

Te Pae Kahurangi
(Looking to the Horizon)

**Review of Crown Research Institutes' positioning to meet
New Zealand's current and future needs**

Terms of Reference

Background

1. The Government's seven Crown Research Institutes (CRIs) comprise AgResearch, Institute of Environmental Science and Research, Institute of Geological and Nuclear Sciences, Manaaki Whenua – Landcare Research New Zealand, National Institute of Water & Atmospheric Research, Plant and Food Research, and New Zealand Forest Research Institute (Scion).
2. The 2010 CRI Taskforce reforms proposed a suite of reforms, which included increasing CRIs' focus on collaboration and efficient technology transfer and adoption with the sectors and key stakeholders it serves.
3. Each CRI has adopted a Cabinet approved Statement of Core Purpose which reflects this focus and clearly articulates the purpose, outcomes and strategic role for their organisation.
4. To ensure CRIs continue to increase their contribution to New Zealand's economic, social and environmental well-being, the CRI Taskforce proposed, and Cabinet agreed [CAB Min (10)43/5C refers], that each CRI is evaluated on an four yearly basis. A full round of reviews was completed between 2013 and 2016. This first round of rolling reviews was useful in developing individual CRI perspectives on performance and capability development.
5. For this round we are undertaking a collective review, as the Crown Research Institutes face a common set of challenges that will involve increased collaboration to secure full value from the sector. These challenges include positioning collective science capabilities for the future, the Crown's broader interest in Crown Research Institutes, and future investment – which are discussed further below.

Context

Positioning collective science capabilities for the future

6. The draft Research, Science and Innovation Strategy, Mata Ki Te Rangi (RSI Strategy) sets a focus on innovating at the frontier. Transformative science can lead to products that consumers could not have imagined, or achieve a shift in the production frontier that would not occur through incremental demand led science.
7. In parallel, emerging generic capabilities such as artificial intelligence and big data provide an opportunity to increase the impact of science. There is a scarcity aspect to these capabilities.
8. CRIs face a collective challenge around how to best develop and leverage these generic capabilities (both as inputs to their science, and as outputs in their own right) to pursue transformative science.

Defining and delivering on the Crown's broader interest in Crown Research Institutes

9. The Crown's interest in CRIs is broader than the funding and engagement that takes place through the Research, Science and Innovation portfolio. For example, CRI work supports areas such as building, environment, health, justice and the primary sectors, along with Mātauranga Māori.
10. There are opportunities to develop the wider Crown interest in CRIs at two levels. Firstly, science could both transform functions delivered by the Crown, and the economic sectors they support. Are current CRI arrangements enabling these opportunities to be pursued? Are the CRIs enabling the innovation potential of Māori knowledge, resources and people?
11. Secondly - in addition to 'transformative science' - CRIs also play a significant role in core public delivery such as water and hazard management. The arrangements within which CRIs deliver this 'science service' can be complex. Delivery often involves CRIs needing to work with each other, for example freshwater

management. In addition, the service could involve engagement, funding sources and contracts with multiple core government agencies. Are these arrangements conducive to effective service delivery?

12. There is a particular opportunity for this review to explore the nature of the Crown's interest in CRIs for core public service delivery, and whether the arrangements support CRIs to optimally deliver on this interest.

Exploring challenges around future investment in footprint and capability

13. A number of CRIs are planning significant investment in infrastructure. These investment choices will have long term (positive or negative) implications for CRI ability to collaborate moving forward.
14. In parallel some CRIs are facing challenges around maintaining medium term financial viability. While this review is not intended to be a funding review, there is an ownership question: are Boards targeting the right long term financial objectives for financial viability, and are these objectives matched with appropriate ownership expectations and wider system settings?

In Scope

15. The purpose of the review is:

How well are the Crown Research Institutes collectively and respectively positioned to meet New Zealand's current and future needs?

16. The report will consider the following areas:

- *Strategic context – including New Zealand's needs of CRIs*
- *Current CRI positioning - including breadth of activities, institutional settings, strengths and weaknesses*
- *Role implications – collective and respective, including any key capability shifts*
- *Any implications for the system that supports CRIs*

17. The report questions in Annex One provide further detail to these areas. In addressing each area, the review will also draw on comparisons with overseas jurisdictions.

Product

18. The report product will:

- set out the context CRIs are operating within, New Zealand's needs and key future trends, issues and opportunities
- set out a future state for Crown Research Institutes to collectively and respectively¹ work towards, in the context of broader institutional settings, and the critical capability shifts it needs to achieve
- provide a more general assessment of Crown Research Institutes' collective and respective organisational capabilities and improvement needs
- set out any related system implications

19. This report will then set the foundation for:

¹ The Panel may choose to set out points relating to individual CRIs in a separate section or Annex.

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- Crown Research Institutes to develop their collective (and any respective) response and action plan to move towards this future state
 - a second engagement round with other actors in the system to discuss any proposals that may have implications for their activities
 - any related policy work.

Out of Scope

20. The review is Crown Research Institute focused. It is not a review of the CRI model, nor a funding review, although the findings may have implications for these areas. The report may also identify gaps between New Zealand's needs and CRI activities, but conclude that CRIs are not the right mechanism for addressing these gaps.
21. The review is not intended to be a 'report card' on current CRI performance – it will only surface these issues in order to clarify the extent of the shift needed for CRIs to position their capabilities for the future (see Annex One for the four key capability dimension areas).

