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 10:19:38 a.m.
Attachments:	Online-submission-form-uploadsdraft-research-science-and-innovation-strategy-submissionsForest-Growers-Research-Ltd-submission-on-MBIE-RSI-Strategy-7-Nov-2019.pdf

Submission on Draft Research, Science and Innovation Strategy recevied:

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

Name
Russell Dale

Name of organisation or institutional affiliation
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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

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

If you selected other, please specify here:

How large is your organisation (in number of full-time-equivalent employees)?
5

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
Forest-Growers-Research-Ltd-submission-on-MBIE-RSI-Strategy-7-Nov-2019.pdf - 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.

Q1 To make the greatest contribution toward transition to a clean, green, carbon neutral New Zealand we will need to substantially increase our focus on our land based activities, how we use the products from our land and add value from manufacture, brand exploitation and the knowledge that arises from these activities.

The production of essential materials from wood fibre and plants producing everything from safe food, to materials to energy. This will require:

- More trees to be planted and how we use our trees,
- Rethinking current models of how we use our land (not simply packaging land-use into discrete activities such as pastoral or forestry or horticulture or conservation)
- Adopting, adapting and innovating on international initiatives in biotechnology, artificial intelligence, remote sensing, use of data, robotics and supply chain management.
- Inventing ways to be able to manufacture in our environment where materials are disbursed and limited infrastructure.

And this will need to be done in the face of:

- Increasing threats from pests and pathogens
- Impact of climate change and extreme events and rising temperatures
- Challenging infrastructure and geography. Ways to on-manufacture based on small regionally based operations
- Taking a futures approach – not segmenting land industries into old models of farmers, foresters, conservationists and horticulturalists – and not assuming those in land based activities are not focussing on work that is at or beyond the frontier.
- International consumer changes. Being able to respond to consumers who want our materials but need to be assured of safety, integrity, quality and

sustainability – accepting that to survive we have to be highly skilled at exporting.

- New Zealand always being a low RSI spend on an international basis. Being clever at leveraging off the investments made elsewhere and clever at adopting, adapting and innovating on the work of others who have bigger RSI pockets. For example in artificial intelligence, managing big data, biotechnology, automation and robotics and supply chain management.
- Future proofing our activities which includes diversification in a managed and strategic fashion. We must protect and innovate on the engine room of the economy and ensure we invest Government RSI into a portfolio approach and not be trapped into committing large investments into non sticky industries (that is those that are easily transferred to other nations).
- That New Zealand has mostly small enterprises with some medium enterprises (on an international basis). We need to enable enterprises to grow and develop and not seeing success as just being about ground-zero start-ups – new activities in existing firms are very important.
- Take advantage that our solutions are also solutions to many of the worlds challenges and hence we can secure value from the knowledge aspect of these solutions.

Q2 RSI has three purposes.

- To create innovations enabling sustainable economic growth and a healthy population
- Creating clever people who enable the above
- Enabling connectivity into the big RSI budgets of other countries.

This has to be done on the basis of a clear national strategy that is whole of Government.

Encouraging youth into STEM subjects through education.

It is imperative that such skilled people can move into contributing to our industries in operational or RSI roles. This is a critical outcome of a national RSI strategy and a powerful indicator of success.

Q3

1. Simplify the system. There seem to be a lot of government RSI investment vehicles and the connectivity between them is not clear. Creation of more investment vehicles adds complexity and counters the very collaborations and connections this strategy sees as critical. As industry is a very substantial investor in and player in the national RSI system – the more transparent it is the better industry and government can work together. Some of these investment mechanisms create outcomes that may not align with delivering the Government agenda. For example the PBRF sees success as citations not connecting with industry. Is this what we want?
2. Design a science system that represents what New Zealand has and be cautious about using others models as exemplars of what New Zealand needs to look like. For example, using classic US type start ups as indicators of a successful RSI system. New Zealand has CRIs, IRO's, industry research entities as well as research activity in government

departments and in companies. How can we best make this all work to build that vision for New Zealand?.

3. Build a national RSI strategy that is focused on delivering a successful New Zealand and uses and enhances our existing operational models.
4. Design the national science system to align to the outcomes we wish to see

The CRIs are important to industry and end-users through their core purpose which is to work with industry/end/users, sustain capability of national importance, focus on the whole RSI value chain and create impact.

