

Response to Te Ara Paerangi: Future Pathways Green Paper, 2021.

I have read with interest the Green Paper and noted its leading questions for which feedback is being sought. I am a senior scientist with over 30 years' experience, having worked in a range of research environments, both in New Zealand and overseas. I have been a post-doctoral fellow, scientist, senior scientist, principal investigator, research programme leader, and team leader. I hope my perspective and suggestions to a selection of your specific questions will be useful in your effort in improving our system. There are many questions on a wide range of aspects. I have chosen to address only those for which I believe I can make a useful contribution or I believe are most important from my perspective.

Q2 and 3 – What should be the guiding principles and how should the strategy for each Priority be set?

Preferred strategic approaches should be set from a national perspective, possibly through a committee involving government, research community, stakeholders, Māori, and research institute perspectives. Its structure should minimise parochialism. National-level experts should be included in priority setting and setting of strategies for the Priorities. Governance should come from central government. In my view it is important that the National Priorities leadership avoid an overly top-down approach to the generation of research ideas and assignment of funding to them so as to avoid conflicts of interest and tendency towards a closed shop. These issues, I believe have limited the effectiveness and true national character of the current National Science Challenges. The scope of activity and approach to funding decisions of the National Priority committees should therefore be appropriately constrained. In my view, access to funding should be open to all qualified researchers, funding should be allocated based on objectively assessed merit, and decision-making should be transparent to the research community as well as accountable to the government. A system featuring open contestability will ensure scientists have agency over their work and careers, and it will promote merit-based career progression. While the resulting emphasis on writing compelling grant applications may seem wasteful of talented researchers' time, it ensures maximum capture of the nation's science creativity – a system dominated by top-down directed research will be inherently narrow in its perspective and is prone to cronyism. Similarly, at an institutional level, pre-filtering of funding applications by research institutes should be minimised, so as to avoid domination of scientific creativity by senior administrators, unhealthy internal competition within institutes for the right to apply for funding, and excessive loss of agency by researchers.

Q4 – How should Māori be engaged with the science system?

My perspective is as a programme leader, having engaged with Te Ao Māori at the level of Māori-owned business, iwi and rūnanga associated with individual hapu. A fully fit for purpose process of engagement and partnership building between researchers and Te Ao Māori takes a lot of time – it is committing and resource-hungry, and may involve adjustment of the research approach to align with Māori values. The cost of this activity needs to be anticipated and included within research budgets. Māori receive many requests to engage with them. Engagement activity is limited by the volume of engagement requests and resources available within Te Ao Māori to respond. The science system should include a mechanism for Māori to obtain the resources required to evaluate and respond to engagement

requests, and to resource relationship building with research teams and institutes they deem are appropriate.

Q8 – Should a system of base grant funding for research institutes be adopted?

Improved financial stability of research institutions is an obvious and significant benefit of this suggestion. However unintended negative consequences will need to be managed. Depending on how it is implemented, such a system could create two tiers of researchers – those whose job stability is underpinned through institutional funding and those on “soft” money funded through research programmes. This could promote unhealthy internal competition and self-interest rather than collaboration. Clearly, there will need to be a formal system for applying for institutional support, qualifying criteria established, and periodic review with the possibility of losing support if funding criteria are no longer met. Criteria for research institutes to be eligible for or be awarded institutional support will be crucial for the system’s success, so as to avoid the closure of valuable institutes (government-owned or independent), maintain a level playing field for all institutes and avoid proliferation of opportunistic institutions that exist merely to game the system. Operation of this system would be a governmental activity additional to current tasks and would add administrative cost.

Q9 – What should future research institutes look like?

The preoccupation with revenue generation among CRIs and some other research institutes has created an unhealthy climate that suppresses scientific creativity, collaboration and a genuine desire to deliver impacts. The company model for the structure and management within CRIs has tended to disempower researchers, who in some cases have become little more than agents for implementing management strategy for realising their organisation’s financial targets. Researchers should be free to contribute their scientific creativity, build their own research and stakeholder networks and create impacts. Institutional management should support researchers without exercising total control over their research activities or starving them of opportunities. They should be even handed with their researchers, provide a system for transparent internal accountability, and foster a positive working culture. In my experience, to a great or lesser extent, New Zealand’s research institutes fall short in this regard. New Zealand’s research institutes should evolve their approach to management of research, creativity and innovation. The root causes of the poor relationships between CRIs and universities need to be identified and rectified. This should include the operating culture of the research community, which has unhealthy aspects. Scientific elitism should be recognised as a negative aspect of New Zealand’s science culture and efforts made to eliminate it.

Q13 – How to improve impacts from research activities?

Addressing the fundamental issues constraining collaboration between institutes and improving the collective science culture in New Zealand (see Q9 above) will reduce barriers to collaboration and facilitate a re-framing of the purpose and motivation of research activities by researchers. Incentives to collaborate across institutes and create best-teams should be built into the science system – currently they are not. Universities should be more incentivised to demonstrate impacts from their research activities, and to maximise this through collaboration with CRIs and independent research institutes as well as stakeholders.

Universities should also be incentivised to utilise talent from within CRIs and independent research institutes in a mutually supportive way, and make university resources more available to these researchers. The handling of IP should be standardised across all research institutes – current IP policies in at least some CRIs provide no personal stake in IP generation for researchers and hence no motivation for researchers to generate IP. There are only very poor mechanisms for enabling entrepreneurship by researchers from IP they have generated. Funding and other types of support structures in this area should be improved to address this gap. Researchers should be empowered, and have opportunities to lead relationship building with stakeholders. Currently, this is applied variably among institutes and researchers. One possibility is that codes of conduct or institutional requirements could be set in place to ensure opportunities for career growth and development of talent in this area are maximised.

Q15 and 16 – What effects will a base institutional grant have on the research workforce?  
What funding mechanisms will promote workforce development?

As described in Q8, a base grant has the potential to create two types of employee, with a relationship imbalance between them. Currently, funding directed specifically at emerging researchers is sorely lacking. There is an acute shortage of specifically designed external grant mechanisms to fund PhD study or post-doctoral fellowships. Including the cost of students and Fellows into larger research programmes constrains the research programme and disempowers the student or Fellow, in some cases relegating them to a glorified technical support role. Sufficient independence to succeed or fail based on their own efforts is vital to a well-functioning personal development programme. The availability of independent student and Fellowship funding should be significantly increased to address this limitation.

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