

BRIEF CURRICULUM VITAE

FREDRICK JONES MUYODI

Associate Professor, Department of Biological Sciences, School of Bioscience
Dipl. Educ., B.Sc. Educ., MSc., PhD.

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Nationality: Ugandan.

Expertise and Research Interest

Fredrick Muyodi is a Water Resource Management specialist with special interest in Hydrobiology, Fisheries and Aquaculture, Water Quality, Aquatic and Environmental Health and Microbiology with over twelve years experience. He holds a Ph.D. in Aquatic Sciences, an MSc in Wastewater Treatment, B.Sc. with Education (Biology and Chemistry) and a Diploma in Education (Biology and Chemistry). Additional qualifications include: Certificate in PhD Supervision and Mentorship, Certificate in Information and Communication Technology (ICT) (Makerere University); Certificate in Project Conceptualisation and Preparation (International Foundation for Science [IFS], Stockholm, Sweden); United Nations Certificate in Basic Security in the Field – Staff Safety (United Nations Department of Safety and Security, Health, and Welfare) and a Certificate in Pedagogical Skills in Higher Education (Makerere University). He is a Certified Environmental Health Practitioner certified by the National Environment Management Authority (NEMA) of Uganda.

Specializes in various areas of Water Resource Management including:

- ❖ Water quality, Sanitation and Hygiene;
- ❖ Fisheries and Aquaculture
- ❖ Oil and Gas Waste management
- ❖ Hydrobiology
- ❖ Environmental health
- ❖ Applied & Environmental Microbiology
- ❖ Water-related diseases, causes and control measures
- ❖ Microbial ecology
- ❖ Limnology of lakes, rivers in temperate climate and waters in the warm belt;
- ❖ Wetlands Ecology and Management
- ❖ Marine Biology.
- ❖ Climate Change Impacts, Mitigation and Adaptation in water resources management

Administrative Experiences

June, 2014: Appointed Dean, School of Bioscience, CONAS, Makerere University

May 2014: Appointed Ag. Dean, School of Bioscience, CONAS, Makerere University

2011-Present: Member of SENATE, representing School of Bioscience, Makerere University.

2012-2013: Acted in various capacities as: Ag. Deputy Principal, CONAS, Dean School of Bioscience, Makerere University

Between 2006 and 2010: Ag. Head of Department, Zoology, Makerere University.

2005 – Present 2012: Examiner, Mature Age Programme, Makerere University, Appointed by Academic Registrar, representing Zoology Department.

Between 2004 and now: Served as Chairperson / Panellist on many Viva voce examinations.

2004- April 2010: Coordinator, Bachelor of Science in Fisheries and Aquaculture Programme, Department of Zoology, Makerere University.

August 2007: Appointed member of Strategic Planning (STRAP) Committee representing Zoology Department at Faculty of Science level.

2006 - 2007: Appointed member of Quality Assurance Committee, Faculty of Science.

2006 – 2010: Member, Departmental Finance Committee

Research History and Outreach

- ❖ Coordinator / Principal Investigator, Lake Victoria Environment Management Project (LVEMP II) (2006 to present).
- ❖ Team Leader, Regional Lake Victoria Research Initiative (VicRes) on “Assessment of impacts of water quality on fish species composition and abundance” (2007 to 2012).
- ❖ March to September 2008, Country Focal Person (for Uganda) in study to develop a new water release policy for Lake Victoria (Lake Victoria Basin Commission of the East African Community).
- ❖ Global Water Partnerships, Contact Person for Zoology Dept., Makerere University, appointed 2007 to present).
- ❖ Currently Coordinator of FRIEND / Nile Ecohydrology Project of the Nile Basin (2008 – 2014).
- ❖ Principle Investigator “Water and Sanitation in selected districts in Uganda” funded by Rockefeller Foundation through [I@mak.com](mailto:�@mak.com) (2005 -2006).
- ❖ Water Quality Component National Consultant for Lake Victoria Environment Management Project (LVEMP) (2005).
- ❖ Team leader in investigations of pollution indicators in various waters and wastewaters (2000 to present).
- ❖ Advisory role in many water and sanitation settings under a number of major regional projects such as LVEMP and NBI (2005 to present);
- ❖ Coordinator, Fisheries and Aquaculture Programme, Department of Zoology, Makerere University (2004 to 2009).

Education:

2000: PhD (Water Resources Management), University of Dar es Salaam, Dar es Salaam / Tanzania.

