From:	no-reply@mbie.govt.nz
To:	Research, Science and Innovation Strategy Secretariat
Subject:	Late submission on draft RSI strategy
Date:	Wednesday, 20 November 2019 10:49:58 a.m.
Attachments:	Online-submission-form-uploadsdraft-research-science-and-innovation-strategy-submissionssubmission-form-research-science-and-innovation-strategy-BRI-FINAL.docx

Are you making your submission as an individual, or on behalf of an organisation?
Organisation

Name
MJ Loza

Name of organisation or institutional affiliation
Bragato Research Institute

Role within organisation
CEO

Email address (in case we would like to follow up with you further about your submission)
mj.loza@bri.co.nz

Which of the below areas do you feel represents your perspective as a submitter? (Please select all that apply)

If you selected other, please specify here:

Gender

Ethnicity

Name of organisation on whose behalf you are submitting, if different to the organisation named above

In which sector does your organisation operate: (Please select all that apply)
Research , Industry, Start-up, Interface of research and industry

If you selected other, please specify here:

How large is your organisation (in number of full-time-equivalent employees)?
10

Please indicate if you would like some or all of the information you provide in your submission kept in confidence, and if so which information.

Please upload your submission document here
submission-form-research-science-and-innovation-strategy-BRI-FINAL.docx - Download File

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Research, Science and Innovation Strategy

Submission form

The Government is developing a Research, Science and Innovation (RSI) Strategy to set out our vision for RSI in New Zealand and its role in delivering a productive, sustainable, and inclusive future.

We are keen to hear the views of New Zealanders on the draft Strategy so that we can get a better understanding of what our country needs from RSI. We also are looking for feedback on how we can take action to ensure New Zealand's RSI system is optimised for success. These views will inform the direction of Government investment in RSI and the research and innovation areas for us to focus on as a country, as well as help us understand the challenges we need to overcome.

We encourage anyone with an interest to make a written submission.

How to have a say

We have included a number of questions in the draft RSI Strategy document to highlight issues on which we would like further input. We encourage you to use these questions as a guide when submitting your feedback.

This document provides a template for you to provide your answers. Please upload the completed document using our online submission page.

You do not have to fill out every section – we welcome submissions on some or all of the questions.

The closing date for submissions is 10 November 2019.

After the consultation period finishes, we will analyse the submissions received and incorporate the feedback in the final version of the strategy.

Confidentiality

Please note: All information you provide to MBIE in your submission could be subject to release under the Official Information Act. This includes personal details such as your name or email address, as well as your responses to the questions. MBIE generally releases the information it holds from consultation when requested, and will sometimes publish it by making it available on the MBIE website.

If you do not want some or all the information you provide as part of this consultation to be made public, please let us know when you upload your submission. This does not guarantee that we will not release this information as we may be required to by law. It does mean that we will contact you if we are considering releasing information that you have asked that we keep in confidence, and we will take your reasons for seeking confidentiality into account when making a decision on whether to release it.

If you do not specify that you would prefer that information you provide is kept in confidence, your submission will be made public. While we will do our best to let you know that we plan to publish your submission before we do so, we cannot guarantee that we will be able to do this.

Contribution of Research, Science and Innovation

This strategy is about New Zealand's Research, Science and Innovation (RSI) at a high-level. Its aim is to identify challenges and opportunities that will have the broadest impact on our research and innovation activities. For this reason, it mentions few specific areas or sectors of research and innovation. For this draft version of the Strategy, we are keen to hear from researchers, innovators, businesses, and providers of public services on what the RSI system could be doing to accelerate progress on Government's priorities.

Question 1: Where can the RSI system make the greatest contribution towards the transition to a clean, green, carbon-neutral New Zealand?

Question 2: Where else do you see it making a major contribution?

Question 3: What else could else the RSI system be doing to accelerate the progress towards the Government's priorities*?

* see list of the Government's twelve priorities included in Part 1 of the draft Strategy.

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

As an industry based on high value, relatively-low-impact land use we support increasing alignment of R&D with those goals.

