# Position Description

## Research Scientist/Engineer – CSOF5

The following information is for applicants

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| Advertised Job Title**:** | Agricultural Economist and Modeller |
| Job Reference: | 61685 |
| Relocation Assistance**:** | Will be provided to the successful candidate if required. |
| Applications Are Open To: | Australian Citizens Only  Australian/New Zealand Citizens and Australian Permanent Residents Only   * All Candidates |
| Percentage of Client Focus - Internal: | 30% |
| Percentage of Client Focus - External: | 70% |
| Reports to the: | Team Leader – Food Systems and Global Change |
| Number of Direct Reports: | 0 |
| Name and Contact Details For Applicant Enquiries | Daniel Mason-D’Croz, [Daniel.masondcroz@csiro.au](mailto:Daniel.masondcroz@csiro.au)  Please do not email your application directly to Daniel Mason-D’Croz. Applications received via this method will not be considered by the selection panel |
| Contact Details For Applying | Call 1300 984 220 or email [careers.online@csiro.au](mailto:careers.online@csiro.au). |
| How to Apply: | Please apply online at [jobs.csiro.au](https://jobs.csiro.au/) and enter the requisition number**.** Internal applicants please apply via ‘Jobs Central’ through the ‘People Hub’ icon |

## Role Overview:

The global food system faces significant challenges to meet growing demand (population projected to surpass 9 billion by 2050), shifting consumption preferences (due to economic growth, urbanization, amongst other factors), in addition to increasingly binding environmental constraints. Climate change in particular threatens the global food system through rising temperatures, changing precipitation patterns, and increasing weather variability which makes agriculture more unpredictable. To meet growing demands while not exceeding key environmental (planetary) boundaries, the agriculture sector will need to transition towards more environmentally sustainable practices, and finding ways to more efficiently produce and distribute agricultural goods all over the world. The global trade system, of which Australia is a key player, is an important element that could increase the global resilience of the food system to local production shocks.

CSIRO is looking to recruit a resourceful Agricultural Economist and Modeller to contribute to innovative research in integrated and multi-disciplinary assessments of the Australian and Global Food Systems, initially around issues of climate variability and trade. This individual will be part of a multi-disciplinary team that will explore issues of the role Australia may play in the future to achieving a more sustainable food system domestically and abroad.

You may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. Key areas of work would include:

* Exploring impacts of climate variability on Australian and Global agricultural markets
* Engaging with internal and external partners on ex ante analysis of the agriculture and land sectors
* Multi-disciplinary analysis linking economic and biophysical modelling of agricultural systems to assess challenges to Australia and the world
* Developing and applying methodologies to link analysis across scales from the global, regional, national, and sub-national.
* Serving as a bridge between macro- and sector- focused modelling within CSIRO as well as between CSIRO and external partners

You will have the opportunity to build and maintain networks, play a lead role in securing project funds, provide scientific leadership and pursue new ideas and approaches that create new concepts.

## Duties and Key Result Areas:

* Work with a range of national and external partners in the improvement and development of computable general equilibrium (CGE) models as well as other economic modelling methods to better represent the agriculture and land sectors in integrated assessments at the national and global level.
* 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.
* Coordinate with existing modelling expertise across CSIRO Agriculture and Food and elsewhere as part of a multi-disciplinary research team working on the economics, productivity and sustainability of farming systems in Australia and abroad.
* Contribute to economic modelling and integrated economic and biophysical analysis of global food systems and the environment across CSIRO.
* Incorporate novel approaches to scientific investigations by adapting and/or developing original concepts and ideas for new, existing and further research.
* Communicate effectively and respectfully in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Produce high quality scientific and/or engineering papers suitable for publication in quality journals and for presentation at national and international conferences.
* Work effectively as part of a multi-disciplinary, often regionally dispersed research team, to undertake independent scientific investigations and carry out associated tasks under the guidance of more senior Research Scientists/Engineers.
* Under the guidance of Senior Research Scientists/ Engineers, work collaboratively and honestly with internal and external colleagues, clients and partners to help define and satisfy objectives for small to medium research projects.
* Lead research projects, including the negotiation of resource requirements.
* Provide coaching and on-the-job training to technical staff and students to ensure experiments are established in accordance with research design.
* Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals.
* Other duties as directed.

## Competencies:

1. **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.**
2. **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.**
3. **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.**
4. **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate response by adapting/creating and testing alternative solutions.
5. **Independence: Plans, sets and works to meet challenging standards and goals for self and/or others. Recognises where endeavours will make the most impact or difference, decides on desired outcome and sets realistic goals to reach this target.**
6. **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:

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

1. A doctorate and or equivalent research experience in a relevant discipline area, such as agricultural economics, economic modelling, or impact assessment
2. Significant knowledge of macroeconomic modelling methods and tools, specifically global GTAP based computable general equilibrium (CGE) models and their application to the global food system including but not limited to:
   1. Multi-disciplinary and multi-scale analysis of the global food system and its impacts on the environment and society including impacts on agricultural production, trade, and demand
   2. Modelling climatic impacts and other risks to the global food system, particularly around issues of climate/weather variability and extreme events
3. Experience using, maintaining, and developing modules for economic analysis, including data processing and data reconciliation techniques.
4. Experience coding in GEMPACK, or demonstrated capacity and willingness to learn GEMPACK
5. **The ability to work effectively as a part of a multi-disciplinary, regionally dispersed research team, and carry out independent individual research, to achieve organisational goals.**
6. A record of science innovation and creativity plus the ability to apply well developed research skills to scientific investigations and to communicate (written and orally) findings to a broad audience.

## Desirable Criteria:

1. Knowledge of climate change impacts, adaptation and mitigation in agriculture.
2. Familiarity with other modelling languages and techniques, particularly partial equilibrium sector models and linking multiple models together.

## Special Requirements:

N/A

## About CSIRO:

We imagine. We collaborate. We innovate. To find out more visit us [online](http://www.csiro.au/)!

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