

From: no-reply@mbie.govt.nz
To: [Research, Science and Innovation Strategy Secretariat](#)
Subject: Draft Research, Science and Innovation Strategy submission
Date: Friday, 8 November 2019 2:33:54 p.m.
Attachments: [Online-submission-form-uploadsdraft-research-science-and-innovation-strategy-submissionsRNC_submission-form-research-science-and-innovation-strategyv3.docx](#)

Submission on Draft Research, Science and Innovation Strategy received:

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

Organisation

Name

Richard Smith

Name of organisation or institutional affiliation

Resilience National Science Challenge

Role within organisation

Director

Email address (in case we would like to follow up with you further about your submission)

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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

Resilience National Science Challenge

In which sector does your organisation operate: (Please select all that apply)

Research

If you selected other, please specify here:

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

3 (and c. 120 research affiliates)

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

RNC_submission-form-research-science-and-innovation-strategyv3.docx - [Download File](#)



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 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.

We note positively the reference to the essential role of the RSI system in supporting New Zealand's approach to climate change mitigation and adaptation. Regarding other 'major contributions' we think that there is scope to expand this context to include other natural hazards. Building resilience to the impacts of natural hazards is not just about 'defending' or the ability to 'respond' in a one-off way but is at the core of the principles of sustainability and well-being, which are key elements of the Government priorities. The RSI system has a key role to play in driving innovative approaches to policy development that embeds resilience thinking in all decision making, both public and private.

As an overall observation, given the focus of the National Science Challenges on issues of national strategic importance, we think it would be helpful to make clear the alignment between the NSC investment mechanisms and the Government priorities. For example, in the case of the Resilience Challenge and the Deep South Challenge, supporting 'healthier, safer more connected communities.

We note also that the core principles of the NSC operating model are also well-reflected in the Government priorities related to:

- Close partnership with Māori
- International reputation
- Thriving and sustainable regions

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.

4) We support a focus on creating new knowledge but recognise that innovation and insights can occur ‘behind the frontier’ through developing new ways of integrating existing knowledge, and that when seeking to improve science ‘impact’ a balanced approach is essential. The RSI text uses the word “frontier” to indicate the edge of knowledge, the boundary between what we know and what we don’t know. In terms of societal benefit and wellness it is the frontier between knowledge and the beneficial application of that knowledge that is critical

5 -8) We consider natural hazards resilience to be of strategic value for New Zealand’s RSI system. Our high societal and economic vulnerability to a wide range of damaging natural hazards requires us to invest in our own research capability to understand and better manage these risks as a nation. The combination of our natural challenges, unique cultural attributes and regulatory environment, and existing capability mean we have an exciting opportunity to be a world leader in developing innovative solutions to climate change and other disaster resilience issues.

A related strategic advantage is the strong attraction of international research consortia to the unique ‘natural laboratory’ of New Zealand, that, if well facilitated, can significantly leverage New Zealand’s own relatively modest science investments, support excellence in science, and make New Zealand a well-connected ‘magnet’ for global talent.

9) We endorse the strategy objectives of excellence, impact and connections. The key to supporting innovation in the public sector, and accelerating the take-up of research science into policy changes and other innovations is through development of deep partnerships and relationships of trust. The National Science Challenge mechanism of collaboration and

partnership is well-placed to facilitate development of more deeply connected and meaningful approaches to science engagement.

PROACTIVELY RELEASED

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 endorse the identification of connectivity as a key priority for the RSI strategy, noting that it is the positive outcomes of connectivity that are important i.e. integration, rationalisation and coordination. We have a highly fragmented and siloed science and tertiary education system in NZ and likewise in national infrastructure in all sorts of areas. The diagram showing all the funding balloons illustrates this.

Our strong endorsement of connectivity (and the positive outcomes it enables) is that connectivity is at the core of the operating principles for the National Science Challenges - in terms of connections across science disciplines (nationally and internationally), across institutions, with key partners such as Māori, and with other research users.

We are encouraged by the recognition given in the strategy to this issue as it reinforces the value and benefit of the NSC model for enabling greater effectiveness and impact from the wider NZ RSI system.

We note however the significant leadership challenge of achieving integration, rationalisation and coordination across the system when some parts of the system (highly competitive funding rounds – needed to stimulate new ideas and talent), sometimes incentivise institutional behaviours that are antithetical to those collaborative outcomes.

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.

The characteristics of excellence outlined in the RSI Strategy (People, Global outlook, Partnership) are well aligned with the principles of excellence that underpin the National Science Challenge model (that is, in the context of relevant research with the potential for societal impact). We endorse the notion that stronger connections support strengthened excellence.

Guiding Policy – Impact

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

Please type your submission below.

We are encouraged by the widening perspective of what research impact is and the focus the new strategy places on impact.

Again, this strongly endorses the NSC operating model of mission-driven, co-created research.

PROACTIVELY RELEASED

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.

We reiterate our earlier comments in relation to connectivity as a core operating principle for the National Science Challenges – we think the NSCs have demonstrated through Tranche 1 the significant value and benefit of collaboration across institutional and disciplinary boundaries. Such connectivity requires resourcing and careful stewardship, to incentivise collaborative behaviours and build relationships of trust within (and beyond) the RSI system.

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 strongly endorse the need to address issues of the capability pipeline (and mobility) in the New Zealand RSI system.

Career stability and bridging the current gap between PhD and post-doctoral levels within New Zealand are essential and long overdue.

At present, large investments in capability being made at the PhD level are at risk of being lost from the system due to the limited support for post-doctorates in New Zealand. We encourage the consideration of enhanced investment in a broad based post-doctoral fellowship scheme to support retention and attraction of research talent.

Research and researchers in NZ would also benefit from greater mobility between our main research reservoirs of talent – the universities and the CRIs. Researchers tend to have strongly siloed careers in NZ. Enabling the transfer of at least some mid-career researchers from university to CRI and vice versa would be beneficial, and should be achievable. It would contribute to the diversity of ideas and approaches and would be more attractive to participants, including new international talent.

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.

We endorse the plans to strengthen support for New Zealand researchers to collaborate internationally.

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.

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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.

We reiterate our earlier comments in this regard:

The key to supporting innovation in the public sector, and accelerating the take-up of research science into policy changes and other innovations is through development of deep partnerships and long-term relationships of trust.

We note the reference to establishing 'innovation missions' to address public good opportunities - the National Science Challenge mechanism of collaboration and partnership is well-placed to facilitate development of such an approach to science engagement.

More specifically, we see significant opportunity for innovation in the public sector for world-leading policy development, decision-support tools and governance arrangements that take effective account of natural hazard risks and build national disaster resilience (including climate change and weather hazards). In this regard, we would like to see stronger links between this RSI Strategy and the DPMC National Disaster Resilience Strategy (2019).

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.

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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.

We are encouraged to see the broadening ambition in the proposed RSI strategy in relation to mātauranga Maori and the goal of improved integration of Māori knowledge, culture, and worldviews throughout the RSI system.

We support the need to address the associated capability issues to ensure the right pathways for engagement and participation are enabled. This strongly aligns with our ambitions in the Resilience Challenge, and is a core principle of the NSCs.

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.

We are encouraged that the principles at the heart of the proposed RSI strategy - excellence, impact and connection – are common to the successful NSC model and operating mechanism.

The current scale of investment across the various mechanisms in the diagram (page 15 of the document) suggests that many of the goals and actions of the proposed strategy could be effectively enabled through a more balanced investment in the NSCs, as a critical nexus for excellence, impact and connection.

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.

PROACTIVELY RELEASED

General

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

Please type your submission below.

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