We are supportive of the approach illustrated in the Draft where focus is given to areas where NZ faces a unique challenge or has a specific need that others are unlikely to address (reducing methane emissions from dairy cattle for example) and make the following points:

- We believe there needs to be a clear process for establishing what those focus areas will be. The current consultation process may be part of that overall process, however we submit that a far broader process should be adopted with a specific goal of establishing what those focus areas will be.
- Suggestions for research focus areas of national significance to NZ include:
    - **Green shipping/export-freight** – as a geographically isolated, exporting nation, we are exposed to an unavoidable transport emissions footprint to get our goods products to international markets. This puts NZ at a competitive disadvantage not just in terms of transport costs, but also in terms of emissions and the view consumers have of us as an emitter. With our 'clean-green' reputation in international markets, this is an increased risk/issue. Research both to reduce that transport emissions footprint and to effectively debunk misinformation about in-market transport emissions would be of value. Green air-transport would deliver benefits for export industries and tourism alike.
    - **Sustainable F&B packaging**. New materials which address F&B safety, storage and quality requirements with a lower environmental impact. A lighter, lower-energy replacement for glass bottles would be an example for our industry.

Researching and innovating towards the frontier

Question 4:	Do you agree that the RSI Strategy should be focused on innovation at the "frontier" (creating new knowledge) rather than behind the frontier (using existing knowledge to improve the ways we do things)?
Question 5:	In which research and innovation areas does New Zealand have an ability to solve problems that nobody else in the world has solved? Why?
Question 6:	In which areas does New Zealand have a unique opportunity to become a world leader? Why?
Question 7:	What do you consider to be the unique opportunities or advantages available to the RSI system in New Zealand?
Question 8:	What RSI challenges are unique to New Zealand, that New Zealand is the only country likely to address?
Question 9:	What are the challenges of innovating in the public sector? How do they differ from those in the private sector?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Q4: We believe there needs to be a balance between research at the frontier and research behind the frontier. Research at the frontier is necessarily more risky for potentially greater reward, while research behind the frontier – particularly if applied to rapidly adapt new technologies to New Zealand's specific conditions – can rapidly deliver high value. A mix of funding and programmes needs to be maintained to support both types of activity – though accepting that private investment should fund private benefits. As is the case today, there is a spectrum of funding mix from Marsden (for example) through to MPI's SFFF or some of Callaghan's programmes (for example). We submit this balance should be maintained.

Q8: As submitted in the previous section green shipping (export freight) is suggested as an area of relatively unique importance for NZ as an exporter isolated from its markets.

Q9: As a private sector entity innovating in collaboration with the public sector, we find the uncertainty of funding arrangements and contracting arrangements can be both frustrating and wasteful. In particular, the constant changes in funding structures from government to government, and differing requirements imposed on us when relevant officials come and go pose challenges. Cross-party political agreement on a sustainable model for RSI funding would be of enormous value.

Our key challenge – Connectivity

Question 10: Do you agree that a key challenge for the RSI system is enabling stronger connections? Why or why not?

Please type your submission below.

We support the view that improving connectivity will be beneficial to the RSI system and the ability of the RSI system to deliver excellence and impact.

We submit that concepts of connectivity should extend beyond connections between research organisations, to include connectivity to community and connectivity to industry.

As such, we submit that industry-connected Independent Research Organisations like Bragato Research Institute, but also (for example Cawthron, LASRA and several other IRANZ members) play an important role in the future of the RSI system in NZ. We also submit that the industry connectivity enabled by levy-funded and other industry representative organisations should be given special consideration.

We further submit that connections between research organisations and (for example) education should be considered. From a whole of government approach, opportunities arising from the Review of Vocational Education and proposed Centres of Vocational Excellence should be leveraged to ensure potential connections with RSI and associated opportunities are leveraged.

Guiding Policy – Excellence

Question 11:	Do you agree with the definition of excellence presented here as the best thing possible in its context? Why or why not?
Question 12:	How can we achieve diversity within our research workforce? What are the current barriers preventing a diverse range of talent from thriving in the RSI system?
Question 13:	Do you agree that excellence must be seen in a global context, and draw from the best technology, people, and ideas internationally? Why or why not?
Question 14:	Do you agree that excellence is strengthened by stronger connections?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Q11: We support the inclusive definition of excellence proposed – not being restricted to a narrow definition relating to citation/publication statistics.

Q13: Operating in a global context and global market – whether that's the market for talent we recruit from, or the markets we sell products into – we support the view that excellence should be considered in a global context.

Guiding Policy – Impact

Question 15: How can we improve the way we measure the impact of research?

