

PhD Student Benjamin K. Nyilitya successfully defends his thesis
Virtually at Ghent University, Belgium



Benjamin during one of the field sampling campaigns in the Lake Victoria basin.

Benjamin K. Nyilitya successfully defended his PhD thesis titled “**Nitrate source apportionment in surface and groundwater of the Lake Victoria basin in Kenya**” on Monday October 19, 2020 at 17.00 EAT. The public defense was conducted online with the members of the Jury seated in Belgium, Germany and Kenya.

Benjamin started his PhD studies in 2016 at ISOFYS – Ghent University, Belgium, thanks to a VLIRUOS TEAM project funding under supervision of Prof. Pascal Boeckx of ISOFYS Lab, Ghent University and [Dr. SM Mureithi](#), Watershed Hydrology Research Lab at LARMAT, University of Nairobi. His PhD research focused on apportioning the sources of nitrate discharge in surface and groundwater of the Kenyan side of the Lake Victoria basin. This study was motivated by increasing impacts of eutrophication in Lake Victoria which are closely associated with elevated nitrate deposition (amongst other nutrients) into the Lake. By integrating

hydrochemical, multi isotope ($\delta^{15}\text{N}$ -, $\delta^{18}\text{O}$ - NO_3^- , and $\delta^{11}\text{B}$) and a Bayesian isotopic mixing model, the study discusses spatiotemporal nitrate concentrations, discharge, potential sources and fate in different land use zones of three major river basins draining the Kenyan part of the basin. In addition, groundwater nitrate pollution sources and associated biogeochemical processes in the urbanized Kisumu city and its surroundings are investigated. The research findings provide useful insights for environmental policy institutions to apply remedial measures. The study results have been published in peer reviewed journals and presented in international conferences

He is an environmental scientist biased on water resources management technologies (BSc, 1998; MSc, 2007: University of Nairobi, Kenya). Earlier in his career, he worked as a Research Assistant at the Institute of Nuclear Science & Technology – University of Nairobi from 2005 to 2007. Since 2008, Benjamin has been working as a Principal Chemist and a water resources researcher at the Ministry of Water and Irrigation, Kenya, with special interests in isotope hydrology applications and water quality management.

.Congratulations Dr. Benjamin!