Create operating models that are focussed on outcomes not inputs. For example:

- CRI operating models need to be focussed on their purpose. That is partnering and delivering impact and sustaining capability of national importance. The increasing emphasis on their need to win money from Endeavour funding to meet a commercial imperative (i.e. make a profit and to deliver on a Government owned required purpose.)
- CRIs were set up as centres of excellence and homes of critical capability in key areas of importance for New Zealand – if these areas are no longer that then we need to adjust accordingly.
- CRIs are a natural base to support the Government focus on increasing Māori in RSI and building in Mātauranga Māori.

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

As an RSI strategy then it needs to cover the whole RSI field – from adopting, adapting, inventing and translating. As the strategy states it is focussing on contributing to delivering the governments vision then it must cover the whole field.

We are providing comment as we feel that as a major part of the New Zealand RSI infrastructure who both employ and invest in RSI it is important that we all work out how we work together to achieve that vision. To limit focus on creating new knowledge and not about applying knowledge then we would eliminate that part that creates impact and is typically more complex.

Q5 and Q6

In those areas where we have an ability to:

- Leverage off our strengths such as derive value from our land in a sustainable manner that can ensure we have an economic base. We have led the world in new models for food and wood fibre production. We have to grow this in the face of massive challenges such as climate change, political change and consumer change. If we do not protect and build on this then we will not be able to pay our future bills.
- Do those activities where we have the greatest imperative to succeed such as in community and environmental health
- Diversify but only where we have stickiness – that is ability to ensure that it can create enduring benefit to New Zealand and not disappear off shore before it becomes investment positive. Some opportunities are where we connect our strengths (material supply (e.g. quality timber) and link this to design and consumer solutions (building components)).

Q7

Use our small size and remoteness to our advantage and build off our strengths.

Increase integration between investment mechanisms.

Ensure that those in a purely research role such as CRIs have every opportunity to form and strengthen their partnerships with industry.

Reduce transaction costs in doing research such as longer term funded programmes.

Be proud of our land-based industries and support them as they seek to diversify and add more sustainable value.

Q8

New Zealand has special challenges about which we need to innovate. For example:

- Dealing with a small domestic market (even including Australia).
- Dependence on markets where the products have to carry the cost associated with getting to distant markets.
- Overcoming the challenges of a dispersed infrastructure and a difficult geographical environment where raw materials are regionally dispersed.
- Community health
- Increasing productivity

Q9

The challenges for the private sector are that we are dealing with mostly small enterprises who need to work together in RSI. Other challenges include:

- The tax R&D system does not easily accommodate companies working together such as through using levy funding models
- The New Zealand RSI system is complex
- The New Zealand RSI system focusses on collaboration yet removes its most potent mechanism to collaborate in science with industry – that is the MBIE partnerships fund.

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.

Q10

Enabling stronger connections is important for the RSI system. It is already part of the New Zealand RSI system.

The current assessment criteria for Endeavour fund for example requires:

Excellence – science of an international standard **clearly putting together a team of international standard.**

Impact – requiring **collaborations** with end-users able to convert research outcomes into Impact.

We do have a system such as the Endeavour fund which sees competition as critical It is not just a competition of ideas but a competition between organisation and individuals. The latter mitigates against true collaboration.

In addition create and enable bigger, long-term programmes so that:

- There can be more collaboration between research providers so that genuinely world class and substantial teams can be created and nurtured.
- They can build in end-users in a genuine partnership role.

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

There is no reason why excellence cannot apply across research and innovation. It can apply to that work that is at the frontier (creating new knowledge in an international context) and it can apply to adapting or adopting knowledge to solve problems. It could equally apply to developing new operational models for businesses.

Q12

The New Zealand science sector (government and industry) is already very diverse with a large number of nationalities represented within it. If the intent is to increase those who whakapapa to Māori then we need to accept that Matauranga Māori is a valid part of science in New Zealand and strengthen what we do in the education system and follow this through the RSI system.

Q13

Yes. NZ is very small and even in the most optimistic scenario will always be a small part of the international RSI effort. We must be directly focussed on leveraging spend by other nations and smart at adopting and adapting.

