University of Oxford

Nature, Food, and Farming Research

UNIVERSITY OF OXFORD

Research Booklet

Some of the Research Programmes, Projects and Staff at the University of Oxford who are keen to collaborate on future research with practitioners in Nature, Food, and Farming.

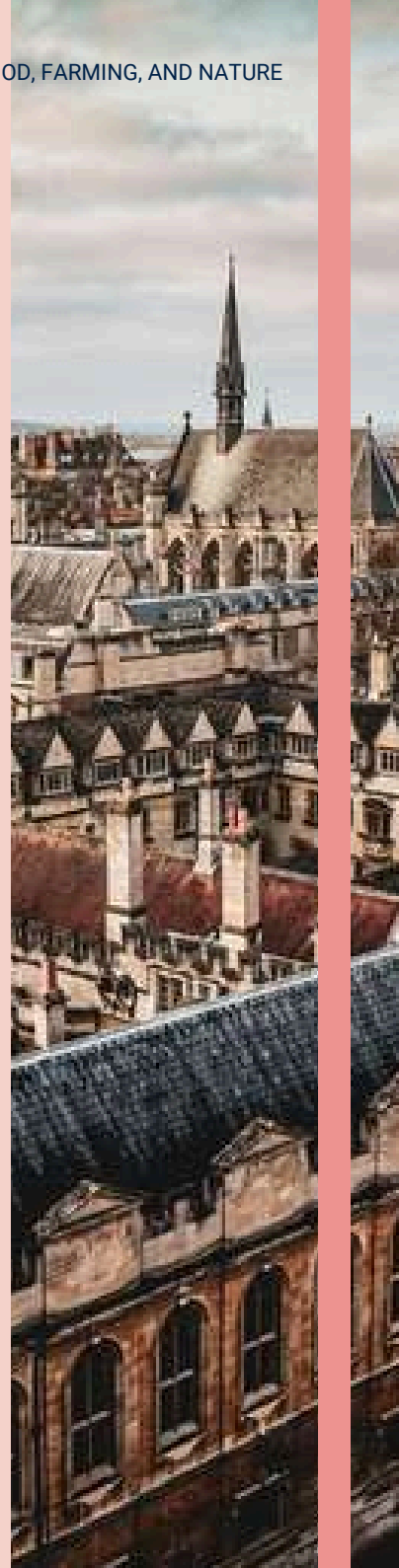
INSIDE

This catalogue brings together a wide range of programmes, projects, and researchers across the University of Oxford whose work engages with key challenges in food, farming, and nature. It has been created to support new conversations, connections, and collaborations between practitioners, policymakers, researchers, and organisations working across sustainable food, farming, land stewardship and rural futures.

This catalogue reflects a collective effort by a large group of researchers keen to engage with practitioners and policymakers.

The production of this catalogue are jointly funded by The Agile Initiative and the Agricultural Resilience Impact and Innovation Hub (AGRIIH).

This booklet was designed and compiled by Jennifer Dodsworth, Jing Zhang, and Jen Lucey



ABOUT

The catalogue is organised to help readers explore a snapshot of research activity and identify potential connections across food, farming, and nature at the University of Oxford.

Inside, you'll find short overviews of some ongoing research, practical insights, and contact information for colleagues who are keen to share knowledge, exchange ideas, and explore opportunities to work together. The projects represented span natural and social sciences, humanities, policy, and applied practice, reflecting the breadth of food- and farm-related work across the University.

We hope this collection offers a useful starting point for finding partners, discovering complementary expertise and sparking new collaborations. Please do reach out directly to researchers, everyone included here has expressed an interest in connecting with the wider community working across food, farming, land stewardship, and nature.

Thank you for taking the time to explore what Oxford has to offer, and we look forward to continuing these conversations beyond the conference.

The Agile Initiative

The Agile Initiative at the Oxford Martin School aims to revolutionise how world-class, high-impact research supports environmental policymaking.

We are part of the Oxford Martin School at the University of Oxford, building on its mission to **foster innovative collaborations** to solve the world's most urgent challenges. The Agile Initiative reflects Oxford University's commitment to net zero carbon and net biodiversity gain and is part of an increasing community of programmes and institutes at the University focused on pressing environmental issues.

Scan to learn more

Agile is funded by the Natural Environment Research Council

agile-initiative.ox.ac.uk

Our Mission

- Deliver solution-oriented science through a new model of interdisciplinary research. Groups of researchers from across the University work with stakeholders and partners (including government at all levels, industry partners, NGOs and local communities) in rapid "Sprint" projects to address a time-critical research question identified by policymakers.
- Create a critical mass of interdisciplinary researchers capable of working within this model. Agile offers training, career development, community-building and collective learning on the Sprint model.
- Contribute to a research culture shift in how impactful, interdisciplinary research is funded and delivered at the University of Oxford and more widely. By collating evidence and learning, Agile will use its findings to influence institutional policies and practices.

Agricultural Resilience Impact and Innovation Hub

About

The Agricultural Resilience Impact and Innovation Hub (AGRIIH) is a new initiative, designed to enhance the real-world impact of Oxford's agricultural research by fostering close collaboration between academia, industry partners, and other stakeholders. The Hub seeks to co-develop cutting-edge, industry-relevant research and innovation that supports the transformation of agriculture towards a more sustainable and resilient future.

