MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

07 March 2025

Ref: DOIA-REQ-0009366-Privacy of natural persons

Privacy of natural persons

Tēnā koe Privacy of natural

Thank you for your email of 7 February 2025 to the Ministry of Business, Innovation and Employment (MBIE) requesting, under the Official Information Act 1982 (the Act), the following information:

> *Specifically, I request the following information:*
> 1. *Any declarations of interest made by Melanie Mark-Shadbolt regarding her position as Co-Founder and Trustee of Te Tira Whakamātaki Ltd while also serving as Co-Director of the BioHeritage Science Challenge.*
> 2. *Any conflict of interest management plans, policies, or actions taken to address her dual role in both organisations.*
> 3. *Any internal correspondence, meeting minutes, or reports discussing potential or perceived conflicts of interest related to Ms. Mark-Shadbolt's roles.*
> 4. *Any assessments or reviews conducted regarding whether her role in the BioHeritage Science Challenge influenced funding decisions related to Te Tira Whakamātaki Ltd.*
> 5. *Any declarations, assessments, or conflict management measures taken regarding Ms. Mark-Shadbolt's relationship to Ron Mark, former NZ First MP, given the BioHeritage Science Challenge was funded under the 2017–2020 Labour-NZ First-Greens Government.*

Background

As context for the response to your request, your email refers to a project funded through the Strategic Science Investment Fund (SSIF) Programmes fund. SSIF Programmes are structured around science platforms.

Under this fund, MBIE makes decisions on who will host a particular platform and on the overall plan of research to deliver against government priorities, using criteria in the SSIF Investment Plan, and contracts with a host organisation to deliver the platform. Funding decisions implementing that plan are made by an independent governance group with expert advice. This devolved process allows researchers and end-users closer to the issues, to design and deliver specific research projects needed to address the overarching question set by Government.

MBIE's contract with hosts include outcome frameworks and key performance indicators (KPIs). MBIE monitors SSIF contracts through annual reporting, regular interaction with governance bodies, and strategic discussions with platform hosts and research leadership. Monitoring is done against the SSIF programmes performance framework.

In relation to your specific request:

- In 2018, the previous government decided to fund a myrtle rust/kauri dieback research platform (Ngā Rakau Taketake) at $13.75 million over three years, and decided as part of Budget 2019 to fund a further $20.75 million for the development of tools to help manage kauri dieback.
- Government agreed that Manaaki Whenua Landcare Research (MWLR) through New Zealand's Biological Heritage National Science Challenge (Biological Heritage NSC: New Zealand's Biological Heritage | Ngā Koiora Tuku Iho | Ministry of Business, Innovation & Employment, Biological Heritage NZ) would host and implement the platform. The Biological Heritage NSC was a long-term programme responsible for research to improve New Zealand's biodiversity and biosecurity. This programme ended in June 2024.
- Research done under Ngā Rakau Taketake was required to align with the research priorities identified in the kauri dieback and myrtle rust science plans (Kauri dieback science plan and Myrtle Rust Science Plan) and with the Biological Heritage NSC's objective of protecting our biodiversity, improving our biosecurity and enhancing our resilience to harmful organisms.
- MBIE assessed a platform plan of research provided by the Biological Heritage NSC and contracted Manaaki Whenua Landcare Research to deliver the plan in May 2019. MBIE decided in June 2019 to extend that contract to include the Budget 2019 funding. The Biological Heritage NSC hosted and implemented the platform over a 5-year period from May 2019 to March 2024.

MBIE responses to your requests

1. *Any declarations of interest made by Melanie Mark-Shadbolt regarding her position as Co-Founder and Trustee of Te Tira Whakamātaki Ltd while also serving as Co-Director of the BioHeritage Science Challenge.*

As context, each paper considered by the governance group of New Zealand's Biological Heritage National Science Challenge included:

(a) A register of the interests of governance group members and directorate.
(b) An agenda item to consider interests in line with conflict-of-interest policies of BioHeritage.

MBIE holds the following documents with declarations of Melanie Mark-Shadbolt's interests as co-Director:

Document name	**Page reference**	**Annex to this letter**
NZ's Biological Heritage National Science Challenge Mana Rangatira Governance Group (MRGG) Agenda Thursday, 2 April 2020 (full paper)	p16	1
NZ's Biological Heritage National Science Challenge Mana Rangatira Governance Group (MRGG) Agenda Wednesday, 3 June 2020 (full paper)	pp19-20	2
NZ's Biological Heritage National Science Challenge Mana Rangatira Governance Group (MRGG) Agenda Wednesday, 6 August 2020 (full paper)	pp12-17	3
NZ's Biological Heritage National Science Challenge Mana Rangatira Governance Group (MRGG) Agenda Thursday 8 June 2023 (excerpt of interest register relating to Melanie Mark-Shadbolt's interests)	pp15-16	4

Ms Mark-Shadbolt's interests prior to her being appointed co-Director are in the document NZ's Biological Heritage Strategic Leadership Group and Knowledge Brokers Interest Register. An excerpt of the document with her interests is in Annex 5.

2. *Any conflict of interest management plans, policies, or actions taken to address her dual role in both organisations.*

The following documents include provisions and policies to manage conflicts of interest in the Biological Heritage NSC and Ngā Rakau Taketake:

- NZBH Collaboration Agreement - Collaboration Agreement - NZBH Collaboration-Agreement - New Zealand's Biological Heritage Data Repository – see Schedule 5 for the conflicts of interest policy.
- NZ Biological Heritage Mana Rangatira Terms of Reference – see 3.XII on page 1 of Ngā Rākau Taketake - Administration - Mana Rangatira (Governance Group) ToR - New Zealand's Biological Heritage Data Repository.
- Biological Heritage Conflict of Interest policy: Ngā Rākau Taketake - Administration - POLICY: Conflict of Interest policy - New Zealand's Biological Heritage Data Repository

As outlined in the Conflict of Interest Policy, all personal, professional, and institutional conflicts of interest were required to be declared in a detailed Interest Register.

Manaaki Whenua Landcare Research advise that for any strategic leadership/knowledge broker meetings where new proposals or funding discussions arose, participants were reminded of the Conflict-of-Interest Policy. If an individual had a conflict, they could respond to questions regarding the proposal or potential funding but were not permitted to advocate for it in any way. Additionally, any conflicted individual did not have voting rights on the proposal.

Manaaki Whenua Landcare Research advises that Ms Mark-Shadbolt did not hold financial delegations. Manaaki Whenua Landcare Research instructed Biological Heritage NSC that no contractors were permitted to have financial delegations for any funds.

3. *Any internal correspondence, meeting minutes, or reports discussing potential or perceived conflicts of interest related to Ms. Mark-Shadbolt's roles.*

The Biological Heritage NSC Mana Rangatira governance group papers from 2 April 2020 meeting (Annex 1) notes that contracts with *Te Tira Whakamātaki Ltd* should include conflict of interest provisions (p6), and that the inclusion of those provisions was in progress (p8).

4. *Any assessments or reviews conducted regarding whether her role in the BioHeritage Science Challenge influenced funding decisions related to Te Tira Whakamātaki Ltd.*

The Audit and Risk Committee of Host Manaaki Whenua Landcare Research's board requested an assurance and risk report from Biological Heritage NSC, including management of conflicts of interest. A report to Biological Heritage NSC Mana Rangatira governance group (MRGG) is in Annex 2 (NZ's Biological Heritage National Science Challenge Mana Rangatira Governance Group Agenda Wednesday, 3 June 2020), see Appendix 4 pp48-54 of the paper in Annex 2.

I have decided to partially transfer this request under section 14(b)(ii) of the Act, in relation to information relating to Manaaki Whenua Landcare Research's Board audit (beyond that provided in

Annex 2). I believe this information to be more closely connected with the functions of Manaaki Whenua Landcare Research.

5. *Any declarations, assessments, or conflict management measures taken regarding Ms. Mark-Shadbolt's relationship to Ron Mark, former NZ First MP, given the BioHeritage Science Challenge was funded under the 2017–2020 Labour-NZ First-Greens Government.*

In relation to this question, Ministers do not make funding decisions on Strategic Science Investment Fund platform projects.

MBIE has no record of any such declarations, assessments or conflict management measures. MBIE is therefore refusing this part of your request under section 18(g) of the Act, that the information requested is not held by the department or venture or Minister of the Crown or organisation and the person dealing with the request has no grounds for believing that the information is either—

(i) held by another department (for itself and for a departmental agency hosted by it or an interdepartmental executive board serviced by it) or interdepartmental venture or Minister of the Crown or organisation, or by a local authority; or

(ii) connected more closely with the functions of another department (for itself and for a departmental agency hosted by it or an interdepartmental executive board serviced by it) or interdepartmental venture or Minister of the Crown or organisation or of a local authority.

Please note some information has been withheld under section 9(2)(a) of the Official Information Act 1982 (OIA) on the grounds of protection of privacy of natural persons. Material that is out of scope for the request has also been redacted.

I do not consider that the withholding of this information is outweighed by public interest considerations in making the information available.

If you wish to discuss any aspect of your request or this response, or if you require any further assistance, please contact OIA@mbie.govt.nz. You have the right to seek an investigation and review by the Ombudsman of this decision. Information about how to make a complaint is available at www.ombudsman.parliament.nz or freephone 0800 802 602.

Nāku noa, nā

Trevor Drage
Manager Strategic Investments
Science System Investment and Performance

NEW ZEALAND'S BIOLOGICAL HERITAGE Ngā Koiora Tūrua Iho | National SCIENCE Challenges

NZ's Biological Heritage National Science Challenge

Mana Rangatira Governance Group (MRGG) Agenda

Date: Thursday, 2 April 2020

Time: 8:30am – 3:00pm

Connect via ZOOM Meeting: https://zoom.us/j/172021117

MRGG Attendees: James Buwalda (Co-Chair), Devon McLean, Emily Parker, Erina Watene-Rawiri, Jan Hania, Daniel Walker, Rob Phillips, Kevin Prime, Glenice Paine

BioH Challenge Attendees: Andrea Byrom (Director), Melanie Mark-Shadbolt (Director Māori), s 9(2)(a) s 9(2)(a)

Observers: Privacy of natural persons (UoW), Privacy of natural persons (MBIE), Privacy of natural persons (MBIE), Privacy of natural persons (PFR)

Apologies:

Time	Item	Format	Led/tabled	Paper No.
8:30am	**Karakia timatanga**			
8:35am	MRGG only	Closed Sesson	James B/Glenice P	
9:30am	MRGG + Director + Director Māori	Closed Session	James B/Glenice P	
10:00am	**BioH Challenge & Observers to join MRGG**			
10:00am	***Standing Items*** • Apologies • Confirm Agenda • DRAFT Minutes of previous meeting - Action Register Risk Register – Challenge and NRT • Interest Register - & declaration of relevant interests prior to meeting	 Approval Approval Discussion Information	 All All Andrea B/Melanie M-S All	 2020/04/01 2020/04/02 2020/04/03 2020/04/04
10:05am	***Financial Statements*** • Financial Update	Discussion	Privacy of natural persons	2020/04/05
10:15am	**Morning Tea (15 min)**			
10:30am	Portfolio overview and investment paper Investment Portfolio overview (A3 View) Draft Dashboard (PowerPoint) MWLR Board Paper	Brief Update Discussion	Andrea B/Melanie M-S	Appendix 1 Appendix 2 Appendix 3 Appendix 4
10:45am	COVID-19: implications and opportunities for the Challenge	Discussion	Andrea B/Melanie M-S	2020/04/06
11:30am	Challenge update from Directors Outcomes Framework T2 Outcomes Framework NRT (roadmaps to 2023 and 2024)	Discussion	Melanie M-S/Andrea B	2020/04/07 Appendix 5 Appendix 6
12:00pm	Annual Update for NRT (forward plan for FY21 due to MBIE late April):	Discussion/ Decision	Andrea B/Melanie M-S	2020/04/08
12:30pm	**Lunch (30 min)**			
1:00pm	Executive leadership team – update on progress PD: Treaty Relationships Manager PD: Strategic Relationship Manager	Discussion/ Decision	Andrea B/Melanie M-S	2020/04/09 Appendix 7 Appendix 8
3pm	**Karakia whakamutunga**			

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NZ's Bio Heritage National Science Challenge
Mana Rangatira Governance Group Minutes

Date: Thursday, 13 February 2020 **Time:** 8am-3pm

Venue: Sudima Hotel Christchurch Airport

Mana Rangatira Attendees: James Buwalda, Glenice Paine, Devon McLean, Emily Parker, Jan Hania, Erina Watene-Rawiri, Rob Phillips, Dan Walker (by video connection)

In Attendance: Andrea Byrom (Director), Melanie Mark-Shadbolt (Director Māori), s 9(2)(a) s 9(2)(a)

Observers: Privacy of natural persons (UoW), Privacy of natural persons (MBIE-Observer) (by video connection)

Apologies: Kevin Prime (MRGG), Privacy of natural persons (PFR), Privacy of natural persons (MBIE)

Item	Description	Action
Closed Session 8:00am to 9:00am		
Closed Session	MRGG Closed Session	
9:00am – 9:30am	MRGG Closed Session joined by Director + Director Māori	
All in attendance from 9:30am	BioH Challenge and Observers join MRGG + Directors • Privacy of natural persons - BioH Challenge • Privacy of natural persons - Observer • Privacy of natural persons - Observer (via video)	
Minutes	***Agreed as true and accurate, with minor corrections:*** ***Moved:*** Erina Watene-Rawiri ***Seconded:*** Glenice Paine *[Action] Correct and finalise previous meeting minutes*	Email to Privacy of natural pe
Matters arising	• Endorse Privacy of natural persons and Privacy of natural persons feedback on proposed MRGG member recruitment process. - Formal paper from Challenge Parties with input from Universities NZ and Science NZ . • James Buwalda to speak to the 27 March University DVC Council Meeting, re Mana Rangatira member recruitment process. • Arrange meetings from MRGG and MWLR Board (intention for joint workshop during MWLR Board meeting 21-22 April).	Privacy of natural persons James B James/Glenice (supported by s 9(2)(a)
Risk Register	• Add new risk: Successfully implementing Tranche 2 and NRT investments. Current=Yellow Target=Green Finalise additional wording of new risks offline - #9. Being asked to do more e.g. NRT with same resource = burden on Challenge. Update current risk to red, and likelihood to Possible → • Endeavor bids due 6 March 2020 • NRT #1. No National agency – who do we work with?	s 9(2)(a) Andrea/Melanie Completed Consider further at

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	○ DOC want to compliment Challenge Investment on different place on pathway. ○ Invited to meet with MPI leadership team. ○ Review effectiveness with Challenge Parties (with stronger focus on implementation 6 monthly). ○ Councils doing what Agency would do, just not as tightly joined up.	April meeting Andrea/Melanie
Interest Register	• James Buwalda – updated Thursday, 13 February - Add: OSPRI Stakeholders' Council – Chair (No financial interest; Stakeholders' Council responsible for monitoring company strategy and long-term objectives, reviewing board performance, and facilitating director succession and recruitment) - Delete: The Centre for International Economics - Delete: Biosecurity 2025 Steering Group • Kevin Prime – updated Friday, 14 February 2020 - Add: Resource Management Act (RMA) Review Panel - Add: MfE Minister's Panel • Jan Hania – updated Friday, 14 February 2020 - Delete: Land and Water Challenge – Innovation Advisor • Noted that ***Interests*** and ***Conflict of Interest*** are not one in the same. Key is how you handle conflicts?	Completed Completed Completed
Financials	• MRGG spend – materiality of overspend pales into insignificance vs importance of work to be done - Reforecast budget to allow work needed to be done. This year more likely than future years. - Privacy of natural pers to check variance column of accountant's report. - Record output(s) of the scoping process for accountability of the $670K. • Co-Director costs shift to management line • Report accepted	s 9(2)(a) s 9(2)(a) s 9(2)(a)
Director Update	• Key points form backdrop to meeting. Useful to put in front of MWLR Board as well. • Outcomes framework – to be completed (with critical steps) and to be used thereafter as primary resource (roadmap) for monitoring implementation (governance) and as basis for communicating overall progress and impact from Challenge • Numbers Summary (e.g. investment leads identified, contracted)- provide for next couple of meetings - MRGG email thoughts on the key things to be included	MRGG Andrea B/Melanie MS

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	- Andrea B/Melanie provide brief assessment for future meetings - Top of the head +/- 10% trend. 5 critical things at a time in view. • Communicate progress on additional $1.6m mentioned previously to MWLR Board. Andrea B sent SLT Paper including comment. • Evidence of decisions being made, and actions being taken important. • Investment Prospectuses - Put draft *Scoping panel reports* online - Revise IPs concisely [redacted] working on). Ensure align with outcome framework. - Roadmap for direction • Focus on audiences - Researchers = ***Scoping Panel Reports*** as is - Stakeholders = Condensed IP, 4 pages - Internal Overview (summary of IPs which summarise the research plans) • Outcome Framework (aka Strategic Plan) with critical steps, priority before April meeting. [a dashboard at the very bottom for quick reference could be useful]	Andrea B s 9(2)(a) s 9(2)(a) Andrea B/ Melanie MS
Attachment 1	• Criteria for prioritisation - Agreed to criteria and relative order/emphasis • Use criteria to revise balance of investment and bring to the next meeting.	s 9(2)(a) Melanie MS
ISAP Membership	• 2 Levels - Higher level (helicopter view) - More detailed science peer-review • MRGG agree to expanding panel up to 8 (5-8 members including Chair) and endorse Terms of Reference. Andrea B paper to MRGG for approval out of session.	s 9(2)(a)
KPIs	• Noted KPI update. • KPIs remaining amber and need to be accounted for to MBIE. • Recorded thanks to [redacted] and [redacted]	
Early Departure from meeting 1:30pm: Daniel W and [redacted]		
Leadership Structure	• Get role description for Co-Directors finalised - James B and Glenice P take on, including timeline and steps and job signing. - Send existing role description, photo of whiteboard - Equal standing, not full time for Melanie (0.6-0.8) (part under research) - Draft for discussing with Andrea B and Melanie MS by 26 February 2020. Seek MWLR Board decision late	James/Glenice Andrea B (completed)

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	April. Noting will be implications for Director cost relative to T1. • Agree in principle on structure put forward in leadership structure paper • Shift 'current SLG members' to research costs • Strategic Relationships Manager at 0.5 to 1.0 • Draft PDs for: Strategic Relationships Manager; Impact Facilitator; Treaty Relationships Manager; Innovation Strategist • Update budget projections • Hold off Impact Facilitator until Q4	Andrea B s 9(2)(a) Andrea B/Melanie MS
TTW MOU	• 'Conflict of Interest' section within draft MOU to be used in contracts with TTW. • No need for MOU, but recognise value of a (simpler) Non-disclosure agreement (NDA), enabling TTW to contribute to Challenge whilst not fettering TTW ability to advocate on matters important to them.	s 9(2)(a) Andrea B/Melanie MS
MRGG/MWLR Board	• Workshop on area of mutual interest - Interface of value for MWLR as host of Challenge and for Challenge being hosted by MWLR, and working towards creating impact together (April 21/22) - James B to confirm details with Privacy of natural persons	Action noted above (James/Glenice)
Meeting closed – 2:40pm		
Next MRGG Meeting: Thursday 2 April 2020 – Rydges Wellington Airport		

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Action Register

Actions from the most recent meeting are shaded. Red = any items that are off track.

Meeting	Action	Responsibility	Status
Feb 2020	1. Endorse Privacy of natural persons and Privacy of natural persons feedback on MRGG appointments. - Formal paper from Challenge Parties with input from Universities NZ and Science NZ.	Privacy of natural persons	Still to be progressed
	2. James Buwalda to attend the 27 March University DVC Council Meeting.	James	***Completed*** *Written briefing due to COVID-19*
	3. Arrange meeting between MRGG and MWLR Board. James to confirm details with Privacy of natural persons (April 21 or 22?) Workshop an area of mutual interest - Interface of value for MWLR as host of Challenge and for Challenge being hosted by MWLR, and working towards creating impact together	James/Glenice	Deferred in light of COVID-19
	4. Risk register, add new risk around successful implementation of T2 and NRT investments (Current Risk = yellow, and Possible →) Circulate offline to finalise wording	s 9(2)(a)/Andrea B/ Melanie MS	***Completed***
	5. NRT Risk #1 – review effectiveness with parties with stronger focus on implementation 6 monthly. Consider more fully at the April meeting.	Andrea B/ Melanie MS	***Completed***
	6. Update Interest Register - James Buwalda - Kevin Prime - Jan Hania	s 9(2)(a)	***Completed***
	7. Reforecast budget noting overspend on Governance this FY - Privacy of natural p to check variance column of accountant's report. - Shift Co-Director costs under management for future - Note additional leadership role costs per Feb item #14.	s 9(2)(a)	***Completed***
	8. Record output(s) of the scoping process for accountability of the $670K	s 9(2)(a)	***Completed***

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	9. Numbers summary to be provided for next couple of meetings - MRGG email thoughts on the key things to be included - Andrea B/Melanie provide brief assessment for future meetings (top of the head +/- 10% trend. 5 critical things at a time in view.)	MRGG Andrea B/ Melanie MS	***Completed***
	10. Communicate progress on additional $1.6m mentioned previously to MWLR Board. Andrea B to send SLT Paper including comment.	Andrea B	***Completed***
	11. Investment Prospectuses - Rename and put draft *Scoping panel reports* online	s 9(2)(a)	In Progress (near completion)
	12. Investment Prospectuses - Revise IPs concisely	s 9(2)(a)	In Progress
	13. Update Outcome Framework with Critical steps before April meeting	Andrea B/ Melanie MS/s 9(2)(a)	***Draft completed***
	14. Use prioritisation criteria to revise balance of investment and bring to the next meeting	s 9(2)(a) / Melanie MS	***Completed***
	15. Paper on ISAP membership to MRGG out of session	s 9(2)(a)	***Completed***
	16. Get role description for Co-Directors finalised. Draft for discussing with Andrea B and Melanie MS by 26 February 2020. Seek MWLR Board decision late April.	James/Glenice	***Completed***
	17. Draft PDs for new leadership roles	Andrea B	In Progress
	18. TTW-Challenge MOU => 'Conflict of Interest' section within draft MOU to be used in contracts with TTW. No need for MOU, but recognise value of a (simpler) Non-disclosure agreement (NDA)	s 9(2)(a) Andrea B/Melanie MS	In progress

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Risk Register

Purpose

The purpose of this paper is to update Mana Rangatira on risk associated with the Challenge and *Ngā Rākau Taketake*, the surge investment.

T2 BioHeritage Challenge Risk Register

Inherent risk	BioHeritage Challenge Risk	Likelihood of occurrence / risk direction	Current residual risk	Target risk
	1. Our failure to build sufficient stakeholder commitment results in loss of momentum for initiatives and action on pathways to impact	Likely ↓		
	2. Our failure to embed partnerships with Māori throughout all Challenge operations and relationship, which in turn results in Māori disengagement and or disenfranchisement from Challenge and Challenge-related activities	Possible →		
	3. Our failure to build the 'right teams' via innovation pathways, and/or 'loss of national capability', results in a loss of momentum towards outcomes and impact	Possible →		
	4. Our failure to scan the external environment results in barriers to adoption and scale-out of Challenge outcomes and impact	Unlikely →		
	5. Our failure to adequately consider sustaining and developing fit-for-purpose science capability (people and infrastructure) in our investment decisions results in an inability to deliver impacts	Possible →		
	6. Our failure to critically review and refresh Challenge investment portfolios, so we maximise progress towards our Mission and the legacy we leave in 2024, results in loss of cohesion and focus	Possible ↓		
	7. Our failure to spot and avert misappropriation/misuse of resources results in intervention by MBIE, and suboptimal delivery of impacts	Possible →		
	8. Our failure to identify and manage risk aversion by Challenge Parties results in a reduced ability to deliver impacts	Possible →		
	9. Our failure to manage the risk that we are asked to do more than we can reasonably do – stretching capacity and detracting from core purpose, contributes to increased risk in the categories above.	Possible ↓		
	10. Our failure to build and maintain a constructive working relationship with the Host hinders delivery of the Challenge mission and associated NRT surge/SSIF investment	Possible ↓		

Inherent / residual / target risk	Likelihood of occurrence	Direction
High	Likely - once every 2-3 years	Improving = ↓
Medium	Possible - once in 10 years	Neutral = →
Low	Unlikely - once every 10-30 years	Worse = ↑

Inherent risk	NgRakau Taketake Risk	Likelihood of occurrence / risk direction	Current residual risk	Target risk
	1. Lack of progress combatting KDB/MR (including reliance on external agencies to implement learnings)	Possible →		
	2. We are unable to engage fatigued stakeholders, particularly Maori	Possible ↓		
	3. Criticism around the Challenge leading this research	Likely ↓		
	4. Lack of transparency and sharing of information	Possible ↓		
	5. Factions within kauri dieback research mean some people are reluctant or unwilling to work together	Possible ↓		
	6. Expectations are higher than scope	Possible ↓		

Commentary on all risk elements (and any recommended changes to status)

COVID-19

COVID-19 and the disruption to people's work, and necessary alterations in the way we communicate and engage with stakeholders will impact various risk elements. On a positive note an NRT zoom conference held at the beginning of the lockdown period was attended by 36 people from numerous organisations, suggesting they place importance on staying engaged, and are comfortable with using the technology even in these difficult times.

Given the rapidly-evolving situation with COVID we provide commentary on all risk elements, not just the medium-to-high risk elements. We'll continue this for the foreseeable future.

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Challenge risk

Risk 1

Connecting with stakeholders will be particularly challenging under lockdown conditions. However, diaries are freeing up as people adjust to the new normal, and both the SLG and our research co-leads are inventing creative ways to connect. Nonetheless stakeholder priorities (and budgets) are likely to remain diverted for the foreseeable future. **No recommended change.**

Risk 2

Significant effort has gone into and continues to go into embedding partnerships with Māori and Treaty based approaches into our work in the Challenge. COVID-19 will put paid to any direct contact for the foreseeable future. This has only a modest impact on Māori researchers or members of the leadership team, but we need to be poised to consider creative ways to connect with people in the regions with technical expertise or biodiversity/biosecurity skills. It has been pleasing to see some faces online, but we need to be mindful that emergency situations often impact at-risk groups the hardest so it will be a matter of being sensitive to their individual situations. Feedback from Māori continues to be favourable, but we recommend **raising the current residual risk to MEDIUM.**

Risk 3

At the last MRGG meeting we said: '*Significant effort has gone into developing criteria for choosing the 'right teams', and processes to ensure transparency when constructing negotiated investments. Whilst it is too soon to change the risk status here, it should be possible to assess how well this approach is working within a few months. No change recommended, but reconsider in April*'. Since February a significant amount of work has gone into this area, which has the potential to significantly extend our reach and connectedness. Normally we would have recommended lowering the risk level. However, given the COVID situation and the limitations of building relationships kanohi-ki-te-kanohi, we **recommend no change** in risk status.

Risk 4

There is likely to be a significant shake-up in whole-of-government priorities in light of COVID-19. In the immediate term we recommend:

Update 'likelihood of occurrence' to POSSIBLE AND INCREASING

Update 'Current residual risk' to HIGH.

Elsewhere we have put time on the agenda to discuss both the implications of COVID-19 as well as the opportunities that are emerging through the crisis.

Risk 5

Another impact of COVID-19 will be on capability in the science and innovation sector and this is likely to bite quickly (i.e. by July 2020 as CRIs in particular re-think their capability needs). At highest risk will be those on 'soft' money (i.e. fixed term contracts), which often includes for example early-career researchers, whose skills we have aimed to nurture in the Challenge. For now we **recommend no change** to the residual risk but suggest **critical re-assessment at the MRGG meeting in June**.

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Risk 6

The work done to clarify our processes around negotiated investments have stood us in good stead to weather the COVID crisis. It is our view that we have maintained a good balance between providing confidence and certainty to teams whilst retaining flexibility in the way we annually refresh our investment portfolios. **No change recommended.**

Risk 7

The Directors, SLG and support team, along with the Host, put considerable effort into ensuring our systems and processes are robust and checked regularly as per Host requirements. However, there will be extra scrutiny on resources across the science sector as the COVID situation bites, and we will need to be extremely vigilant to potential misappropriation of resources. We recommend:

Update 'likelihood of occurrence' to POSSIBLE AND INCREASING

Update 'current residual risk' to MEDIUM.

Risk 8

Whilst we have worked hard on key Challenge Party relationships, these will require active nurturing in the COVID-19 environment. We **recommend** leaving the residual risk as medium for now, but updating likelihood to **POSSIBLE AND INCREASING**.

Risk 9

Related to the 'misappropriation of resources' risk above, there is a possibility that Challenge funds will be seen as easy pickings to commandeer if things get tight. Whilst we **recommend no change now**, we do need to **consider this again in June**.

Risk 10

The recently-added Challenge risk item #10 (relationship with Host Board) has been downgraded from red to yellow (and tracking back to green). However, this relationship will require active effort especially as we work with the Host to consider COVID-19 implications for the Challenge.
Recommend upgrading likelihood status to POSSIBLE AND LIKELY.

NRT risk

Risk 1

We were asked to provide a more in-depth consideration of this risk for this meeting, however with the advent of the COVID crisis things have changed somewhat. On the one hand, people will be unable to get into the bush to take measurements for the foreseeable future. On the other hand, many are viewing this as a self-imposed short-term rāhui – one which for KDB at least, will have significant impact on the rate of spread of the pathogen.

More generally, there will be considerable scrutiny of budget items by Treasury and it is our assumption that funding for operational work by agencies (e.g. surveillance, operational research, etc.) will likely be diverted elsewhere. This will have a significant impact on the ability of science generated in NRT to interface with operational work, in turn curtailing our ability to 'scale up and out' (to use the language of our innovation pathway). Back in February we suggested that this risk could be downgraded to yellow in April depending on progress; we now recommend it **remains unchanged**.

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Risk 2

Stakeholder fatigue (and attention) is likely to be significantly impacted by the COVID crisis. We recommend:

Update 'likelihood of occurrence' to POSSIBLE AND INCREASING

Update 'Current residual risk' to HIGH.

It is worth bearing in mind however, that we have worked hard to build relationships, with recent attendance at cross-sector online hui attracting 30-40 people in lockdown week alone. The Challenge SLG needs to consider creative ways to continue to build on such opportunities, primarily because the COVID crisis has given people pause to re-consider the relationship between people and the environment. If we can position the Challenge to help stakeholders make that connection – and invest to keep people in jobs in regions – we may well find that the level of engagement and enthusiasm for Challenge-related work increases and not diminishes in the medium-to-longer term.

Risk 3

We have not heard much on this. **No change recommended,** although it is worth bearing in mind that with the inevitable funding squeeze to follow, we should be vigilant because agencies and others will target the Challenge.

Risk 4

The Challenge team has continued to work hard on this and it is one activity that can continue under lockdown. For example, Privacy of natural perso has almost completed the kauri dieback stocktake and the Challenge can made it available online. This builds good will in our communities of interest. The Challenge also takes the lead in convening (via Zoom) a number of research and operational groups working on MR and KDB. This has earned some brownie points in the system. In February we recommended downgrading to low risk this month, however given the COVID crisis we suggest **no change at the present time**.

Risk 5

This is still a medium risk. Competitive behaviour has been an ongoing challenge and may well be exacerbated by the COVID situation. **No change recommended.**

Risk 6

We **recommend no change.**

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Biological Heritage National Science MRGG Interest Register

GG Member (as an individual)	**Association* – Relationship** (personal, professional, or family)	Organisation	Role		Financial Interest	Nature of Interest
James Buwalda	Out of Scope					
Glenice Paine						

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GG Member (as an individual)	**Association* – Relationship** (personal, professional, or family)	Organisation	Role		Financial Interest	Nature of Interest
Devon McLean	Out of Scope					
Daniel Walker						
Rob Phillips						

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GG Member (as an individual)	**Association* – Relationship** (personal, professional, or family)	Organisation	Role		Financial Interest	Nature of Interest
Emily Parker	Out of Scope					
Kevin Prime						
Jan Hania						
Erina Watene-Rawiri						

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GG Member (as an individual)	**Association* – Relationship** (personal, professional, or family)	Organisation	Role		Financial Interest	Nature of Interest
Andrea Byrom	Out of Scope					
Melanie Mark-Shadbolt						
	Professional	MPI – Myrtle Rust Stakeholder Group, Kauri Dieback/Myrtle Rust Joint-SSAG	Member		No	Represent TTW on this groups, but both work with the Challenge on NRT.
	Out of Scope					

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GG Member (as an individual)	**Association* – Relationship** (personal, professional, or family)	Organisation	Role		Financial Interest	Nature of Interest
	Professional	Te Tira Whakamātaki	Director		Yes	Director and CEO of TTW. There is the potential for me to have a financial interest if I were to receive a dividend or salary though at present I do not. TTW is a partner of the Challenge via MOU, and has received funding from the Challenge.
	Out of Scope					
	Professional	Te Tira Whakamātaki Foundation	Trustee		No	As a Trustee of the Charitable TTW Foundation I do not receive payment or benefit, though TTW Foundation may benefit from contract work directly or indirectly.

* Association – relationship (personal or professional) between potential external counter party and Biological Heritage National Science Challenge Senior Leadership Group (SLG) Member that is of a tenure or standing that it could give rise to render the SLG member less than independent in his/her judgement of alternatives and selection of the party. Close family members include spouse/partner, siblings, children, parents

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Financial Statements – February 2020

The position for the Challenge and NRT as at end February 2020 is summarised below. Key points are indicated (any areas of risk in red).

1. There is still uncertainty about the ability (or not) to use Revenue in Advance (RIA) to carry forward funds received from MBIE but not yet paid to contractors under the Ngā Rākau Taketake SSIF contract. Nigel Thomson (GM Corporate Services) from the Host is consulting other CRIs and Price Waterhouse Coopers, as well as finance people within MBIE. COVID-19 makes this all the more important to resolve.
2. The original budgeted amount for NRT was $10.75m. MBIE varied the contract deferring $3.5m to FY20/21. A further $2.3m NRT funding is currently unallocated from FY19/20 and will need to be carried forward (RIA).
3. The figures provided in the following pages reflect the position prior to the escalation of COVID-19 in New Zealand. The lockdown will have some effect upon delivery of work and in admin/management travel budget requirements, and we will assess the impact in the coming weeks.
4. The contracts we are currently negotiating have been amended to reflect the uncertain environment we are now operating in. Due dates for delivery of milestones are being entered, but with an * and accompanying text:

   "* *The date indicated is the ideal target date, but the exact dates that are feasible for delivery are in reality unknown at this time. The contractor will use best endeavours to work towards target dates, but both parties acknowledge the obstacles in place due to COVID-19 and will review and mutually agree firmer timelines once it is appropriate to do so. No penalty shall be imposed on the contractor should target dates not be achievable and best endeavours have been employed.*

   Payments may be suspended or terminated if the conditions relating to a Deliverables are not met to the reasonable satisfaction of the Challenge."
5. As per the decision at the last MRGG, the costs of the Co-Director have been shifted to the Management code, including transfer of past expenditure.
6. MRGG confirmed that costs of running the MRGG were to be budgeted at a higher level for the period. The budget was reviewed in that light, but the current lockdown situation may further alter the actual expenditure to June 30th Privacy of natural per will monitor the situation and revise the budget accordingly.

Nb. The accountants table of year to date actuals vs budget ytd is not available due to COVID-19. The % spend vs year to date (67%) columns below summarise the same information.

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Biological Heritage NSC - T2 Budget 2019/20

Budget category	FY 2019/20 Approved Bus Plan	FY 2019/20 Current Forecast	Variance to Bus.Plan	% spend YTD Feb 29 (67%)	
IMPACT 1 - Whakamana | Empower	$929,600	$561,300	-$368,300	53%	SO2 not allocated yet, defer in part to FY21
IMPACT 2 - Tiaki | Protect	$1,097,600	$1,034,620	-$62,980	51%	SO3 begun and SO5 frontloaded. SO4 not allocated, defer in part to FY21
IMPACT 3 - Whakahou | Restore	$929,600	$687,705	-$241,895	51%	SO6 not fully allocated, defer in part to FY21
Strategic Initiatives & Supporting Architecture	$170,000	$611,557	$441,557	28%	Supporting Architecture allocations made
Research yet to be allocated (c. 20%)	$449,200	$0	-$449,200	NA	Allocations made
Director Discretionary (944009-0002)	$150,000	$150,000	$0	56%	
Contingency/Yet to allocate	$25,000	$25,000	$0	NA	
Sub total Research	*$3,751,000*	*$3,070,182*	*-$680,818*	47%	
Research Support	$1,122,928	$903,032	-$219,896	57%	
- Research Support (0301)	$325,487	$277,689	-$47,798	66%	Part shifted to NRT, defer decision on additional support staff
- SLG (0401)	$383,784	$355,628	-$28,156	41%	
- BH Leadership (Exec) (0403)	$413,657	$269,715	-$143,942	70%	Shifted Co-Director to Management
Sub total (Research + Support)	**$4,873,928**	**$3,973,214**	**-$900,714**		
Science Engagement	$679,907	$356,282	-$323,625	76%	
- Communications (0501)	$362,000	$58,842	-$303,158	29%	Delayed Comms Mgr. Redirected funds to research/supporting architecture
- Engagement/KBs (0502)	$317,907	$297,440	-$20,467	85%	
Governance and Management	$532,271	$666,476	$134,205	58%	
- Mana Rangatira (0201)	$200,900	$205,900	$5,000	83%	Travel/operating was tracking high, post COVID-19 need to monitor/review
- Management (0101)	$331,371	$460,576	$129,205	47%	Moved Co-Director to management budget
TOTAL	**$6,086,106**	**$4,995,972**	**-$1,090,134**	**52%**	(Mgt & Support = $1,925,790)
Adjusted Governance and Management %		6.5%			Adjusted as per KPMG review guidelines. Over 5 years tracking towards 4.1%

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Biological Heritage NSC - T2 Budget

Budget category	FY 2019/20 Current Forecast	FY 2020/21 Budget	FY 2021/22 Budget	FY 2022/23 Budget	FY 2023/24 Budget	Total to June 2024
IMPACT 1 - Whakamana | Empower	$561,300	$970,000	$1,067,000	$1,067,000	$1,067,000	$4,732,300
IMPACT 2 - Tiaki | Protect	$1,034,620	$1,792,500	$1,751,750	$1,751,750	$1,751,750	$8,082,370
IMPACT 3 - Whakahou | Restore	$687,705	$1,240,000	$1,364,000	$1,364,000	$1,364,000	$6,019,705
Strategic Initiatives & Supporting Architecture	$611,557	$735,000	$735,000	$735,000	$735,000	$3,551,557
Research yet to be allocated (c. 20%)	$0	$690,000	$690,000	$690,000	$690,000	$2,760,000
Director Discretionary (944009-0002)	$150,000	$150,000	$150,000	$150,000	$150,000	$750,000
Contingency/Yet to allocate	$25,000	$39,685	$42,382	$48,774	$51,048	$206,889
Sub total Research	*$3,070,182*	*$5,617,185*	*$5,800,132*	*$5,806,524*	*$5,808,798*	*$26,102,821*
Research Support	$903,032	$1,266,386	$1,357,394	$1,375,261	$1,437,140	$6,339,213
- Research Support (0301)	$277,689	$328,411	$362,941	$353,156	$386,569	$1,708,766
- SLG (0401)	$355,628	$541,743	$552,483	$565,522	$578,883	$2,594,259
- BH Leadership (Exec) (0403)	$269,715	$396,232	$441,970	$456,583	$471,688	$2,036,188
Sub total (Research + Support)	**$3,973,214**	**$6,883,571**	**$7,157,526**	**$7,181,785**	**$7,245,938**	**$32,442,034**
Science Engagement	$356,282	$440,818	$485,628	$457,017	$602,602	$2,342,347
- Communications (0501)	$58,842	$342,739	$385,588	$354,976	$498,520	$1,640,665
- Engagement/KBs (0502)	$297,440	$98,079	$100,040	$102,041	$104,082	$701,682
Governance and Management	$666,476	$694,474	$694,655	$711,808	$729,510	$3,496,923
- Mana Rangatira (0201)	$205,900	$194,234	$178,800	$179,826	$180,872	$939,632
- Management (0101)	$460,576	$500,240	$515,855	$531,982	$548,638	$2,557,291
TOTAL	**$4,995,972**	**$8,018,863**	**$8,337,809**	**$8,350,610**	**$8,578,050**	**$38,281,304**
Adjusted Governance and Management %	6.5%					4.1%

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NRT Surge - Budget 2019/20

Budget category	FY 2018/19 Actual (2 mths)	FY 2019/20 Approved Bus Plan	FY 2019/20 Current Forecast	Variance to Bus.Plan	% spend YTD Dec 31 (50%)	
NRT - Kauri Dieback	$463,847	$1,134,295	$3,395,182	$2,260,887		Allocations made
NRT - Myrtle Rust	$54,531	$225,557	$945,749	$720,192		
Yet to allocate (inc D Discretionary	$0	$8,802,400	$0	-$8,802,400	NA	MBIE defer $3.5m of 2019/20 SSIF funding to smooth profile
- KDB yet to be allocated	*$0*	*$7,373,637*	*$0*			and allocated $ to NRT Goals. Unallocated $ received FY19/20 to be
- MR yet to be allocated	*$0*	*$1,428,763*	*$0*			carried forward
Sub total Research	***$518,378***	***$10,162,252***	***$4,340,931***	***-$5,821,321***	42%	
NRT Research Support	$700	$362,607	$314,675	-$47,932	65%	
- NRT Res Support (0031)	$0	$80,234	$61,734	-$18,500	58%	
- NRT Leadership (0043)	$700	$282,373	$252,941	-$29,432	67%	
Sub total (Research + Support)	**$519,078**	**$10,524,859**	**$4,655,606**	**-$5,869,253**		
NRT Comms & Engagement (KBs)	$0	$206,063	$224,798	$18,735	63%	
- NRT Science Comms (0051)		$86,753	$95,393	$8,640	64%	Split some operating & contingency between Challenge and NRT
- NRT Engagement (0052)		$119,310	$129,405	$10,095	62%	Extended KB contract, increased allowance for travel.
TOTAL	**$519,078**	**$10,730,922**	**$4,880,404**	**-$5,850,518**	**44%**	

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NRT Surge - Budget

Budget category	FY 2018/19 Actual (2 mths)	FY 2019/20 Current Forecast	FY 2020/21 Budget	FY 2021/22 Budget (10/12 mths)	FY 2022/23 Budget (12 mths)	Total to June 2023
NRT - Kauri Dieback	$463,847	$3,395,182	$7,337,266	$7,717,596	$6,356,229	$25,270,120
NRT - Myrtle Rust	$54,531	$945,749	$2,070,024	$1,572,404	$0	$4,642,708
Yet to allocate (inc D Discretionary	$0	$0	$761,883	$765,730	$426,800	$1,954,413
- KDB yet to be allocated	*$0*	*$0*	*$761,883*	*$765,730*	*$426,800*	
- MR yet to be allocated	*$0*	*$0*	*$0*	*$0*		
Sub total Research	***$518,378***	***$4,340,931***	***$10,169,173***	***$10,055,730***	***$6,783,029***	***$31,867,241***
NRT Research Support	$700	$314,675	$379,072	$382,671	$395,019	$1,472,137
- NRT Res Support (0031)	$0	$61,734	$105,578	$100,318	$103,489	$371,119
- NRT Leadership (0043)	$700	$252,941	$273,494	$282,353	$291,530	$1,101,018
Sub total (Research + Support)	**$519,078**	**$4,655,606**	**$10,548,245**	**$10,438,401**	**$7,178,048**	**$33,339,378**
NRT Comms & Engagement (KBs)	$0	$224,798	$302,273	$311,599	$321,952	$1,160,622
- NRT Science Comms (0051)		$95,393	$166,884	$172,273	$178,574	$434,550
- NRT Engagement (0052)		$129,405	$135,389	$139,326	$143,378	$404,120
TOTAL	**$519,078**	**$4,880,404**	**$10,850,518**	**$10,750,000**	**$7,500,000**	**$34,500,000**

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COVID-19 Impacts and Opportunities

Purpose

The purpose of this paper is to provide Mana Rangatira Governance Group with an update on the impacs and opportunities that COVID-19 presents for the Challenge.

