From:	no-reply@mbie.govt.nz
To:	Research, Science and Innovation Strategy Secretariat
Subject:	Draft Research, Science and Innovation Strategy submission
Date:	Sunday, 10 November 2019 2:37:49 p.m.
Attachments:	Online-submission-form-uploadsdraft-research-science-and-innovation-strategy-submissionssubmission-form-research-science-and-innovation-strategy-10-Nov.docx

Submission on Draft Research, Science and Innovation Strategy recevied:

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

Name
Wendy Nelson

Name of organisation or institutional affiliation
NIWA

Role within organisation
Programme Leader

Email address (in case we would like to follow up with you further about your submission)
wendalinels@gmail.com

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

If you selected other, please specify here:

Gender
female

Ethnicity
Pakeha

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)

If you selected other, please specify here:

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

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-10-Nov.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 prioritiesincluded in Part 1 of the draft Strategy.

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

The RSI system needs to be contributing to fundamental science and discovery because these areas of work are the foundation for solutions and innovations for our future survival.

This is not adequately represented in the current draft.

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.

The language used in this document is not helpful and lacks the clarity one would hope for in a strategy document.

"Innovation at the frontier" will mean different things to different readers – why not be explicit about discovery science, about the importance of science that makes iterative advances across a wide range of disciplines as well as innovation?

What RSI challenges are unique to New Zealand, that New Zealand is the only country likely to address?

The NZ situation (physically, geologically, ecologically, culturally, etc etc) – presents a range of NZ-unique challenges. We cannot rely on global work to identify our issues and our solutions, to document our unique oceanography, biodiversity and so forth.

The obsession with international profiles reflects policy people who have still not grasped some of the key needs of NZ – for good policy development and resource/economic/social management we need NZ-focused research. This must draw on the best examples /best practice internationally, and it should be innovating and developing NZ-appropriate approaches and drawing on the richness of our south Pacific location.
The appropriate places for this work to be published and promulgated is not necessarily in the highest-ranking international journals.

The draft strategy does note: "we do a lot with what we have" and "Our researchers also appear to be making impact within their academic fields. Relative to other countries in the OECD, the ratio of New Zealand's very highly cited research papers (i.e., research papers in the top 10 per cent of publications) to papers with few or no citations is just above the OECD

average".

We are achieving a remarkable amount with what we have – but the expectations (for demonstrating impact, translational and interface work with stakeholders etc etc) and costs of work keep increasing and the funding does not. There is nothing wrong in increased expectations, but these must be accompanied by resourcing. In the absence of increased investment, we will have an even more eroded system than currently.

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.

The report notes weak connectivity – and in my view, that can be put squarely at the feet of current policy and funding tools which do not incentivise connections and make collaboration/cross-institution work/travel difficult.

My experience is that the science system does not reward NZ scientists within a sector self-organising to improve connections and enable better outcomes for NZ, we do this despite our institutions and structures and not enabled by the science system.

A case in point is the taxonomic collections sector which has produced detailed analyses of the sector and end-user/stakeholder needs, has self-organised, and has pointed out serious issues which are preventing connectivity – and yet no decisions by the policy and funding agencies have been made to enable improved outcomes. The need for a review of the taxonomic collections sector has been flagged for over 25 years – and this week the PCE has pointed again to lack of connectivity around environmental databases.

"We want to focus on sustainable provision of future-focused infrastructure; in particular our databases, collections…"

The review of collections and databases has been on the books of MoRST, MSI and latterly MBIE for years – it has always fallen into the too-hard basket. The fact that this is still on the 'wish list' is testament to how ineffectual these strategies are. As a science practitioner, it is hard to take calls for connectivity seriously when the need has been made explicit on multiple occasions. Can we have confidence that any action will result from this current strategic document?

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.

Diversity in the workforce will only be achieved when the career pathways and career environment reflect respect for the participants. Current policies have led to significant erosion of opportunities for early career scientists – few post-docs and unclear career pathways. If you are currently an "outsider" to the system what will attract you to a science career if the barriers are more obvious than the advantages?

Do you agree that excellence is strengthened by stronger connections? Why or why not?

In general yes – but I fear there is an element of cultural cringe evident in some of the strategy – not all international endeavours are better than NZ work, sometimes it is of no relevance and the requirement to link internationally is not appropriate. In work I am aware of and have been involved in, the NZ work has been leading the way and international colleagues have followed the NZ lead.

Our strength can be as a result of our size (which can also be a constraint) - the fact that we are a small community, and that we can get all the key players in a room and can work across disciplines to focus on a shared common task can be powerful. This is something colleagues outside NZ really admire and envy. We have the potential to act in a coherent and coordinated manner – but the current funding instruments do not enable this type of agility and responsiveness.

Guiding Policy – Impact

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

Please type your submission below.

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.

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.

What changes could be made to support career stability for researchers in New Zealand? What would be the advantages and disadvantages of these approaches?

This section about attracting and retaining talent is galling to read as someone whose whole career has been marked by the experimentation of science policy people. I have experienced the ups and downs of a whole range of funding tools/approaches. I have at no stage felt that there is genuine career stability, or respect from policy people for the science staff in public institutions. I am deeply frustrated with the state of the SSIF funding – its erosion and that lack of understanding by public policy officials about the impact of this erosion.

At a personal level, I am frustrated that every year I have no guarantees about the money that will be available for fundamental work on NZ marine biodiversity (funded through SSIF) – all I know is that it will be less than in the previous year. Where is the framework in which long term planning can be conducted and multi-year research be adequately planned and conducted? It is all very well talking endlessly about innovation – but if you are trying to hang on to sufficient fte to retain staff, having to slice and dice time across endless separate projects to keep money coming in to the organisation (CRI) – it is very difficult to maintain a creative and innovative environment. The fact that the SSIF has stagnated is at the heart of this issue.

Unless there is enough time for new scientific work, and creatively developing science skills, we will not have the workforce we need to tackle the big challenges facing NZ.

There are few incentives at present and few mechanisms to attract and retain early career and mid-career scientists. I know people holding Rutherford awards who have taken very significant pay cuts to return to NZ, struggle to get the resources they need from their institutions, and for whom there is no clear career path once their Rutherford is complete – and yet these are meant to be our best.

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.

More resources and better links between the priorities of central and local government and the allocation of funding.

There are NZ-unique issues which no one else has responsibility to address and thus need to be supported by the NZ government/public good funding

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.

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.

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.

No, we do not have a well-coordinated system. Amongst other things this strategy needs to address the erosion of SSIF, the emphasis on innovation without recognising the balance that must occur across a range of science activities, address the disproportionate transaction costs associated with science funding applications.

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.