Oxford is home to world-leading research spanning plant science, climate and ecology, social science, business, and economics—a unique ecosystem of expertise that can drive meaningful change in agriculture. AGRIIH serves as a catalyst for interdisciplinary collaboration, breaking down barriers between disciplines, and addressing the disconnect between academia and implementation. By working closely with industry and other agriculture sector stakeholders, the Hub will co-create scalable, actionable innovations that harness technology, people, and nature to create resilient, climate-smart agriculture.

How will AGRIIH deliver these aims?

Our approach includes assessing our research capacity to align with industry needs, conducting workshops to generate new ideas and collaborations, and fostering a strong feedback loop between researchers and end users. Through targeted funding initiatives and partnerships, we support the development of scalable innovations that can drive real-world change. By actively identifying and pursuing funding opportunities, we aim to sustain and grow this collaborative ecosystem, ensuring that cutting-edge research translates into tangible agricultural impact.

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Scan to learn more

Leverhulme Centre for Nature Recovery

The Leverhulme Centre for Nature Recovery brings together researchers, farmers and policymakers to understand and enable large-scale, inclusive nature recovery. Based at the University of Oxford, the Centre works closely with local partners in Oxfordshire and national bodies such as DEFRA to explore regenerative farming, landscape recovery and land-use change. Its research combines science, social insight and practice to support thriving, nature-rich landscapes and resilient rural communities.

Our vision is: "To understand and support what it takes to deliver effective, inclusive and scalable nature recovery"

To achieve this vision, we focus our activities around three goals:

1. Understand the societal, biophysical, policy, and systemic factors that enable or challenge nature recovery.
2. Collaborate with practitioners, communities, and partners in diverse contexts to test, challenge, and innovate the tools, techniques, and theories that deliver fair and effective nature recovery.
3. Establish an inclusive nature recovery community, rooted at Oxford, harnessing its convening power and interdisciplinary research strengths to confront the urgent debates and transformational challenges at the heart of nature recovery.

Scan to learn more

naturerecovery.ox.ac.uk

The Oxford Martin Programme on FOOD SUSTAINABILITY

How we produce and consume food has a huge bearing on multiple environmental problems including biodiversity loss, deforestation, climate change, water scarcity, and water pollution.

However, today, there is a major lack of comparable information about the environmental impacts of different food products produced using different practices:

- Few farmers measure their environmental impacts and those that do use different methods.
- Farmers struggle to access advice on how to reduce environmental issues.
- There is no standardised format for sharing environmental data in food supply chains or between researchers.
- There is a lack of publicly available data on the environmental impacts of foods produced using different practices in different geographies.

Without this information, the foundations for creating sustainable food supply chains are missing.

The Oxford Martin Programme on Food Sustainability has created a data structure, data platform, and toolkit to calculate environmental impacts to help address these challenges. These are available on the HESTIA platform.

The Oxford Martin Programme on
THE FUTURE OF FOOD

The Oxford Martin Programme on the Future of Food is an interdisciplinary programme of research and policy engagement concerning all aspects of the food system, based at the University of Oxford

A significant overhaul of the current global food system is needed to meet the challenges of feeding a growing world population in a healthy, equitable, sustainable and resilient way.

The future of food programme links together research on the food system at Oxford and facilitates solution-orientated research to address these major concerns. The research includes scientific, economic, social and environmental issues of food production and consumption, as well as how food affects health, sustainability and economic development.

By integrating existing research, supporting new interdisciplinary initiatives, and facilitating interactions between academia, government, civil society and the private sector, we provide fresh insights and propose effective action to address the challenges of feeding the global population.

TABLE Debates
at the Environmental Change Institute

Food sits at the heart of interconnected crises, spanning climate change, biodiversity loss, malnutrition, poverty and injustice. There is growing awareness that we urgently need to act to transform our food systems. Yet at the same time, debates about what to do are becoming more intense, divisive and polarised, as different actors bring forward competing visions of a food future.

TABLE explores **both the scientific evidence** and the **underlying values** that support and inform these visions. These values (as well as assumptions, desires and cultural preferences) influence how we interpret the evidence, understand the world around us, judge what is most important in a food system, and think about possible and desirable futures. By mapping both evidence and values in debates, we highlight critical differences and areas of agreement, identify research questions to help resolve uncertainties, and suggest paths forward.

Scan to learn more

Our mission is twofold: to provide clarity on the substance and parameters of food system debates (where and why is it that we agree and disagree?); and to offer space for nuanced, self-reflective dialogue within the food community. Together, these ingredients can contribute to our vision: a better decision-making environment for food system transformation, built on a shared understanding of the evidence and open acknowledgement of the values at play.

Nature-based Solutions Initiative (NbSI)

The Nature-based Solutions Initiative (NbSI) is an international team dedicated to advancing impactful, interdisciplinary research that shapes policy and practice around nature-based solutions. We do this through research, teaching, and active engagement with policymakers and practitioners.

Agriculture is a core research theme, and NbSI is home to AGRIIH (see page 3) and the Flourishing Landscapes Programme, which researches agroforestry and multi-cropping practices as pathways towards healthy, biodiverse and multi-functional production landscapes. Building on an established programme of work on coffee and cocoa across the tropics, we are now developing an ambitious new programme that translates lessons from tropical agriculture to temperate contexts. This includes testing nature-friendly multicrop systems across a European climate gradient, working with farmers to co-create workable crop design, integrating citizen science approaches, and linking impacts from field to landscape scales.