1996: MSc (Wastewater treatment), University of Dar es Salaam, Dar es Salaam / Tanzania.

1993: B.Sc. Educ. (Upper Class Honours Degree, Biology, Chemistry & Education), University of Dar es Salaam, Tanzania.

1986: Dipl. Educ. (Chemistry, Biology & Education), National Teachers' College, Unyama, Uganda.

Others: Certificate in PhD Supervision and Mentorship (2010);
UN Certificate in Basic Security in the Field – Staff Safety, Health and Welfare (2009);
Certificate in Project Conceptualisation and Preparation (2007);
Certificate of Participation in Competitive Grants Proposal Writing (2007);
Certificate of Participation in Curriculum Development & Pedagogy (2006);
Certificate in Information and Communication Technology (ICT) (2004);
Certificate in Pedagogic skills (for teachers of higher Institutions of learning) (2003).

Professional Experience

Jun 2011 – Present: Associate Professor - Department of Biology, Makerere University, Kampala, Uganda.

2006 – May 2011: Senior Lecturer - Department of Zoology, Makerere University, Kampala, Uganda.

2001 – 2006: Lecturer - Department of Zoology, Makerere University, Kampala, Uganda.

1994 – 2000: Researcher, Department of Botany, University of Dar es Salaam, Tanzania.

1993 – 1994: Teaching Assistant, Department of Botany, Makerere University, Uganda.

Some of the Publications

1. Nkalubo, W., Chapman, L. and Muyodi, F.J. (2014). Feeding ecology of the intensively fished Nile perch, *Lates niloticus* in Lake Victoria, Uganda. *Aquatic Ecosystem Health Management* 17(1): 62-69.
2. Kaddumukasa, M., Nsubuga, S. and Muyodi, F.J. (2013). Occurrence of culturable *Vibrio cholerae* from Lake Victoria and two rift valley lakes Albert and George, Uganda. *Lakes & Reservoirs: Research and Management*, 17, Issue 4, 291–299.
3. Muyodi, F.J. and Kapiyo, R. (2012). Beach community-designed system to ameliorate water quality deterioration in catchments of lake Victoria. *The Open Environmental Engineering Journal*, 5: 84-95.
4. Muyodi, F.J., Mwanuzi, F.L. and Kapiyo, R. (2011). Environmental quality and fish communities in selected catchments of Lake Victoria. *The Open Environmental Engineering Journal*, 4: 54-65.
5. Muyodi, F.J., Bugenyi, F.W.B. and Hecky, R.E. (2010). Experiences and Lessons Learned from Interventions in the Lake Victoria basin: the Case of Lake Victoria Environmental Management Project. *Lakes & Reservoirs: Research and Management*. 15(2): 77-88.
6. Efitre, J., Bugenyi, F., Mbabazi, D., Kubiriza, G.K., Muyodi, F.J. and Bwanika, G. (2010). Fish Biodiversity. In: Baseline Report on State of Biodiversity in the Nile Uganda 2010, Edited by J.B. Kaddu and H. Busulwa. A production of the Wetlands and Biodiversity Conservation Component of the Nile Transboundary Environment Action Project. Nile Basin Initiative Secretariat, pp. 103-108. ISBN: 978-9970-148-29-5.
7. Muyodi, F.J. (2010). Microbes. In: Baseline Report on State of Biodiversity in the Nile Uganda 2010, Edited by J.B. Kaddu and H. Busulwa. A production of the Wetlands and Biodiversity Conservation Component of the Nile Transboundary Environment Action Project. Nile Basin Initiative Secretariat, pp. 65-66. ISBN: 978-9970-148-29-5.
8. Muyodi, F.J., Mwanuzi, F.L., Keizire, B., Kapiyo, R., Mbabazi, D. and Mpaata, E. (2009). Influence of Water Quality on Fish Species Composition, Abundance and Distribution in Thruston Bay, Lake Victoria Uganda. In: Banadda, N., Isabirye, P., Onywere, S., Nampala, P. and Tenywa, J.S. (eds), Integrated Risk Assessment and Management of Pollutants in Lake Victoria Basin. Lake Victoria Research Initiative. Inter-University Council for East Africa, African Crop Science, pp. 251-264. ISSN 2078-5933.
9. Bugenyi, F.W.B., Kizito, Y.S., Luyiga, S., Miyingo-Kezimbira, A. and Muyodi, F. (2009). Wetlands. In: Larsson, P., Kirumira, E.K., Steigen, A.L. and Miyingo-Kezimbira, A. (eds), Sharing Water: Problems, Conflicts and Responsible Solutions – The case of Kampala. Universitetsforlaget AS, Oslo, Norway. ISBN: 978-82-15-01444-9.
10. Muyodi, F.J., Hecky, R.E., Kitamirike, J.M. and Odong, R. (2009). Trends in health risks from water-related diseases and cyanotoxins in Ugandan portion of Lake Victoria basin. *Lakes & Reservoirs: Research and Management*, 14(3): 239–250.
11. Balirwa, J.S., Wanda, F.M. and Muyodi, F.J. (2009). Impacts of Water Hyacinth and Water Quality Change on Beneficial Uses of Lake Victoria, Uganda. Proceedings of 13th World Lake Conference, 1-5 Nov., Wuhan, China. International Lake Environment Committee (ILEC). http://wldb.ilec.or.jp/data/ilec/WLC13_Papers/others/39.pdf
12. Muyodi, F.J. and Odong, R. (2005). Hydrobiology. Department of Distance Education, Institute of Adult and Continuing Education, Makerere University. ISBN: 9970 423 168.
13. Muyodi, F.J. and Orikushaba, P. (2005). Risk awareness and factors affecting behaviours that address STDs and HIV/AIDS among a sample of Makerere University students, Uganda. In: proceedings of the 4th National AIDS Conference, 21-23rd March 2005, Kampala Uganda. <http://www.aidsuganda.org/npdf/Absdtract%20book2005.pdf> (Accessed 25 April 2009).
14. Muyodi, F.J., Rubindamayugi, M.S.T. and Semesi, A.K. (2004). Effect of water hyacinth on distribution of sulphate-reducing bacteria in sediments of Lake Victoria. *Water SA*, 30(3): 421- 425.
15. Muyodi, F.J., Rubindamayugi, M.S.T. and Kitamirike, J.M. (2003). The influence of water hyacinth on presence of pathogens in near-shore waters of Lake Victoria. *The Uganda Journal*, 49: 79-87.
16. Muyodi, F.J. (2000). Microbiological analysis of the waters of Lake Victoria in relation to the invasion of the water hyacinth (*Eichhornia crassipes*) Mart. Solms. A case study of the lakeshores of Mwanza

