#119

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Monday, March 14, 2022 5:57:43 PM
Last Modified: Wednesday, March 16, 2022 2:43:14 PM
Time Spent: Over a day

Page 2: Section 1: submitter contact information

Q1

Name

Dr Craig Grant

Q2

Email address

Privacy - 9(2)(a)

Q3

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.

Yes

Q4

Can MBIE contact you in relation to your submission?

Yes

Page 3: Section 2: Submitter information

Q5

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

Organisation

Page 4: Section 2: Submitter information - individual

Q6

Are you a researcher or scientist?

Respondent skipped this question

Q7

Age

Respondent skipped this question

Q8

Gender

Respondent skipped this question

Q9

In which region do you primarily work?

Respondent skipped this question

Q10

Ethnicity

Respondent skipped this question

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?

Respondent skipped this question

Q14

Is it a Māori-led organisation?

Respondent skipped this question

Q15

Which disciplines are most relevant to your work?

Respondent skipped this question

Q16

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

Respondent skipped this question

Page 8: Section 2: Submitter information - organisation

Q17

Organisation name

Otago Museum

Q18

Organisation type

Other (please specify):
Museum

Q19

Is it a Māori-led organisation?

No

Q20

Where is the headquarters of the organisation?

Otago

Q21

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

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

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)

- Research priorities should reflect Aotearoa New Zealand's long-run goals and ambitions in homogenous sectors.
- Priorities should focus on building capability, connections, and underpinning infrastructure in emerging / heterogenous sectors.

Priorities should reflect Aotearoa New Zealand's long-run goals and ambitions. These should already be well-defined and reflected in the key work programmes/national strategies of broader Ministries (e.g., such as Ministry for Environment's priorities around climate change, biodiversity, freshwater, etc) rather than reinvented through an additional priority-setting process. The examples given in Fig. 1 within the Green Paper would be consistent with this approach.
Historically, FRST/MoRST and MBIE have set topic-based priorities to guide the focus of the national research effort, and have used large programme or platform-based investments to progress. Although potentially effective for long run topics where there is coherent underpinning research infrastructure required (e.g., climate change, freshwater) and if there is genuine collaboration between research providers involved (not evident to date), this model doesn't suit more emergent and less homogeneous priorities such as Advanced Manufacturing/ICT and Mātauranga Maori. In these areas, setting topic-based priorities is not credible.
In these areas, the priorities should focus on building capability, connections, and underpinning infrastructure – i.e.,:

- Growing Aotearoa's advanced research/technical and mātauranga capability.
- Nurturing connections between this capability with their relevant stakeholders (e.g., industry/business/enterprise; iwi, rūnanga, hapū).
- Supporting the underpinning research infrastructure (e.g., advanced manufacturing tooling; museum collections <> regional mātauranga Māori hubs) and networking it nationally.

Q23

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)

- UNDRIP and Te Tiriti recognises indigenous communities' heritage and relationships to cultural landscapes. Research priorities must include recognition and protection of taonga.

The UNDRIP recognises indigenous communities' heritage and relationships to cultural landscapes, as does Article II of Te Tiriti o Waitangi. Empowering these requires sustained research and ongoing protection for taonga values, especially those that are at risk of loss. This should be clearly articulated as one of the key research principles. Part of giving effect to Te Tiriti in this regard will be to ensure that the care and exploration of collections and research resources that are crucial to realising taonga related research are built into a sustainable national research infrastructure.
If national research priorities are aligning with existing well-articulated, long-run national outcome priorities and their associated strategies / Ministry approved work programmes, this should ensure these strategies will give genuine effect to Te Tiriti in their design and objectives. There should also be a parallel governance-level process, led by Māori, which reviews this starting set of priorities from a Te Ao Māori perspective to identify what:

- Priority areas might be missing - including with respect to, and through, the above-mentioned capability and infrastructure lens.
- Their 'priority priorities' - i.e., what they see as the most pressing priorities for new (or re-prioritised) investment.

Q24

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)

- Research strategies should align with national strategies and/or work programmes.

- Strategies must take into account inter-generational protection of, and access to, haplotypes, salvaged heritage, and cultural taonga.

- Independent National Research Council (or equivalent) established to oversee strategy design, operationalisation and evolution.

As noted above, national RSI strategies should:
- Flow from the overarching national strategies for the priorities identified; and
- Have their outcomes connected with the organisations/stakeholders involved in shaping and/or giving effect to those priorities.

Note: In doing so, the RSI strategies should complement, not crowd-out, operational RSI investment by the relevant stakeholders/Ministries.
The development of these strategies must be inclusive of collecting organisations to ensure they take into consideration the:
- Long term data, access and learning requirements; and
- Implications and obligations for mātauranga and taonga inherent within, or that will emerge from the associated research endeavours.

