#102

Privacy - 9(2)(a)

Page 2: Section 1: submitter contact information

Q1

Name

Bevan Weir

Q2

Privacy - 9(2)(a)

Q3 **Yes**

Can MBIE publish your name and contact information with your submission?Confidentiality notice: Responding “no” to this question does not guarantee that we will not release the name and contact information your provided, if any, as we may be required to do so by law. It does mean that we will contact you if we are considering releasing submitter contact information that you have asked that we keep in confidence, and we will take your request for confidentiality into account when making a decision on whether to release it.

Q4 **Yes**

Can MBIE contact you in relation to your submission?

Page 3: Section 2: Submitter information

Q5 **Individual**

Are you submitting as an individual or on behalf of an organisation?

Page 4: Section 2: Submitter information - individual

Q6 **Yes**

Are you a researcher or scientist?

Privacy - 9(2)(a)

Privacy - 9(2)(a)

Privacy - 9(2)(a)

Privacy - 9(2)(a)

Page 5: Section 2: Submitter information - individual

Q11

What is your iwi affiliation?

Respondent skipped this question

Page 6: Section 2: Submitter information - individual

Q12

If you wish, please specify to which Pacific ethnicity you identify

Respondent skipped this question

Page 7: Section 2: Submitter information - individual

Q13

What type of organisation do you work for?

Crown Research Institute or Callaghan Innovation

Q14

Is it a Māori-led organisation?

No

Q15

Which disciplines are most relevant to your work?

Biological sciences

Q16

What best describes the use of Mātauranga Māori (Māori knowledge) in your work?

There is some Mātauranga Māori, but it is not the main science knowledge

Page 8: Section 2: Submitter information - organisation

Q17

Respondent skipped this question

Organisation name

Q18

Respondent skipped this question

Organisation type

Q19

Respondent skipped this question

Is it a Māori-led organisation?

Q20

Respondent skipped this question

Where is the headquarters of the organisation?

Q21

Respondent skipped this question

What best describes the use of Mātauranga Māori (Māori knowledge) in your organisation?

Page 9: Section 3: Research Priorities

Q22

Priorities design: What principles could be used to determine the scope and focus of research Priorities?(See page 27 of the Green Paper for additional information related to this question)

One principle for guiding a national research priority-setting process should be if important research could not be (or unlikely to be) funded by any other mechanism (e.g. Taxonomic research). These research activities should be considered a core function as outlined in the green paper.

Q23

Respondent skipped this question

Priority-setting process: What principles should guide a national research Priority-setting process, and how can the process best give effect to Te Tiriti?(See pages 28-29 of the Green Paper for additional information related to this question)

Q24

Respondent skipped this question

Operationalising Priorities: How should the strategy for each national research Priority be set and how do we operationalise them?(See pages 30-33 of the Green Paper for additional information related to this question)

Page 10: Section 4: Te Tiriti, mātauranga Māori, and Māori aspirations

Q25

Engagement: How should we engage with Māori and Treaty Partners?(See page 38 of the Green Paper for additional information related to this question)

Respondent skipped this question

Q26

Mātauranga Māori: What are your thoughts on how to enable and protect mātauranga Māori in the research system?(See pages 38-39 of the Green Paper for additional information related to this question)

Respondent skipped this question

Q27

Regionally based Māori knowledge hubs: What are your thoughts on regionally based Māori knowledge hubs?(See page 39 of the Green Paper for additional information related to this question)

My concern with this idea, depending on implementation, is that it could isolate Māori from the rest of the research system.

Page 11: Section 5: Funding

Q28

Core Functions: How should we decide what constitutes a core function, and how do we fund them?(See pages 44-46 of the Green Paper for additional information related to this question)

One principle for determining a core function should be if important research could not be (or unlikely to be) funded by any other mechanism.

An example is taxonomic research. This is nationally important for Biodiversity though describing new native species of Bacteria, Fungi, invertebrates, and cryptic flora. This is critical to understand what species are present in NZ and which need conservation. Additionally Taxonomic research is critical for Biosecurity particularly for plant pathogens and pest insects.

Although it is possible to get contestable or commercial research funds to investigate (for example) practical applications of plant pathology, it very difficult to get such funds to work on the core underlying taxonomy.

Where practical core functions should have a public outreach component to explain the important of this research to the public that ultimately fund this work. An example in my field of taxonomy is that we run occasional ‘bio blitzes’ which are public engagement events where we try to discover and identify all life within a defined area over 24 hours. This also helps encourage a new generation into the science field.

Q29

Establishing a base grant and base grant design: Do you think a base grant funding model will improve stability and resilience for research organisations?(See pages 46-49 of the Green Paper for additional information related to this question)

Yes

Q30

Establishing a base grant and base grant design: How should we go about designing and implementing such a funding model?(See pages 46-49 of the Green Paper for additional information related to this question)

I very am supportive of a base grant.

It is likely the public would be surprised just how much time a scientist spends on trying to find research funds, rather than actually doing research. A partial base grant would remove a lot of this ‘wasted time’ from the system allowing more actual research to occur.

Of course, contestable funding is still important. However, there are different ways of doing this. I have recently been part of groups that have got two SFFF grants. The experience of these was much better than applying for an Endeavour Research Programme. The SFFF was a lot of back and forth with the funder co-designing the research. Whereas with an Endeavour you have one shot to impress the reviews and hope that the research is what MBIE wanted. A more collaborative design process could be built into base grant funding.

