Call Information

Title: Neglected and Underutilized Crop Species, Food Security and Climate Resilience in Sub-Saharan Africa

Host: Sustainable Environments and Equitable Development (SEED) research lab, Trent School of the Environment, Trent University, Canada

Duration: 3–6 months

Research Context

Climate change is placing growing pressure on food systems across sub-Saharan Africa. Increasing rainfall variability, drought, extreme heat, declining soil productivity, pests, and other environmental stresses are affecting agricultural production and the food security of smallholder farming households. These pressures raise an important question: Are African food systems relying on a crop base that is too narrow for a changing climate? Across the region, farmers have historically cultivated a much wider diversity of indigenous and locally adapted crops. Many of these species are drought tolerant, adapted to marginal environments, nutritionally valuable, and deeply embedded in local food cultures and farming knowledge. Yet many have become neglected and underutilized, receiving limited attention from agricultural research, breeding programs, extension services, markets, and public policy. At the same time, knowledge about these crops is changing. Some species are disappearing from farms and diets, seed is becoming more difficult to access, and knowledge of their production, processing, and use may not always be transferred between generations. Understanding whether and how NUS can contribute to more diverse, food-secure, and climate-resilient farming systems is therefore increasingly important.This research opportunity forms part of a broader program examining crop diversity, seed systems, food security, and agricultural resilience in sub-Saharan Africa, with particular interest in Ghana and Malawi.

Research Opportunities

The student will develop a focused project within one of three areas:

1. Examine how neglected and underutilized crops contribute to household food security, dietary diversity, nutrition, seasonal food availability, and rural livelihoods.

2. Investigate the potential of locally adapted and underutilized crops to strengthen smallholder resilience to drought, rainfall variability, heat, pests, and other climate-related stresses.

3. Explore how farmers access, save, exchange, and conserve NUS seeds, and how changing knowledge, gender relations, markets, policies, and generational transitions influence the continued cultivation or disappearance of these crops.

Who Should Apply?

The opportunity is open to students with backgrounds in sustainable agrifood systems, agricultural economics, environmental studies, geography, development studies, or related disciplines.

We particularly welcome students with interests in food security, climate change, agroecology, seed systems, crop diversity, indigenous and traditional crops, and African food systems. PhD students from Ghana or Malawi interested in undertaking a 3–6 month research exchange at Trent University are particularly encouraged to apply. Applicants with existing research on NUS, climate resilience, food security, seed systems, or related areas will be especially well positioned to connect their work to the broader research program.