# Position Details

## CSIRO Early Research Career (CERC) Postdoctoral Fellowship– CSOF4

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| The following information is for applicants |
| Advertised Job Title  | CSIRO Winanga-y Postdoctoral Fellowship in Economics of Regenerative Agriculture |
| Job Reference | 84408 |
| Tenure | Specified Term of 3 years full-time |
| Salary Range | AU$89,926 to AU$98,504 pa (pro-rata for part-time) + up to 15.4% superannuation |
| Location(s) | Perth, Western Australia |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All Candidates |
| Position reports to the | Team Leader  |
| Client Focus – Internal | 100% |
| Client Focus – External | 0% |
| Number of Direct Reports | 0 |
| Enquire about this job | Dr Dean Thomas at Dean.Thomas@csiro.au |
| How to apply | Apply online at <https://jobs.csiro.au/> Internal applicants please apply via **Jobs Central**If you experience difficulties when applying, please email careers.online@csiro.au or call 1300 984 220. |

**Acknowledgement of Country**

CSIRO acknowledges the Traditional Owners of the land, sea and waters, of the areas that we live and work on across Australia. We acknowledge their continuing connection to their culture and pay our respects to their Elders past and present. View our [vision towards reconciliation](https://www.csiro.au/en/about/Indigenous-engagement/Reconciliation-Action-Plan).

### Role Overview

**CSIRO Early Research Career (CERC) Fellowships** provide opportunities to scientists and engineers who have completed their doctorate and have less than three years relevant research experience. These Fellowships aim to develop the next generation of future leaders of the innovation system through:

* A differentiated career development program to deliver capability excellence and breadth across all facets of the national innovation system;
* Research training via strategic research and development projects with a clear focus that will deliver real impact through science and engineering excellence;
* An innovative culture supporting the development and demonstration of original thinking and expertise leading to peer-recognition; and
* Opportunities to develop skills and experience in collaborative research teams to effectively work within national and global multi/transdisciplinary and multi-stakeholder environments.

CERC Fellows **are appointed for three years or full-time equivalent.**

The CERC Fellow will provide leadership in the quantitative systems analysis of regenerative agricultural practices by combining farming systems modelling and advanced analytics capabilities, applied in the mixed farming region of southern Australia. This work contributes to CSIRO’s Resilient Farming Systems impact area and will provide an ideal opportunity to develop your research skills in evaluating farming systems, economic and risk scenarios. The position will be supervised by an internationally recognised research team.

The CERC Fellow will undertake research to broaden business benchmarking through developing components of an underpinning framework to evaluate regenerative agriculture interventions. Advanced decision support for land managers through digital integration and analysis of complex farming systems represents core frontier science within CSIRO’s Agriculture and Food business unit. Improved confidence in predicting the outcomes of regenerative agriculture interventions will lead to faster adoption of beneficial practices, confidence by consumers of agricultural products that concerns around production footprints are being managed and will assist farmers to avoid implementing changes that are not scientifically substantiated.

The CERC Fellow will build a multidisciplinary network within CSIRO, nationally and internationally. The economic assessment framework will be ground truthed in close consultation with collaborating producers who are considering or have applied regenerative agriculture interventions. Research outputs will be published in high-impact international journals and presented at conferences.

We are thrilled to be able to deliver on the commitment we made in our strategy to invest in frontier science with the CSIRO Agriculture & Food Winanga-y Postdoctoral Fellowship scheme. The word Winanga-y (pronounced win-na-gnay) is a cultural asset gifted by the Gomeroi Nation in Myall Vale to CSIRO's Agriculture and Food Business Unit to name the new Postdoctoral Fellowship Scheme. Winanga-y means to understand, know, remember, and think.

### Duties and Key Result Areas

Under the direction of senior research scientists and engineers, this CERC Fellow will:

* + Review the current literature relating to regenerative agricultural practices, focusing on economic analysis of complex practice change and the key metrics required for assessing profit and risk in regenerative agriculture scenarios.
	+ Address the question of how regenerative agricultural interventions affect farm profit and risk, during implementation and maintenance of practice change. The fellow will learn and apply CSIRO’s biophysical and bioeconomic modelling methods. A particular case study will be the economic analysis of building soil microbial functions, through alternative soil management and crop rotations.
	+ Identify sources of data that are important for analysis of regenerative agriculture scenarios. These will include the use of sensor data, geospatial data and data lake repositories, and other sources of data that may be difficult to source or not available in a standardised format. This will create the basis to design a broader range of regenerative agricultural scenarios and research questions and inform the scaling of these methods.
	+ Develop new methods to assess the costs and benefits associated with regenerative agriculture, particularly in relation to the productivity of mixed farming systems. New analytical approaches such as AI, ML and digital twins will be considered to extend current analyses and present new insights.
	+ Embed the analytical framework within a national grid, implementing workflows within established software systems to enable the analytics framework to be applied effectively across a wide geographical footprint.
	+ Publish results in relevant international scientific venues (high-level journals and conferences).
	+ Communicate effectively and respectfully with all staff, clients, and suppliers in the interests of good business practice collaboration and enhancement of CSIRO's reputation.
	+ Adhere to the spirit and practice of CSIRO's Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Making Safety Personal goals.
	+ Other duties as directed.

