One Health Initiative for A Resilient, Circular, and Regenerative Food System in Eastern Africa PhD Project

PhD Project Title	Project Summary	Qualifications and required experience
Scaling one health innovation for social, livelihoods, and economic security in Eastern Africa	Smallholder crop and livestock farmers face coexisting production constraints. Crops, including vegetables, are affected simultaneously by various pests and diseases. Lack of quality feed in sufficient quantities at the right time hinders livestock production. Sky-rocketing input prices compared to the end products discourage crop and livestock production investment. Especially, input prices are increasing due to the disruption of value chains because of the war in Ukraine, the COVID-19 pandemic, and other shocks. Coupled with the ever-increasing recyclable waste in many places and the high fiscal cost of recycling, a growing environmental footprint of crop and livestock production is a formidable challenge for policymakers. Policymakers and developments are under pressure to promote innovations and best practices that can address farmers' challenges and reduce the environmental footprints of the agriculture sector. One Health is an approach that recognizes that people's health is connected to the health of animals, plants, and the environment. Insect farming and push-pull technology (IFPPT) are prime examples of how the One Health approach can be applied. Prompting bundle of IFPPT can strengthen local agri-food systems in the wake of geopolitical risks, pandemics, climate change, and foreign currency scarcity to import input. Insect framing addresses the challenge of food insecurity by enhancing the production of eco-friendly protein and other nutrients at a cheaper cost. Additionally, it can reduce environmental impact by recycling household and industrial biowastes. Frass fertilizers have the potential to complement chemical fertilizers. Locally sourcing input for crop and livestock production could reduce the lengthy supply chains for fertilizers and feed and production costs. The Push-Pull technology is an innovative agroecological method that addresses multiple challenges related to insect pests, parasitic weeds, and soil fertility in cropping systems. Micro- and Meso-levels studies have quantified the *ex-ante* and ex-post economic, social, and environmental impact of individual insect farming and push-pull technology. However, studies on the impact of bundling these technologies and how they can be promoted jointly are limited. Understanding the value chains of these one-health innovations remains crucial to scale insect farming and push-pull technology at the micro-level. Establishing empirical evidence on the best scaling strategies of the innovations and their products (frass fertilizers, insect larvae, and push-pull forage crops) is yet to be done. The Ph.D. student using the state-of-the-art evaluation methods will generate evidence on the mechanisms to scale the one health innovation concurrently and the economics, nutrition, and environment of prompting these innovations at the same time eastern Africa and contribute to developing sustainable, integrated, and evidence-based policies and strategies for a resilient farming system in the region. Specifically, the Ph.D. student will work on the following subtopics: • Understand the knowledge, attitudes, and practices (KAPs) of insect farming and push-pull technology, map the value chains of these innovations, and design efficient marketing system for these products, • Document the impact of innovation scaling strategies on knowledge diffusion and adoption of insect farming and push-pull technology jointly, and • Quantify the impact of the one-health interventions (insect farming and push-pull technology) on food and nutritional security of smallholder farmers.	We are looking for a Ph.D. candidate who will have the following qualifications and requirements: • MSc in Agricultural Economics, Applied Economics, and Development Economics. • Strong motivation to conduct independent research in agricultural economics and interest in contributing to evidence-based policymaking in Africa. • Strong knowledge and skills regarding research design, digital survey tool design, data collection and supervision, data analysis using Stats software, and presentation. • Two publications in reputable journals • Demonstrated knowledge of and experience with qualitative and quantitative data collection methods and analysis. • Strong written and oral communication skills in English • Experience working in Eastern Africa and knowledge of the local context, and willingness to frequently travel to project sites