

CURRICULUM VITAE

William Aino SHIVOGA, (Dr.rer.nat.)

Masinde Muliro University of Science and Technology,
Department of Biological Sciences,
P.O. Box 190-50100,
KAKAMEGA, KENYA

Tel: +254 721264334 (Mobile) Email: shivoga@gmail.com, wshivoga@mmust.ac.ke

PERSONAL INFORMATION

Date of Birth:	18 th December 1959
Place of Birth:	Nakuru, Kenya
Citizenship:	Kenyan
Sex:	Male
Marital status:	Married
Languages:	English, Kiswahili and Kiluhya
Religion:	Christian
ORCID ID:	https://orcid.org/0000-0002-1694-933
Scopus Author ID:	56012749600

Summary

William Aino Shivoga, is a Professor of Aquatic Ecology in the Department of Biological Sciences of Masinde Muliro University of Science and Technology (MMUST). He holds a Doctor of Natural Sciences (Dr.rer.nat., Limnology/Ecology) from the University of Vienna, Austria (1999); Post Graduate Certificate in Limnology at the Institute of Limnology, Academy of Sciences, Mondsee, Austria (1994); Master of Philosophy in Environmental Studies from Moi University, Eldoret-Kenya (2001); Master of Education from Kenyatta University (1988); and Bachelor of Education Science, Botany/Zoology) from the University of Nairobi (1984). Dr Shivoga is a fellow of the United Nations University Advanced Research of Ecology, Economy and Legal aspects of Biological Diversity Programme, University of Ghent, Belgium.

I have 18 years of leadership and management experience since March 2003: having served as Dean Faculty of Environment and Resources Development (Egerton University), Chairman Department of Environmental Sciences (Egerton University), Chairman Department of Biological Sciences (MMUST), Executive Dean, School of Natural Sciences (MMUST), Acting Deputy Vice Chancellor, Planning Research and Innovation (MMUST) for two and half years and currently the Executive Dean, School of Natural Sciences (MMUST). I have also been a member and chaired many committees.

As a researcher in stream ecology and watershed management, Prof. Dr Shivoga has won and successfully managed major research grants from UNDP/GEF, GL-CRSP US-AID and IDRC, Canada. He have supervised and mentored both local and international postgraduate students at masters and doctoral levels. Prof. Dr Shivoga has worked on a range of river, lakes and watersheds in Africa and Europe, gaining broad experience of the global challenges facing water and habitat quality. He has widely published in internal referred journals, cited by over 200 authors and participated in many scientific international conferences.

Prof Shivoga is Lead Expert of Environmental Impact Assessment and has been a member of professional associations including Ecology and Health (IAEH), Eastern Africa-Austria Water Association (EAAWA), International Association of Theoretical and Applied Limnology (SIL) and the Southern African Society of Aquatic Scientists (SASAQS). He has served on the Editorial Board of the African Journal of Aquatic Science. He is currently a representative of MMUST in the Austrian – African Research Network (Africa-UniNet).

Prof Shivoga has established collaborative linkages with University of Vienna, University of Natural Resources and Life Sciences (Universität f. Bodenkultur Wien), University of Wyoming (US), Utah State University, Western University, Canada, Cambridge University, Manchester Metropolitan University, University of Warwick, University of Venda (SA), University of Pretoria, University of Rwanda, Debre Berhan University, Ethiopia and Egerton University.

Prof. Shivoga's current research interests include tropical stream ecology; microbial ecology; watershed management; characterisation of biophysical and social components of aquatic systems; the linking of ecological mechanisms operating within rivers and their watersheds; and the policies which drive and protect ecosystems from human and climatic change impacts; ecology and evolution of waterborne pathogens, wastewater treatment, environment as a source of antimicrobial resistance and One Health Solution to antimicrobial resistance for green living.

EDUCATIONAL AND ACADEMIC BACKGROUND

- Sep. 2000 – Feb. 2001:** Post-doctoral advanced training and research in the Ecology, Economy and Legal aspects of Biological Diversity, United Nations University Fellowship at the University of Ghent, Belgium
- Oct. 1995 – Jan. 1999:** Doctor of Natural Sciences (Limnology/Ecology) University of Vienna, Austria. Title of Thesis: *Spatio-temporal Variations in Physicochemical Factors and Stream Fauna Abundance and Composition in the Zones of Transition between Baharini Springbrook, Njoro River and Lake Nakuru, Kenya.*
- March – Dec. 1994:** Post Graduate Limnology Course at the Institute of Limnology, Academy of Sciences, Mondsee, Austria. Project title: *Phosphate Uptake Behaviour by a Mixed Phytoplankton Population in a Lake and by Eukaryotic Green Algae, Scenedesmus bijuga in Culture.*

- 1989 – 1991:** Master of Philosophy in Environmental Studies, Moi University, Eldoret, Kenya. Title of thesis: *Relationship between Environmental Factors and Phytoplankton Species Composition and Biomass in Kesses Dam, a Tropical Man-Made Water Reservoir.*
- 1986 – 1988:** Master of Education (TDC), Kenyatta University, Nairobi, Kenya. Title of thesis: *Analysis of Biological Science Courses in Diploma Colleges: A Case Study of Moi Teachers College, Eldoret.*
- 1980 – 1984:** Bachelor of Education (Science), Nairobi University, Kenya. Project: *Investigation of Nitrogen Uptake in Zea mays through Studies of Nitrate Reductase and Nitrate Reductase Inactivating Enzymes.*
- 1974 – 1979:** Secondary and High School Education, St. Patrick’s High School, Iten, Kenya.
- 1967 – 1973:** Primary School Education at Soy Primary School, Soy, Kenya.

EMPLOYMENT HISTORY

- 16 October 2012 to Present:** Professor of Aquatic Ecology, Masinde Muliro University of Science and Technology, Kakamega, Kenya
- August 2015 to 2021:** Executive Dean, Faculty of Science, Masinde Muliro University of Science and Technology, Kakamega, Kenya
- February 2016 to September 2018:** Acting Vice Chancellor, Planning Research and Innovation, Masinde Muliro University of Science and Technology, Kakamega, Kenya
- August 2014 to August 2015:** Acting Dean, Faculty of Science, Masinde Muliro University of Science and Technology, Kakamega
- August 1, 2011 to August 2014:** Chairman, Department of Biological Sciences, Masinde Muliro University of Science and Technology, Kakamega, Kenya
- November 2010 to August 2012:** Associate Professor, Department of Biological Sciences, Masinde Muliro University of Science and Technology, Kakamega, Kenya
- March 2008 – October 2010:** Associate Professor, Department of Environmental Science, Egerton University, Kenya
- March 2007 – March 2009:** Dean of the Faculty of Environment and Resources Development, Egerton University, Egerton, Kenya

March 2003 – March 2007:	Chairman of the Department of Environmental Science, Egerton University, Egerton, Kenya
March 2001 – March 2008:	Senior Lecturer Department of Environmental Science, Egerton University, Egerton, Kenya
1993 – March 2001:	Lecturer, Department of Environmental Science, Egerton University, Kenya.
Feb. 1992 –1993:	Assistant Lecturer, Department of Botany, Egerton University, Kenya.
1988 – 1991:	Diploma College Lecturer, Moi Teachers, Eldoret, Kenya, (Teachers Service Commission).
1984 – 1988:	High School Biology and Chemistry Teacher, St. Patrick's High School, Iten, Kenya, (Teachers Service Commission)

PROFESSIONAL TRAINING

21 -25 May 2018	Training Workshop on Postgraduate Supervision, University of Rwanda, Nyamata Kigali Rwanda.
28-30 November 2017	Three-Day Corporate Governance Training Course, Masada Hotel, Naivasha, Kenya.
2-5 May 2017	Grounding Personal Research Culture, Grant Proposal Writing and Postgraduate Supervision, University of Venda, SA and Masinde Muliro University of Science and Technology, MCU, MMUST.
1 – 4 March 2016	Discipline Management and Industrial Relations Training Programme for MMUST, Federation of Kenya Employers (FKE), The Main Catering Hall Unit (MU), Masinde Muliro University of Science and Technology, Kakamega.
3 – 6 November 2015	2015/2016 MMUST Performance Contract Negotiation and Vetting, The Main Catering Hall Unit (MU), Masinde Muliro University of Science and Technology, Kakamega
4 – 6 June 2014	National Multiplication Training on Curriculum Development and Review for Newly Chartered Public Universities in Kenya: Implementation and Accreditation – Part 2. Organized by Commission for University Education (CUE) and the Germany Academic Exchange Service (DAAD), Nakuru, Kenya
2 – 4 December 2013	National Multiplication Training on Curriculum Development and Review for Newly Chartered Public Universities in Kenya: Implementation and Accreditation. Organized by Commission for University Education (CUE) and the Germany Academic Exchange Service (DAAD), Nakuru, Kenya