We need to earn partnerships with international players and to be able to do this then we need to do something that enables us to bring something to that partnership such as science and/or end-user connectivity.

Q14

Strong connections do not of themselves mean anything is excellent. It is about creating the best team doing the best work.

Guiding Policy – Impact

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

Please type your submission below.

Q15

There have been many studies on impact and entities that measure the impact of science. Many recent studies have been done on this but we are not aware if these have been made public.

A robust strategy will define success.

For example:

- **Lagging**: NZ is resilient etc, attracts talent to those areas that are critical to NZ to achieve our vision, good place to be a child, good environment etc, we are a respected part of the international science community, NZ has a distinctive (and attractive) approach to science through integration of Mātauranga Māori. R&D spend is top of OECD, new innovations being delivered out of our core activities and growing and diversifying on our core activities.

Leading: Build those programmes critical to NZ achieving vision, attracting youth of NZ into STEM, encouraging all New Zealanders to embrace Mātauranga Māori in science activities. NZ developed a global reputation for science and innovation in key areas well connected to New Zealand's future prosperity (e.g. developing sustainable resources, modelling sustainable land-use approaches, leveraging our natural resources to build new products and knowledge industries such as in building solutions), new innovative activities, growing enterprises (new products, new customers), attracting international talent into those activities where New Zealand is creating impact from its RSI activities.

We need to be well considered in what we see as success. Just looking at start-ups or citations is too narrow. Investment set up to focus on these may create perverse outcomes when measured on how it delivers on New Zealand's vision.

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.

Q16

International connections are strong in forestry. These serve three purposes:

- ensuring that we invest in genuinely best teams,
- leveraging knowledge and
- supporting trade activities.

National connections are weaker – because we have a science system and operating models that emphasises domestic competition. Although we note this is supposed to be a competition of ideas where entities need to win money then it becomes a competition between providers.

We need to be cautious about simply creating investment mechanisms that see collaboration as the dominant mark of success. This could be overcome by ensuring we do sustain focus on best teams, best end-user connection and large coherent programmes.

The MBIE partnership approach did deliver on the above.

Q17

Reinstate MBIE Partnerships programmes.

Invest by portfolio showing what is important to New Zealand rather than an open agenda. This will ensure New Zealand research players collaborate to develop the best team and build meaningful collaborations with end-users.

Use the existing mechanisms to require building teams of international standing and well connected to end-users.

Q18

Simplify the system by reviewing the CRI operating model – by ensuring they have the investment required to deliver on their purpose and competition is at the boundaries not at their core.

Being deliberate about where the Government will invest in say a portfolio approach - bring the competition to the margins not at the core.

Enable more integration with sector interests and big long-term programmes to help address succession planning and enhance impact.

Does the PBRF system encourage collaborations. It may within science but not between science and end-users.

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.

Q19

By taking a long term focus on RSI.

Increasing youth wanting to do STEM subjects.

Taking a long-term view and ensuring coherency across investment mechanisms. For example Curious Minds is an excellent idea but it does not feed into anything so what it creates is lost.

Programmes that are truly long-term - say 15 years enabling them to bring in emerging talent and nurture it and to strengthen collaborations.

Q20 and 21

New Zealand does attract a lot of international talent. This is not of itself a problem. We can improve by building larger, long-term programmes and reduce the focus on a constant cycle of winning money.

A lot of the challenges are beyond the RSI system. For example competing with nations who build in health and pension systems into remuneration.

Q22

Being a centre of excellence in well-defined areas would help attract talent. We need to be clear what they will be and what will they look like. A seven year programme will struggle to achieve this. Excellence is not only about doing science and publications it is about solving critical problems and creating options that enhance well-being and economic outcomes and future proof New Zealand.

Doing science of excellence is only one aspect that attracts talent – it is also frequently about end-user connectivity, and working on impact and the ability to be part of a RSI transference process.

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.

Q23, 24 and 25.

A clear national strategy that shows how RSI connects to achieve national outcomes. This has to be more than just within the science system.

The government investing its funding in clear portfolios of activities in a very transparent way.

Increasing simplification of the system where the Government is clear about investing where science teams of international standing are created with teams well connected to end-users that can clearly create impact and that such programmes are well governed.

