

MBIE Te Ara Paerangi - Future Pathways

Response from Te Wāhanga Pūtaiao - Wellington Faculty of Science, Te Herenga Waka - Victoria University of Wellington

It is timely for us to consider the structure and foci of our research system and how major change will deliver better outcomes for Aotearoa New Zealand. As part of a university, we are committed to the continuum of learning, to capability development and to supporting ‘careers of meaning’ in our communities. Our kaupapa is to train, motivate and foster talent for rewarding careers in science and related areas. Our sector underpins knowledge creation to increase human and planetary well-being as well as support future economic growth. We recognise the importance of diversity, both in the outcomes we seek from our research activity and in the people who contribute to these outcomes. We value knowledge creation and the training of inquisitive minds, as part of the process of creating valuable outcomes from research for our communities.

We recognise Government RSI drivers, sector organisational structure and funding priorities lead directly to institutional decision making that impacts on the RSI workforce and our ability to deliver outstanding outcomes from research activities. We therefore welcome comprehensive analysis of what is best for the whole system.

1. NGĀ WHAKAAROTAU RANGAHAU, RESEARCH PRIORITIES

KEY QUESTION 1: What principles could be used to determine the scope and focus of research Priorities?

KEY QUESTION 2:

A) What principles should guide a national research Priority-setting process?

B) How can this process best give effect to Te Tiriti?

KEY QUESTION 3: How should the strategy for each research Priority be set and how do we operationalise and implement them?

Response:

- Priorities should encompass broad ambitions for areas of impact, and operate over timescales that allow for significant and valuable contributions.
- Priorities need to be set by a broad array of stakeholders. Independence and transparency are important and the priorities need to extend beyond parliamentary terms and specific government interests.
- It is important to allow researcher creativity to find a home within our national priorities: as the green paper notes “Researchers naturally seek to address the most important and pressing opportunities and problems that are facing people and the planet.”
- We are concerned that our system currently trades off fundamental or ‘blue-sky’ research against applied, outcome-focused research. These approaches are interconnected, and we believe fundamental research sets the foundations for innovation and beneficial outcomes. Therefore, it’s essential to also prioritise investigator-led research; Priorities need to inspire, motivate and embolden the research workforce.

- We should prioritise work that is risky and bold, addresses important fundamental questions and enhances our reputation in an international context. High impact research is essential for building New Zealand’s credibility as a knowledge-based economy.
- Appropriate governance of priorities is critical. This needs to be coupled with a broad mandate including long term goals, supporting capability development, encouraging diversity of people and ideas, and not focus solely on short term solutions.
- Priorities need to encourage innovative approaches to research that cross existing discipline and organisational boundaries. Priorities should encourage multi-disciplinary research to encompass the social sciences, arts and humanities to recognise that complex problems often require investigation of the human dimension to find holistic solutions.

2. TE TIRITI, MĀTAURANGA MĀORI ME NGĀ WAWATA O TE MĀORI TE TIRITI, MĀTAURANGA MĀORI AND MĀORI ASPIRATIONS.

KEY QUESTION 4: How would you like to be engaged?

KEY QUESTION 5: What are your thoughts on how to enable and protect mātauranga Māori in the research system?

KEY QUESTION 6: What are your thoughts on regionally based Māori knowledge hubs?

Responses:

- Our research sector and our priorities need long term perspectives that embrace te tiriti obligations and foster mātauranga Māori.
- We need to build Māori research capacity through a range of initiatives and develop career structures that provide meaningful roles for our Māori researchers.
- We need to foster early engagement with schools and regional kura Kaupapa to encourage science career development including a range of initiatives eg. Robinson Research Institute TECH Bootcamp and VUW Āwhina science outreach
- All researchers and institutions need enhanced competency, pride and understanding of te ao Māori including mātauranga Māori.
- Regional Māori knowledge hubs will allow for authentic Māori engagement and support mātauranga Māori; we encourage their creation. Cross-institutional collaboration including these hubs should be encouraged, incentivised and rewarded.
- We are concerned that Vision Mātauranga priorities currently need to be addressed in every small ‘unit’ or project of research. This overstretches Māori researchers and encourages inappropriate trade-offs within small budgets. We want to see authentic research partnerships flourish but we also acknowledge that sometimes there is no meaningful ‘interface’ (and attempts to define one may be unsatisfactory for all parties).

3. TE TUKU PŪTEA FUNDING

KEY QUESTION 7: How should we determine what constitutes a core function and how should core functions be funded?

KEY QUESTION 8: Do you think a base grant funding model will improve stability and resilience for research organisations, and how should we go about designing and implementing such a funding model?