Please type your submission below.

Reinforcing the view expressed earlier regarding the special industry connectivity enabled through industry representative organisations, we submit that such bodies can play a key role is achieving several of the 5 key goals served by placing impact at the heart of the strategy – especially connecting researchers and end users, informing government's future investment decisions.

Economic analysis of the benefits delivered by a specific research programme is an expensive addition to a research programme. Funding such analysis multiple times, by multiple organisations looking at similar issues is inefficient and leaves potential learnings on the table. We submit that consideration be given to implementing economic analysis on the impact of RSI activities as a standard/core, centralised function undertaken by funders in the RSI system.

Guiding Policy – Connections

Question 16:	Where do you think weak connections currently exist, and what are the barriers to connections at present?
Question 17:	What actions will stimulate more connectivity between parts of the RSI system?
Question 18:	How could we improve connections between people within the RSI system and people outside it, including users of innovation, and international experts, business communities, and markets?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Enablers of improved connectivity include:

- Information systems which make it possible to identify capability and who-is-doing-what-and-where
- Policy settings and mechanisms which incentivise research providers to work closely with end-users and Industry representative groups
- Making research, data and IP held within CRIs more accessible. We support the suggestion in the Draft that the policies around open access to data and research, management of IP within our research organisations be looked into.

Actions – Making New Zealand a Magnet for Talent

Question 19:	How can we better nurture and grow emerging researchers within New Zealand and offer stable career pathways to retain young talent in New Zealand?
Question 20:	How could we attract people with unique skills and experience from overseas to New Zealand?
Question 21:	What changes could be made to support career stability for researchers in New Zealand? What would be the advantages and disadvantages of these approaches?
Question 22:	Do you agree with the initiatives proposed in the Strategy to support and attract talented researchers and innovators? Are any changes needed for these initiatives to be successful? Are there any other initiatives needed to achieve these objectives?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

We support the initiatives described in the policy, however we believe that more underlying funding issues need to be addressed so research organisations have the longer-term certainty of funding needed to make investments in capability and capability building. It is hard to understate the extent to which "attracting the best visionary thinkers" is hampered by uncertainty of funding. In a globally intense market for research talent, lack of funding certainty is a serious black mark against any research institute seeking to attract staff.

Actions – Connecting Research and Innovation

Question 23:	What elements will initiatives to strengthen connections between participants in the RSI system need to be successful?
Question 24:	What elements will initiatives to strengthen connections between participants in the RSI system and users of innovation need to be successful?
Question 25:	What elements will initiatives to strengthen connections between participants in the RSI system and international experts, business communities, and markets need to be successful?
Question 26:	Are there any themes, in addition to those proposed in the Strategy (research commercialisation and international connections), that we need to take into consideration?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Actions – Start-up

Question 27:	How can we better support the growth of start-ups?
Question 28:	Do the initiatives proposed in the draft Strategy to support growth of start-ups need to be changed? Are there any other initiatives needed to support start-ups?
Question 29:	What additional barriers, including regulatory barriers, exist that prevent start-ups and other businesses from conducting research and innovation?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Actions – Innovating for the public good

Question 30:	How can we better support innovation for the public good?
Question 31:	What public-good opportunities should our initiatives in this area be focused on?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Actions – Scale up

Question 32: What is the best way to build scale in focused areas?

Question 33: Do the initiatives proposed in the Strategy to build scale in focused areas need to be changed? Are there any other initiatives needed to build scale?

Note: see following page to comment on possible areas of focus

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Scale up – Choosing our areas of focus

For this draft iteration of the strategy, **we seek input on the selection of possible areas of focus**. We will consider establishing around five focus areas, but, depending on the eventual selection, are likely to introduce them over time, rather than immediately. In addition to the criteria set out in the Strategy document, we invite stakeholders to consider the following factors in their suggestions –

- The ambition of this strategy to focus efforts in the RSI portfolio at the global frontier of knowledge and innovation.
- Ways in which the RSI system can accelerate progress on the government's goals.
- The focus areas already determined by *From the Knowledge Wave to the Digital Age*.
- Work already underway where we are already seeking to build depth and scale in the RSI system.

The following areas could be a useful start, and are highlighted in *From the Knowledge Wave to the Digital Age:*

- **Aerospace**, including both autonomous vehicles and our growing space industry.
- **Renewable energy**, building on recent investments in the Advanced Energy Technology Platform.
- **Health technologies** to improve delivery of health services and explore opportunities in digital data-driven social and health research.