municipality. Ph.D. Thesis, University of Dar es Salaam.

Some of the Technical Reports

1. Muyodi, F.J. (2014). Draft Report on Studies On Water Quality / Limnology – Kingfisher 4 Oil and Gas Development, Bugoma, Uganda. Consulting for Environmental Assessment Consult Limited (EACL) and Tullow Oil (Uganda) Limited.
2. Muyodi, F.J. (2013). Analysis of existing policies of Uganda for integrating climate change adaptation approaches including regional and transboundary issues. National Consultancy work for The Global Water Partnership (GWP) Eastern Africa, Nile Basin Secretariat, Entebbe, Uganda.
3. Muyodi, F.J. (2012). The Role of Private Sector In Addressing The Challenges of Climate Change on Key Social Economic Sectors in tThe Nile River Basin: Dynamics and Impact of Climate Change in the Global context. Paper Presented at The Regional Consultative. The Global Water Partnership (GWP) Eastern Africa, Nile Basin Secretariat, Entebbe, Uganda.
4. Muyodi, F.J. (2012). The Uganda Climate Resilience Status Report. The Global Water Partnership (GWP) eastern Africa. Nile Basin Secretariat, Entebbe, Uganda.
5. Muyodi, F.J. (2012). Water Quality Assessment/Audit Report for Lake Bounty Ltd, Fish Processing Factory, Plot M245, Ntinda Industrial Area, P. O. Box 71080, Kampala, Uganda.
6. Muyodi, F.J. (2011). Environmental Assessment for the Proposed Rehabilitation / Strengthening of Busia / Malaba-Bugiri Road, Water Quality Biological Indicators Baseline Data Report . Environmental Assessment Consult Limited, New Kampala Port, Ministry of Works, Transport and Communication, Republic of Uganda.
7. Muyodi, F.J. (2010). Water quality Biological Indicators Baseline Data Report. Environmental Assessment Consult Limited, New Kampala Port, Ministry of Works, Transport and Communication, Republic of Uganda.
8. Muyodi, F.J. (2010). West Nile Block 1 Water Quality Baseline Data Report. Environmental Assessment Consult Limited (EACL). Heritage Oil Limited.
9. Muyodi, F.J., Bugenyi, F.W.B., Isabirye-Basuta, G., Twongo, T., Okaranon, J.O., Semalulu, O., Mubiru, D., Sande, E. and Kapiriri, M. (2007). Applied Research Programme for the Lake Victoria Basin. Final Report, Uganda. Lake Victoria Environmental Management Project (Phase II Preparation). Ministry of Water and Environment, Republic of Uganda, World Bank.
10. Muyodi, F.J., Bugenyi, F.W.B., Isabirye-Basuta, G., Twongo, T., Okaranon, J.O., Semalulu, O., Mubiru, D., Sande, E. and Kapiriri, M. (2007). Regional Applied Research Programme for the Lake Victoria Basin. Final Report. Lake Victoria Environmental Management Project (Phase II Preparation). East African Community, World Bank.
11. Muyodi, F.J. (2007). Assessment of the Status of Water Quality Data Management in Uganda. Final Report. Nile Transboundary Environmental Action Project (NTEAP). Nile Basin Initiative (NBI).
12. Muyodi, F.J and R.E. Hecky. (eds). (2005). Water Quality Synthesis for LVEMP-1. Final Report. Lake Victoria Environmental Management Project (LVEMP), Republic of Uganda, World Bank.