Overview

This is a quick overview and assessment of the impact of COVID as of Friday 27 March. Things may have changed by the time you read this, let alone in a week's time!

Impacts

Financial and contract delivery

- See narrative in the financial paper. Too early to evaluate impact on delivery and thus implications for carrying over funds. Note the need for urgency in dealing with the RIA issue for NRT with MBIE.
- We are regularly checking in with teams and have asked them to be proactive if they foresee delivery issues emerging. We are also working with MW as the Host on a coordinated response to MBIE on impacts on contract delivery.
- Payment of debtors is being closely coordinated with MW's accountants as this requires a staff member to be on-site to process payments.

Personnel

- No-one in the Support, SLG or research leads has serious issues that we know of at the moment, although the situation has impacted on everyone to some extent. Most seem settled into working at home with a high degree of variability in ability to work productively. Lots of sharing of tools and tips for online working.
- We have provided the Host with a list of critical roles and functions (co-chairs; co-Directors; some Support staff) and stand-ins if these individuals become incapacitated.
- On the other hand we have all commented just how easy it is to get hold of previously busy people at the moment. Whilst being sensitive to people's individual situations, there are a range of emerging opportunities to connect and get some work done.

Essential services

- Our Host is not classed as one of the essential services as a whole organisation. However, biosecurity is an essential service (more later on the opportunities).

Aligned research

- MBIE are foreshadowing a potential rollover of current Endeavour programmes, meaning that they would not be running a bidding round in 2021. This may actually be a positive for our efforts to align and de-fragment existing research.

Leveraging investment

- There is of course likely to be significant pressure on public sector funds over the next several years. This will have a significant impact on our ability to leverage funding from co-investors and/or key stakeholders. We recommend that MRGG spend some time discussing the implications of this for our strategic approach.

Opportunities

Our teams have brainstormed a number of opportunities. We apologise for this being somewhat of a brain dump at this stage.

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Rod Oram foreshadowed a stepwise approach to kick-starting the economy: https://www.newsroom.co.nz/2020/03/27/1102149/we-face-two-herculean-efforts-to-save-economy

This may be a useful playbook to think about some of the opportunities to pivot BioH to be ready to help. We are extremely fortunate that in BioH the 'Empower, Protect, Restore' framework is an enduring framework from which to springboard, and that our research leads are all up for deploying resources in innovative ways that deliver what is needed to create impact in a post-COVID world.

Storytelling, narratives, governance and policy

- One of the biggest opportunities is around storytelling and narratives. We all feel it is imperative to start now with re-shaping positive narratives, and contribute to coordinated thinking at a national level that sets Aotearoa on a path to a very different future.
- We need to roll out messages about re-connecting people with places, and that COVID (in the longer term) potentially presents regional employment opportunities.
- Some of our existing investments (e.g. SO7) are poised to help with creating innovative processes and frameworks to make fair and equitable long-term decisions at local, regional and national levels.
- Creating governance, policy and frameworks that make the most of the opportunity and yet do not undermine national efforts to kick-start the economy. Ensuring that we don't default to BAU 'ratchet up the economy and ratchet down the environment' approach.
- Business models and financial levers going forward can be more attentive to the environment.
- Alternative governance systems e.g. iwi monitoring their boundaries – proactively and PART of our new governance arrangements; protection being viewed favourably and as a right.
- Storytelling NOW – what evidence can we pull out and put forward via our channels? Pre-empt conversations that will be had by government.
- We have seen evidence of the power of government in times of crisis. Government CAN do something as amazing and drastic as this – haven't done it for KDB and CC, but could! How do we shape narratives to make that happen now?
- Partnering with the 'right' people – especially iwi – to re-boot a sustainable economy.

Mobilising workforces

- Especially in sectors that have lost employment e.g. forestry, tourism – re-deploying to collect data in the regions, kill pests, carry out restoration activities.
- Opportunity to do research very differently e.g. via kaitiaki in regions, etc.
- Using biodiversity credits to help generate employment in the regions once the lockdown period has finished.
- Protecting conservation workers and developing good physical distancing protocols while at work.
- Gradually expanding the list of essential services and ensuring that conservation is one! (with appropriate physical distancing protocols).
- NZ dollar has fallen so demand for commodities may continue to be robust? How will that impact some of our key stakeholders and what are the opportunities? (e.g. Farming and Nature Conservation)

Biosecurity

- Biosecurity is essentially pandemic prevention or protection – we need to re-frame it as such. Future thinking: assuming NZ achieves 'containment', what biosecurity tools can be brought to

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bear on detecting the virus; will our values-based risk models be useful? How will we identify risk pathways?

- Understanding how pests of biosecurity concern 'flow' and spread requires better epidemiological models – perhaps this was overdue in the current situation. Pathogen pathways.
- Can we do some synthesis pieces via the C&A Think Tank? Including data and analysis capability?
- What can the biosecurity system learn and how can we improve?

Ecological restoration and public health

- e.g. https://ecohealthglobal.org
- Biological heritage ((Te Taiao, not the Challenge itself) transcends politics – fundamental part of our wellbeing and who we are. This is a big opportunity to re-set a positive narrative.
- At least one team is incorporating consideration of these linkages into understanding drivers and barriers to restoration, and getting on the front foot early so that we are ready when the country comes out of lockdown in spring.

Data synthesis and integration

- Data – synthesis, integration, re-use and sharing – is an obvious opportunity that can be taken advantage of whilst in lockdown. Teams are already putting some thought into collating data sets while they have the time and freedom for discussions.

A note of caution

Whilst the above brain-dump presents some exciting opportunities – we do need to be mindful that many in the communities we connect with are not as fortunate. It may be worth considering the development of an ethics framework from which we engage in a post-COVID world. Many in the leadership team are acutely aware that our privileged positions should not be taken lightly and are committed to doing what we can to re-build a prosperous New Zealand.

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Challenge Update from the Director and Director Māori

Purpose

The purpose of this paper is to provide Mana Rangatira with an update on Challenge progress including *Ngā Rākau Taketake* (NRT).

Key points

Since the February Mana Rangatira meeting we have had the following areas of focus:

- Continuing implementation of Challenge T2 and Ngā Rākau investments, particularly identifying co-leads and lead providers and getting contracts executed.
- Seeking approval from MRGG for new investments, including a paper to the MW Board (in progress at time of writing) for approval of Challenge investment to 2021.
- Drafting position descriptions for the 'Executive' leadership team as discussed at the February MRGG meeting.
- Ensuring that we have a full suite of tools for MRGG to evaluate progress at every meeting as well as on an annual basis.
- COVID-19: pivoting the team into working remotely, and assessing the impacts and opportunities for the Challenge.

Tranche 2 and NRT implementation

We largely covered this on 23 March during the discussion on the investment portfolio, but are happy to have further discussion on this especially in light of any potential COVID-19 impacts on progress.

Seeking approval for new investments (Appendices 1-4)

For MRGG members that were not present at the meeting on 23 March to discuss the investment portfolio, the documentation is all provided in **Appendices 1-4** (including the DRAFT paper to the MW Board). Seeking approvals from the Board for at least FY21 is imperative now because we have contracted almost all the work we previously had approval for. We will be unable to complete contracting for future work (either in FY20 or FY21) until that approval is forthcoming.

Executive leadership team

See paper ***2020/04/09***

Tools for MRGG to asses progress to creating impact

Mana Rangatira to note that you now have tools at your disposal to assess progress (as requested in February), including:

- The Outcomes Frameworks for the Challenge and NRT (**Appendices 5 and 6**), including the 'roadmap' of critical steps. These are still in draft form, but all pathways with Critical Steps should be completed by June as the Annual Workplans are completed by the research teams.
- The dashboard of progress (**Appendix 2**) – feedback is welcome.

COVID-19 impacts and opportunities

See paper ***2020/04/06***

Microsoft Teams

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Over the past month the Challenge Support Team, SLG and research leads have been trialling Microsoft Teams. Teams is a tool that enables much better management of systems and processes; stronger project management and assignment of tasks; video conferencing; and a host of other tools.

Teams is in 'pilot' stage in Manaaki Whenua, so they have provided it to the Challenge on the proviso that we seek minimal IT support other than the basics. This is completely understandable especially given the lockdown situation.

Nevertheless, 'Teams' is useful and we would like to roll it out to the MRGG. Our biggest question is whether you would find it useful, so this part of the discussion is to gauge your interest. It may be helpful as a mechanism to check in with us on a more regular basis (as Jan in particular has requested), because relevant information is visible to everyone.

Process for appointment of new MRGG members prior to 30 June

A reminder to make time during the meeting to discuss the process for appointing or rolling over MRGG meetings in light of the COVID situation.

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Review of DRAFT NRT SSIF Annual Update (20/21)

Purpose

The purpose of this paper is to provide Mana Rangatira with an opportunity to comment on the DRAFT Ngā Rākau Taketake SSIF Annual Update 2020-2021 due at the end of April.

Overview

The SSIF Annual Update 2020-2021 is a forward-looking plan for NRT investment that outlines how SSIF funding will be used over the coming year (1 July 2020 – 30 June 2021) to deliver the SSIF outcomes outlined in the Platform Plan for Ngā Rākau Taketake, and

- Confirms that the SSIF investment is still aligned with the strategic intent outlined in the Platform Plan;
- Explains the need for any changes to the SSIF investment strategy; and
- Identifies any risks to the delivery of the Platform objectives.

It is due to MBIE at the end of April 2020.

Risks

None

Recommendations

That Mana Rangatira **reads** the DRAFT Ngā Rākau Taketake SSIF Annual Update 2020-2021 **and sends feedback** to the Director and Director Māori before the 17th of April.

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BioHeritage National Science Challenge - Draft

Ngā Rākau Taketake (NRT) SSIF Annual Update 2020 – 2021

This Annual Update outlines how SSIF funding will be used over the coming year (1 July 2020 – 30 June 2021) to deliver the SSIF outcomes outlined in the Platform Plan for Ngā Rākau Taketake, and

- Confirms that the SSIF investment is still aligned with the strategic intent outlined in the Platform Plan
- Explains the need for any changes to the SSIF investment strategy, and
- Identifies any risks to the delivery of the Platform objectives.

1. Strategic Drivers

A number of positive and negative drivers, external and internal, are expected to influence NRT SSIF plans over the coming year. They are noted below, following which is commentary on how NRT will respond to these drivers.

External

- Allocation of additional funding for Kauri Dieback (KDB);
- Completion of the Myrtle Rust (MR) Science Plan & its prioritisation;
- Ongoing spread of both pathogens;
- Lack of certainty around the National Pest Management Plan (NPMP) and ongoing operational funding;
- Track closures and a lack of compliance or support for those;
- Greater participation of Māori in biosecurity and the protection of forests;
- Research investment and the success of research funding applications; and
- COVID-19 response and recovery.

Internal

- Process development within BioHeritage Challenge – including building right teams etc.;
- Ability to prioritise the priorities;
- Host relationship; and
- COVID-19 implcations on host, challenge parties, leadership team, lead organisations and lead researchers.

Response to drivers

The BioHeritage Challenge has developed a set of guidelines and standards to sit alongside the principles and processes detailed in the BioHeritage Challenge 2019-2024 Strategy that collectively will continue to underpin science investment decisions, and pathways to impact, for this SSIF Platform. These collective procedures (guidelines, standards, principles, processes) are purposely designed to ensure the Challenge is agile in its ability to respond to drivers and **flexible enough to purposefully balance urgent and immediate deliverables.** This will be increasingly important during the COVID-19 response and recovery.

In order to **ensure openness and transparency**, Challenge processes, guidelines and standards are available online, as too will be information on current and upcoming research investments and outcomes. Ensuring NRT takes a **strategic** and **"whole of system" view across the entire innovation pathway and all relevant investments** is vital over the 2020/2021 period as RSI investment responds to evolving priorities. Now more that ever the NRT Platform will need to optimize coordinated national effort in KDB/MR research.

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2. SSIF Funding

NRT has agreed on seven key strategic science investment areas listed in table below. These reflect the nine Indicative Research priority areas included in the SSIF plan but have been refined by the BioHeritage Plant Pathogen Scoping Group following mapping of the research landscape and in consultation with a wide range of stakeholders. These investment areas also align closely with themes within the KDB and MR science plans.

Funding allocations to the seven key investment areas are indicated in Table 1 below, and include the initial "surge funding" of $8.75M for KDB and $5M for MR, and the yet to be contracted supplementary allocation of $20.75 in 2019. These allocations not only reflect the research prioritisation and funding recommendations of the MR and KDB SSAGs, but also redresses historical chronic under-funding in areas essential to deliver impact. Such as;

- Māori-centered research, kaupapa Māori and research involving Māori, and application of Mātauranga Māori-derived solutions, starting at $4M
- Mobilising for Action investment to develop new communication tools ~$4M
- Risk assessment and ecosystem impacts ~$4.9M

Table 1: Planned investment as approved by Mana Rangatira (2 April 2020).

Investment area	Current funding to June 2020	Suggested investment to June 2021	Suggested investment FY22 $'000 (10% available for flexibility/pivot) *	Suggested investment FY23 $'000	Total Spend $'000 (% Research Funding) **
Goal 1 – ORANGA (Te Mauri) This work is aimed at developing a Mātauranga and Kaupapa Māori-led programme of work to restore the mauri of the rākau (tree) species threatened by these pathogens and their associated environments. It brings together Māori, researchers, councils, and other landowners and stakeholders.	100,000 (yr18/19) 500,000	1,106,210	1,200,000	1,100,000	$4,006,210
Goal 2 – MOBILIZING FOR ACTION This investment is focused on: • Designing and carrying out multi-faceted national campaign & local actions. • Developing an end-user accessible, geo-referenced map of positive sites, sampled sites and hazard ratings to help inform and drive community initiatives to combat kauri dieback and myrtle rust. • Engaging with community and school groups through participatory science teaching methods.	500,000	1,206,210	1,200,000	1,100,000	$4,006,210
Goal 3 – INTEGRATED SURVEILLANCE A Mātauranga Māori surveillance framework is being developed for kauri dieback and myrtle rust, co-designed with mana whenua hapū/iwi kaitiaki and central and local government and informed by	400,000 (yr18/19) 710,000	999,870	800,000	480,000	$3,389,870

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traditional understanding of land and forest management and use.					
Goal 4 – CONSERVATION & RESTORATION The aim of this investment is to help prevent the extinction of iconic species and to protect at-risk species and ecosystems and taonga rākau (trees) and locations.	700,000	1,700,000	1,700,000	1,447,060	$5,547,060
Goal 5 – RISK ASSESSMENT, ECOSYSTEM IMPACT In this investment, standardised impact measures are being developed using existing work and strengthening incorporation of kaupapa Māori approaches to increase their relevance to a wider range of communities. These in turn inform more comprehensive risk assessment for ecosystem impact, and identify more comprehensively where risk lies.	700,000	1,400,000	1,600,000	1,230,720	$4,930,720
Goal 6 – HOST PATHOGEN & ENVIRONMENT In this investment, the role of factors such as disturbance associated with animal and human activity, topography, weather, soil type, aspect, pest control, other bio-physical factors in disease development is being determined, both under current conditions and under future climate change	500,000	1,700,000	1,500,000		$3,700,000
Goal 7 – CONTROL, PROTECT & CURE **(Tools for detection and management)** This investment is developing a suite of fully integrated management tools and approaches to protect taonga/iconic trees and locations.	400,000	1,100,000	1,100,000	998,040	$3,698,040
Storytelling	230,931	195,000	190,000	409	$616,340
Directors' Discretionary	0	$250,000	$250,000	$250,000	$750,000

3. SSIF Funded Research and Activities

a. Strategic intent

NRT will continue to implement and deliver to its strategic intent as outlined in the our SSIF plan. In 2020-2021, NRT will build on substantial groundwork undertaken over the last year and indeed from Challenge investments in Tranche 1.

Key examples are:

- Building on the learnings from the highly successful *Kauri Rescue* community-led project in NRT's *Mobilising for Action* investment to develop new communication tools;
- Building on novel rongoā approaches and early work to develop culturally acceptable seed banking approaches in NRT's *Oranga*;

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- Mātauranga based solutions for KDB inactivation are part of *Tools for Detection and Management (control, protect and cure).*

b. Impact

We will be focussing on three key areas in 2020-2021:

Building collaborations and alignment of research effort

During FY20/21 we will continue to leverage and align SSIF investment to provide opportunities to stimulate integrative co-innovation in plant disease management that is not currently being achieved through other investment mechanisms in the New Zealand innovation system.

Stakeholder engagement

We have been strengthening, repairing and making new connections between researchers, agencies, kaitiaki, communities and interest groups by hosting regular MR and KDB community information sharing via zoom hui. Hui are very well attended and support free-flow of information such that: intelligence on spread of diseases is timely; research plans are shared and synergies identified; and research outcomes are being shared early with those implementing solutions. The initiation of KDB community meetings have already been supported by many attendees form a wide variety of entities, who have noted it as an "NZ first" in terms of bringing together diverse stakeholders in a safe environment and one that takes essential steps towards build trust and collaboration between previously fragmented researchers and stakeholders. Hui will be ongoing throughout the FY20/21; format and frequency will be adapted as required to maximise benefit to all participants. NRT will be collaborating with MPI and DOC to host joint MR and KDB symposia later in 2020.

Co-innovation and co-investment

Increasing interaction between NRT researchers and agencies is resulting in early identification of opportunities for co-innovation and co-investment. During FY20/21 we will take advantage of this and actively work with investment area leads to identify opportunities for co-investment to expedite development of solutions. For example we will work with DOC who are seeking information on effectiveness of disinfectants and are contributing co-funding to the *Tools for Detection and Management* (TDM) and *Oranga* investment areas; research is being co-designed to ensure outcomes can be rapidly implemented. MPI have also indicated several areas of complementarity with TDM, and will contribute co-funding to develop management methods for infected areas. We are finalising co-investment with MW SSIF for a high priority project investigating Kauri landscape genomics that sits within NRT's *Conservation and Restoration* research goal. We note though that co-investment opportunities will be limited during the COVID-19 recovery phase.

c. Science excellence

Criteria for selection of Investment area leaders have been developed and applied to select credible leaders of all seven investment areas; co-leads have strong track records in delivery of excellent science and broad collaboration.

Key focus areas for 2020:

- Working with leads of all research investment areas to build the right teams, and team that are inclusive, especially teams of newly contracted investment areas. By way of example, the *Mātauranga Māori-based surveillance framework* team already includes researchers from

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three CRIs, MPI, DOC, Māori communities and industry and will broaden further as the work progresses;

- Identification of further opportunities to leverage international expertise as teams complete Annual Workplans;
- Achieving satisfactory feedback on direction of annual workplans by ISAP and Mātauranga Māori/Indigenous knowledge holders (NRT KPI);
- Application of flexible contracting processes as required to adapt research in response to early findings/changes in the funding landscape/fast-fail projects;
- Testing of framework mentioned in MMSF research plan;
- Annual hui or wānanga to share information across our teams prior to all teams submitting their workplans; and
- Ensure authorship of emerging NRT publications comprise two or more organisations and/or Māori researchers/entities.

d. Horizons and co-funding/leverage

The stock-takes of KDB and MR research will continue to be updated with new information of delivery and publications. Ongoing analysis of any progress and changes from current research investments will continue to provide clarity of the relative proportion of investment in generating new ideas, developing emerging ideas, or leveraging proven ideas (Horizons 1-3). We will continue to utilise the flexibility provided by the SSIF platform to bolster research effort in areas of greatest need across the research horizons, and to leverage the SSIF Platform to encourage new investment, to deliver the greatest impact. This includes our focus on proportionately greater SSIF investment into H2-H3 research for both pathogens. Urgent delivery for 2021 includes; high throughput rapid detection and surveillance tools to determine the presence or absence of KDB and MR.

e. Investing in people

Investing in and developing inter- and trans-disciplinary research teams

Key focus areas for 2020:

- Building capability in KDB/MR research by embedding emerging researchers and students, Māori researchers and kaitiaki into teams (NRT KPI);
- Maintaining a strong focus and funding for generation of new ideas or developing emerging ideas research by resourcing and consolidating diverse high performing research teams (NRT KPI).

Developing new capability

We will continue to reach out and actively embed/include; Māori researchers, knowledge holders; students/rangatahi and kaitiaki across all of NRTs high performing teams (NRT KPI).

f. Vision Mātauranga

A key focus is the continuation of our successful efforts to add value through integration of Mātauranga Māori and Te Ao Māori, including investment in Māori-centred research, kaupapa Māori: *Te mauri o te rakau, te mauri o te ngahere, te mauri o te tangata*. This work builds on projects begun in Tranche 1 of the Challenge, and includes a suite of kaupapa Māori projects that aim to restore the collective health of trees, forests and people, by connecting to and resourcing Māori communities and their environmental knowledge holders to explore solutions embedded in mātauranga Māori. As part of the delivery of our workplan, the team will continue to reach out

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to ensure ongoing co-development and testing of progress being made across all our investment areas. This continues to address and fulfil the needs and priorities of hapū and kaitiaki, and clearly builds on the links made across all our investments in NRT.

This kaupapa will be supported by a Māori Knowledge Broker to provide guidance on the inclusion of Mātauranga Māori and Te Ao Māori.

Key focus areas for 2020/21:

- Ensuring 100% of investments have Māori collaborators embedded in research projects (NRT KPI) and all investments score an average of "4" in the VM scale, as evaluated by Mana Rangatira;
- Culturally appropriate protocols and agreements have been developed and are in place for collection, use and management of Māori data arising from this programme;
- A myrtle rust wānanga has been held with kaitiaki;
- A seed conservation wānanga has been held with kaitiaki;
- Best practice culturally acceptable methodology for seed/germplasm collection and protection has been agreed and shared with MR and KDB communities of practice (NRT KPI); and
- Establish baseline measure of confidence of Māori in connections made, research progress and ability to deliver impact (NRT KPI).

g. Domestic and international collaboration

Establishing inclusive collaborations will be achieved through these key initiatives for 2020/21;

- Domestic collaboration will continue through the successful MR and KDB community information hui;
- Our ISAP panel will continue to provide science review of all research and work plans;
- Building new international linkages between researchers within Te Mauri o te Rākau and UK based Kew Gardens/Millenium seedbank; and
- Our strategic invitation to a panel of international experts attending our sponsored 2019 Phytophthora and MR Symposia, is now progressing to research based collaborations with Privacy of natural persons

h. Support for nationally significant databases and collections

Two new intiatives are being scoped by NRT in 2020/21;

- We are currently contributing to a proposal to leverage new resource to save a significant international culture collection of related (to KDB) Phytophthora isolates from being lost through disestablishment of this key international curation in USA;
- Our conservation and restoration team are participating in the review of the future curation of the living kauri germplasm collection (initiated during Scion's six year Healthy Trees Healthy Future (HTHF) programme, which ended in 2019). We will be contributing to the future plans for this collection and is expected to be resolved by the end of 2020. Our team will ensure key decision making involves each mana whenua who have contributed their germpasm and knowledge to the HTHF programme.

4. Key Actions

Key Actions to be initiated in the coming year(s) (TBC):

- All seven research investment areas have head contracts with a lead institute;

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- All seven research investment areas have annual workplans which have been reviewed by ISAP;
- All seven research investment areas workplans have been endorsed by Mana Rangatira.

5. Additional or Confidential Comment

Given the rapidly-evolving situation with COVID we note there are risks for the foreseeable future. COVID-19 will disrupt people's work, and necessary alterations in the way we communicate and engage with stakeholders will impact various work programmes. On a positive note an NRT zoom conference held as the beginning of the lockdown period was attended by 36 people from numerous organisations, suggesting they place importance on staying engaged, and are comfortable with using the technology even in these difficult times.

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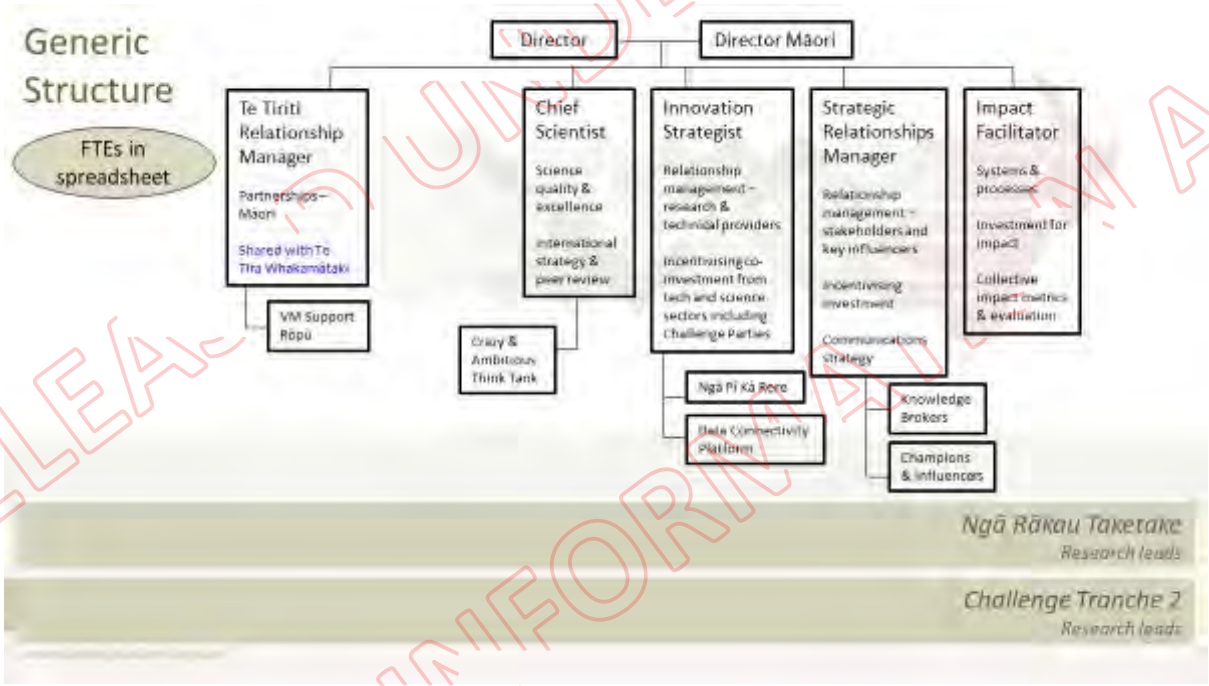
Progress on the Executive Leadership Team

Purpose

The purpose of this paper is to provide Mana Rangatira Governance Group with an update on progress on the Executive leadership Team (ELT).

Overview

As a reminder, at the February MRGG meeting we agreed on the structure of the ELT:



- Two of four position descriptions (Treaty Relationships Manager, and Strategic Relationships Manager) have been drafted (**Appendices 7 and 8**).
- Both have been discussed with the co-chairs. We welcome any further feedback before finalising them.
- Progress on the other PDs, and a process to seek Board approval, has been delayed due to COVID-19.
- There is no further impediment to finalising PDs. It would be useful to spend some time at the MRGG meeting on a process to seek MW Board approvals for these.

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APPENDIX 1: Portfolio of research investments to 2023 and 2024: NRT and Challenge T2

Overview

In mid-February, MRGG requested the Directors and Operations Manager to lay out a full portfolio of investment to 2023 (NRT) and 2024 (Challenge) and clarify the approval status of each of the SOs and NRT Theme areas, to enable further approvals by the Manaaki Whenua Board.

Further, you asked us to lay out the steps taken in construction of the 'right teams' and in approval processes, and a 'dashboard' to assess progress against each of these steps.

This paper:

1. Lays out the **proposed funding profile** pa for seven SOs in Challenge Tranche 2; for the Supporting Architecture; and for seven NRT Themes (Appendix 1; Table 1).
2. Lays out a **research summary and MRGG/MW Board approval status** of Challenge T2 and NRT investments as of March 2020 (Appendix 1; Table 2).
3. Summarises Challenge 'negotiated' **investment processes** developed by the SLG and Support Team including steps in the SLG and MRGG approval process, and guidelines and documents available to teams.
4. Suggests that we now **seek approval from the MW Board** for investments worth $26.1M (Challenge Tranche 2 to 2024) and $31.87M (NRT to 2023), enabling MRGG to continue to actively manage Challenge and NRT investments from here on.

Proposed funding profile across the Challenge and NRT

Proposed investments in each SO and for the Supporting Architecture (Challenge T2) and for NRT are laid out in **Appendix 1**, Table 1.

We used the 'prioritising the priorities' criteria, which were agreed by MRGG at the mid-February meeting, to allocate funding across SOs (Challenge T2) and NRT Theme areas. A rationale for the proportional level of investment in each is provided in the right-hand column of the table. For NRT, the desired proportional level of investment articulated by the SSAGs in 2019 also influenced our proposed proportional investment into each Theme.

Research summary and investment portfolio overview of approvals and progress

In previous meetings, MRGG requested consistency in the level of research detail provided about each investment in both the Challenge and NRT. You felt that this was particularly important for the Supporting Architecture (Pou), which we had not clearly articulated. This detail is now provided in **Appendix 1**, Table 2.

Table 2 also summarises:

- The current approval status (approval for new investment being sought; approved to 30 June but further approval needed to June 2021 at a minimum; or approved to 30 June and recommended for approval out to 2023/24) of each SO and each NRT Theme.
- Progress against each investment area (e.g. co-leaders appointed; lead provider identified, contracting underway, etc.) using a traffic light system. Progress against each step is also summarised in **Powerpoint 1: the Decision-Making Framework**, which uses a dashboard approach to capture essential information at a glance.

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Because negotiated investments are a different way of working in the NZ science system, we need to be transparent about every step of the process. To that end, below is a quick summary of the narrative and guidelines we provide online.

This section is important. We know you are unlikely to wish to delve into the detail. However, we anticipate that Mana Rangatira will require reassurance that robust processes and timelines have been established, because you will in turn wish to give the Manaaki Whenua Board confidence that those processes are being followed and that timelines for delivery are clear (as we all know, risks are addressed through the risk registers).

Before we do that however, here is a quick summary of the **primary touch points** for Mana Rangatira:

1. *Touch point 1:* [can occur any time] Initial approval of investment. Challenge Directors and SLG then identify co-leads and lead providers, and begin work to construct the 'right teams' and develop an Annual Workplan (AWP); see below for details).
2. *Touch point 2:* [aiming to consistently occur in March each year from FY21 onwards] Approval of AWPs that have been developed for each SO and/or NRT Theme; taking into account a report (peer review) from the ISAP. This is the first year that teams have developed AWPs. Approval of the AWP should trigger release of the next 12 months' investment.
3. *Touch point 3:* [occurs at every MRGG meeting] Regular oversight of how each team is tracking towards delivery of Critical Steps, using the Outcome Framework that we discussed in February.

As you can imagine, the above steps (and all processes) are still bedding down. The Challenge SLG is working to get as many AWPs as possible completed and peer-reviewed in time for the June MRGG meeting.

Now to the detail. As a starting point, we regularly update the key messages on the 'Get Involved' page on the Challenge website: https://bioheritage.nz/wp-content/uploads/2019/04/Key-Messages.pdf

The next thing we do is provide an overview of the Tranche 2 process: https://bioheritage.nz/get-involved/1-tranche-2-essentials/

This includes background information on 'why get involved with the Challenge' – from an individual or an institutional point of view. This information is targeted primarily at our Challenge Parties: https://bioheritage.nz/download/why-get-involved-with-the-challenge/

Next, the Outcomes Framework that Mana Rangatira will be using as a tool to assess how the Challenge is tracking is also available as a 'living document'. As discussed at the February meeting, (1) by April this document will be updated with critical steps to 2024 for the lead-off investments; (2) a similar document (containing critical steps) completed for NRT; and (3) by June we should have a complete set of Critical Steps available for Mana Rangatira to use as a tracking tool: https://bioheritage.nz/download/logic-framework/

This document is presented early in the narrative, in order to ensure that everyone understands the Challenge impacts, Strategic Outcomes, and 2023/24 Goals and is clear what everyone is working towards. In the same general area we also provide the KPIs for the Challenge and NRT:

Challenge: https://bioheritage.nz/download/bioheritage-key-performance-indicators/

NRT: https://bioheritage.nz/download/nga-rakau-taketake-key-performance-indicators/

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As Mana Rangatira has seen already, finding the right co-leads is a critical step in the investment process. We have already used the following criteria to assess potential co-leads (and their organisations) in NRT, and are in the process of doing the same for the Challenge: https://bioheritage.nz/download/criteria-for-project-leads-and-providers/

Once co-leads have been identified and a lead provider selected, strong criteria are then needed to build the 'right' teams and select partners, who may be providing cash investment, study sites, data, infrastructure, Mātauranga knowledge or other forms of co-investment. The criteria for building the right teams are an essential tool for the SLG to work with the research co-leads in development of the Annual Workplan: https://bioheritage.nz/download/criteria-and-guidelines-for-investment/

Next, because partnership with Māori is such an essential part of the Challenge kaupapa, and because to create impact we must adequately resource Māori to participate fully in NZ's science and innovation system, we also lay out our expectations on 'best practice' for partnering with Māori: https://bioheritage.nz/download/best-practice-guidelines-for-partnering-with-maori/

Next is for the Challenge SLG and co-leads to understand the steps they need to take to during initial approval and contracting process. Key stages and an approximate timeline are laid out here (and see Appendix 1): https://bioheritage.nz/download/investment-timeline/

A vital step in constructing initial contracts is the development of an Annual Workplan (which essentially doubles as the research plan for the coming year), so we provide a template for the teams to get started. This document is important because the teams must include information on co-investment and on the Critical Steps to 2023/24 (which inform the 'roadmap' or pathway to impact in the Outcomes Framework used by Mana Rangatira to assess progress): https://bioheritage.nz/download/annual-workplan-template/

Teams are also expected to draft a Communications Plan and a Stakeholder Engagement Plan during the initial contracting stage. This is to ensure that they 'reach out' across the science and innovation sector and work in an inclusive and collaborative way to build the right teams:

Communications Plan: https://bioheritage.nz/download/communications-plan-template/

Stakeholder Engagement Plan: [still coming]

We also link to various Challenge policies, and to our principles and values:

Conflicts of interest policy: https://bioheritage.nz/download/conflict-of-interest-policy/

IP management plan: https://bioheritage.nz/download/intellectual-property-management-plan/

Principles & values; equity, diversity & inclusion policy; and codes of conduct: https://bioheritage.nz/download/operating-principles-values-diversity-inclusion-and-codes-of-conduct/

The penultimate document in this process is the one we have used in this paper (Appendix 1; Table 2) to have a first cut at 'prioritising the priorities' across Challenge SOs and NRT Goals. Again, this document is available online to ensure transparency in this final step in our investment decision-making: https://bioheritage.nz/download/prioritising-the-priorities/

Finally, more for our own use but available for anyone to see, we provide the SLG and Knowledge Brokers with clear guidance for helping build the right teams. We have found that this is important because it empowers the SLG and keeps them safe when they get lobbied: https://bioheritage.nz/wp-content/uploads/2019/04/Guidance-SLG-building-right-teams.pdf

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The **PowerPoint 1: Decision-Making Framework** summarises the above processes visually and is also a draft 'dashboard' as to the status of each investment. Feedback is welcome.

An important note on flexibility

From the outset, Mana Rangatira has signalled clearly that you are looking to reward teams that retain some flexibility, on an annual basis, to pivot in a new direction if new opportunities open up to accelerate to our 2024 Goals. To that end, we have:

- Built a 10% 'flexibility contingency' into each contract, to enable us to release funding during the annual cycle to pursue new opportunities as they emerge. Such funding could be used for example to leverage co-funding or to connect with a new research team.
- Ensured that we retain a 'research reserve contingency' of 10% at Challenge level, to be used for similar purposes to the above.

At some point in the next few years, if we decide to make a >10% shift in funding allocations between SOs or NRT Themes where we have previously received approval from the MW Board, we will need to go back to them to seek approval for the change – as per the delegations framework.

Recommendations and approvals sought from Mana Rangatira

That the MRGG **approve** the suggested funding profile across NRT Themes, SOs, and the Supporting Architecture, for the investments listed in the portfolio overview in Appendix 1 (Table 1).

The MRGG **note** the work done by the Directors and SLG to ensure that the Challenge continues to run a transparent negotiated funding process, including the primary touch points for Mana Rangatira (e.g. AWP; ISAP peer review).

That the MRGG **note** progress to date in applying these processes in both the Challenge and NRT investments, and **provide feedback** on the dashboards in Powerpoint 1: Decision-Making Framework.

That the MRGG **agree** on a process by which we seek approval for the overall portfolio of Challenge and NRT investments from the Manaaki Whenua Board (see below).

Recommendations on the process for seeking approval from the Manaaki Whenua Board

We now need to provide specific recommendations to the MW Board about the funding approvals we intend to seek from them. To that end, we suggest:

- Compiling a Board paper that would include a 'funding profile' table similar to Table 1 in Appendix 1, which clearly lays out the separate profiles for the Challenge Tranche 2 and NRT;
- Requesting that the Board note the proposed funding profiles, over the remaining life for each;
- Distilling the key steps around the investment planning and approval processes we have developed, and asking the Board to note them;
- Requesting that the Board note and endorse the primary touch points in Mana Rangatira's approval processes;
- For both the Challenge and SSIF investments, seeking approval for each SO or NRT Theme for the forthcoming year (i.e. FY21), noting that Mana Rangatira will (a) review and approve funding draw-down during the year based on satisfactory development and negotiation of contracts and will (b) review funding annually, including a report to the MW Board, to confirm investment is still on track so next instalment can be allocated, or more/less investment is appropriate based on actual progress and/or changing priorities across the portfolio;
- In line with the above process, seeking approval for 2020-21 funding.