A problem with CRIs are the excessively large overheads. Obviously, some of the things that the overheads pay for a very important such as CAPEX, IT, support staff etc. However, there are some great potential savings to be made. If a base grant covered these at a reasonable cost then overheads could be lowered meaning more research funding could be spent on doing science rather than other costs. Some overseas funding agencies for example refuse to pay our excessive overheads which limits funding opportunities.

Research funded by the core grant should be inherent open and free to access in line with NZGOAL: https://www.data.govt.nz/toolkit/policies/nzgoal/ this is already the case with the biological databases and collections at MWLR, but should be the case for any work funded under this system, e.g. weather data. Publicly funded data should be open and open data allows others to build and analyse in new ways the originators may have not considered.

Lowering the overhead rates will also allow researches to help small New Zealand businesses that could not afford science staff but need some research work done.

Page 12: Section 6: Institutions

Q31

Institution design: How do we design collaborative, adaptive and agile research institutions that will serve current and future needs?(See pages 57-58 of the Green Paper for additional information related to this question)

The company model for CRIs should be abandoned. It leads to a perverse skewing to the research landscape to only following the dollar rather than larger strategic research needs.

It is possible that creating a new organisation for all biological collections and databases could be cost efficient, but it would lose connections to other strands of organisational research such as ecology and applied research. The integration of a collections specific organisation into the rest of the science system would need to be carefully considered. Such an institution would also need sufficient major CAPEX funding for occasional large expenditures.

‘Virtual institutions’ could be considered. One of these that works well is B3 https://www.b3nz.org.nz/ as a biosecurity hub that brings researchers from different organisations together. However, it has suffered from loosing its specific money that it had in the OBI days. Now each individual organisation must fund its own researchers, this necessarily comes with the baggage and focus of each individual CRI.

Q32

Role of institutions in workforce development: How can institutions be designed to better support capability, skill and workforce development?(See page 58 of the Green Paper for additional information related to this question)

Respondent skipped this question

Q33

Better coordinated property and capital investment: How should we make decisions on large property and capital investments under a more coordinated approach?(See pages 58-59 of the Green Paper for additional information related to this question)

Over a certain financial limit (say $500K) all capital investments should be opened up to the science sector for potential collaboration and co-investment for more efficiency. For example, MWLR in Auckland build a PC3 plant containment facility onsite, then a few years later PFR in Auckland also build a similar facility. Each were built with an individual commercial need in mind, but a much larger, better facility could have been built though collaboration. There would be reduced costs though not duplicating facility management etc.

Q34

Institution design and Te Tiriti: How do we design Tiriti-enabled institutions? (See page 59 of the Green Paper for additional information related to this question)

Respondent skipped this question

Q35

Knowledge exchange: How do we better support knowledge exchange and impact generation? What should be the role of research institutions in transferring knowledge into operational environments and technologies?(See pages 60-63 of the Green Paper for additional information related to this question)

Respondent skipped this question

Page 13: Section 7: Research workforce

Q36

Workforce and research Priorities: How should we include workforce considerations in the design of national research Priorities?(See pages 69-70 of the Green Paper for additional information related to this question)

Respondent skipped this question

Q37

Base grant and workforce: What impact would a base grant have on the research workforce?(See pages 70-71 of the Green Paper for additional information related to this question)

A base grant would be very positive, allowing a focus on research rather than bid writing.

Q38

Better designed funding mechanisms: How do we design new funding mechanisms that strongly focus on workforce outcomes? (See page 72 of the Green Paper for additional information related to this question)

Postdoctoral research is a critical part of the science system, the old FoRST Postdoctoral Fellowships scheme was a fantastic way to get young scientists a start on their science career. This should be reimplemented.

Page 14: Section 8: Research infrastructure

Q39

Funding research infrastructure: How do we support sustainable, efficient and enabling investment in research infrastructure?(See pages 77-78 of the Green Paper for additional information related to this question)

Nationally significant Collections and databases (and tightly associated taxonomic research) are currently funded by a SSIF infrastructure grant. In general, this is a good system and should continue. Although the amount of funding is not sufficient to meet all of needs in New Zealand lowering the CRI overheads though the use of a base grant and other mechanisms would allow this funding to stretch further.

An interesting aspect of collections funding is that a dollar invested in a collection says there. Collections have specimens that are many decades old, and current funds invested goes to keeping the specimens collected now useful for decades in the future. Thus, the value of collections and databases appreciate over time. This can contrast with other forms of infrastructure investment that depreciate over time such as HPC clusters. Both forms of investment are critical, but collections spending is more effective over the long term.

One consideration to enhance New Zealand's databases and collection is to make submission of specimens to national collections a condition of MBIE grants. For example, if a fungal strain was used in a research paper (funded by MBIE) this should be submitted to a national collection to insure its long-term preservation. This again is a way to ensure the most effective use of a MBIE funding dollar.

Biological collections and databases are inexorably linked with the taxonomic research of alpha taxonomy (describing new species) and classification/identification. Taxonomists are required to work with the collections to ensure that they keep their value. Although databases can (and should be) digitised, if a species identification is wrong then all the downstream analysis that relies on the collection data will be affected. For example, this is especially important with plant pathogenic bacteria and fungi where our own and overseas research frequently splits a single species into several. The important questions then become: which of the new species do we have in NZ? Are any threats to our economy and should the import risk be reassessed? These important impacts of taxonomic changes require that taxonomists are funded and closely associated with collections.