

## Lead Brief: Addressing Te Ara Paerangi Future Pathways to Deliver Transformation

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**The New Zealand Government has announced the Te Ara Paerangi Future Pathways consultation, based on a Green Paper outlining concerns about the state of the nation’s research funding, institutions and workforce. This working brief spearheads analysis by Te Pūnaha Matatini Centre of Research Excellence and the New Zealand Association of Scientists, combining efforts to examine the consultation themes, public consultation sessions, and possible frameworks for transformational change. We recommend a base funding system to support people as the foundational step to address all consultation themes, and sharing of briefs to support a wide range of stakeholders to develop a more trusted, open and effective model for public good research support as a common resource.**

Aotearoa New Zealand currently has a globally unique research system built on strongly debated decisions<sup>1</sup> made 30 years ago to convert research funding to a fully contestable market. The system is widely considered to have underperformed, and the economic theories upon which it was based have been largely unsupported and replaced by improved understanding that provides a basis for change. Despite reviews<sup>2</sup> and changes over time<sup>3</sup>, the drivers of the 1990-era reforms still appear to dominate decisions – including in the whole-of-government relationship with the research system. Rising frustration in the research community highlights the need and opportunity for transformational change. This should take a well-being approach to both the people and capabilities of the research system, allowing a better trusted research system to address national priorities, better connect internationally, and address three decades of underperformance in business research and development spending.

The consultation themes have been helpful in structuring transformational thinking:

- **Prioritisation**, as we suspected, is more difficult than MBIE expected. Many high level priorities are widely accepted, but how research can be prioritised to find solutions in these areas, or identify emerging concerns is not. We believe this highlights the value of the other consultation theme in creating a trusted and supported research community that can lead national goal setting.
- **Te Tiriti, mātauranga Māori and Māori aspirations** is a theme where substantial comment should be led by Māori-led organisations and Māori researchers, but we note the potential for wider proposals for transformational change and enabling systems to deliver considerable benefits in this area.
- Our **Funding** system is characterised by high levels of contestability accompanied by unusually high overheads to cover institutional costs. Transformational change can be achieved with a base funding mechanism that values people and capability in the system, and can be better aligned to support connectivity, open science, and major priorities. Many further changes could be enabled by this.

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<sup>1</sup> e.g., Beattie, D. (1986). *Key to Prosperity, Science & Technology : Report of the Ministerial Working Party*. Wellington, N.Z. Ministerial Working Party on Science and Technology.

<sup>2</sup> OECD. (2007). *OECD Reviews of Innovation Policy: New Zealand*.

<sup>3</sup> [MBIE. \(2020\). Te Pae Kahurangi: Positioning Crown Research Institutes to collectively and respectively meet New Zealand’s current and future needs.](#)

- Our **Institutions** are complex, unusual, and fragmented, with the separate roles of commercial consultancy and commercialisation of intellectual property causing considerable confusion. The formation of CRIs was driven by the structure of the funding system with “A New Deal”<sup>4</sup> including principles such as full contestability and ‘user pays’. There is a basis to reconsider institutional structures to match current needs and redesigned funding models.
- The **Workforce** deserves better support for the development of stable careers, particularly in areas of national interest, including research leadership for and partnerships with Māori and other groups, and connectivity across disciplines and into innovation. The skew of prestige and resources allocated to those with overseas training and recruitment deserves acknowledgement, and suggests a need for improved future planning, support and training.
- **Infrastructure** highlights that present settings poorly support shared and connective activity, nationally and internationally. This consultation process brings great opportunities to build social ecosystems for research infrastructure to improve on the current situation, which lacks shared strategies and is commonly transactional with institutions acting as shopfronts.

We believe the consultation themes and major challenges in the research system can be collectively addressed by a **transformative base funding proposal**. Briefly, this would employ principles identified in [Elinor Ostrom’s work on common-pool resource systems](#), which won the 2009 Nobel Prize in Economics for designing solutions overcoming the behavioural and game-theory problems preventing markets from solving resource allocation problems, with later application to knowledge systems<sup>5</sup> and climate change.

The skeleton of the base funding proposal is briefly explained here, and will be further developed. We envision a base funding scheme that would reallocate overheads and possibly some current or new funding mechanisms to provide partial support for established researchers and potentially infrastructure. Allocation would use a largely non-competitive system with the potential to incentivise knowledge sharing and other priorities. These settings would enable improved early career stability, labour-force mobility for innovation and the development of connective, Māori-centred or regional institutions, and the measurement and delivery of open or connected science with better potential for Aotearoa New Zealand to appropriate benefits as *NZ inc*. By focusing primarily on supporting people, the skeleton of the proposal is neutral to institutional considerations except to allow mobility that could support self-organising evolution of institutions and connections.

Transformation within a system will have wider implications, in this case across all six consultation themes, and with separate interests in many compartments of the research system. Therefore, we advocate a [repository system](#) of openly available briefs outlining evidence, concepts and ideas, authored by individuals or affiliated groups, to support the Te Ara Paerangi Future Pathways submission process and further discourse.

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<sup>4</sup> Arbuckle, R. H. (1988). *Science and Technology Review: A New Deal*. Wellington, N.Z. : Science and Technology Advisory Committee.

<sup>5</sup> Ostrom, E., & Hess, C. (2007). *Understanding knowledge as a commons : from theory to practice*. Cambridge, Massachusetts : MIT Press, Piscataway, New Jersey.

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[NZAS Council](#) has made contributions through discussion and the earlier development of a Call for Renewal of the Science System coordinated by Craig Stevens.

WTB has led the development of [frameworks and analysis](#) responding to the Green Paper consultation and writing of the brief. LS has led analysis of workforce and early career research issues. WTB, LS, CS compiled notes on MBIE consultations. All have contributed to the draft and a longer document condensed to form the brief. We also acknowledge helpful discussion with Tammy Steeves, Michael O'Sullivan and Aisling Rayne, Shaun Hendy, Rob Elshire, Hon Margaret Austin, and Johanna Goven.

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