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Appendix 1
Suggested funding profile across the Challenge and NRT (Table 1); and
Research summary, approval status and investment portfolio overview (Table 2)

Table 1 Funding profile across the Challenge and NRT

Investment area	Current funding to June 2020	Suggested investment in to June 2021	Suggested investment FY22 $'000 (10% available for flexibility/pivot)**	Suggested investment FY23 $'000	Suggested investment FY24 $'000	Total Spend $'000 (% Research Funding)***	Rationale for this proportional level of investment
Challenge Tranche 2 ($'000)							
SO1 BS & BD *	$350	$620	$620 base $62(10% 'flexi') **$682**	$620 base $62 **$682**	$620 base $62 **$682**	**$3,101** **(11.9%)**	This SO is focused on developing a national scorecard that clearly describes the current state of New Zealand's biological heritage in a way that inspires local actions to reverse the decline. It links **biosecurity and biodiversity** with primary sector needs, and is an area that would struggle to attract funding investment outside of the Challenge. It supports Māori aspirations and is an area currently under-invested across the system. It is in alignment with a large number of government and business initiatives and could leverage in-kind support. This work would be system leading. We recommend raising the investment level to 11.9%
SO2 BD	$43	$350	$350 $35 **$385**	$350 $35 **$385**	$350 $35 **$385**	**$1.631** **(6.2%)**	This investment is aimed at helping local communities to develop and realise their biological heritage aspirations. This SO is a **biodiversity** investment that can underpin government and business initiatives. This SO is a cross-cutting one that others will rely on quite heavily, however it is inextricably linked to, and should leverage off of, goal 2 in NRT. Again, this is another area that will help achieve the Challenge's mission, supports Māori aspirations and is currently under-invested across the system. We recommend dropping the investment level slightly to reflect the increased related NRT investment.
SO3 BS	$200	$500	$500 $50 **$550**	$500 $50 **$550**	$500 $50 **$550**	**$2,414** **(9.2%)**	This investment is aimed at developing a completely new biosecurity risk-assessment framework that is more dynamic than the current system, enabling flexible, real-time responses to emerging environmental and social changes. This SO is an important **biosecurity** investment area that contributes directly to the Challenge's mission and would make a real difference to the system. However, it should leverage off current work in the system including B3 work, as well as link to and leverage off of the NRT investment in goal 5. For those reasons we propose a slight drop in investment in this SO.
SO4 BS	$50	$442	$443 $44 **$487**	$443 $44 **$487**	$443 $44 **$487**	**$2,026** **(7.8%)**	This investment is aimed at driving surveillance actions 'on ground' in local places in order to scale up collective national effort and link biosecurity surveillance to restoration efforts. This SO is an important **biosecurity** investment area that contributes directly to the Challenge's mission, would make a real difference to the system and is supportive of Māori aspirations. However, it is highly operational and should leverage off current work in the system including MPI, DOC, Councils, Industry investments, as well as link to and leverage off of the NRT investment goal 3. For those reasons we propose a slight drop in investment in this SO.
SO5 BS & BD	$541	$850 (inc $200k ZIP project)	$650 $65 **$715**	$650 $65 **$715**	$650 $65 **$715**	**$3,641** **(14%)**	This investment is aimed at: • Building a biosecurity system that intercepts more biosecurity threats at airports, mail centres and sea ports, before they enter into the environment to spread and establish;

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							• Tools that shift from a reliance on chemical applications to smart gene-based or other emerging technologies that enable control to be self-disseminating rather than point-source applications for invertebrate pests; and • Cost-effective removal of the last 5% of survivors to achieve eradication, and cost-effective prevention of immigration back into areas that have been eradicated, for mammal pests. Another important **biosecurity** investment area that will see major benefits to **biodiversity**, this SO is widely supported by public and government interest which is matched with corresponding funding alternatives (i.e. PF2050, NEXT, SSIF, MBIE). This SO contributes to achieving the Challenge's mission, has the ability to create impact and make a real difference. It also supports the aspirations of Māori, is in alignment with initiatives across the whole-of-government and business which should attract additional funding, and has the ability to connect new teams and reduce overlap. For those reasons we propose a slight increase in investment in this SO.
SO6 BD	$200	$590	$590 $59 **$649**	$590 $59 **$649**	$590 $59 **$649**	**$2,811** **(10.8%)**	This investment is aimed at strengthening the connection between people and Te Taiao through scaling up and leveraging current restoration efforts. This SO is one that has the potential to make significant progress by 2024, as well as incentivise and drive system change. It is in alignment with whole-of-government and business initiatives and is in an area typically under-invested in despite being a possible game-changer. It should and could leverage in-kind support and potentially deliver collective impact. That said we have recommended that we slightly lower investment in this area and link it into work being done across NRT.
SO7 BS & BD	$350	$650	$650 $65 **$715**	$650 $65 **$715**	$650 $65 **$715**	**$3,209** **(12.3%)**	This investment aims to break the current mould and build new systems, policies and governance capability that will provide much greater protection to Te Taiao. This SO is one that will likely create a real difference, drive system changes and create impact, and help the Challenge achieve its mission. It leans heavily on the support of Māori as it attempts to address their concerns, all the while drawing together and progressing ideas that government agencies have battled with for some time. It will build bridges among researchers and organisations not previously connected, it is in an area currently under-invested in, but could attract some in-kind support. Its an area identified in NRT as vital but not directly funded. For those reasons we propose a slight increase in investment in this SO.
Directors' Discretionary	$150	$150	$150	$150	$150	**$750** **(2.9%)**	This investment is aimed at taking advantage of emerging opportunities. To date, of the $150K allocated, we have committed or spent $137K (Protecting Paradise film about PF2050; GBIRd; paper on options for Biodiversity policy aligned with the NZ Biodiversity Strategy; supporting a publication from the Tranche 1 EC workshop; a social network analysis of stakeholders; supporting the Tauranga Moana Biosecurity Capital; an Inspiring Communities workshop on collective impact [on hold due to COVID-19]; 2x PhD students that started in T1 but didn't finish). We have also committed $30K for Frozen Ark in FY21, which is a proposal by the NEXT Foundation to preserve reproductive material from New Zealand's threatened taonga species.
Research Reserve Contingency	$0	$690	$690	$690	$690	**$2,760** **(10.6%)**	This contingency was proposed in the Strategy to enable additional investment in key areas with emergent opportunities.
TOTAL $'000	**$1,884**	**$4,842**					
Ngā Rākau Taketake $'000							
Goal 1 B	$100 (yr18/19) **$500**	$1,106	$1,200	$1,100		**$4,006** **(13%)**	This work is aimed at developing a Mātauranga and Kaupapa Māori-led programme of work to restore the mauri of the rākau (tree) species threatened by these pathogens and their associated environments. It brings together Māori, researchers, councils, and other landowners and stakeholders. dire This goal has been under invested in the past despite being highlighted as important by both SSAGs and numerous agencies who noted this goal should receive about 21% of the total science investment. This goal will struggle to get investment elsewhere, and will need to underpin other themes and most likely become the lead for seed conservation/germplasm work. Our recommendation of 13% is well under the SSAGs recommendation.

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Goal 2 K	$250 (approved Dec 19) **$250**	$1,206	$1,200	$1,100		**$4,006** **(10%)**	This investment is focused on: • Designing and carrying out multi-faceted national campaign & local actions. • Developing an end-user accessible, geo-referenced map of positive sites, sampled sites and hazard ratings to help inform and drive community initiatives to combat kauri dieback and myrtle rust. • Engaging with community and school groups through participatory science teaching methods. Adhoc and under investment in the past has left a gap in this space. We believe this goal is vital and will struggle to get real investment despite its importance for the sustainability of long-term support for research and management by the public. This research underpins other goals (i.e. provides the social license) and our recommendation for 13% investment is above the SSAG's 10% recommendation.
Goal 3 B	$400 (yr18/19) **$710**	$1,000	$800	$480		**$3,389** **(11%)**	A Mātauranga Māori surveillance framework is being developed for kauri dieback and myrtle rust, co-designed with mana whenua hapū/iwi kaitiaki and central and local government and informed by traditional understanding of land and forest management and use. Surveillance has been under-invested with regards to MR and Māori surveillance, but not necessarily in the KDB space which has been and should be agency driven. This theme should be supported by councils and LTM agencies, and is provided for in the NPMP which may get funded. It is a highly operational space and our recommendation of 11% investment is in alignment with the SSAG's recommendation of the same.
Goal 4 K	$250 (approved Dec 19) **$450**	$1,700	$1,700	$1,447		**$5,547** **(18%)**	The aim of this investment is to help prevent the extinction of iconic species and to protect at-risk species and ecosystems and taonga rākau (trees) and locations. This goal covers some of the basic fundamental research that is needed, or in the case of MR hasn't been done yet. Additionally, it needs to replace the kauri part of HTHF's. The conservation elements of this goal have been underinvested in the past, but some of this work should be supported by SSIF investment. In recognition of the expensive nature of this type of work we recommend 18% investment which is slightly higher than the SSAG's 17%.
Goal 5 B	**$700**	$1,400	$1,600	$1,231		**$4,931** **(16%)**	In this investment, standardised impact measures are being developed using existing work and strengthening incorporation of kaupapa Māori approaches to increase their relevance to a wider range of communities. These in turn inform more comprehensive risk assessment for ecosystem impact, and identify more comprehensively where risk lies. This goal needs to do future focused work and establish base line fundamental long-term ecological studies which Beyond Myrtle Rust in part covers, however very little has been done in this space for KDB (i.e. mostly students). This goal has struggled to attract funding or co-investment in the past, and thus has been underinvested in. Our recommendation of 16% investment is above that of the SSAG's who recommend 14%.
Goal 6 M	$297 (approved Dec 19) **$204**	$1,700	$1,500			**$3,700** **(15%)**	In this investment, the role of factors such as disturbance associated with animal and human activity, topography, weather, soil type, aspect, pest control, other bio-physical factors in disease development is being determined, both under current conditions and under future climate change. Previously this goal has had funding and it most likely will attract new agency funding, but it justifies investment because of the fast invasion spread and lack of information particularly around MR. It will require agile and responsive investment. Our recommendation of 15% is above the 12% recommendation of the SSAG's.
Goal 7 K	$192 $308 ($1m approved Dec 19)	$1,100	$1,100	$998		**$3,698** **(12%)**	This investment is developing a suite of fully integrated management tools and approaches to protect taonga/iconic trees and locations. Kauri communities, especially Māori, have previously identified this goal as important for investment. That said it is our view that the wider system should support this goal via other forms of investment i.e. endeavours, smart ideas, SSIF and SfIT. We also suspect investment from MPI and DOC via the Kauri programme should and or will be made available. Our recommendation of 12% is only slightly below the SSAG's recommendation of 13%.

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Storytelling	$231	$195	$190	$0.5		**$616 (2%)**	The SSAGs allowed 3% investment for management and procurement. It is our view that 2% should be reserved for additional programmes that might arise in the wider design, media and arts space i.e. Kauri art exhibitions that raise awareness, kauri short films or documentaries etc.
Directors' Discretionary B	$0	$250	$250	$250		**$750**	No commitments have been made to date.
TOTAL $'000	**$4,341**	**$9,657**					
Pou $'000							
Crazy Ambitious Think Tank	$250	$350	$250	$250	$250	**$1,350**	
Champions & Influencers	$25	$250	$200	$100	$50	**$625**	
Data Connectivity Platform	$25	$125	$250	$250	$250	**$900**	
Ngā pī kā rere	$50	$50	$50	$50	$50	**$250**	
Māori Rōpū	$50	$50	$50	$50	$50	**$250**	
Impact measurement	$35	$35	$35	$35	$35	**$175**	
TOTAL $'000	**$435**	**$860**					

* Challenge: BS = biosecurity; BD = biodiversity NRT: M = Myrtle Rust; K = Kauri; B = Both

** In addition to the research reserve contingency (c. 10% of the research budget at Challenge level), we have also built in another 10% 'flexibility' contingency pa at the level of the individual investment.

*** Indicates proportional allocation to the SO (Challenge T2) or NRT Theme, with rationale for that proposed level of investment in the right-hand column.

Coloured column indicates funding for which approval is being sought from the Manaaki Whenua Board.

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Table 2: Investment portfolio overview – Challenge Tranche 2 (including Supporting Architecture) and NRT

Approval status:

Colour	Key step
	Funding approval being sought from Mana Rangatira and MW Board to **at least** 30 June 2020
	Funding already approved to 30 June 2020 by both Mana Rangatira and the MW Board; need to consider approving to June 2021 at a minimum
	Initial funding has been approved by Mana Rangatira and the MW Board; Will be ready to seek approval for a funding extension to June 2021, i.e. the team is satisfied that Annual Workplan will have been completed by June MRGG meeting and that peer review is in progress

Progress status:

Acronym	Key step*
CO	Co-leads appointed
LP	Lead provider identified and discussions underway
SUM	½ to 1-page summary of initial research – suitable for MRGG and Board approval – drafted by co-leads and SLG using material from Scoping Panel Report
IC	Support Team establishes initial contract and is providing guidance to lead provider on subcontracting
SLG	SLG guiding co-leads using criteria for 'building the right teams' and other guidance documentation available online
AW	Annual workplan, including Critical Steps and co-investment, ready for evaluation by Mana Rangatira
ISAP	ISAP have peer reviewed annual workplan
PLANS	Communications, IP and Stakeholder Engagement plans completed
FULL	Full contract executed

* colour coded using traffic light system

Colour	Meaning
	Completed
	In progress and on track – live right now
	On track with issues being addressed – live right now
	Tracking towards
	Off track

Challenge Tranche 2				
SO	**Research overview**	**Approval status**	**Progress status**	**Commentary**
1	**Title** A bioheritage scorecard for Aotearoa **Research** Aotearoa New Zealand's biological heritage is in dangerous decline. Many people and organisations are involved in measuring biological heritage, but effective action to reverse this trend has not eventuated. We are simply monitoring the decline, and failing to take action to turn that around. This investment is focused on developing a national scorecard that clearly describes the current state of New Zealand's biological heritage in a way that inspires local actions to reverse the decline. A 100-year restoration vision is guiding development of the national scorecard: that vision was identified as sorely lacking in a recent report by the Parliamentary Commissioner for the Environment. The national scorecard comprises local and regional indicator		CO LP SUM IC SLG AW ISAP PLANS FULL	**Lead provider** University of Waikato **Co-leads** Privacy of natural persons (UoW) Privacy of natural persons (Te Rūnanga o Ngāi Tahu) **Timeline to delivery** AW + ISAP approval by June 2020

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	information, aggregated up to the 'big picture' restoration vision. Local scorecards are of practical importance and relevance to local people in local places, with scores aggregated across Aotearoa. Ultimately, the aim with the national scorecard is to encourage and direct incremental investments by private landowners, investors, and communities to generate large, intergenerational, cumulative impacts that result in reversing the decline. Action-oriented measures guide primary sector and conservation practitioners. Importantly, the scorecards complement and do not duplicate national efforts to measure biological heritage. Challenge investment is focused on: (1) development of novel indicators of human and biological health to audit progress; (2) listing the types of meaningful on-ground actions that people can take; and (3) development of impact investment criteria based on the scorecard.			
2	**Title** Empower New Zealanders to demand and enact environmental stewardship and kaitiakitanga **Research** Unless New Zealanders are inspired to action and to working together for a common goal, the risk is that the response to our biological heritage crisis will be disjointed, and potentially counter-productive. This need for collectively inspired action and connection is well recognised. Further, there is a growing need to realise and empower kaitiakitanga and environmental stewardship in all New Zealanders, and to commit to Te Tiriti o Waitangi and the fundamental connection to te taiao, the natural environment. The team scoping potential investment in SO2 identified critical gaps and needs in three areas: • Helping local communities to develop and realise their biological heritage aspirations. • Developing and supporting the adoption and scale out of tools, capabilities and tikanga frameworks to help agencies, sectors and organisations as they work to exemplify, encourage and enable kaitiakitanga and environmental stewardship. • Linking with tool and framework development in other Strategic Outcomes (SOs) to ensure that design and implementation protocols, including related engagement processes, take account of the social and cultural considerations that underpin kaitiakitanga and environmental stewardship. These three areas are very important, but from the outset the SO group identified a need to integrate across Challenge investments in other SOs. To that end we recommend supporting two researchers to lead further development and scoping of this investment over the next 6 months by integrating closely with researchers, mātauranga knowledge holders, and stakeholders in other SOs (particularly SOs 1, 5, 6 and 7) and in NRT (particularly Goal 2 (Mobilising for Action) and Goal 5 (Risk Assessment)) as they build the teams and develop detailed Annual Workplans. The scope of this development work will focus on: 1. Working closely with other SO and NRT teams as they develop Annual Workplans, to ensure shared case studies and identify (where appropriate) common research methodologies. 2. More fully explore how the work will draw on expertise and Challenge investments from Tranche 1, and expertise and relevant research from the original SO group members. 3. Ensure that there is strong integration with the Crazy & Ambitious Think Tank. The above approach will ensure that SO2's investment dovetails with, and supports, our other investments, but we emphasise that the environmental stewardship framework pur forward by SO2 in their Scoping Panel Report was novel research in its own right and identified a major need in the biological heritage 'system'.		CO LP SUM IC SLG AW ISAP PLANS FULL	**Lead provider** None at the moment. As noted we propose to contract two members of the original Scoping Groups to re-frame the proposed investment to align with other Challenge and NRT investments. **Interim Co-leads** Privacy of natural persons (EcoResearch) Privacy of natural persons (Independent) **Timeline to delivery** Final scoping completed and recommendations made for further investment by June 2020
3	**Title** He Tangata, He Taiao, He Ōhanga: a values-based biosecurity risk assessment framework for Aotearoa **Research** New Zealand's biological heritage is under threat from invasive pests. There are two main problems.		CO LP SUM IC SLG AW	**Lead provider** AgResearch/B3 **Co-leads** Privacy of natural persons (AgR) Privacy of natural persons (MPI)

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	First, biosecurity risks posed by new or existing pests are dynamic and change frequently, but quite often the focus is on a single organism. Also, our biosecurity system takes a 'reactive' approach to emerging pests because it is hard to justify spending funds on an organism that might not become a serious problem. This means we overlook emerging pests, and we focus on one pest at a time rather than proactively scanning for emerging issues to address problems before they arise. Second, only economic impacts are used to justify action to control or eradicate a pest. We don't currently take into account non-economic impacts, nor do we include Māori values. Also, people who would like to participate in the biosecurity system – particularly Māori – are not resourced to be a part of the decision-making. As a result, our biosecurity system is inefficient, and not inclusive of a wide range of values and needs. This investment addresses that shortcoming by developing a completely new biosecurity risk-assessment framework. The framework is more dynamic than the current system, enabling flexible, real-time responses to emerging environmental and social changes (such as in climate, demographics, land use, trade and tourism). It also groups organisms with similar characteristics together under common areas of risk, enabling us to respond to multiple threats at the same time. To incentivise new investment in this area, the framework is responsive to more than just economic concerns. Impacts of potential threat organisms on ecology, social values, and Māori values are included. The framework is supported with activities that increase societal awareness of emergent and latent biosecurity risks, and Challenge investment is aimed at driving better resourcing for currently marginalised groups, particularly mana whenua, to actively participate in the biosecurity system. Challenge investment is focused on: (1) improved non-monetary valuation of potential risks; (2) an international scan of dynamic assessment frameworks; and (3) social science to help us better communicate risk to society so that people can participate fully in the system.		ISAP PLANS FULL	**Timeline to delivery** AW + ISAP approval by June 2020
4	Title State-of-the-art biosecurity surveillance systems **Research** In 2019, the Scoping Group for SO 4 identified a number of priority areas and gaps for biosecurity surveillance research, along the innovation pathway from discovery science through operational rollout to create impact on the ground. However, it became clear that further prioritisation was needed, because much of the proposed work could serve as support for, or be integrated with, other Challenge investments. Specifically: • The 'Integrated surveillance' and 'Mobilising for Action' Themes in NRT; • Research to empower and inspire communities and industry to take action to protect biological heritage, particularly in SOs 1, 2, 6 and 7 • The need for champions and influencers to help drive surveillance actions 'on ground' in local places in order to scale up collective national effort and link biosecurity surveillance to restoration efforts. The team have requested $50K to run a wānanga with the Challenge SLG and co-leads from other investments, once these have developed (or are in the process of developing) their annual workplans. From this hui a plan for investment will be developed for FY21 and beyond. We support this initiative.		CO LP SUM IC SLG AW ISAP PLANS FULL	**Lead provider** None at the moment. As noted we propose to contract two members of the original Scoping Groups to run a wānanga to align this investment better with other Challenge and NRT investments. **Co-leads** TBD **Timeline to delivery** Wānanga held, final scoping completed and recommendations made for further investment by June 2020

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5	**Title** A virtual biosecurity hub for Aotearoa **Research** New Zealand's biosecurity system is arguably the most sophisticated and effective in the world, but there is a huge need for transformational changes and improvements to be made. Innovation, but also engagement with mana whenua and end users from tool discovery and process design through to adoption and full implementation is essential. This investment is aimed at building a biosecurity system that intercepts more biosecurity threats that present at airports, mail centres and sea ports, before they enter into the environment to spread and establish. To create impact, scientists and engineers from CRIs, universities and private companies are working extensively with frontline border MPI staff, MPI management and Māori. Representatives from across biosecurity agencies are engaged in the process to ensure eventual deployment of developed tools. Central to this vision is the building of a Virtual Biosecurity Co-design Hub (the Hub) that is part of this and other Strategic Outcomes. The Hub is a co-design process for discovery through to adoption that generates a flow of new, turnkey tools and strategies developed for immediate implementation and is the focus of investment not only from the Challenge but other interested investors who need a tool and strategy development pipeline that efficiently delivers ready-to-use tools and strategies to strengthen border biosecurity. Software and sensors, automation, and data processing are aimed at achieving new, faster, more efficient or more sensitive tools or strategies. A key strength of the Hub is fresh thinking from the technology and gaming sectors: they bring acceptance that ideas can fail at any stage with stop points, but with a lower cost, and that failure leads to increased knowledge and future opportunities. Only the best ideas that yield successful prototypes will be ready for stakeholder product investment, pilot and deployment.		CO LP SUM IC SLG AW ISAP PLANS FULL	**Lead provider** Discussions being had by Privacy of natural perso **Co-leads** TBD **Timeline to delivery** Due diligence completed and stop/go decision made to continue or cease investment by June 2020
5	**Title** Tools to support landscape-scale control of invasive invertebrates **Research** New Zealand's biological heritage is declining primarily because of the impacts of invasive invertebrate and vertebrate predators (see next section). Although these pests can be controlled at local scales, current tools, especially toxins, have a range of undesirable side-effects. They are also difficult and expensive to scale up to regional or national scales. Additionally, a focus on 'control' (i.e. pest suppression rather than full eradication) requires an ongoing sustained commitment of funding and effort, which significantly limits our ability to scale up the use of vital tools. To address the invertebrate problem, Challenge investment is focused towards tools that shift from a reliance on chemical applications to smart gene-based or other emerging technologies that enable control to be self-disseminating rather than point-source applications. By 2024, in partnership with other investors, Challenge investment will have demonstrated effective use of at least one of these for deployment at scale for a nationally-distributed invertebrate that has substantial economic, health, and/or ecological costs to the country. Success in 2024 will be measured by the demonstration of at least two novel technologies that can achieve landscape-scale pest eradication and the widespread interest in adoption of these technologies by relevant organisations and communities, establishing the platform for ongoing investment and further technology development.		CO LP SUM IC SLG AW ISAP PLANS FULL	**Lead provider** Victoria University of Wellington **Co-leads** Privacy of natural persons Privacy of natural persons (both VUW) **Timeline to delivery** Stakeholder workshops to be completed by June 2020; recommend allocating further funding in this space as it is an experienced team and had a clear plan for further investment.
5	**Title** Mammal pest control tools to support Predator-Free 2050 **Research** Challenge investment will be closely linked to our efforts to find a self-disseminating tool for invertebrates (above) but for invasive mammals, the focus is on two simple but transformative technologies and approaches: • Cost-effective removal of the last 5% of survivors to achieve eradication; and • Cost-effective prevention of immigration back into areas that have been eradicated.		CO LP SUM IC SLG AW ISAP PLANS	**Lead provider** Manaaki Whenua **Co-leads** Privacy of natural persons Māori co-lead identified and discussions being held

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	With several other investing partners, Challenge investment is aimed at developing an AI (Artificial Intelligence) detection system for three vertebrate pests (possums, rats and stoats) to support the national Predator-Free 2050 Strategy. Just like with invertebrate pests above, by 2024, in partnership with other investors, Challenge investment will have demonstrated effective use of at least one new tool for deployment at scale, for less than $10/ha, for one of these three pest taxa. Complementary social research, aimed at obtaining the necessary social licence to utilise any new tools developed for both invertebrate and vertebrate pests, is part of another investment elsewhere in Strategic Outcome 2.		FULL	**Timeline to delivery** AW + ISAP approval by June 2020
6	**Title** Diverse, successful and practical pathways to support ecosystem regeneration **Research** This investment is aimed at strengthening the connection between people and Te Taiao. We acknowledge the enormous efforts by thousands of New Zealanders to reverse the decline in our biological heritage, but also recognise the challenges they face in connecting with one another, in scaling up and leveraging their current effort, and in overcoming economic, legislative and organisational barriers to more sustainable and culturally-appropriate environmental stewardship. Challenge investment is currently focused on three areas: • Creating and operating an adaptive management network to connect and enhance the success of local regeneration efforts in Aotearoa New Zealand. Business as usual involves small local networks, or disconnected activities in a single region (e.g. many restoration groups operating in isolation within the same catchment), and our aim is to connect and scale up these efforts. • Creating knowledge to clarify pathways and remove barriers for enhanced restoration success, working closely with the team in Strategic Outcomes 1 and 7. The focus here is on identifying barriers and past failures, and on what determines how much value is derived from investment. This information is being used in real time to inform future restoration attempts. • Supporting co-development of exemplar restoration projects that showcase successful regeneration of mātauranga and bioheritage, in native species enterprises and urban environments. Future investment will focus on building resilience by restoring specific connections between people and nature, and on non-market valuation of such connections. The aim is to use this information to drive a 'positive cycle' of restoration activities that enable scaling up across landscapes.		CO LP SUM IC SLG AW ISAP PLANS FULL	**Lead provider** Cawthron Institute **Co-leads** Privacy of natural persons (Cawthron Institute) Privacy of natural persons (Zealandia) **Timeline to delivery** AW + ISAP approval by June 2020
7	**Title** Case study research on governance and policy options that drive transformational change for biological heritage in Aotearoa **Research** Current governance arrangements and policy instruments in Aotearoa actually fail to protect Te Taiao. In fact many economic and land-use policies, practices and settings make things worse. There are many reasons for this failure: • The environment is not properly valued in policy development and decision-making. • Māori lack the resources to engage fully in protecting biological heritage as a Treaty partner. • Many levels of government make decisions that affect biological heritage with little or no national coordination or cooperation. • The people closest to nature, and who are most affected by the decline, find it difficult to get their knowledge and values recognised. They are often not included or resourced to participate in strategic, local decisions that would make a difference to biological heritage. This investment aims to break the current mould and build new systems, policies and capability that will provide much greater protection to Te Taiao. Participatory governance structures – based on devolving power, decision-making, and responsibility – deliver more sustainable and effective environmental outcomes, but research needed to uncover what works and what does not in the very specific context of Aotearoa.		CO LP SUM IC SLG AW ISAP PLANS FULL	**Lead provider** Victoria University of Wellington **Co-leads** Privacy of natural persons (VUW) Privacy of natural persons (MPI/independent) **Timeline to delivery** AW + ISAP approval by June 2020

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	Involving mana whenua and local communities is likely to be more successful than structures that centralise power, decision-making and responsibility, and a devolved model is also less susceptible to capture by those that gain from damaging biological heritage. Hence, Te Ao Māori and other community values are central to this alternative approach. The time is right: we are moving into a post-Treaty-settlement world of greater partnership between Iwi and the Crown. There is a window of opportunity in Aotearoa at present, with several Acts and policy statements under review, a national Biodiversity Strategy under development, and a whole-of-Government approach mooted for the WAI262 Treaty claim. Also, there are emerging examples of co-design and co-governance, for example from Te Urewera and Te Awa Tupua, from which we can learn valuable lessons. Challenge investment is focused on: (1) understanding different leadership models; (2) policy development; (3) system co-design principles; and (4) implementation of new governance case studies across Aotearoa.			

Ngā Rākau Taketake				
Goal	**Research overview**	**Approval status**	**Progress status**	**Commentary**
1	**Theme** Oranga **Research** This work is aimed at developing a Mātauranga and Kaupapa Māori-led programme of work to restore the mauri of the rākau (tree) species threatened by these pathogens and their associated environments. It brings together Māori, researchers, councils, and other landowners and stakeholders. A core activity is to develop a shared understanding and direction of the work within a kaupapa Māori framework to provide a model across the other Goals for best practice in how to engage with and involve Māori in determining what success of the investments looks like. In addition, it explores explicit Mātauranga solutions, such as rongoā, underpinned by maramataka, in response to the pathogens. • There are three complimentary workstreams: Social science: research design to set and measure impact, develop the research approach in partnership through hui and wananga, complete surveys at the start and throughout, and monitoring success according to the agreed impact measures. • Taiao tuatahi (Pathogen Trials 1): carry out pathogen assessments on sanctuaries and kauri seed cones in partnership with kauri landowners and land managers, engage in knowledge transfer with the landowners to enable communities to develop community level expertise to sustain the impacts. • Mātauranga Māori: form VM expert teams, rongoā trials, developing Cultural Health Indicators (CHI), impact assessments and distinctive communications. While there has been investment in these areas in both the KDB and MR space, there has been limited coordination, especially in the case of KDB. This has resulted in mixed levels of stakeholder and partner engagement, and a need to substantially reset relationships with Māori. This work is essential for the success of investments in the other Goals.		CO LP SUM IC SLG AW ISAP PLANS FULL	**Lead provider** Te Tira Whakamātaki **Co-leads** Melanie Mark-Shadbolt (TTW) Privacy of natural persons (PFR) **Timeline to delivery** AW + ISAP approval by June 2020
2	**Theme** Mobilising for action **Research** Engagement of mana whenua, community, councils and industry and creating a level of buy-in that prompts people to take action to protect taonga rākau (trees) is critical for the success of the programme. Without a sufficient segment of the population having interest and being willing to act it is unlikely that		CO LP SUM IC SLG AW	Lead provider University of Auckland Co-leads Privacy of natural persons (UoA) Privacy of natural persons (Massey Uni)

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	any biophysical research will provide the impact required in the response. A key aspect is the development of social and cultural indicators that will result in a strong understanding of the connection between ecosystem and community health, and create the environment of trust required for activities such as germplasm collection and genetic / genomic studies, with underpinning cultural authority agreements in place to ensure the wishes of the mana whenua are represented. To achieve these outcomes to support the goal, research investment is focused on: • Designing and carrying out multi-faceted national campaign & local actions, based on stakeholder mapping and surveying, leading to community and council co-design for protection/restoration programmes. • Developing an end-user accessible, geo-referenced map of positive sites, sampled sites and hazard ratings to help inform and drive community initiatives to combat kauri dieback and myrtle rust. • Engaging with community and school groups through participatory science teaching methods e.g. Unlocking a Nation of Curious Minds. Social science trials new communication and behaviour change methods. Similarly to Oranga, there is substantial work to be done to increase public engagement with the response. In contrast, while there is some strong community engagement around kauri dieback (i.e. Keep Kauri Standing, and Kauri Rescue/Tiaki Mo Kauri), some have suggested that there is "myrtle rust fatigue" within the wider community. Previous funding for social science around both diseases has been largely limited compared to biophysical work, and many of the science system funding mechanisms do not lend themselves to this area. The Challenge has excellent track in enabling such areas and can substantially change the footing of this part of the system.		ISAP PLANS FULL	**Timeline to delivery** AW + ISAP approval by June 2020
3	**Theme** Integrated surveillance **Research** A Mātauranga Māori surveillance framework is being developed for kauri dieback and myrtle rust, co-designed with mana whenua hapū/iwi kaitiaki and central and local government. The framework is informed by traditional understanding of land and forest management and use. Surveillance and modelling of the distribution of pathogens, diseases and hosts, is being developed and ground-truthed using Mātauranga and improved detection technologies. An integrated surveillance approach allows up to date and accurate knowledge of the extent of kauri dieback and myrtle rust based on both Mātauranga and Western science, resulting in better management of threatened species and ecosystems and better support for community action. For both kauri dieback and myrtle rust there has been substantial effort in development of tools and technologies for surveillance. This has often focused strongly at the detection end of the spectrum, but with less emphasis on how to draw inference on presence / absence of the diseases at scale, and how this can be made relevant to local community. We see a strong opportunity for both to be improved, and that this would make a substantial contribution to management. If this could be achieved it will also provide an excellent opportunity for outreach via Goals 1 and 2.		CO LP SUM IC SLG AW ISAP PLANS FULL	Lead provider Manaaki Whenua Co-leads Privacy of natural persons (Tangata Whenua Rōpū) Privacy of natural persons (MW) **Timeline to delivery** AW + ISAP approval by April 2020
4	**Theme** Conservation & restoration **Research** The aim of this investment is to: • Help prevent the extinction of iconic species. • Protect at-risk species and ecosystems and taonga rākau (trees) and locations. Protocols for the effective long-term storage of kauri and Myrtaceae species are being developed to ensure that, in even the worst-case scenario, a species' survival can be maintained. This involves development of cultural authority agreements around the protocols and holding of material.		CO LP SUM IC SLG AW ISAP PLANS FULL	Lead provider Manaaki Whenua Co-leads Privacy of natural persons (MW) Privacy of natural persons (Auckland Botanic Gardens/Auckland Council) **Timeline to delivery** AW + ISAP approval by June 2020

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	A Mātauranga Māori guided exploration of whakapapa for kauri and key myrtle species, and how this may or may not relate to genetic / genomic understanding of species diversity, is also being undertaken to inform genetic research and conservation practice. An understanding of genetic diversity in kauri and key Myrtaceae species will inform other investments, especially around selection of material for conservation, resistance screening, and understanding of population histories and potential future trajectories. This will in turn underpin future breeding programmes for species where these are deemed to be culturally appropriate. Ultimately this will lead to field trials of potentially resistant plants for evaluation. This research facilitates the collection and preservation of seed of kauri, myrtles and other ecosystem-dependent species, and includes access to germplasm for research on threatened species and potential breeding. Co-development and implementation of a multi-year plan with hapū, to explore what research options for conservation and restoration are culturally acceptable is crucial. This investment works from the perspective of the host and ecosystem, incorporating conservation biology principles to ensure the survival and persistence of susceptible species. Application of methodologies developed by primary industries is often appropriate, but all activities follow a co-design principle with Māori.			
5	**Theme** Risk assessment and ecosystem impacts **Research** In this investment, standardised impact measures are being developed using existing work and strengthening incorporation of kaupapa Māori approaches to increase their relevance to a wider range of communities. These in turn inform more comprehensive risk assessment for ecosystem impact, and identify more comprehensively where risk lies, either geographically in the case of kauri but also in regard to possible host species for myrtle rust. Impact measures also examine broader ecological impacts on associated flora and fauna. Ecosystem impact assessment is comprised of measures of ecosystem health and resilience, both in a western science and Mātauranga Māori framework. This investment builds substantially on MPI-funded work for MR, which will feed into Goal 4, informing host species management. For KDB, it forms part of a more holistic response, by taking an 'ecosystem resilience' approach. There has been some focus on resilience to date, but at limited scales (often microbial). An ecosystem-level approach to kauri dieback and myrtle rust has long been advocated for by Māori, and this workstream aims for a kaupapa Māori and ecosystem-level approach, focused at site-to-landscape scales.		CO LP SUM IC SLG AW ISAP PLANS FULL	**Lead provider** Scion **Co-leads** Privacy of natural persons (Scion) Privacy of natural persons (UoA) **Timeline to delivery** AW + ISAP approval by June 2020
6	**Theme** Host/pathogen/environment **Research** Understanding the current and evolving diversity of pathogen populations is essential for long-term management of both diseases (and for kauri dieback, the origin of the pathogen). Similarly, knowledge of host populations is required for management, conservation and restoration efforts. In this investment, the role of factors such as disturbance associated with animal and human activity, topography, weather, soil type, aspect, pest control, other bio-physical factors in disease development is being determined, both under current conditions and under future climate change. The influence of multiple abiotic and biotic stressors on disease latency and expression, and host responses is being investigated. The investment will directly inform research and operational management in several other investments, particularly Goals 2 and 5, and will be complimentary to Goal 4 in setting conservation priorities. There has been limited work to date on the environmental drivers of KDB, with the exception of studies looking at animal vectors. One outstanding question that needs to be addressed are the role of other biotic stressors, in particular other phytophthoras, in KDB dynamics. Work on the mediation of infection for		CO LP SUM IC SLG AW ISAP PLANS FULL	**Lead provider** Plant & Food Research **Co-leads** Privacy of natural persons (PFR) Privacy of natural persons (Perception Planning and Tangata Whenua Rōpū) **Timeline to delivery** AW + ISAP approval by June 2020

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	both diseases by other microbes has been very limited in Aotearoa to date yet is potentially of high value in attempting to identify novel methods for halting the decline of kauri and Myrtaceae species. The genomes of both pathogens have been sequenced, and offer unique insights into how these pathogens are able to infect and cause disease, as well as open opportunities to investigate new ways to control or manage these pathogens. The genome for *Austropuccinia psidii* is the largest fungal genome sequenced to date, and can be used to investigate how this species has evolved to become invasive on a pandemic scale with a host range of over 580 plant species. Investigation of Myrtaceae hosts genomes already sequenced will complement the work.			
7	**Theme** Control, protect & cure **Research** This investment is developing a suite of fully integrated management tools and approaches to protect taonga/iconic trees and locations. The aim is to prevent physical, aesthetic and ecosystem damage to coastal, interior and urban landscapes dominated by myrtle plants, and to kauri forest ecosystems. The tools being developed are culturally appropriate, informed by Mātauranga Māori. Hui and community workshops are aimed at socialising new technologies, assessessing important values and concerns, and ensuring integration with operational activities and case studies. One important focus of the work is that ecologically and socially relevant 'management units' are being defined – i.e. how pathogens spread, and when and where treatments are effective. Decision support and modelling approaches (linked to Goal 3) are being developed to determine the most appropriate management interventions based on factors such as disease spread and treatment efficacy. Laboratory and field studies are being conducted to test the efficacy of various decontamination approaches for soil. Management methods for infected areas (i.e., Mātauranga Māori, chemotaxis, biological control, phosphite treatments) are also being developed via this investment. The team are also determining whether site manipulation can work to control disease. This activity incorporates research from many of the other six investments, but with an emphasis on novel tools and approaches to KDB and MR management. Two key areas with a high degree of novelty include the extension of both (1) biological control and (2) rongoā research. In the case of biological control, most focus to date has predominantly been on viruses, but there is considerable scope to explore whether other taxa can be effective biocontrol agents. This investment links to a review of biocontrol approaches in the Beyond Myrtle Rust programme and extends to active research and investigation. For KDB, the role of soil microorganisms is the logical focus of potential biocontrol solutions.		CO LP SUM IC SLG AW ISAP PLANS FULL	**Lead provider** Scion **Co-leads** Privacy of natural persons (Scion) Privacy of natural persons (Perception Planning and Tangata Whenua Rōpū) **Timeline to delivery** AW + ISAP approval by June 2020

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Challenge Tranche 2 – Supporting Architecture (Pou)	
Pou	Research overview
Crazy & Ambitious Think Tank	During the scoping and pitch process, several teams identified the need to have researchers and key stakeholders working closely with local communities, including mana whenua, to collect local data in local places. By 'data' we mean for example biophysical measures of pest and pathogen abundance; indices of biodiversity; mātauranga; biocultural indicators; measures of human wellbeing; and changes in human behaviour and actions. Whilst the collection and collation of such data is vital to the overall success of our research investments, this approach alone is risky. First, even if our teams are working to share information across SO and NRT Goals, we will be unable to synthesise, integrate and aggregate such information in the absence of a 'big picture' framework. This risks creating 'silos' across our investments. Second, the 'bottom up' approach is not appealing to some of New Zealand's best researchers and knowledge holders who have expertise in 'systems thinking' or a more holistic world view – we cannot afford to lose this expertise from the Challenge. And third, whilst 'on ground' research with communities has been a mainstay of the Challenge's success to date, it tends to be focused towards the right-hand end of the innovation pathway, i.e. on operational research and/or implementation. Ensuring that a modest resource is dedicated to creating a conceptual framework across the Challenge and NRT will ensure a stronger focus on discovery science, using fresh theoretical thinking. Hence the porposed formation of the Crazy & Ambitious Think Tank (CATT). A related opportunity we have with the CATT is to maintain momentum from Tranche 1, by synthesising social and ecological data collected in T1 project investments and weaving this more effectively into Tranche 2. Whilst this is to some extent being done via the individual teams, again it is important to aggregate the information and synthesise it into a cohesive whole that is greater than the sum of the parts. A third emergent need from the scoping process was the observation that some research areas, whilst high priority, face many 'systemic' issues – so much so that Challenge investment alone will make very little difference to solving a particular problem. The Challenge cannot possibly address all priority needs, but what we can offer is to lay the groundwork for future investments (either from the Challenge envelope in future, or from future budget cases for extra funding). It is necessary to put some thought into this now so that we are well positioned to apply a collective impact approach to these issues and consider exactly where Challenge investment would add the most value. Examples that emerged from the scoping process include but are not limited to: freshwater restoration; weed management; strengthening the biosecurity system; and how to build mātauranga more effectively into science policy. We recommend this level of funding to June 2021 to: • Appoint the co-leads ([redacted] and [redacted]; each 0.1 FTE) to work with the Chief Scientist ([redacted]) to scope the work of the CATT to June 2021, with a focus on developing a conceptual framework for the Challenge; this includes full consideration of a Te Ao Māori world view (by June 2020). • Assemble a small group with diverse expertise, including Māori and early-career people, to contribute to the think tank – with a particular focus on data integration from Tranche 1 and emergent Tranche 2 investments (group assembled by June 2020 and data integration underway in Q1 and 2 or FY21). • Scope the 'think pieces' needed (we envisage $30-50K per think piece) and run a small contestable 'seed and scope' process with an open call for teams to complete the think pieces for the Challenge (one think piece completed by June 2020; and up to three more by June 2021).
Champions & Influencers' Programme	A critical need that emerged across the 2019 scoping process was the need for better 'storytelling'. By this we don't mean BAU 'communications' expertise; rather a focus on trusted and credible messengers, embedded in local areas, who are highly influential in shaping the behaviours and actions of other people partly because they apply values-based messaging and they 'walk the talk'. This was also identified as a need by stakeholders: for example, both the NZ Biodiversity Strategy and Biosecurity 2025 documentation highlight the need for champions and influencers to drive transformational change in the way we protect and manage Te Taiao. Identifying and growing these individuals into a network of champions and influencers for the Challenge (and for Aotearoa) was identified as a particular need in SO1, but a similar need was identified in SOs 2, 3, 6 and 7. For the sake of efficiency we have reduced investment in local champions that was originally proposed within individual SOs. Instead we propose to: 1. Partner with 'The Workshop' – a Wellington-based 'think and do' tank spearheaded by [redacted] (https://www.theworkshop.org.nz/our-approach) to invest in a cross-Challenge programme aimed at growing a network of champions and influencers that would be shared across multiple SO case studies. Exploratory work needs to be done with The Workshop to ensure that any programme they co-design with and for us is fit-for-purpose and creates the impact we are looking for – this would involve modest investment initially, but could be increased (e.g. from the 20% Challenge contngency) if it proved to be successful and supportive of the research case studies in SO and NRT investments.

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	2. Allocate a small 'retainer' for Edmund Hillary Fellow Privacy of natural persons to work with Challenge SO teams to help with pitching to potential investors. This is an important part of the 'storytelling' approach because it will support SO and NRT teams to convey clear messages to potential investors. Initial funding (to June 2020) in the C&I Programme would be used to: • Have two members of the Challenge SLG attend 'Common Cause' training workshops run by The Workshop in April and May. • Work with members of The Workshop team, and with Privacy of natural persons, to further scope a C&I Programme including key deliverables and a timeline for the first 12 months. Funding from July 2020 would be used to: • Identify potential champions/influencers emerging from case studies in the SOs and in NRT, and further co-develop the C&I Programme with The Workshop to 'onboard' and grow these individuals to re-frame key conversations, motivate people to act, and ultimately, influence policy and public discourse at local, regional and national levels.
Data Connectivity Platform	"Data connectivity" has emerged as critical issue across several BioHeritage Scoping Groups and for partners that BHNSC works closely with. There is a critical gap in this area that the Challenge can address, ideally in conjunction with others doing similar work. The Challenge needs to be able aggregate, synthesize, interrogate and distribute data relevant to its 2024 goals. Initially, the focus would be on two areas key areas -- Ngā Rākau Taketake (plant pathogens) and Predator Free 2050. However, the aggregation of data will be equally important to the success of other BHNSC programmes, such as the bioheritage scorecard. In short, the Challenge needs to support the development of a data collaboration and analytics / visualisation tool. The Challenge is currently calling this product a "data connectivity platform," although the best technical term is up for discussion. The Challenge envisions this as a technical tool that allows it or partner agencies to "pool" or federate data and then analyse it to make policy/management decisions or investment choices. <u>Key deliverables</u> • An assessment of related current work or relevant historical projects • A plan to engage with relevant organisations through which the Challenge might leverage additional resources • Creation of a MVP system or tool the allows the Challenge and partners such as DOC, PFNZ Ltd, MfE, etc. to aggregate and analyse data • An ability to bring in more data sets over time The deliverables will need to be aware of Maori data sovereignty considerations and to respond to the Wai262 claim. Appropriate stop-go decision points will need to be incorporated. <u>Background</u> The Challenge is aware that this has been an ongoing need for NZ and believes that we can be the catalyst to develop a minimum viable product (MVP) for bio data. There is historical work to build on, such as the Bio data Services Stack (BSS), which successfully demonstrated that bio data federation in New Zealand is possible, although not simple. The project concluded that New Zealand should work toward a persistent, sustainable, and well-supported national Bio Data Infrastructure (BDI). Stats NZ, for example, operates the Integrated Data Infrastructure (IDI), a large research database with data about people and households. The Challenge's proposed data connectivity platform should be seen as contributing to this kind of capacity. (The full final report of the BSS project can be found at: https://tinyurl.com/y9df72f2.) The Land, Air, Water Aotearoa (LAWA) partnership operates a website to share environmental data and information (https://www.lawa.org.nz/about). Similarly, MBIE recently funded the "Time-Evolving Data Science / Artificial Intelligence for Advanced Open Environmental Science" research project, which includes development of a "platform for organising and accessing data." See https://taiao.github.io/taiao/ The Department of Conservation also has been developing a trapping data visualisation capacity with Southland Regional Council that could potentially be aligned with this initiative. In response to the PCE's report (https://www.pce.parliament.nz/publications/focusing-aotearoa-new-zealand-s-environmental-reporting-system) MfE and the EMaR (Environmental Monitoring and Reporting) consortium are also looking at system design and resourcing for reporting environmental data. The Challenge is aware that data collection and sharing technology is changing rapidly, many organisations have initiatives in this area and new tools are continually being discussed. The Challenge wants a tool that meets our immediate needs, while being flexible enough to respond to new developments and demands. National collaboration to this end would be ideal.