- 29 May 2008:** The Environmental Management and Coordination Act, Certificate of Registration as Environmental Impact Assessment/Audit Expert No. 0039.
- 24 – 25 June 2008:** Corporate Governance: Principles and Practice, Responsibilities of the Council and the Management Role and Functions of Egerton University Management Organs, Centre for Corporate Governance, Hotel Cathy, Nakuru, Kenya.
- 13 - 15 November 2006:** Implementation and Documentation of ISO 9000 Course, Kenya Bureau of Standards (KEBS), Njoro, Kenya.
- 16 - 18 January 2006:** Leadership, Corporate Governance, Strategic Planning and Institutional Management Training, School of Monetary Studies, Nairobi, Kenya
- 4 – 5 August 2005:** An In-House Training on Financial Management Training for Egerton University Deans and Heads of Departments, Federation of Kenya Employers at ARC Hotel, Egerton University, Kenya.
- 23 June 2005** Integrating Gender in the Global Livestock CRSP, Dublin, Ireland
- 29 – 31 March 2004** Introduction to Geographical Information Science (ArchGIS Part I and II), University of Wyoming Geographic Information Centre, Egerton University, Kenya
- 11 – 15 March 2002:** Training for Web Coordinator Course, African Virtual University Centre, Egerton University, Kenya.
- October 2002** The Project Cycle Management – Logical Framework Course using the TeamUP-PCM Methodology, Team Technologies Inc., Washington DC., 2002

RESEARCH AREAS AND GRANT ADMINISTRATION EXPERIENCE

1. **Research Scientist:** Towards COVID-19 containment: Geo-app Surveillance of SARS-CoV-2 and Effectiveness of Home-Based Care in Western Region of Kenya. Funded by Masinde Muliro University of Science and Technology University Research Fund (MMUST-URF 2021).
2. **Principal Investigator/Project Leader,** Centre of Excellence for Water and Environmental Resources Management (CEWERM), funded by Masinde Muliro University of Science and Technology University Research Fund (MMUST-URF 2016). **2016 –to date.**
3. **Principal Investigator:** Tropical Stream Ecology: Spatiotemporal Variability in Habitat Characteristics and Macroinvertebrate Communities in River Isiukhu, Kenya. Funded by UNESCO/The World Academy of Sciences (TWAS) RGA No. 16-536 RG/BIO/AF/AC_G

– FR3240293308 (12 December 2016 to 30 November 2018).

4. **Project Leader:** Lake Naivasha Sustainability Project: Managing Resources for Continual Improvement of the Ecosystem for Human Health and Well-being. The project is in collaboration with Schulich School of Medicine, University of Western Ontario Canada, Department of Pharmacology & Therapeutics, McGill University, Montréal, Québec, National Environment Management Authority (NEMA), Department of Environmental Biology, Ontario Agriculture College, University of Guelph, Guelph, Kenya Wildlife Service (KWS), Kenya Electricity Generating Company (KenGen) and the Division of Medical Services Rift Valley Province, Ministry of Health the Ministry of Health, Kenya. Funded by IDRC, Canada. (2009 -2012).
5. **Research Scientist** in the Commission for Higher Education project entitled “*Empowering Local Communities for Sustainable Agricultural Production: Case Studies for Nakuru and Kakamega Districts*”. The Project Aimed at enhancing wetland benefits through smallholder aquaculture-agriculture systems in the Lake Victoria Basin, East Africa. Funded by European Commission. (2006 – 2010)
6. **Principal Investigator**, Sustainable Management of Watersheds-Collaborative Research Support Program (SUMAWA–CRSP): *Sustainable Management of Rural Watersheds: Biophysical, Livestock and Human Interactions in the River Njoro Watershed*. In collaboration with Moi University, Department of Fisheries, Kenya Wildlife Service, University of Wyoming, University of California-Davis and Utah State University. (GL-CRSP/USAID). (2002 – 2008).
7. **Principal Investigator/ Coordinator** of Community-based Wetland Project for Wastewater Treatment (UNDP/GEF Small Grant Programme) in collaboration with Maji Na Ufanisi and TARA Consult (2003 – 2007).
8. **Research Scientist/National Member** of the Steering Committee in the UNEP/WCM Research Project on the “The Biodiversity Indicators for National Use”. Coordinated by the Kenya Wildlife Service. (2002-2005).
9. **Research Scientist** in the European Commission Research on the “The dynamics and evaluation of finger ponds in East African freshwater wetland ecotones using appropriate fish production techniques”. (2002 – 2005).

CONSULTANCIES

1. **November 2014 to February 2015:** Socioeconomic and Hydrogeological Survey for Improvement of Groundwater Supply in South and Central Regions of Somalia. Client: iHH- iNSANi YARDINIMVAKFI, Somalia
2. **September 2010:** Review of the current status of Biological and Wildlife Environment in the vicinity of Olkaria III Geothermal Power Plant.
3. **January –May 2009:** Leading a team of Experts (Engineers, Economists, Environmental Scientists, Socioeconomics) in the development a proposal entitled: *Njoro-Egerton Community Water Supply and Conservation Project, Kenya* a grant funded by ORIO (to orio@info.evd.nl), Facility for Infrastructure Development for projects in the field of public infrastructure.

4. **2 - 4 March 2010:** Workshop Moderator/Facilitator: Electronic (e-) Waste: Impacts, Challenges and the Role of Government, Service Providers and the Consumer. Ole Sereni Hotel, Nairobi, 9-10 June 2010.
5. **September 2009:** Review of the current status of Biological and Wildlife Environment in the vicinity of Olkaria III Geothermal Power Plant.
6. **July to September 2009:** Review of Concept Notes on Food, Health and Adaptation to Climate Change in East and Southern Africa. International Development Research Centre (IDRC) Canada – Ecosystem Approaches to Human Health Program Initiative.
7. **November 2007- May 2008:** Developing Curriculum for Kitabi Conservation Training Centre, Kigali, Rwanda.
8. **May 2007:** Preparation of Project Proposals for Community and Urban Water Supply and Sanitation Project, Nyandarua and West Pokot Districts, Kenya. Initiative Proposals- 6no. The proposed projects are based in **Nyandarua** (Kipipiri Water Project, Njambini Water and Sanitation Project, Engineer Town Water and Sanitation Project) **and West Pokot Districts** (Kacheliba Town Water and Sanitation Project, Sigor Water and Sanitation Project, Makutano-Kapenguria Water and Sanitation Project). The proposals were successful and the projects in Nyandarua were funded by the Kenya-Italy Debt for Development Initiative (**KIDDI**) program for promoting sustainable economic development in Developing Countries.
9. **August 2006 to January 2007:** Collation of information on information on the Mau Forest, WWF-Eastern Africa Regional Programme Office (WWF-EARPO).
10. **February - May 2004:** Environmental Audit of the Sabite and Seger Petrol Filling Station at Mogotio, Koibatek District, Kenya
11. **September 2003:** Review of the current status of Biological and Wildlife Environment in the vicinity of Olkaria III Geothermal Power Plant.
12. **March – August 2002:** Analyses of water quality of Kargi Wells in Marsabit, Kenya. A project of Global Livestock Collaborative Research Program; University of California Davis, US.
13. **November 2000 – June 2001:** Worldwide Fund for Nature - Lake Nakuru Conservation and Development Project (WWF-LNCDP) as a partner in the Development of a Biological Monitoring and Water Quality Assessment Program for Lake Nakuru Basin, Kenya
14. **January – August 2000:** Environmental Impact Assessment Study of the Ormat Olkaria III Geothermal Power Project. **Specific Duties:** Responsible for studying the Biological Environmental Impacts associated with drilling, construction, and operation of the power plant, including hazards to plant and animals associated with (i) destruction of habitat, (ii) impediment of free movement of wildlife, (iii) pollution from chemicals in geothermal waters, gases, and in the soil, and (iv) any other impacts on the biodiversity of the area.

