

JOB DESCRIPTION

SPECIFIC JOB TITLE	Postdoctoral Research Scientist — Agricultural Sustainability Database
LEVEL/BAND	
JOB FAMILY	Science
GENERIC ROLE TITLE	Postdoctoral Research Scientist
CONTRACT TYPE	Fixed term (12 months)
HOURS	37
REPORTS TO	Research Scientist, Sustainable Agriculture Sciences — North Wyke
DEPARTMENT	Sustainable Agriculture Sciences — North Wyke
LOCATION	North Wyke
DATE	August 2021

OVERVIEW OF ROLE/JOB PURPOSE

We are seeking a highly qualified postdoctoral research scientist specialised in sustainability assessment of agricultural production systems. The position will run for 12 months and be based at the institute's North Wyke site in Devon, England.

With a clear and urgent need to transform our farming systems to make them more resource-efficient, less polluting and more resilient to external shocks, the value of agricultural experimental data is greater than ever. Established in 1843, Rothamsted Research is the world's longest-running agricultural research institute with a wealth of information that can be utilised to determine what food we should grow where and how to achieve the oft-conflicting goals of food security, environmental/ecological sustainability and vibrant rural communities. Our Broadbalk arable rotation trial, for example, has continuously been running for 178 years, providing an invaluable evidence base for soil carbon dynamics, a major determinant of climate change impacts of agriculture.

Working as part of the Digital Rothamsted Initiative aiming to extract the untapped value of data resources and archived samples owned by the institute, the post holder will be responsible for standardisation of soil, agronomic, livestock, environmental/ecological and agribusiness data across multiple long-term trials being carried out at multiple sites in England (Bedfordshire, Hertfordshire, Suffolk and Devon) so that the performance of each treatment becomes comparable across trial boundaries. Using this unified database, the post holder will then lead a systematic appraisal of a diverse range of farming systems under Rothamsted's portfolio, including [the Long-term Experiments \(LTEs\)](#), [the Large Scale Rotation Experiment \(LSRE\)](#) and [the North Wyke Farm Platform \(NWFP\)](#), with the view to identify dominating (consistently superior) and dominated (consistently inferior) farming practices through a trade-off analysis. Finally, the post holder will collate life cycle inventory information associated with each production system and transfer them to [HESTIA](#), a global open-access platform for agri-food life cycle assessment (LCA) data managed by the University of Oxford, to facilitate secondary use of project outputs. [The Oxford Martin School](#) will provide technical expertise for this component of work as an external project partner.

The primary duties of this position are summarised below. The post holder is expected to carry out all tasks listed here and any others reasonably requested by the line manager or the institute. While this position is primarily desk-based, occasional visits to the experimental sites may be required in order to evaluate the quality of the database as well as to assist the wider goals of the research team. When this is necessary, the post holder must be able to travel flexibly within reasonable limits.

MAIN DUTIES OF ROLE			
Generic Outputs	Weight	Description of Outputs	Description of Job Specific Duties
SCIENTIFIC RESEARCH	40%	Undertake scientific research (data collection) within predetermined scopes	<ul style="list-style-type: none"> •Review the latest scientific literature to inform the project team •Design a database structure that suits the overarching project goals •Develop rules and protocols for data standardisation •Collate data from the predetermined list of field experiments to build a unified database •Ensure data quality and replicability
ANALYSIS AND PUBLICATION	30%	Analyse data and publish findings in scientific journals	<ul style="list-style-type: none"> •Analyse data using appropriate statistical methods •Interpret the results of data analysis •Propose and coordinate follow-up data collection and/or collation as required •Write and publish scientific articles in internationally reputable journals
WORKING WITH OTEHRS	10%	Participate in internal networks and work with external organisations	<ul style="list-style-type: none"> •Contribute to project management through meeting attendance and report writing •Liaise with external project partners to ensure smooth transfers of data and information
KNOWLEDGE EXCHANGE AND OUTREACH	5%	Work with people and businesses outside the scientific community	<ul style="list-style-type: none"> •Communicate research findings to end-users, industrial stakeholders, policymakers and media, both orally and in written formats •Contribute to public engagement events organised by the project team, the institute and external partners
FINANCIAL MANAGEMENT	5%	Acquire and manage fund for scientific research	<ul style="list-style-type: none"> •Contribute to project finance management through meeting attendance and report writing •Ensure lawful and efficient use of institutional resources
LEADERSHIP AND MANAGEMENT	5%	Support peers and oversee work of more junior staff	<ul style="list-style-type: none"> •Participate in internal scientific exchange activities to mutually enhance knowledge and create a stimulating workplace •Under supervision of the line manager, offer day-to-day guidance to postgraduate and summer students
PROFESSIONAL DEVELOPMENT	5%	Plan own development opportunities	<ul style="list-style-type: none"> •Seek advice, guidance, coaching and/or mentoring from appropriate individuals to improve the quality of outputs and deliverables •Identify and participate in appropriate professional development opportunities to acquire new skills and knowledge •Initiate and sustain professional networks for future opportunities

PERSON SPECIFICATION AND SELECTION CRITERIA*

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EDUCATION/QUALIFICATIONS		Essential	Desirable	How Tested? **		
1.	A PhD in agricultural science or a closely related field, either awarded or to be awarded within six months from the deadline for this application; in the latter case the thesis must have already been submitted for examination (supporting document required)	✓		✓		Cert
1.	Professional knowledge in agricultural production systems in the UK	✓		✓		AF, IV
2.	Professional knowledge in food consumption patterns in the UK	✓		✓		AF, IV
3.	Genuine interest and professional knowledge in agricultural sustainability	✓		✓		AF, IV
4.	Ability to conduct automated or semi-automated data collation, as clearly evidenced by scientific publications or supporting documents	✓		✓		AF, Test
5.	Good understanding of statistical theory and competency in statistical software, as clearly evidenced by scientific publications or supporting documents	✓		✓		AF, Test
6.	Ability to work as a team player, as supported by references	✓		✓		AF, IV
7.	Excellent communication skills in English, both spoken and written, as or at the level equivalent to a native speaker	✓		✓		AF, IV, Cert
8.	Professional knowledge in agribusiness analysis				✓	AF, IV
9.	Professional knowledge in life cycle assessment (LCA)				✓	AF, IV
10.	Professional knowledge in relational database systems				✓	AF, IV
11.	A strong track record of scientific publications				✓	AF, IV

BEHAVIOURS/ATTITUDES		How Tested?			
1.	Drive for Quality: Makes incremental improvements to processes			IV	
2.	Strategic Thinking: Draws on experience when undertaking duties of role			IV	
3.	Creativity and Innovation: Responds positively to change, and identifies and tries out different approaches			IV	
4.	Developing Self and Others: Formalises development needs for self and participates in learning activities to enhance performance			IV	
5.	Professional Conduct: Demonstrates an understanding of others' perspectives			IV	
6.	Productive Relationships: Is a good team player			IV	
7.	Effective Communication: Communicates to a wide audience in an accurate and timely manner			IV	
GENUINE OCCUPATIONAL REQUIREMENTS		Essential	Desirable	How Tested?	
1.	Ability and willingness to travel flexibly, potentially during unsociable hours (within reasonable limits), to fulfil requirements for agricultural experiments			✓	AF

* Minimum requirements of the post and how they will be assessed

** Evidence of criteria will be established from: **AF** (application form), **IV** (interview), **Test** (skills test/prepared question/presentation), **Cert** (certificate checked by interview panel)