The inter-generational need for protection of, and access to, haplotypes, salvaged heritage, and cultural taonga needs to be fundamentally factored in each strategy development if it is to be truly enduring. This has been a major shortcoming of previous RSI priority and strategy setting processes.
An operational model that involved establishing a National Research Council (NRC) to oversee these national research strategies could be beneficial. An independent NRC could offer strategic oversight over their design and investment balance. Sub-groups of the council, potentially chaired by relevant Ministerial Science Advisors and drawing in international expertise, could oversee the more detailed operations of each priority, including making portfolio balance and funding recommendations back through to the NRC.
Note: Using truly nationally based priorities will also avoid the perverse behaviours that have dogged National Science Challenges from their inception. The wider public and industry showed very little interest in the engagement process that led to setting the NSCs. This process became very internally focused within the RSI system. The NSCs were then operationalised more through a process of market share negotiations between research providers, rather than mission-based prioritisation. This resulted in duplicative and costly administrations. Although some cross-disciplinary collaborations emerged over time, the cost to achieve these was very inefficient.

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)

Otago Museum hosts an extensive collection of Māori taonga, Aotearoa's only bi-cultural science centre, and undertakes extensive science engagement at kura and marae across the motu. All these activities are guided by our Māori Advisory Committee. We would welcome the opportunity to engage in the process of assisting in the building of the human capability and supporting infrastructure required by Māori to give full effect to the potential of mātauranga Māori. We would gladly draw upon our relationships with iwi and rūnanga to facilitate such korero.

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)

- Treat mātauranga Māori as a nationally significant taonga, that needs dedicated collating, curating, protection, and sharing/embedding across the wider science system

He tanagata, he tangata, he tangata - it is the people, it is the people, it is the people. To enable and protect mātauranga, the first step is to build the capability (people) and supporting infrastructure (access to taonga; curatorial and mentorship support). Both are currently critically thin and require systemic and substantial investment to build genuine quality and depth. We must urgently start to frame mātauranga Māori as a nationally significant taonga, that needs dedicated collating, curating, protection, and sharing/embedding across the wider science system and through public engagement and outreach.

A key aspect of mātauranga Māori research is ensuring the maintenance of the reference resources important to it, as well as dissemination and embedding of research findings in Māori communities. Museums offer an effective mechanism for providing the custodial care for such resources, as well as a channel to facilitate sharing within wider Māori communities. However, much like Māori, museums have not been meaningfully engaged in conversations around the RSI system to date. Both Māori and the museum sector need to be engaged to empower and resource iwi mātauranga and science endeavours, whilst also being cognoscente of inherent sensitivities and taonga values.

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)

- Support concept together with networking such hubs nationally.

Regionally based Māori knowledge hubs, if well executed, offer real potential to connect the rūnanga and iwi in a given region, facilitate networking with wider RSI system, and thus create a richer understanding of that region’s mātauranga. How these are linked to facilitate national knowledge / mātauranga sharing will also be key.
Museums are well placed to serve as, or support, regionally based Māori knowledge hubs. The large metropolitan museums have well established and trusted relationships with iwi. These relationships are growing wider and deeper as decolonisation initiatives gain pace.

As interdisciplinary institutions with a strong focus on sharing knowledge of science and the humanities with a diversity of audiences in both real and virtual domains, museums would be well placed to facilitate the development of regionally based, but nationally networked hubs. Metropolitan museums house extensive Māori and Pacific collections, providing a logical fit where research material, indigenous knowledge exchange, communications and communities can be brought together. In addition, museums are very attuned at working collaboratively with researchers from each/every type of research provider, thus avoiding any concerns around freedom of access to the knowledge hosted within the hubs.

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)

- Core functions should directly underpin what is required to deliver national research priorities.
- Research institutes should propose what core functions they can offer to this effect.
- Establish a National Research Committee (or equivalent) to make judgements on these proposals and recommend the balance of core funding vs. contestable funding across each priority.

A core function is defined as a group of services, products and/or activities designed to achieve a common result(s) necessary to achieve the mission. Providing a significantly greater level of core funding to support such functions in organisations across the RSI system would go a long way towards improving collaboration, a much greater focus on delivering outcomes (rather than securing market share), and the ability to sustainably and strategically plan for, and invest, in future-focused RSI capacity.

