

## Response to Green Paper: Te Ara Paerangi - Future pathways.

Thank you for opportunity to respond the above, and the process for reform of the New Zealand Research, Science and Innovation System (RSIS).

For us, (BOEE), this is about how as a nation we adapt to climate change. This will require a much more effective, productive and agile RSIS than currently, with much greater emphasis on change and the future, rather than the *status quo*. In our view the current RSIS is not fit for purpose, and if the *status quo* prevails, it will become steadily less fit for purpose.

What follows is an analysis the existing RSIS with a view to identification of characteristics and issues that are barriers to the function of an effective RSIS, put another way those things that we feel should not be part of the new RSIS. This is used to produce what we think is a list of positive characteristics of the new RSIS. Following this are recommendations for the thinking process for planning the new RSIS.

### Characteristics

Our view of the current RSIS is rather more muted than that presented in the Green Paper. Whilst we see the current RSIS as making contributions that [occasionally] have<sup>1</sup>

*“...spanned breakthrough research, support[ed] critical sectors of the economy and society, enhance[d] understanding of the natural world, solve[d a very few] environmental challenges...[our edits]”,*

we wonder how much more taxpayer value and real breakthrough could have been realised without what seem to be fundamental design faults of the current RSIS including:

- A grossly under-funded research system underpinning both Universities and CRIs which at root is responsible for many of the points below.
- The unfair competition between Universities and CRIs for the same research funds
- The nature and structure of CRIs:
  - which does not seem to comprehend the fundamental difference between consultancy and research and the implications of this difference for organisations and organisational structures.
  - Which impacts on the wellbeing of their staff who are expected to deliver research, products and win research funds.
  - The perverse and destructive competition between different CRIs for research funds and research ‘turf’
- It is very difficult for new or non-standard players to obtain research funding - in some cases, *e.g.* Deep South Science Challenge, effective exclusion of new players for 1 or 2 rounds occurs until they have been able to negotiate themselves in, *i.e.* initially not based on the merit of proposals.

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<sup>1</sup> Ministry of Business, Innovation and Employment (MBIE) (2021) *Hikina Whakatutuki – Lifting to make successful*.

- Effective exploitation of PhD students by Universities and CRIs because they are cheaper than post-docs, with knock-on quality and wellbeing issues.
- A wasteful University research training regime that produces too many PhDs for too few University Posts
- Too many and too small Universities.
- A fossilized (in terms of staffing) University system with too few 'new-blood' opportunities and often with respect to recruitment an inward-looking perspective.
- In most cases there is a lack of dedicated government or parliamentary science research support (e.g. analogous to a scientific civil service). Instead ministries access assistance from consultants, CRIs or Universities.

We understand that the current RSIS had its roots in 'Rogernomics' and that this mind-frame although having many strengths, also has many weaknesses, symptoms of some of which seem displayed in the list above. Whatever the new RSIS looks like, these types of issues represent what is not required.

Other very real issues with the current RSIS are some of the guidance and steering issues by government for the overall system. The very well-meaning but operationally destructive guidance and conditions around science research funding, e.g. the requirements of co-creation of research proposals with Māori, which *prima facie* seems such a very good idea. Many, probably most research proposals are not local in scale but instead are focused nationally or wider. This seems to imply that a nationally focused co-creation is likely to be required. One of the key issues here is the Māori world-view seems strictly territorial, they are '*the people of the land*', and often literally this seems to mean that a particular hapu or tribe in some way either own land, (or aspire to own that land), or have/want the rights to secure resources from it. Sometimes this extends to guardianship of that land for either cultural or environmental conservation. This territorial view may be why Māori seem to find it hard to have a national view on many issues of relevance to the RSIS, because it seems that agreements between Iwi themselves, (at Tribe, hapu or local levels) are difficult, and almost certainly unique.

Experience also indicates that those Māori with whom others need to discuss such things as research proposals present as rather time-poor, and often the paraphrased response is 'come back when you have funding'. This presents serious problems to deliver the intent of the guidance. If this type of guidance remains in the new RSIS, effectively the only science research projects that could be included would be local in scope.

In re-imagining the new RSIS, it is hard to disagree with the aspirations expressed in the Minister's Foreword<sup>1</sup>. Clearly by definition the RSIS is about science and innovation. However, The Treaty of Waitangi is now interpreted to require the RSIS to include Te Ao Māori. Clearly, Science and Te Ao Māori are matters of different types, e.g. Science is an invention to validate, preserve and discover knowledge, and it is different in type to (for example) Art, which is a form of expression. It could be said that Art is compatible with Science at the level of e.g. Scientific

Watercolours, nonetheless in reality it has very little substantive to say about a system for the validation, preservation and discovery of knowledge: largely because it is a different type of matter. In the same way it is completely recognized that Te Ao Māori is the world view of Māori, however, like Art, it is a different type of matter to Science. The key challenge then is to identify in what ways these two different types of matter can complement each other in the new RSIS. How do we create opportunities for growth in Aotearoa that allow all of our people to sustainably prosper without damaging/overburdening either side in existing relationships and preventing perverse outcomes like tokenism or bleeding off research money into non-research uses? In short, how can our RSIS be inclusive? There will be many valid suggested answers to this question addressing various issues. For what it is worth our suggestion is structural: It may be that a National Māori body could be part of the overview and review system for all national research programmes (*i.e.* collections of projects), but is not part of the individual project review process. This does not prevent joint projects (one might imagine some sort of science quantification of traditional environmental knowledge in one sphere or another, *e.g.* drinking water practices).

The above leads us to a few suggested characteristics of the new RSIS:

- The new RSIS needs to be funded on a scale appropriate to desired outcomes. Given the current RSIS is underfunded, and in the light of adapting to climate change we are likely to require more from it than currently, this means the new RSIS will need radically increased funding.
- In our view the University sector needs to have greater capacity. We suggest this includes:
  - Less not more Universities, possible just one or two nationally (this reduces University admin costs and increases critical mass).
  - Suggest reduction in number of campuses
  - Much larger Universities. According to international ranking systems the best NZ university is about 160<sup>th</sup> globally. Some current Universities should essentially become Schools or campuses of other Universities. In some cases some specialist Universities (*e.g.* Lincoln) should become a foundation part of a new university dedicated to sustainable primary productivity.
  - Secondary (service) research in Universities needs to move out into either the new Crown Research Services Organisation (CRSO), see below.
- The staff undertaking primary research in CRIs along with their research needs to be absorbed as subject groups (*i.e.* currently competing and cognate groups in different CRIs be put together and rolled into one of the Universities).
- Those parts of CRIs providing Crown Services (*i.e.* non primary research but required nationally, *e.g.* Forensics) need amalgamation into a new Crown Research Services

Organisation (CRSO). This would be an independent research organization funded by both The Crown and the marketplace, see below.

- A section of the CRSO will be dedicated to supporting Central and Local Government (*e.g.* ministries, DHBs, Territorial Authorities *etc.*).
- This Government Research Support Service should also contain an organizationally separate section, possibly headed by one of the Officers of Parliament and overseen by the Select Committee for Officers of Parliament, with its own ringfenced funding to provide Scientific support to Parliament.
- Some of the current University and CRI research activities belong either in sheltered startup systems or fully in the marketplace.
- In our view CRIs are neither *'fish nor fowl'* and need to be disestablished. Our economy is not large enough to use resources for perverse and unhelpful competition. As described above, CRI groups and sections rolled into either Universities, the new CRO, or ultimately in the marketplace.

Ultimately whatever the shape of the new RSIS it must be able to overcome the problems and inefficiencies of our current system, without gathering more problems on the journey.