



PhD Project Advertisement

Project title:

Participatory frameworks for enhancing sustainability and resilience in urban agriculture

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Project description:

CoFarm in Cambridge are pioneering a new approach to local, sustainably produced food using a co-created community farm that brings people together to grow and share nutritious food and by building stronger communities and healthier ecosystems. The farm, which is already highly productive, donated all of its produce in 2020/21 to eight emergency food hubs which were established across Cambridge to support people experiencing food insecurity. In order to maintain this level of food production and build resilience into the system, it is important to incorporate agro-ecological methods that can allow the land to also support biodiversity and associated ecosystem services as well as minimising climatic impacts. Furthermore, there is evidence of a range of health and wellbeing benefits from engaging with food growing including better diet quality and healthier and ethical food choice motivations. Understanding and quantifying these benefits and establishing how to upscale urban community farming is the key to building resilience and longevity into these initiatives.

This PhD project would be focused on co-developing methodological frameworks with a range of stakeholders that could be used to enhance and monitor this food system in terms of its economic, environmental, and social sustainability. The main hypothesis is that resilience can be built into local, urban food systems through the use of a robust monitoring framework. The research will address the key question of is whether it is possible to develop a simple evaluation system that can demonstrate the four components of food system sustainability: i) technical (the production of safe sufficient food), ii) economic (financial viability), iii) environmental (biodiversity and climate), and iv) social (nutrition and well-being).

The key research objectives will be to:

- i. Establish the key stakeholders within the system (including representatives from disadvantaged communities) and develop participatory research approaches
- ii. Co-develop a framework that includes a series of protocols for monitoring
 - a. technical aspects relating to food production including yield/quality of produce, crop diversification and rotations, food loss/waste, inputs such as water, fertiliser, pest/disease control, seeds,

- b. economic aspects including financial viability, energy efficiency, carbon capture (credits)
 - c. environmental aspects: soil health, biodiversity, ecosystem services, climate impact
 - d. social aspects: skills, health and well-being
- iii. Co-develop citizen science knowledge exchange protocols that allows volunteers to share and monitor inputs/outputs
 - iv. Co-develop a series of selection criteria that allows the assessment of new sites for expansion of the community farm approach in the local area (using methods such as multi-criteria decision analysis)
 - v. Analyse these data to identify ways to improve access to fresh and nutritious food for disadvantaged communities, improve the natural capital of urban agricultural sites, ensure sustainability and build resilience within the system

Training opportunities:

The student will have the opportunity to work with researchers in both the University of Reading and Cranfield University and therefore benefit from working within different multi-disciplinary research areas including agricultural ecology, sustainability, bio-economic modelling and citizen science approaches. There will also be the opportunity to work closely with [CoFarm](#) and to engage with a broad range of their stakeholders.

There will be the opportunity to attend a range of post-graduate modules at both Universities. The School of Water, Energy and Environment at Cranfield University run a series of modules as part of its postgraduate programmes in Sustainability and Future Food Sustainability. The student will be able to attend the one week "Principles of Sustainability" module, which covers technical, economic, environmental, and social aspects of sustainability. At Reading the Schools of Agriculture and Food will provide access to the Institute of Food, Nutrition and Health's Education & Professional Training Hub. The student will also have the opportunity to collaborate and learn from Reading's [Sustainability team](#) and Cranfield's [Sustainability Group](#).

Further, the student will benefit from the Reading Researcher Development Programme (RRDP) led by the Graduate School which provides tailored learning for all graduate students to meet personal development needs including building; knowledge and intellectual abilities, personal effectiveness, research governance and organisation, engagement, influence and impact.

Student profile:

This studentship would suit a candidate with a strong interest in advancing sustainability in the food system and in urban/community agriculture. This project would be suitable for students with a degree in biology, agriculture, horticulture, geography, or a closely related science.