

## **Addressing Water Security and Water Quality Through Sustainable Solutions**

*Western University - November 18, 2020* - The Water Security and Water Quality session in Western's 2020 Africa-Western Collaboration (AWC) day witnessed multiple presentations, in some cases with themes extending beyond water security and quality itself.

The session was facilitated by Dr. Lameck Osinde, a lecturer at the Ivey Business School and Continuing Studies at Western University. Commencing the session was Thelma Zulfawu, a Ph.D. at the University of Waterloo who spoke about water, sanitation, and hygiene (WaSH) in Healthcare Facilities in Kenya. The presentation highlighted the often-neglected causes behind community health issues. Taking a systems-based approach to WaSH, Zulfawu discussed the political, economic, and ecological factors impacting this issue. Following Zulfawu was Katherine Butler and Eva Chang, who spoke about their experience as interns for a Rwandan NGO that implemented a probiotic yogurt intervention in communities as part of the Western Heads East initiative. Additional highlights of the session included a student presentation to reduce ecoland waste in Uganda, observations on water security and its role in gender-based violence, and the ability of chemiresistors to remove heavy metals from drinking water.

Underscoring the discussion, speakers highlighted many linked obstacles facing the resolution of water quality and security in challenged areas. Poor water quality and gender inequality were the two areas that were repeatedly emphasized by the presenters. Both factors have a profound effect on reducing water security and standard of living in developing countries. Adwoa's presentation on the perception of water quality in communities showed that over 80% of water sources used by communities were contaminated with at least one heavy metal. This is especially problematic because the consumption of polluted water can result in severe adverse health conditions. Furthermore, Abraham Marshall Nunbogu's presentation provided valuable insight into the different types of violence concerning WaSH practices. In addition to the structural violence that is seen through the political marginalization and discrimination in WaSH practices, sexual violence seen through rape and spousal assaults are also by-products of the water security problems. The "Water Security in Uganda" presentation highlighted solutions that can effectively address poor water quality and gender inequality. There was a robust emphasis on using community leaders to educate individuals on problems resulting from insufficient water security. This, coupled with the implementation of local filter-making workshops, can not only improve the quality of water but also bolster the local economies. In doing so, such transdisciplinary and sustainable solutions can address multiple SDGs at once.

While SDGs 3 (Good Health and Wellbeing), 5 (Gender Equality), and 6 (Clean Water and Sanitation) were highlighted in these presentations, it should be noted that other SDGs are affected during the decision-making processes of improving water quality and security. Potential solutions will also impact SDGs 8 (Decent Work and Economic Growth), 9 (Industry, Innovation, and Infrastructure), and 12 (Responsible Consumption and Production). The need for adequate infrastructure will require innovative solutions (SDG 9); however, an idea will only be successful if there are workers to execute these plans (SDG 8). A sustainable solution in a given country will incorporate appropriate programs to educate their population and improve their technological and scientific capacities, leading to more sustainable patterns of consumption (SDG 12). Once this infrastructure is put in place, it can affect SDG 4 (Quality Education) in conjunction with SDG 5

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and SDG 10 (Reduce Inequality Within and Among Countries). Additionally, a sustainable solution will allow girls to be enrolled in school and attend classes due to the greater water access (SDG 4 and 5). Not only will this address current gender inequities, but it will also improve the inequalities that are present in many societies (SDG 10). This will enhance the potential opportunities for women in addition to promoting their social, economic, and political inclusion.

Overall, the session on water security and quality showcased a variety of well-rehearsed presentations that were unique in terms of presentation style and delivery but shared a common theme of discussing the negative implications of poor water quality and gender inequality on water security and population health. An emphasis was placed on creating transdisciplinary and sustainable solutions to not only improve current population health by targeting multiple SDGs, but also provide equal access to safe drinking water for subsequent generations.