PUBLICATIONS

1. Sifuna Anthony Wawire, Oleg N Reva, Thomas J O'Brien, Wendy Figueroa, Victor Dinda, **William A Shivoga**, Martin Welch (2021). Virulence and antimicrobial resistance genes are

- enriched in the plasmidome of clinical Escherichia coli isolates compared with wastewater isolates from western Kenya. Infection, Genetics and Evolution 91: 104784. <https://doi.org/10.1016/j.meegid.2021.104784>
- Jane Oremo, Francis Orata, Joseph Owino and **William Shivoga** (2020). Assessment of Available Phosphates and Nitrates Levels in Water and Sediments of River Isiukhu, Kenya, *Applied Ecology and Environmental Sciences*, 2020, Vol. 8, No. 3, 119-127. DOI:10.12691/aees-8-3-7
 - Paul O. Abuom, **William A. Shivoga**, Douglas N. Anyona, Gabriel O. Dida (2020). Effect of land use on soil quality in Rivers Nyando and Yala Catchments of Lake Victoria Basin, Western Kenya, *Agricultural Science Research Journal* Volume (10) Issue (7): 164 – 173. ISSN 2026-6073.
 - Jane Oremo, Francis Orata, Joseph Owino and **William Shivoga** (2019). Assessment of heavy metals in benthic macroinvertebrates, water and sediments in River Isiukhu, Kenya. *Environmental Monitoring and Assessment* 191(11). DOI 10.1007/s10661-019-7858-5
 - Rael Adhiambo, Francis Muyekho, Irena F. Creed, Eric Enanga, **William Shivoga**, Charles G. Trick and John Obiri (2019). Managing the invasion of guava trees to enhance carbon storage in tropical forests. *Forest Ecology and Management* 432: 623-630, Elsevier 15 January 2019.
 - Menya, A. A., Sifuna Anthony, **Shivoga W.A.** and Wawire S.A. (2018). Enteric bacterial communities associated with the Omubhira Stream in Kakamega County, Kenya. *African Journal of Bacteriology Research* **10**(3): 23-33, August 2018, DOI: 10.5897/JBR2018.0261. ISSN: 2006 -9871.
 - Clarice Malaho, Sifuna Anthony Wawire and **William A. Shivoga** (2018). Antimicrobial resistance patterns of Enterobacteriaceae recovered from wastewater, sludge and dumpsite environments in Kakamega town, Kenya. *African Journal of Microbiology Research* **12**(28) 673-680, 28 July, 2018 DOI: 10.5897/AJMR2017.8656.
 - Olilo, Casianes, Muia, Wairimu, Onyando, Japheth, Moturi, Wilkister, Ombui, P and **Shivoga, William** (2016). Effect of vegetated filter strips on infiltration and survival rates of *Escherichia coli* in soil matrix at Mau, Njoro River Watershed, Kenya. *Energy, Ecology and Environment*. DOI 10.1007/s40974-016-0049-0. Received: 3 September 2015 / Revised: 2 December 2016 / Accepted: 11 December 2016.
 - C. O. Olilo, J. O. Onyando, W. N. Moturi, A. W. Muia, Amber F. Roegner, Z. Ogari, P. N. Ombui and **W. A. Shivoga** (2016). Composition and design of vegetative filter strips instrumental in improving water quality by mass reduction of suspended sediment, nutrients and *Escherichia coli* in overland flows in eastern escarpment of Mau Forest, Njoro River Watershed, Kenya. *Energy Ecol Environ*. 2016 December; 1(6): 396–407. doi:10.1007/s40974-016-0032-9.
 - C.O. Olilo, J.O. Onyando, W.N. Moturi, A.W. Muia, P. Ombui, **W.A. Shivoga**, and A. F. Roegner (2016). Effect of vegetated filter strips on transport and deposition rates of *Escherichia coli* in overland flow in the eastern escarpments of the Mau Forest, Njoro River Watershed, Kenya. *Energ. Ecol. Environ*. DOI 10.1007/s40974-016-0006-y. Received: 3 August 2015 / Revised: 29 December 2015 / Accepted: 6 January 2016
 - J. M. Kariuki, W. N. Moturi, **W. A. Shivoga**, I. W. Kingori and C. M. Kilonzi (2016). Demand for, Awareness on and Constraints to Proper Solid Waste Management in Njoro Division, Nakuru, Kenya. *Journal of Scientific Research & Reports Article no.JSRR.25844. ISSN: 2320-0227*. Received 22nd March 2016 Accepted 31st May 2016 ,Published 13 June 2016.

12. **William A. Shivoga** (2015): Scientific Contribution in Creed, I. F., Henley, P., Trick C. G. & Wegulo, F. N. (Eds.) *Moving Waters: A Study of Lake Naivasha*. London, ON: Africa Institute Publishing Western University Ontario, CANADA. ISBN: 9780771431036. October 2015.
13. Ali-Olubandwa, M., Kathuri, N., Odero-Wanga, Dolphine and **Shivoga, William**. (2015). Impact of Agricultural Reform Measures on Maize Production among Small Scale Farmers: The Case of Western Province of Kenya. *Asian Journal of Agricultural Extension, Economics & Sociology*. 5. 137-146. 10.9734/AJAEES/2015/12053. January 2015.
14. Donde O. Omondi, Muia A. Wairimu, Wanga L. Aketch, **Shivoga A. William**, Charles G. Trick and Irena F. Creed (2015). Faecal pollution and solar purification of community water sources within Lake Naivasha basin, Kenya. *Journal of Water, Sanitation and Hygiene for Development* June 2015. Impact Factor: 0.44. DOI:10.2166/washdev.2015.150
15. Casianes O. Olilo, **William A. Shivoga**, John J. Kitetu and Simon Agembe (2014). Effects of environmental factors on cyanobacteria dynamics in Lake Baringo, Kenya. *Lakes and Reservoirs: Research and Management* 2014 19: 240–254. December 2014.
16. Naluyange, Victoria, Ochieno, Dennis, Maingi, John, Ombori, Omwoyo, Mukaminega, Dative, Amoding, Alice, Oendo, M. Okoth, S., **Shivoga, William** and Muoma, John. (2014). Compatibility of Rhizobium inoculant and water hyacinth compost formulations in Rosecoco bean and consequences on Aphis fabae and Colletotrichum lindemuthianum infestations. *Applied Soil Ecology*. 76. 68–77. 10.1016/j.apsoil.2013.12.011. April 2014.
17. Kigen, Charles, W Dennis, M, Ochieno, Muoma, John, **Shivoga, William**, Konje, Martha, Onyando, Zedekiah, C Soi, Benard, Makindi, Stanley, M Kisoyan, Philip and Mironga, John. (2014). Spatial Modeling of Sorghum (*Sorghum bicolor*) growing areas in Kenyan Arid and Semi-Arid Lands. 66. 20674-20678. January 2014.
18. Faith Milkah Muniale, Francis Wegulo, **William Shivoga** and Muchai Muchane (2014). Birds in Fragmented Eastern Mau Forest. *Global Journal of Scientific Researches* 2(1): 2 7– 3 0, 31 January, 2014.
19. Onyando, Zedekiah, **Shivoga, William**, Lung'ayia, Henry, W. Ochieno, Dennis, Humphrey, Agevi and Kigen, Charles. (2013). The influence of land use on nutrient regime in a tropical stream. **Elixir pollution**. 64. November 2013.
20. Donde O. Oscar, Muia A. Wairimu, **Shivoga A. William** (2013). Temporal Variation in Densities of Microbiological Indicators of Pollution in Water Sources within Naivasha Lake Basin, Kenya. *International Journal of Scientific & Technology Research* 2(10) ISSN 2277-8616. October 2013.
21. Kigen, Charles, Patrick, Okoth, Konje, M, **Shivoga, William**, Ochieno, Dennis, Wanjala, S, Humphrey, Agevi, Onyando, Zedekiah, Soy, B, Kisoyan, P and Makindi, Stanley. (2013). Modeling the Spatial Impact of Climate Change on Grevy's Zebra (*Equus grevyi*) niche in Kenya. *Elixir Remote Sensing*. 62. 17608-17611. September 2013.
22. Donde, O., O., Muia A., W., **Shivoga A., W.**, (2013). Faecal bacterial pollution of borehole water between collection points and households within Naivasha, Kenya. *Egerton J. Sci. & Technol. Volume 13: 165-184 ISSN No. 2073 - 8277*