The CERC Fellow learning, development and training programis developed between the CERC Fellow and their CSIRO supervisor. The program will focus on enhancing the Fellow’s capabilities to the level expected of an independent researcher and will include on-the-job and course-based development encompassing:

* Discipline-specific techniques and protocols
* Professional growth
* Project management
* Communication and influencing skills
* Working and collaborating with others

## **Selection Criteria**

CSIRO is an Equal Opportunity employer working hard to recruit world-class talent that represents the diversity across our society. As part of our commitment to Aboriginal and Torres Strait Islander employment outcomes, preference will be given to Aboriginal and Torres Strait Islander candidates who meet the role criteria.

#### Essential

*Under CSIRO policy only those who meet all essential criteria can be appointed.*

1. A doctorate (or will shortly satisfy the requirements of a PhD). The doctorate must be in a relevant discipline area, such as agricultural systems or ecology, systems modelling, or agricultural economics.

Please note: To be eligible for this role you must have **no more than 3 years** (or full-time equivalent) of relevant research experience.

1. Demonstrated understanding of farm economic evaluation, including profit, risk and emerging markets such as carbon and natural capital.
2. Demonstrated understanding of farming systems analysis, including modelling of mixed farming systems or their components.
3. High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including the presentation of research outcomes at national and international conferences.
4. A sound history of publication in peer reviewed journals and/or authorship of scientific papers, reports, grant applications or patents.
5. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

## **Desirable**

1. Experience in remote sensing, GIS, or spatio-temporal analysis/statistics.
2. Experience in advance analytical methods, such as machine learning or use of data lakes
3. Experience with programming software such as R or Python
4. Remain productive, positive and resilient in complex, ambiguous and/or uncertain environments.
5. **The ability to work effectively as part of a multi-disciplinary, potentially regionally dispersed research team, plus the motivation and discipline to carry out autonomous research.**

## **Required Competencies**

* **Teamwork and Collaboration:** Cooperates with others to achieve organisational objectives and may share team resources in order to do this. Collaborates with other teams as well as industry colleagues.
* **Influence and Communication:** Uses knowledge of other party's priorities and adapts presentations or discussions to appeal to the interests and level of the audience. Anticipates and prepares for others reactions.
* **Resource Management/Leadership:** Allocates activities, directs tasks and manages resources to meet objectives. Provides coaching and on the job training, recognises and supports staff achievements and fosters open communication in the team.
* **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
* **Independence:** Recognise and makes immediate changes to improve performance (faster, better, lower cost, more efficiently, better quality, improved client satisfaction).
* **Adaptability:**Copes with ambiguity or situations that lack clarity. Adapts readily to changing circumstances and new responsibilities (which may include activities outside own preferences) in the interests of achieving team objectives. Recognises the need for and undertakes personal development as a result of changes.

To be appointed as a CERC Fellow within CSIRO, candidates are required to have **submitted** their doctoral thesis at the time of commencement, as a minimum requirement, if PhD conferment has not been obtained. If a candidate has submitted, but their PhD has not yet been formally attained, the starting salary will be CSOF4-1 ($87,068). Upon CSIRO receiving written confirmation that the PhD has been awarded (within a six month period from commencement date), the salary will be increased to the negotiated level and the difference will be back-paid to the Officer’s start date.

Special Requirements

Appointment to this role may be subject to conditions including provision of a national police check as well as other security/medical/character clearance requirements.

* The successful candidate will be asked to obtain and provide evidence of a National Police Clearance or equivalent. Please note that individuals with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* If the successful candidate is not an Australian Citizen or Permanent Resident, they may be required to undergo additional security clearances, which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test- https://ielts.com.au/)

**Our value proposition**

We want CERC Fellows to join our world class science, engineering and digital teams to solve big, complex problems that make a real difference to the future of Australia and the world.

You'll get to work with some of the most talented minds in their fields, not just in Australia, but in the world. At CSIRO, we spark off each other, learn from each other, trust each other and collaborate closely to achieve more than we could individually.

Find out more about our CSIRO Early Research Career (CERC) Fellow Experience Employee Value Proposition (EVP) [here](https://www.csiro.au/en/careers/postdoctoral-fellowships).

## **About CSIRO**

We solve the greatest challenges through innovative science and technology. Visit [CSIRO Online](http://www.csiro.au/) and

Find out more about CSIRO [Agriculture and Food](https://www.csiro.au/en/Research/AF)

Find out more about CSIRO [Data61](https://www.csiro.au/en/about/people/business-units/Data61)

Find out more about CSIRO [Land and Water](https://www.csiro.au/en/Research/LWF)

for more information.

CSIRO is a values-based organisation.  In your application and at interview you will need to demonstrate behaviours aligned to our values of:

* People First
* Further Together
* Making it Real
* Trusted