Important Conferences, Workshops and Seminars

June, 2013: Global Water Partnerships Eastern Africa regional Workshop (6th-7th June). Strengthening Private Sector Actors in the Nile River Basin and their role in addressing Climate Change issues in the Nile Basin. Global water Partnerships Eastern Africa (GWPEA) regional Secretariat, Nile Basin Initiative Secretariat, Entebbe, Uganda.

May 2013: Global water Partnerships Eastern Africa Regional Consultation workshop to prepare GWPEA Work Programme and Global GWP Strategy towards 2020 Nairobi, 3rd – 4th May 2013, Nairobi, Kenya.

October, 2012: Council of Frontiers Conference, Entebbe, Uganda. Paper presented on 'Influence of Total Phosphorus, Total Nitrogen and Metals bio accumulated in Water Hyacinth Plants on *Neochetina* Weevil Population and Herbivory'.

June, 2012: Workshop to discuss draft East African Standard on Industrial and Municipal Effluents discharged

into public sewers and water bodies, The Uganda National Bureau of Standards Technical Committee on Chemicals and Environment (UNBS/TC 5). Kampala / Uganda. As Committee member.

February 2012: Consultative Workshop: Establishing Framework for Identifying Demand-Driven Research Topics to Be Undertaken by Postgraduate Students, Lake Victoria Environmental Management Project Phase II (LVEMP II). As Convenor.

October 2011: 1st Lake Victoria Research Initiative (VICRES) Bioannual Forum, Kampala / Uganda, as Team Leader of a research team.

June 2011: FRIEND / Nile Ecohydrology Workshop, UNESCO Cairo Office Project, Cairo, Egypt. As Coordinator and researcher.

April 2009 to 2010:

- i. Lake Victoria Research Initiative (VICRES) Pollution Cluster Workshop, Bujumbura (Burundi), as a researcher, presented a paper.
- ii. Lake Victoria Environmental Management Project (LVEMP), Kisumu, Kenya.
- iii. Nile Basin Initiative (NBI), UNESCO-IHP, Ministry of Water and Environment, Lake Victoria Basin Commission (LVBC) at national and regional levels, as participant or consultant
- iv. Supervision and Mentoring of Postgraduate student, Kyambogo University, Kampala (Uganda)
- v. FRIEND / Nile Ecohydrology Workshop, UNESCO Cairo Office Project, Nairobi, Kenya. Both as researcher and Coordinator.

2008:

- i. Attended a United Nations University Fisheries Training Program (UNU-FTP) conference and workshop on Aquaculture, Marine Fisheries Training Institute, Skúlagata, Iceland.
- ii. Near Lake Shore Drinking Water Project Planning Meeting, Kisumu, Kenya. Reviewing the best technologies for provision of safe water and sanitation in near lake shore communities around Lake Victoria.
- iii. 1st BIO-EARN/VicRes Scientific Conference, Kampala, Uganda. Presented a paper.