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Ngā pī kā rere (Early Career)	ECs ended up being a vital part of the scoping process, and they added a huge amount of value because of their networks and expertise. It is vital that we continue to support them, in part because building a diverse network raises the Challenge profile and awareness across expertise we otherwise would not be able to access.
	
	Throughout the scoping process in 2019, a group of c. 10 ECs (early-career individuals) contributed to all the design workshops. The group was spearheaded by Privacy of natural persons and Privacy of natu [redacted]. After the investment pitches, the EC group made four recommendations, centred on creating impact through an EC network as part of the Challenge investments. These recommendations focused on:
	1. Clear and diverse career pathways (including but not limited to academia)
	2. Building leadership capability in a collaborative system
	3. Driving excellent mentorship and support
	4. Networking opportunities not afforded in an individual's organisation alone.
	The four areas are not independent of one another, and were seen as enabling ECs to support and grow research activities (i.e. the network would be focused on ensuring that ECs are contributing meaningfully, and had opportunities to grow within, Challenge research investments).
	The proposed EC network's points of difference from those facilitated by individual Challenge Parties are that (1) it will span the innovation pathway, enabling ECs to network across organisations and disciplines; and (2) it explicitly includes individuals from stakeholder organisations, thus providing greater diversity in the group, expanding the horizon of researchers who often believe that the only career pathway is academia.
	We recommend a modest investment ($50K) in continuing the EC network to:
	• Fund a key individual (Privacy of natural persons) to work with Privacy of natural persons to continue building the network, with a focus on supporting research investments in the 'right teams'; highlighting more clearly the diversity of pathways and/or opportunities; and seeking out ECs with critical skills who may have capacity to take on work if mentored by the right experienced leaders.
	• Seek out individuals that encompass the diverse career paths in biodiversity and biosecurity, including (but not limited to) local government, MPI, DOC, science communication, industry, not-for-profit, outreach and research.
	• Develop an EC advisory group for the BioH Challenge, with an **external** focus on developing new pathways to support research activities through negotiation and influence (e.g. influencing others to contribute to the 2024 goals), and an **internal** focus on reviewing annual workplans and ensuring early-career expertise and skills are built into the teams.
	• Continue to champion having roles for ECs in the wider leadership team of the Challenge.
	• Ensure that some seed-and-scope funds or other investments are targeted to ECs.
	• Provide mentorship for more established BHNSC members ("dual mentorship"), especially in regards to emerging skills within technology, data analyses & data management.
	• Build the next generation of collaborative leaders who are comfortable working across disciplines and sectors, to ensure succession planning.
	• Ensure that ECs continue to be involved in defining research priorities so they can:
	  o Get a sense of what the people ultimately making funding decisions see as important and valuable;
	  o Understanding of how strategic processes work so that they are better placed to contribute in future;
	  o Demonstrate their knowledge and skills to potential future collaborators and employers.
	Measurements of impact will include:
	• Capturing narrative around what the BHNSC is doing well already – building on the study of Challenge collaborative processes completed by Privacy of natural persons
	• Capturing information on EC involvement and success, ready for Challenge and NRT reporting.
	• Mapping and characterising EC networks over time, with a baseline network analysis completed by June 2020.
	What will be completed by June:
	• Continuing to build the network, and developing the EC advisory group (baseline network analysis completed by June).
	• Supporting networking and capacity building for the ECs above and beyond their time funded by specific SOs and in the Crazy & Ambitious Think Tank.

Māori Rōpū	The Māori Rōpū (yet to be named) will act in part like the Kāhui Māori did, in that they will provide advice around research procurement, content and quality. They will also be able to help us shape our Māori stories and reporting against KPIs. In the first year the intention is to use this budget to resource our T2 participation in Rauika Māngai (the cross-NSC Māori Rōpū).
Critical reflections and measuring impact	It would be prudent to set aside a modest amount pa (at this stage it is $35K; see Table 1) to ensure that we are measuring the 'right' things that demonstrate progress towards our intention to create impact. This is for two reasons. First, the Support Team and most SLG do not currently have expertise in impact measurement, and especialy not in measuring progress around collective impact. Thus, we may need to out-source such expertise. Second, we have agreed KPIs in both the Challenge and NRT that will require Challenge resource to measure (in previous years MBIE have done some measurements, and they still do, but these are more traditional metrics and it is clear that they expect the Challenge to proactively set baselines and quantify annual targets as progress towards the KPIs ourselves.

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BioHeritage Whakapapa

Saving Our Iconic Trees | NEW ZEALAND'S BIOLOGICAL HERITAGE | National Science Challenges

- The objective of New Zealand's Biological Heritage (NZBH) is to *"protect and manage our biodiversity, improve our biosecurity and enhance our resilience to harmful organisms"*. The Challenge's research aims to **reverse the decline of New Zealand's biological heritage** through a national partnership to deliver a step change in research innovation, globally leading technologies, and community and sector action.
- The Challenge is hosted by Manaaki Whenua – Landcare Research. Collaboration partners are all New Zealand universities, all Crown research institutes, the Cawthron Institute, the Ministry for Primary Industries (MPI) and the Department of Conservation (DOC).
- The Challenge was launched on 29 August 2014. The Government allocated up to $63.7 million (excl. GST) for New Zealand's Biological Heritage over ten years to 30 June 2024. Funding for the first five-year period, Tranche 1, to 30 June 2019 was $25.8 million (excl. GST). Funding for the remaining five-year period to 30 June 2024 is $37.9 million (excl. GST).
- **In 2015** NZBH developed its investment processes and worked with stakeholders to understand investment priorities. **Five** research leaders were identified, they developed research projects which were assessed and eventually approved by Challenge Governance for investment.
- **In 2016** NZBH invested in a further **two** research leaders and their projects. NZBH also held a contestable funding round which invested in five research projects including research showing how native plants may provide long-term solutions to kauri dieback by attracting and killing spores of *Phytophthora agathidicida*, and in research which empowered several communities to fight kauri dieback on a large scale by providing practical tools and knowledge to delay development of the disease.
- **In 2017** NZBH invested in its **final** VM project, signing off on a research plan that had taken a number of years to develop. **In 2018** NZBH signed off on its **final** research project, and by the end of 2019 almost all of NZBH's Tranche 1 projects were complete. Many of which rolled into Tranche 2 scoping groups and projects. Only two research projects were carried over into 2020.
- In Tranche 1, NZBH developed innovative tools to eradicate pests and diseases that threaten biodiversity. New 'super-lures' based on ferret odour were shown to be successfully attracting stoats, rats and hedgehogs, and began being trialled by regional councils, community and conservation groups in Hawke's Bay and the Hauraki Gulf. Significant progress was made in new technologies to control wasps; using novel science with the potential for major impacts, and complementary research on wasp population dynamics laid the groundwork for field application of the technologies, and understanding the response of wasp populations to climate change. However Tranche 1 research did not save one species nor one tree.
- Despite the great research done in Tranche 1, Challenge Parties realised that $63.7 million was nowhere near sufficient to 'reverse the decline of New Zealand's biological heritage'. Challenge Parties were however strongly supportive of NZBH and **aligned over $176 million** worth of research towards the Challenges objective. This illustrates the progress NZBH has made in coalescing previously disparate biodiversity and biosecurity research activity, and this collective funding would have had a better chance at reversing the decline of NZ's biological heritage. It is this collective impact view that drove the development of the NZBH 2019-2024 Strategy.
- **In 2018**, NZBH was required to undergo a mid-way review in order to secure its Tranche 2 funding. In response to feedback from Challenge Parties and stakeholders a new strategy was designed to reflect the collective aspiration to; try something new, defragment the sector and attempt to save one tree or species. The new approach laid out in the Challenges 2019-2024 Strategy was seen as visionary and bold by the assessment panel who **recommended further investment** in the Challenge. Tranche 2 funding was confirmed by MBIE in XXXX, and months later the Challenge was asked to host a SSIF Platform for Kauri Dieback (KDB) and Myrtle Rust (MR). In November 2018 Ngā Rakau Taketake SSIF Platform surge funding was announced by Minister Woods. The contract was signed in May 2019.
- **In 2019** NZBH, whilst wrapping up Tranche 1 research, ran a scoping process which developed and tested 2024 goals, mapped current investment, identified research and investment gaps, and made decisions on where the Challenge should invest. In addition it determined who the research leads and lead organisations should be and allowed them to build the 'right teams'. During this period NZBH also invested in urgent NRT research, and funded some overlapping research to tie Tranche 1 and Tranche 2 together. This meant that the Challenge could ensure it was developing the best research programmes, while undertaking critical research.
- **In 2020** NZBH, will ensure all 14 investment areas have developed a research workplan, based on the scoping report, a communications and engagement plan, and that these workplans have been peer reviewed and are endorsed by Mana Rangatira. Contracts will then been issue that acknowledge NZBH's **'new way of operating'**, which **gives researchers and research providers certainty of funding** whilst allowing for an agile workplan. Challenge leadership and governance have the **ability to review and revise investment annually**.
- As NZBH approaches the end of the third quarter or year one, we believe it is in a much stringer position than it was at the same time in Tranche 1, and thank all those researchers who have already been working and delivering excellent research despite final contracts not being issued.

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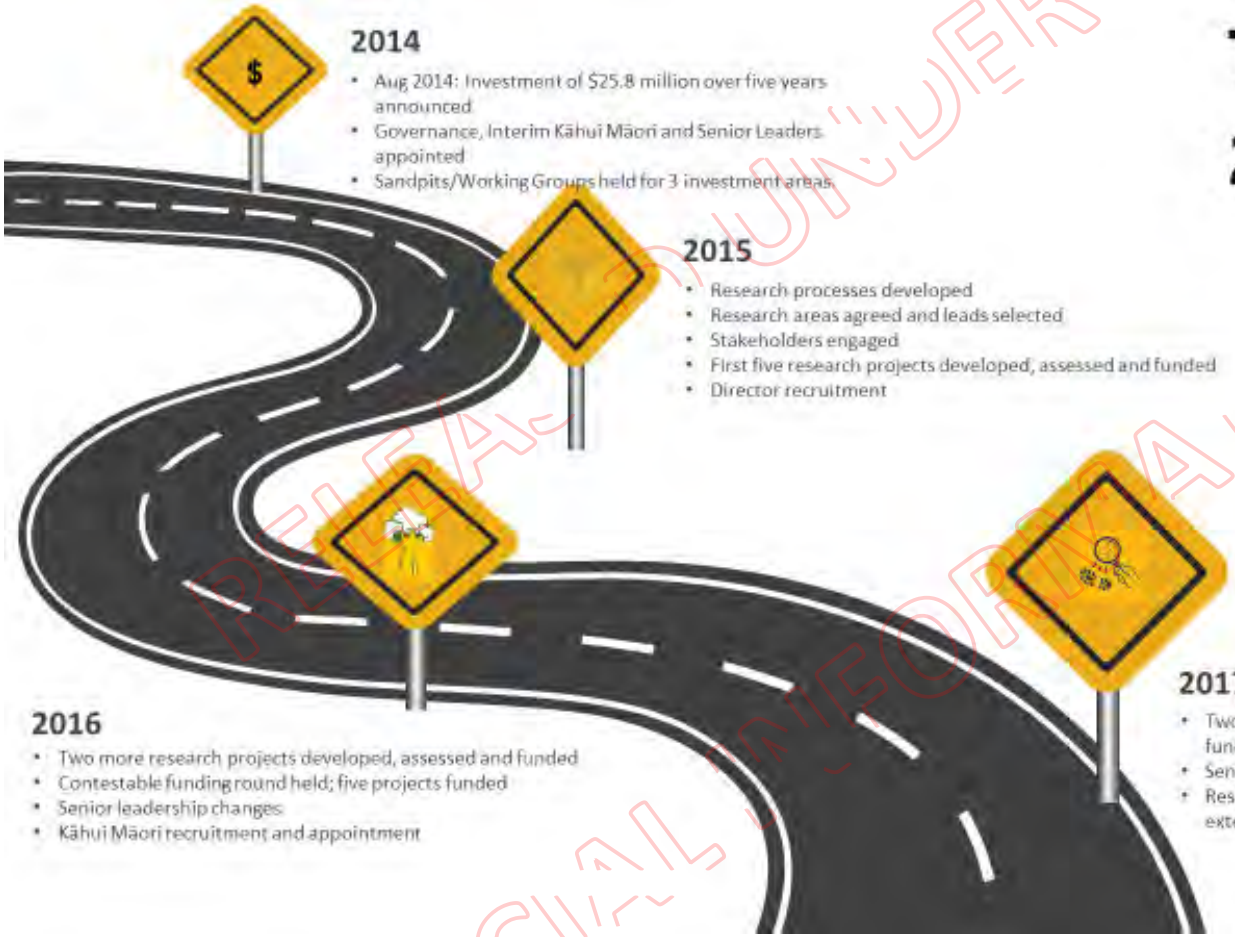
Tranche 1
2014-2019



2014
- Aug 2014: Investment of $25.8 million over five years announced
- Governance, Interim Kāhui Māori and Senior Leaders appointed
- Sandpits/Working Groups held for 3 investment areas

2015
- Research processes developed
- Research areas agreed and leads selected
- Stakeholders engaged
- First five research projects developed, assessed and funded
- Director recruitment

2016
- Two more research projects developed, assessed and funded
- Contestable funding round held; five projects funded
- Senior leadership changes
- Kāhui Māori recruitment and appointment

2017-19
- Two final research projects developed, assessed and funded
- Senior leadership changes
- Research undertaken, finalized and extended/amended where required

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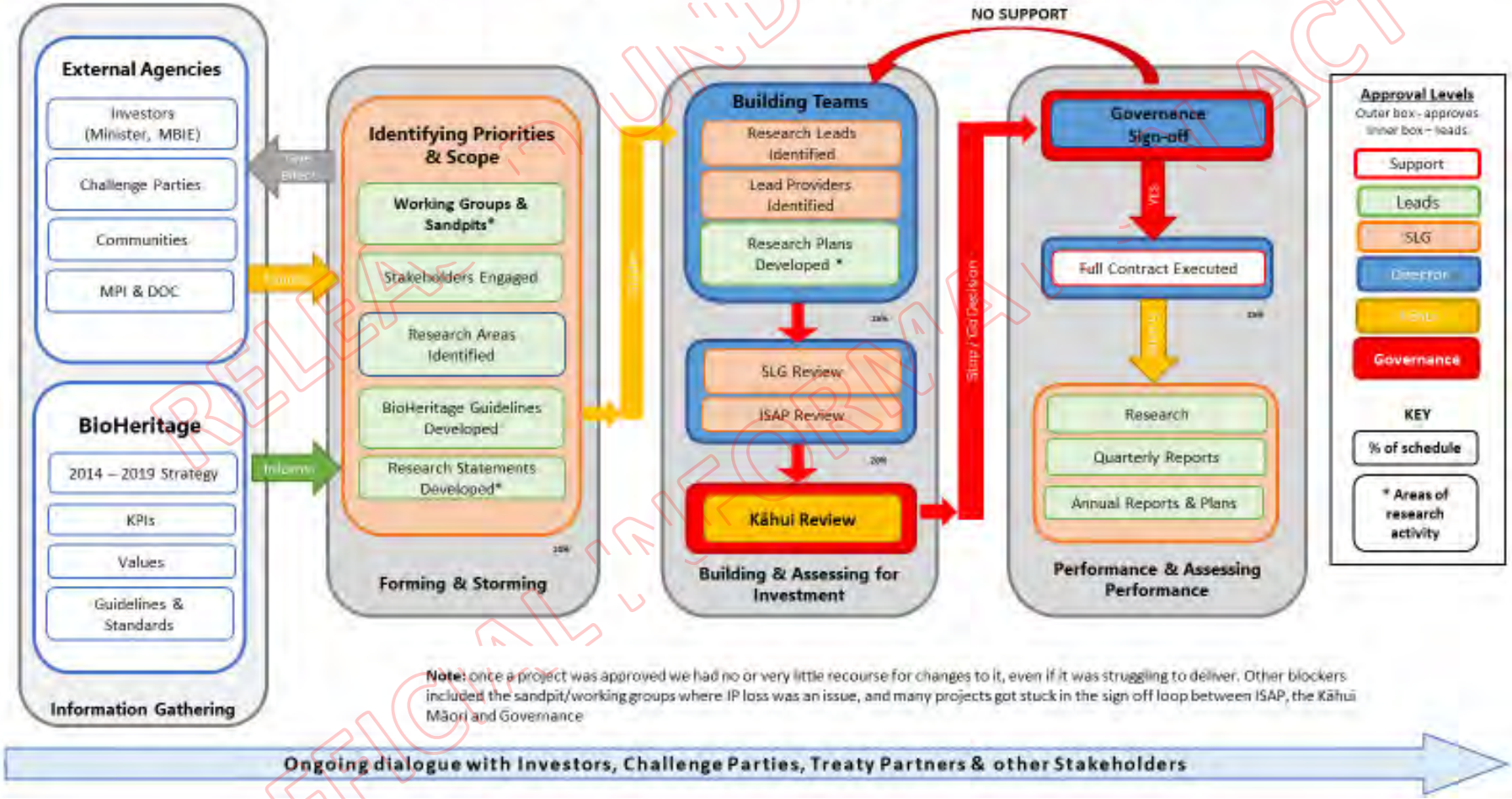
Tranche 1 (2014-2019) Decision Making & Investment Process



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Roadmap for Challenge Tranche 2

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Roadmap for Ngā Rākau Taketake

Nov 2018

- Investment of $13.75 million over three years announced

2019

- SSIF platform developed & submitted (Contracted with MBIE – May 2019)
- NRT co-leads appointed
- Rapid Implementation Group identified urgent investment needs – two research contracts underway, through to July 2020
- Plant Pathogen Scoping Group produced report identifying seven research themes and priorities for NRT investment
- Leads and lead agencies for two further 'themes' identified; initial contracts issued
- Further investment in Kauri Dieback announced ($20.75 million)

2020

- Guidelines and standards, and decision-making framework developed
- Leads and lead agencies for remaining three 'themes' identified; initial contracts issued
- Annual plans developed, reviewed and approved
- Full contracts issued
- Additional Kauri Dieback investment contracted
- NRT annual report
- Myrtle Rust & Kauri Dieback Symposium held

2021-23

- Research well underway
- Annual plan updates and reviews
- Mana Rangatira reassessment of investment spread
- NRT annual reports
- Myrtle Rust & Kauri Dieback Symposia held

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Ngā Rākau Taketake Roadmap 2020-21

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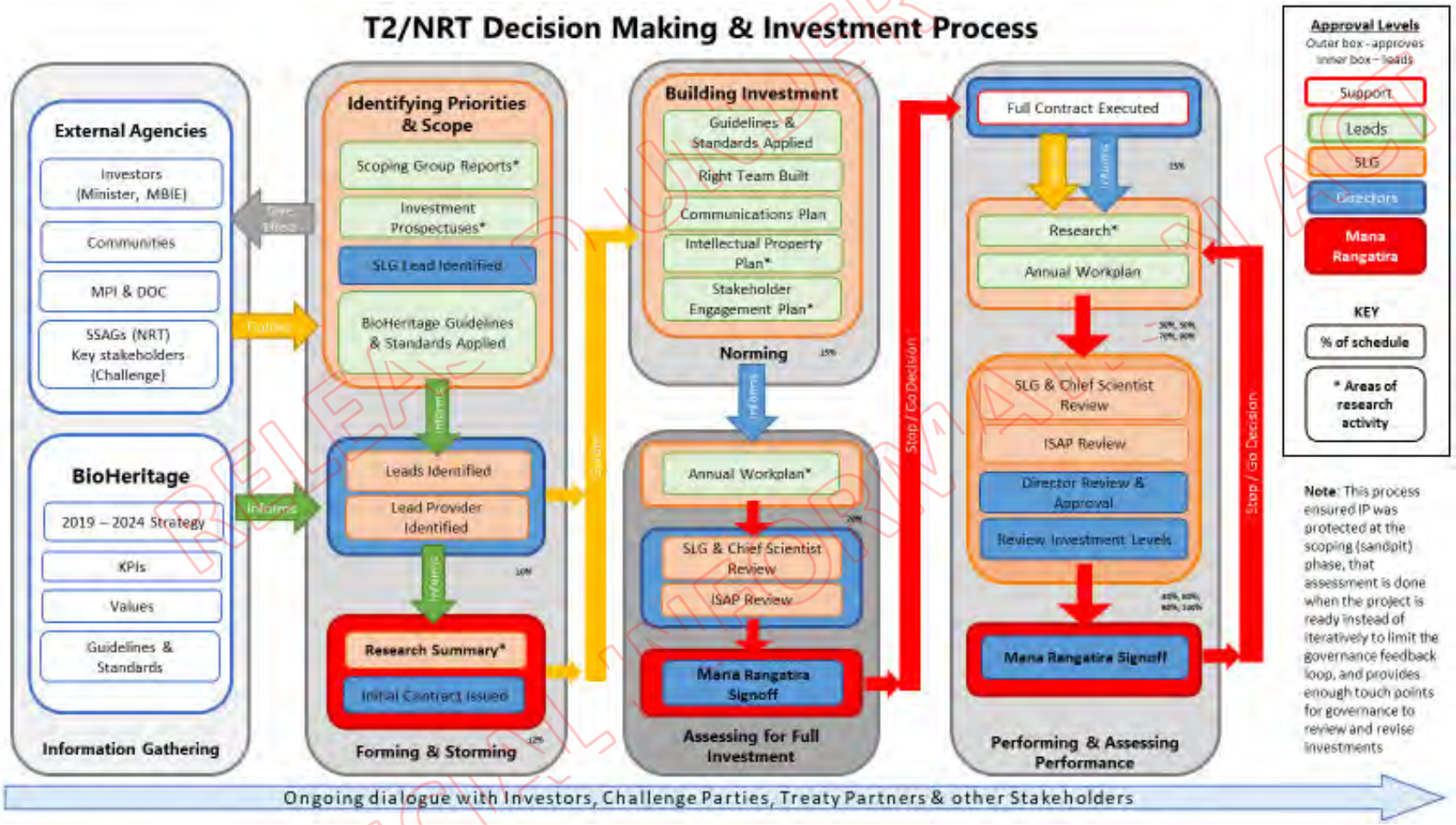

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Year 1 July 2019 – June 2020	SO1 Scorecard	SO2 Stewardship	SO3 Risk Assessment	SO4 Surveillance	SO5 Tools & Tech	SO6 Restoration	SO7 Policy & Governance
Lead Organisation	The University of Waikato	Eco Research Associates Ltd; learning sustainability	agresearch; B3	TBC	Wellington	CAWTHRON The power of science	Victoria University of Wellington Te Herenga Waka
Lead Researchers (Male 8 (44%), Female 6 (33%), Māori 5 (28%))	Privacy of natural persons	Privacy of natural persons	Privacy of natural persons	TBC*	Privacy of natural persons (TBC)	Privacy of natural persons	Privacy of natural persons
Budget	$3,101,000	$1,631,000	$2,414,000	$2,026,000	$3,641,000	$2,811,000	$3,209,000
Status	CO, LP, SUM, IC, SUG, AW, ISAP, PLANS, FULL	CO, LP, SUM, IC, SUG, AW, ISAP, PLANS, FULL	CO, LP, SUM, IC, SUG, AW, ISAP, PLANS, FULL	CO, LP, SUM, IC, SUG, AW, ISAP, PLANS, FULL	CO, LP, SUM, IC, SUG, AW, ISAP, PLANS, FULL; CO, LP, SUM, IC, SUG, AW, ISAP, PLANS, FULL; CO, LP, SUM, IC, SUG, AW, ISAP, PLANS, FULL	CO, LP, SUM, IC, SUG, AW, ISAP, PLANS, FULL	CO, LP, SUM, IC, SUG, AW, ISAP, PLANS, FULL
% of Schedule Towards Completion	15% ↑	10% ↑	7% →	5% →	12% ↑	15% ↑	15% ↑
Outputs 19/20	• Stakeholder analysis complete	• Stakeholder analysis complete • Paper submitted to Pacific Conservation Biology: empowering the 'local' voice in a graphical representation of New Zealand's Biological Heritage (Flora & Fauna) • Rea Māori biodiversity posters for kura developed and entering production • Work programme aligned with NRT Goal 2	• Stakeholder analysis complete • International Indigenous Biosecurity Hui Taumata held, business plan developed for continuation of Network created • Work programme aligned with NRT Goal 5	• Stakeholder analysis complete • Work programme aligned with NRT Goal 5	• Stakeholder analysis complete • Survey design underway • Tech companies interviewed	• Stakeholder analysis complete • PhD student supported	• Stakeholder analysis complete

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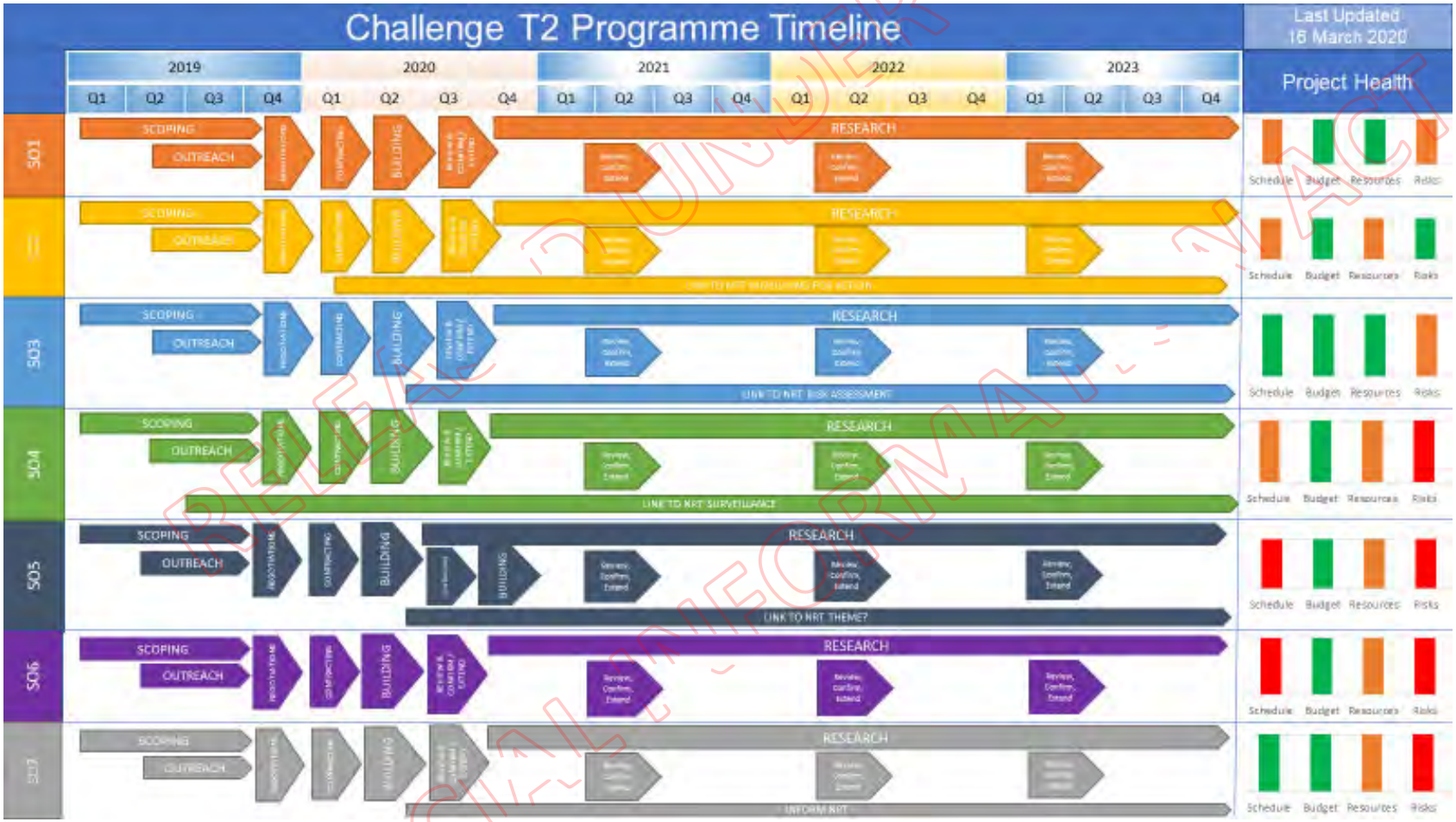

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Surge funding May 2019 SSIF Top-Up coming Y1 May 2019 – July 2020	Oranga	Mobilizing for Action	Integrated Surveillance	Conservation & Restoration	Risk Assessment, Ecosystem Impact	Host, Pathogen & Environment	Control, Protect & Cure
Lead Organisation	TE TIRA WHAKAMĀTAKI FOUNDATION	UNIVERSITY OF AUCKLAND	Manaaki Whenua	Manaaki Whenua	scion	RESEARCH	scion
Lead Researchers Male 5 (36%), Female 9 (64%) Māori 6 (43%)	Privacy of natural persons Melanie Mark-Shadbolt	Privacy of natural persons	Privacy of natural persons	Privacy of natural persons	Privacy of natural persons	Privacy of natural persons	Privacy of natural persons
Budget	$4,485,000	$4,485,000	$3,795,000	$6,210,000	$5,520,000	$5,175,000	$4,140,000
Status	CO, LP, SUM, E, SLG, AW, ISAP, PLANS, FULL	CO, LP, SUM, IC, E, SLG, AW, ISAP, PLANS, FULL	CO, LP, SUM, IC, SLG, AW, ISAP, PLANS, FULL	CO, LP, SUM, E, SLG, AW, ISAP, PLANS, FULL	CO, LP, SUM, IC, E, SLG, AW, ISAP, PLANS, FULL	CO, LP, SUM, E, SLG, AW, ISAP, PLANS, FULL	CO, LP, SUM, IC, E, SLG, AW, ISAP, PLANS, FULL
% of Schedule Towards Completion	12% ↑	12% ↑	20% ↑	10% →	10% →	10% ↑	20% ↑
Outputs 19/20	• Appointment of Kaumatua rōpū • Rongoā trials underway • Rongoā wānanga run • Pl staring in a mini-documentary on kauri rongoā • Book chapter in print • Co-funding from DOC for seed conservation work	• 120 people interviewed over 60 hui (including senior policy people, kaitiaki and community leaders / representatives) • *Ongoing support for Kauri Rescue*	• Māori Advisory Group (Tangata Kokiri) established • Researcher and community hui held • Surveillance framework designed and being tested with agencies (i.e. MPI), researchers and Māori • Aligned MBIE bid submitted		• Myrtle rust biology and its impacts on vulnerable hosts research conducted	• Fundamentals of MR early invasion impact biology conducted	• 120+ people interviewed (incl. researchers, agencies, industry, Māori) • Engagement and communications plans complete • Seed funding approved for 3 novel tools to get them to market • SFI $1M biosecurity platform created

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% of Schedule Towards Completion	12% ↑	12% ↑	20% ↑	10% →	10% →	10% ↑	20% ↑
Outputs 19/20	• Appointment of Kaumatua rōpū • Rongoā trials underway • Rongoā wānanga run • PI staring in a mini-documentary on kauri rongoā • Book chapter in print • Co-funding from DOC for seed conservation work	• 120 people interviewed over 60 hui (including senior policy people, kaitiaki and community leaders/ representatives) • *Ongoing support for Kauri Rescue*	• Māori Advisory Group (Tangata Kokiri) established • Researcher and community hui held • Surveillance framework designed and being tested with agencies (i.e. MPI), researchers and Māori • Aligned MBIE bid submitted		• Myrtle rust biology and its impacts on vulnerable hosts research conducted	• Fundamentals of MR early invasion impact biology conducted	• 120+ people interviewed (incl. researchers, agencies, industry, Māori) • Engagement and communications plans complete • Seed funding approved for 3 novel tools to get them to market • SFTI $1M biosecurity platform created

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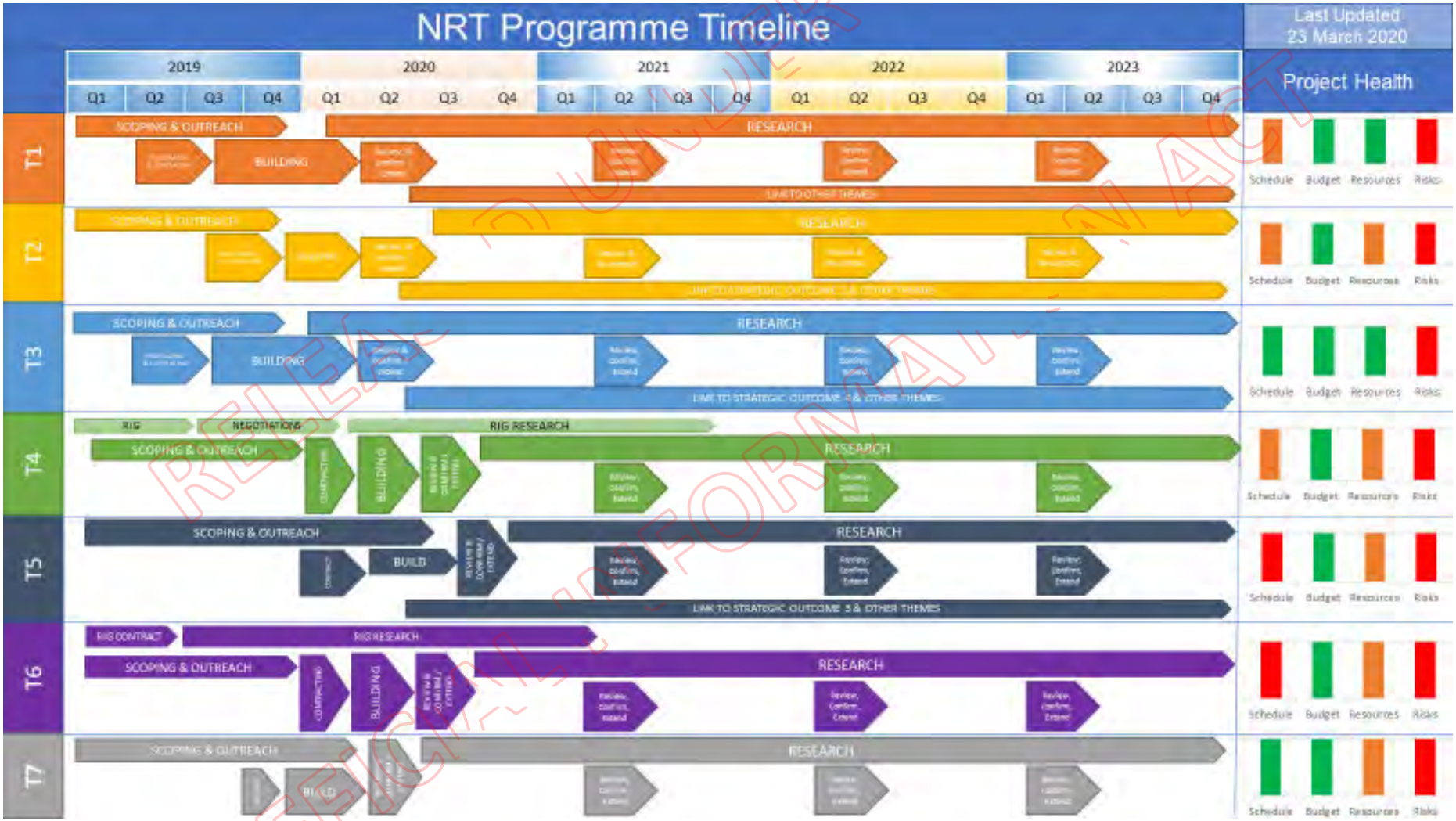

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Approval status:

Colour	Key step
	Funding approval being sought from Mana Rangatira and MW Board to **at least** 30 June 2020
	Funding already approved to 30 June 2020 by both Mana Rangatira and the MW Board; need to consider approving to June 2021 at a minimum
	Initial funding has been approved by Mana Rangatira and the MW Board; Will be ready to seek approval for a funding extension to June 2021, i.e. the team is satisfied that Annual Workplan will have been completed by June MRGG meeting and that peer review is in progress

Progress status:

Acronym	Key step*
CO	Co-leads appointed
LP	Lead provider identified and discussions underway
SUM	½ to 1-page summary of initial research – suitable for MRGG and Board approval – drafted by co-leads and SLG using material from Scoping Panel Report
IC	Support Team establishes initial contract and is providing guidance to lead provider on subcontracting
SLG	SLG guiding co-leads using criteria for 'building the right teams' and other guidance documentation available online
AW	Annual workplan, including Critical Steps and co-investment, ready for evaluation by Mana Rangatira
ISAP	ISAP have peer reviewed annual workplan
PLANS	Communications, IP and Stakeholder Engagement plans completed
FULL	Full contract executed

* colour-coded using traffic light system

Colour	Meaning
	Completed
	In progress and on track – live right now
	On track with issues being addressed – live right now
	Tracking towards
	Off track

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PORTFOLIO OF INVESTMENTS IN THE BIOLOGICAL HERITAGE CHALLENGE TRANCHE 2 AND NGĀ RĀKAU TAKETAKE SSIF PLATFORM

Purpose

To seek Board approval for funding for a portfolio of investments in Ngā Rākau Taketake (the SSIF platform for kauri dieback and myrtle rust) and the BioHeritage Challenge Tranche 2 to 2023 and 2024, respectively.

Key Points

The Challenge Governance Group, Mana Rangatira, has agreed on proposed multi-year funding profiles for the investment portfolio across the Challenge Tranche 2 and the Ngā Rākau Taketake SSIF Platform. This profile draws on the scoping/design work carried out during 2019, balancing the available investment to maximise overall impact. The roll-out of this investment will be subject to annual reviews, for each of the Challenge Tranche 2 Strategic Outcomes and the Ngā Rākau Taketake SSIF Platform Goals, to enable adaptation of the investment focus and balance in response to progress being made and/or changes in the external operating environment.

- We are now seeking approval from the Manaaki Whenua Board for funding required to deliver 2020-21 research for each Challenge Tranche 2 Strategic Outcome and Ngā Rākau Taketake Goal. These investments are worth $8.02m for Challenge Tranche 2 and $14.0m for the SSIF Platform. This will enable rapid scaling up of activity in each of these areas, following active development of research teams and plans, as well as initial research activity during 2019-20. Contracts with lead organisations for each Challenge Tranche 2 Strategic Outcome and Ngā Rākau Taketake SSIF Platform Goal will be based on research plans approved by Mana Rangatira.
- We will thereafter seek approval annually in April/May each year for the funding required for the following financial year to continue implementation of Challenge Tranche 2 and NRT.
- The Challenge is poised to significantly scale up its investment activity, and to provide certainty to research teams and organisations.
- The Challenge has developed step-by-step processes and criteria to assess the quality of all investments, including international peer-review, and made this information available online to ensure transparency and rigour in decision-making at every step.
- The Challenge also has an investment decision-making framework in place for ongoing active review by Mana Rangatira (including annual review).

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- Mana Rangatira works with the Challenge Director, Director Māori, and leadership team to identify and manage risk on a continual basis, with NRT and Challenge T2 treated as two distinct investments and risks managed accordingly.
- We briefly discuss the potential impact of COVID-19 on Challenge investments, noting that this will be covered in depth at the upcoming Mana Rangatira meeting on 2 April.

Recommendations

- That the Board approve the portfolio of funding for NRT ($14.0m) and Challenge Tranche 2 ($8.02m) to June 2021.
- That the Board note the work done to develop transparent and rigorous processes to allocate 'negotiated' funding, with active monitoring and review including international peer review.
- That the Board note the proposed investment profile for the remaining life of NRT and the Challenge respectively, to June 2023 and June 2024, and note the proposed annual review process that will take place before further approval is sought from the Board.
- That the Board note the work done to develop transparent and rigorous processes to allocate 'negotiated' funding, with active monitoring and review including international peer review.
- That the Board note the intention of Mana Rangatira to actively manage both investments, including bi-monthly check-ins on progress in addition to rigorous annual review, in line with the aspiration to deliver tangible outcomes and create impact by 2023/4.

Overview

As a reminder, scoping of BioHeritage Challenge and NRT investments was completed in late 2019. This scoping process positioned the Challenge well to contract early research in both the Challenge and in the NRT SSIF Platform. Defining 2023 (NRT) and 2024 (Challenge) Goals for each of the T2 Strategic Outcomes in turn enabled detailed research planning and start-up activity, led by designated leads for each Strategic Outcome.

As a result, the Challenge is poised to significantly scale up its investment activity, and to provide certainty to research teams and organisations.

The Challenge's Governance Group, Mana Rangatira, met on 23 March to discuss:

- Progress in rolling out previously-approved funding in NRT and in the Challenge Tranche 2.
- A proposed investment profile for both NRT and Tranche 2 over the life of each contract (to 2023 and 2024 respectively).

