

The Our Land and Water National Science Challenge: how transformative can we be?

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Abstract

The national science challenges are positioned firmly within the New Zealand science system as “mission led”. Indeed, their *raison d’être* is to address “complex, long-term, national scale issues for New Zealand”, and each has a specific mission. Our Land and Water’s is to *enhance primary sector production and productivity while maintaining and improving our land and water quality for future generations*.

The New Zealand science system in general, and mission-led science in particular, is frequently characterised as “transformational” of itself, or with the potential to deliver “transformative” impact. The science challenges themselves use the same language. But we know from the social sciences that examples of truly transformative change are rare, and require major shifts in multiple parts of the system, accompanied by fundamentally different approaches to the way the knowledge needed to drive the shifts is generated and shared.

The transformation rhetoric implies some specific questions for the Our Land and Water challenge:

1. What does transformation actually mean?
2. What transformations must the challenge bring about if it is to achieve its mission?
3. And how well is it placed to do so?

We can start to address these by conceptualising transformational impact or change in terms of its location at one end of an innovation spectrum that ranges from incremental shifts through to wholesale systems changes. This allows us to consider the scale and character of change required to achieve the mission. It also provides a framework within which to better understand the social and cultural dimensions of change. Neither of these dimensions is explicit in the mission, but both are integral to understanding the mechanisms by which behaviours and land uses can adapt in ways and to extents that provide for the values that our communities, national and local, hold.

This complex interaction between knowledge and outcome is reflected in the Challenge architecture. This comprises three interdependent themes, which taken together explore specific research questions targeting the way value from primary production is enhanced when land use opportunities are informed by the full range of community values, and explored through collaborative processes which emphasise co-innovation and shared learning.

Just as importantly, the Challenge design is predicated on the view that if it is to facilitate meaningful and timely shifts along the innovation spectrum for our primary producers, it must change the way it undertakes its research. This means embedding cross-institutional and cross-disciplinary perspectives into research practice, and emphasising co-innovation and co-design, in which end users are actively involved in the framing of research questions, study design and science delivery.

This latter represents both an opportunity and a “challenge” for researchers in the way they work with stakeholders across government agencies, industry, communities and NGOs, and with Māori partners, to provide knowledge that underpins policy and behavioural changes in support of achieving the mission.