Mission: To enhance understanding and implementation of nature-based solutions that support thriving human and ecological communities and nurture an economy that enhances the web of life. To this end, we conduct interdisciplinary research and provide guidance for decision makers based on the best available evidence and in a way that respects the rights and knowledges of Indigenous Peoples and local communities

naturebasedsolutionsinitiative.org

Food Systems Transformation Group

The Food Systems Transformation Group pioneers and integrates stakeholder-driven, systems-based tools and participatory methods to navigate complexity in the food system. These include frameworks for food systems mapping, modelling, assessment and foresight. We work with stakeholders to highlight potential trade-offs and synergies resulting from their decision-making process.

Our Strategy

- To undertake high quality, impactful food systems research that helps influence and shape policy and practice
- To offer and develop new participatory methods and foresight tools so that food system actors can plan and analyse changes to the system
- To deliver innovative teaching and learning approaches that prepare those working in the food system to meet future challenges
- To promote new modes of knowledge exchange to support those working in the food system.

Our aim is to help a wide range of stakeholders develop and implement enhanced food system policy and practice that improve food security and health outcomes with less environmental impact. We also recognise the need to maintain vibrant commercial and livelihood opportunities. We use innovative methods and tools based on an integrated food systems approach.

Scan to learn more

eci.ox.ac.uk/research/food-systems-transformation

Farm Environments in Policy and Practice

Participatory Approaches to Agri-Environment Scheme Development

SoGE School of Geography and the Environment

Farm Environments in Policy and Practice is a Defra-funded research project which uses innovative participatory social science methods to produce rigorous, policy relevant insight into farmer and land manager experiences of agri environment scheme development during the post-Brexit agricultural transition. Our work blends qualitative and quantitative approaches, informed by cultural and environmental geography, to surface how environmental outcomes are negotiated, delivered and experienced on the ground. We co-design research with farmers, policymakers and land management organisations so that evidence directly addresses practical delivery challenges and emerging policy needs.

How can we deliver effective, equitable and place-based environmental governance?

eci AGILE INITIATIVE OXFORD MARTIN SCHOOL

This Agile Initiative Sprint aims to strengthen effective and equitable place-based environmental governance by examining how Wales' Area Statements are working in practice. Working with Natural Resources Wales and stakeholders across local community groups, land managers, businesses, and policymakers, the research will assess how different actors engage with Area Statements, identify barriers to implementation, and explore opportunities for improvement. The project will produce an evidence-informed roadmap to support meaningful, locally grounded decision-making and enhance delivery of national and global sustainability goals.

Scaling-up nature-based solutions in the UK

Nature-based Solutions (NbS) have huge potential to support climate mitigation, adaptation, nature recovery, food security, rural economy and human wellbeing, but implementation is slow and patchy. Some interventions are poor quality, leading to adverse impacts and undermining legitimacy and social support.

To address this challenge, this 18-month research 'sprint' – part of The Agile Initiative at the Oxford Martin School – worked with stakeholders to identify and tackle key cultural, scientific and governance barriers to the implementation of high-quality NbS in the UK. The outputs are presented in our 'NbS Knowledge Hub', a one-stop shop for NbS practitioners and policy-makers including:

- The 'Recipe for Engagement' – a best practice guide for practitioners to engage meaningfully with stakeholders and the public.
- An open source software package to help people create opportunity maps for planning nature recovery and NbS at landscape scale for any area in England.
- A biodiversity and soil health monitoring tool
- An interactive library of guidance on planning, implementation and monitoring NbS.

HESTIA

HESTIA provides free and methodologically harmonised data on the production practices and environmental impacts of farms and food products. Our models and data standard enable farms and supply chains to quantify, communicate, and reduce their impacts.

Our research tests whether helping farmers measure and monitor their farms' environmental outcomes leads them to change their practices and improve sustainability. Many agricultural policies assume that simply providing environmental data drives change, but this has not been rigorously tested. Through large-scale randomised control trials, we aim to produce strong evidence to help farmers, businesses, and policymakers make more effective, evidence-based decisions for sustainable agriculture.

Livestock Environment and People

How we produce and consume food is possibly the most important determinant of human and environmental health worldwide.

The global average consumption of meat and dairy is rising, driven by increasing incomes and population growth. The growing demand for meat matters as its consumption has significant effects on people's health and livestock production can have major environmental impacts.

Meat can be an important source of some nutrients, but there is also evidence that high meat consumption may increase the risk for some types of chronic disease. Livestock production is also a major source of greenhouse gases and other pollutants, increases water scarcity in some regions and can exacerbate soil erosion. However, livestock provides large-scale employment and the trade in livestock and related food products is a core component of the economy of many countries.

Policy makers are increasingly grappling with the economic, health and environmental consequences of rising meat consumption and these issues are particularly complex given the multiple narratives about eating meat and dairy that influence everyone's behaviour. The LEAP programme aimed to understand the health, environmental, social and economic effects of meat and dairy production and consumption to provide evidence and tools for decision makers to promote healthy and sustainable diets.

Can regenerative agriculture deliver nutritious food and a just food system?

AGILE INITIATIVE | OXFORD MARTIN SCHOOL | TABLE

This Agile Initiative Sprint looks at regenerative agriculture's environmental and productivity claims, and considers what a regenerative shift in UK agriculture would mean for our food system as a whole.