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- Details on the decision-making framework and key decision-points for Mana Rangatira, with a particular focus on the expectations of Mana Rangatira around tracking progress frequently (i.e. at least every two months) as well as through annual review.
- An agreed process to seek approval from the Manaaki Whenua Board for funding the portfolio of investments to June 2021 (this paper).

In this paper we seek approval for $6.73m of research investment across all seven of the Challenge's Strategic Outcome areas, $14.0m across seven Themes in Ngā Rākau Taketake, and for a $1.3m Challenge-wide fund for specific pieces of research to support both Challenge and NRT investments (called 'Supporting Architecture'). The investment portfolio is detailed in **Appendix 1**.

These proposed investments each entail a contract to a lead provider (either building on previously-approved work or to a new provider from one of the 18 Challenge Parties), with work to be completed by June 2021. Over the next 12 months it is the Challenge's intention to further build on these investments and provide longer-term certainty to the same lead providers (and their subcontractors) beyond June 2021, but given the rapidly-evolving nature of the COVID-19 situation we felt it was prudent to seek approval only to June 2021 at this stage.

We outline a framework for investment decision-making in more detail below.

Progress in rolling out previously-approved funding in NRT and Challenge T2

A dashboard of progress is provided in **Appendix 2**.

Processes and criteria for investment

All Challenge processes and criteria for allocating negotiated funding are online at:

https://bioheritage.nz/get-involved/1-tranche-2-essentials/

Investment decision-making framework and timelines

Previous approvals by the Board have enabled the Challenge to get research underway through four NRT contracts and five Challenge contracts. Research plans have been developed, the 'right' teams constructed and subcontracts issued to key personnel. Prior to the COVID-19 pandemic, co-investment conversations were being held with stakeholders and aligned research activities were being identified (the latter are both ongoing, but have been very disrupted). Team construction, contracting and initial research activities have been actively managed by the Challenge leadership team, with Mana Rangatira oversight. Mana Rangatira's

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focus is on empowering teams to actively self-review, and to proactively work with the Challenge to alter the direction of research if it is not proving fruitful.

Detailed research plans are reviewed by the ISAP, but again peer-review has been somewhat delayed due to the COVID-19 situation. It is anticipated that peer review will have been completed by June 2020, in time for FY21 research activities to ramp up. On an annual basis, once all contracts are up and running, the Challenge (including Mana Rangatira) will work with research teams to review and reflect on achievements and to plan the upcoming year.

In **Appendix 2** we outline the decision-making framework.

Portfolio of investments for approval to 2023 (NRT) and 2024 (Challenge)

See **Appendix 1**.

Challenge response to COVID-19

The Challenge response to COVID-19 will be discussed by Mana Rangatira at their Zoom meeting on 2 April and is not covered here except to note that the proposed investments will likely provide some welcome good news and funding stability for many researchers and organisations in a deeply challenging and uncertain time.

The Challenge is actively working with MW as the Host to provide a coordinated picture to MBIE of the potential impact of COVID-19 on research delivery.

Risk commentary

The Challenge Directors and Mana Rangatira actively manage risks to successful implementation for both NRT and Tranche 2 investments:

- Building and maintaining momentum, working with lead providers.
- Embedding partnerships with Māori, with commitment to Māori-led investments.
- Developing and deepening relationships with stakeholders.
- Fostering a culture of active self-review within investment teams, to optimise impact.

The Challenge has separate risk registers for the Tranche 2 envelope and NRT for actively monitoring and addressing key risks. It will likely to be necessary to update the risk registers in light of the COVID-19 crisis.

Financial Implications

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The proposed $20.7m of lead-off investment for which we are seeking approval is c. 37% of the total available research funds to June 2024.

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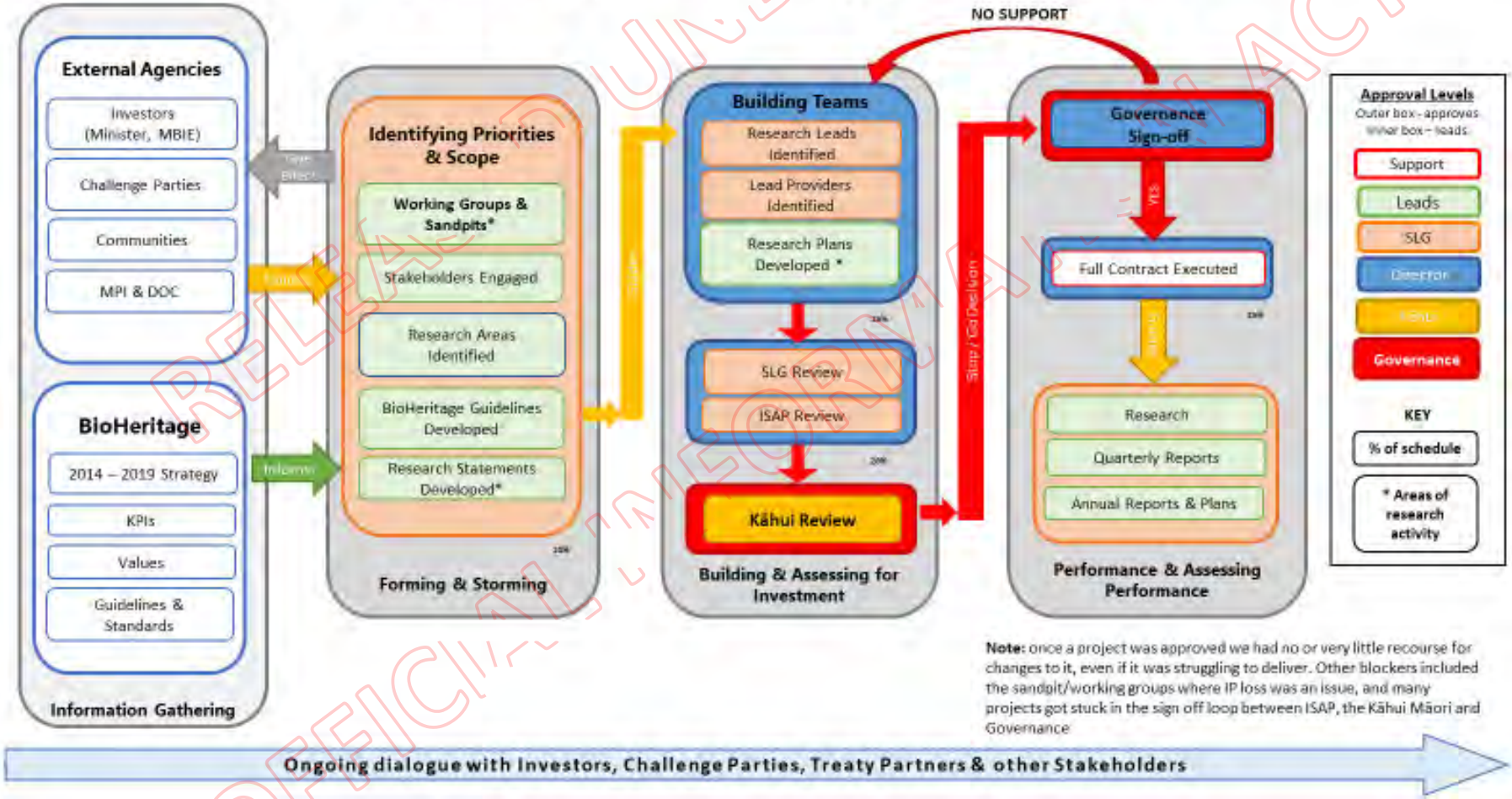
Tranche 1 (2014-2019) Decision Making & Investment Process



Note: once a project was approved we had no or very little recourse for changes to it, even if it was struggling to deliver. Other blockers included the sandpit/working groups where IP loss was an issue, and many projects got stuck in the sign off loop between ISAP, the Kāhui Māori and Governance

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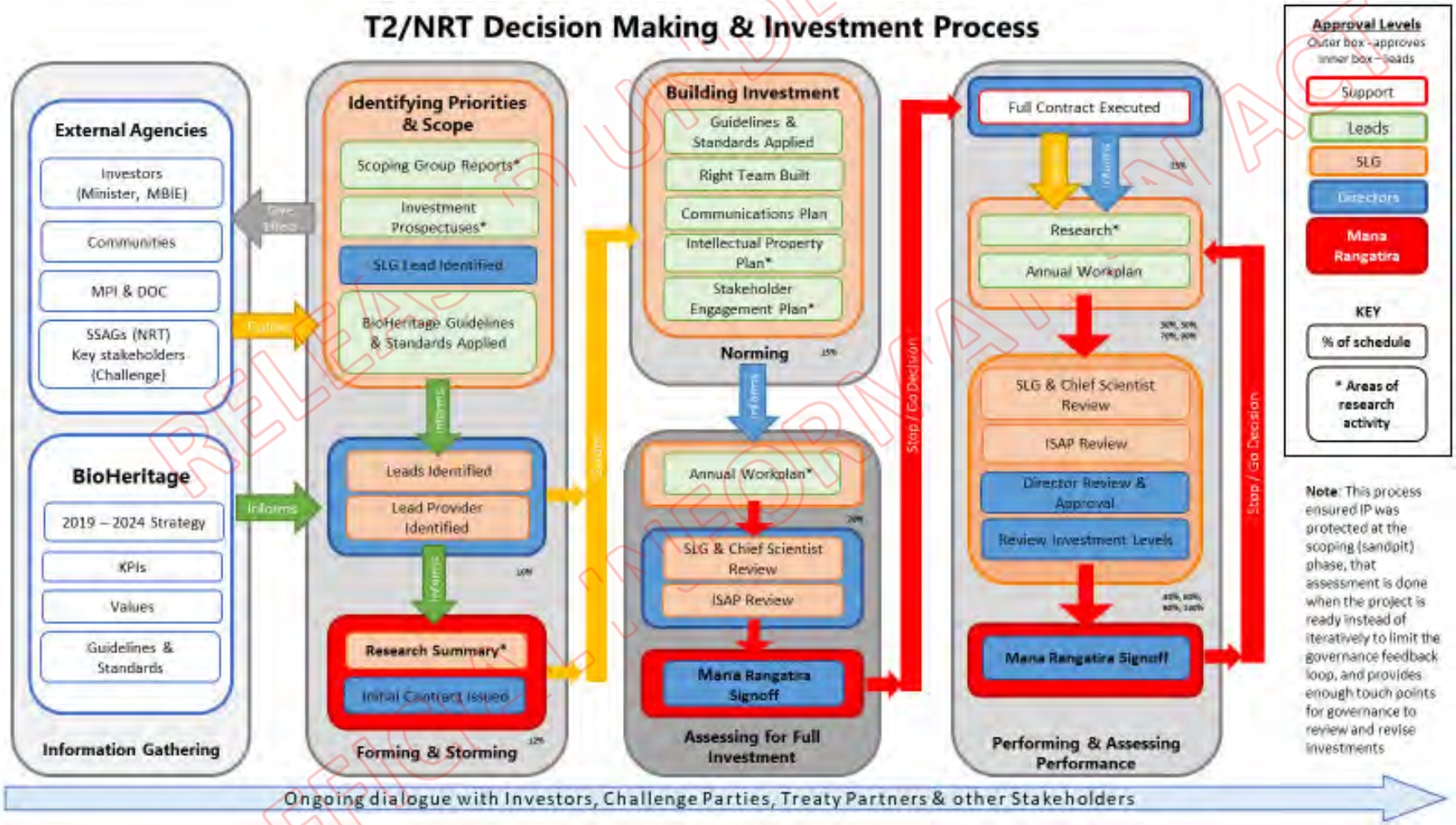

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Budget	**$3,101,000**	**$1,631,000**	**$2,414,000**	**$2,026,000**	**$3,641,000**	**$2,811,000**	**$3,209,000**
Status	✓ 2024 goals agreed ✓ Research summary ✓ Leads selected ✓ Contract approved ✓ Research begun	✓ 2024 goals agreed ✓ Research summary ✓ Leads selected ✓ Contract approved ✓ Cross-SO/NRT work begun	✓ Seeding research underway ✓ 2024 goals agreed ✓ Research summary ✓ Leads selected ✓ Contract approved ✓ Research begun ✓ Community & researcher hui held	✓ 2024 goals agreed ✓ Research summary ✓ Leads selected ✓ NRT alignment work begun ✓ Contract under negotiation	✓ 2024 goals agreed ✓ Research summary ✓ Leads selected ✓ Contract approved ✓ Research begun	✓ 2024 goals agreed ✓ Research summary ✓ Leads selected ✓ Contract approved ✓ Research begun	✓ 2024 goals agreed ✓ Research summary ✓ Leads selected ✓ Contract approved ✓ Research begun ✓ Annual peer review of work underway
Outputs 19/20	• Stakeholder analysis complete	• Stakeholder analysis complete • Paper submitted to Pacific Conservation Biology: empowering the (part) voice in a graphical representation of New Zealand's Biological Heritage (Flora & Fauna) • Red Million biodiversity posters for kura developed and entering production • Work programme aligned with NRT Goal 2	• Stakeholder analysis complete • International Indigenous Biosecurity Hui Taumata held, business plan developed for continuation of Network created • Work programme aligned with NRT Goal 5	• Stakeholder analysis complete • Work programme aligned with NRT Goal 3	• Stakeholder analysis complete • Survey design underway • Tech companies interviewed	• Stakeholder analysis complete • PhD student	• Stakeholder analysis complete

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Lead Organisation	TE TIRA WHAKAMĀTAKI FOUNDATION	UNIVERSITY OF AUCKLAND	Manaaki Whenua	Manaaki Whenua	SCION	Plant & Food Research	SCION
Lead Researchers Male 5 (36%), Female 9 (64%) Māori 6 (43%)	Privacy of natural persons Melanie Mark-Shadbolt	Privacy of natural persons	Privacy of natural persons	Privacy of natural persons	Privacy of natural persons	Privacy of natural persons	Privacy of natural persons
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Status	✓ Priorities agreed ✓ Research plan ✓ Team selected ✓ Contract approved ✓ Research begun ✓ Community hui scheduled	✓ Priorities agreed ✓ Research plan ✓ Team selected ✓ Contract approved ✓ Research begun ✓ Community hui ongoing	✓ Priorities agreed ✓ Research plan ✓ Team selected ✓ Contract approved ✓ Research begun ✓ Community & researcher hui held	✓ Priorities agreed ✓ Research plan ✓ Team selected ✓ Contract approved	✓ Urgent research funded and started ✓ Priorities agreed ✓ Research plan ✓ Team selected ✓ Contract approved	✓ Urgent research funded and started ✓ Priorities agreed ✓ Research plan ✓ Team selected ✓ Contract approved ✓ Research begun	✓ Priorities agreed ✓ Research plan ✓ Team selected ✓ Contract approved ✓ Research begun ✓ Annual peer review of work underway
Outputs 19/20	• Appointment of kaumatua rōpū • Rongoā trials underway • Rongoā wānanga run • PI starring in a mini-documentary on kauri rongoā • Book chapter in print • Co-funding from DOC for seed conservation work	• 120 people interviewed over 60 hui (including senior policy people, kaitiaki and community leaders / representatives) • Ongoing support for Kauri Rescue	• Māori Advisory Group (Tangata Kōkiri) established • Researcher and community hui held • Surveillance framework designed and being tested with agencies (i.e. MPI), researchers and Māori • Aligned MBIE bid submitted		• Myrtle rust biology and its impacts on vulnerable hosts.	• Fundamentals of MR early invasion impact biology	• 120+ people interviewed (incl. researchers, agencies, industry, Māori) • Engagement and communications plans complete • Seed funding approved for 3 novel tools to get them to market • SFTI $1M biosecurity platform created

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NEW ZEALAND'S BIOLOGICAL | Ngā Koiora Tuku iho | National SCIENCE

APPENDIX 5: Outcomes Framework T2

MISSION: To reverse the decline of New Zealand Biological Heritage, through a Engaging and influencing Te Pae Tawhiti nationa[illegible] change in research innovation, globally leading technologies and community and sector action.

Impacts

New Zealanders value our biological heritage, understand how it is changing, and are inspired to take action to protect it

By 2024, a majority of New Zealanders value our biological heritage, &

KPI: Whakamana (empower): New Zealanders value our biological heritage and are enabled to actively contribute to positive change.

MEASURE: Demonstrate year-by-year increase in community programmes directly related to the Challenge that are socialising the value of New Zealand's biological heritage through the arts, culture, or community restoration activities. Starting baseline = average across all investments to 30 June 2019.

New Zealand's biosecurity system is world class

By 2024, New Zealand's biosecurity system is fit for purpose

KPI: Tiaki (protect): New Zealand's biosecurity system is fit for purpose.

MEASURE: At least two new control, surveillance or eradication tools/technologies, and/or substantial improvements to existing tools/technologies and strategies, are being applied at the border and/or at a landscape scale. Barriers to adoption at border/landscape scale have been

New Zealand's natural and production ecosystems are resilient and thriving

By 2024, we understand social and ecological linkages in natural and production

KPI: Whakahou (restore): Technical, policy and governance frameworks are designed to ensure our ecosystems are resilient to current and future threats.

MEASURE: Frameworks (developed e.g. in SO7) that take into account whole system interdependencies (social, cultural and/or environmental) are being use by policymakers to improve the health and wellbeing of people and the environment. One framework by 2021; one more by 2023. Progress in

Strategic Outcomes

SO1: We report progress using a biological heritage scorecard for Aotearaoa

SO2: We empower New Zealanders to demand and enact environmental stewardship and kaitiakitanga

SO3: We anticipate both emerging & latent biosecurity risks, and avoid new or recurring invasions

SO4: We have state-of-the-art biosecurity surveillance systems

SO5: We deploy novel tools, technologies & strategies for control or eradication of biotic threats

SO6: We quantify social-ecological linkages for use in managing, protecting and restoring ecosystems

SO7: We enable people to build biological heritage resilience with the right policy and governance instruments

2024 Goals

We know what and how to measure

Scorecards as catalysts for action

Influential, adaptive scorecards that empower

Local communities develop and realise BioH aspirations

Support the tools, frameworks and tikanga protocols developed elsewhere in Challenge

Legislative and socio-cultural licence

Participation: Mana whenua and key participants active in risk ID

Values: Prioritise biosecurity risks through Māori values lens

Impact: Dynamic and adaptable biosecurity risk

Much earlier detection

Real-time monitoring of system changes

Māori co-designed surveillance

Communities involved in surveillance

New surveillance tools

2-3 new tools for border biosecurity pests and/or vertebrate & invertebrate legacy pests

Accelerate deployment of 2-3 new tools at scale

Support PF2050

Characterise connections between people and nature

Value connections between people and nature

Foster better connections via diverse, successful, practical regeneration pathways

Mana whenua enabled and resourced to participate as partner

New governance architecture for biological heritage resilience

Capability to reverse the decline lifted and sustained

Crazy & Ambitious Think Tank *(CATT) – Researchers and key stakeholders are working closely with local communities, including man whenua to collect local data in local places.*
Data Connectivity Platform *– A technical tool that allows partner agencies to "pool" data so it can be analysed for policy/management decision or investment choices has is developed.*

Critical Steps – the pathway to impact

Development of a novel indicator of human and biological heath to audit progress completed

Types of meaningful on-ground actions that people can take have been identified and showcased

Development of impact investment criteria based on the scorecard is completed.

Scorecards: different benefits (services) that bioheritage contributes to, in terms of both the environment and social development as linked elements has been developed

Common research methodologies across SOs and NRT identified.

T1 investments have been explored to draw on expertise and relevant research

Improved non-monetary valuation of potential risks developed

International scan of dynamic assessment frameworks completed

Social science to help us better communicate risk to society so that people can participate fully in the system has been completed.

Integration with NRT biosecurity surveillance research developed

Communites and industries are empowered and inspired

Champions and influencers to help drive surveillance actions 'on ground' established

A virtual biosecurity hub for Aotearoa developed

Tools to support landscape-scale control of invasive invertebrates have been identified

Transformative technologies and approaches developed: Cost-effective removal of the last 5% prevention of immigration back into areas that have been eradicated.

Adaptive managment network to enhance success of local regeneration efforts is created

Restoration exemplars are developed to showcased

Create knowledge to clarify pathways to remove barriers for enhanced restoration success

Different leadership models have been investigated and understood

New policies are developed

System co-design priciples are developed

Implementation of new governance case studies across Aotearoa are developed and showcased.

Champions & influences' programme:

KPI: Leadership and direction: New Zealand researchers (including Challenge Parties) and stakeholders (including industry, private sector, government agencies, and Māori entities) are actively focusing their own strategic priorities on NZ's biological heritage, and have become more united in making strategic, long-term, impact-oriented progress in sustaining and restoring NZ's biological heritage.
MEASURE: Demonstrate an increase in 'active' alignment of research investments and/or in-kind contributions focused on Strategic Outcome areas, and maintain or grow the current level of Challenge input into strategic directions of key stakeholders.

KPI: Partnership with Māori: Māori partners are themselves championing the added value of working in a more collaborative and inclusive science environment.
MEASURE: At least one new 'partnership' case study provided by Māori partners each year; demonstrates additionality and better outcomes from partnership at governance/management/research levels.

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APPENDIX 6: Outcomes Framework NRT

MISSION: To reverse the decline of New Zealand Biological Heritage, through a national partnership to deliver a step change in research innovation, globally leading technologies and community and sector action.
Our vision for success is that the mauri of kauri and our native myrtle species is safeguarded, sustained and enhanced for our tamariki and mokopuna.

IMPACTS

New Zealanders value our biological heritage, understand how it is changing, and are inspired to take action to protect it

New Zealand's biosecurity system is world class

New Zealand's natural and production ecosystems are resilient and thriving

THEMES

Whakamana – Empower
New Zealanders value our biological heritage and are enabled to actively contribute to positive change

Tiaki – Protect
New Zealand's biosecurity system is fit for purpose

Whakahou – Restore
Technical policy and governance frameworks are designed to ensure our ecosystems are resilient to current and future threats

2023 GOALS

KPI: *Best practice learnings of community-led KDB management projects understood and shared for application in future community led initiatives*

KPI: *Species and sites for protection from diseases prioritised and tikanga-based approaches to seed/germplasm protection implemented at 90% of sites*

KPI: *National surveillance used to delimit impact of KDB and MR. Information is being used by DOC and at least two local authorities to guide management practices*

KPI: *Species and sites for protection from diseases prioritised and tikanga-based approaches to seed/germplasm protection implemented at 90% of sites*

KPI: At least two prototype tools for surveillance, detection and control have been evaluated and validated by cross-organisational teams

KPI: *Best practice culturally acceptable methodology for seed/germplasm collection and protection has been agreed and shared for MR and KDB*

KPI: *Mātauranga-Maori guided study of Kauri population structure and variability is guiding management and conservation approaches in use by DOC and at least two*

Critical Steps – the pathway to impact

Mobilising for Action

Social dimensions underpinning community engagement understood and adopted

Social/cultural engagement indicators

Communication tools for engagement and empowerment

Mana whenua kaitiakitanga recognised and supported

Method for design of national campaigns/local actions developed and tested

Measures for social/cultural engagement indicators developed and tested

KDB and MR community (researchers/mana whenua/ stakeholders) engaged and

Conservation and Restoration

Cultural authority agreements and protocols for long-term storage of Myrtaceae / kauri

Landscape / population genomics for kauri/key Myrtaceae identified and understood

Iconic species safeguarded

At risk ecosystems protected

Seed and germplasm collected for research and potential breeding

Mātauranga Māori led research options identified, co-developed and implemented

Integrated Surveillance

Maori co-designed surveillance framework

Pathogen distribution mapped

Pathogen Predictive model

MMFS fit for purpose, and ready for integration into everyday surveillance activities

Online MMFS database co-developed and tested

'Proof of Freedom' model developed and tested

Surveillance risk models for MR and KDB assessed Existing and new data compiled

Risk Assessment & Ecosystem Impacts

Framework for measuring ecosystem health and resilience

Geographical risks for Kauri dieback and host risks for myrtle rust identified

Broader ecosystem impacts of KDB / MR examined and identified

Framework for measuring ecosystem health and resilience developed and tested

Control, protect, cure

Rapid diagnostic and field-based detection methods for MR and KDB

Alternative disinfectants for MR and KDB

Mātauranga Maori-based bioactives

Lab and field trials to determine efficacy of soil decontamination completed

Decision model for management intervention developed and tested

Management units defined – pathogen spread, when/where treatment effective

Oranga – Te Mauri o Te Rākau

Mana whenua kaitiakitanga recognised, supported and engaged

Frequency and vibrations of forest language (sounds) mapped to inform ecosystem health

Rongoa solutions for kauri dieback

Host, Pathogen & Environment

Host, pathogen and environmental factors better understood

KPI: Progress towards impact
MEASURE: All NRT contracts are completed or on track for completion by agreed timeframes

KPI: Collaboratrion enhanced and delivery of impact expedited through open sharing of data and outcomes from research on KDB and MR
MEASURE: 1) 85% of stakeholders satisfied with experience of accessing knowledge or technology 2) Annual progress summaries for NERT funded projects available online and research updates provided via quarterly newsletter

KPI: Vision Mātauranga - Mātauranga Māori is informing development of solutions to KD and MR.
MEASURE: 1) 100% of NRT investments have Māori collaborators 2) Maintain/increase proportion budget invested in Māori-led or Kaupapa Māori research each year 3) Confidence of Māori and key stakeholders in connections made, research progress and ability to deliver impact 4) Two case studies published demonstrating value Mātauranga Māori brings to development of new tools and management strategies

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POSITION DESCRIPTION **APPENDIX 7: Treaty Relationships Manager**

Position:	**Treaty Relationships Manager, NZ's Biological Heritage National Science Challenge *Ngā Koiora Tuku Iho***
Term:	Fixed (4.5 years to June 2024)
Status:	Part time (0.5 FTE; negotiable)
Location:	Negotiable
Directly Reporting To:	Co-Directors

About

[introduction in Te Reo māori]

Stewardship of Aotearoa New Zealand's unique biological heritage – taonga rākau (plants and trees), kararehe (animals), awa (rivers), roto (lakes), ngāhere (bush/forests), whāma (farming) and ahumāra (horticulture) landscapes – is every New Zealander's responsibility. In the Biological Heritage National Science Challenge, *Ngā Koiora Tuku Iho*, we recognise that people have reciprocal relationships with the natural world. These relationships need nurturing if we are to protect and restore our biological heritage for future generations.

There are gaps in our knowledge of how best to protect and restore our biological heritage. We need to discover, develop and deploy new knowledge in innovative ways, and we need to empower Māori knowledge, resources and people to manage their own natural assets if we are to transform the way we protect and restore biological heritage.

In the Biological Heritage National Science Challenge we aim to build interconnections across all forms of knowledge, science, research, innovation, and technology. Our critical role is to invest in research and innovation that will focus currently-diverse interests towards common goals in order to create positive impact for biological heritage. Leadership, co-design and influence underpin the Challenge's strategy, and our values are at the heart of who we are.

Whilst our Challenge has shown leadership in the way we have embedded Māori researchers and knowledge holders, the whakataukī written by Ngāti Hine kaumatua and leader, Ta Himi Henare, best encapsulates our mahi (work):

> *"Kua tawhiti kē to haerenga mai, kia kore e haere tonu. He nui rawa o mahi, kia kore e mahi tonu"*
> *(you have come too far not to go further; you have done too much not to do more)*

This is a unique strategic leadership role with the opportunity to drive change in the way we embrace Te Ao Māori in the science and innovation system of Aotearoa, and to ensure that the Biological Heritage National Science Challenge more deeply embeds the principles and articles of the Treaty of Waitangi/Te Tiriti o Waitangi.

Purpose

The primary focus of this role is to ensure that the Biological Heritage National Science Challenge is taking a Treaty-based approach to our strategy and investments at all levels, and to champion the importance of Te Ao Māori in the Challenge in ways that are respectful, relevant and mana-enhancing. This requires influential partner organisations to understand our strategy, and to appreciate the ways

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in which many interconnected individuals and organisations can collectively achieve greater impact through targeted investment.

You are someone who is highly strategic: looking to help us build critical relationships with key Māori influencers and to champion Te Ao Māori in the science and innovation system of Aotearoa. As the Treaty Relationships Manager you will: have a background or experience in research for the benefit of Te Taiao; ensure that the Challenge takes meaningful steps to give effect to Te Tiriti o Waitangi; and ensure that science and innovation is responsive to statutory responsibilities arising from recent Treaty settlements and their implications for New Zealand's biological heritage, including a familiarity with WAI262 and the Crown response to that claim. You will be working in a passionate and dynamic team including our Governance Group (Mana Rangatira) and co-Directors, Executive Leadership Group (ELG) and Support Team.

Primary Objectives

- *Ensure a Treaty-based approach*: Embed principles and articles of Te Tiriti at all levels of the Challenge; uphold and champion our Challenge values.
- *Build strategic partnerships:* Help build effective and lasting relationships with Māori across multiple organisations to drive collective impact for the benefit of Aotearoa's biological heritage.
- *Embrace Te Ao Māori:* Champion a greater understanding of the many ways in which the science and innovation system can embrace Te Ao Māori to create positive impact for Aotearoa's biological heritage.
- *Support and resource Māori knowledge, resources and people*: Ensure equity in resourcing of Māuauranga Māori and kaupapa Māori research approaches in Challenge investments, and equity in decision-making by the leadership team.
- *Champion Māori research excellence*: Ensure that Māori and academic aspirations, and intellectual property, are valued and respected.
- *Strive for collective impact*: Help build a better understanding of what pathways to impact look like for Māori, and how the Challenge can drive collective impact for Māori in Aotearoa's science and innovation system.

Key Accountabilities

[note that this section is too long and detailed. Some of the bullet points will not be relevant to this position and will end up being accountabilities of the co-Directors and/or other members of the leadership team. They remain here for now so that they are captured somewhere. Draft core accountabilities for this position are highlighted in green as a starting point].

***Ensure a Treaty-based approach*:**

- Ensure that the Challenge takes meaningful steps to give effect to Te Tiriti o Waitangi (The Treaty of Waitangi), recognising and respecting the principles of Partnership, Protection and Participation, and the articles of Kawanatanga – governance and the relationship between Treaty Partners, Tino Rangatiratanga – the right to be self-determining in all areas, Oritetanga – authentic contributions that drive equitable access and outcomes and Te Ritenga – honouring beliefs, values and aspirations of Māori, in research investments.

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- Ensure that the Challenge is responsive to Māori interests in the science and innovation system, and that these are protected.
- Help build a greater understanding across the challenge governance and leadership of what it means to work in a Treaty-based framework.
- Oversee leadership development in the ELG and investment leads, to help build capability and capacity in the sector.

Build strategic partnerships:

- Interface with Mana Rangatira in implementing the Challenge Strategy, and on strategic matters relating to Treaty-based partnerships.
- Build external and internal relationships across the science and innovation system. Develop and maintain a network across NSCs, MBIE, Māori researchers in Challenge Party institutions.
- Foresee key relationship risks and work with the Strategic Relationships Manager to proactively mitigate them.

Embrace Te Ao Māori:

- Embed tikanga practices in the Challenge, e.g. mana, rangatiratanga and manaakitanga. Uphold and champion the Challenge values at all times.
- Ensure a Māori worldview of excellence, interconnectedness, and impact is embedded throughout the Challenge.

***Support and resource Māori knowledge, resources and people*:**

- Ensure that Māori aspirations have a place and a voice in the NZ science and innovation system; acknowledge Tangata Whenua grievances and work to address these structurally and culturally using innovative, sometimes novel, fit-for-purpose approaches.
- Hold the Challenge to account in fairness and equity in resourcing and decision-making.
- Provide strategic leadership and coordination for Vision Mātauranga in the Challenge.
- Embed principles for good practice for VM in the science sector, developed by Rauika Māngai and/or other relevant Māori research networks.
- Ensure that Māori researchers are supported and developed, including support for Māori researchers that are expected to fulfil both cultural and scientific roles.

***Champion Māori research excellence*:**

- Help source Mātauranga experts appropriate for delivery of particular research investments.
- Oversee development of cultural safety agreements, IP arrangements and benefit sharing that ensure appropriate ownership by Māori.
- Help prepare material required by MBIE for reporting and reviews, and inform the ELG, Directors and Mana Rangatira in a timely fashion of any issues impacting on delivery.
- Value both Mātauranga and kaupapa Māori research, and scientific methodologies, and build confidence in teams to continue learning and development in this area.
- Contribute to sector-wide initiatives such as: ensuring consistency in how Mātauranga science quality is assessed. Work with the Challenge's Chief Scientist to ensure appropriate and fair peer review of Challenge research using indigenous expertise wherever possible.

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***Strive for collective impact*:**

- Support the ELG in leading change in the sector to empower Māori and be more inclusive, including in monitoring and accountability and in delivery of our 'impact' KPIs to MBIE.
- Uphold a principle of working collectively to achieve common goals, and be able to articulate the Challenge's 'collective impact' approach to Māori and non-Māori partners and potential investors.
- Champion opportunities for Challenge investments to be Māori-led.
- Work with iwi, hapū and Māori entities to ensure appropriate pathways to impact.

Person Specification

Education, qualifications and learning

- Tertiary qualified (or relevant experience) in Te Taiao (environmental) research relevant to the Challenge Mission and Impacts (Whakamana, Tiaki, Whakahou).
- Proven experience in or deep knowledge of:
  - Building strong political and stakeholder networks, relationships and partnerships using Treaty-based frameworks.
  - Building Māori partnership strategies for organisations operating at a national level.
  - The WAI262 claim and the Crown response to that claim, and the implications for New Zealand's biological heritage.

Knowledge, Skills & Experience

- Deep understanding of the principles of the Treaty of Waitangi and Treaty settlements and how they should inform and be applied in the science and innovation sector in Aotearoa.
- Awareness of the statutory responsibilities arising from recent Treaty settlements, how these should inform science and innovation, and implications of these for Aotearoa's biological heritage.
- An ability to operate effectively with Challenge researchers, including kaupapa Māori researchers.
- Excellent oral and written communication skills targeted to a wide range of audiences. Proven ability to deliver complex, inter- or trans-disciplinary, large-scale projects: on time, within budget and to a high standard.
- Understanding of, and willingness to share best practice in, all aspects of Tikanga Māori.

Personal Attributes

- Strategic thinker with a can-do attitude, amiable personality, positive outlook and a high level of resilience and composure when working under pressure.
- Proactive approach: identifies needs and issues, taking ownership of the strategic direction of the Challenge and providing drive and initiative. Ability to make independent decisions.
- Exceptional interpersonal and relationship management skills.

Desirable

- Experience working in dynamic, fast-pased, rapidly-evolving teams or startup ventures, with strong time management skills and workload planning.

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- Fluency in Te Reo Māori.

Behavioural Competencies

[to be fleshed out]

Taiao, WAI262, core issues of the Challenge as a high priority

Values

Mātauranga Māori

Innovation – quality improvement, excellence

Networking and interconnectedness – relationships, partnerships, collective impact

Alignment – system focus

Delegations

Financial Delegations:

None

Human Resources Delegations:

None

Interactions/Regular Contacts

External: Senior influencers and decision-makers across iwi/hapū/whānau, Māori trusts; Māori industry sector groups; MBIE; Rauika Māngai

Internal: Challenge co-Directors, Executive Leadership Group, Support Team, senior Māori positions across 18 Challenge Parties, knowledge holders in Māori iwi/hapū or corporate entities; Mana Rangatira (the Challenge Governance Group); Māori research leads in [nascent Māori leadership support group yet to be named]

Health, Safety and Environment Objectives

- Takes reasonable care to ensure their own health and safety in the workplace, and that no action or inaction on their part harms others.
- Ensures their own activities comply with all relevant statutory and other Health, Safety and Environmental (HSE) requirements; apply appropriate CoPs, SOPs and other procedures.
- Sets an example of accountability and continual improvement in HSE practices.
- All invited non-employees (visitors, volunteers, students, interns etc.) are hosted responsibly.

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Performance Criteria

Goals and objectives will be agreed annually. These will be consistent with the Key Accountabilities and Personal Attributes contained within this Position Description, and will include performance appraisal measures, together with any support required by the employee to achieve those objectives.

Working Environment & Physical Demands

Landcare Research undertakes to ensure its workplaces are safe and that no person is harmed as result of our work activities. The list below is provided to give an indication of the type of environment and potential hazards which may be encountered in this role.

(tick appropriate boxes)

Physical	Biological/Chemical	Environmental
☐ Office/computing	☐ Soils, potting mixes, composts	☐ Adverse weather/heat/sun
☐ Standing for long periods	☐ Sewage and wastewaters	☐ Alpine conditions
☐ Manual handling/lifting	☐ Bio solids	☐ Off-shore islands
☐ Hiking/tramping - easy	☐ Insects	☐ International travel
☐ Hiking/tramping - hard	☐ Microorganisms	☐ Polar environments
☐ Camping out – "roughing it"	☐ Pathogens	☐ Isolated environments
☐ River-crossings	☐ Animals – contact/handling	☐ Geothermal areas
☐ On-road driving	☐ Plants and fungi	☐ Urban environments
☐ Off-road 4WD/ATV driving	☐ Chemicals/toxins	☐ Rural/farm environments
☐ Charter flying/Helicopters	☐ Flammable liquids/gases	☐ Production forestry blocks
☐ Travel in Boats/Ships	☐ Dusts/fumes/vapours	☐ Mines/earthworks/excavations
☐ Construction work	☐ Compressed gases	☐ Old mine shafts/pits
☐ Operating tools & equipment	☐ Cryogenic substances	☐ Roadside work
☐ Deft/fine manual tasks	☐ Other	☐ Working at heights
☐ Microscopy	☐ Radioactive substances & equipment	☐ Noise (in environment or from equipment)
☐ Swimming/Snorkelling/Diving	☐ Electricity	☐ Confined space work
☐ Night time/shift work	☐ Lasers	
☐ Extended hours as required to meet deadlines	☐ Firearms/hunters	

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APPENDIX 8: Strategic Relationships Manager

POSITION DESCRIPTION

Position: Strategic Partnerships & Communications Manager
Term: Fixed (to June 2024)
Status: Full-time
Location: Flexible; Wellington preferred
Directly Reporting To: Challenge co-Directors

About

Stewardship of Aotearoa New Zealand's unique biological heritage – plants, animals, rivers, lakes, forests, farming and horticulture landscapes – is every New Zealander's responsibility.

Transformational change is needed to look after our biological heritage. Science and research discover, develop and deploy new knowledge in innovative ways, but can no longer be conducted in isolation. National leadership is needed via strategic partnerships and key relationships. Leadership, influence and impact are at the heart of the Biological Heritage National Science Challenge, *Ngā Koiora Tuku Iho*.

Our critical role is to invest in research and innovation that will empower and focus the efforts and investments of currently-diverse groups towards common goals in order to benefit the environment – a 'collective impact' approach. In the Biological Heritage National Science Challenge we draw on a diverse range of knowledge, science, research, innovation, and technology development being conducted across research organisations, Māori, communities, and government agencies.

This is a unique strategic leadership role with the opportunity to build partnerships and drive change in the way research is conducted at a national level, for the benefit of Aotearoa.

Purpose

The primary focus of this role is to help foster strategic partnerships across multiple organisations at a national level. This requires influential stakeholders to understand our investment strategy, and to recognise how multiple organisations can collectively achieve greater impact through targeted investment. This will require nuanced storytelling, building a strong brand and reputation for the Challenge whilst simultaneously enhancing the mana of individual organisations in the collective.

You are someone who is highly strategic: looking to help us build critical relationships with a key stakeholders. As the Strategic Relationships Manager you will have experience in multi-stakeholder relationship management, or in a senior strategic marketing or communications role, or as a public relations professional. You will work proactively across multiple organisations and key influencers and decision-makers to shape the stories of the future. You will have a strong awareness of the political landscape and will work to anticipate and manage strategic risks.

You will be working alongside passionate and dynamic team including the Challenge Governance Group (Mana Rangatira) and co-Directors, Executive Leadership Group (ELG), Support Team, and a Science Communicator, building high-level strategic relationships for this popular Challenge. You will have exceptional organisational and communication skills, a high level of cultural competency, an outstanding ability to build effective relationships, and the aptitude to adapt to changing requirements and needs in an exciting and rapidly-evolving entity.

Primary Objectives

- *Strategic partnerships:* Help build effective and lasting relationships with senior influencers and stakeholders across multiple sectors to drive collective impact for the benefit of Aotearoa's biological heritage.
- *Communications Strategy:* Develop and implement a creative and innovative Communications Strategy as a living and dynamic document, building on the Challenge's 2019-2014 Strategy.
- *Branding, visibility and reputation:* build the brand, visibility and reputation of the Challenge for driving collective impact. Ensure its Directors and Strategic Leadership team are seen as trusted

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national voices for biological heritage. Promote and protect the Challenge's values. Foresee and halp manage critical risks.

- *Storytelling:* Shape the stories of the future for Aotearoa's biological heritage, not just tell the stories of today. Oversee the Challenge's communications, social marketing, visual storytelling and content creation, and digital media needs, working with the Science Communicator.
- *Influence investment:* through effective relationship building, help influence research investments for the benefit of New Zealand's biological heritage from government, private and other sources.

Key Accountabilities

Strategic Partnerships and Relationships with Key Influencers

- Work with Mana Rangatira, co-Directors and ELG to build meaningful partnerships and relationships in spheres of influence relevant to our Challenge Parties, including senior stakeholders, decision-makers, politicians, and investors, to drive collective impact.
- Oversee market research of priority audiences. Set targets, increase expectations and identify and nurture 'thought leader' talent across the Challenge's communities of interest.
- Proactively manage relationships with media and secure high-profile media publicity that demonstrates thought leadership and creates impact.

Communications Strategy

- Develop and lead an innovative, impactful and engaging Communications Strategy that aligns with the Challenge's 2019-2024 Strategy, to drive transformational change for biological heritage.
- Have a strong understanding of, and interest in, Aotearoa/New Zealand's science and research sectors and how to effectively communicate impact to non-specialist audiences.
- Oversee the creation and distribution of engaging, relevant and targeted multi-media content, optimised for social media and digital platforms, with support from the Science Communicator and from externally contracted videographers, writers, designers and photographers as needed.
- Deliver internal communications required to implement the strategy: ensure all 18 Challenge Parties and strategic influencers are aware of media and brand guidelines, and their messaging is consistent with the Challenge's expectations.

Branding, Visibility and Reputation

- Develop a compelling, creative and innovative 'brand story' which captures and conveys the Challenge's collective impact approach and the essence of its mission.
- Develop, champion and promote the Challenge Directors and SLG as national go-to 'thought leaders' on topical issues, whilst managing associated strategic risks.
- Ensure the Challenge's brand story and associated communications show passionate and meaningful commitment to our values and to our and partnership with Māori.
- Increase Challenge visibility and profile to achieve 'cut through' in the media (including Māori media) and with diverse communities of interest. Coordinate and respond to media enquiries.
- Provide quality strategic communications advice to the Challenge co-Directors and ELG, and oversight of media liaison, content, brand, digital and social media, sponsorship and stakeholder engagement. Ensure the collective impact approach is applied consistently across all communications and engagement activities.

