venture
TARANAKI
Te Puna Umanga

Te Ara Paerangi Future Pathways Team
Ministry of Business, Innovation and Employment
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Submission on the Te Ara Paerangi Future Pathways green paper

Venture Taranaki is the regional development agency (RDA) for the Taranaki rohe, encompassing a wide range of activities spanning local and regional economic development and strategy; sector development, diversification and innovation; enterprise innovation, investment and growth; and regional promotion. We are a charitable trust, governed by an independent Board of Trustees, and committed to the principles of Te Tiriti o Waitangi.

Facilitating a wide range of activities and working alongside diverse stakeholders and enterprises, Venture Taranaki remains responsive to helping the Taranaki community navigate engagement with all areas of the New Zealand RSI system. Our position within the region means we often see first-hand the benefits, needs, challenges and impacts of this system in practice, and where enhancements could lead to even greater gains helping to solve some of the important challenges of our time.

Venture Taranaki commends the intent of this green paper in engaging with communities, organisations and individuals to collectively redesign our RSI system. This full system review is timely, given the comparatively few/minor interventions that have occurred in the past 30 years, the critical issues that lie before us and the opportunity to develop a more effective, co-designed, future-focused end-user friendly system which also integrates and honours Te Tiriti o Waitangi principles.

Our key recommendations are summarised below, and are detailed in the following pages:

1. A more complex systems approach is needed for shaping and measuring priorities in the future as opposed to the traditional linear and KPI driven approaches.
2. The adoption of a co-design process in development of the system (and priorities if such an approach is adopted), involving various levels of Māori, industry, academic and government interests.
3. The inclusion of a strong regional or place-based lens across the system and priorities.
4. Priority setting should reflect a balance of big picture mission-driven objectives against responsive changing situational priorities.
5. Inclusion of Te Tiriti o Waitangi and co-integration of mātauranga Māori in all areas of the RSI system is imperative, which has the ability to strengthen collaboration across research fields.
6. Support, in principle, regionally based Māori knowledge hubs, however any development here must be led by local iwi and hapū and resourced appropriately.
7. Venture Taranaki fully supports a base grant funding model to improve the stability and resilience of our research system.

8. A mixed model is recommended that comprises key elements such as: formula funding (basic operational), negotiated budget (performance orientated), and categorical funds (innovation orientated).
9. The system must be more agile, responsive and have room to 'flex' if it is to become more attractive to industry and investors, who frequently operate 'ahead of the curve'.
10. There needs to be a much clearer accessible framework for measuring the return on investment for cultural, social, environmental and economic benefit.
11. Include measures of success, responsibility and accountability, focused on outcomes (not outputs such as publications).
12. Designing a more collaborative system is necessary. It should go beyond the incentivisation of funding pools that require collaboration. Changes in culture and the integration of a Te Ao Māori perspective may aid the shift.
13. Co-campus research facilities between CRI's and universities and/or co-labs may further advance the above and reduce inefficiencies in facilities and/or research efforts but this should not be a primary focus. Co-location alone will not drive collaboration and risks disconnection with community.
14. Establishing dedicated in-region RSI partnership roles would foster greater connections with industry, especially if aligned with RDAs and regional clusters and specialism.
15. Further strengthen the role of citizen and participatory science within our RSI system and provide appropriate infrastructure to capture knowledge and data.
16. Provision of base funding is important for retention of core, quality researchers, aligned with national priorities, and to underpin career development and confidence in our RSI system and institutes.
17. An overarching RSI strategy developed through a quadruple helix approach would be beneficial for unifying our RSI system.
18. Leveraging the role of regional intelligence/development organisations will help facilitate stronger outcomes through community and industry learning and adoption.

Research Priorities

Exploring the role that whole-of-system priorities could play in focusing research activities and concentrating resources towards achieving national goals.
Submission addresses the following questions:

1. **What principles could be used to determine the scope and focus of research Priorities?**
2. **What principles should guide a national research Priority-setting process, and how can the process best give effect to Te Tiriti?**
3. **How should the strategy for each national research Priority be set and how do we operationalise them?**

The green paper immediately explores research priorities as a blanket solution to reforming our RSI system and addressing challenges yet does not provide a logical framework for why this approach is to be taken.