Calls for new food policy demand connection between food, health and environment, and the incentivisation of a just transition in what we grow and what we eat. The effects of a regenerative shift in UK food supply across diverse farm systems will have both local and global consequences for food affordability, availability, nutritional quality and supply stability, as well as for land use.

This Sprint aims to clarify if and how regenerative agriculture can lead to greater alignment between land and environmental goals on the one hand, and food and nutrition security on the other, while identifying what policies would enable a just transition for the sector and for those it supplies.

Scan to learn more

OUR RESEARCHERS

This catalogue showcases a selection of some Oxford researchers whose work connects closely with themes explored at the Oxford Real Farming Conference. Each entry highlights a researcher's key interests, areas of expertise and ongoing projects, alongside direct contact details for follow-up discussions.

The individuals included here span multiple departments, research centres, and interdisciplinary initiatives across the University. Together, they represent a broad and diverse community engaging with questions around food systems, farming futures, ecology, rural livelihoods, environmental governance, land justice, and sustainable land management.

Profiles in the catalogue are deliberately concise, designed to give a clear sense of who is working on what, and to help you identify people whose work aligns with your own interests or challenges. Where relevant, the previous project pages provide short summaries of current research, practical applications, recent findings and opportunities for collaboration.

All researchers listed have expressed a strong interest in connecting with practitioners, policymakers and fellow researchers. We encourage you to reach out directly if you would like to explore ideas, ask questions or begin a conversation about working together.

Abigail Brown

anthropocene antifungal resistance

Abi is a second-year DPhil student in the School of Geography and the Environment. Abi holds an MPhil in Anthropocene Studies from the University of Cambridge (distinction) and was awarded the Jenning's Prize for her academic achievements. She also holds a first-class BA in Human Geography from the University of Durham. Prior to her doctoral study, Abi gained experience in ESG and CSR, working in sustainability consulting for two years before moving to Oxford. In her first year at Oxford, she was also a research assistant on the Farm Environments in Policy and Practice Project, working on the SFI Pilot exit-interview process.

Abi's current research investigates antifungal resistance in English agriculture. Her project uses a qualitative, mixed-methods approach to investigate how antifungal resistance is understood, managed and experienced across different agricultural, business, and regulatory settings in England. Influenced by more-than-human scholarship and assemblage thinking, Abi is particularly interested in the entangled roles of fungi, humans, and chemicals in shaping the emergence and management of antifungal resistance.

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Paul Behrens

OXFORD MARTIN SCHOOL

climate food systems transformation diets energy

Paul's research focusses on the implications of rapid food system transformations in a rapidly changing world.

There is an urgent need for a Great Food Transformation to reduce environmental harm and to increase food system resilience. Paul is working on integrated models to assess the environmental and social impacts of such a transition on both consumers and producers. His research program explores the social outcomes of this transformation —from changes in subsidies and land management to increasing food security.

They are exploring how subsidy regimes could be aligned with food system transformations in diets and supply chains for environmental and social improvements. They do this by tracing the production of food through to consumers and exploring farm income, assets, and subsidies.

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Frances Colles

One health | disease transmission | microbiology

Dr Colles is a professional microbiologist and began her career working in diagnostic laboratories for the Animal and Plant Health Agency and NHS. She moved to research, gaining a doctorate from the University of Oxford, and specialises in disease that co-infects animals and people. In addition to research, she teaches Oxford University medical and biology students, and is an expert advisor for the World Health Organization (WHO), Food and Agriculture Organisation of the United Nations (FAO) and UK Food Standards Agency (FSA).

They use DNA-based methods to precisely trace the transmission of foodborne bacterial disease from 'farm to fork'. They also work closely with farmers to research animal welfare and gut health to improve resilience to disease and reduce antibiotic use, improving efficiency and food safety. They are currently investigating the significant rise in human Campylobacteriosis cases in 2024 and the persistence of a handful of highly antibiotic-resistant variants despite reduced antibiotic use on farms.

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Christophe Christiaen

SMITH SCHOOL OF ENTERPRISE & ENVIRONMENT

food and finance

sustainable finance

Christophe leads Spatial Finance research at the Oxford Sustainable Finance Group, managing a multidisciplinary team developing open data, metrics, and methodologies. His work leverages artificial intelligence and geospatial analytics to assess sustainability risks, opportunities, and impacts for assets and companies in their local and global contexts.

Oxford Sustainable Finance Group, within the Smith School of Enterprise and the Environment, study how agriculture, food systems, the environment, and finance are connected. Their research looks at how future changes in food production could cause or reduce financial risks, and how spatial environmental datasets can support sustainable finance requirements without increasing the reporting burden for farmers. They've found that detailed public data, especially in the UK, is readily available to support banks, food manufacturers, food retailers, and policymakers' sustainability goals.

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Cecilia Dahlsjö

rewilding | regenerative farming | ecosystems

Cecilia Dahlsjö is a Senior Researcher at the University of Oxford's Leverhulme Centre for Nature Recovery. Her research focuses on ecosystem functioning, biodiversity, and the role of regenerative farming and rewilding in restoring nature. With expertise in field ecology, ecological energetics, and research coordination, Cecilia leads projects across Oxfordshire linking energy flows, soil health, and land management with new technological advances in ecoacoustics to support evidence-based approaches to sustainable, productive farming.

