

To create solutions for water quality issues in developing regions, an integrated approach between engineering, chemistry, and sociology is necessary. In order to ensure sustainability of the solution, it is essential that an in-country presence is maintained throughout the implementation process. It is against this background that the University of Illinois at Urbana Champaign initiated collaboration with the University of Nairobi and Bondo University College to begin addressing the issues surrounding water quality in Bondo, Siaya County.

A group of eight students led by Professor Benito Mariñas, Theresa Vonder Haar, Aimee Gall, and Lauren Valentino were joined by the University of Nairobi Chemistry and Sociology and Social Work Departments, Bondo University College, and representatives from the Bondo Water District Office. Vincent Madadi, Nicholas Mwenda, and Nusrat Beckham from the University of Nairobi's Chemistry Department have worked on this project with the University of Illinois since 2010. Dr. Robinson Ocharo, the department head for Sociology and two of his students, Phantus Wambiya and Rehema Leilah joined the team this year. Once the team arrived in Bondo, they were joined by Maurice and Maurice from the Bondo Water District Office who organized the site visits throughout the week. Michael Oloko and Daniel Ongor from Bondo University's Engineering College also participated in site visits throughout the trip.

The University of Illinois team arrived in Kenya on February 14, 2012 and from February 20-23, the team visited several drinking water sources in Bondo to conduct water sampling and community surveying. In total, two water pans, one water kiosk, one shallow well, one treatment plant, and five homes were sampled. Quantitative water quality data was collected on site using handheld probes and a colorimeter. Samples were collected and brought back to a portable laboratory set up in Bondo's West End Hotel for further analysis. Furthermore, water samples were sent back to the University of Illinois for additional coagulation and disinfection experiments and ICP-MS analysis.

On-site surveys were conducted with the help of two University of Nairobi students, Phantus Wambiya and Rehema Leilah, both fluent in the local language Luo. Through these surveys, the team was able to grasp the seasonal water quality trends, water practices, education, health, and priorities of the local people. With thorough data collected, the Illinois team returned home, prepared to begin design on appropriate water treatment systems and maintain the relationships with collaborators in Kenya. (see the following link for the post-trip report)

Post –Trip Report: A Joint Collaboration Between the University of Illinois at Urbana-Champaign, University of Nairobi, Bondo University College, and Bondo District Water