Research priorities are already identified within the current system structure and funding models, yet the framing of these present challenges for incorporating rapidly changing and new research fields,

engaging and meeting business innovation needs, and allowing funding consideration for valuable yet 'out of priority scope' research.

Current priorities are continuously changing at Government/funding level, making it difficult to maintain momentum and ensure 'follow through' of crucial stages that enable investments, outputs and innovation value to be maximised. Whilst prioritisation is important for targeting funding, how we think about these at a system wide level needs to be different if we are to future proof the RSI system.

Venture Taranaki recommends that a more complex systems approach is needed for shaping and measuring priorities in the future as opposed to the traditional linear and KPI driven approaches. This system should also tie back, in some way, to cultural, social, environmental, and economic wellbeing indicators as a foundation, to provide consistency and alignment with other broader community aspirations outside of the RSI system.

Although the Government needs to facilitate the process, we also strongly recommend the adoption of a co-design process in development of the system, involving various levels of Māori, industry, academic and government interests.

We further recommend the inclusion of a strong regional or place-based lens to ensure consideration of priorities and systems remain relevant and engaging for all parts of Aotearoa New Zealand, and builds on regional strengths, innovation opportunities, and regional strategies. This helps to ensure we remain end-user and community-goal focused.

Priority setting should also reflect a balance of big picture mission driven objectives against responsive changing situational priorities. There will always be a tension between short and long-term priorities, but we need to ensure a balance is maintained to keep the system agile and future focused.

Any priority setting needs to remain broad and responsive to community/industry needs. While building on our research strengths, we need to ensure priorities do not become too prescribed, restricting exploration of emerging future-focused fields of innovation. This needs to be reflective in a funding model – ie ensuring sufficient flexibility to accommodate 'valid research' that does not fit within the scope of current priority prescribed funding that is too heavily designed at front end.

When delivering on priorities, there needs to be a balance in ensuring Government priorities do not take precedence over collective regional and national priorities. This will help ensure stability of ongoing research areas and wider system and community buy-in. Priorities driven by Government are unlikely to attract the levels of private investment that is needed to grow our RSI capability. Having a strong economy-driven focus in building capability and woven throughout priorities can help further facilitate investment from industry.

In relation to the above, whilst science and 'blue sky' research is important, reviewing barriers and ensuring flexibility and sufficient funding is available for applied research is critical. These are often areas centred on concrete ideas aligned to critical areas such as advancing high value, low emissions options pertaining to energy, resources and food and fibre, where innovation, momentum and private investment and partnerships can be rapidly mobilised and advanced.

Recommendations:

- A more complex systems approach is needed for shaping and measuring priorities in the future as opposed to the traditional linear and KPI driven approaches.
- The adoption of a co-design process in development of the system (and priorities if such an approach is adopted), involving various levels of Māori, industry, academic and government interests.
- The inclusion of a strong regional or place-based lens across the system and priorities.
- Priority setting should reflect a balance of big picture mission-driven objectives against responsive changing situational priorities.

Te Tiriti, mātauranga Māori, and Māori aspirations

Exploring how the research system can best honour Te Tiriti obligations and opportunities, give life to Māori research aspirations and enable mātauranga Māori.
Submission addresses the following questions:

4. **How should we engage with Māori and Treaty Partners?**
5. **What are your thoughts on how to enable and protect mātauranga Māori in the research system?**
6. **What are your thoughts on regionally based Māori knowledge hubs?**

Te Tiriti o Waitangi plays a pivotal role in ensuring Te Ao Māori (the Māori world view) and mātauranga Māori (Māori knowledge) is included in the research system. This requires a system-wide acknowledgement of and commitment to Aotearoa New Zealand's founding document, and we can draw on its historical significance as well as its cultural, social, environmental and economic implications in order to move toward an aspirational vision for Aotearoa New Zealand. Once this is recognised, and mātauranga Māori is included as a valuable asset to all areas of the RSI system, the practice itself and ensuring bicultural perspectives are included, will give rise to equitable outcomes. A significant part of this is recognising that mātauranga Māori does not fit within mainstream research frameworks, and so consideration to needs to be given to adapting the framework appropriately to ensure a collaborative and inclusive approach.