23. Donde O. Oscar, Muia A. Wairimu, **Shivoga A. William**, Onyango A. Christine (2012). Temporal variation in densities of microbiological indicators of pollution in water sources within Naivasha Lake basin, Kenya. *Journal of Environmental Science and Engineering*. Paper No. JEASE-E20120827-01.
24. C.M. Kihia, J.M. Mathooko, R.K. Ruwa and **A.W. Shivoga** (2012). Leaf Herbivore Preference in a Tropical Mangrove Forest Impacted by Human Physical Disturbance. *International Journal of Ecology and Development* **22** (2): 52–62. January 2012.
25. CM Kihia, JM Mathooko, RK Ruwa and **WA Shivoga** (2011): Influence of human disturbance on patterns of leaf herbivory at Gazi Bay mangrove forest, Kenya. *African Journal of Aquatic Science* 2011, **36**(3): 235–241. December 2011.
26. Onyango, Godfrey, Wegulo, Francis and **Shivoga, William**. (2011). Utilization of Research finding for sustainable management of Lake Naivasha Basin. Conference Proceedings: Research for Promoting Creativity, Innovation, Development and Industrialization, At Kabarak University Nakuru. P.185. October 2011.
27. E. M. Enanga, **W. A. Shivoga** , C. Maina-Gichaba, I. F. Creed (2011). Observing Changes in Riparian Buffer Strip Soil Properties Related to Land Use Activities in the River Njoro Watershed, Kenya. *Water, Air and Soil Pollution Journal. Water Air Soil Pollution* (2011) **218**:587–601. June 2011.
28. Adijah M. Ali-Olubandwa, N. J. Kathuri, Dolphine Odero-Wanga and **William. A. Shivoga** (2011). Challenges Facing Small Scale Maize Farmers in Western Province of Kenya in the Agricultural Reform Era. *American Journal of Experimental Agriculture* **1**(4): 466-476, 2011.
29. Ali-Olubandwa, Adijah & Odero-Wanga, Dolphine & J. Kathuri, N & **Shivoga, William**. (2010). Adoption of Improved Maize Production Practices Among Small Scale Farmers in the Agricultural Reform Era: The Case of Western Province of Kenya. *Journal of International Agricultural and Extension Education*. 17. 21-30. 10.5191/jiaee.2010.17103. January 2010.
30. Kihia, Charles, Jude, Mathooko. Ruwa, R and **Shivoga, William**. (2010). Mangrove litter biomass input in a forest impacted by human physical disturbance, Gazi Bay, Kenya. *Ecotropica*. 16. 113-123. Society for Tropical Ecology. January 2010.
31. Macharia, S., Mono G.V., Ngugi C.C. and **Shivoga, W.A.** (2009). Towards sustainable participatory management Lake Naivasha fishery resources. *Samaki News* **Volume 4**.
32. **Shivoga, William** and Moturi, Wilkister. (2009). Geophagia as a risk factor for diarrhoea. *Journal of infection in developing countries*. 3. 94-8. 10.3855/jidc.55. March 2009.
33. Oyoo-Okoth, Elijah, Muchiri, Mucai, **Shivoga, William**, Miller, Scott, Rasowo, Joseph and Ngugi, Charles. (2009). Spatial and seasonal variations in phytoplankton community structure in alkaline-saline Lake Nakuru, Kenya. *Lakes & Reservoirs Research & Management*. 14. 57-69. 10.1111/j.1440-1770.2009.00392.x. March 2009.
34. Charles Kigen , **W. A. Shivoga**, A. Magana (2009) Water Quality Analysis using Macroinvertebrates and Riparian Vegetation in a Tropical River. *Egerton University Journal of Science and Technology* **9** (2009). <http://journal.egerton.ac.ke/index.php/ejt/article/view/57>
35. Baker, Tracy, Miller, Scott, **Shivoga, William** and Chiuri, W.L. (2008). Development and use of a multiple objective spatial decision support system in East African rural watershed

management. Conference: Proceedings of the American Water Resources Association Spring Specialty Conference, At San Mateo, CA. March 2008.

36. Kibichii, Samuel, **Shivoga, William**, Muchiri, Mucai, Enanga, Eric and Miller, Scott. (2008). Seasonality in water quality and its influence on the abundance and distribution of phytoplankton and chironomid larvae in Lake Nakuru, Kenya. *SIL Proceedings*, 1922-2010. 30. 333-338. 10.1080/03680770.2008.11902138. January 2008.
37. Samuel Kibichii, **William A. Shivoga**, Mucai Muchiri, Erick Enanga and Scott N. Miller (2008). Seasonality in water quality and its influence on the abundance and distribution of phytoplankton and chironomid larvae in Lake Nakuru, Kenya. *Verh. Internat. Verein. Limnol.* 2008, **30(3)**: 333–338, Stuttgart, July 2008.
38. Nguta C.M., P.M. Ithagu and **W.A. Shivoga** (2008): Concentration of Cadmium, Lead and Zinc in soil and grass around the Nakuru Municipal dumpsite, Kenya. *Journal of Agriculture and Technology* 2008 **10** (2): 34-40.
39. **Shivoga, W.A.**, Muchiri, M., Kibichi, S., Odanga, J., Miller, S.N., Baldyga, T.J., Enanga, E.M. and Gichaba, C.M. Influences of land use/cover on water quality in the upper and middle reaches of River Njoro, Kenya. *Lakes & Reservoirs: Research and Management* 2007 12: 97–105.
40. Baldyga, Tracy J., Scott N. Miller, C. Maina Gichaba and **Shivoga, W.** (2007). Suitability of the Automated Geospatial Watershed Assessment (AGWA) Tool in Assessing Hydrologic Response and Land Cover Change in River Njoro Watershed, Kenya. *Egerton Journal: Science and Technology*, **7(1)**: 56-71.
41. Baker, Tracy, Miller, Scott, **Shivoga, William**, Lelo, Francis, Paige, Ginger and Mooney, S. (2007). Development of a participatory spatial decision support system for East African rural planning. Conference: Proceedings of AfricaGIS 2007, At Ouagadougou, Burkina Faso. September 2007.
42. Kibichii, Samuel, **Shivoga, William**, Muchiri, Mucai and Miller, Scott. (2007). Macroinvertebrate assemblages along a land-use gradient in the upper River Njoro watershed of Lake Nakuru drainage basin, Kenya. *Lakes & Reservoirs: Research & Management*. 12. 107 - 117. 10.1111/j.1440-1770.2007.00323.x. July 2007
43. **Shivoga, William**, Muchiri, Mucai, Kibichi, Samuel, Odanga, Jethro, Miller, Scott, Baker, Tracy, Enanga, Eric and Gichaba, Maina. (2007). Influences of land use/cover on water quality in the upper and middle reaches of River Njoro, Kenya. *Lakes & Reservoirs: Research & Management*. 12. 97 - 105. 10.1111/j.1440-1770.2007.00325.x. July 2007.
44. Baker, Tracy, Miller, Scott, Gichaba, Maina and **Shivoga, William**. (2007). Suitability of the Automated Geospatial Watershed Assessment (AGWA) tool in assessing hydrologic response and land cover change in River Njoro watershed, Kenya. *Egerton Journal of Science and Technology*. 7. 56-71. January 2007.
45. Kibichii, S, **Shivoga, William**, Muchiri, Mucai, Baker, Tracy, Miller, Scott. (2006). Impact of land use on the physicochemical characteristics and the structure of benthic macroinvertebrates of the upper River Njoro, Kenya. Conference: Environ06: 16th Irish Environmental Researchers Colloquium, University College Dublin, At Dublin, Ireland. January 2006.