Once national research priorities and strategies are finalised (the ‘mission’) proposals could be sought from research organisations for what core functions they feel they could offer that are essential to underpin the delivery on these priorities/strategies.
A National Research Council (or equivalent) could adjudicate on how these stack-up across the spectrum of research institutions and priorities and make recommendations as to the percentage of the RSI envelop that should be directed towards core vs. contestable funding.

It is crucial that this process ensures consideration of the associated collections and databases that underpin multiple national research priorities. This dimension has been missing from all negotiated and contestable portfolios within the RSI system. Even when Nationally Significant Databases were established in the 1990s, the process only focused on ‘traditional’ research providers, with no metropolitan museums being part of the process, despite hosting the largest repositories of research material in the country.

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)

- Support establishing a base grant that reflects contribution to national benefits/priorities.
- Needs to explicitly include museums to guard against the potentially imminent loss of nationally significant collections and databases currently orphaned within the RSI system.

The GLAM (Galleries, Libraries, Archives, Museums) sector may be broadly separated into national institutions such as Te Papa, the national service museums and the National Library that are largely funded by central government, and non-national institutions that are largely funded by local government. The five major legislated museums, Te Papa, Auckland War Memorial Museum, Canterbury Museum, MOTAT and Otago Museum, host over 13 million items, with about 75% of these items housed outside of Te Papa and thus receiving no or little central government funding.

This means local government funding is currently subsidising the ever-increasing demand of nationally significant research needs. There is an urgent need for a base grant model that recognises and supports the national benefit from holding, caring, and providing access to these collections of national significance. Such national RSI benefits and demands are increasing through increasing expectations around digitisation needs, handling associated genomic data/haplotypes, supporting more mātauranga Māori-based initiatives, and greater demand for assistance with public science engagement and outreach.

A base grant that supports the management, development and data mobilisation of research collections of national significance would address the shortfall and secure these collections and their accessibility for the myriad of research endeavours that draw upon collections and data.

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)

- Provision of base funding will greatly heighten collaboration and responsiveness across the RSI system.
- Request the White Paper includes a specific recommendation to develop a work stream to better integrate the research, collection maintenance, and science engagement aspects of the major museums in this reform process and within nationally supported RSI infrastructure.

A shift away from such a highly contested system to one with a healthier balance of core funding will go a long way towards nurturing a more collaborative and responsive RSI ecosystem.

However, a critical shortcoming within the current RSI system is the lack of direct engagement of MBIE and wider government with museums. Outside of nationally funded Te Papa, the main metropolitan museums (Otago, Canterbury and Auckland) are all local body funded and their research collections and databases have not been considered by MBIE to be integral to the RSI system.

Museums, by their very nature, are collaborative institutions that are mandated, but not funded, to serve all sectors of the community. Despite being highly adaptive and agile they are resource constrained. This is in large part due to them being treated as a ‘common’ or ‘free service’ by RSI funders and providers – i.e., whereby our national research system expects local body funded (&/or even self-funded) museums to provide integral research support and services at nil or negligible cost. Even more critical there is no support for the on-going and growing demand for curation and storage of critical research haplotypes nor demand for digitisation of items.

A key component of the White Paper should be a specific recommendation to develop a work stream to better integrate the research, collection maintenance and science dissemination aspects of the major museums into reform process and the nationally supported science infrastructure.

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)

Appropriate core funding would enable organisations to strategically invest in future-focused capability and workforce needs. For example, there is a well acknowledged shortage of taxonomists in terrestrial and marine invertebrates in Aotearoa, however, no ability to train or professionally develop staff in this domain as there is no underpinning funding for such capability development.

In addition, although specimens – the physical infrastructure upon which taxonomy and biosystematics depend – remains foundational, digital representations (high-resolution images, 3D scans, photogrammetry, genetic sequences etc.) are becoming increasingly in demand by the research community. Training and digital infrastructure is necessary if we are to meet the challenges and opportunities these new technologies bring.

There is also a critical shortcoming in coordination of inter-research organisations' understanding of each other's workflows and capacity. Museums have increasingly limited capacity to safely store items under current funding models. We run the risk that scientific specimens collected in the field cannot ultimately be deposited and processed by museums to ensure their long-term storage and availability for research access in the future.

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)

This should be integral to the process of determining core funding discussed above, with the added dimension of ensuring appropriate/equitable long-term access by wider RSI system to such resources. Encouraging co-location of such large investments is sensible.

Metropolitan museums are already located adjacent or close to research providers, and the nature of museums (being not for profit and community focused) make them ideally suited to hosting long-term capital investments that will remain in the public/RSI-good.

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)

- Build capability in kaupapa Māori via investment in scholarships, internships and senior mentorship positions across the RSI system.