There are many Government investment mechanisms each with their own criteria. How well do those criteria fit into achieving the governments vision?

Incentives will drive behaviour. For example PBRF focusses on citations not connecting with industry.

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.

Q27

Is there any evidence that start-ups are an indicator of a healthy innovation system or achieving the vision for New Zealand?

New Zealand is a nation of mostly small enterprises with one or two companies registering as medium enterprises on an international scale. Better to focus on growing those small enterprises, enable existing entities to build new activities and support innovation to happen where true value can be created and sustained in New Zealand.

Many New Zealand start-ups are not sticky to New Zealand so we see large tranches of tax payer funding go into companies that move offshore long before they ever become positive contributors to New Zealand.

New Zealand industry does support start-up ventures but not in the American model. We do not have the investment base, the culture or the environment to support American style start-ups.

It is better to take a more holistic view and measure actual value being created rather than what might be perceived to be an indicator of science success.

Larger, long-term programmes well connected to end-users do provide an opportunity for a variety of new enterprises to develop and in an environment where investor risk is minimised. These could be new product offerings, new joint ventures or even full start-ups. Success is about all these things happening.

Q28

It is not clear what initiatives are being referred to in supporting start-ups?.

Rather support existing activities to grow in a meaningful way.

Q29

As a nation of SME's we need to enable companies to work together to innovate and build new ventures. The R&D tax incentive system does not readily allow this to happen. For example the forest growing industry commits about $6million of investment into a group fund for sector growth, much more private investment and

provides many millions of dollars of their time, use of land and resources to support RSI. Only their private investment fits into the tax credit scheme.

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.

Q30

Firstly, enhancing and improving the environment and the health of all New Zealanders has a strong commercial dimension. This is of considerable interest to industry and to strengthen this they have commercial imperatives to have the best brand possible over use of resources (people, land, materials). Industry and Government working together can enable both private and national wealth to be created.

We need to move past partitioning environment, conservation and commercial activity. They are intrinsically linked. In ten years' time the boundaries between a forest, pastoral activities, horticulture and conservation activities will have gone. Building new models for land use and adding more value is a critical challenge for New Zealand and not one that other nations face with such intensity.

Treasury has developed the Living Standards Framework which is a useful approach to how we measure success. This approach could underpin every programme where Government invests.

Q31

Building new models for how we use our land and derive the various multiple benefits.

Increasing focus on working with youth – to attract them to R&D

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.

Q32

We can build scale in focussed areas by:

- Investing by portfolio that supports the engine room of the economy and supports it as it grows and continues its focus on creating enduring value.
- Doing those activities that are sticky to New Zealand.
- Providing long-term investment into programmes that are well governed, and are attractive to industry so uptake and industry knowledge can be leveraged.
- The CRI's were purpose designed to be the above but the system has moved so that it seems a lot of their time has to be focussed on bidding..

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.

We should avoid the urge to pick specific areas rather set a broader agenda and invest by portfolio. For example:

(i) **Protecting the engine room of the economy** (the land and land-based industries and community health). That is developing new models for land-use, grow the production of safe-food, sustainable timbers and fibre in a resilient and increasingly pristine environment will require substantial innovation across fields ranging from protecting plants from pests and pathogens to growing productivity to developing ways to manufacture on a small scale. Achieving the above would go a long way to contributing to the national agenda of a zero-carbon high value creating nation.
Improving community health and social infrastructure (others can better comment)

(ii) **Growing the engine room of the economy**. For example, building new customers based on products (including tourism) from how we use our land. This could include producing energy or build solutions or plastics from plants.

(iii) **Building totally new ventures built on New Zealand's strengths**. This is possible where space research or similar comes in where we use our remoteness as a strength.

Every element of the above should be connected to ensure we use big data, artificial intelligence, biotechnology and so on are enabled to be adopted and used in New Zealand..

Typically we should invest about half into protection, and split the balance between growth (new products for example such as energy) and into totally new ventures.

Do not assume that (i) is less challenging scientifically than (iii).

Examples.

The entry of one single pathogen such as phytophthora ramorum would wipe out New Zealand's commercial and conservation forests? With limiting ability to use chemical approaches to managing such issues we have to ensure our science is well prepared to finding solutions.