Her group's work aims to understand how farms and ecosystems function by tracking how energy, biodiversity, and microclimate interact above and below ground. Using traditional field ecology alongside new technologies such as eco-acoustics, they explore how regenerative and rewilding practices across arable, pasture, and woodland systems support soil life, wildlife, and resilience, helping to develop scalable ways to monitor and enhance ecological health in agriculture.

Leverhulme Centre for Nature Recovery

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Jennifer Dodsworth

agri-environment policy | ELMs | participatory research | farming futures

Jennifer is a Research Fellow in the Agile Initiative, and a social scientist with expertise in cultural geography, environmental governance, and agri-environment policy. She leads a Defra-funded research project, *Farm Environments in Policy and Practice* ,investigating the Sustainable Farming Incentive (SFI) Pilot and Environmental Land Management (ELM) test and trials. This work employs participatory methods to assess how new agri-environmental schemes can be designed to be both effective for farmers and beneficial for nature.

As both a researcher and a tenant hill farmer in Cumbria, Jennifer also aims to integrate first-hand experience of land management into her research, ensuring her work remains grounded in the realities of rural livelihoods.

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Lexi Earl

Future of Food | knowledge exchange | food education | coordination

Lexi Earl is a writer and science communicator, currently programme manager for both the Future of Food network in the Oxford Martin School and the LEAP project.
Before starting at Oxford, Lexi worked at the University of Nottingham, first as a Research Fellow in Arts Education and then as a Communications Manager for the Future Food Beacon. She holds a PhD in Education, and is the author of *Schools and Food Education in the 21st century* (2018, Routledge) and, with Pat Thomson, *Why garden in schools?* (2021, Routledge).

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Tara Garnett

climate | health | food solutions | livestock

Tara is the Director of *TABLE*, which sets out the evidence, assumptions, and values underpinning different viewpoints on food systems controversies. Table is a collaboration between the University of Oxford, Wageningen University & Research and the Swedish University of Agricultural Sciences.

Her work centres on the interactions among food, climate, health and broader sustainability issues; she has a particular interest in livestock as a sector where many of these converge. She is also interested in how knowledge is communicated to and interpreted by policy makers, civil society organisations and industry, and in the values that these different stakeholders bring to food problems and possible solutions.

Tara is based at the Environmental Change Institute in the School of Geography and the Environment, is a fellow of the Oxford Martin School and is co-investigator on the Wellcome Trust-funded Livestock, Environment and People (LEAP) project.

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Max Hadoke

soil biology | grazing management

Max is a Dphil student at the University of Oxford. He has a keen interest in determining the effects of practical management interventions upon soils and their resident communities, given their importance to the biological functioning of soils. Max is also interested in how agricultural management might be affected by logistical constraints, such as time and finance, particularly as he has worked on farms before starting his undergraduate degree.

Max's project aims to determine the effects of grazing management on soil biological communities. Specifically, Max studies if forage management strategies for livestock grazing can cause changes in the composition of communities such as earthworms, fungi and bacteria. The aim is to show if there are shifts in the communities, indicating if there are changes in soil function as a result of grazing.

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Caitlin Hafferty

environmental governance | place-based | social science

Caitlin Hafferty is a Postdoctoral Researcher in environmental social science at the University of Oxford's Environmental Change Institute. Her work focuses on environmental governance, particularly place-based and collaborative approaches at the science–policy interface. She works closely with government, NGOs, businesses, and community groups across the UK.

Caitlin is Co-lead of an Agile Initiative 'Sprint' on place-based governance, a researcher at the Leverhulme Centre for Nature Recover, and an alumni Fellow of the Oxford Policy Engagement Network (OPEN). In 2025, she was seconded to the Department of Energy Security and Net Zero (DESNZ) as a Policy Advisor. Her work primarily focuses on England, Wales, and Scotland.

Leverhulme Centre for Nature Recovery

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Mark Hirons

Environmental Justice | Governance | Land-use

Mark Hirons is a Senior Researcher at the Environmental Change Institute, University of Oxford, working at the interface of agriculture, environment and society. His research focuses on how governance, policy and power shape equitable outcomes in land use, farming and nature recovery, with a growing emphasis on UK contexts.

Mark is closely involved in the Leverhulme Centre for Nature Recovery and the Oxford Agile Initiative, supporting more inclusive, deliberative and evidence-informed approaches to environmental decision-making. His work engages critically with nature recovery, nature-based solutions and food systems, centring questions of justice, values and who benefits from environmental change.

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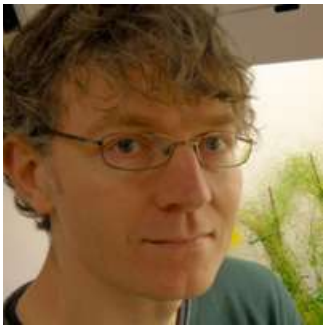

Paul Jarvis

Paul Jarvis has been working on chloroplast biology in plants for more than 20 years, and he moved to the University of Oxford in 2013. His research focuses on the molecular mechanisms underlying the development and operation of chloroplasts. He is particularly interested in those processes that control the assembly and stability of the thousands of different proteins that make up a functional chloroplast. His research led to the discovery of the so-called CHLORAD pathway for the selective proteolytic removal of chloroplast proteins, which has potential applications in agriculture.

climate

plant biology

energy

Their research focuses on the mechanisms governing vital subcellular structures in plants called chloroplasts, which capture sunlight energy to power growth through photosynthesis. Specifically, they study how the so-called "CHLORAD" pathway regulates chloroplasts and plant growth, with a view to using it as a technology for crop improvement. In wheat, they manipulated CHLORAD to extend the period of photosynthetic activity in leaves, producing a "stay-green" trait to boost yield and tolerance to environmental stresses. They are currently at the stage of performing field trials to assess performance of this technology.