Response:

- We recognise that the RSI funding system greatly influences our research activity, ambitions, and achievements. It also has a direct effect on our ability to encourage outstanding future researchers to the sector and on the attractiveness of science and science-related careers.
- Funding should support ambitious, high-risk investigator-led research and value excellent research of international significance.
- Funding needs to incentivise a best-team approach to research.
- Our current Government investment in science research and development lags behind that of other small, advanced economies. This precious resource is spread thinly and limits the impacts of our work in various ways, some of which are listed:
 - Low granting success rates result in low morale, discourage entry into the research workforce and leave early career researchers in very vulnerable positions.
 - The lack of funding encourages low-risk institutional practices around research force employment and ultimately leads to disillusionment and loss of talent from the sector. Many early career researchers are on multiple short-term contracts.
- Workforce continuity and job security at all career stages are important considerations in the funding model.
- The current funding system discourages risk taking by researchers or institutions; it pushes all the funding to a project-by-project basis and does not support ambitious infrastructure projects or long-term investment in people and enduring relationships.
- Our full cost funding model and current overhead policies puts researchers and their institutions at loggerheads – often on a project level. This has a negative impact on productivity.
- The current overhead recovery model is not fit for purpose within our University sector. By pushing overheads into the individual budgets of individual, investigator-led projects, it drives the evolution of selfish gamesmanship and time-consuming, *ad hoc* admin processes. Therefore, we support funding models that re-imagine the award of overheads at the level of the institution, in line with the model used by major Australian funders.
- The proposed base grant or alternative overhead model would need to reflect the different costs of research delivery, and discourage institutions from underinvesting in high quality facilities and infrastructure. This is a particular concern for the experimental sciences.
- We are also aware that the funding model needs to allow a range of institutions, including small-scale ones, to thrive.
- Universities hold capability that is part of our critical workforce in addition to CRIs. The funding structure needs to reflect this.
- Assessment of core functions needs to consult a range of stakeholders but must take a long-term lens on our national research capability.
- Support for mātauranga Māori and Māori engagement needs incentivisation through direct resourcing.
- Our New Zealand system needs to interface with the international research community to allow appropriate exchange of ideas and capability.

4. NGĀ HINONGA INSTITUTIONS

KEY QUESTION 9: How do we design collaborative, adaptive and agile research institutions that will serve our current and future needs?

KEY QUESTION 10: How can institutions be designed to better support capability, skills and workforce development?

KEY QUESTION 11: How should we make decisions on large property and capital investments under a more coordinated approach?

KEY QUESTION 12: How do we design Te Tiriti enabled institutions?

KEY QUESTION 13: How do we better support knowledge exchange and impact generation? What should be the role of research institutions in transferring knowledge into operational environments and technologies?

Response:

- We need our institutions to be collaborative, adaptive, agile and enabled to respond national priorities and emerging areas of need, while maintaining excellence in researcher-led initiatives .
- All institutions within the sector should be incentivised to deliver high quality collaborative research with efficient shared investment in research infrastructure.
- We believe Universities provide a crucial component of our research infrastructure, as noted in the green paper.
- We strongly support greater collaboration between CRIs, Universities and other research organisations.
- Science parks and co-location may be helpful for connecting researchers and supporting facility costs. Operating and funding models would also need to be aligned to realise the benefits of co-location.

5. TE HUNGA MAHI RANGAHAU RESEARCH WORKFORCE

KEY QUESTION 14: How should we include workforce considerations in the design of research Priorities?

KEY QUESTION 15: What impact would a base grant have on the research workforce?

KEY QUESTION 16: How do we design new funding mechanisms that strongly focus on workforce outcomes?

Response:

- Universities and Faculties such as ours play an important role in training future researchers. We need greater connectivity to career opportunities both in the public and private sectors.
- Many of the current major workforce issues are caused by insufficient funding and funding instability.
- We strongly favour a wide range of fellowships and grants to cover full costs of employment and direct research costs. There need to be multiple rounds of ECR-funding per year in line with the *ad hoc* timing of their fixed term contracts.
- New initiatives are required to attract our ECRs back from overseas in addition to supporting the best of those already here. We strongly believe that increased postdoctoral funding is needed overall. A new funding system should avoid the high overhead rates that postdoctoral funding currently attracts, which discourages the appointment of ECRs.
- Institutions should be encouraged to invest in a stable research workforce.
- Inflexible career structures have a detrimental effect on attracting talented and diverse researchers.

- Our funding system needs to consider, and overcome, the barriers that exist for inclusion of Māori, Pacific peoples, and women.

6. TE HANGANGA RANGAHAU RESEARCH INFRASTRUCTURE

KEY QUESTION 17: How do we support sustainable, efficient and enabling investment in research infrastructure?

Response:

- We support a national approach to infrastructure provision.
- Our mechanisms for infrastructure investment need to de-risk ambitious infrastructure procurement and encourage collaboration. Infrastructure funding that uses a project-by-project model fails to support ambitious long-term research.
- Many areas of ambitious science often rely on expensive equipment and facilities that cannot be supported by one organisation alone. Centralised facilities are one solution. Infrastructure provision needs to include technical support, training and access programmes. Access to the Australian Synchrotron is an important example of shared infrastructure. It is challenging for smaller institutions to contribute to this kind of infrastructure provision under our current models.