46. **Shivoga, William**, Muchiri, Mucai, Kibichi, S, Odanga, Jethro, Miller, Scott, Baker, Tracy and Gichaba, Maina. (2005). Impacts of upland land use on downstream water quality in River Njoro Watershed, Kenya. Conference: Proceedings of the 11th International Conference on the Conservation and Management of Lakes, at Nairobi, Kenya, Volume: 2. October 2005.
47. **Shivoga, William**, Muchiri, Mucai, Kibichi, S, Odanga, Jethro, Miller, Scott, Baker, Tracy and Gichaba, Maina. (2005). Impact of land use on water quality in River Njoro Watershed, Kenya. Conference: Proceedings of the International Grasslands Conference: Grasslands—a Global Resource, At Dublin, Ireland. June 2005.
48. **Shivoga, William**, Muchiri, Mucai, Kibichii, S, Odanga, Jethro, Miller, Scott and Baker, Tracy. (2005). Upstream land uses and riparian zones contribution to downstream nutrient concentrations in River Njoro, Kenya. Conference: Proceedings of the International Grasslands Conference: Grasslands—a Global Resource, At Dublin, Ireland. June 2005.
49. Baker, Tracy, Mooney, S, Miller, Scott, Ouma, D, and **Shivoga, William**. (2005). Institutions, environment and water use: the River Njoro watershed and Lake Nakuru. Report number: Working paper 2005-104, Affiliation: Department of Agricultural and Applied Economics, University of Wyoming, Laramie, WY. January 2015.
50. Mavura, Ward, O. Apiyo, M., **Shivoga, William**. (2004). The Impact of Sony Sugar Factory Effluents on the Pollution Status of River Sare, Migori District, Kenya. *Journal of Civil Engineering Research and Practice*. 1. 10.4314/jcerp.v1i2.29127. December 2004.
51. Thel, L, Baker, Tracy, Cockrell, A.J., Miller, Scott, Lelo, Francis, Gichaba, Maina, Ouma, S, **Shivoga, William**, Muchiri, Mucai and Jenkins, Marion. (2004). Integration and management of hydrologic, ecologic, socio-economic and stakeholder data for watershed management in Kenya. Conference: GIS in the Rockies 2004 Conference: “Worlds of Opportunity”, At Denver, CO. October 2004.
52. Baker, Tracy, Miller, Scott, Thel, L, **Shivoga, William** and Gichaba, Maina. (2004). Improving livelihoods with remote sensing and GIS. Conference: Conference: GIS in the Rockies 2004 Conference: “Worlds of Opportunity”, At Denver, CO. October 2004.
53. Jenkins, Marion, Lelo, Francis, Chiuri, Wanjiku, **Shivoga, William** and Miller, Scott. (2004). Community Perceptions & Priorities for Managing Water and Environmental Resources in the River Njoro Watershed in Kenya. 10.1061/40737(2004)140. June 2004.
54. Baker, Tracy, Miller, Scott, **Shivoga, William** and Gichaba, Maina. (2004). Assessing Land Cover Change Impacts Using Remote Sensing and Hydrologic Modeling. Conference: Proceedings of the American Society for Photogrammetry and Remote Sensing Annual Meeting, At Denver, CO. May 2004.
55. **Shivoga, A.W.** and Coppock, D. Layne (2003): Pastoral Risk Management and Contaminated Drinking Water: The Case of Kargi, Northern Kenya. Research Brief 03-03-PARIMA, March 2003. GL-CRSP/USAID. http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1193&context=envs_facpub
56. **Shivoga, A. W.** (2001): Phosphate uptake behaviour by a mixed phytoplankton population in a lake and by eukaryotic green algae *Scenedesmus bijuga* in culture. *Egerton Journal* 3(2): 39-59.

57. **Shivoga, William.** (2001). The influence of hydrology on the structure of invertebrate communities in two streams flowing into Lake Nakuru, Kenya. *Hydrobiologia*. 458. 121-130. 10.1023/A:1013108917295. January 2001.
58. **Shivoga, William.** (1998). Stream faunal distribution along a steep salinity gradient in the Eastern Rift Valley of Kenya. *SIL Proceedings, 1922-2010*. 27. 1285-1289. 10.1080/03680770.1998.11901443. January 1998.
59. **Shivoga, A. W.** (1999): Spatio-temporal variations in physicochemical factors and stream fauna abundance and composition in the zones of transition between Baharini Springbrook, Njoro River and Lake Nakuru, Kenya. (Abstract). *Dissertation Initiative for the Advancement of Limnology and Oceanography*. DIALOG 3: 133.
60. **Shivoga, A. W.** (1999): Spatio-temporal variations in physicochemical factors and stream fauna abundance and composition in the zones of transition between Baharini Springbrook, Njoro River and Lake Nakuru, Kenya. *PhD thesis*, University of Vienna, Austria.
61. **Shivoga, A. W.** (1991): Relationship between environmental factors and phytoplankton species composition and biomass in Kesses Dam, a tropical man-made water reservoir. *M.Phil. thesis*, Moi University, Kenya.
62. **Shivoga, A. W.** (1987) Analysis of biological science courses in diploma colleges: a case study of Moi Teachers College. *M.Ed. thesis*, Kenyatta University, Kenya.
63. Leichtfried, M. and **Shivoga, A. W.** (1995): The Njoro River-Lake Nakuru ecotonal system in Kenya. *Jber. Biol. Stn Lunz* 15: 67-77.

Books/Reports:

1. Lugo, C.C. and **W.A. Shivoga** (2006). Egerton University: National Disaster Preparedness and Management - A Diploma Course in Military Science Program Egerton University (MILS 0226). Egerton University Press.
2. Anderson Koyo, Robert Ndeti, Richard Odongo, John Githaiga, **William Shivoga**, Fred Omengo and Julius Manyala (2005): Biodiversity Indicators for National Use Project: Kenya National State of Wetland Ecosystem and Project Experience Report. Kenya Wildlife Services. Website: www.kws.org

Conferences/Workshops Publications:

1. William A. Shivoga (2020). Participated and made presentation on Masinde Muliro University of Science and Technology Profile. Kickoff Meeting and First General Assembly, Held at University of Natural Sciences (BOKU), Vienna, Austria, 30-31 January 2020.
2. Agnes A. Menya, Sifuna A. W., **Shivoga A. W.** (2018). Pathogenic Enteric Bacterial Communities associated with the Omubhira Stream in Kakamega County, Kenya. The First Pan-African International Research Congress (PAIRC) 18th – 22nd June, 2018. Congress Book of Programme and Abstracts.
3. Claris Malaho, Antony Wawire Sifuna and **William A. Shivoga** (2018). Antimicrobial resistance patterns of Enterobacteriaceae recovered from wastewater, sludge and dumpsite

environments in Kakamega, Kenya. The First Pan-African International Research Congress (PAIRC) 18th – 22nd June, 2018. Congress Book of Programme and Abstracts.