In principle, Venture Taranaki supports the development of a regionally-based Māori knowledge hubs, however any development here must be led by local iwi and hapū, and resourced appropriately. A 'hubs' model has significant potential benefits to strengthen co-design and accessibility for both public and private research, and would be further strengthened by mātauranga Māori. These also need to be structured and supported in a way that meets the social and economic aspirations of Māori, and acknowledges the significance of Māori cultural and environmental values. Time, personnel, and financing are all significant resourcing challenges for Iwi and hapū, and each entity has its own specific order of priorities which are determined by the needs and aspirations of their respective rohe.

Recommendations:

- Inclusion of Te Tiriti o Waitangi and co-integration of mātauranga Māori in all areas of the RSI system is imperative, which has the ability to strengthen collaboration across research fields.
- Support, in principle, regionally-based Māori knowledge hubs, however any development here must be led by local iwi and hapū and resourced appropriately.

Funding

Exploring potential ways to reshape the RSI funding system for the future. It covers how funding can be used to give effect to national priorities, reduce unproductive competition, and ensure our institutions can respond to emerging opportunities.

Submission addresses the following questions:

7. **How should we decide what constitutes a core function, and how do we fund them?**
8. **Do you think a base grant funding model will improve stability and resilience for research organisations? How should we go about designing and implementing such a funding model?**

Venture Taranaki fully supports a base grant funding model to improve stability and resilience of our research system. Alongside supporting core operational (HR, IT, buildings, etc), this needs to extend to a greater portion of research costs that exist across all areas of research areas (i.e. personnel, core research for base work and public good). This will go a long way in terms of ensuring important work continues to be advanced, and provide a more certain platform to underpin the retention of research expertise, enabling them to continuously build capability within institutions.

The competitive nature of current funding pools means there is significant risk to maintaining and growing research capability, and achieving outcomes, when researchers are spending time working to simply fund their existence within the research system. Development of funding proposals are often led by senior researchers, detracting from the time these skills could be spent advancing research output.

At a public funding level, a mixed model is recommended by Venture Taranaki that comprises key elements such as: formula funding (basic operational), negotiated budget (performance orientated), and categorical funds (innovation orientated).

In addition, the funding model needs to ensure it has a built-in provision for private sector contributions to be included and that there is flexibility for approaches such as partnership models. To encourage such partnerships, private investment needs a research system that can be an innovation 'rapid responder' so that they can keep ahead of market opportunities. It is our observation that the present system frequently lacks this agility and flex. The current system can also prove prohibitive to enterprise accessing research capability due to both baseline costs to private enterprise and research institutes not being sufficiently resourced and ready for research in a way that is capable of responding to community/industry needs at short notice.

The experience of a number of enterprises we support is that RSI institutions are interested in being engaged and linking up with businesses, leading to great conversations, but once scoping and pricing

is discussed, it becomes unaffordable and out of reach of businesses, so businesses don't commit, and the process can be viewed as wasted time. As a result, enterprise R&D can become piecemeal and miss larger opportunities.

Finally – how do we measure the success of our RSI, and its broader benefits? The system should be underpinned by a much clearer and accessible framework for measuring the return on investment including those aligned with cultural, social, environmental and economic benefit.

Recommendations:

- Venture Taranaki fully supports a base grant funding model to improve the stability and resilience of our research system.
- A mixed model is recommended that comprises key elements such as: formula funding (basic operational), negotiated budget (performance orientated), and categorical funds (innovation orientated).
- The system must be more agile, responsive and have room to 'flex' if it is to become more attractive to industry and investors, who frequently operate 'ahead of the curve'.
- There needs to be a much clearer accessible framework for measuring the return on investment for cultural, social, environmental and economic benefit.
- Include measures of success, responsibility and accountability, focused on outcomes (not outputs such as publications).