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Richard Kipling

regenerative agriculture | Pollination Ecology | resilient food systems

Richard has a background in ecology and expertise in high nature value and climate-friendly livestock farming. Before gaining his PhD in Pollination Ecology in 2011, he worked as a countryside ranger at a number of internationally important UK nature reserves. Since 2011, his research has included applying quantitative and qualitative methodologies to problems as diverse as guillemot breeding productivity, the pollination niches of buttercups and the research priorities for animal health modelling.

His current research focus is on understanding the meaning and implications of different models of regenerative agriculture, and on investigating barriers to and solutions for more local, resilient food systems. Prior to joining the TABLE team, he was Head of Research for the Sustainable Food Trust and continues to work one day a week with the charity as a Senior Research Advisor. Away from work, he is a keen walker and writer.

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Rachel Lasko

co-design | agri-environment policy | ELMs

Rachel Lasko is a social scientist with expertise in policy co-design, environmental governance, and agri-environmental policy. Her research centres on the Green Brexit transition, specifically evaluating farmers' policy concerns during the post-Brexit agri-environmental policy shift.

As the UK undertakes its first major agricultural policy overhaul in over three decades, Rachel investigates how farmers in England are responding to the introduction of new Environmental Land Management Schemes (ELMS), which are being co-designed to align the agriculture sector with environmental targets such as the 25-Year Environment Plan and Net Zero by 2050.

Working at the intersection of academia and policy, she collaborates directly with farmers, policymakers, and local communities to co-develop practical, participatory solutions for sustainable agriculture and biodiversity restoration.

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Owen Lewis

regenerative agriculture | community ecology | agri-environment policy | conservation biology

Owen Lewis is Professor of Ecology in the Department of Biology. His research explores the processes that maintain and threaten biodiversity, and the role of biodiversity in sustaining ecosystem functions and services, including food production.

Research in his group relevant to farming often focuses on insects and their interactions with plants and other organisms. They study how agroecological practices including 'regenerative farming' impact belowground and aboveground biodiversity and associated processes and services, including those relating to yields. At the interface between policy and practice we also study the ecological outcomes of policies such as Biodiversity Net Gain and agri-environment schemes.

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Emily-Jane Lewis-Brown

lifecycle analysis | sustainable agriculture | ecology

Emily's life's work is to deliver exceptional and ethical research that informs and improves the wellbeing of people, other animals and the planet. An ecologist by training and nature, she takes a holistic perspective of actors in systems and seek to understand and appreciate interactions between system parts. This leads to an inter-disciplinary approach, which she is using in the HESTIA's farm trials to help improve the environmental sustainability of foods.

She is researching ways to help achieve environmentally sustainable agriculture through trials with farmers, using the HESTIA Life Cycle Analysis models of carbon footprints, water scarcity, eutrophication, toxicity, and other metrics. They are working with farmers, NGOs, and other actors in food systems to develop toolkits that farmers find useable and useful for measuring and managing the environmental impacts of their produce in ways that support the wellbeing of all involved.

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Jamie Lorimer

environmental geography | social science | livestock | wildlife conservation

Jamie Lorimer is Professor of Environmental Geography at the University of Oxford. His research explores environmental governance across different scales. Past projects have explored the histories, politics and cultures of wildlife conservation spanning elephant conservation to microbiome manipulation.

His current research explores transitions in agriculture and conservation in the context of growing concerns about the relationships between farming, biodiversity loss and global warming. He is working on a book entitled *What's Your Beef? Why we disagree about cattle*.

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Jen Lucey

biodiversity | ecosystem health | knowledge exchange

Jennifer Lucey is the Deputy Director of the Nature-based Solutions Initiative and a Senior Researcher specializing in biodiversity and sustainable agriculture at the Smith School for Enterprise and the Environment (Department of Geography) at the University of Oxford.
Her impact-driven research aims to find and refine nature-based solutions for transforming agricultural landscapes to support biodiverse and resilient ecosystems, while maintaining and enhancing yields for a healthy human population.

Jen is currently leading a project to establish an Agricultural Resilience Impact and Innovation Hub, aiming to build industry partnerships and foster interdisciplinary collaboration across ecology, plant science, and social science to co-create impactful research and innovation.

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John Lynch

climate

environmental sustainability

life-cycle assessment

John Lynch is a researcher interested in approaches to assessing climatic and environmental sustainability. John is a climate and environmental scientist with a particular interest in agricultural sustainability assessment. He has worked on agricultural impact indicators, greenhouse gas emission metrics and appraisal of carbon dioxide removals across previous research positions in the UK and Ireland.

John is currently an Agile Initiative Fellow, contributing across a number of "sprint" projects and exploring new ways of undertaking policy-relevant environmental research.