4. Donde, O., O., Muia A., W., **Shivoga A., W.**, (2012). Faecal bacterial pollution of borehole water between collection points and households within Naivasha, Kenya. 7th Egerton University International Conference: Research and Expo. 26th - 28th September 2012. ARC Hotel, Egerton University, Kenya.
5. Oscar O. Donde, Wairimu A. Muia, **William A. Shivoga**, Charles G. Trick, Irena F. Creed (2012). Faecal pollution and solar disinfection of community water sources within Lake Naivasha Basin, Kenya. 9th Earth Day Colloquium. Centre for Environment and Sustainability, Western University. North Campus Building, Room 113, 114 and 117, Western University, Canada.
6. Oscar O. Donde, Wairimu A. Muia, **William A. Shivoga**, Charles G. Trick, Irena F. Creed (2012). Faecal pollution and solar disinfection of community water sources within Lake Naivasha Basin, Kenya. Kenya. 6th Egerton University International Conference: research and Expo. 21st – 23rd September 2012. ARC Hotel, Egerton University, Kenya.
7. Makoba H., **W.A. Shivoga**, M. Muchiri, S. N. Miller. 2008. Use of Benthic Macroinvertebrates as Indicators of Water Quality in River Njoro, Kenya. Sengupta M. and Delawani R. (Editors). 2008 Proceedings of Taal 2007: The 12th World Lake Conference: 2161-2168.
8. Baldyga, T.J., S.N. Miller, **W.A. Shivoga**, L.W. Chiuri, G. Paige, 2008. Development and use of a multiple objective spatial decision support system in East African rural watershed management. Proceedings of the 2008 AWRA Spring Specialty Conference: GIS and Water Resources V. March 17-19, 2008, San Mateo, CA.
9. Kibichi, S., **W. A. Shivoga**, M. Muchiri, S.N. Miller. 2005. Physicochemical factors and community structure of benthic macroinvertebrates along a gradient of changing land uses in the upper reaches of River Njoro Watershed, Kenya. Ministry of Water and Irrigation, International Lake Committee 11th World Lakes Conference, 31 October – 4 November 2005, Nairobi, Kenya. Proceedings Volume 2: 411-426.
10. Maina-Gichaba, C., **W. A. Shivoga**, E. M. Enanga, S. Kibichii & Scott N. Miller. 2005. Sediment Loading on Inland Lakes/Wetlands: A Case Study of Lake Nakuru, Kenya. Ministry of Water and Irrigation, International Lake Committee 11th World Lakes Conference, 31 October – 4 November 2005, Nairobi, Kenya. Proceedings Volume 2: 389-391.
11. M.O. Okelo, J.O. Onyando, **W.A. Shivoga** and S. N. Miller. 2005. Analysis of Surface Runoff and Soil Loss under Different Land Use Types in River Njoro Watershed Using a Mini Rainfall Simulator. Ministry of Water and Irrigation, International Lake Committee 11th World Lakes Conference, 31 October – 4 November 2005, Nairobi, Kenya. Proceedings Volume 2: 446-450.
12. Ngugi Faith Milkah, **W.A. Shivoga**, Mucai Muchiri and Scott Miller (2005). Effects of land use changes on bird composition along River Njoro: A watershed of Lake Nakuru. Ministry of Water and Irrigation, International Lake Committee 11th World Lakes Conference, 31 October – 4 November 2005, Nairobi, Kenya. Proceedings Volume 2: 540-543.

13. **Shivoga, W.A.**, M. Muchiri, S. Kibichi, J. Odanga, S.N. Miller, T. J. Baldyga and C.M. Gichaba (2005). Impacts of upland land use on downstream water quality in River Njoro Watershed, Kenya. Ministry of Water and Irrigation, International Lake Committee 11th World Lakes Conference, 31 October – 4 November 2005, Nairobi, Kenya. Proceedings Volume 2: 472-476.
14. Onyando, J.O., Gichaba, C. M, **Shivoga, W.A.**, Miller, S. N. (2005). Micro-field assessment of soil erosion and surface runoff using mini rainfall simulator in Upper River Njoro Watershed in Kenya., *XX International Grassland Congress 2005* p.746. Wageningen Academic Publishers, ISBN 9076998817.
15. **Shivoga, W. A.**, M. Muchiri, S. Kibichi, J. Odanga, S.N. Miller, T. J. Baldyga and C.M. Gichaba (2005). Impact of land use on water quality in River Njoro Watershed, Kenya. *XX International Grassland Congress 2005*, p.689. Wageningen Academic Publishers, ISBN 9076998817.
16. Jenkins, M.W., F.K. Lelo, L.W. Chiuri, **W.A. Shivoga**, and S.N. Miller. 2004. "Community Perceptions and Priorities for Managing Water and Environmental Resources in the River Njoro Watershed in Kenya." Proceedings: 2004 World Water and Environmental Resources Congress, June 27 - July 1, 2004, Salt Lake City, UT. ASCE, Reston, VA.
17. Baldyga, T.J., S.N. Miller, **W.A. Shivoga**, and C. Maina-Gichaba, 2004. Enhanced land classification in a tropical Kenya landscape. Abstract submitted to the American Society for Photogrammetry and Remote Sensing Fall Meeting, Kansas City, MO, September 12-16, 2004.
18. Baldyga, T.J., S.N. Miller, **W.A. Shivoga**, and C. Maina-Gichaba, 2004. Assessing the impact of land cover change in Kenya using remote sensing and hydrologic modeling. Proceedings of the 2003 American Society for Photogrammetry & Remote Sensing Annual Conference, Denver, CO, May 23-28, 2004.
19. Baldyga, T.J., S.N. Miller, **W.A. Shivoga**, and C. M. Gichaba (2004) Land cover change detection in the River Njoro watershed: a landscape in transition. Proceedings of the 57th Annual Meeting of the Society for Range Management, January 24-30, 2004, Salt Lake City, UT.
20. **Shivoga, W.**, and D.L. Coppock. 2003. For pastoralists the risk may be in the drinking water: The case of Kargi, N. Kenya. Research Brief 03-03-PARIMA. Global Livestock Collaborative Research Support Program. University of California at Davis. 4 p
21. Baldyga, T.J., S.N. Miller, C. Maina-Gichaba, and **W.A. Shivoga**, 2004. Land cover change detection in the River Njoro watershed: a landscape in transition. Poster presented at the Society for Range Management 57th Annual Meeting, Salt Lake City, Utah, January 20-24, 2004.
22. Baldyga, T.J., S.N. Miller, C. Maina-Gichaba, and **W.A. Shivoga**, 2003. Assessing the impact of land cover change in Kenya using remote sensing and hydrologic modeling. Poster presented at the Wyoming Geographic Information Sciences Center Open House, October 12, 2003. Publications
23. Steven Hockett, D. Layne Coppock, **William A. Shivoga**, Francis Lelo, and Scott N. Miller (2003): Comparing Processes of Stakeholder Participation in Community-Based Watershed

Programs: The Little Bear River, Utah, USA, and River Njoro, Rift Valley Province, Kenya. Proceedings of the VIIth International Rangeland Congress, 26 July- 1 August 2003, Dublin, South Africa. ISBN Number: 0-958-45348-9: pp1750-1752.

24. **Shivoga, W. A.**, F. K. Lelo, C. Maina-Gichaba, F. Lusenaka, M. Jenkins, and S.N. Miller (2002): Integrated Stakeholder Participation and Watershed Assessment in the River Njoro Watershed, Kenya. Global Livestock Collaborative Research Support Program International Conference, Washington DC, USA.
25. **Shivoga, A. W.** (2000): Causes and Consequences of Catchment Degradation: Hydrologic, Ecological, Health and Economic Implications. National Conference on Water Resources Management. Held at KCCT-Mbagathi, Nairobi, 19th – 22nd March 2002.
26. **Shivoga, A. W.** (2000): Environmental Issues as They Relate to National Water Policy in Poverty Alleviation. Provincial Workshop on National Water Policy as Relates To Poverty Alleviation. Held at The Stem Hotel, Nakuru, 28th – 29th March, 2000.

CONFERENCES/SEMINARS/WORKSHOPS

- | | |
|------------------------------|--|
| 9 – 13 July 2018: | Building Capacity for Sustainable Water and Food Security in Drylands of Sub-Saharan Africa (BRECCIA) Workshop, Pinecone Hotel, Kisumu, Kenya. |
| 18 – 22 June, 2018: | The First Pan-African International Research Congress (PAIRC), at Gran Swiss Royal Hotel, Kisumu, Kenya, |
| December 2017: | International Researchers' Link Workshop on the Role of Smallholder Agroforestry in Combating Climate Change, Newton-Utafiti Fund and NRF, Kisumu, Kenya |
| 6 July 2017: | The Gender and Disability Workshop, Main Catering Unit, Masinde Muliro University of Science and Technology |
| 19 – 21 August 2015: | Retreat for Council, University Management Board, Deans and Directors at Mombasa Beach Hotel |
| 23 – 24 January 2014: | Facilitator, National Multiplication Training on Curriculum Development and Review for Newly Chartered Public Universities in Kenya: Implementation and Accreditation. Organized by Commission For University Education (CUE) and the Germany Academic Exchange Service (DAAD). Held at MCU, Masinde Muliro University of Science and Technology, Kenya. |

POSTGRADUATE STUDENT MENTORSHIP AND SUPERVISION

Students Who Have Graduated with PhD Degrees:

1. **C.M. Kihia:** Dynamics of Leaf litter input, retention and bioprocessing in a Kenyan mangrove forest. (Germany Student Exchange, DAAD Scholarship) (*PhD Graduate 2007, Egerton University*).
2. **Adijah M. Ali-Olubandwa:** Factors Affecting Involvement of Small Scale Farmers in Maize Production During the Agricultural Reform Era: The Case of Western Province of Kenya. (*PhD Graduate 2008, Egerton University*).
3. **Paul Abuom:** Linking land use/land cover and sediment dynamics in River Nyando and Sondu Miriu catchments of Lake Victoria Basin, Kenya (START/PACOM PhD Fellowship/ICRAF) (*PhD Graduate 2008, Egerton University*).
4. **Wilkister Moturi:** Water, sanitation and hygiene in poor rural households in River Njoro watershed: Identifying risks and interventions for reducing childhood diarrheal morbidity (Germany Student Exchange, DAAD Scholarship) (*PhD Graduate 2008, Egerton University*).

