# Research Scientist/Engineer – CSOF5

Role summary for potential applicants

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| Advertised Job Title**:** | Agriculture Systems Modeller |
| Reference Number**:** | 57564 |
| Classification**:** | CSOF5 |
| Salary Range: | AU$92,591 to AU$100,199 plus up to 15.4% superannuation |
| Location**:** | St. Lucia, QLD |
| Tenure: | Indefinite |
| Relocation assistance**:** | Will be provided to the successful candidate if required. |
| Applications are open to: | Australian/New Zealand Citizens and Australian Permanent Residents only |
| Functional Area**:** | Research Scientist/Engineer |
| % Client Focus - Internal: | 15% |
| % Client Focus - External: | 85% |
| Reports to the: | Team Leader - Global Food and Nutrition Security |
| Number of Direct Reports: | 0 |

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| **Role Overview:** |
| The role of Research Scientist Staff in CSIRO is to conduct innovative research leading to scientific achievements that are aligned with CSIRO's strategies. You may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. 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.This position will provide leadership in the area of bio-economic integrated assessment of farming and food systems, including the development and application of sophisticated statistical and mathematical programming methods for prioritising technology and policy actions in agricultural systems. This post will also coordinate the development of tools and software, in line with the activities of other CSIRO programmes and initiatives. It is expected that this position will serve as a bridge between the work of the Food and Nutrition Security group at the household level and our numerous external partners working in this area (CCAFS, BMGF, IIASA, IFAD, AgMIP and others). The position will also engage and further develop the work on priority setting, monitoring and evaluation and ex-ante and ex-post assessments of sustainable intensification, climate adaptation strategies, diversification options and others. The incumbent will also collaborate with other colleagues working at more aggregated scales in our multi-scale assessment work. |

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| **Duties and Key Result Areas:** |
| * 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 the developing world.
* Contribute to the development of the field of agricultural systems analysis, and the integrated economic and biophysical assessment of food systems and the environment across CSIRO.
* work with a range of national and external partners in the assessment and quantification of the economic, production and natural resource impacts of different technologies and policies on agricultural systems at different scales (from the farm to the global level).
* contribute and coordinate the development of suitable household –level bio-economic models to study niches for specific technologies and for assessing their impacts on incomes, productivity, food security, greenhouse gas emissions, and other environmental dimensions, and potential trade-offs arising from their adoption.
* Engage in multi-sectoral assessments or international initiatives (IPCC, etc) as needed.
* 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.
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| **Selection Criteria:** |
| *Under CSIRO policy only those who meet all essential criteria can be appointed****Pre-Requisites:***1. **Education/Qualifications:** A doctorate and or equivalent research experience in a relevant discipline area, such as agricultural systems, agronomy, or agricultural economics
2. **Communication:** Strong written and oral communication skills including the ability to publish research results, prepare reports and present the results of scientific investigations at national and international conferences and stakeholder meetings.
3. **Publications: A solid record of publication in quality, peer reviewed journals.**
4. **Behaviours: A history of professional and respectful behaviours and attitudes in a collaborative environment.**

***Essential Criteria:***1.Significant knowledge of agricultural systems in both the developed and the developing world2. Solid bio-economic modelling skills at different levels: from crops and livestock to the farm household and regional levels with at least some of the following skills:* Production frontier and other econometric modelling skills
* Simulation modelling of crops, livestock and agricultural systems dynamics.
* Statistical economic modelling of technology adoption among farm households
* Mathematical programming skills: linear programming and variants, others
* Development of methods for understanding the impacts of technology upscaling to the regional level
* Modelling of climatic and other risks in farming systems
* Land use and bio-economic regional modelling

3. Experience in using economic, bio-economic models, and spatial analysis for policy scenario development and ex-ante impact assessment. 4. Significant experience writing scientific code in R, Python or equivalent languages, and experience handling large datasets.5. The ability to work effectively as 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 & willingness to incorporate novel ideas and approaches into scientific investigations.***Desirable Criteria:***1. Extensive knowledge of adaptation options in farming systems and capacity to evaluate them from different perspectives (e.g. from environmental, socio-economic, production, development and food security perspectives).
2. Experience with geographical information systems

**CSIRO is a values based organisation. You will need to demonstrate behaviours aligned to our values of:*** Integrity of Excellent Science
* Trust & Respect
* Creative Spirit
* Delivering on Commitments
* Health, Safety & Sustainability
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| **Other Information:** |
| **How to Apply**Please apply for this position online at <https://jobs.csiro.au/> and enter requisition number **57564**. Internal applicants please apply via ‘Jobs Central’ in SAP (click ‘Recruitment’) Please load one document containing your CV and a brief cover letter addressing the selection criteria and your motivations for applying (Maximum 2MB). You will also be required to respond to some screening questions.  If you experience difficulties applying online call 1300 984 220 for assistance. Outside Australian business hours please email: csiro-careers@csiro.au. **Referees**: Please provide contact details of two previous supervisor or academic/professional referees in your resume/CV. We will ask your permission before making contact. **Contact:** If after reading the selection documentation you require further information please contact: Dr Mario Herrerovia email: Mario.Herrero@csiro.au or phone: +61 7 3214 2538 Please do not email your application directly to Dr Herrero. Applications received via this method may not be considered by the selection panel.**About CSIRO**Australia is founding its future on science and innovation. Its national science agency, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) is a powerhouse of ideas, technologies and skills for building prosperity, growth, health and sustainability. It serves governments, industries, business and communities across the nation. Find out more! [www.csiro.au](http://www.csiro.au). We work flexibly at CSIRO, offering a range of options for how, when and where you work. Talk to us about how this role could be flexible for you. Find out more! [CSIRO Balance](https://www.csiro.au/en/Careers/A-great-place-to-work/Work-life-balance) **CSIRO Agriculture & Food** carries out research and development for new agricultural technologies, value added foods, crop and livestock improvement, aquaculture, farming systems, sustainability and advancement of international agriculture. |