How can we leverage off our being a superb producer of high quality timbers and marry that with design and manufacture to take advantage of a growing market for sustainable build solutions?

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

No focussing on adjusting mechanisms is unlikely to achieve the substantial changes you are seeking.

If the vision we create for New Zealand and the portfolios we invest in fully integrate with a Māori world view then we have clear targets on what the science to achieve that must look like.

It seems there is confusion between addressing Vision Matauranga policy and simply benefits to Māori. There is also a challenge to ensuring programmes do address the Vision Matauranga policy and using international assessors who are unlikely to understand this dimension.

Q35,36 and 37.

In the industry in which we work there are a lot of Māori enterprises who are innovative and connected to the RSI system. Many are developing innovative approaches to land-use (including adventure tourism), developing mixed crop options and exploring different business and marketing models.

Where is the evidence that this is not the case?

Any changes or greater integration of a Māori world view will take time and needs to start with youth in the education system then permeate it with all programmes supported by Government investment.

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.

Q38

The MBIE Partnerships investment vehicle was an excellent model to address RSI over many horizons of research investment. The presence of Government investment enabled a greater risk profile (and commensurate national rewards) to be achieved.

Q39

The CRIs were set up as centres of excellence in areas of national importance, designed to have stable funding, good governance and to focus on translating excellent science into impact while sustaining capabilities of national importance.

The CRIs are delivering globally leading research but the better question is it doing this efficiently and effectively and best arranged to deliver Impact. The CRI model was designed to be intimately connected to (but not subservient) to sectors such as pastoral, forestry, conservation etc to ensure those sectors were supported with nationally important capability, leading science and enabling those sectors to be positively challenged and hence delivering sustainable value to New Zealand.

The business model they seem to be operating appear to require them to win money in a contest to deliver on their Government required purpose. Similarly do this with short lived programmes.

The addition of National Science Challenges is confusing to external parties as some appear to compete with CRIs.

The question is not about coordinated, dynamic research across horizons of research and innovation. Rather are they able to operate in a way that delivers the best science and innovation and to effect impact and through this protect those sectors considered critical for New Zealand. Also to create those critical international connections to support an adopt, adapt and innovate model.

They were not set up to focus on the health of the RSI system per se but rather to do globally leading science, be well connected internationally and be sufficiently well connected to sectors so that Impact could be assured.

The CRIs should be global centres of excellence in their core purposes.

The consequence are that critical capability is hollowed out as programmes are short and bidding becomes a too frequent activity.

Q40

What are the critical areas of endeavour for example major areas of international activity that New Zealand needs to connect to in a major way. For example, artificial intelligence or biotechnology. Rather than operate multiple organisational connections why not do this at a national level and maximise value to New Zealand.

Q41

Simplicity and avoiding dilution of effort and duplication.

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.

This document does attempt to link RSI investment to achieving a national vision.

This should be reinforced and from that evolve those portfolios for investment of RSI.

Essentially New Zealand needs to invest in those areas where we can see value being created, value being enhanced and where new value can be created. Doing this in a balance portfolio.

Investment is not just about judging science excellence and impact but also being assessed based on fit for New Zealand to achieve its vision.

To achieve the above does not need any new initiatives we already have many. This can lead to:

- A high transaction cost system
- Focussing on success being about winning money as opposed to creating impact
- Loss of focus on areas critical for New Zealand to achieve its vision

It is not clear as to whether this describes a New Zealand RSI sector or how Government will invest in RSI. It is a bit of both and as such it is not clear.

Industry makes substantial investment into RSI but apart from discussion around tax and national RSI spend it is otherwise little discussed.

General

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

Please type your submission below.

We appreciate the opportunity to make this submission.

As an industry who values and invests substantially in RSI we see a healthy RSI system as a critical enabler for New Zealand to become the best it can.

We strongly support the view that RSI is critical to achieving a national vision. The strategy we follow in RSI then must be focussed on achieving that vision. This does need a whole of Government and whole of nation approach.

As a small nation we have to use our scarce resources as effectively as we can, leverage the work undertaken internationally and be very smart at adopting, adapting and innovating and doing this very cost effectively.

We reinforce the earlier statement that the starting point is to look at the RSI structures we already have in place and enable them to achieve their purpose.