

# Wastewater solutions eyed for Ghana agriculture

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Environmental Engineering graduate student Ahmed Abuhussein recently spent five months in the west African country of Ghana where he addressed gaps in applying treated wastewater in agriculture at city level – a possible solution to the

area's water woes. Credit: Paul Mayne

Ghana's water supply is devastatingly vulnerable to the point where, one Western researcher believes, the country's 25 million people could soon be at risk – "an alarming thing we should all be concerned about."

Environmental Engineering graduate student Ahmed Abuhussein recently spent five months in the west African country where he addressed institutional, social and technical gaps in applying treated wastewater in agriculture – a possible solution to the area's water woes. With 66 per cent of Ghana's withdrawn water earmarked for agriculture (which makes up almost half of the country's GDP) the use of treated wastewater could have a significant impact.

Currently, 81 per cent of the country's wastewater is not being treated and of the 9 per cent being collected, less than 6 per cent is 'appropriately' treated. Abuhussein conducted field work at a local waste stabilization pond and interviewed local authorities, industries and non-profit organizations in the country.

"We have a huge issue in Ghana, and in developing countries in general, especially in Sub-Saharan Africa. The availability of water is scarce," said Abuhussein, noting the average Canadian uses 80,000 cubic metres of water per year, while that number is 2,000 cubic metres in Ghana.

"Talk about taking things for granted. We'd probably use that (2,000) in less than a month or so. International aid is not working. Nothing is changing. That was one of the issues I found."

The first Western Engineering student to hold the International Development Research Centre Doctoral Research Award, Abuhussein's

research was conducted in affiliation with Zoomlion Ghana Limited, one of the largest waste management industries in West Africa, and the Western-led Africa Institute for Sanitation and Waste Management based in Accra.

Abuhussein wants to look towards a project that combines technical and monetary aspects that will address the quality of the water and its end use, because the treatment will be different.

"I want to find out, based on the experience of those I spoke with as experts, what the main challenges are and what they see as possible opportunities," he said. "Did they perceive benefits for the use of wastewater? A significant portion were accepting but, surprisingly, one or two were not interested."

Abuhussein said many small farms use non-treated wastewater, simply extracting what flows through the open gutters on their property.

"We want to know what the quality is. We want to learn from what we already have. What is going right and what is going wrong," he said. "It's not meeting standards for applications with agriculture."

Abuhussein is well aware [water](#) quality in Ghana is significantly crippled. But, he feels there can be improvement, despite the rest of the world lagging in terms of how we should allocate international funds.

"Our priorities may not be that of the local people. In fact, they aren't. It's important to take into account their priorities and agendas," Abuhussein said. "I'm optimistic there can be change. There are certain things that need to be streamlined and a more focused effort on things that matter on a local level – income, education. This will create a great impact. I learned a lot. I saw things I didn't expect in terms of research and life. It is part of the excitement in learning something new and

gaining new perspectives from others."

Provided by University of Western Ontario

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