

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 3:05:55 p.m.
Attachments: [Online-submission-form-uploadsdraft-research-science-and-innovation-strategy-submissionsubmission-form-research-science-and-innovation-strategy_MCE-alumni_Heidi-Darcy.docx](#)

Submission on Draft Research, Science and Innovation Strategy received:

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

Individual

Name

Heidi Darcy

Name of organisation or institutional affiliation

Master of Commercialisation and Entrepreneurship (University of Auckland) alumni

Role within organisation

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

hdar009@aucklanduni.ac.nz

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

Entrepreneur

If you selected other, please specify here:

Gender

Female

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)

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.

No confidential information has been provided.

Please upload your submission document here

submission-form-research-science-and-innovation-strategy_MCE-alumni_Heidi-Darcy.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.

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Q1- Reducing New Zealand's Agricultural emissions

Investment into research aimed at increasing yield and productivity in agriculture and horticulture with more efficient use of natural resources, especially water. More productive farms with a greater yield per animal to reduce numbers of stock required to achieve the same output, and reduce greenhouse gases.

Integral to achieving this is an investment in technology to enable data-driven decision making which has a significant impact on productivity.

Helping NZ adapt to our changing climate

As an island nation, rising sea levels and changing climates will have an impact on food production in coastal communities. Investment into research on plant breeding in conjunction with weather research will encourage genetic varieties more suited to the changing environment to deliver sustainable food production.

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.

HD

Q4 I agree that Govt should be investing in research at the frontier. There are many businesses in NZ investing in incremental innovation to add value to their businesses and these initiatives should be supported. However, the greatest gains will come from strategic investment in new technology at the frontier which will shift the dial on economic impact from R&D investment.

Q5-7 We have a demonstrated ability to solve engineering and agricultural challenges. Our geographical isolation means it is often not cost-effective to adopt technology from overseas, forcing us to innovate in NZ.

We have a unique opportunity to develop a centre of excellence in marine research. we have more access to the sea and to a diverse range of marine ecosystems than many countries. There is untapped potential in research on cultivating and harvesting seaweed derived products, provided these are value-add products and not commoditised.

Unique advantage to the RSI system in NZ is that our small population and geographical size foster collaboration and networking within our own RSI ecosystem.

Q9 Significant challenge innovating in healthcare public sector is that training for our multi-disciplinary medical professionals includes very limited training on research methodologies, human centred design and commercialisation. Upskilling health professionals and/or fostering links with research hubs will be important if we are to really see a shift in impact from NZ-led health research.

Another challenge public sector innovation faces is that the key driver is often around social impact which is very hard to quantify. In contrast, private sector research is often measured according to a more immediate economic benefit for the company. In the private sector,

outcomes (especially in education and health) may often not be seen for a longer time period, compared with private sector research and funding these longer-term projects is challenging with the constraints of parliamentary terms and changing Govt priorities.

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.

HD Enabling stronger connections is critical. It is reliant on NZ developing a reputation for excellence in key industries so that international players recognise our expertise, but is also reliant on NZ businesses actively developing relationships through initiatives like the Centre for Asia Pacific Excellence market insights programmes, Callaghan Innovation tours etc.

A significant barrier to developing connections beyond academic co-authorship, is that many research grants are not available if the research is conducted outside of NZ. This hinders NZ businesses from accessing medical and technology researchers from overseas and bringing those benefits back into NZ businesses. RSI initiatives should be open to funding research projects offshore, providing the benefits can be exploited by NZ businesses.

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.

HD Q11 I agree with the focus on the definition of excellence to move beyond citations and encompass the 'best thing possible' across a range of industries. I also agree that what excellence looks like for different industries will vary depending on their size, lifecycle and sector. However, the definition is too open-ended and is not linked to outcomes. If we only define excellence on the inputs into innovation and not to the outputs then we have a very one-sided view and it becomes about the 'best *intention* possible' rather than the 'best thing possible'. This definition leaves it up to each individual to interpret what excellence might mean. We need to provide a broad range of examples and guidelines on how to measure excellence across various industries so that innovators have something to benchmark against.

Guiding Policy – Impact

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

Please type your submission below.

HD A key component of *measuring* research impact is the ability to communicate the impact. Science communication competencies and tools are lacking in NZ. Even when we innovate and it has an impact we are very poor at communicating that impact to affected stakeholders and taxpayers. It is important to increase training and innovation in this field so that we have novel technology and established competency to communicate the impact and therefore receive the maximum outcome.

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.

PROACTIVELY RELEASED

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.

PROACTIVELY RELEASED

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.

HD Investment in tech incubators and innovation hubs is paying off as it is strengthening cross-functional connections and facilitating synergistic innovation. This should be a key focus for our RSI strategy and funding.

In order to accelerate the innovation outcomes from these connections, we need to advance intellectual property knowledge. Researchers and small businesses often lack a good understanding of how best to protect and exploit intellectual property knowledge and this slows the adoption of and benefit from innovation.

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.

HD Public funding for start-ups is geared towards start-ups returning a profit. Pre-profit enterprises often have to rely on equity funding which is dilutive. There is a high-cost and often a lead time of several years to translate scientific research into a commercial offering and there is very limited funding available at this early stage. Even with angel investment, a working prototype is often a prerequisite for funding but it can take a lot of money and time for a start-up to get it to this stage for advanced innovations at the frontier. We need to provide better funding into these early stage start-ups if NZ is to realise the benefit from hi-tech, high-growth start-ups.

An important barrier to start-ups translating research into commercial opportunities is the lack of knowledge in NZ regarding global regulatory affairs. We need to provide NZers with more access to resources and knowledge in this area so that they innovate with the global regulatory framework in mind. If we do not embed this knowledge early into the design process, we risk limiting our ability to scale and enter global markets. More information on global regulatory frameworks could be made available through NZTE and Callaghan but also earlier in the innovation life cycle by incorporating an awareness of regulations into our learning curriculums..

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.

PROACTIVELY RELEASED

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.

PROACTIVELY RELEASED

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.

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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.

PROACTIVELY RELEASED

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.

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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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