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Caitlin McElroy

Caitlin McElroy is a Departmental Research Lecturer in Enterprise and the Environment at the Smith School and the School of Geography and the Environment. Caitlin is an economic geographer and her research has engaged with institutional theory, financial geography, science and technology studies, and environmental justice. Building on projects on the circular economy and supply chains, her current research addresses Regenerative Economy Solutions across multiple sectors including agriculture, mining, and computing.

financial geography

circular economy

Regenerative Economy

The Regenerative Tea Futures project investigates how the tea industry can adapt to current and emerging challenges to become more equitable, sustainable, and resilient in the face of climate change. It aims to generate actionable insights for stakeholders while contributing to the existing literature on environmental governance and climate adaptation in agricultural commodity systems reliant on labour and resources from the Global South. It is part of the Regenerative Economy and Living Library (RELL).

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Lars Østergaard

plant science | Molecular Plant Biology | legumes

Lars Østergaard is the Sherardian Professor of Botany at University of Oxford. He obtained his PhD from University of Copenhagen in Biochemistry in 1997. Following postdoctoral studies at UC San Diego on plant developmental genetics, Lars moved to the John Innes Centre (JIC) in 2005 establishing a research programme on reproductive development and morphological diversity in crops and non-cultivated plant species. At JIC, Lars was Head of the Crop Genetics Department and Institute Programme Leader.

They aim to understand the molecular and genetic basis of developmental traits important for legume crop performance. To this end they study for example the genetic and hormonal interactions that ensure careful coordination between pod and seed growth and development. Using association genetics coupled with gene-editing technology and advanced phenotyping, they will apply this knowledge to less domesticated legume crops with potential for resilience to future climate conditions.

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Steven Reece

biodiversity monitoring | ecoacoustic monitoring | artificial intelligence | machine learning

Steve leads the AI and machine learning team in the Leverhulme Centre for Nature Recovery. He has over 35 years consultancy and research experience in AI and machine learning. His work spans both application and theory and his current research interests include ecoacoustics, entropy-based eco-energetic modelling, AI methods for science discovery, multi-modal learning, few-shot learning and blind source separation.

Above-ground passive acoustic monitoring is a well established method for assessing biodiversity health of farms. They (including Olga Isupova and Ella Browning) are developing scalable, transferrable and cost effective AI methods for ecoacoustic data analytics that make sense of the whole soundscape by, for example, separating out the sound sources, such as individual taxa, anthropogenic processes and weather and also flagging unusual sounds.

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Rob Salguero-Gómez

Rob Salguero-Gómez is a Professor of Ecology at the University of Oxford and Tutorial Fellow at Pembroke College. He leads the SalGo Team at Oxford Biology, which studies how species persist under environmental change using comparative demographic models and global databases. His work on ecological resilience and the development of autonomous pipelines to monitor complex ecosystems informs resilience in ecological and agri-food systems facing climate and socio-economic pressures.

His research group explores how wild populations respond and adapt to environmental change. Using demographic models and global data networks, we study how species' life histories shape their resilience to stressors such as climate extremes, habitat loss, and exploitation. These insights help predict which populations or management strategies sustain productivity and biodiversity—informing more resilient agricultural landscapes, sustainable harvests, and policies that balance food security with ecological stability.

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ecological resilience

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Alison Smith

nature recovery | policy support | opportunity mapping

Alison helped to co-develop and apply evidence-based tools and guidance to support more effective nature recovery and land use strategies that can deliver genuine and long lasting benefits for biodiversity and people. She aims to help policymakers, land managers and local communities identify suitable interventions in the right places to meet local needs, by mapping and assessing opportunities for a range of nature-based solutions and nature recovery options that deliver multiple benefits and minimise trade-offs (e.g. with food production).

Her work includes developing methods of mapping and assessing land cover and natural capital, exploring land-use trade-offs and identifying evidence-based policy options that can meet climate, biodiversity and socio-economic goals. She is currently working with the Land Use for Net Zero, Nature and People (LUNZ) Hub to explore co-designed climate and nature-friendly land-use pathways. She also developed the Agile Nature Recovery and Nature-based Solution Opportunity Maps, which have supported development of several Local Nature Recovery Strategies in England.

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Jed Soleiman

soil health | regenerative agriculture | rewilding

Jed is passionate about rewilding and regenerative agriculture, particularly in exploring and understanding how to encourage nature recovery in soils and their responses to different interventions. Focusing mainly on the UK, Jed has previously worked on understanding mycorrhizal responses to rewilding at the Knepp Wildland, and is now also partnered with the Centre for High Carbon Capture Cropping (CHCx3) to investigate soils under regenerative agriculture regimes. It is hoped that this knowledge can help contribute to and inform successful landscape-scale conservation and nature recovery in the UK.

Measuring energy flows in ecosystems is emerging as a possible way to measure their health, helping understand elements such as diversity and function in one metric. Applying this framework to soil could be promising to quantify change following interventions, allowing tracking of differences to soil health over time. Working at FarmED in the Cotswolds, Jed has been applying this framework to the regenerative arable rotation to understand the suitability of this method, and see if it can reveal how herbal leys improve soils compared to a chemically farmed control.

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Isobel Talks

Department of Education | Agile Initiative | Oxford Martin School

Environmental Education

Sustainable Agriculture Skills

Agroecology

Isobel Talks is a researcher, lecturer and consultant. After getting involved in climate-resilient agricultural projects whilst carrying out her DPhil fieldwork in Bangladesh, she began working on a regenerative farm near Cambridge during the COVID-19 pandemic. Since 2021, Isobel has worked with the Landworkers' Alliance on a number of projects, including the NESS (New Entrant Support Scheme) pilot with Defra, 'Experts in Your Field' and facilitating the Agroecology Research Collaboration. Isobel also teaches the 'Environmental Education' course at the University of Oxford which promotes the radical reorientation of teaching and learning in response to the climate crisis, and carries out research on skills for agroecology and climate change education.