Students Who Have Graduated with MSc Degrees:

1. **Wilson Busenei:** Effects of turbidity on the condition and feeding habits of *Oreochromis (Tilapia) niloticus baringoensis* in Lake Baringo, Kenya (TONOLLI MEMORIAL AWARD). (*MSc graduate 2004, Egerton University*)
2. **Paul Abuom:** Effects of sediment deposition on the structure of benthic macroinvertebrate assemblages in Lake Baringo, Kenya (TONOLLI MEMORIAL AWARD). (*MSc graduate 2004, Egerton University*)
3. **Omwenga Jusper Maranga:** Heavy metal and nutrient retention in Kerenga Wetland, Kericho, Kenya. (*MSc graduate 2004, Egerton University*)
4. **Marcellus O. Apiyo:** Effects of Sony Sugar Company on the physicochemical environment of River Nyando, Lake Victoria Basin. (*MSc graduate 2004, Egerton University*)
5. **Cyrus M. Kilonzi:** Effects of organic manure on sediment characteristic, nutrients dynamics and benthic macroinvertebrate composition in Lake Victoria Fingerponds. (*MSc graduate 2003, IHE-UNESCO, The Netherlands*)
6. **Ithagu Peter Macharia:** Nakuru dumping site as a source of heavy metal pollution in soil, water and plants. (*MSc graduate 2004, Egerton University*)
7. **Priscah Jelagat Rongoei:** Assessment of the water cycle and nutrient flow to implement sustainable water reuse in Egerton University (*MSc graduate 2005, IHE-UNESCO - Institute For Water Education, The Netherlands*)
8. **Charles Kimani Ndung'u:** Determination of microbiological water quality in mid-reaches of River Njoro, Nakuru, Kenya. (*MSc graduate 2007, Egerton University*).

9. **Casianes Owino Olilo:** Effects of sediment deposition on the abundance and species richness of phytoplankton in Lake Baringo, Kenya (TONOLLI MEMORIAL AWARD). (*MSc graduate 2008, Egerton University*).
10. **Henry Makoba:** Benthic macroinvertebrate communities assemblage along a gradient of land uses in the upper reaches of River Njoro, Kenya. (*MSc graduate 2008, Egerton University*).
11. **Ombicha Kariuki Samuel:** Assessment of the Impacts of Kisii Municipality and Gesonso Coffee Factory on Water Quality of River Riana in Kisii, Kenya. (*MSc graduate 2008, Egerton University*).
12. **Josiah Kipkorir Rotino:** Investigation of the Levels and Impact of Pollutants Discharged from Fluorspar Mining on the Physicochemical Characteristics of Kerio River, Kenya. (*MSc graduate 2008, Egerton University*).
13. **Malachi Omondi Okelo:** Analysis of soil erosion, infiltration and runoff in different land uses in the Upper River Njoro Watershed in Kenya (*MSc graduate 2009, Egerton University*).
14. **Charles Kipsang Kigen:** The Potential of Using a Biological Monitoring Assessment Tool for Evaluation of Water Quality in River Njoro Watershed, Kenya. (*MSc graduate 2009, Egerton University*).
15. **Erick Enanga:** The Influence of Catchment Land use on Stream Integrity across Multiple Spatial Scales in River Njoro Watershed, Eastern Mau-Kenya. (*MSc graduate 2010, Egerton University*).
16. **Simon Macharia:** Feeding habit and dietary overlap of introduced Common carp (*Cyprinus carpio L.*) in Lake Naivasha, Kenya (*MSc graduate 2010, Egerton University*).
17. **Annete Mukami Njue:** Effects of periodic sedimentation on soil biochemical properties in the Lake Victoria Basin. (*MSc graduate 2010, Egerton University*).
18. **Samuel Kibichi:** Community structure of benthic macroinvertebrates along a gradient of changing land use in the Upper Reaches of River Njoro Watershed. (*Posthumous, Moi University*).
19. **Joseph Maina Kariuki:** Solid waste management at Egerton University, Kenya and the surrounding communities. (*MSc Graduate 2011, Egerton University*).
20. **Godwin Leslie Muhati:** A study on the status of *Acacia xanthophloea* and effects of damage rates to the recruitment and regeneration of young trees in Olpejeta Conservancy. (*MSc Graduate 2012, Egerton University*).
21. **Soita Wafuke:** Factors influencing adoption of agroforestry technologies among small-scale farmers in Nzoia Location, Lugari District. (*MSc Graduate 2012, Egerton University*).
22. **Godfrey Onyango:** Assessment of research findings and their utilization for sustainable management of Ecosystem Health of Lake Naivasha, Kenya. (*MSc Graduate 2012, Egerton University*).

23. **Oscar Donde:** Human health risks associated with the loading and ecological maintenance of coliform (enteric) bacteria in the drinking and surface waters of Lake Naivasha. (*MSc Graduate 2012, Egerton University*).
24. **Christine Onyango:** Assessment of Water Quality by Use of Macro-Invertebrates in Omubhira and Lurambi Streams: Implications for Management and Conservation (*MSc Graduate 2012, Masinde Muliro University of Science and Technology*).
25. **Zedekiah Odira Onyando:** Assessment of ecological Water quality of River Isiukhu Using Physicochemical Analysis and Macroinvertebrates assemblages (*MSc Graduate 2013, Masinde Muliro University of Science and Technology*).
26. **Victoria Naluyange:** Compatibility of Rhizobium species and water hyacinth manure in integrated pest management for bean production. (*MSc Graduate 2013, Masinde Muliro University of Science and Technology*).
27. **Eliud Bwambok:** The impact of human activities on the four most targeted tree species in Kisere Forest, Kakamega County. (*MSc Graduate 2013, Masinde Muliro University of Science and Technology*).
28. **Dolorita K. Muyekho:** Effects of Agricultural Effluents on Water Quality and Macroinvertebrate Diversity in Canals within Nzoia Nucleus in Western Kenya. (*MSc Graduate 2013, Masinde Muliro University of Science and Technology*).
29. **Dorice Sindu Nyongesa:** Land Use Practices and Water Quality of River Shimiche Ecosystem (*MSc Graduate December 2017, Masinde Muliro University of Science and Technology*).
30. **Clarice Khaselo Malaho:** Antibiotics Resistance Prevalence and Patterns in Enteric Bacteria Recovered from Dumpsites and Wastewaters in Kakamega County. (*MSc Graduate December 2018, Masinde Muliro University of Science and Technology*).
31. **Agnes A. Menya:** Assessment of pollution and prediction of environmental risks of heavy metals on aquatic fauna in Lake Victoria, Kenya. (*MSc Graduate December 2018, Masinde Muliro University of Science and Technology*).