Aotearoa's major museums have established strong commitments to bicultural development that have regard for the ToW and UNDRIP. A major challenge, especially in the South Island, is the human resourcing of commitments to iwi – both in terms of resourcing such roles, but also in recruitment for such roles (where we have perpetually struggled to recruit mātauranga expertise).

Ensuring that there is a clear career pathway and support for emerging Māori and Pacific researchers is critical to overcome this capability bottleneck. Not only should they be well mentored within any organisation, but actively connected with the wider RSI community, and given the opportunity to participate in projects that directly serves their Māori communities. This will help build deeper connections between these communities and the research institutions.

Proactive investment in scholarships, internships and senior positions is required to build this capability.

Museums can offer the perfect training ground for such researchers as they offer direct connections to both the wider RSI system and to the regional rūnanga.

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)

- Set the expectation that external partnerships and public science engagement is the norm, not the exception or fringe activity, within the RSI system.
- Develop Atlas Aotearoa – a national data aggregator that includes mātauranga Māori.

This challenge is multi-faceted. Fundamentally it requires a cultural shift within the sector away from a ‘publish or perish’, or even ‘patent or perish’ mentality, to one of ‘partner or perish’. Encouraging the mobility of people and ideas /projects both among the research community but also across into stakeholder groups (be they industry, policy makers or community/iwi groups) will be key.

Coupled with this will be building a greater social license and connection with wider public about the nature and importance of the RSI being undertaken, so over time we have a more RSI-literate society that actively embraces new technological progresses, as well as appreciating and understanding more around mātauranga Māori and the role it can play in shaping Aotearoa’s culture and practices.

There are immediate and tangible initiatives that could be taken to dramatically improve knowledge exchange. Aotearoa's biodiversity information needs to be brought together and made easily available in the one place. It is strongly recommended that a national data aggregator be developed, and that collections and data holders be incentivised, though technical support and funding for targeted digitisation programs, to support the portal.

The Atlas of Living Australia (ALA); a national project focused on making biodiversity information accessible and usable is a tangible example of how this could be achieved. Funded by the Australian Government through the National Collaborative Research Infrastructure Strategy (NCRIS), its role is to aggregate Australia's biodiversity information and make it available online at the Atlas of Living Australia. It is founded on the principle of data sharing – collect it once, share it, use it many times – the ALA provides free, online access to more than 85 million occurrence records, based on specimens from natural history collections, field observations and survey. These records are enriched by additional information including molecular data, photographs, maps, sound recordings and literature. This vast repository of information makes the ALA the most comprehensive and accessible data set on Australia's biodiversity ever produced and is constantly growing, with a range of powerful, open-source mapping and analysis tools, enabling all users (including citizen scientists) to explore and analyse information in new ways.

An ‘Atlas Aotearoa’ could be implemented in New Zealand wherein developments accommodate mātauranga Māori and broader Indigenous knowledge systems.

- Museums, being independent and trusted institutions with a public-facing culture, provide an ideal – but underutilised – vehicle for the translation, extension and engagement of public, business, and stakeholders with science and technology.

As noted above, establishing a greater culture of partnerships within the RSI system will ensure new knowledge, methodologies, and technologies are inherently passed on and implemented by those requiring them in a timely and seamless fashion. This could be further enhanced by encouraging greater use of internships and stakeholder-partnered postgraduate projects, wherein the students become the knowledge transfer agents, and potentially lift the RSI capability of the stakeholder if they end up employed after the project.

Museums also play a critical role in knowledge sharing by being effective translators of overly technical information into more user/public friendly formats. Otago Museum has developed mobile science showcases that have also effectively showcased kiwi research and technologies to stakeholders and the public around the motu. This has had huge impact demystifying science concepts around climate change and nanotechnology, which will heighten the long-term adoption of associated technologies and policies around these areas.

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)

- Core funding should be predicated upon the provision of workforce development plan, and a component of the core funding be used to advance that plan.

As noted above, the provision of core funding should be predicated upon the provision of workforce development plans. Also, in more emerging / fast paced sectors (such as advanced manufacturing and ICT), and in an area as diverse/heterogenous as mātauranga Māori, rather than trying to identify topic-based priorities the focus should shift to building capability in these areas, connecting that capability into the wider RSI environment, and providing that capability with the underpinning infrastructure it needs to thrive. Such a decentralised strategy will sow greater diversity of capability, ideas, and connections in a shorter period of time.

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)

As noted above, a base grant to a research institute should be predicated on a component of it being dedicated to research workforce development. This is critical if these core functions need to be sustained over the long term and succession planning undertaken.

