

Research in Action: Agrobiodiversity, Nutrition and Sustainable Marketing of Heritage Crops in Ecuador and Canada



Dr. Brian McLaren of Lakehead University, far right, is joined by Ecuadorian instructor Fernando Romero, left, and PhD exchange students Cristina Ross and Paul Benalcazar during a campus visit. Credit: Julio Gomes photo

Photo # 2 (below): Paul Benalcazar and Cristina Ross, front, attend a field trip along the Paushiyacu River in Ecuador, with students from Lakehead's Faculty of Natural Resources Management. Credit: Submitted photo

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By Julio Heleno Gomes

Young scholars from Ecuador and Canada will be part of a cross-cultural exchange program looking at how improvements to small-scale farming practices can support traditional agriculture in ways that conserve biodiversity and mitigate climate change. "It's about going back to the future," Lakehead University professor Brian McLaren says.

"Small-scale farms add to biodiversity, but they'll only be managed sustainably if they can compete with the global food trade that is done on a large scale."

McLaren, an associate professor in Lakehead's Natural Resources Management department, is the principal researcher on a project that will engage and support rural farmers in ways that can provide social, economic, ecological and health



benefits. The study involves McLaren and Lakehead researchers Dr. Chander Shahi, Dr. Charles Levkoe and Dr. Mirella Stroink, as well as Brock University and a university in Ecuador.

"It's a team that is multidisciplinary and it will look at this project from different perspectives," McLaren says of the researchers' backgrounds, which ranges from botany and economics to behavioural sciences.

Local partners include the Thunder Bay Agricultural Research Station, KBM Resources Group and the Local Organic Food Co-ops Network. TBARS, for example, has worked

with Lakehead University on projects looking at new crop varieties, changing growing conditions, and less water-intensive agriculture.

By working with small farmers in the Thunder Bay area and the Niagara region, as well as in South America, researchers hope to improve water management, soil conservation and pest control, as well as help produce a wider range of products, including organic and traditional foods. Consumers will benefit through a healthier diet and food sovereignty. Overall, the benefits will be increased biodiversity, improved resilience to climate change, and varied habitats for complementary species such as pest enemies.

“Wherever we go in the world, small farmers, if they add to the diversity on their farm, if they do better water management, if they have planting that protects the soil from erosion and water from becoming contaminated, they help mitigate climate change,” McLaren says. “We watch what farmers do and help them understand they are part of the whole planet.” Along with Brock, Lakehead is working hand-in-hand with ESPOCH, a polytechnic university in central Ecuador.

“This is a great opportunity,” says Fernando Romero, an ESPOCH instructor who specializes in statistics and biometrics. “I would say this is the only way to have good solutions — looking at how nature works and looking at how human beings work.”

An award of \$283,000 from the Queen Elizabeth II Diamond Jubilee Advanced Scholars Program will see researchers embark on international exchanges. McLaren says the researchers will work closely with rural and indigenous communities to resolve local problems in food security and environmental sustainability.

“Learning by watching others — that’s the idea,” McLaren explains, adding that he expects participants to develop a network of global expertise, industry contacts and real-world experience.

In early October, the first of five Ecuadorians arrived at Lakehead to begin their graduate studies.

“We are happy to be here and have this once-in-a-lifetime opportunity to learn, and I’m sure the people going from Canada to Ecuador will learn a lot as well,” says Cristina Ross, a PhD student in Forest Science.

Her four-year project will look at the impact of climate change on agricultural landscapes (such as water and nutrient retention, and the runoff of contaminants into Lake Superior) and its impact on crops in Northwestern Ontario.

Her colleague, Paul Benalcazar, has a background in engineering and will study irrigation systems.

“For us in Ecuador it’s a big issue because we don’t have enough water,” he says. “We will try to learn how to manage water more efficiently.”

The project began in April and will continue to 2020. McLaren is interviewing five potential Canadian scholars who will conduct research in Ecuador.

“This is the result of a very profitable relationship between Lakehead and ESPOCH,” says Romero, who will co-ordinate local internships for visiting Canadian scholars. “We have been working together and doing many things in a short time.”

Sources : <https://www.lakeheadu.ca/research-and-innovation/about/news/research-stories/research-stories-archive/node/61402>