Ongoing Student Thesis Supervision:

1. **Remigio Turyahabwe:** Influence of Different Land Uses on Ecosystem Health of River Sironko Catchment, Eastern Uganda, Kenya (*Ongoing, PhD thesis, Masinde Muliro University of Science and Technology*).
2. **Adejimi Ayodeji Saheed:** Effects of two Modes of Collaborative Instructional Strategies on Students Learning Outcomes in Biology within Ibadan Metropolis, Oyo State, Nigeria. African Centre of Excellence for Innovative Teaching and Learning Mathematics and Science (ACEITLMS) (*Ongoing, PhD thesis, University of Rwanda*)
3. **Manishimwe Henriette:** Effect of Inquiry Learning Cycle on Students' Achievement in Classification of Living Things among Upper Secondary Schools in Rwanda. African Centre of Excellence for Innovative Teaching and Learning Mathematics and Science (ACEITLMS) (*Ongoing, PhD thesis, University of Rwanda*)

4. **Emmanuel Kazungu:** Variation of Macroinvertebrates Species Composition and Abundance along River Isiukhu, Kenya (*Ongoing, MSc thesis, Masinde Muliro University of Science and Technology*).
5. **Pauline Adisa:** Assessments of Mercury Concentration and Bacteria in Sediments and Soils Tailings in Mahudu-Kaimosi Gold Mines, Vihiga County, Western Kenya (*Ongoing, MSc thesis, Masinde Muliro University of Science and Technology*).
6. **Frederick Juma:** Effects and Scenarios of Climate and Land use/Cover change on hydrological processes in Isuikhu River, Kenya (*Ongoing, PhD thesis, Masinde Muliro University of Science and Technology*).

AWARDS

30 Oct-30 Dec 2018	The World Academy of Sciences (TWAS) additional funding for Conference participation.
12 Dec 2016- 30 Nov 2018	The World Academy of Sciences (TWAS) for advancement of science in developing countries Research Grant Agreement (RGA) No. 16-536 RG/BIO/AF/AC_G – FR3240293308
6 January 2017	Centre for Water and Environmental Resources Management MMUST URF
23 December 2016	Best Research Group, MMUST Gala Dinner and 2016 Awards.
18 December 2015	Vice Chancellor's Commendation, MMUST Gala Dinner and 2016 Awards.
30 Nov. – 5 Dec. 2008:	International Development Research Centre, Canada (IDRC) Grant to attend the Ecohealth Forum 2008 at Merida, Mexico.
July- August 2009:	Western University Ontario Canada, McConnell Family Visiting Researcher in Ecosystem Health.
October 2002	USAID Sponsorship to train for Project Cycle Management – Logical Framework Course using the TeamUP-PCM Methodology, Team Technologies Inc., Washington DC., 2002
Sep. 2000 – Feb. 2001:	United Nations University Fellowship for Post-doctoral advanced training and research in the Ecology, Economy and Legal aspects of Biological Diversity at the University of Ghent, Belgium.
Oct. 1995 – Jan. 1999:	Austrian Foreign Student Exchange (OeAD) Scholarship to study for PhD in Limnology/Ecology University of Vienna, Austria

- March – December 1994:** Academy of Sciences Scholarship to study for Post Graduate Limnology Course at the Institute of Limnology, Mondsee, Austria.
- 1989 – 1991:** Moi University Scholarship to study for a Master of Philosophy in Environmental Studies at Moi University, Eldoret, Kenya.
- 1986 – 1988:** Ministry of Education Scholarship to study for Master of Education (TDC) at Kenyatta University, Nairobi, Kenya.

EXTERNAL EXAMINATION:

- External Examiner in the Department of Environmental Science, Maseno University for four (4) years w.e.f. 2016/2017 academic year.
- External Examiner for the 2015/2016 and 2016/2017 academic years in the Department of Biological Sciences, University of Eldoret
- External Examiner for the 2010/2011, 2011/2012 and 2012/2013, 2013/2014 Academic Years Examination at the Centre for Advanced Studies in Environmental Law and Policy (CASELSP), University of Nairobi.
- External Examiner for the 2010/2011, 2011/2012 Academic Year Examination in the Department of Environmental Conservation and Management, South Eastern University College (Constituent College of the University of Nairobi).

PROFESSIONAL MEMBERSHIPS/ LINKAGES

1. Member of the International Association for Ecology and Health (IAEH)
2. Licensed Lead Expert, Environmental Impact Assessment under the Kenya National Environment Management Authority
3. Fellow of the United Nations University.
4. Member of the National Organizing Committee of the 11th World Lake Conference, 31 October-4 November, 2005. Kenyatta International Conference Centre, Nairobi Kenya.
5. Member of the Eastern Africa- Austria Water Association (EAWA)
6. Member of Kenya Wetland Forum
7. Member of the Editorial Board of the African Journal of Aquatic Science.
8. Member of the Kenya National Oceanographic Commission for UNESCO.
9. Member of the International Association of Theoretical and Applied Limnology (SIL)
10. Member of the Southern African Society of Aquatic Scientists (SASAQS).
11. Member of the Species Survival Commission, World Conservation Union (IUCN).

UNIVERSITY /NATIONAL COMMITTEES

- Chairman of the Privately Sponsored Students Programme (PSSP) University Wide Board 4th August 2017 to 3rd August 2019.
- Chairperson of Oversight Committee First Pan-African International Research Congress w.e.f. 3rd October 2017.
- Member of the Committee to Assist Fast-track the School of Medicine w.e.f. 24th January 2017.
- Member of the Committee for Establishment of MMUST Kisumu City Campus at Kibos Sugar Research Foundation (KESREF) w.e.f. 27th October 2016

- Member of the Inaugural Board of MMUST Enterprises, 16 February 2016.
- Member of the Centre for Kakamega Tropical Forest Studies (CEKATFOS), MMUST, for three (3) years w.e.f. 4 January 2016.
- Chairman University Tender Committee, w.e.f. 29th May 2015.
- Chairman of Kitale University College Task Force, 6th February 2014
- Member of the Committee to Revise Retirement of Academic Staff Policy, 4th April 2014 to 4th May 2014
- Member of the Senate Curriculum Review Committee.
- Member of Senate Ad Hoc Committee on University Statutes, 22nd March, 2013
- Member of the Senate Ad Hoc Committee to address recommendations of the Nursing Council, 31st August 2012.
- Senate Representative/Convener of the 2nd Ad-Hoc Committee of Senate investigating Examination Irregularities for 2nd Semester 2011/2012 Academic Year, 6th July 2012.
- Senate Representative Appointments and Promotions Committee for School of Health Sciences, Masinde Muliro University of Science and Technology, 2nd April 2012
- Chairman/Senate Representative of the 3rd Ad Hoc Committee of Senate Investigating Examination Irregularities for 1st Semester 2011/2012 Academic Year, Masinde Muliro University of Science and Technology, March 2012
- Chairman of Shortlisting Committee for School of Health Sciences, Masinde Muliro University of Science and Technology, February 2012
- Member of Appeals Committee for Elections of Deans of Faculties (Masinde Muliro University of Science and Technology) held on 22nd July 2011.
- Member of Ad Hoc Committee Developing a Matrix for the 2011/2012 Masinde Muliro University of Science and Technology Semester Dates, July 2011.
- Member of Egerton University Strategic Planning and Implementation Committee (Strategic Planning Sub-committee)
- Member of the Steering Committee in the UNEP/WCM Research Project on the Biodiversity Indicators for National Use.
- Chairman - Njoro-Egerton Community Water Supply, Sanitation and Conservation Project, Nakuru District, Kenya Proposal Writing Team. Submitted to European Commission ACP-EU Water Facility Actions in ACP Countries on 30th June 2006 in Collaboration with the Rift Valley Water Services Board.
- Chairman - Egerton University Water Crisis Committee
- Chairman – Egerton University Outreach/Extension Committee
- Member – Egerton University-Kenya Agricultural Research Institute (KARI), MOU Committee.

OTHER CONTRIBUTIONS

- WECOHAS - Kakamega Founder Member since 2015.
- NACOSTI Post Graduate Grant award 2015 to my MSc Student, Clarice Khaselo Malaho of Ksh.200,000
- *Metschnikowia shivogae sp. nov.*, a yeast species associated with insects of morning glory flowers in East Africa named in honour of the family of William Shivoga, Dean of the Faculty of Environment and Resources Development of Egerton University, Egerton, Kenya. *Int J Syst Evol Microbiol* 58 (2008), 2241-2244; *O110.1099/ijs.0.2008/000596-0*.

2008 International Union of Microbiological Societies.
(<http://ijs.sgmjournals.org/cgi/content/full/58/9/2241>)

- Member of the Editorial Review Board of the African Journal of Aquatic Science 2000 to 2002.
- Member of the Board of Governors, Chekalini Secondary School, Lugari District, 2012 - 2015.