Isobel also led 'Skills for Sustainable Farming Futures', an interdisciplinary research project to understand regenerative skill needs and establish a network that brings together research and practice-based expertise in the university with key agricultural stakeholders and policy makers. Education and training for agroecology and other sustainable forms of agriculture is an underdeveloped but strategically vital research area.

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Rachel Tanner

Rachel Tanner is an Associate Professor who since 2022 has run an internationally collaborative research team that takes a One Health approach to the control of TB, considering various interconnected factors associated with humans, animals and the environment. They collaborate with partners including the Animal and Plant Health Agency and the Royal Veterinary College to develop and test new vaccines against bovine TB (bTB).

Her team in the Biology Department studies bovine TB with a focus on the development and testing of novel vaccines for cattle. In the UK, bTB results in the culling of tens of thousands of cows every year, and control costs exceed £100 million annually. Vaccination could prevent infections and limit disease spread, improving the productivity and longevity of herds. They have identified new vaccine candidates that look promising in mice, and developed bovine immune organoids (an 'immune system in a dish') to test vaccines in a rapid, ethical and cost-effective way.

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Department of BIOLOGY

animal health

bovine TB vaccines

Lucy Walker

environmental impact data farming practices

Lucy is a research assistant for the HESTIA project. She is interested in understanding how different farming practices can have different levels of impacts, and understanding how to represent agricultural data in a way that accurately and honestly reflects the current practices. Her work is part of the LED4FOOD project funded by DEFRA which aims to make environmental impact data more reliable and accessible for businesses within the food system.

HESTIA is a free database which provides harmonised data on the production practices and environmental impacts of farms and food products. Our models and data standard enable farms and supply chains to quantify, communicate, and reduce their impacts. HESTIA calculates a range of environmental impacts including GWP100, water use, land use, and ecotoxicity. From HESTIA's calculations you can compare agricultural systems directly to understand where the key impacts are originating from.

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Department of BIOLOGY

HESTIA

Geraldine Wright

Geraldine is the Hope Professor of Entomology in the Department of Biology. She is currently the section head of Behaviour and Biomechanics. She has over 25 years of experience working with bees. She is particularly interested in the chemical ecology of pollination and has studied how chemical compounds produced by plants influence the behaviour of bees. She started a successful University spin-out company that is producing pollen substitutes for domesticated honeybees based on her lab's research.

Her lab studies the behaviour and physiology of bees. They have specifically investigated the nutrition of bees, especially the nutrition acquired from pollen, and they created a pollen substitute that can be used by beekeepers. They study the mechanisms bees have for assessing food quality and learning and remembering floral traits. They are finding ways to optimize bee pollination of crops such as soft fruits and vegetables.

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bees

entomology

chemical ecology

Jing Zhang

food systems

agriculture

resilience

Jing is the Project and Knowledge Exchange Lead for the Agricultural Resilience Impact and Innovation Hub (AGRIIH), aiming to build partnerships with industry to develop impactful interdisciplinary research and innovation that transforms our agricultural systems for a more resilient future.

Jing is also a postdoctoral researcher in the Food Systems Transformation Group at the Environmental Change Institute. Her research focuses on food system transformation, resilience, and sustainability, exploring how innovations and actor interactions shape more resilient and sustainable food futures.

Jing contributed to the Co-Centre for Sustainable Food Systems and BeanMeals, where she worked on the development and application of the Food System Sustainability Compass to visualise and assess food system outcomes—including nutritional health, environmental sustainability, social equity, and economic viability—within specific regional contexts.

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Sophus zu Ermgassen

ecological economics | nature markets | Biodiversity Net Gain

Sophus is an ecological economist working on topics broadly related to biodiversity finance, UK environmental policy, biodiversity compensation (e.g. biodiversity offsetting, Biodiversity Net Gain), infrastructure sustainability, nature-positive organisations, and postgrowth economics. A key focus of his current work is on learning lessons from shortcomings in past nature markets to understand how to design nature markets in a way that satisfies both ecological and financial objectives.

Examples of his recent research projects include evaluating the outcomes of biodiversity compensation systems in the UK and abroad, exploring the sustainability dimensions of the UK housing affordability crisis and charting policy pathways to achieving "a home for all within planetary boundaries", and evaluating the species threatened globally by society's growing demand for sand and construction minerals.

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Monika Zurek

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Food Systems

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Monika Zurek is a titular associate professor and Lead of the Food System Transformation Group at the Environmental Change Institute. For more than 25 years she has worked on food systems change, environment and development interactions, currently focusing on system thinking and foresight tools, in research (International Maize and Wheat Improvement Center-CIMMYT, University of Oxford), international organisations (FAO), consulting (Climate Focus BV) and the philanthropic sector (Gates Foundation). She was also a lead author for various environmental assessments such as the Intergovernmental Panel on Climate Change (IPCC, AR4) and the Millennium Ecosystem Assessment.
Monika is involved in, and leads on, a number of projects within the Food Systems Group at the ECI including co-leading the Foresight4Food (F4F) initiative (current projects are listed below). She also sits on the coordination team of the UK's cross-government Global Food Security Programme on the Resilience of the UK Food System.

University of Oxford

Nature, Food, and Farming Research: Introductory booklet