Principles

22. The report process will be:
 - future focused – on future New Zealand needs, science trends, and Crown Research Institutes' adaptability to future shifts in these areas
 - Panel driven – ensuring the Panel of experts bring external expertise relevant to the report
 - open and transparent – ensuring that there are "no surprises" for either Crown Research Institutes or MBIE
 - based on effective stakeholder engagement – balancing the opportunity for stakeholder input with engagement fatigue
 - inclusive of Māori and ensuring their needs of CRIs are identified and considered
 - efficient – ensuring compliance costs for gathering information is minimised
 - sensitive to the need to ensure appropriate protection of information.

Process for the report

Report Owners

23. The report owners are the Deputy Chief Executive, Labour Science and Enterprise and General Manager Entity Performance and Investment.

Panel membership

24. The Panel will comprise four to six individuals to ensure an appropriate mix of experience and knowledge is represented, including:
 - previous review experience, including an ability to connect with Crown Research Institutes and challenge their thinking

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- understanding of the science system and its economic contribution
 - expertise in key potential capability areas
 - expertise in core government service delivery needs.

25. The Panel will be expected to engage with a wide range of business users to understand their needs of CRIs.

International Reference Group

26. An International Reference Group will be available to the Panel throughout the process to provide views on:

- science trends
- comparisons with overseas jurisdictions
- Crown Research Institutes' strategy and positioning
- the Panel's draft direction of travel.

Government's Network of Science Advisors

27. The Government's Network of Science Advisors will be consulted for input into the Review on government's needs, science trends, and issues and opportunities for CRIs.

28. MBIE will ensure appropriate steps are taken to manage any potential conflicts of interest.

Report process

29. The expected review phases are:

1. Panel recruitment, commissioning meeting with MBIE and review of background material
2. Initial Panel meeting with board: CRI Chairs' own reflections on the landscape CRIs operate within and where they see the issues and opportunities
3. Meeting with Minister
4. Research into science trends
5. Interviews with users
6. Research into science trends and best practice
7. Panel workshop with CRI Chairs and MBIE
8. Individual CRI visits
9. Interviews with collaborators and wider actors in the science system
10. Panel workshop with CRI Chairs and MBIE
11. Any follow up engagement necessary
12. MBIE check in
13. Draft Report discussion with MBIE and CRI Chairs

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14. Report finalisation, including Crown Research Institutes' response
 15. Panel and CRI Chairs' meeting with Minister to discuss report and Crown Research Institutes' response
 16. Release.
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30. These phases may be refined based on discussions between the Panel Chair, MBIE and CRI Chairs. The Panel Chair will have regular 'check ins' with CRI Chairs throughout the process to test thinking and ensure no surprises. The Panel Chair will also check in with MBIE on progress.
 31. The process is expected to commence mid-November, with a final report, response and action plan targeted for late May.

Administration

32. MBIE's Entity Performance and Investment Team (MBIE) will recruit and provide support for the Panel throughout the process. The key contact for the process is Alan Vandermolen, Director, Entity Performance and Investment.
33. MBIE will work with Crown Research Institutes and the Government Science Advisor network to develop background material for the report Panel, and book key stakeholder meetings. The cost of the report will be met by MBIE.
34. The report will be subject to requests under the Official Information Act (1982). The Panel's final report and Crown Research Institutes' action plan will be released publicly, with any commercial-in-confidence material withheld.

Annex One: Report questions

Questions to consider in developing the report product:

Strategic context: The Crown's interest in Crown Research Institutes

- What are New Zealand's key needs and opportunities CRIs could contribute to? In particular:
 - a. What is needed from CRIs to deliver against the RSI Strategy?
 - b. What is needed from CRIs to address core government service delivery needs?
 - c. What is needed from CRIs to support Maori aspirations?
- What trends are we seeing that the science system needs to respond to?

Current Crown Research Institute positioning

- What are the current institutional settings for supporting the breadth of CRI activities and how does this compare with overseas models?
- How well do CRI strategies align with New Zealand's key needs and opportunities?
- How well (including how sustainably) are CRIs positioning their capabilities for the future?
- How well do CRIs connect with each other and wider stakeholders in delivering on New Zealand's needs?
- What is it that CRIs currently do well, where do they need to improve and are there any barriers to improving?

Role implications

- What does this mean for the future role that CRIs could play collectively and respectively for New Zealand's key needs and in support of core government service delivery?
- What key shifts are needed across the four key capability dimensions (below) to respond to government priorities:
 - a. What does this mean for the government's expectations of CRIs?
 - b. What does this mean for CRI arrangements?
 - c. What does this mean for future CRI capability and infrastructure?

System implications

- What might this mean for the system that supports CRIs?

Four key capability dimensions:

1. **Leadership and direction:** Purpose vision and strategy, leadership and governance, and culture
2. **Delivery for customers and New Zealand:** Understanding customer needs, value proposition, operating model, collaboration and partnerships

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3. **People development:** Leadership and workforce development (including Maori workforce capability) , performance and engagement
 4. **Financial and resource management:** including information management.