2006 – 2007:

- i. Many conferences / workshops organised by Lake Victoria Environmental Management Project (LVEMP), Nile Basin Initiative (NBI), UNESCO-IHP, Ministry of Water and Environment, Lake Victoria Basin Commission (LVBC) at national and regional levels, as participant or consultant.
- ii. Occasionally attends Nature Uganda public presentation / debates on conservation of wildlife.

2004 - 2005:

- i. Participant as National Consultant in National workshop on water quality and Quantity organised by LVEMP, Kampala Uganda.
- ii. Participant as National Consultant in Regional workshop on water quality and Quantity organised by LVEMP, In Mwanza, Tanzania.
- iii. "Water Resources Management Sector Reform" National Stakeholders' Workshop, Grand Imperial Hotel, Kampala / Uganda.
- iv. 11th World Lake Conference in Nairobi, Kenya organised by International Lake Environment Committee (ILEC). Presented a paper.
- v. Participant, "13th Conference for Inland Fisheries of Africa Conference" FAO, Entebbe / Uganda.

b) Membership

i) American Society for Microbiology (ASM), admitted 2004; ii) WATERSANITATION, on mailing list (Watersanitation List), admitted 2004; iii) Nature Uganda, admitted 2003; iv) Wildlife Conservation Society of Tanzania, admitted 1998; v) Tanzania Society for Microbiology, admitted 1997.

Postgraduate Courses Taught

ZFA7201: Limnology and the Aquatic Environment.

ZFA7208: Ecology and management of Wetlands, Rivers and Lake Ecosystems.

Undergraduate Courses Taught: Aquatic Resource Management (3 CU), Aquaculture (3 CU), Basic Aquatic Ecology (3 CU), Aquatic Microbiology (4 CU), Environmental Microbiology (3 CU), Aquatic Environmental Health (3 CU), Introduction to Microbiology and Biotechnology (3 CU), Basic Bacteriology and Virology (2 CU). Hydrobiology (4 CU) and conducts research, outreach, consultancy and supervision of student projects in these fields.

List of Students supervised / advised between 2007 and 2011

PhD: 4; MSc: 12 and Undergraduate Research Projects: 45.

Awards Obtained

1996 to 2000: Netherlands Universities Fund For International Co-operation (NUFFIC): Lake Victoria project which earned me a Ph.D., at the University of Dar es Salaam, Tanzania.

August 1999 to February 2000: NUFFIC Award: Molecular Biology Research work in the Department of Microbiology and Molecular Biology, Catholic University of Nijmegen, The Netherlands.

June 1998: Commonwealth Travel Grant: To participate in a scientific conference at the City University of Hong Kong.

1994 to 1996: NUFFIC Award: Funded research that earned me a MSc, at the University of Dar es Salaam, Tanzania.

October 1989 to July 1993: IUC Award, Inter-University Council for East Africa, for my undergraduate training which earned me a BSc. Ed.

Journal Reviewer/Editor

1. Lakes & Reservoirs: Research and Management – Wiley-Blackwell.
2. Physics and Chemistry of the Earth – Elsevier.
3. South African Journal of Science.
4. Journal of Conservation Biology.
5. African Journal of Hydrobiology and Fisheries.
6. African Journal of Biotechnology.
7. Journal of Agricultural and Biological Sciences.
8. Journal of Biological Conservation.

Activities in Civic, Public or International Affairs

- 1) Member, National Technical Committee on Chemicals and Environmental Standards (UNBS/TC 5), Uganda National Bureau of Standards, appointed 2012.
- 2) Global Water Partnerships, Contact Person for Zoology Dept., Makerere University, appointed 2007.
- 3) Member, Preparatory Technical Team, Lake Victoria Nearshore Drinking Water Project, "Finding Solutions to Polluted Lakeshore Drinking Water in Rural African Communities: Women, Community Learning and Appropriate Technology" Organized jointly by United Nations University International Network on Water, Environment and Health (UNU-INWEH), appointed 2007.
- 4) Member, National Technical Working Group, Lake Victoria Environmental Management Project (LVEMP) Phase 2, appointed 2007.
- 5) Coordinator, Ecohydrology Component of the Nile Basin Countries, appointed 2008.
- 6) Member, National Water Quality Working Group, Nile Transboundary Environmental Action Project (NTEAP) of the Nile Basin Initiative (NBI), Chairperson, appointed Jan. 2006.
- 7) Member, Governing Council, Fisheries Training Institute (FTI) of Uganda, appointed May 2007.