Institutions

Re-examining how we design and shape public research institutions (focussing on CRIs and Callaghan) to enable them to give effect to national priorities, encourage greater connectivity, and be adaptable in a fast-changing world.

Submission addresses the following questions:

9. **How do we design collaborative, adaptive and agile research institutions that will serve current and future needs?**
10. **How can institutions be designed to better support capability, skill and workforce development?**
11. **How should we make decisions on large property and capital investments under a more coordinated approach?**
12. **How do we design Tiriti-enabled institutions?**
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?**

Challenges around collaboration appear to stem largely from a siloed approach to research practice areas as a result of competition for and protection of funding. Although we see strong areas of collaboration, especially between CRIs or between a CRI and a university, there is clearly room for improvement in relation to full system collaborations concerning research areas. Collaborations between CRIs and universities can be challenging with universities being commercially driven. Increasingly universities are competing for the same funding pools as CRIs and against other

universities. This creates further strain for CRIs relying on these funding pools to operate with minimal/no commercial ventures to support core activities.

Designing a more collaborative system needs to go beyond the incentivisation of funding pools that require collaboration (i.e. National Science Challenges). It necessitates changes in leadership style, culture, mindset and everyday RSI teamwork activities. Exploring this from a Te Ao Māori perspective (Māori world view) will also provide new insights and ways that can help us to shift away from this silo effect. Developing Te Tiriti o Waitangi led institutions can only be successful if their foundations are approached collaboratively and in accordance with the principles Te Tiriti o Waitangi.

Being publicly funded, CRIs also have a responsibility to ensure they are connecting with regions and providing access to research information. Regional connectors and facilitators play a key role in fostering innovation opportunities and exploring new areas to collaborate on research. Venture Taranaki would like to propose the possibility of establishing dedicated in-region partnership roles as part of core operation to enhance RSI connections, potentially aligned with local industry clusters and specialism, and to forge arrangements that are much more responsive to community needs. These would be targeted towards regions without universities/CRIs yet offer important hubs of industry expertise. Taranaki, with its industry specialisms in energy, engineering, biodiversity and food processing, is an example of where such a regional hub could be established with cross-mapping RSI interfaces.

Increasing co-campus research facilities between CRI's and universities may minimise the risk (and inefficiencies) of duplicating physical infrastructure but will not in and of itself minimise the risk of duplicating similar research work, tackling the same core research problems. (It is noted however that this is also often unavoidable due to complexities with confidentiality and IP arrangements and not necessarily a significant problem). The economies of scale argument is also limited in its impact, as different research needs still require bespoke facilities, and some existing locations are constrained/not suited to further development due to their location (eg in CBD areas). We also note a significant risk of lack of community and enterprise/business connection should creating large research-focused campuses be the goal.

It is our observation that Callaghan Innovation has become too focused on running a grants scheme rather than driving innovation. Separating out the grants funding operations to have a dedicated industry focused innovation institute would be beneficial for ensuring we remain responsive to new emerging fields and economic opportunities.

Where is the 'I' in RSI?

Innovation is much wider than research and science, with many factors beyond the RSI system that drive innovation in response to community and market shifts. Private sector needs to be involved to bring research into practice for both community and industry, and improved socialising of research with community can reveal new opportunities. Many institutions do not have the right skill sets to effectively commercialise research and need to develop closer working relationships with industry to strengthen economic potential. The future RSI system needs to reflect changes to recognise the importance of innovation, the critical role it plays and partnerships critical to its success.

We acknowledge that this must also be balanced by consistency in core areas. When government funding round focuses keep changing – grants disappear just as they are starting to make progress -

the ability to make an actual difference is limited; success comes after, in being able to commercialise research and early-stage development.

Perceptions and challenges around IP can be a significant barrier for our SME's. There is a perception that engaging CRIs and universities in R&D results in these institutes taking ownership of IP. If IP needs to be shared with institutions, private enterprise is less likely to pick it up for commercialisation. When IP results from publicly-funded research with potential commercial applications, there could be set timeframes around how long institutions hold on to new IP to find appropriate partners to commercialise before releasing to open market for commercial opportunities.