Storytelling

- Build Challenge brand and reputation around transformational partnerships for national impact.
- Work proactively with Mana Rangatira, Directors, and ELG to shape future stories, including anticipating and proactively managing communications on contentious issues.
- Oversee and/or write blogs, media releases, speeches, and opinion pieces and ensure production and distribution of a regular newsletter by the Science Communicator.
- Mentor key thought leaders in media training and influence.
- Oversee digital best practice, social media, website development and online engagement.
- Oversee a strategy to increase and strengthen online engagement with priority audiences.

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Influencing Investment

- Work proactively with Mana Rangatira, Challenge co-Directors, and ELG to foster strategic partnerships for philanthropic and corporate investment.
- Contribute to, shape and influence Government science policy and investment strategies.
- Manage the Challenge's engagement budget to maximise leverage opportunities from third-party investors.
- Work with Mana Rangatira, co-Directors and ELG to build strong political networks and meaningful partnerships in spheres of influence relevant to the Challenge.

Person specification

Education, Qualifications and Learning

- Proven experience in:
  - Building strong political and stakeholder networks, relationships and partnerships.
  - Public relations, marketing, and/or a senior strategic communications role.
  - Risk management, strategic planning, and value proposition development.
  - Driving successful campaigns and transformational organisational and system change.
  - Development and implementation of communications strategies.
- Keen enthusiasm, ability, and readiness to acquire new skills relevant to the position.

Knowledge, Skills & Experience

- Excellent oral and written communications skills across a range of audiences.
- Experience mentoring and coaching future influencers in communications, media, and stakeholder engagement.
- Excellent project management skills with proven ability to deliver complex, inter- or trans-disciplinary, large-scale projects: on time, within budget and to a high standard.
- Experience developing and implementing communications and media plans and guidelines, and brand positioning and key messaging where recognition of multiple stakeholders is required.
- Confident working with content and website management systems.
- Oversight of project and event management (e.g. annual reports, symposia, stakeholder evenings); and management of external mailing lists (media, stakeholders, newsletter etc.).

Personal Attributes

- A can-do attitude and a high level of resilience and composure when working under pressure.
- Strategic thinker with amiable personality, a positive outlook and expert communication skills.
- Excellent interpersonal and relationship management skills.
- Highly organised.

Desirable

- Understanding of, and experience in, the science, education or health sectors.
- Experience working in dynamic, fast-paced, rapidly-evolving teams or startup ventures.
- A passion for the environment/conservation/biosecurity and deep desire to make a difference.

Health, Safety and Environment Objectives

- Take reasonable care to ensure your own health and safety in the workplace, and that no action or inaction on your own part harms others. Also ensure own activities comply with all relevant statutory and other Health, Safety and Environmental (HSE) requirements and apply appropriate CoPs, SOPs and other procedures
- Set an example of accountability and continual improvement in HSE practices
- All invited non-employees (visitors, volunteers, students, interns etc.) are hosted responsibly

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Interactions/Regular Contacts

External: Senior influencers and decision-makers in primary industries and sector groups, community groups, NGOs, regional and national government, universities, iwi, Māori groups, sustainability organisations, private investors;
Communications & Marketing teams in other National Science Challenges,
Manaaki Whenua Communications Team
Mainstream media

Internal: Challenge co-Directors, Executive Leadership Group, Support Team, Science Communicator, communications teams and researchers across 18 Challenge Parties, knowledge holders in Māori iwi/hapū or corporate entities, science expertise in stakeholder organisations

Delegations:

* None

Performance Criteria

Goals and objectives will be agreed annually. These will be consistent with the Key Accountabilities and Personal Attributes contained within this Position Description and will include performance measures (statements of achievement), together with any support required by the employee to achieve those objectives.

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NEW ZEALAND'S BIOLOGICAL HERITAGE Ngā Koiora Tuku Iho | National SCIENCE Challenges

NZ's Biological Heritage National Science Challenge

Mana Rangatira Governance Group (MRGG) Agenda

Date: Wednesday, 3 June 2020

Time: 8:00am – 3:00pm

Venue: Rydges Wellington Airport Hotel, 28 Steward Duff Drive, Wellington Airport

Connect via ZOOM Meeting: https://zoom.us/j/96013277690

MRGG Attendees in Person: James Buwalda (Co-Chair), Glenice Paine (Co-Chair), Devon McLean, Emily Parker, Jan Hania, Rob Phillips

MRGG Attendees via Zoom: Erina Watene-Rawiri, Daniel Walker, Kevin Prime

BioH Challenge Attendees in Person: Andrea Byrom (Director), Melanie Mark-Shadbolt (Director Māori)

BioH Challenge Attendees via Zoom: s 9(2)(a))

Observers in Person (TBC): Privacy of natural persons (UoW)

Observers via Zoom: Privacy of natural persons (MBIE), Privacy of natural persons (MBIE), Privacy of natural persons (PFR)

Apologies:

Time	Item	Format	Led/tabled	Paper No.
8:00am	**Karakia timatanga**			
8:05am	MRGG only	Closed Sesson	James B/Glenice P	
9:00am	MRGG + Director + Director Māori	Closed Session	James B/Glenice P	
10:00am	**Break and Morning Tea (15 min) – BioH Challenge & Observers to join MRGG**			
10:15am	***Standing Items*** • Apologies • Confirm Agenda • DRAFT Minutes of previous meeting – Action Register Risk Register – Challenge and NRT • Interest Register – & declaration of relevant interests prior to meeting	 Approval Approval Discussion Information	 All All Andrea B/Melanie MS All	 2020/06/01 2020/06/02 2020/06/03 2020/06/04
11:00am	**Short break for those on Zoom**			
11:05am	***Financial Statements*** • Financial Update	Discussion	s 9(2)(a)	2020/04/05
11:30am	Challenge Update from Director and Director Māori -Progress in implementation of T2 & NRT -Outcomes Framework -MBIE Forward Plan 2020	Discussion	Melanie MS/Andrea B	2002/06/06
12:30pm	**Lunch (30 min)**			
1:00pm	Challenge Update from Director and Director Māori ...contd. -COVID impacts -Process for MRGG approval of AWPs			Late paper to come
3:00pm	**Karakia whakamutunga**			

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Mana Rangatira
2020/06/01
Approval

NZ's Biological Heritage National Science Challenge
Mana Rangatira Governance Group Minutes

Date: Thursday, 2 April 2020

Time: 8am-3pm

Video Conference: Via Zoom

Mana Rangatira Attendees: James Buwalda, Glenice Paine, Devon McLean, Emily Parker, Jan Hania, Erina Watene-Rawiri, Rob Phillips, Dan Walker, Kevin Prime

In Attendance: Andrea Byrom (Director), Melanie Mark-Shadbolt (Director Māori), s 9(2)(a) s 9(2)(a)

Observers: Privacy of natural persons (UoW), Privacy of natural persons (P&F), Privacy of natural persons (MBIE)

Apologies: Privacy of natural persons (MBIE)

Topic	Details	Action
Closed Session		
	Prior to the formal Governance Group Meeting, the Director and Director Māori met with the Mana Rangatira Governance Group (MRGG). ACTION: Draft paper for MW Board on proposed Challenge ELG, roles and responsibilities and socialise it early so 'no surprises' for Board. Cognisant of COVID and rapid change. Discuss with RG. (Andrea/Mel) Also, draft principles of decision-making (especially financial and HR) 'no surprises' between the 2 levels of governance (Mana Rangatira and Manaaki Whenua Board) so we can move with agility, but keep MW Board fully appraised. (James/Glenice) Subsequent discussion (main session) Organise a Zoom with Co-Directors, Co-Chairs, and Challenge Party Co-Chairs (aim end next week or week after). Re ELG, engaging with Challenge Parties under lockdown, any updates. What if further delays in appointments, impact on Co-Directors? – key people on SLG have contracts expired, need to move to secure some key people, other aspects can wait given situation. Getting structure and process for confirming people agreed is time critical, being sound on the Governance process. Seek efficient process. May need to pare back some of the 'ambition' on the new roles (transaction costs in convincing people of the need to change/novelty) – not a time for crazy brave experiments. Potential to use existing capacity?	
General Business		
Welcome	James Buwalda welcomed everyone, and formally opened the meeting.	
Apologies	One or two people dropped in and out of the zoom meeting from time to time. A quorum was maintained throughout.	
Agenda Confirmed	The agenda for the meeting was introduced by the Chair.	
Minutes of previous meeting		
	The minutes of the previous meeting were agreed as true and accurate with minor corrections:	Finalise previous meetings minutes s 9(2)(a)

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Moved Devon *Seconded* Erina	
Action Register	
Feb #1/2 – some discussions with CPs, written update from James. [redacted] will check in with [redacted] for University response, James send [redacted] briefing note and [redacted] will get a response from CRIs. [redacted] and [redacted] consolidate combined view of CPs. Nb. All Board appointments to CRIs suspended at present. (If no new appointees by June James discuss with Devon and Kevin).	[redacted] check with s 9(2)(a) on University response re new MRGG appointments. [redacted] get response from CRIS (James to send briefing note as reminder)
COVID-19	
CRI perspective – [redacted] Financial Implications • ESR different – very busy on COVID response or exempt (e.g. Police) work. Rest of CRIs have done stocktake of how they could support ESR. • This FY $5m each loss expected from each CRI. Cash implication depends on length of lockdown. • MBIE/SSIF cash keeps flowing (accounting issues to deal with). • Commercial activity – significantly impacted, unable to complete hands on work, payment on delivery of work – no cash flow. • Cost/Revenue/Cash mismatch – drag on financial reserves. If shutdown goes long will hit loan limits, varies by CRI depending on cash pools/debt. Getting work done • Some degrees of essential activities. Logistics around doing so safely. • IT infrastructure OK to work from home, scheduling work a big exercise. • Some people have lost entirety of their work, significant impact (work and emotional) on people. Kiwifruit = *deja vu* PSA. Akin to in mourning. • Others responding to the adversity/energised in dealing with a crisis e.g. payroll. ***University perspective –*** [redacted] • Very similar to [redacted] • Some people have completed field season and can analyse their data. Considerations such as when people return to site to work we will need to ensure physical spacing etc, shift work... Agility important - locking into a rigid structure bound to fail. *James to* [redacted] – how confident can we be that the multi-year appropriations will continue or be at risk.	

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Privacy of natural pers [redacted] - no word of any risk to appropriations, cash flow will continue as per contract. Acknowledge will be significant impact/delays. Will address (e.g. contract variations) once is a degree of normality. • Challenge contract mechanism/Annual Work Plans facilitates agility. • Strategic discussions with Lead Contractors - CPs can expect to be engaged at high level to ensure we all get the best out of the available funding. Simply pushing out milestone delivery dates is not a satisfactory response by research teams – needs CE level input. • Māori researchers/communities impacted: financial, social disruption, effect on (current) ability to engage with research. Regional responses will be needed. ***Impacts/Longer term opportunities*** • Leveraging Investment – co-investment has been a cornerstone of Challenge strategy, but difficult in new world situation. Aligned funding still an opportunity. • Are able to access some people's time more readily at the moment. • Telling our stories, mobilise people in the regions on conservation work – delivery, creating impact on the ground. • Privacy of natural [redacted] looking for opportunities around nature in people's backyards through People, Cities and Nature programme – he will call Andrea to discuss how could work together. • Dan – situation in Australia is similar to Privacy of natura [redacted] and Privacy of natural pe [redacted] experience. Public sector funding unlikely to be the same for some time to come. • Write-up a think piece around situation and opportunities/ways forward. Potential to collaborate with MfE/TTW. Also contact Privacy of n [redacted] Privacy of natural pers [redacted] & Privacy of natural persons [redacted] DOC keen to align with Challenge in some areas, roles of conservation post COVID and partnering with Māori.	Privacy of natural [redacted] call Andrea to discuss opportunities to work with the People, Cities and Nature programme. Think piece around situation and opportunities/ways forward... (Andrea/Mel/James).
Portfolio overview and investment/Directors Update	
• Discussed at MRGG out of session meeting last week, follow up is a paper to the MWLR Board for approval. • Be clear how we are impacting on the mission. How do we motivate people to align to the critical steps. • What level of detail (from the AWPs) is appropriate to come to MRGG in future. The full AWP is too detailed for Governance purposes and the role of MRGG. The critical steps alone possibly have insufficient detail.	

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• Relate to the dashboard, what are the 'six' things we are following, give SO leads opportunity to comment on progress. • Have confidence in the SO Leads, and MRGG assess at the appropriate level to review progress and provide feedback. • Privacy of na - in his area at UoW for each research programme there is a regular catch-up. Critical steps in research plans are at a lower level than what would be appropriate for MRGG. Higher level conversation, is progress being made, annual review. Report by exception. • Critical steps towards the SO => contribution of the SO to the mission. • Privacy of nat - What can we now do/what have we got now that we couldn't do/didn't have a year ago e.g. a working prototype, prototype being used by endusers. At governance level have we got what we thought we'd get a year ago? • Once AWPs come in will have better idea of how to review/monitor. 'Dashboard' approach may be the bridge between the detail and the high level. • DW – Critical steps not emerging from the AWP, but in parallel to compare and contrast. Need to have equivalence across SOs to allow comparison across SOs and inform future balancing of relative investment. • Active review from within each team, but also some top down view of what success looks like. SLG provide overview/assessment for MRGG. • Table 1 – investment profile, may some adjustment but % are important. Some assumptions in the splits of Biosecurity and Biodiversity, more in the Biosecurity space, partly due to linkages to NRT. • NRT tried to stick true to SSAG advice in distribution of funding. • Table 2 is visualised in the Dashboards beneath. • Privacy of n - finds the tables outstanding, and will recommend them to be used in another Challenge. Exactly what required. Be good to have summary presented at a future CP meeting. • Privacy of natu - endorse those comments from Privacy of natural - If we deliver all that is contained in the SOs, what will we deliver to the mission. • Privacy of natura - very good and clear, especially the powerpoint summary versions (ideally the summaries would be first, and then the details). Be good to get sense of what will get out of each SO each year e.g. SO 1 what year do you get first draft (even if only 50% done, testing with stakeholders. Y1 couple of measure being used and tested, Y2 draft scorecard etc, single bullet points on	Draft of what a dashboard would look like for each SO. Any Investments that are well progressed put up for consideration. MRGG give feedback on what wish to see in a dashboard. Update 'critical steps' (Outcome logic) chart, reflecting bottom-up input (from project leads) and top-down input (from leadership team perspective), to become critical resource for reviewing progress and performance of investments. MRGG to review at next meeting.

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major outputs.). Agree bottom up and top down iterative process. Don't get bogged down in the process level. Break up the 2023/24 Goals into steps/deliverables over time which can measure progress against. Very simple, 1 liners. [Privacy of nat endorsed these comments, matches level of detail MBIE requires and aligning 'systems' is sensible] • Don't also assume will take 4 years to deliver e.g. to get final scorecard, if could do in 2 years why not do it... • Health Check dashboard, and a Critical Step achievement dashboard are the two aspects – keep theme separate. • MS-Teams? MRGG comfortable using Zoom for the moment.	
Budget – Financial statements	
• Nigel Thomson (MWLR) discussing accounting policy with CFOs from other CRIs and auditors. • If RIA not possible then pay forward $ with associated forward commitments for delivery. Has implications for CPs liabilities on balance sheets, but the benefit of the cash flow is positive, especially in the COVID environment. Risk of prepaying early on in the contract is relatively low. Subsequent adjustment of payment schedules • MRGG endorse the proposed solution: • If RIA not possible, then fund lead contractor up front, with contractual obligations in place to deliver the work and carry over funds. At this early stage in the contracts this is low risk (payment schedule can come back into line with usual in arrears payments in future) and assist in organisations cash flow in the COVID-19 environment. Challenge Parties to carry over funding and manage accounting implications. • Add words to the new contracts to ensure proactive communication from the lead collaborator if non delivery by due dates becomes apparent.	Amend contract s 9(2)(a) completed.
Lunch	
NRT Forward Looking Plan	
• MBIE have discussed relaxing requirements around FLPs. Level of detail lower than Platform plan. Bearing in mind keen interest from stakeholders, MBIE looking for us getting research contracted and underway (as fast as practicable). • What research has been done, what committed to doing in coming year (even in COVID-19 situation). • RS&I funding funds strategic research, not (directly) funding operational research but on the pipeline to impact does have operational implications.	

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• In Forward Plan be clear about the constraints on NRT re operational funding. Manage people's expectations, acknowledge risks in current environment. • NRT sometimes accused of moving too slowly, sometimes misinformed commentary. Risk to operational budgets in COVID-19 response. E.g. Kauri Rescue subject to an MPI bid for future funding, if that falls over then pressure will come back to NRT. Note in the risk section of the plan. • Mel still aiming to deliver to MBIE by end April/1 May. (Nb. Challenge FLP no longer required in full, simple statement will suffice along with any supporting information.)	MRGG provide feedback on NRT FLP to Mel by 17th April.
Risk Registers	
• Andrea talked through the RR's in light of COVID suggested some updates. • Missing category of risk – CPs (researchers/capability) simply not able to do the research (e.g. locked in living rooms, disrupting experiments by iterative lockdowns...). Need to be agile. • CP impacted, which impacts on ability of Challenge and NRT to deliver.	Add risk item 11 – generic risk of interruption of ability of researchers/ stakeholders to undertake the work. s 9(2)(a)Andrea)
Actions and next steps	
Final comments Glenice – noted the standard of the papers received this time around. Devon – agree, papers well done. Conversation re Governance appointments important. Dashboards – missing element is if we deliver what have we achieved for the mission. Good having the pre meeting glass of wine. Erina – papers 'Challenge leading', hope can get team in place quickly but transparently, including signing up Directors contracts. Spending 6hrs on zoom less painful than 17hr day travelling, so overall OK. Privacy of natural perso zoom worked well (via her iPhone). Full marks for acknowledging the situation and being sensitive to peoples situations. Look after yourselves as well. Privacy of natural p – good papers make the meetings easier. 5 minute breaks during the meeting would be good for future. Mel – agree with Privacy of natural pe shorter blocks, a few more breaks. Acknowledged Privacy of natural p comms work – if MRGG want to send photos to Privacy of natural p from their backyards please do. Acknowledge difficulties around regions, reach out to Mel especially for her connections to Iwi Leader's forum if that would be helpful. Rob – noted issues re COVID he is dealing with as well, staff on edge. Papers good, zoom meetings working well. Don't underestimate the impact COVID will have on NZ and the World. Dan – Concurred, jealous of Erina's backdrop. Emily – echoed same comments. Will help shepherd approvals through MWLR. Privacy of natural p – thanks for the inclusive way these meetings are run re Challenge Parties s 9(2)(a) zoom worked well, first time directly taking minutes by typing rather than writing and typing up later. Andrea – comfortable with Zoom. James chaired well. COVID is the curve-ball, and we are mindful of the struggles some people are enduring.	
Next MRGG Meeting	
The next MRGG meeting is to be June – venue/format TBC Meeting closed at 2.12pm	

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Action Register

Actions from the most recent meeting are shaded. Red = any items that are off track.

Meeting	Action	Responsibility	Status
Feb 2020	3. Arrange meeting between MRGG and MWLR Board. James to confirm details with Privacy of natural persons (April 21 or 22?) Workshop an area of mutual interest - Interface of value for MWLR as host of Challenge and for Challenge being hosted by MWLR, and working towards creating impact together	James/Glenice	Deferred in light of COVID-19
	11. Investment Prospectuses - Rename and put draft *Scoping panel reports* online	s 9(2)(a)	Completed
	12. Investment Prospectuses - Revise IPs concisely	s 9(2)(a)	In Progress
	18. TTW-Challenge MOU => 'Conflict of Interest' section within draft MOU to be used in contracts with TTW. No need for MOU, but recognise value of a (simpler) Non-disclosure agreement (NDA)	s 9(2)(a) Andrea B/Melanie MS	Completed
Apr 2020	1a. Draft paper for MW Board on proposed Challenge ELG, roles and responsibilities and socialise it early so 'no surprises' for Board. Cognisant of COVID and rapid change. Discuss with RG 1b. Draft principles of 'no surprises' between the two levels of governance so we can move with agility, but keep MW Board fully appraised.	Andrea B/Melanie MS James/Glenice	Completed but in limbo Completed
	2. Organise a Zoom with Co-Directors, Co-Chairs, CP Chairs	s 9(2)(a) Aim end of week 6-10 April or week after)	Completed
	3. Finalise previous meeting minute	s 9(2)(a) completed) – s 9(2)(a) to send to MWLR	Completed
	4. Check with Privacy of natural persons on University response re new MRGG appointments. Privacy of natural p get response from CRIs. Privacy of n and Privacy of consolidate combined view of CPs.	Privacy of natural persons (James to send briefing note as reminder)	Completed
	5. Privacy of natural call Andrea to discuss opportunities to work with the People, Cities and Nature programme.	Privacy of natural persons	Completed
	6. Think piece around COVID-19 situation and opportunities/ways forward (also contact Privacy of natural persons & Privacy of natural persons).	Andrea B/Melanie/James	Deferred
	7. Draft of what a dashboard would look like for each SO. Use any investments	Andrea B/Melanie/ s 9(2)(a)	Dashboard Completed

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Meeting	Action	Responsibility	Status
	that are well progressed – put to MRGG for feedback Update 'critical steps' (Outcome logic) chart, reflecting bottom-up input (from project leads) and top-down input (from leadership team perspective)	MRGG to feedback on draft	Outcome Framework in progress
	8. Add words to the new contracts to ensure proactive communication from the lead collaborator if non delivery by due dates becomes apparent	Privacy of natural p	Completed
	9. Provide feedback on NRT Forward Looking Plan to Mel	MRGG (by April 17th)	Completed
	10. Add risk item 11 – generic risk of interruption of ability of researchers/ stakeholders to undertake the work.	Privacy of natural p Andrea B	Completed

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Risk Register

Purpose

The purpose of this paper is to update Mana Rangatira on risk associated with the Challenge and *Ngā Rākau Taketake*, the surge investment.

T2 BioHeritage Challenge Risk Register

Inherent risk	BioHeritage Challenge Risk	Likelihood of occurrence / risk direction	Current residual risk	Target risk
	1. Our failure to build sufficient stakeholder commitment results in loss of momentum for initiatives and action on pathways to impact	Likely ↓		
	2. Our failure to embed partnerships with Māori throughout all Challenge operations and relationship, which in turn results in Māori disengagement and or disenfranchisement from Challenge and Challenge-related activities	Possible →		
	3. Our failure to build the 'right teams' via innovation pathways, and/or 'loss of national capability', results in a loss of momentum towards outcomes and impact	Possible →		
	4. Our failure to scan the external environment results in barriers to adoption and scale-out of Challenge outcomes and impact	Unlikely →		
	5. Our failure to adequately consider sustaining and developing fit-for-purpose science capability (people and infrastructure) in our investment decisions results in an inability to deliver impacts	Possible →		
	6. Our failure to critically review and refresh Challenge investment portfolios, so we maximise progress towards our Mission and the legacy we leave in 2024, results in loss of cohesion and focus	Possible ↓		
	7. Our failure to spot and avert misappropriation/misuse of resources results in intervention by MBIE, and suboptimal delivery of impacts	Possible →		
	8. Our failure to identify and manage risk aversion by Challenge Parties results in a reduced ability to deliver impacts	Possible →		
	9. Our failure to manage the risk that we are asked to do more than we can reasonably do – stretching capacity and detracting from core purpose, contributes to increased risk in the categories above.	Possible →		
	10. Our failure to build and maintain a constructive working relationship with the Host hinders delivery of the Challenge mission and associated NRT surge/SSIF investment	Possible ↓		
	11. Factors affect successful implementation of Tranche 2 investments	Possible →		
	12. Interruption to ability of researchers/stakeholders to undertake the work	Possible ↓		

NRT Surge Risk Register

Inherent risk	NgRakau Taketake Risk	Likelihood of occurrence / risk direction	Current residual risk	Target risk
	1. Lack of progress combatting KDB/MR (including reliance on external agencies to implement learnings)	Possible →		
	2. We are unable to engage fatigued stakeholders, particularly Maori	Possible ↓		
	3. Criticism around the Challenge leading this research	Likely ↓		
	4. Lack of transparency and sharing of information	Possible ↓		
	5. Factions within kauri dieback research mean some people are reluctant or unwilling to work together	Possible ↓		
	6. Expectations are higher than scope	Possible ↓		
	7. Factors affect successful implementation of NRT investments	Possible →		
	8. Interruption to ability of researchers/stakeholders to undertake the work	Possible ↓		

Commentary on all risk elements (and any recommended changes to status)

COVID-19

In terms of research delivery and planning in the Challenge and NRT, COVID-19 has caused fewer disruptions than expected, with many in the research community pivoting quickly to work remotely. Further, we have noted an increase in attendance at Challenge/NRT online meetings, especially by mana whenua, community groups, stakeholders, research leads, etc. Thus, despite the disruption, progress has been steady on development of Annual Workplans (see below for commentary on other delays).

However, in the wider sector there are significant risks with budget constraints to organisations and agencies that would normally have co-funded or aligned research activity; hiring freezes in many organisations; and uncertainty for those on 'soft money' (particularly Early-Careers). These wider system

factors will likely impact on our research teams going forward. For example: Auckland Council operational funding to the Kauri Rescue team (from Tranche 1) is now in jeopardy because their budgets have been cut.

Challenge risk

Risk 1

Connecting with stakeholders was slow to ramp back up under lockdown conditions, mainly because many agencies needed to improve their IT/security systems for working remotely. However, this resolved over the course of a month or so and we have had good engagement with government agencies online. Whilst there is strong opportunity for alignment, priorities (and budgets) are likely to remain diverted for the foreseeable future. We **recommend no change.**

Risk 2

Significant effort has gone into and continues to go into embedding partnerships with Māori and Treaty based approaches into our work in the Challenge. COVID-19 will reduce direct contact for the foreseeable future, but we have had strong Māori representation at meetings online and have worked hard to maintain relationships and connections as COVID levels ease. Feedback from Māori continues to be favourable, but we **recommend raising the current residual risk to MEDIUM.**

Risk 3

The Challenge SLG have put significant effort into building the right teams. COVID constraints have not hampered this effort; indeed may even have been beneficial with diaries freed up to spend time developing research workplans. However, more recently the MW audit of Challenge decision-making processes, and the time taken to complete this, has slowed progress because while we are unable to issue contracts to lead providers, they in turn have been unable to issue subcontracts to researchers and partners, who are increasingly unwilling to do more work without contracts (or top-ups) in place. We **recommend no change**.

Risk 4

The 'nature-based' focus of economic recovery for Aotearoa under the current government presents significant opportunities for the Challenge (and thus Challenge Parties). We have been working with key government agencies in a joined-up manner to determine alignment of priorities – at present we feel well connected to these external drivers and are working to maintain those relationships and opportunities. We **recommend changes to 'likelihood of occurrence' to POSSIBLE AND INCREASING** and **'current residual risk' to HIGH (RED).**

Risk 5

Another impact of COVID-19 will be on capability in the science and innovation sector. At highest risk will be those on 'soft' money (i.e. fixed term contracts), which often includes for example early-career researchers. We conducted a survey of ECs in the Challenge to determine how best to support them ***Appendix 1*** and will work to see where we can support. Undoubtedly capability retention will also be a significant topic of conversation at the Challenge Parties' meeting on 5 June. For now, we **recommend no change.**

Risk 6

The work done to clarify Challenge processes around negotiated investments, and to guide the research teams in development of their Annual Workplans, has stood us in good stead to weather the COVID crisis. We have maintained a good balance between providing confidence and certainty to teams whilst

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retaining flexibility in the way we annually refresh our investment portfolios. We **recommended no change.**

Risk 7

The Directors, SLG and support team put considerable effort into ensuring our systems and processes are robust and checked regularly. However, we need to be extremely vigilant to potential misappropriation of resources and/or capture by organisations. Actively managing this risk is an area that can result in burnout in the Challenge SLG because it can be exhausting dealing with this kind of behaviour on a regular basis. We **recommend changes to 'likelihood of occurrence' to POSSIBLE AND INCREASING, and 'current residual risk' to MEDIUM.**

Risk 8

Whilst we have worked hard on key Challenge Party relationships, these will require active nurturing in the COVID-19 environment. This is an agenda item for the Challenge Parties' meeting on 5 June.

We **recommend no change to residual risk for now, but updating 'likelihood of occurrence" to POSSIBLE AND INCREASING.**

Risk 9

Related to the 'misappropriation of resources' risk above, there is a possibility that Challenge funds will be seen as easy pickings to commandeer if things get tight. Whilst there is some pressure, constant vigilance is needed. We **recommend no change**.

Risk 10

The recently-added Challenge risk item #10 (relationship with Host Board) was originally downgraded from red to yellow (and tracking back to green). However, this relationship appears to need ongoing active effort. We recommend upgrading 'likelihood of occurrence' to POSSIBLE AND LIKELY and 'current residual risk' to HIGH (RED).

Risk 11

This risk was added at the last meeting. There have been two major areas of delay, both of which have been signalled above.

COVID: as discussed, the lockdowns had a mixed impact with some researchers struggling to maintain a work/life balance but many appreciating the quiet time to focus on workplan development, data analyses, publications, and project planning. The longer-term impacts are still not yet clear.

MW Board audit: There is risk to both the Challenge and Host reputations given the length of the delay. For example, see correspondence: on 29 May we received a Ministerial request via MBIE to provide detail on expenditure to date on Kauri dieback (Tranche 1 and NRT). There has been considerable concern in the research sector in recent months at the time taken for contracting this work and we have had to work very hard to maintain good working relationships with our co-leads and lead providers given these delays, so it is not surprising that we would receive such a request from the Minister. Further, recent events have been particularly distressing to Māori, who have started to perceive the situation as a repeat of bad experiences in the past. This at a time when the Challenge had been putting so much effort into rebuilding trust.

Risk 12

As noted above, it is a little too early to assess the magnitude of this risk.

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NRT risk

Risk 1

Lockdown has prevented some field and lab work but this has now recommenced. We have been heartened by the high level of engagement from the research teams and wider community throughout the lockdown, with much work progressed during this time via virtual hui. This has happened despite most teams not having contracts in place, see below (Risk 3). However, in recent weeks, we have experienced push-back from providers because contracts have not been signed off and progress has slowed.

Significant reductions in agency and Council funding for operational work has increased the risk around pathways to impact, so this risk remains high.

We recommend **update 'likelihood of occurrence' to LIKELY AND INCREASING.**

Risk 2

All stakeholders have been significantly impacted by the COVID crisis, as communities and organisations have needed to prioritise safety and wellbeing of their own. However, as stated above we have been heartened by the high level of engagement with NRT that has been sustained in recent months under difficult circumstances. In particular, the NRT Māori co-leads are now playing a key role in coordinating NRT engagement and involvement of Māori, with the express purpose of preventing further fatigue and fragmentation of people's efforts. We **recommend no change.**

Risk 3

This risk has increased, for the same reasons as noted under the Challenge T2 risk register. There is significant reputational risk to the Challenge, NRT and the Host because of the delays in contracting research as a result of the Board audit. Our lead providers are all anxious about the delays in contracting as are our co-leads and the team members, causing a loss of confidence and potential damage to reputations, especially because the reasons for the delays could not be disclosed. Receiving approval from the Board's Audit & Risk Committee to proceed to contracting (28 May) should ease the pressure but we **recommend updating 'current residual risk' to HIGH (RED).**

Risk 4

The Challenge team has continued to work hard on this throughout lockdown. For example, Privacy of natural perso has almost completed the kauri dieback stocktake and the Challenge will make it available online. This builds good will in our communities of interest. NRT convenes (via Zoom) monthly KDB and MR community information sharing hui, which are popular and well attended (~45 people per hui). NRT progress is shared at these meetings and circulated widely through the meeting notes. These hui together with newsletters and attendance at SSAG meetings are increasing transparency and information sharing. However, given the COVID crisis we **recommend no change.**

Risk 5

This is still a medium risk. Competitive behaviour has been an ongoing challenge and may well be exacerbated in the post-COVID environment. We **recommend no change.**

Risk 6

Expectations are higher than scope and have increased due to recent uncertainty arising from potential loss or deferral of other research funding in the system (e.g. no KDP budget allocation to MPI; MBIE Smart Ideas deferral; agency funding on hold/cancelled (e.g. Auckland Council's Kauri Rescue funding

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& co-funding of KDP research budget). Lack of certainty or deferrals of current/future research projects has led to increased interest in, and scrutiny of, the NRT research programme & budget. Expectations are well beyond scope (as NRT budget cannot extend to support all or any of these requests).

We **recommend update "likelihood of occurrence" to LIKELY AND INCREASING.**

Risk 7

Continued stalling/delays/lack of approval of all proposed research plans, associated budget and contracts for NRT now risks the progress and implementation of the entire NRT investment plan.

We **recommend update "likelihood of occurrence" to LIKELY AND INCREASING and 'current residual risk' to HIGH (RED)**

Risk 8

As above, continued delays/lack of approval of all proposed research plans including lack of confirmation of all contracts for NRT co-leads, and their wider teams, is risking the ability of the entire NRT team to undertake and complete their work, including work with key/all stakeholders. The delays/lack of approval also introduced uncertainty for the entire team and is now undermining & negatively impacting all work across the NRT Platform. Currently, 3 of 4 of the NRT leadership team will not be in place as of 30 June.

We **recommend update "likelihood of occurrence" to LIKELY AND INCREASING and 'current residual risk' to HIGH (RED)**

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Biological Heritage National Science Challenge MRGG Interest Register

GG Member (as an individual)	Association* Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
James Buwalda	Out of Scope				
Glenice Paine					

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GG Member (as an individual)	Association* Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
Devon McLean	Out of Scope				
Daniel Walker					
Rob Phillips					

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GG Member (as an individual)	Association* Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
Emily Parker	Out of Scope				
Kevin Prime					
Jan Hania					
Erina Watene-Rawiri					

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GG Member (as an individual)	Association* Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
Andrea Byrom	Out of Scope				
Melanie Mark-Shadbolt					
	Professional	MPI – Myrtle Rust Stakeholder Group, Kauri Dieback/Myrtle Rust Joint-SSAG	Member	No	Represent TTW on this groups, but both work with the Challenge on NRT.
	Out of Scope				
	Professional	Te Tira Whakamātaki Limited (Charity)	Director	No	Director and CEO of TTW. There is the potential for me to have a financial interest if I were to receive a dividend or salary though at present I do not. TTW is a partner of the Challenge via NDA, and has received funding from the Challenge.

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GG Member (as an individual)	Out of Scope				
	Professional	Te Tira Whakamātaki Foundation (Charity)	Trustee	No	As a Trustee of the Charitable TTW Foundation I do not receive payment or benefit, though TTW Foundation may benefit from contract work directly or indirectly.
	Out of Scope				

* Association – relationship (personal or professional) between potential external counter party and Biological Heritage National Science Challenge Senior Leadership Group (SLG) Member that is of a tenure or standing that it could give rise to render the SLG member less than independent in his/her judgement of alternatives and selection of the party. Close family members include spouse/partner, siblings, children, parents

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Financial Statements – April 2020

The position for the Challenge and NRT as at end April 2020 is summarised below. Key points are indicated (any areas of risk in red).

1. There have been encouraging discussions between Nigel Thomson (GM Corporate Services) and Audit NZ regards accounting treatment of the NTRT SSIF funding. Draft proposed wording for incorporation into the accounting policy is as follows:

   MWLR and the Crown are parties to a National Science Challenge Strategic Science Investment Fund - Ngā Rākau Taketake Platform (NRT Contract) under which the Crown contracts MWLR to perform research activities that support the Ngā Rākau Taketake Platform. Specific outcomes, and their associated delivery programmes, are agreed over the term of the agreement with Shareholding Ministers. For financial reporting purposes this Strategic Funding is treated as a Government Grant in terms of NZ IAS 20. NRT funded projects are completed over the life of the contract based on milestones, and are recognised as revenue on a systematic basis over the periods in which MWLR recognises as expenses the related costs for which the grants are intended to compensate.

   Nigel noted this only affects presentation of the account results, and the funding available to the research programme is not affected.

2. Research actuals are tracking below budget due to delays in recommended investments being contracted (MWLR Board Audit & Risk Committee approval received 28 May 2020). New budgets have just been setup in the finance system in anticipation, but accruals and/or actual payments of sub-contracts have not occurred.

3. I have made some adjustments in light of COVID-19 but the final effect upon delivery of work and in admin/management travel budget requirements remains to be seen.

4. **For Approval:** The proposed budgets for 2020/21 are included for both the Challenge, and Ngā Rākau Taketake. These are predicated upon the MWLR Board Audit & Risk committee approving the contracts as recommended to them by MRGG.

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NZ Biological Heritage National Science Challenge - Tranche II
Finance - Research Support, Governance, and Management Detail
For the Period Ended 30 April 2020

	Actual YTD April 2020	Budget YTD April (83%)	Variance to Budget (+) Over / (-) Under spend	FY19/20 Bus Plan (GG approved)	2019/20 Full Yr Forecast	Variance w/ Forecast	Comments
Research Tranche 2							
IMPACT 1 - Whakamana | Empower	421,716	774,667	(352,951)	929,600	558,300	(371,300)	SO2 not fully allocated yet, defer in part to FY21
IMPACT 2 - Tiaki | Protect	833,876	914,667	(80,791)	1,097,600	964,620	(132,980)	SO3 begun and SO5 frontloaded. SO4 not allocated, defer in part to FY21
IMPACT 3 - Whakahou | Restore	504,372	774,667	(270,295)	929,600	687,705	(241,895)	SO6 not fully allocated, defer in part to FY21
Strategic Initiatives & Supporting Architectur	74,455	141,667	(67,212)	170,000	186,001	16,001	Supporting Architecture allocations made
Research yet to be allocated (c. 20%)	-	374,333	N/A	449,200	-	(449,200)	All research for year fully allocated (hence $Nil YTD actual)
Director Discretionary (944009-0002)	99,706	125,000	(25,294)	150,000	121,225	(28,775)	
Contingency/Yet to allocate	-	20,833	N/A	25,000	-	(25,000)	
Sub Total Research Tranche 2	**1,934,125**	**3,125,833**	**(796,542)**	**3,751,000**	**2,517,851**	**(1,233,149)**	
	77%	83%					
Support							
- Research Support Team (0301)	225,370	271,239	(45,869)	325,487	273,736	(51,751)	
- SLG (0401)	254,595	319,820	(65,225)	383,784	264,884	(118,900)	
- BH Leadership (Exec) (0403)	228,768	344,714	(115,946)	413,657	256,636	(157,021)	Shifted Co-Director to Management
Sub Total Support	**708,733**	**935,773**	**(227,041)**	**1,122,928**	**795,256**	**(327,672)**	
	89%	83%					
Sub Total Research and Support	**2,642,857**	**4,061,607**	**(1,023,583)**	**4,873,928**	**3,313,107**	**(1,560,821)**	
	80%	83%					
Science Engagement (Outreach)							
- Communications (0501)	18,393	301,667	(283,274)	362,000	28,823	(333,177)	Delayed Strat. Eng. Mgr. Redirected funds to research/supporting architecture
- Engagement/KBs (0502)	261,375	264,923	(3,547)	317,907	282,397	(35,510)	
Sub Total Engagement (Outreach)	**279,768**	**566,589**	**(286,821)**	**679,907**	**311,220**	**(368,687)**	
	90%	83%					
Governance and Management							
- Challenge Governance (0201)	165,488	167,417	(1,929)	200,900	197,056	(3,844)	
- Management (0101)	365,530	276,143	89,387	331,371	450,431	119,060	Moved Co-Director to management budget
Sub Total Governance and Management	**531,018**	**443,559**	**87,459**	**532,271**	**647,487**	**115,216**	
	82%	83%					
GRAND TOTAL TRANCHE 2	**3,453,643**	**5,071,755**	**(1,222,945)**	**6,086,106**	**4,271,814**	**(1,814,292)**	
	81%	83%					

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Nga Rakau Taketake (NRT) Surge & SSIF Funding
Finance - Research Support, Governance, and Management Detail
For the Period Ended 30 April 2020

	Actual YTD April 2020	Budget YTD April (83%)	Variance to Budget (+) Over / (-) Under spend	FY19/20 Bus Plan (GG approved)	2019/20 Full Yr Forecast	Variance w/ Forecast	Comments
Research							
NRT Committed	1,750,031	1,133,210	616,821	1,359,852	4,340,931	2,981,079	MBIE defered $3.5m of 2019/20 SSIF funding to smooth profile. Funds allocated to NRT Goals, and $2.3m received FY19/20 to be carried forward to future years
NRT Yet to be allocated	-	7,335,333	(7,335,333)	8,802,400	-	(8,802,400)	
Sub Total Research	**1,750,031**	**8,468,543**	**(6,718,513)**	**10,162,252**	**4,340,931**	**(5,821,321)**	
	40%	83%					
NRT Research Support							
- NRT Research Support	48,344	66,862	(18,518)	80,234	61,435	(18,799)	
- NRT Science Leadership	208,797	235,311	(26,513)	282,373	247,870	(34,503)	
Sub Total Support	**257,141**	**302,173**	**(45,031)**	**362,607**	**309,305**	**(53,302)**	
	83%	83%					
Sub Total Research and Support	**2,007,172**	**8,770,716**	**(6,763,544)**	**10,524,859**	**4,650,236**	**(5,874,623)**	
	43%	83%					
NRT Comms & Engagement (KBs)							
- NRT Science Communications	71,795	72,294	(499)	86,753	88,762	2,009	Split some operating & contingency between Challenge and NRT
- NRT Engagement	98,900	99,425	(525)	119,310	104,830	(14,480)	Extended KB contract, increased allowance for travel.
Sub Total NRT Comms & Engagement	**170,695**	**171,719**	**(1,024)**	**206,063**	**193,592**	**(12,471)**	
	88%	83%					
GRAND TOTAL	**2,177,867**	**8,942,435**	**(6,764,568)**	**10,730,922**	**4,843,828**	**(5,887,094)**	
	45%	83%					

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Biological Heritage NSC - T2 Budget 2020/21

Budget category	FY 2019/20 Current Forecast	FY 2020/21 Proposed Budget	FY 2021/22 Budget	FY 2022/23 Budget	FY 2023/24 Budget	Total to June 2024
IMPACT 1 - Whakamana | Empower	$558,300	$970,000	$1,067,000	$1,067,000	$1,067,000	$4,729,300
IMPACT 2 - Tiaki | Protect	$964,620	$1,862,500	$1,751,750	$1,751,750	$1,751,750	$8,082,370
IMPACT 3 - Whakahou | Restore	$687,705	$1,240,000	$1,364,000	$1,364,000	$1,364,000	$6,019,705
Strategic Initiatives & Supporting Architecture	$186,001	$1,104,039	$835,000	$735,000	$685,000	$3,545,040
Research yet to be allocated (c. 20%)	$0	$690,000	$690,000	$690,000	$690,000	$2,760,000
Director Discretionary (944009-0002)	$121,225	$150,000	$150,000	$150,000	$150,000	$721,225
Contingency/Yet to allocate	$0	$92,494	$94,237	$96,517	$99,948	$383,196
Sub total Research	*$2,517,851*	*$6,109,033*	*$5,951,987*	*$5,854,267*	*$5,807,698*	*$26,240,836*
Research Support	$795,256	$1,266,386	$1,357,394	$1,375,261	$1,437,140	$6,231,437
- Research Support (0301)	$278,736	$328,411	$362,941	$353,156	$386,569	$1,704,813
- SLG (0401)	$264,884	$541,743	$552,483	$565,522	$578,883	$2,503,515
- BH Leadership (Exec) (0403)	$256,636	$396,232	$441,970	$456,583	$471,688	$2,023,109
Sub total (Research + Support)	**$3,313,107**	**$7,375,419**	**$7,309,381**	**$7,229,528**	**$7,244,838**	**$32,472,273**
Science Engagement	$311,220	$440,818	$485,628	$457,017	$602,602	$2,297,285
- Communications (0501)	$28,823	$342,739	$385,588	$354,976	$498,520	$1,610,646
- Engagement/KBs (0502)	$282,397	$98,079	$100,040	$102,041	$104,082	$686,639
Governance and Management	$647,487	$702,099	$703,485	$720,565	$738,110	$3,511,746
- Mana Rangatira (0201)	$197,056	$201,859	$187,630	$188,583	$189,472	$964,600
- Management (0101)	$450,431	$500,240	$515,855	$531,982	$548,638	$2,547,146
TOTAL	**$4,271,814**	**$8,518,336**	**$8,498,494**	**$8,407,110**	**$8,585,550**	**$38,281,304**

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NRT Surge - Budget 2020/21

Budget category	FY 2018/19 Actual (2 mths)	FY 2019/20 Current Forecast	FY 2020/21 Proposed Budget	FY 2021/22 Budget (10/12 mths)	FY 2022/23 Budget (12 mths)	Total to June 2023
NRT - Kauri Dieback	$463,847	$3,395,182	$7,337,266	$7,717,596	$6,356,229	$25,270,120
NRT - Myrtle Rust	$54,531	$945,749	$2,070,024	$1,572,404	$0	$4,642,708
Yet to allocate (inc D Discretionary)	$0	$0	$638,459	$730,730	$621,800	$1,990,989
- KDB yet to be allocated	*$0*	*$0*	*$638,459*	*$730,730*	*$621,800*	
- MR yet to be allocated	*$0*	*$0*	*$0*	*$0*		
Sub total Research	***$518,378***	***$4,340,931***	***$10,045,749***	***$10,020,730***	***$6,978,029***	***$31,903,817***
NRT Research Support	$700	$309,305	$379,072	$382,671	$395,019	$1,466,767
- NRT Res Support (0031)	$0	$61,435	$105,578	$100,318	$103,489	$370,820
- NRT Leadership (0043)	$700	$247,870	$273,494	$282,353	$291,530	$1,095,947
Sub total (Research + Support)	**$519,078**	**$4,650,236**	**$10,424,821**	**$10,403,401**	**$7,373,048**	**$33,370,584**
NRT Comms & Engagement (KBs)	$0	$193,592	$302,273	$311,599	$321,952	$1,129,416
- NRT Science Comms (0051)		$88,762	$166,884	$172,273	$178,574	$427,919
- NRT Engagement (0052)		$104,830	$135,389	$139,326	$143,378	$379,545
TOTAL	**$519,078**	**$4,843,828**	**$10,727,094**	**$10,715,000**	**$7,695,000**	**$34,500,000**

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Challenge Update from the Director and Director Māori

Purpose

The purpose of this paper is to provide Mana Rangatira with an update on Challenge progress including *Ngā Rākau Taketake* (NRT).

