# 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 Agricultural/Natural Resource Economics and Foresight Modelling |
| Job Reference | 74540 |
| 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) | St. Lucia, QLD |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | All Candidates |
| Position reports to the | Team Leader – Sustainable Food Systems Futures |
| Client Focus – Internal | 20% |
| Client Focus – External | 80% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Duy Nong via email at [duy.nong@csiro.au](mailto:duy.nong@csiro.au) + 61 7 3214 2475 |
| 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](mailto: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 area 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) Postdoctoral Fellowships** provide opportunities to scientists and engineers who have completed their doctorate and have less than three years relevant postdoctoral work 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 Postdoctoral Fellows **are appointed for three years or part time equivalent.**

We are thrilled to be able to deliver on the commitment we made in our strategy to invest in frontier science with the new 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.

The Postdoctoral Fellow will join a multi-disciplinary team applying foresight modelling tools to explore agri-food system transition pathways and inform and shape policy. This group works across business units and has strong connections to Australian and International policy-making bodies. The fellow would contribute to ongoing foresight modelling efforts, by building and extending analytical and modelling tools to better assess the linked biophysical and economic constraints facing the food system, and applying these tools to help explore potential pathways/trade-offs and promote the development of more resilient and sustainable food systems in Australia and abroad.

The Postdoctoral Fellow will engage in work to improve the whole-of-economy modelling possible in GTEM, a global computable general equilibrium (CGE) model. They would contribute to these efforts, by developing new modules to better incorporate natural resource use and constraints (land and water), and thereby help to extend our modelling capability to a range of topics such as but not limited to:

1. Modelling natural resource constraints, and the impacts of climate change on agricultural production systems
2. Assessing the environmental ramifications of new agricultural and energy policies, new trade agreements, adoption of new technologies, changes in consumer demand, as well as the potential economic and social implications of environmental policies on agricultural production and trade.
3. Simulating the effects of technology development to assess the evolving and dynamic footprint of agriculture
4. Analysing the synergies and trade-offs of a growing bioeconomy, and the potential consequences on natural resources use amongst land-based sectors including agriculture, forestry, the bioeconomy, amongst others.
5. Improving potential connections to other detailed agriculture and sector models.

### Duties and Key Result Areas:

The fellow will lead work on improving the modelling of natural resource use and constraints in GTEM, and in so doing will be expected to:

* Review literature and modelling approaches to representing natural resource use and constraints in CGE models.
* Revise and update underlying model database to ensure current physical representations of resource use accurate.
* Collect, clean, and harmonise current and projected global land-use, and irrigation and hydrological data.
* Design, under the supervision of our modelling team, new modules in GTEM-Food to incorporate land-use and water-use. This will include not only accounting for resource use and related emissions from land-use change, but also ensuring that there are binding constraints to production and resource competition based on availability of resources.
* Apply best modelling and design practices, including documenting of model code and applications.
* Be able to present and explain model developments both internally and externally.
* Contribute to the ex-ante analysis of global and Australian agricultural futures and impacts of international and national trends on Australian agricultural production and trade, as well as broader impacts to the economy and environment (some of this work may be with external clients or working internally in CSIRO with our [Missions](https://www.csiro.au/en/about/challenges-missions/Missions) that have an agri-food sectoral component.
* Occasionally you may be required to represent CSIRO externally, including in public forums, with industry or the research sector or with Government.

Under the direction of senior research scientists and engineers, CERC Postdoctoral Fellows:

* Carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes.
* Recognise and exploit opportunities for innovation and the generation of new theoretical perspectives, and progress opportunities for the further development or creation of new lines of research
* Carry out research investigations requiring originality, creativity, and innovation
* Record, manage, and analyse data/information using relevant domain data science techniques.
* Proactively undertake development to grow effective researcher capabilities to support career goals.
* 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 Postdoctoral Fellow learning and development program**](http://www.csiro.au/en/Careers/Student-and-graduate-programs/Postdoctoral-fellowships)is developed between the CERC Postdoctoral Fellow and their CSIRO supervisor. The program will focus on enhancing the Fellows’ 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

## **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.

## **Selection 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) in a relevant discipline area, such as Economic modelling, Agricultural Economics, Natural Resource Economics, or Environmental Economics.

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

1. Experience with computable general equilibrium model development/extension and data compilation using GEMPACK, and other data processing and analytical software.
2. Experience with GTAP-based models and dynamic CGE models, and their application to the global agriculture and food systems.
3. Familiarity with data visualisation software and techniques, and the ability to interpret and communicate complex results
4. 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.
5. A sound history of publication in peer reviewed journals and/or authorship of scientific papers, reports, grant applications or patents.
6. A record of science innovation and creativity, including the ability & willingness to incorporate novel ideas and approaches into scientific investigations.

## **Desirable:**

1. Knowledge of climate change impact functions, resource uses (land and water) in agricultural and energy production, and the modelling of climate change impacts on agricultural production.
2. Familiarity with other modelling languages and techniques, particularly partial equilibrium sector models, or farm/household-level models and an interest in coupling models for more complex analyses
3. Remain productive, positive, and resilient in complex, ambiguous and/or uncertain environments.
4. **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.**

To be appointed as a CERC Postdoctoral Fellow within CSIRO, candidates are required to have **submitted** their PhD 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 Check or equivalent. Please note that people 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 Postdoc 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.

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

## **About CSIRO:**

We solve the greatest challenges through innovative science and technology. To find out more visit us [online](http://www.csiro.au/)!

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

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