There is a growing role of research, science and innovation taking place in everyday communities with increasing participation in citizen and participatory science. Delivering the Curious Minds Participatory Science Platform in Taranaki, we have seen the benefits of engaging all parts of communities in research. This style of research is an equally a key contributor to influencing decision making and leading innovation beyond what our research institutes are focused on. There are challenges with feeding knowledge gained through citizen and participatory science back into the broader RSI system to be accessible to wider audiences and benefit further research. A focus needs to put on ensuring such knowledge and associated data is not lost, through for example, appropriate databases/knowledge-sharing platforms.

Recommendations:

- Designing a more collaborative system is necessary. It should go beyond the incentivisation of funding pools that require collaboration. Changes in culture and the integration of a Te Ao Māori perspective may aid the shift.
- Co-campus research facilities between CRI's and universities and/or co-labs may further advance the above and reduce inefficiencies in facilities and/or research efforts but this should not be a primary focus. Co-location alone will not drive collaboration and risks disconnection with community.
- Establishing dedicated in-region RSI partnership roles would foster greater connections with industry, especially if aligned with RDAs and regional clusters and specialism.
- Further strengthen the role of citizen and participatory science within our RSI system and provide appropriate infrastructure to capture knowledge and data.

Research workforce

Exploring how we best develop our workforce, ensure the RSI workforce is connected, diverse and dynamic and they are offered attractive and flexible careers and career pathways.
Submission addresses the following questions:

14. **How should we include workforce considerations in the design of national research Priorities?**
15. **What impact would a base grant have on the research workforce?**
16. **How do we design new funding mechanisms that strongly focus on workforce outcomes?**

With a growing familiarity with remote connection technology, we have opportunity to access research knowledge in new ways. Developing the research system so it can take advantage of this shift and more strongly tap into a global research ecosystem through the ability to export and import

knowledge in more fluid ways will help us more rapidly strengthen domestic research capability and innovation.

Keeping quality researchers publicly accessible to our domestic market requires stable and appropriate salaries and depth of career pathways. Constant restructuring by some research institutes, as well as lack of funding certainty, creates an environment of uncertainty for retaining and strengthening talent across all areas of research. These researchers are also spending far too much time bidding for funding ahead of what they are there for. The structure of base funding should seek to stabilise continuity of research capability and enable researchers to focus on research.

Research leadership across academia, Māori, industry and government also needs to be supported to champion the future focus of our RSI system.

Recommendation:

- Provision of base funding is important for retention of core, quality researchers, aligned with national priorities, and to underpin career development and confidence in our RSI system and institutes.

Research infrastructure

Exploring effective funding, governance, and ownership arrangements for national research infrastructures and how we should support sustainable, efficient and enabling investment in research infrastructure.

Submission addresses the following questions:

17. **How do we support sustainable, efficient, and enabling investment in research infrastructure?**

An overarching collective research strategy would be beneficial for unifying our RSI system, however autonomy of institutes to govern their specialist fields of expertise within such a strategy remains important for being able to seek and develop opportunities independent of changing Government or industry demands. Independent self-governance also helps institutes maintain relationships with industry that may not otherwise want to engage with too much government oversight.

Development of such a strategy needs to be co-created, based on a quadruple helix approach involving Māori, government, industry, and academia, with a strong focus on end-users. Any strategy should also have a focus on how it enables regional intelligence/development organisations such as RDA's to access and leverage research. Effective engagement at this level helps facilitate stronger outcomes through faster community and industry learning and adoption of research.

Recommendation:

- An overarching RSI strategy developed through a quadruple helix approach would be beneficial for unifying our RSI system.
- Leveraging the role of regional intelligence/development organisations will help facilitate stronger outcomes through community and industry learning and adoption.

For any questions, or to discuss this submission further, please contact Anne Probert, General Manager Regional Strategy and Sectors – Privacy - 9(2)(a) .

Yours sincerely

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