Key Points

Key areas of progress since previous meeting:

- Appointed co-leads for all Tranche 2 (but one) and NRT investments (seven Strategic Outcomes in the Challenge Tranche 2 and seven Themes in NRT) and executed initial contracts to lead providers for those that have been approved. This includes expertise from many Challenge Parties and some independent contractors through contracts to lead providers and subcontracts to research teams.
- Placed details of research investments for the Whakamana/Empower and Whakahou/Restore impact areas online:

  Whakamana: **https://bioheritage.nz/our-goals/empower/**

  Whakahou: **https://bioheritage.nz/our-goals/restore/**

  Information for the Tiaki/Protect impact area will be online shortly.
- Placed details of NRT research investments online:

  NRT Themes: **https://bioheritage.nz/research/saving-our-iconic-trees/**
- Continued the process of 'building the right teams' which is ongoing across all investments. Key principle: building the 'right teams' is an iterative process ('by negotiation'), with appropriate injections of extra funding to the same lead provider and their subcontractors during this stepwise process. Documentation and guidance for building the right teams through this negotiated process is has been online since January 2020: **https://bioheritage.nz/get-involved/1-tranche-2-essentials/**
- Sought approval for further investments for FY20, and to June 2021 from the Manaaki Whenua Board, for both Ngā Rākau Taketake and the Challenge Tranche 2. The Board's Audit & Risk Committee requested an audit of Challenge decision-making processes which has caused considerable delays in execution of contracts for FY20 and FY21. The audit has now been completed (28 May 2020) and there were no major areas of concern.
- Continued to work with co-leads and their growing teams to develop Annual Workplans (AWPs), which outline the upcoming year's research in detail. Drafts are close to completion by many, but not all, research teams. The next step is peer review by the Challenge's International Science Advisory Panel. We have one AWP out for peer review currently.
- Developed Outcomes Frameworks for NRT and Challenge T2, which summarise critical annual steps and a pathway to 2023 or 2024 goals.
- Continued to assess the impact of Covid-19 on Challenge and NRT progress. Early indications are that the lockdowns were a mixed blessing with some individuals freed up to spend more time planning and re-prioritising work but others significantly impacted (e.g. through delays in field or lab work). It is too early to determine how this will balance out in terms of delivery. A survey of the impact of Covid-19 on Early-Career individuals in the Challenge is in ***Appendix 1***.

  Identified opportunities to leverage and seek synergies across the Challenge and NRT through regular online hui to connect co-leads, and regular online 'community hui' across Kauri Dieback and Myrtle Rust communities of interest (including government agencies, mana whenua, NGOs, community groups, technology sector, and researchers).

- Began a process to replace two members of the Challenge Governance Group, Mana Rangatira.
- Continued to work with regional and national government agencies to ensure alignment with their priorities; to respond to the Covid-19 crisis with government agencies in a coordinated fashion; and to ensure that key stakeholders are embedded in Challenge research teams.
- Continued to build an extensive network of Māori co-leads and researchers or knowledge holders, and embedded them into the research programmes. This has been one of the most exciting developments in the Challenge in recent months because it is still a very novel way of working in the New Zealand science system.
- Contributed to the cross-NSC network of Māori leaders (Rauika Māngai) which has provided strategic advice and input to MBIE and to Minister Woods (***Appendices 2 and 3***).

  Completed newsletters for the Challenge T2 and NRT:

  Challenge: **https://bioheritage.nz/may-newsletter-bioheritage/**

  NRT: **https://mailchi.mp/d5b73a27e3da/ng-rkau-taketake-apr-newsletter-5943553?e=1472dfbb40**
- Completed MBIE's forward-looking plans for both the Challenge T2 and NRT. In general, the aim is to adhere to activities outlined in the strategies for both investment areas, but we have paid particular attention to the potential impacts of contracting delays, and of Covid-19, on research delivery over the next 12 months. **The Challenge Forward-Looking Plan for FY21 requires approval by Mana Rangatira at this meeting** (see separate section below).

Implementation of T2 and NRT Research

- Mana Rangatira will now be familiar with the dashboard in ***Appendix 4***, because we have used this framework to respond to the Manaaki Whenua Board audit. As we have all agreed, the intention now is to use the framework to monitor progress in the establishment phase of each Strategic Outcome area or NRT Theme. We provide a dashboard of progress in the establishment phase, updated as of 29 May.
- We are heartened by progress to date given potential Covid impacts and delays due to the Board audit. Many teams have worked hard to produce draft Annual Workplans (AWPs). To date, we have 'sighted' about one third of the total AWPs that need to be delivered by the research teams. Draft contracts had specified that AWPs would be due on either 10 May or 18 May, but without contracts being executed, we were unable to enforce these due dates.
- In turn we had hoped to have several AWPs out for peer-review by the International Science Advisory Panel at the present time, but currently only one is out for review.
- Slow progress on AWPs has in turn impacted on our ability to clarify 'Critical Steps' and populate the Outcomes Frameworks for NRT and Challenge T2 (next section).
- Now that the audit has been completed and approval has been given to proceed to contracting, we will ensure that the Challenge SLG continues to work closely with the research teams to move rapidly to complete the AWP and peer-review steps. This needs to be completed by as many teams as possible prior to 1 July, but a more likely scenario is that some teams will be delayed into Q1 of FY21. We now need to work with Mana Rangatira on a streamlined process for approval of the AWPs (with appropriate assurance and oversight of the peer review process) so that we can move quickly to make up for lost time. This will need to be done 'out of session'.

Outcomes Frameworks for the Challenge T2 and NRT

- Mana Rangatira have previously approved the Outcomes Frameworks for the Challege T2 and NRT. As noted above, we had hoped to have a full set of 'Critical Steps' – one significant acheivement signalling annual progress – populated into the Outcomes Frameworks. However, teams are still completing their Annual Workplans and these are critical documents for populating the Critical Steps into the Outcomes Frameworks. We have provided two Frameworks (one for the Challenge T2 and one for NRT; ***Appendices 5 and 6*** and note that updated versions for FY21 will be provided at the next MRGG meeting in August.

Challenge Forward-Looking Plan

- Normally at this stage of the annual cycle, NSCs complete a 'Forward-Looking Plan' (FLP) for MBIE. This is a statement about key activities and strategic directions in the upcoming financial year and is used by MBIE to measure progress in subsequent reporting. It is the equivalent of the 'annual update' you signed off last month for NRT.
- Because of the Covid crisis, MBIE have indicated in correspondence that:'

  "*In lieu of the normal Forward-looking Plan we require only an indication of any work that represents a change from the strategic direction outlined in your 2019-2024 Future Strategy.*"
- We have chosen to provide a very short FLP ***Appendix 7*** for the Challenge T2 which highlights only deviations to the Strategy. The FLP was due at the end of May but MBIE have given us an extra week so that **Mana Rangatira can provide feedback** prior to submitting the Plan.
- For completeness, we also provide the final Annual Update for NRT that was submitted to MBIE (***Appendix B***).

Budget 2020 implications for the Challenge

- Budget 2020 is unashamedly focused towards creating jobs, however at its heart is productivity, sustainability and inclusivity.
- There is a modest increase for the science and innovation sector which brings New Zealand closer to its goal of lifting research and development to 2 percent of GDP. This year's budget includes: an allocation of $324 million for the Strategic Science Investment Fund, $226 million for research and development growth grants, $243m and $79m for the Endeavour and Marsden funds respectively, $115m for NSC's, $110m for Callaghan Innovation and $110m for the Health Research Fund. Of significance are the large increases in the Catalyst Fund, up to $35m, and the significant funding increase to expand the impact of Vision Mātauranga, $33 million.
- The nature-based budget offers the Challenge an opportunity to work with key agencies to support their investment with robust research. The following packages are of direct relevance to our work; $433 million to restore wetlands, and improve the health of rivers and estuaries; $200 million for nature-based jobs via DOC, councils, iwi and hapū; $154.3 million for enhancing nature and indigenous biodiversity on public and priavte land with DOC and friends; $147.5 million for pest control and eradication, including the PF2050 vision and work with iwi to prevent the collapse of North Island forests; $40 million for pest and weed control on Crown lannd in river beds and the control of acquatic weeds; and the $27.5 million towards wallby control. Investment in the areas of acquatic weeds, pest weeds, and predator control alleviate some pressure for the Challenge to invest in these areas, areas we've already been unable to address adequately.

- Andrea Byrom and Privacy of natural persons (NRT Co-Lead) responded to media enquiries about nature-based jobs in Budget 2020, which was a chance to profile the concept of a Scorecard for Aotearoa (SO1):
  https://www.rnz.co.nz/national/programmes/morningreport/audio/2018748159/how-do-those-on-the-ground-feel-about-budget-s-big-green-spend
  https://www.rnz.co.nz/national/programmes/first-up/audio/2018747969/nz-needs-to-keep-sight-of-ecological-goals

COVID-19 impacts and opportunities

Impacts on Early-Career individuals

- See next section

Impacts on the 'research ecosystem'

- We have completed several small and one large hui to canvas the opportunities and risks that Covid-19 poses to delivery of the Challenge goals. The larger hui was focused around Kauri Dieback and Myrtle Rust (NRT).

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- **Opportunities:** for our research teams, the lockdowns were a chance to reflect, pivot and plan – to a degree more than they had expected. Further, much of the Challenge's research is strongly aligned with the signals coming from Government around, for example, a nature-based economy. Thus, many opportunities have been identified for researchers to connect to knowledge holders and communities in the regions, working collaboratively with them to generate data without necessarily physically visiting potentially-vulnerable communities. In many instances we are starting to act on these opportunities.
- **Risks:** Covid will place severe budget constraints on many organisations, including research organisations. Re-prioritisation of budgets within agencies (or failure to secure new funding in Budget 2020) has meant that much of the operational research that would have been done by agencies such as DOC and MPI can no longer be undertaken. Also, there are now hiring freezes in place in many organisations. These constraints have placed high expectations both on Challenge research funding and on the NRT SSIF Platform. Notwithstanding these expectations, the hui was a chance for all organisations to understand each others' constraints and to begin to identify opportunities to use our partnerships to make the best of the situation. A follow-up hui is planned for early June.
- We have provided this information to the Challenge Parties and CP co-chair Privacy of natural persons has designed an agenda around Covid (meeting to be held via Zoom on 5 June) so that we can determine how best to work proactively with CPs to respond to the crisis.

Early Career Survey

- The Challenge ran a survey by email and on social media to ascertain the impact of Covid-19 on the wellbeing and productivity of early-career individuals.
- We define 'early career' as anyone up to and including 10 years post PhD, and we have included individuals from government agencies and mana whenua in our network (hence we do not use the term 'ECR' or early-career researcher, as the Challenge EC network is wider than just researchers).
- The results of the surveys are in ***Appendix 1***. The Challenge SLG are now using the results to plan how best to support ECs in the Challenge T2 and NRT.

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Appendix 1

Survey Results: impact of COVID on Early Career individuals

Email survey – 15 respondents

At which career stage are you?

Hons/Msc:	0
PhD:	67%
Post-Doc:	27%
Employed, fixed term:	0
Employed, permanent:	6.7%

How much has the covid-19 pandemic affected your mahi?

Not at all:	0
Minor inconvenience:	20%
Somewhat inconvenienced:	47%
Quite a bit:	33%
Completely:	0

How are you feeling?

Extra stormy:	13%
A little rainy:	33%
Mild:	27%
Partly sunny:	20%
All sunshine:	7%

If you would like, please let us know why you are feeling this way:

1. It is really hard to be far from family right now. Besides, working exclusively from home and constantly on the computer can be sometimes be hard to stay focused.
2. Working from home is difficult - Separation of work and play is very important for productivity!
3. The impacts of Covid has left a lot of uncertainty
4. Pretty lucky that I can carry on work doing computer simulations and I don't rely on labs at the moment. Working environment is not ideal and will become more difficult as the house becomes full again after lock-down.
5. I have a comfortable home, supportive family, and facilities to work from home.
6. Progress has been very slow and that is discouraging
7. Lots of pressure due to projects deadlines and dealing with all sort of unexpected events happening during the covid19 lockdown.
8. Collaborations as well as sequencing partners are all based overseas and therefore our work here depends quite a lot on their ability to proceed with the lab work in their countries.
9. Grateful to be part of a kind and supportive team :)
10. Fewer distractions, more work being done

11. Family overseas, no real contact to friends since lockdown, jobs on hold, PhD going slow
12. So much uncertainty and plans on hold etc. I was supposed to be moving to Germany to start a new postdoc but instead, I am now staying here for a few more weeks (months?). It's all very unsettling not knowing when I will be moving halfway across the world, and starting my first postdoc from home, in the wrong time zone is hard.

Given the disruption of covid-19, what would you most like support with? Choose as many options as needed.

Finances:	33%
Academic logistics:	33%
Situational logistics:	40%
Coping with stress & anxiety:	47%
Future opportunities:	53%
Regular cuddles with puppies and/or kittens:	33%

Do you have any other feedback on how covid-19 has affected your studies or work?

1. It has definitely slowed the whole work schedule in general, as we had to re-adjust to set up a descent workstation from home to get things done.
2. Covid-19 brings major uncertainty regarding the future. As a finishing PhD student, I'm worried about how the job market may look like when I finish and if I'm able to travel for a new role.
3. It has shifted the timeframe for my research which is difficult when your work is tied to a VISA
4. The disruption has come at a bad time since I am wrapping up my PhD. Emotional demands of friends/family/partner can take a great deal of time away from work. Working environment is poor (inconvenient for me and my housemates and giving me a bad back!). All the stresses put together can make it difficult to progress at the necessary rate. However, I count myself among the very fortunate. Despite the difficulties (that are not unique to me), it is still possible for me to work and I live in a country where the number of Covid-19 cases is still low.
5. I have submitted my thesis, and am waiting for my examiners reports to come in. There has been significant delay, however, and I'm not sure if its related to Covid-19 or not.
6. Uncertainty around what the future holds post-PhD (e.g., what opportunities will be available for ECRs, given widespread loss of job security and prospects?)
7. I had to extend my PhD, but my funding ran out, it is stressful

Social media survey – 15 respondents

NB: social media surveys were not just answered by ECs, so should be taken with a grain of salt.

Facebook (pick one or more of five options): *11 'votes'*

Finances:	64%
Research Plan:	9%
Living Logistics:	18%
Stress & Anxiety:	0%
Networking:	9%

Twitter (pick one of four options): *37 'votes'*

Finances:	47%
Living Logistics:	16%
Stress & Anxiety:	32%
Networking:	5%

Instagram (Yes/No for each option):

Finances:	14/16 (47% yes)
Research Plan:	15/2 (88% yes)
Living Logistics:	10/8 (56% yes)
Stress & Anxiety:	16/4 (80% yes)
Networking:	16/3 (84% yes)

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Appendix 2
Rauika Māngai_2019 VM Leadership Hui Summary

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BRINGING VISION MĀTAURANGA TO LIFE

This summary describes principles of good practice for Vision Mātauranga in the science sector. Recommendations are also proposed to help leap to the next level of science excellence, impact and success.

Empower Māori Knowledge

Only Western science legitimised	**Mātauranga & Western science valued**
Mātauranga merely acknowledged	**Mātauranga activity resourced**
Taken from Mātauranga experts	**By and with Mātauranga experts**
Non-Māori as primary VM experts	**Māori as primary VM experts**
Cultural expertise overlooked	**Cultural expertise valued**
Scientific expertise side-lined	**Scientific expertise recognised**

Empower Māori Resources

Academic aspirations alone	**Māori & academic aspirations**
Publication alone	**Publication & benefit for Māori people**
IP benefit retention by academic institutions	**IP benefit sharing or Māori ownership**
Only Western scientific measures of excellence, impact and success	**Māori worldview of excellence, impact and success is included**

Empower Māori People

Consulted for projects, programmes & orgs	**Māori-led projects, programmes & orgs**
Advice sought to tick the 'VM box'	**Advice sought for research value and followed**
Informed about the decisions made	**Involved as decision makers**
Projects about Māori	**Projects by and with Māori**
Māori rare in the sector	**Many Māori in the sector**
Cultural labour is unpaid or underpaid	**Additional labour is resourced**
Māori researchers responsible & isolated	**Māori researchers supported & developed**

Empower the Future

Recommendations for a thriving VM science system

- Employ an engaged Treaty relationship in the science sector
- Create dedicated Mātauranga or Māori science initiatives, e.g. Mātauranga NSC or SSIF
- Convene an independent Mātauranga Commission to formulate a Mātauranga science research framework
- Define science excellence that encompasses Mātauranga Māori
- Establish consistency in how Mātauranga science quality is assessed and by whom
- Establish an expert council for Mātauranga science oversight
- Pro-active workforce development and support, with retention as a priority
- Correctly resource Māori researchers expected to fulfil both cultural and scientific roles
- Develop a thriving and retained pipeline for Māori in STEAM disciplines
- Improve mapping linking research activity to impact for Māori communities

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Summary information drawn from the Vision Mātauranga (VM) Leadership hui held on 30-31 October 2019, convened by the **Rauika Māngai** at Te Wai o Horotiu Marae, AUT, Auckland. The hui involved two days of discussion with over 100 Māori Researchers and science community members.

Appendix 3
Notes of the Accelerating Māori in STEAM Hui

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Notes of the accelerating Māori in STEAM hui 11th December 2019 Rutherford House, Wellington

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Purpose: To allow Minister Woods to hear the voices of Māori working at the science-mātauranga interface and to provide a clear steer about how to accelerate Māori in STEAM with key actions that the Minister can take away.

Attendees: Privacy of natural persons Melanie Mark-Shadbolt, Privacy of natural persons Hon Minister Dr Megan Woods

Guests: Privacy of natural persons Prue Williams, Privacy of natural persons, Carolyn Tremain, Privacy of natural persons

Apologies: Privacy of natural persons

Noted the previous hui[1] that have involved around 170 Māori Leaders, rangatahi and policy makers to agree priority action areas for enabling Māori to participate equitably in and lead a STEAM-focused future. The ideas put forward at the hui have been tested and refined over the past two months and reflect a consensus view.

As well as the outcomes from the hui which are captured in the next page some other points were noted in the roundtable with Minister Woods.

- Noted the overlaps with the future-of-work portfolio and the need to invest in Māori R&D intensive businesses so rangatahi have high skills employment to move into. There is a need for data about which businesses to invest in and collective working across iwi. There is a lack of data about the number of Māori researchers in business. The MBIE future-of-work

[1] The first was a two-day Vision Mātauranga (VM) Leadership hui held on 30-31 October convened by Rauika Māngai at Te Wai o Horotiu Marae. The second, 'Transforming the future of Māori in STEAM' was hosted by Privacy of natural persor and Privacy of natural persons on 19th November at Waipapa Marae.

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programme has data on participation of Māori and Pasifika by different industries and could help with foresighting as part of developing a Māori STEAM strategy.

- The commitment made by Government that New Zealand history will be taught in all schools and kura by 2022 represents an opportunity to ensure that tamariki grow up with mātauranga and can develop capabilities as dual knowledge navigators with a strong cultural identity. It was noted that funding would be required to make this happen.

- There are opportunities to enhance co-governance and co-management by increasing Māori appointments on boards. Noted the ineffectiveness of current BAU approach of having one Māori 'voice' on a board and the need to re-balance power, consistent with a Te Tiriti partnership approach. Concentration of Te Ao Māori expertise on boards would enable dynamic thinking to be scaled more effectively than being spread thin across the system (where the outcome is 'divide and exhaust'). Te Whare Hukahuka offers governance and leadership training.

- The outcomes of this third and final hui represents a clear path forward. The RSI Strategy consultation is an opportunity to bring these conversations forward, but the opportunity is being missed in the current approach of seeking Māori consultation on a strategy that is already largely worked up, and where mātauranga is on the margins of the RSI system.

- A ropū that draws from those involved in the hui could be a good forum for continuing to progress these actions. There is an opportunity to bring the ropū together with relevant Ministers including Davis, Mahuta, Jackson, Hipkins and Henare perhaps through a dinner in the speakers lounge.

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STOP	START	KEEP
Competition for crumbs • Inappropriate funding mechanisms and 'tick the box' tokenism • Competing over 'crumbs' • Rigid focus on STEM/STEAM – let's front foot mātauranga • Funding & systems that put mātauranga at the periphery and devalues other knowledge systems • Competition in the system inc amongst ourselves • Using money ring-fenced for VM for professional development of non-Māori • Gatekeeping – restricting access to participating in the science system as a result of Māori not being in positions of power and influence **Reinventing the wheel** • and pulling funding from programmes already showing success **Unequal power balance** • Divide and exhaust – Māori stretched too thin across multiple engagements • De-valuing Māori views in RS&I • RSI Strategy as one dimensional	**Funding** • Having a shared vision • Putting Mātauranga at the core • Having a strategy to elevate mātauranga by Māori, for Māori, for the whole of Aotearoa • Assessment of the value of VM as a policy • Specific new funding for mātauranga eg Māori CRI / CORE/ NSC / platform • Growing philanthropic • Equitably funding mātauranga and recognising other knowledge system • Protecting mātauranga **Power sharing & working in partnership** • Getting movement on the Te Tiriti partnership and power sharing • Re-designing the system through co-design and Māori involvement in setting priorities • • Changing the narrative • Changing narrative into positive language and sharing success • Promoting the value of mātauranga to Aotearoa • Collective evidence of the benefits of mātauranga / opportunity lost of not funding • Re-contextualising information/education • Raising visibility of the impact on the community **Enabling tamariki and Rangatahi participation & leadership** • Early exposure to tech / RSI and enhancing capability the in areas they are passionate about eg greater awareness of tech pathways • Rangatahi-led mātauranga • Fun and interactive experiences for our young • Educating and supporting our teachers	**What works** • Long-term funding for Māori-led and mātauranga initatives with proven success • Telling Māori stories of success across diverse audiences • Increase funding for VMCF • Māori curriculum content but grow it **Conversation and leadership** • Brave conversations, pushing boundaries and keeping safe • Bringing Māori together • Māori partnership • Māori / wahine Māori Leadership • Supporting allies

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Appendix 4

BioH Tranche II NRT Investment Process Mana Rangatira Assurance

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Tranche 2 and NRT Investment Decisions – Assurance and Risk – Mana Rangatira

What is in these slides

- The next slides summarise the state of play with respect to each Challenge Tranche 2 and Ngā Rākau Taketake investments, matrixed against the Manaaki Whenua Audit & Risk Committee request.
- The Challenge decision-making framework (previously tabled) is included on a later slide. It highlights the steps in the process of contracting Challenge and NRT investments by negotiation.

How we have complied with the audit

- We follow a step-wise process to build the right team. This process is ***transparent, and clearly laid out on the Challenge website*** for anyone to access. Key decisions are recorded, conflicts of interest addressed and documented in the form of minutes, signed conflicts of interest documents, an interests register, spreadsheet(s), or other documentation. Progress towards each step is ***colour-coded in column 2*** on each slide.
- On the next slides we link this step-wise process to the approach laid out in the audit Board paper, in a matrix framework.
- When the process is complete, relevant cells will contain a ***hyperlink to documented evidence*** on the Challenge Sharepoint site, accessible by anyone on the MRGG.
- This framework will enable Mana Rangatira to ***access any and all documents*** that demonstrate that we have complied with the audit.
- ***Every contract – irrespective of lead provider – is treated in exactly the same way i.e. goes through the same steps*** in the lead-up to execution of a contract.

Key to colour-coding on the next slides

Colour	Meaning
	Completed
	In progress and on track – live right now
	On track with issues being addressed – live right now
	Tracking towards
	Off track

Shade	Meaning
	MRGG and SLG believe explanation and documented evidence is needed
	MRGG and SLG believe explanation and documented evidence is not necessary at this step

Challenge Tranche 2	Mana Rangatira – Assurance and Risk					
	Step	Quality of proposed activity	Provider's capacity to deliver	Conflict(s) of interest	Pricing/Value for money	Significant risks
Strategic Outcome 1 A Biological Heritage Scorecard for Aotearoa $650,000	Extensive scoping, design, and 2024 Goals completed	Completed Link to T2 EOI scoping documents area which includes spreadsheets / notes and ToR. Link to Scoping Panel Report Link to Pitch Presentation	Considered in early stages Link to T2 EOI scoping documents	• Scoping Members interest register	Standard honorarium paid to all parties contracted to participate in scoping process, who weren't otherwise/already contracted members of the leadership team. Link to standard letter/contract with honorarium amount	Considered in MRGG papers - 2019/06/06 & minutes No significant risk, beyond those being managed through standard Challenge processes, noted at this early stage of investment planning.
	ISAP peer-review of Scoping Panel Report completed	Completed and teams revised reports Link to ISAP review documents				
	Director, KN, & SLG review of Scoping Panel Report; Goals prioritised	Director review of each Scoping report with feedback to each team – written and verbal Link to all KB/SLG review documents		SLG/KB Interest register Mana Rangatira tested process with Director, and assured that potential conflicts were managed appropriately (noting no decisions at this stage regarding project leads or proposed levels of investment). Potentially conflicted parties were not directly involved in decision regarding prioritisation of respective goal.		
	Nominal budget allocated for research teams to address prioritised Goals	Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06 Nominal budgets reflected priorities and recommendations identified in scoping reports, followed by moderation by Leadership Team. Mana Rangatira interrogated and reviewed nominal budget allocation at December2019 meeting, noting that annual allocations can be varied based on commitments made in each Annual Work Plan and following annual reviews of progress against objective.			Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06	
	Research co-leads and lead provider identified and selected	Potential co-leads/proivders identified at SLG hui 4 December Mana Rangatira interrogated and reviewed research leads/lead provider recommendations at December 2019 meeting. Mana Rangtira reviewed capability and reputation of project co-leads, noting their reputation and track record. These co-leads stood out during scoping process as having the best understanding of the need and the best approach for addressing that need. This conclusion widely endorsed within leadership team and by others involved in scoping process.	Potential co-leads/proivders identified at SLG hui 4 December Mana Rangatira acknowledged reputation and capability of project leads and track record of UoW as a lead provider. Project leads demonstrate real understanding of 'right team', collaboration, and intended impact.	CoI policy applied when identifying potential co-leads and providers – Conflict of interest policy No material conflicts-of-interest identified for this investment. Project leads/lead provider not directly involved in investment recommendations to Mana Rangatira.		
	Recommendations to			Considered in MRGG papers [link to		Considered in MRGG papers

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Challenge Tranche 2	Mana Rangatira – Assurance and Risk					
	Step	Quality of proposed activity	Provider's capacity to deliver	Conflict(s) of interest	Pricing/Value for money	Significant risks
Strategic Outcome He Tangata, He Taiao, He Ōhanga: a values- based biosecurity risk assessment framework for Aotearoa $350,000	Extensive scoping, design, and 2024 Goals completed	Completed Link to T2 EOI scoping documents area which includes spreadsheets / notes and ToR. Link to Scoping Panel Report Link to Pitch Presentation	Considered in early stages Link to T2 EOI scoping documents	• Scoping Members interest register	Standard honorarium paid to all parties contracted to participate in scoping process, who weren't otherwise/already contracted members of the leadership team. Link to standard letter/contract with honorarium amount	Considered in MRGG papers - 2019/06/06 & minutes No significant risk, beyond those being managed through standard Challenge processes, noted at this early stage of investment planning.
	ISAP peer-review of Scoping Panel Report completed	Completed and teams revised reports Link to ISAP review documents				
	Director, KN, & SLG review of Scoping Panel Report; Goals prioritised	Director review of each Scoping report with feedback to each team – written and verbal Link to all KB/SLG review documents		SLG/KB Interest register Mana Rangatira tested process with Director, and assured that potential conflicts were managed appropriately (noting no decisions at this stage regarding project leads or proposed levels of investment). Potentially conflicted parties were not directly involved in decision regarding prioritisation of respective goal.		
	Nominal budget allocated for research teams to address prioritised Goals	Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06 Nominal budgets reflected priorities and recommendations identified in scoping reports, followed by moderation by Leadership Team. Mana Rangatira interrogated and reviewed nominal budget allocation at December2019 meeting, noting that annual allocations can be varied based on commitments made in each Annual Work Plan and following annual reviews of progress against objective.			Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06 Charge-out rates negotiated with reference to standard charge-out rates applied to researchers; standard honoraria for non-researchers (e.g. kaitiaki) follow Challenge SOP for Sensitive Discretionary Expenditure	
	Research co-leads and lead provider identified and selected	Potential co-leads/proivders identified at SLG hui 4 December Mana Rangatira interrogated and reviewed research leads/lead provider recommendations at December 2019 meeting. Mana Rangtira reviewed capability and reputation of project co-leads, noting their reputation and track record. These co-leads stood out during scoping process as having the best understanding of the need and the best approach for addressing that need. This conclusion widely endorsed within leadership team and by others involved in scoping process.	Potential co-leads/proivders considered at SLG hui 4 December SLG consulation/negotiation with potential providers led to recommendation for the project leads. Project Leads outside main Challenge Party organisations, and will operate through their own company/organisation structures. Project leads demonstrated (during scoping process) strong understanding of project need and intended outcome. Their research and consulting track record in project area is sound. Project leads well placed to facilitate	CoI policy applied when identifying potential co-leads and providers – Conflict of interest policy No material conflicts-of-interest identified for this investment. Project leads/lead provider not directly involved in investment recommendations to Mana Rangatira.		

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Challenge Tranche 2	Mana Rangatira – Assurance and Risk					
	Step	Quality of proposed activity	Provider's capacity to deliver	Conflict(s) of interest	Pricing/Value for money	Significant risks
Strategic Outcome 3 A Virtual Biosecurity Hub for Aotearoa $500,000	Extensive scoping, design, and 2024 Goals completed	Completed Link to T2 EOI scoping documents area which includes spreadsheets / notes and ToR. Link to Scoping Panel Report Link to Pitch Presentation	Considered in early stages Link to T2 EOI scoping documents	• Scoping Members interest register	Standard honorarium paid to all parties contracted to participate in scoping process, who weren't otherwise/already contracted members of the leadership team. Link to standard letter/contract with honorarium amount	Considered in MRGG papers - 2019/06/06 & minutes No significant risk, beyond those being managed through standard Challenge processes, noted at this early stage of investment planning.
	ISAP peer-review of Scoping Panel Report completed	Completed and teams revised reports Link to ISAP review documents				
	Director, KN, & SLG review of Scoping Panel Report; Goals prioritised	Director review of each Scoping report with feedback to each team – written and verbal Link to all KB/SLG review documents		SLG/KB Interest register Mana Rangatira tested process with Director, and assured that potential conflicts were managed appropriately (noting no decisions at this stage regarding project leads or proposed levels of investment). Potentially conflicted parties were not directly involved in decision regarding prioritisation of respective goal.		
	Nominal budget allocated for research teams to address prioritised Goals	Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06 Nominal budgets reflected priorities and recommendations identified in scoping reports, followed by moderation by Leadership Team. Mana Rangatira interrogated and reviewed nominal budget allocation at December2019 meeting, noting that annual allocations can be varied based on commitments made in each Annual Work Plan and following annual reviews of progress against objective.			Standard charge-out rates applied to researchers; standard honoraria for non-researchers (e.g. kaitiaki) follow Challenge SOP for Sensitive Discretionary Expenditure Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06	
	Research co-leads and lead provider identified and selected	Potential co-leads/proivders identified at SLG hui 4 December Mana Rangatira interrogated and reviewed research leads/lead provider recommendations at December 2019 meeting. Mana Rangtira reviewed capability and reputation of project co-leads, noting their reputation and track record. These co-leads stood out during scoping process as having the best understanding of the need and the best approach for addressing that need.	Connection to B3 collaboration (incl. MPI), provides access to capability in multiple providers Australian precedent that is working, so able to leverage experience from there	CoI policy applied when identifying potential co-leads and providers – Conflict of interest policy No material conflicts-of-interest identified for this investment. Project leads/lead provider not directly involved in investment recommendations to Mana Rangatira.		
	Recommendations to MRGG to enable team construction & AWP			Considered in MRGG papers [link to Dec papers and minutes]		Considered in MRGG papers Mana Rangatira recognised risk in making this

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Challenge Tranche 2	Mana Rangatira – Assurance and Risk					
	Step	Quality of proposed activity	Provider's capacity to deliver	Conflict(s) of interest	Pricing/Value for money	Significant risks
Strategic Outcome 4 Tools to Support Landscape-Scale Control of Invertebrates $442,000 TBC*	Extensive scoping, design, and 2024 Goals completed	Completed Link to T2 EOI scoping documents area which includes spreadsheets / notes and ToR. Link to Scoping Panel Report Link to Pitch Presentation	Considered in early stages Link to T2 EOI scoping documents	• Scoping Members interest register	Standard honorarium paid to all parties contracted to participate in scoping process, who weren't otherwise/already contracted members of the leadership team. Link to standard letter/contract with honorarium amount	Considered in MRGG papers - 2019/06/06 & minutes No significant risk, beyond those being managed through standard Challenge processes, noted at this early stage of investment planning.
	ISAP peer-review of Scoping Panel Report completed	Completed and teams revised reports Link to ISAP review documents				
	Director, KN, & SLG review of Scoping Panel Report; Goals prioritised	Director review of each Scoping report with feedback to each team – written and verbal Link to all KB/SLG review documents		SLG/KB Interest register Mana Rangatira tested process with Director, and assured that potential conflicts were managed appropriately (noting no decisions at this stage regarding project leads or proposed levels of investment). Potentially conflicted parties were not directly involved in decision regarding prioritisation of respective goal.		
	Nominal budget allocated for research teams to address prioritised Goals	Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06 Nominal budgets reflected priorities and recommendations identified in scoping reports, followed by moderation by Leadership Team. Mana Rangatira interrogated and reviewed nominal budget allocation at December2019 meeting, noting that annual allocations can be varied based on commitments made in each Annual Work Plan and following annual reviews of progress against objective.			Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06	
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	Recommendations to			Considered in MRGG papers [link to		Considered in MRGG papers

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Challenge Tranche 2	Mana Rangatira – Assurance and Risk					
	Step	Quality of proposed activity	Provider's capacity to deliver	Conflict(s) of interest	Pricing/Value for money	Significant risks
Strategic Outcome 5 Invert pest tools Mammal pest tools Biosecurity Hub $850,000 Privacy of natural persons Privacy of natural persons Privacy of natural persons (TBC)	Extensive scoping, design, and 2024 Goals completed	Completed Link to T2 EOI scoping documents area which includes spreadsheets / notes and ToR. Link to Scoping Panel Report Link to Pitch Presentation	Considered in early stages Link to T2 EOI scoping documents	• Scoping Members interest register	Standard honorarium paid to all parties contracted to participate in scoping process, who weren't otherwise/already contracted members of the leadership team. Link to standard letter/contract with honorarium amount	Considered in MRGG papers - 2019/06/06 & minutes No significant risk, beyond those being managed through standard Challenge processes, noted at this early stage of investment planning.
	ISAP peer-review of Scoping Panel Report completed	Completed and teams revised reports Link to ISAP review documents				
	Director, KN, & SLG review of Scoping Panel Report; Goals prioritised	Director review of each Scoping report with feedback to each team – written and verbal Link to all KB/SLG review documents		SLG/KB Interest register Mana Rangatira tested process with Director, and assured that potential conflicts were managed appropriately (noting no decisions at this stage regarding project leads or proposed levels of investment). Potentially conflicted parties were not directly involved in decision regarding prioritisation of respective goal.		
	Nominal budget allocated for research teams to address prioritised Goals	Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06 Nominal budgets reflected priorities and recommendations identified in scoping reports, followed by moderation by Leadership Team. Mana Rangatira interrogated and reviewed nominal budget allocation at December2019 meeting, noting that annual allocations can be varied based on commitments made in each Annual Work Plan and following annual reviews of progress against objective.			Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06	
	Research co-leads and lead provider identified and selected	Potential co-leads/proivders identified at SLG hui 4 December Mana Rangatira interrogated and reviewed research leads/lead provider recommendations at December 2019 meeting. Good links to Gemomics Aotearoa. Noted this is only Challenge investment in gene tech for invasive species control (and therefor of high interest in relation to PF2050 interim goal) Mana Rangtira reviewed capability and reputation of project co-leads, noting their reputation and track record. These co-leads stood out during scoping process as having the best understanding of the need and the best approach for addressing	Potential co-leads/proivders identified at SLG hui 4 December Project leads confirmed after further negotiation, with recommendation to Mana Rangatira 6 April. Mana Rangatira acknowledged reputation and capability of project leads, and recognised value of Māori co-lead for this project.	CoI policy applied when identifying potential co-leads and providers – Conflict of interest policy One of the providers is Challenge host. Although Challenge Director is formally employed by Challenge host, Mana Rangatira satisfied (after interrogation of decision process) that Director was not materially conflicted. (Note – Challenge Director not personally involved in any Challenge-funded research)		

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Challenge Tranche 2	Mana Rangatira – Assurance and Risk					
	Step	Quality of proposed activity	Provider's capacity to deliver	Conflict(s) of interest	Pricing/Value for money	Significant risks
Strategic Outcome 6 Diverse, Successful and Practical Pathways to Ecosystem Regeneration $442,000 CAWTHRON The power of science® Privacy of natural persons	Extensive scoping, design, and 2024 Goals completed	Completed Link to T2 EOI scoping documents area which includes spreadsheets / notes and ToR. Link to Scoping Panel Report Link to Pitch Presentation	Considered in early stages Link to T2 EOI scoping documents	• Scoping Members interest register	Standard honorarium paid to all parties contracted to participate in scoping process, who weren't otherwise/already contracted members of the leadership team. Link to standard letter/contract with honorarium amount	Considered in MRGG papers - 2019/06/06 & minutes No significant risk, beyond those being managed through standard Challenge processes, noted at this early stage of investment planning.
	ISAP peer-review of Scoping Panel Report completed	Completed and teams revised reports Link to ISAP review documents				
	Director, KN, & SLG review of Scoping Panel Report; Goals prioritised	Director review of each Scoping report with feedback to each team – written and verbal Link to all KB/SLG review documents		SLG/KB Interest register Mana Rangatira tested process with Director, and assured that potential conflicts were managed appropriately (noting no decisions at this stage regarding project leads or proposed levels of investment). Potentially conflicted parties were not directly involved in decision regarding prioritisation of respective goal.		
	Nominal budget allocated for research teams to address prioritised Goals	Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06 Nominal budgets reflected priorities and recommendations identified in scoping reports, followed by moderation by Leadership Team. Mana Rangatira interrogated and reviewed nominal budget allocation at December2019 meeting, noting that annual allocations can be varied based on commitments made in each Annual Work Plan and following annual reviews of progress against objective.			Standard charge-out rates applied to researchers; standard honoraria for non-researchers (e.g. kaitiaki) follow Challenge SOP for Sensitive Discretionary Expenditure Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06	
	Research co-leads and lead provider identified and selected	Potential co-leads/proivders identified at SLG hui 4 December Mana Rangatira interrogated and reviewed research leads/lead provider recommendations at December 2019 meeting. Connecting community restoration efforts is a big need. Mana Rangtira reviewed capability and reputation of project co-leads, noting their reputation and track record. These co-leads stood out during scoping process as having the best understanding of the need and the best approach for addressing that need. This conclusion widely endorsed within leadership team and by others involved in scoping	Potential co-leads/proivders identified at SLG hui 4 December Cawthron well-placed to lead this contract. Core team has engaged wider network to ensure broad-based capability.	CoI policy applied when identifying potential co-leads and providers – Conflict of interest policy No material conflicts-of-interest identified for this investment. Project leads/lead provider not directly involved in investment recommendations to Mana Rangatira.		

