PhD Project Advertisement

Project No/title: FBS2026 29 Hood rc / *Working with farmers to co-design sustainable agroforestry systems*
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Co-supervisors:
Professor Paul Burgess, Cranfield University
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Project Details

Addressing the climate and biodiversity crises requires ambitious, science-backed shifts to farming. Silvoarable agroforestry is an ambitious intervention that involves planting rows of trees (e.g. apples) through arable fields. Research has shown that – compared to arable farming – silvoarable agroforestry can increase biodiversity, carbon sequestration, soil health, and pest control. Silvoarable systems can also increase yields and revenue, making this a rare example of a regenerative practice that can provide environmental and food production benefits simultaneously.

However, knowledge gaps remain around how to best manage silvoarable agroforestry, including the impacts of different trees species. We urgently need research trials to address this, as new national policies supporting agroforestry are increasing uptake. This is the aim of the Trees-in-fields Network, where we co-design silvoarable experiments with farmers. Co-designing experiments ensures research is relevant to farmers and has impact, while connecting researchers to farmers and the wider industry to learn directly from them.

Research aims: Identify best-management of silvoarable systems by working with farmers across a network of silvoarable experiments to assess the environmental and production impacts of different tree species. For example, this includes a N-fixing experiment, which aims to test whether N-fixing trees can reduce the negative environmental impacts of fertiliser use.

What you will do: The PhD student will conduct fieldwork across the Trees-in-fields Network, which includes ten silvoarable agroforestry farms in Southern England. They will work with the farmers and the Trees-in-fields team to identify a suite of farm indicators, spanning biodiversity (e.g. natural enemies such as spiders), soil health (e.g. carbon, microbes, earthworms, nutrients) and production (e.g. tree health, crop yield). Specialist training will be provided in the chosen indicators. Results will be published in scientific papers, policy briefs, and presented at academic and industry conferences. The student will engage with the network of farmers to organise on-farm events and training days. This study will provide key evidence on optimising silvoarable farming systems to create a more regenerative, sustainable, and resilient future for farming.

References:

1. https://doi.org/10.1016/j.agee.2023.108480
2. https://doi.org/10.1016/j.cosust.2022.101244
3. https://doi.org/10.1016/j.agee.2020.107031
4. https://doi.org/10.1016/j.ecolecon.2021.107214

Student profile

Essential for project: A background in one or more of ecology, agriculture, zoology, or environmental science. Experience conducting ecological fieldwork or a related activity.

Desirable for project: Experience conducting ecological labwork (e.g. insect identification) or similar. Experience working with farmers or other agricultural stakeholders.

Minimum requirements for all FoodBioSystems applicants: An upper 2nd class degree (or equivalent) in a subject relevant to the project. Candidates with a lower class of Bachelors degree, but merit or above at Masters level will also be considered. Demonstrable skills in problem-solving, team-working, communication and time management.

Training

Project specific training opportunities: The student will be trained in ecology and co-designing agricultural experiments at the University of Reading (UoR). As part of an active and collaborative research group, they will be invited to regular seminars and academic and farmer conferences, and have opportunities to collaborate with other PhD students and learn from them directly. Cranfield University will provide training on soil health and provide links with agroforestry networks across Europe. They will receive external training where necessary, such as invertebrate identification training with the Field Studies Council. Anglian Water will host the student for a three-month placement where the student will gain valuable industry experience. They will also gain industry experience through the Trees-in-fields Network, who will provide close links with farmers across the country and regular interactions through on-farm events and workshops.

FoodBioSystems training opportunities: Throughout their studentship, all FoodBioSystems doctoral researchers participate in cohort training that covers four key themes: food systems, big data (data analytics and modelling), business, and research fundamentals. All doctoral researchers complete a placement: either project-related with a non-academic (CASE) partner, or unrelated to the project and outside the academic environment (PIPS). Details of training are available on the DTP website: https://research.reading.ac.uk/foodbiosystems/training/.

Project supervision style

The lead supervisor will have weekly 1:1 meetings with the student, unless otherwise agreed with the student (e.g. if they are on placement or doing fieldwork). These meetings will include discussing project progress, student development outside the immediate project, and the student's wellbeing. They will also attend weekly group meetings with Amelia's research group, and weekly seminars in term time with the wider department. The wider supervisory team will have meetings as required (e.g. monthly). This will be regularly to start (every two weeks) and then reduce in frequency as the project is implemented. All supervisors will have the opportunity to revise the student's outputs and attend project events. Where possible, the student will schedule delivering written work in advance so the supervisors can block out time and feedback promptly. For unscheduled work, the supervisors will aim to return it within a week, or three weeks at most.

Stipend (Salary)

FoodBioSystems DTP students receive an annual tax-free stipend (salary) that is paid in instalments throughout the year. For 2025/26 this is £20,780 and it will increase slightly each year at rate set by UKRI.

Equity Diversity and Inclusion

The FoodBioSystems DTP is committed to equity, diversity and inclusion (EDI), to building a doctoral researcher (DR) and staff body that reflects the diversity of society, and to encourage applications from under-represented and disadvantaged groups. Our actions to promote diversity and inclusion are detailed on the FoodBioSystems DTP website and include:

- Offering reasonable adjustments at interview for shortlisted candidates who have disclosed a disability or specific learning difference.
- Guaranteed interview and applicant mentoring schemes for applicants, with UK home fees status, from eligible under-represented ethnic groups who also meet academic eligibility criteria and the student profile essential for the project.

These are opt-in processes.

Our studentships can be offered to home students on a part-time basis, and studentship end date and stipend payments will be amended to reflect the part-time registration. The minimum registration for DTP funded part-time students is 0.5 FTE (studying an average of 20 hours per week over 8 years). We regret that part time registration is not available to international students due to complexities of visa restrictions.

Funding note

We welcome applications from candidates with Home/ROI fees and international fees status. This studentship is funded by UKRI and covers stipend, fees at Home/ROI rate, and research costs.

Costs that must be found from other sources or met by the individual student include:

The difference between international and Home/ROI fees at University of Reading, visa fees, healthcare surcharge, relocation costs and guarantor services.

Information about fees is available at https://www.reading.ac.uk/doctoral-researcher-college/funding/fees/fees-new-students

For up to date information on funding eligibility, studentship rates and part-time registration, please visit the FoodBioSystems website.