroek P., Ogello E., Drexler S., Zollitsch W., Liti D., **Akoll P.** and Waidbacher H. (2019) Growth and Nutrient Removal Efficiency of Sweet wormwood (*Artemisia annua*) in a Recirculating Aquaculture System for Nile Tilapia (*Oreochromis niloticus*). *Water*, 11, 923; <https://doi.org/10.3390/w11050923>
- Yatuha J., Kang'ombe J., Nkwangu D., **Akoll P.** and Masembe C. (2019) Nutritional and economic potential of *Clarias liocephalus* for rural populations of South western Uganda. *African Journal of Rural Development*, 4 (2): 217-224 <http://www.afjrd.org/jos/index.php/afjrd/article/view/691>
- Tibihika P.D., Waidbacher H., Masembe C., Curto M., Sabatino F., Alemayehu E., Meulenbroek P., **Akoll P.**, & Meimberg H. (2018) Anthropogenic impacts on the contextual morphological diversification and adaptation of Nile tilapia (*Oreochromis niloticus*, L. 1758) in East Africa. *Environmental Biology of Fishes* 101, (3): 363–381. <https://doi.org/10.1007/s10641-017-0704-0>
- Egesa E., Masette M., Bwanika G., Muyodi F. and **Akoll P.** (2018) Effectiveness of Surfaces used for Sun-drying *Rastrineobola argentea* along Lake Victoria shoreline, Uganda. *African Journal of Tropical Hydrobiology and Fisheries*, 16, (1) 16 – 23. <https://www.ajol.info/index.php/ajthf/article/view/170912/160325>
- Steigen A, Nylund A, Karlsbakk E., **Akoll P.**, Fiksdal I.U., Nylund S., Odong R., Plarre H., Semyalo R., Skar C. and Watanabe K (2013) ‘*Cand. Actinochlamydia clariae*’ gen. nov., sp. nov., a Unique Intracellular Bacterium Causing Epitheliocystis in Catfish (*Clarias gariepinus*) in Uganda. *PLOS ONE*, 8(6): e66840. <https://doi.org/10.1371/journal.pone.0066840>
- Akoll P.** Konecny R., Mwanja W.W. and Schiemer F. (2012) Risk assessment of parasitic helminths on cultured Nile tilapia (*Oreochromis niloticus*, L.). *Aquaculture* 356-357: 123–127. <https://doi.org/10.1016/j.aquaculture.2012.05.027>
- Akoll P.** and Mwanja W.W. (2012): Fish health status, research and management in East Africa: past and present. *African Journal of Aquatic Science*, 37(2): 117-129. <https://doi.org/10.2989/16085914.2012.694628>
- Akoll P.**, Mwanja W.W. Fioravanti M.L., Konecny R. and Schiemer F. (2012) Infection dynamics of *Cichlidogyrus tilapiae* and *C. sclerosus* (Monogenea, Ancyrocephalinae) in Nile tilapia (*Oreochromis niloticus* L.) from Uganda. *Journal of Helminthology*, 86: 302–310. <https://doi.org/10.1017/S0022149X11000411>
- Akoll P.**, Konecny R., Mwanja W.W. and Schiemer F. (2012) Infection patterns of Nile tilapia (*Oreochromis niloticus*, L.) by two helminth species with contrasting life styles. *Parasitology Research*, 110: 1461–1472. <https://doi.org/10.1007/s00436-011-2649-0>
- Akoll P.**, Konecny R., Fioravanti M.L., Mwanja M. W., Nattabi J., Agoe C. and Scheimer F. (2012) Parasite fauna of farmed Nile tilapia (*Oreochromis niloticus* L.) and African catfish (*Clarias gariepinus*) in Uganda. *Parasitology Research*, 110: 315–323. <https://doi.org/10.1007/s00436-011-2491-4>

