

REQUEST FOR PROPOSALS: INNOVATIVE AND RESILIENT LAND AND WATER USE THEME

Background and scope

The National Science Challenge: Our Land and Water (OL&W) has the objective *“To enhance primary sector production and productivity while maintaining and improving our land and water quality for future generations”* and the vision that *“New Zealand is world-renowned for integrated and successful land-based primary production systems, supported by healthy land and water and capable people”*.

The OL&W Challenge funds programmes that align to its Strategy (www.ourlandandwater.nz). The Challenge has three research themes. The Innovative and Resilient Land and Water Use theme emphasizes the need to characterise and classify our land and water resources and create new systems that will enhance the production and productivity of enterprises while minimising their footprint. Building on previous work, a think-piece (see website) was commissioned to explore the rationale for a primary research question set as:

What simultaneous improvement in productivity and reduced environmental footprint can be gained from the interaction of soil-plant-animal genomics?

A workshop on the 14th of October adjusted the think-piece hypothesis slightly to:

“Significant additional gains in soil, plant, and animal productivity, coupled with reduced environmental footprint can be realised through appropriate matching of functional genotypes (plant and animal) and understanding the interactions among soil, plant and animal microbiomes.”

The workshop and subsequent feedback provided material for more detailed questions to structure a potential programme of work. Within the context of the primary question and hypothesis you should address the following statement or questions in your proposal:

1. How do you determine and define a soil-plant-animal microbiome phenotype?
2. Is there a standard microbiome phenotype associated with poor and high performing enterprises?
3. What are the key soil-plant-animal microbiome interactions that impact on improved productivity¹ and water and soil quality?
4. Can we identify bio-indicators of microbiome interactions that impact on productivity and water and soil quality?
5. Can we manage the microbiome, or use our knowledge of it to tailor management practices, to improve productivity and water quality?

¹ Defined as a net increase in primary product output per unit of resource consumed. Note that while improvements in productivity are sought, land use suitability may require a decrease in production to meet other economic, environmental, social or cultural objectives.

Funding

Up to 1.8 million dollars (ex GST) is available for use up to 30 June, 2019. The preference is to fund **one programme**².

Eligibility

Any New Zealand-based research organisation or end-user may apply. However a minimum of 75% of any funds approved must remain within New Zealand. The project (or a close variation) cannot already be funded by MBIE or another funding agency and any parallel application(s) must be declared in the proposal.

Assessing Proposals

Proposals are to be sent to the Challenge e-mail, ourlandandwater@agresearch.co.nz, by noon on the 9th of December, 2016 using the attached template:

Proposals will be reviewed by two independent experts, who will discuss and rank proposals with the Science Leadership team. The independent assessors will then discuss the top ranking proposals with the Directorate, from which the Directorate will make a final decision. The Challenge will aim to have assessments done within two weeks, and notify the winning proposal upon approval of the proposal by the Our Land and Water Board. The Directorate reserves the right to negotiate changes to the successful proposal.

Projects will be assessed on a scale of 1 (poor) – 10 (excellent) in the following areas and weightings. Please see the attached proposal template for further information.

1. Science Excellence and integration (weighting, 40%)
2. Best team and appropriate use of existing and aligned resources, risks and capability development (weighting, 20%)
3. Potential for Impact (weighting, 40%)

² The successful proposal will involve multiple providers and will demonstrate strong linkages with stakeholders/beneficiaries of the research.