We invite comment on these suggestions and welcome input on other possible focus areas.

Please type your submission below.

As submitted earlier:

We submit there should be a much larger, focussed process to identify and prioritise key areas of focus.

Two suggested areas of focus are:

- Green shipping/export-freight – as a geographically isolated, exporting nation, we are exposed to an unavoidable transport emissions footprint to get our products to international markets. This puts NZ at a competitive disadvantage not just in terms of transport costs, but also in terms of emissions and the view consumers have of us as an emitter. With our 'clean-green' reputation in international markets, this is an increased risk/issue. Research both to reduce that transport emissions footprint and to effectively debunk misinformation about in-market transport emissions would be of value. Green air-transport would deliver benefits for export industries and tourism alike.
- Sustainable F&B packaging. New materials which address F&B safety, storage and quality requirements with a lower environmental impact. A lighter, lower-energy replacement for glass bottles would be an example for our industry.

Actions – Towards an Extended Vision Mātauranga

This section of the draft Strategy signals our intention to consult and collaborate further with Māori stakeholders to co-design our responses and initiatives. From that perspective, we consider the signals in the draft Strategy to be a start, rather than a set of final decisions. Nonetheless, we are keen on initial feedback in the following areas.

Question 34: Does our suggested approach to extending Vision Mātauranga focus in the right five areas? If not, where should it focus?

Question 35: How can we ensure the RSI system is open to the best Māori thinkers and researchers?

Question 36: How can we ensure that Māori knowledge, culture, and worldviews are integrated throughout our RSI system?

Question 37: How can we strengthen connections between the RSI system and Māori businesses and enterprises?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Q34: The Strategy states that the Vision Mātauranga extension will be codesigned with Māori. The extension needs to be framed in the context of partnership obligations under the Te Tiriti o Waitangi. Power and resourcing should be equitably shared.
It is critical that all researchers increase their knowledge and understanding of Mātauranga Māori – a sector shift is needed. Everyone is responsible for producing the shift. It is also critical that leaders and decision makers understand biases and implement processes that minimise biases influencing outcomes (funding and appointments etc).

Vision Mātauranga knowledge is synonymous with research excellence in NZ. The definition of research excellence and how it is measured is critical.

Q35. Some parts of the RSI system, such as National Science Challenges, allow Māori thinkers and researchers to be successful as Māori. In other sectors, Māori researchers face barriers, burdens and systemic racism, therefore, cannot flourish and often exit the sector.

Many Māori researchers are the sole Indigenous researcher in the team, Department and School making them vulnerable. Other people can relate and extrapolate this point to their own distinct culture and identity. However, it is critical to remember the unique Treaty position that Māori hold as partners with the Crown. Māori should not feel marginalised and isolated within NZ. The size of the problem has not been documented in terms of frequency, extent and seriousness of these barriers to success. Until this happens, system minimises the issue and delays implementing solutions.

Q36: It is important for Māori researchers to feel valued in the sector. A critical mass is needed in all fields. Messaging needs to be consistent - Māori spaces are needed and time allowed for whānaungatanga and tikanga. If this does not occur, Māori are expected to flourish in suboptimal environments.

Q37: Strengthen connection RSI, Māori businesses and enterprises.
Māori economies currently make up 6% of the NZ's GDP. Enhancing links between Māori researchers, RSI system, Māori businesses and enterprises is logical and should produce profitable outcomes for NZ.

Actions – Building Firm Foundations

Question 38:	Do the current structures, funding, and policies encourage public research organisations to form a coordinated, dynamic network of research across the horizons of research and innovation? What changes might be made?
Question 39:	Is the CRI operating model appropriately designed to support dynamic, connected institutions and leading edge research? What changes might be made?
Question 40:	What additional research and innovation infrastructure is necessary to achieve the goals of this Strategy? What opportunities are there to share infrastructure across institutions or with international partners?
Question 41:	What elements will initiatives in this area need to be successful?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Actions – General

Question 42: How should the Government prioritise the areas of action, and the initiatives proposed under each area?

Please type your submission below.

General

Question 43:	Do you have any other comments on the Strategy which have not yet been addressed?

Please type your submission below.