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)

The aforementioned support of a shift to provision of more core funding and a bigger emphasis on capability development should make meaningful progress on providing better workforce outcomes. It will enable organisations to telegraph future needs. Also, a strategic review of core infrastructure will identify critical capability gaps that could be proactively filled.

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)

- It is critical that MBIE confront and address the issue that ~75% of Aotearoa's research collections are currently unsupported within the RSI system, via:
  - Initiating a dedicated work stream to engage museums alongside existing RSI collections and databases.
  - Reviewing and applying best practice from proven international models for designating and supporting nationally significant collection infrastructure.

The first step in this process is to recognise where there is a glaring deficiency in the current RSI investment system with respect to research infrastructure as it relates to collections and databases.

Currently consideration of the collections, databases and allied research support and outreach functions of all the major museums (outside of the nationally funded Te Papa) are missing from all contestable and negotiated approaches, despite these museums hosting 75% of the countries research collections.

This research infrastructure in these museums continues to be supported by subsistence level funding from local bodies, for what are national-level RSI services. This predicament is heightened for Otago Museum which has a disproportionately large and nationally significant collection relative to a diminishing rating base). The result of this chronic underfunding is run down and vulnerable collections and an increasing inability to support the RSI system in their needs, let along undertake original research directly. This is also jeopardising the ability of museums to support wider mātauranga Māori projects, despite being one of the most critical repositories of relevant taonga.

In order to retain protection of, and access to these research collections, as well as to ensure the professional curation of and sharing information about them, core functions include ensuring:

- safe housing and maintenance of collections that are readily available for research access,
- qualified staff capable of caring for and interpreting them – including taxonomists, curators, collection managers, and conservators
- digital infrastructure to digitise content and make discoverable in a format that complies with international standards, that are interoperable and readily accessible.

We are currently unable to ensure the continued provision of any of these functions unless a new funding model is urgently adopted.

The importance of this predicament cannot be overstated.

Collections and data are a key part of Aotearoa New Zealand's bioinformatics and socio-cultural infrastructure. These taonga provide irreplaceable references, or records, against which we are constantly building and modifying our knowledge and understanding of our natural and cultural worlds. Despite an increasing recognition that these collections are indeed core infrastructure that underpins important environmental and sociocultural research, some of Aotearoa's largest and most significant collections fall outside MBIE's 'Nationally Significant Collections & Databases'.

These issues have been well canvased by independent experts previously yet remain unactioned to date:

1. The recent review of funding and prioritisation of environmental research in New Zealand, undertaken by the Parliamentary Commissioner for the Environment (2020, pp22), notes 'the set of 25 NSCDs, designated in 1996 has remained fixed since that time. Yet, they make up only a small subset of the many sources of scientific information used in environmental science in New Zealand.' Furthermore, the criteria applied to determine what constituted a nationally significant collection were ill defined and can equally apply to many collections outside the 25 NSCDs.

2. New Zealand's Biodiversity collections were also the subject of a detailed report by the Royal Society Te Aparangi in 2015. It highlighted the value and importance of national biodiversity collections and their associated taxonomic research for primary production, biosecurity, conservation, environmental monitoring, human and animal health, natural science, national and international legislative obligations and for society and mana whenua

international legislative obligations and for society and mana whenua.

The report documented the decades-long erosion of investment and support, risks to the future sustainability of the collections, and their contribution to New Zealand. It also noted that New Zealand's biodiversity collections are fragmented, the collections infrastructure (physical specimens, taxonomic research, tools and information systems, associated activities) is largely invisible to beneficiaries, and that there is poor strategic alignment between short-term and long-term priorities relevant to the collections and the biodiversity knowledge they contain.

The report concluded that these collections should be recognised as national heritage assets and essential components of the New Zealand science system, that a whole-of-system approach is needed to connect providers, custodians, practitioners, stakeholders, and end-users of biodiversity knowledge, and that a single point of responsibility within government should be established to coordinate a coherent approach to policy and investment in the biological collections infrastructure. (Discovering Diversity: A Decadal Plan for Taxonomy and Biosystematics in Australia and New Zealand 2018-2028).

As noted above there are models by which such databases and collections can be identified and supported, in part, via core funding. Other models exist elsewhere. The UK have developed criteria for assessing the status of collections from which they can designate if it's of national and/or international research merit and assigned 'Designation' status. Such collections are then eligible for additional infrastructural funding: https://www.artscouncil.org.uk/supporting-collections-and-archives/designation-scheme#section-1. The Australian National Collaborative Research Infrastructure Strategy (NCRIS) is another model that could be adapted for New Zealand. (https://www.dese.gov.au/ncris). Both models offer robust and sustainable approaches to identifying and supporting critical collections.