## Conference presentations

1. **Akoll P.** Olwo J., Walakira J., Nalukwogo R., Mayega J. & Bondad-Reantaso M. (2022) Active Surveillance of Tilapia Lake Virus within Lake Victoria Crescent in Uganda. Presented at Enhancing capacity/risk reduction of emerging Tilapia Lake Virus (TiLV) to African tilapia aquaculture project Terminal Workshop. Akasombo, Ghana. 15<sup>th</sup> – 17<sup>th</sup> November 2022
2. **Akoll P.** (2022) Aquatic Animal Health and Aquaculture Biosecurity Performance and Capacity in Uganda: Stakeholder Analysis. FAO Regional Workshop on aquatic organisms' disease management. Dar es salaam, Tanzania. 12<sup>th</sup> – 15<sup>th</sup> July 2022
3. **Akoll P.** Walakira J., Nalukwogo R., Mayega J., Olwo J., & Bondad-Reantaso M. (2021) Tilapia Lake Virus active Surveillance within Lake Victoria Crescent in Uganda: Preliminary Results. Tilapia Health Quo vadis? International Technical Seminar on Tilapia Health. Virtually – 1<sup>st</sup> to 3<sup>rd</sup> December 2021
4. **Akoll P.**, Dagne A, Drexler S., Kaunda-Arara B. Kubiriza G.K., Odong R., Waidbacher H., Winkler G., Bwanika G., Nampala P., Nsibirano R., Ntangaare M., Liti D., Tigabu Y., Teshome K., Cheffo A., and Masembe C. (2017) Enhancing graduate training and research in aquaculture through institutional collaborations. In: *Sustainable Aquaculture New Frontiers for Economic Growth Spotlight on Africa*. World Aquaculture Society Conference held on June 26-30, 2017 in Cape Town, South Africa
5. Odong R, Kubiriza G.K., **Akoll P.** and Masembe C. (2017) Boosting aquaculture production in Africa through strategic and synergistic partnerships and advancement of inter/multi-disciplinary training. In: *Sustainable Aquaculture New Frontiers for Economic Growth Spotlight on Africa*. World Aquaculture Society Conference held on June 26-30, 2017 in Cape Town, South Africa
6. Winkler G., Kitaka N., Waidbacher H., Masembe C., **Akoll P.**, Kaunda-Arara B., Dagne A., Fetahi T., Mengistou S. (2017) Stronger together – development and implementation of collaborative post-graduate programmes in aquatic sciences, aquaculture & fisheries. In: *Sustainable Aquaculture New Frontiers for Economic Growth Spotlight on Africa*. World Aquaculture Society Conference held on June 26-30, 2017 in Cape Town, South Africa
7. Odong R, Kubiriza G.K., **Akoll P.** and Masembe C. (2017) Synergistic partnerships for inter disciplinary training of aquaculture graduates in Africa. In: *Sustainable Aquaculture New Frontiers for Economic Growth Spotlight on Africa*. World Aquaculture Society Conference held on June 26-30, 2017 in Cape Town, South Africa
8. **Akoll P.** Fioravanti M.L., Paladini G., Shinn A.P., Konecny R., Rutaisire J. and Scheimer F. (2009) *Cichlidogyrus*, Paperna, 1960 fauna of Nile tilapia (*Oreochromis niloticus* L.) from Lakes Kyoga and Victoria basins, Uganda. Poster presentation at the 6<sup>th</sup> International Symposium on Monogenea held on 03<sup>rd</sup> - 07<sup>th</sup> August 2009 in Cape Town, South Africa
9. **Akoll P.** Konency R. and Rutaisire J. (2005) Prevalence and pathology of protozoan and monogenean parasites from fry and fingerlings of cultured *Clarias gariepinus* (Burchell, 1882) in Uganda. Abstracts of the proceedings of the 39<sup>th</sup> Annual Meeting of the Austrian association for Tropical medicine and Parasitology held on 17<sup>th</sup> to 18<sup>th</sup> November 2005 in Vienna (Abstract in Germany).

### **Contributions to Scientific Community**

Reviewer of several Journals including Reviewer of: Diseases of Aquatic Organisms, Journal of Helminthology, African Journal of Aquatic Sciences, Scientific Africa, Reviews in Aquaculture; Aquaculture International; Aquaculture Research; Journal of Great Lakes Research; Veterinary Parasitology Regional Studies and Reports

### **Community-based research**

Technical lead in Tilapia Lake Virus Surveillance under MAAIF supported by FAO  
Developed compendium on Fish health and Disease Management for extension staff and farmers  
Organized and executed refresher courses in Fish health and Disease Management

### **Students Supervision**

#### **PhD**

1. Adamu Yimer Beyene: Unravelling the Bacterial community in Nile Tilapia (*Oreochromis niloticus*) Farms of Uganda
2. Begumisa Magyezi Godfrey: Ecological characteristics of monogeneans in wild cultured *Clarias gariepinus* in Uganda
3. Ogubi Nafula Juliet: Spoilage and post-harvest losses in small pelagic fishes in Lake Albert, Uganda

#### **MSc**

1. Mutua Grace Nduku (2022) Virus community of farmed Nile tilapia (*Oreochromis niloticus*) in Lake Victoria Crescent, Uganda
2. Omadi Samuel (2022): Dynamics of soil transmitted helminths under mass drug administration among school children in Kumi municipality
3. Nakitto Norah (2022): Infection and transmission patterns of monogenean in cultured and wild Nile tilapia (*Oreochromis niloticus*) in Lake Victoria
4. Sarah Nakaziba (2022): Postmortem physicochemical changes in the African Lung Fish (*Protopterus aethiopicus*) held at room and chilled temperature
5. Borodi Charles Mondo Soma (2019): Effect of smoking technologies on nutritional value and safety of *Mormyrus caschive* and *Oreochromis niloticus* in South Sudan
6. Oyet Godfrey Jomo Andrew (2018): Parasite infestation and risk factors in farmed Nile tilapia (*Oreochromis niloticus*, Linn.) and the African catfish (*Clarias gariepinus*, Peters) in Gulu district
7. Asiimire America (2018): Effects of chemical pollution on fish relative abundance and diversity in Nakivubo and Katonga wetlands of Lake Victoria
8. Egesa Eugene (2017): Evaluation of different Mukene sun-drying surfaces in Lake Victoria basin
9. Namboowa Sharon (2017): The occurrence and effect of helminth parasites infesting *Clarias gariepinus* in Lake Wamala, Uganda
10. Nantege Diana (2015): Ecology and distribution of bivalves in Murchison of Lake Victoria, Uganda