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Challenge Tranche 2	Mana Rangatira – Assurance and Risk					
	Step	Quality of proposed activity	Provider's capacity to deliver	Conflict(s) of interest	Pricing/Value for money	Significant risks
Strategic Outcome 7 Case-Study Research on Governance and Policy Options That Drive Transformational Change for Biological Heritage in Aotearoa $442,000 VICTORIA UNIVERSITY OF WELLINGTON TE HERENGA WAKA Privacy of natural persons	Extensive scoping, design, and 2024 Goals completed	Completed Link to T2 EOI scoping documents area which includes spreadsheets / notes and ToR. Link to Scoping Panel Report Link to Pitch Presentation	Considered in early stages Link to T2 EOI scoping documents	• Scoping Members interest register	Standard honorarium paid to all parties contracted to participate in scoping process, who weren't otherwise/already contracted members of the leadership team. Link to standard letter/contract with honorarium amount	Considered in MRGG papers - 2019/06/06 & minutes No significant risk, beyond those being managed through standard Challenge processes, noted at this early stage of investment planning.
	ISAP peer-review of Scoping Panel Report completed	Completed and teams revised reports Link to ISAP review documents				
	Director, KN, & SLG review of Scoping Panel Report; Goals prioritised	Director review of each Scoping report with feedback to each team – written and verbal Link to all KB/SLG review documents		SLG/KB Interest register Mana Rangatira tested process with Director, and assured that potential conflicts were managed appropriately (noting no decisions at this stage regarding project leads or proposed levels of investment). Potentially conflicted parties were not directly involved in decision regarding prioritisation of respective goal.		
	Nominal budget allocated for research teams to address prioritised Goals	Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06 Nominal budgets reflected priorities and recommendations identified in scoping reports, followed by moderation by Leadership Team. Mana Rangatira interrogated and reviewed nominal budget allocation at December2019 meeting, noting that annual allocations can be varied based on commitments made in each Annual Work Plan and following annual reviews of progress against objective.			Standard charge-out rates applied to researchers; standard honoraria for non-researchers (e.g. kaitiaki) follow Challenge SOP for Sensitive Discretionary Expenditure Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06	
	Research co-leads and lead provider identified and selected	Potential co-leads/proivders identified at SLG hui 4 December Mana Rangatira interrogated and reviewed research leads/lead provider recommendations at December 2019 meeting. Mana Rangtira reviewed capability and reputation of project co-leads. These co-leads stood out during scoping process as having the best understanding of the need and the best approach for addressing that need. This conclusion widely endorsed within leadership team and by others involved in scoping process.	Potential co-leads/proivders identified at SLG hui 4 December Mana Rangatira acknowledged reputation and capability of project leads and track record of VuW as a lead provider. Project leads demonstrate real understanding of 'right team', collaboration, and intended impact. Many of right skills were 'assembled' during scoping process.	CoI policy applied when identifying potential co-leads and providers – Conflict of interest policy No material conflicts-of-interest identified for this investment. Project leads/lead provider not directly involved in investment recommendations to Mana Rangatira.		
	Recommendations to MRGG to enable team			Considered in MRGG papers [link to Dec papers and minutes]		Considered in MRGG papers

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Ngā Rākau Taketake		Mana Rangatira – Assurance and Risk				
	Step	Quality of proposed activity	Provider's capacity to deliver	Conflict(s) of interest	Pricing/Value for money	Significant risks
Theme 1 Oranga $1,106,000	Extensive scoping, design, and 2024 Goals completed	Completed Link to T2 EOI scoping documents area which includes spreadsheets / notes and EoI ToR. Link to Scoping Panel Report Link to Pitch Presentation	Considered in early stages Link to T2 EOI scoping documents	Scoping Members interest register	Standard honorarium paid to all parties contracted to participate in scoping process, who weren't otherwise/already contracted members of the leadership team. Link to standard letter/contract with honorarium amount	Considered in MRGG papers - 2019/06/02 & minutes No significant risk, beyond those being managed through standard Challenge processes, noted at this early stage of investment planning.
	ISAP peer-review of Scoping Panel Report completed	Completed and teams revised reports Link to ISAP review documents				
	Director, KN, & SLG review of Scoping Panel Report; Goals prioritised	Director review of each Scoping report with feedback to each team – written and verbal Link to all KB/SLG review documents		SLG/KB Interest register Conflicts of interest noted for all parties potentially contributing to proposed activity. Mana Rangatira tested process with Director, and assured that such potential conflicts were managed appropriately (noting no decisions at this stage regarding project leads or proposed levels of investment). Potentially conflicted parties recused from decision regarding prioritisation of respective goal.		
	Nominal budget allocated for research teams to address prioritised Goals	Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) Nominal budgets reflected priorities and recommendations identified in scoping reports, followed by moderation by Leadership Team. Mana Rangatira interrogated and reviewed nominal budget allocation at December2019 meeting, noting that annual allocations can be varied based on commitments made in each Annual Work Plan and following annual reviews of progress against objective.			Provider is outside main Challenge Party organisations so extra scrutiny at SLG and cross-check that standard charge-out rates would be applied to researchers; standard honoraria for non-researchers (e.g. kaitiaki) follow Challenge SOP for Sensitive Discretionary Expenditure Evidence: SLG Hui Meeting 4 December 2019 (Christchurch); and SLG review via email; and email evidence of Director making final decision on this investment	
	Research co-leads and lead provider identified and selected	Co-leads ranked using criteria NRT co-leads scoring spreadsheet and criteria documents Mana Rangatira interrogated and reviewed	Provider is outside main Challenge Party organisations so extra scrutiny at MRGG – TTW provide most significant reach and delivery for/by/and with	Provider is outside main Challenge Party organisations and leader is on the SLG, so extra		

TE TIRA WHAKAMĀTAKI FOUNDATION

Privacy of natural persons

Melanie Mark-Shadbolt

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Ngā Rākau Taketake	Mana Rangatira – Assurance and Risk				
	Step	Quality of proposed activity	Provider's capacity to deliver	Conflict(s) of interest	Pricing/Value for money	Significant risks
Theme 2 Mobilising for Action $1,456,000 Privacy of natural persons	Extensive scoping, design, and 2024 Goals completed	Completed Link to T2 EOI scoping documents area which includes spreadsheets / notes and EoI ToR. Link to Scoping Panel Report Link to Pitch Presentation	Considered in early stages Link to T2 EOI scoping documents	Scoping Members interest register	Standard honorarium paid to all parties contracted to participate in scoping process, who weren't otherwise/already contracted members of the leadership team. Link to standard letter/contract with honorarium amount	Considered in MRGG papers - 2019/06/02 & minutes No significant risk, beyond those being managed through standard Challenge processes, noted at this early stage of investment planning.
	ISAP peer-review of Scoping Panel Report completed	Completed and teams revised reports Link to ISAP review documents				
	Director, KN, & SLG review of Scoping Panel Report; Goals prioritised	Director review of each Scoping report with feedback to each team – written and verbal Link to all KB/SLG review documents		SLG/KB Interest register Conflicts of interest noted for all parties potentially contributing to proposed activity. Mana Rangatira tested process with Director, and assured that such potential conflicts were managed appropriately (noting no decisions at this stage regarding project leads or proposed levels of investment). Potentially conflicted parties recused from decision regarding prioritisation of respective goal.		
	Nominal budget allocated for research teams to address prioritised Goals	Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) Nominal budgets reflected priorities and recommendations identified in scoping reports, followed by moderation by Leadership Team. Mana Rangatira interrogated and reviewed nominal budget allocation at December2019 meeting, noting that annual allocations can be varied based on commitments made in each Annual Work Plan and following annual reviews of progress against objective.			Initial work, prior to further investment proposed here, has delivered significant results and value. Pricing for further work based on cost-structures established during initial work. Standard charge-out rates applied to researchers; standard honoraria for non-researchers (e.g. kaitiaki) follow Challenge SOP for Sensitive Discretionary Expenditure Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06	
	Research co-leads and lead provider identified and selected	Co-leads ranked using criteria NRT co-leads scoring spreadsheet and criteria documents Mana Rangatira interrogated and reviewed research leads/lead provider recommendations at December 2019 meeting. Mana Rangtira noted strong platform established already as basis for scaling-	UoA contracted already for initial work, prior to scaling up proposed now. Co-lead has made significant progress reaching out to wider research networks. Strong support from, and partnership with Māori.	No material conflicts-of-interest identified for this investment. Project leads/lead provider not directly involved in investment recommendations to Mana Rangatira. Scoring spreadsheet for NRT		

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Ngā Rākau Taketake	Mana Rangatira – Assurance and Risk				
	Step	Quality of proposed activity	Provider's capacity to deliver	Conflict(s) of interest	Pricing/Value for money	Significant risks
Theme 3 Integrated Surveillance $1,000,000 Manaaki Whenua Landcare Research Privacy of natural persons	Extensive scoping, design, and 2024 Goals completed	Completed Link to T2 EOI scoping documents area which includes spreadsheets / notes and EoI ToR. Link to Scoping Panel Report Link to Pitch Presentation	Considered in early stages Link to T2 EOI scoping documents	Scoping Members interest register	Standard honorarium paid to all parties contracted to participate in scoping process, who weren't otherwise/already contracted members of the leadership team. Link to standard letter/contract with honorarium amount	Considered in MRGG papers - 2019/06/02 & minutes No significant risk, beyond those being managed through standard Challenge processes, noted at this early stage of investment planning.
	ISAP peer-review of Scoping Panel Report completed	Completed and teams revised reports Link to ISAP review documents				
	Director, KN, & SLG review of Scoping Panel Report; Goals prioritised	Director review of each Scoping report with feedback to each team – written and verbal Link to all KB/SLG review documents		SLG/KB Interest register Conflicts of interest noted for all parties potentially contributing to proposed activity. Mana Rangatira tested process with Director, and assured that such potential conflicts were managed appropriately (noting no decisions at this stage regarding project leads or proposed levels of investment). Potentially conflicted parties recused from decision regarding prioritisation of respective goal.		
	Nominal budget allocated for research teams to address prioritised Goals	Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) Nominal budgets reflected priorities and recommendations identified in scoping reports, followed by moderation by Leadership Team. Mana Rangatira interrogated and reviewed nominal budget allocation at December2019 meeting, noting that annual allocations can be varied based on commitments made in each Annual Work Plan and following annual reviews of progress against objective.			Initial work, prior to further investment proposed here, has delivered significant results and value. Pricing for further work based on cost-structures established during initial work. Standard charge-out rates applied to researchers; standard honoraria for non-researchers (e.g. kaitiaki) follow Challenge SOP for Sensitive Discretionary Expenditure Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06	
	Research co-leads and lead provider identified and selected	Co-leads ranked using criteria NRT co-leads scoring spreadsheet and criteria documents Mana Rangatira interrogated and reviewed research leads/lead provider recommendations at December 2019 meeting. Mana Rangtira noted strong platform established already as basis for	Manaaki Whenua already contracted for initial work prior to this expanded investment. Capability/capacity has been established: • Māori advisory group (Tangata Kokiri) established, • Researcher and community hui held	Provider is Challenge host. Although Challenge Director is formally employed by Challenge host, Mana Rangatira satisfied (after interrogation of decision process) that Director was not materially conflicted. (Note – Challenge Director not personally involved in any Challenge-funded research)		

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Ngā Rākau Taketake	Mana Rangatira – Assurance and Risk				
	Step	Quality of proposed activity	Provider's capacity to deliver	Conflict(s) of interest	Pricing/Value for money	Significant risks
Theme 4 Conservation and Restoration $1,000,000 Manaaki Whenua Landcare Research Privacy of natural persons	Extensive scoping, design, and 2024 Goals completed	Completed Link to T2 EOI scoping documents area which includes spreadsheets / notes and EoI ToR. Link to Scoping Panel Report Link to Pitch Presentation	Considered in early stages Link to T2 EOI scoping documents	Scoping Members interest register	Standard honorarium paid to all parties contracted to participate in scoping process, who weren't otherwise/already contracted members of the leadership team. Link to standard letter/contract with honorarium amount	Considered in MRGG papers - 2019/06/02 & minutes No significant risk, beyond those being managed through standard Challenge processes, noted at this early stage of investment planning.
	ISAP peer-review of Scoping Panel Report completed	Completed and teams revised reports. Link to ISAP review documents				
	Director, KN, & SLG review of Scoping Panel Report; Goals prioritised	Director review of each Scoping report with feedback to each team – written and verbal Link to all KB/SLG review documents		SLG/KB Interest register Conflicts of interest noted for all parties potentially contributing to proposed activity. Mana Rangatira tested process with Director, and assured that such potential conflicts were managed appropriately (noting no decisions at this stage regarding project leads or proposed levels of investment). Potentially conflicted parties recused from decision regarding prioritisation of respective goal.		
	Nominal budget allocated for research teams to address prioritised Goals	Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) Nominal budgets reflected priorities and recommendations identified in scoping reports, followed by moderation by Leadership Team. Mana Rangatira interrogated and reviewed nominal budget allocation at December2019 meeting, noting that annual allocations can be varied based on commitments made in each Annual Work Plan and following annual reviews of progress against objective.			Initial work, prior to further investment proposed here, has delivered significant results and value. Pricing for further work based on cost-structures established during initial work. Standard charge-out rates applied to researchers; standard honoraria for non-researchers (e.g. kaitiaki) follow Challenge SOP for Sensitive Discretionary Expenditure Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06	
	Research co-leads and lead provider identified and selected	Co-leads ranked using criteria NRT co-leads scoring spreadsheet and criteria documents Mana Rangatira interrogated and reviewed research leads/lead provider recommendations at December 2019 meeting. Stocktake of aligned research completed, providing confidence that	Manaaki Whenua already contracted for initial work prior to this expanded investment. High potential for strong Māori partnership (although need for further work to develop this has been noted).	Provider is Challenge host. Although Challenge Director is formally employed by Challenge host, Mana Rangatira satisfied (after interrogation of decision process) that Director was not materially conflicted. (Note – Challenge Director not personally involved in any Challenge-funded research)		

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Ngā Rākau Taketake	Mana Rangatira – Assurance and Risk				
	Step	Quality of proposed activity	Provider's capacity to deliver	Conflict(s) of interest	Pricing/Value for money	Significant risks
Theme 5 Risk Assessment and Ecosystem Impacts $2,100,000 SCION FORESTS • PRODUCTS • INNOVATION Privacy of natural persons	Extensive scoping, design, and 2024 Goals completed	Completed Link to T2 EOI scoping documents area which includes spreadsheets / notes and EoI ToR. Link to Scoping Panel Report Link to Pitch Presentation	Considered in early stages Link to T2 EOI scoping documents	Scoping Members interest register	Standard honorarium paid to all parties contracted to participate in scoping process, who weren't otherwise/already contracted members of the leadership team. Link to standard letter/contract with honorarium amount	Considered in MRGG papers - 2019/06/02 & minutes No significant risk, beyond those being managed through standard Challenge processes, noted at this early stage of investment planning.
	ISAP peer-review of Scoping Panel Report completed	Completed and teams revised reports. Link to ISAP review documents				
	Director, KN, & SLG review of Scoping Panel Report; Goals prioritised	Director review of each Scoping report with feedback to each team – written and verbal Link to all KB/SLG review documents		SLG/KB Interest register Conflicts of interest noted for all parties potentially contributing to proposed activity. Mana Rangatira tested process with Director, and assured that such potential conflicts were managed appropriately (noting no decisions at this stage regarding project leads or proposed levels of investment). Potentially conflicted parties recused from decision regarding prioritisation of respective goal.		
	Nominal budget allocated for research teams to address prioritised Goals	Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) Nominal budgets reflected priorities and recommendations identified in scoping reports, followed by moderation by Leadership Team. Mana Rangatira interrogated and reviewed nominal budget allocation at December2019 meeting, noting that annual allocations can be varied based on commitments made in each Annual Work Plan and following annual reviews of progress against objective.			Initial work, prior to further investment proposed here, has delivered significant results and value. Pricing for further work based on cost-structures established during initial work. Standard charge-out rates applied to researchers; standard honoraria for non-researchers (e.g. kaitiaki) follow Challenge SOP for Sensitive Discretionary Expenditure Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06	
	Research co-leads and lead provider identified and selected	Co-leads ranked using criteria NRT co-leads scoring spreadsheet and criteria documents Mana Rangatira interrogated and reviewed research leads/lead provider recommendations at December 2019 meeting.	Scion has strong commitment to Myrtle rust research, central to this theme	No material conflicts-of-interest identified for this investment. Project leads/lead provider not directly involved in investment recommendations to Mana Rangatira. Evidence: Scoring spreadsheet for NRT TTW).		
	Recommendations to MRGG to enable			Considered in MRGG papers (link to		Considered in MRGG papers

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Ngā Rākau Taketake	Mana Rangatira – Assurance and Risk				
	Step	Quality of proposed activity	Provider's capacity to deliver	Conflict(s) of interest	Pricing/Value for money	Significant risks
Theme 6 Host-Pathogen-Environment Interactions $2,100,000 Plant & Food RESEARCH Privacy of natural persons	Extensive scoping, design, and 2024 Goals completed	Completed Link to T2 EOI scoping documents area which includes spreadsheets / notes and EoI ToR. Link to Scoping Panel Report Link to Pitch Presentation	Considered in early stages Link to T2 EOI scoping documents	Scoping Members interest register	Standard honorarium paid to all parties contracted to participate in scoping process, who weren't otherwise/already contracted members of the leadership team. Link to standard letter/contract with honorarium amount	Considered in MRGG papers - 2019/06/02 & minutes No significant risk, beyond those being managed through standard Challenge processes, noted at this early stage of investment planning.
	ISAP peer-review of Scoping Panel Report completed	Completed and teams revised reports Link to ISAP review documents				
	Director, KN, & SLG review of Scoping Panel Report; Goals prioritised	Director review of each Scoping report with feedback to each team – written and verbal Link to all KB/SLG review documents		SLG/KB Interest register Conflicts of interest noted for all parties potentially contributing to proposed activity. Mana Rangatira tested process with Director, and assured that such potential conflicts were managed appropriately (noting no decisions at this stage regarding project leads or proposed levels of investment). Potentially conflicted parties recused from decision regarding prioritisation of respective goal.		
	Nominal budget allocated for research teams to address prioritised Goals	Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) Nominal budgets reflected priorities and recommendations identified in scoping reports, followed by moderation by Leadership Team. Mana Rangatira interrogated and reviewed nominal budget allocation at December2019 meeting, noting that annual allocations can be varied based on commitments made in each Annual Work Plan and following annual reviews of progress against objective.			Initial work, prior to further investment proposed here, has delivered significant results and value. Pricing for further work based on cost-structures established during initial work. Standard charge-out rates applied to researchers; standard honoraria for non-researchers (e.g. kaitiaki) follow Challenge SOP for Sensitive Discretionary Expenditure Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06	
	Research co-leads and lead provider identified and selected	Co-leads ranked using criteria NRT co-leads scoring spreadsheet and criteria documents Mana Rangatira interrogated and reviewed research leads/lead provider recommendations at December 2019 meeting. Fundamentals of Myrtle rust early invasion impact biology research	Plant and Food Research has strong commitment to Myrtle rust research, central to this theme Lead researchers have track record in this research area	No material conflicts-of-interest identified for this investment. Project leads/lead provider not directly involved in investment recommendations to Mana Rangatira. Evidence: Scoring spreadsheet for NRT		

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Ngā Rākau Taketake	Mana Rangatira – Assurance and Risk				
	Step	Quality of proposed activity	Provider's capacity to deliver	Conflict(s) of interest	Pricing/Value for money	Significant risks
Theme 7 Control, Protect and Cure $1,100,000 SCION FORESTS • PRODUCTS • INNOVATION Privacy of natural persons	Extensive scoping, design, and 2024 Goals completed	Completed Link to T2 EOI scoping documents area which includes spreadsheets / notes and EoI ToR. Link to Scoping Panel Report Link to Pitch Presentation	Considered in early stages Link to T2 EOI scoping documents	Scoping Members interest register	Standard honorarium paid to all parties contracted to participate in scoping process, who weren't otherwise/already contracted members of the leadership team. Link to standard letter/contract with honorarium amount	Considered in MRGG papers - 2019/06/02 & minutes No significant risk, beyond those being managed through standard Challenge processes, noted at this early stage of investment planning.
	ISAP peer-review of Scoping Panel Report completed	Completed and teams revised reports Link to ISAP review documents				
	Director, KN, & SLG review of Scoping Panel Report; Goals prioritised	Director review of each Scoping report with feedback to each team – written and verbal Link to all KB/SLG review documents		SLG/KB Interest register Conflicts of interest noted for all parties potentially contributing to proposed activity. Mana Rangatira tested process with Director, and assured that such potential conflicts were managed appropriately (noting no decisions at this stage regarding project leads or proposed levels of investment). Potentially conflicted parties recused from decision regarding prioritisation of respective goal.		
	Nominal budget allocated for research teams to address prioritised Goals	Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) Nominal budgets reflected priorities and recommendations identified in scoping reports, followed by moderation by Leadership Team. Mana Rangatira interrogated and reviewed nominal budget allocation at December2019 meeting, noting that annual allocations can be varied based on commitments made in each Annual Work Plan and following annual reviews of progress against objective.			Initial work, prior to further investment proposed here, has delivered significant results and value. Pricing for further work based on cost-structures established during initial work. Standard charge-out rates applied to researchers; standard honoraria for non-researchers (e.g. kaitiaki) follow Challenge SOP for Sensitive Discretionary Expenditure Minutes of decision – both SLG and MRGG meetings SLG Hui Meeting 4 December 2019 (Christchurch) MRGG 2019/12/06	
	Research co-leads and lead provider identified and selected	Co-leads ranked using criteria NRT co-leads scoring spreadsheet and criteria documents Mana Rangatira interrogated and reviewed research leads/lead provider recommendations at December 2019 meeting. Substantial research progress includes wide consultation,	Scion has strong commitment to research in this theme Lead researchers have strong track record	No material conflicts-of-interest identified for this investment. Project leads/lead provider not directly involved in investment recommendations to Mana Rangatira. Evidence: Scoring spreadsheet for NRT		

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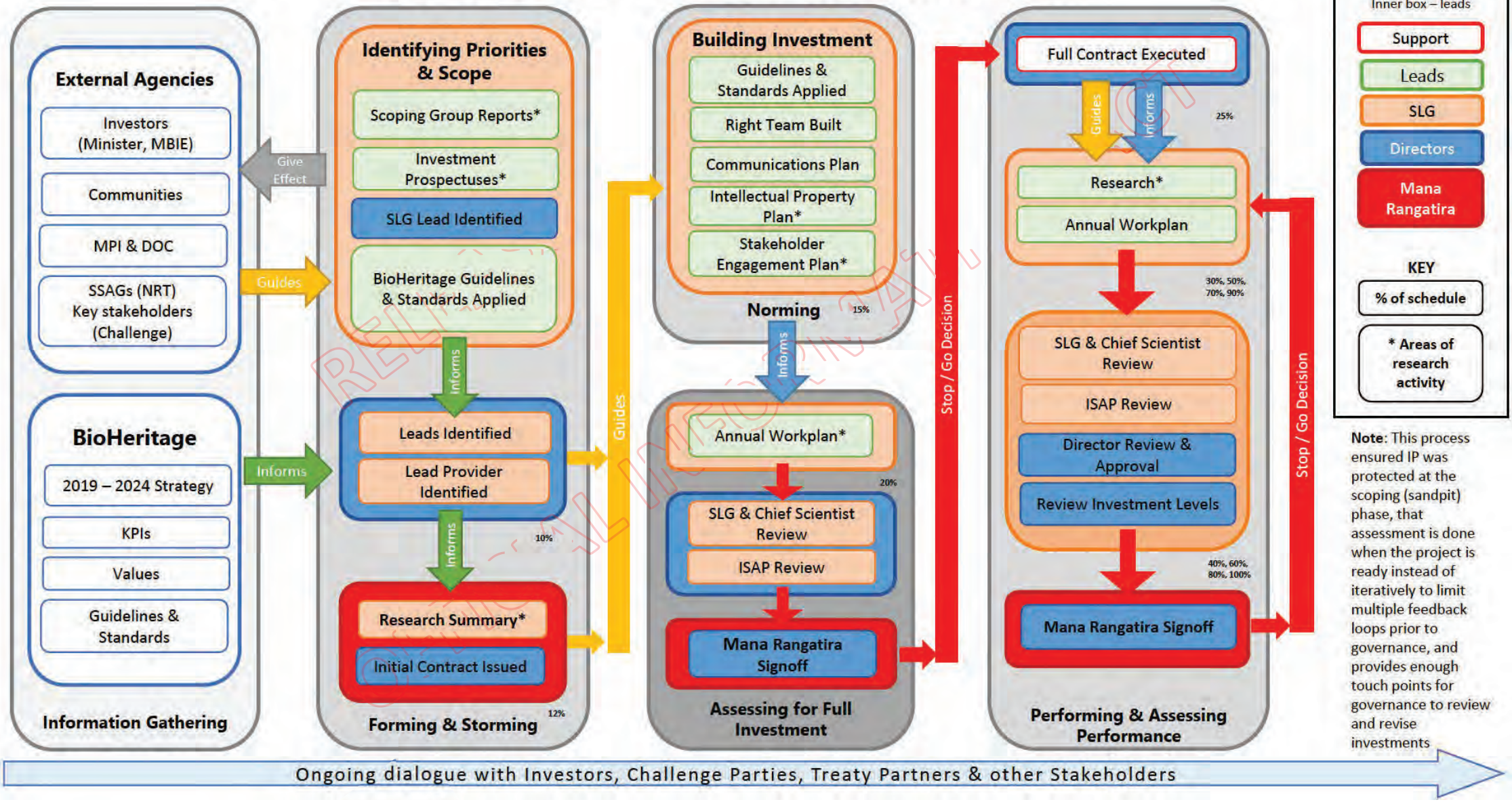
T2/NRT Decision Making & Investment Process



Note: This process ensured IP was protected at the scoping (sandpit) phase, that assessment is done when the project is ready instead of iteratively to limit multiple feedback loops prior to governance, and provides enough touch points for governance to review and revise investments

Appendix 5
Outcomes Framework Challenge T2

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MISSION: To reverse the decline of New Zealand Biological Heritage, through a national partnership to deliver a step change in research innovation, globally leading technologies and community and sector action.

Impacts

KPI 1: Whakamana (empower): New Zealanders value our biological heritage and are enabled to actively contribute to positive change.

MEASURE: Demonstrate year-by-year increase in community programmes directly related to the Challenge that are socialising the value of New Zealand's biological heritage through the arts, culture, or community restoration activities. Starting baseline = average across all investments to 30 June 2019.

KPI 2: Tiaki (protect): New Zealand's biosecurity system is fit for purpose.

MEASURE: At least two new control, surveillance or eradication tools/technologies, and/or substantial improvements to existing tools/technologies and strategies, are being applied at the border and/or at a landscape scale. Barriers to adoption at border/landscape scale have been mitigated for at least one new technology. Annual progress will be reported in annual report narrative.

KPI 3: Whakahou (restore): Technical, policy and governance frameworks are designed to ensure our ecosystems are resilient to current and future threats.

MEASURE: Frameworks (developed e.g. in SO7) that take into account whole system interdependencies (social, cultural and/or environmental) are being use by policymakers to improve the health and wellbeing of people and the environment. One framework by 2021; one more by 2023. Progress in intervening years will be reported in annual report narrative.

New Zealanders value our biological heritage, understand how it is changing, and are inspired to take action to protect it

By 2024, a majority of New Zealanders value our biological heritage, & are enabled to actively contribute to positive change

New Zealand's biosecurity system is world class

By 2024, New Zealand's biosecurity system is fit for purpose

New Zealand's natural and production ecosystems are resilient and thriving

By 2024, we understand social and ecological linkages in natural and production ecosystems, and will be designing technical, policy and governance frameworks to ensure our ecosystems are resilient to current & future threats

Strategic Outcomes

SO1: We report progress using a biological heritage scorecard for Aotearaoa
KPIs 1,3,4,5

SO2: We empower New Zealanders to demand and enact environmental stewardship and kaitiakitanga
KPIs 1,2,3,4,5

SO3: We anticipate both emerging & latent biosecurity risks, and avoid new or recurring invasions
KPI's 1,2,4,5

SO4: We have state-of-the-art biosecurity surveillance systems
KPIs 1,2,4,5

SO5: We deploy novel tools, technologies & strategies for control or eradication of biotic threats
KPIs 2,4,5

SO6: We quantify social-ecological linkages for use in managing, protecting and restoring ecosystems
KPIs 1,3,4,5

SO7: We enable people to build biological heritage resilience with the right policy and governance instruments
KPIs 1,3,4,5

2024 Goals

We know what and how to measure

Scorecards as catalysts for action

Influential, adaptive scorecards that empower

Local communities develop and realise BioH aspirations

Support the tools, frameworks and tikanga protocols developed elsewhere in Challenge

Legislative and socio-cultural licence

Participation: Mana whenua and key participants active in risk ID

Values: Prioritise biosecurity risks through Māori values lens

Impact: Dynamic and adaptable biosecurity risk

Much earlier detection

Real-time monitoring of system changes

Māori co-designed surveillance

Communities involved in surveillance

New surveillance tools

2-3 new tools for border biosecurity pests and/or vertebrate & invertebrate legacy pests

Accelerate deployment of 2-3 new tools at scale

Support PF2050

Characterise connections between people and nature

Value connections between people and nature

Foster better connections via diverse, successful, practical regeneration pathways

Mana whenua enabled and resourced to participate as partner

New governance architecture for biological heritage resilience

Capability to reverse the decline lifted and sustained

***Crazy & Ambitious Think Tank** (CATT) – High-impact think pieces to support excellent research*

Data Connectivity Platform** – A technical tool for partner agencies to "pool" data sets for analyses to inform policy/management decisions or investment choices: **PF2050 and Kauri Dieback as case studies

Critical Steps – the pathway to impact

Scorecards are reporting against the National BioHeritage Indicator sets.

High impact delivery pathways have been identified and scorecards co-developed

A 100-year BioHeritage restoration vision has been established

Bicultural National BioHeritage indiator set developed

A virtual biosecurity hub for Aotearoa developed

Foundational research on gene-based tools for wasp control completed

One transformative technology for mammal pest control developed and trialled

Support networks for community restoration hubs created

Restoration exemplars developed and showcased

Barries to enhancing the success of restoration initiatives identified

System co-design priciples developed

Models of treaty-based governance across Aotearoa compared for success in delivery of transformative outcomes

Champions & influencers programme:

***1.** Developing a network of BioHeritage Champions; **2.** Engaging with education and training sectors; **3.** Mobilising for action to restore bioheritage through hui, seminars and workshops, kanohi-ki-te-kanohi, and use of all forms of media*

KPI 4: Leadership and direction: New Zealand researchers (including Challenge Parties) and stakeholders (including industry, private sector, government agencies, and Māori entities) are actively focusing their own strategic priorities on NZ's biological heritage, and have become more united in making strategic, long-term, impact-oriented progress in sustaining and restoring NZ's biological heritage.
MEASURE: Demonstrate an increase in 'active' alignment of research investments and/or in-kind contributions focused on Strategic Outcome areas, and maintain or grow the current level of Challenge input into strategic directions of key stakeholders.

KPI 5: Partnership with Māori: Māori partners are themselves championing the added value of working in a more collaborative and inclusive science environment.
MEASURE: At least one new 'partnership' case study provided by Māori partners each year; demonstrates additionality and better outcomes from partnership at governance/management/research levels.

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Appendix 6
Outcomes Framework NRT

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MISSION: To reverse the decline of New Zealand Biological Heritage, through a national partnership to deliver a step change in research innovation, globally leading technologies and community and sector action. Our vision for success is that the mauri of kauri and our native myrtle species is safeguarded, sustained and enhanced for our tamariki and mokopuna.

IMPACTS

KPI 1 *Best practice learnings of community-led KDB management projects understood and shared for application in future community led initiatives*

KPI 2 *Species and sites for protection from diseases prioritised and tikanga-based approaches to seed/germplasm protection implemented at 90% of sites*

KPI 3: *National surveillance used to delimit impact of KDB and MR. Information is being used by DOC and at least two local authorities to guide management practices*

KPI 4 *Species and sites for protection from diseases prioritised and tikanga-based approaches to seed/germplasm protection implemented at 90% of sites*

KPI 5: *At least two prototype tools for surveillance, detection and control have been evaluated and validated by cross-organisational teams*

KPI 6: *Best practice culturally acceptable methodology for seed/germplasm collection and protection has been agreed and shared for MR and KDB*

KPI 7: *Mātauranga-Maori guided study of Kauri population structure and variability is guiding management and conservation approaches in use by DOC and at least two local authorities*

THEMES

WHAKAMANA – EMPOWER

New Zealanders value our biological heritage, understand how it is changing, and are inspired to take action to protect it

TIAKI – PROTECT

New Zealand's biosecurity system is world class

WHAKAHOU – RESTORE

New Zealand's natural and production ecosystems are resilient and thriving

2023 GOALS

Mobilising for Action
KPI 1, 8, 9, 10

Social dimensions underpinning community engagement understood and adopted

Social / cultural engagement indicators

Communication tools for engagement and empowerment

Mana whenua kaitiakitanga recognised and supported

Conservation & Restoration
KPI 2, 4, 6, 7, 8, 9, 10

Cultural authority agreements and protocols for long-term storage of Myrtaceae / kauri

Landscape / population genomics for kauri / key Myrtaceae identified and understood

Iconic species safeguarded

At risk ecosystems protected

Integrated Surveillance
KPI 3, 5, 8, 9, 10

Maori co-designed surveillance framework

Pathogen distribution mapped

Pathogen Predictive model for pathogen

Risk Assessment & Ecosystem Impacts
KPI 4, 7, 8, 9, 10

Framework for measuring ecosystem health and resilience

Geographical risks for Kauri dieback and host risks for myrtle rust identified

Broader ecosystem impacts of KDB / MR examined and identified

Control, Protect, Cure
KPI 5, 8, 9, 10

Rapid diagnostic and field-based detection methods for MR and KDB

Alternative disinfectants for MR and KDB

Mātauranga Maori-based bioactives developed/implemented

Real-time monitoring of system changes

Oranga – Te Mauri o Te Rākau
KPI 1, 2, 4, 6, 8, 9, 10

Maori-led research successfully procured

Mana whenua and kaitiaki recognised, resourced and empowered to protect and restore ngahere impacted by KDB and MR

Te Ao Maori worldview intrinsic in ngahere restoration

Mātauranga Māori solutions for KDB and MR deployed

Host, Pathogen & Environment
KPI 7, 8, 9, 10

Host, pathogen and environmental factors better understood

Critical Steps – the pathway to impact

Method for design of national campaigns/local actions developed and tested

Measures for social/cultural engagement indicators developed and tested

KDB and MR community (researchers/mana whenua/ stakeholders) engaged and interviewed

Seed and germplasm collected for research and potential breeding

Mātauranga Māori led research options identified, co-developed and implemented

Culturally appropriate protocols for seed conservation, germplasm storage and genomic work co-developed with mana whenua?

MMFS fit for purpose, and ready for integration into everyday surveillance activities

Online MMFS database co-developed and tested

'Proof of Freedom' model developed and tested

Surveillance risk models for MR and KDB assessed
Existing and new data compiled

Framework for measuring ecosystem health and resilience developed and tested

Lab and field trials to determine efficacy of soil decontamination completed

Decision model for management intervention developed and tested

Management units defined – pathogen spread, when/where treatment effective

Hapū-led (rongoā) tools developed tested and deployed nationally

Solutions identified for development/ testing of forest health utilising kupu Māori (mimicking forest sounds)

Influencers/Champions active

Seed conservation protocols and procedures developed by Māori and key agencies. Seed collecting is commencing using those protocols.

KDB and MR wānanga held with kaitiaki and learnings utilised in co-development of research

KPI 8: Progress towards impact
MEASURE: All NRT contracts are completed or on track for completion by agreed timeframes

KPI 9 : Collaboratrion enhanced and delivery of impact expedited through open sharing of data and outcomes from research on KDB and MR
MEASURE: 1) 85% of stakeholders satisfied with experience of accessing knowledge or technology 2) Annual progress summaries for NERT funded projects available online and research updates provided via quarterly newsletter

KPI 10: Vision Mātauranga - Mātauranga Māori is informing development of solutions to KD and MR.
MEASURE: 1) 100% of NRT investments have Māori collaborators 2) Maintain/increase proportion budget invested in Māori-led or Kaupapa Māori research each year 3) Confidence of Māori and key stakeholders in connections made, research progress and ability to deliver impact 4) Two case studies published demonstrating value Mātauranga Māori brings to development of new tools and

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Appendix 7
BHNSC Forward Looking Plan (FLP) 2020-21

Correspondence from MBIE to all National Science Challenges re: Forward-Looking Plans

This correspondence provides important context for the Forward-Looking Plan for FY21.

Email from Privacy of natural persons *(30/03/2020)*

> *In lieu of the normal Forward-looking Plan we require only an* ***indication of any work that represents a change from the strategic direction outlined in your 2019-2024 Future Strategy.***
>
> *A Forward-looking Plan in the format outlined in the guidelines is not mandatory this year. But if you are completing all or part of a Forward-looking Plan for NSC use (e.g. for Challenge Parties or your governance group), please send us this [instead].*
>
> *NSCs should* ***email*** *their response directly to their MBIE NSC Investment Manager by noon on* ***29 May 2020****. Please do not submit using the MBIE portal.*

Email from Privacy of natural persons *(22/05/2020)*

> *Approved extension to 5 June 2020 so that Mana Rangatira could discuss.*

Given this guidance and direction from MBIE, we have taken a streamlined approach to the FLP. This is mainly because there is no significant deviation from the work we outlined in the 2019-2024 Strategy (with exceptions; see further commentary below).

We propose to:

1. Fill out the FLP template 'by exception' i.e. provide information or an explanation only where there is significant deviance from implementation of the 2019-24 Strategy;
2. Provide MBIE with updated but work-in-progress versions of the Challenge (and NRT) Outcomes Frameworks as separate A3 documents (because these provide a high-level overview of strategic direction and because they are publicly-available on the Challenge website for the use of the Challenge Parties).

We are seeking MRGG endorsement of this approach.

TEMPLATE BASED ON GUIDELINES: Guidelines here

1. Strategic Goals:

Strategic goals for FY21 have not deviated significantly from the 2019-24 Strategy.

Annual Workplans (AWPs) for all seven Strategic Outcomes, including international peer-review, will be approved by the Challenge Governance Group, Mana Rangatira, throughout June 2020 ready to begin the FY21 research programme.

Through FY21, progress of the research teams will be measured quarterly against Critical Steps laid out in the AWPs and in the Challenge's Outcomes Framework (Appendix 1).

2. Key Activities and Initiatives:

Planned activities will not deviate significantly from the work we have already undertaken to implement the Challenge Strategy. Q1 and Q2 in FY20 provided a solid foundation from which to launch research activity in FY21, which we capitalised on in Q3 and Q4 by building the 'right teams' to deliver on tangible goals by 2024, and by getting initial research underway. All planned activities now flow from that foundational work and initial research activity.

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Any additional activities are likely to centre around assessing and responding to the potential impacts of Covid-19 on progress and/or planned research (particularly field work and, to a now-diminishing extent, laboratory work). In FY20 we held several extra hui to help our teams plan how they will work under different Covid restrictions. In FY21 we will ensure that the research teams stick to the plans and we will facilitate additional hui and/or adapt operating procedures (e.g. physical distancing protocols) as needed, in order to ensure as much flexibility and continued delivery if Covid circumstances change. Covid-19 was also a major agenda item at a recent meeting of the Challenge Parties,

3. Risks, Issues and Opportunities:

Mana Rangatira pay active attention to ongoing and emergent areas of risk at every meeting. We do not address those further here.

There are three areas of risk. Two of these centre around delay in delivery of key outputs in FY21:

1. **Continued delays due to Covid-19 impacts.** We cover mitigation of this risk above: plans are now in place for the research teams to mitigate against such delays by switching to alternative workstreams (e.g. those that can be completed under future lockdowns); by working closely with kaitiaki and/or citizen scientists, reducing or doing away altogether with the need to be physically present in communities; and through remote hui and workshops using videoconferencing tools and technologies where needed.
2. **Delays in getting research underway due to an audit of Challenge processes by the Host Manaaki Whenua.** We have now responded to the audit and provided all the information requested. However, the audit process took some months to

The third area of risk centres around the appointment of a new Director. In Q1 and Q2 of FY21, Mana Rangatira will undertake to complete the recruitment process in a timely fashion in order to ensure continuity. This is **particularly important to maintain momentum around the Challenge's focus on Treaty partnerships and relationships**.

4. Performance areas:

There is no deviation from planned activity under six of the seven performance areas. For performance area 6 (Governance & Management), extra activity will centre around the appointment of a new Challenge Director.

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NEW ZEALAND'S BIOLOGICAL HERITAGE

Ngā Koiora Tuku Iho

National SCIENCE Challenges

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Appendix B
Ngā Rākau Taketake (NRT) SSIF Annual Update 2020-2021

This Annual Update outlines how SSIF funding will be used over the coming year (1 July 2020 – 30 June 2021) to deliver the SSIF outcomes outlined in the Platform Plan for Ngā Rākau Taketake, and:

- Confirms that the SSIF investment is still aligned with the strategic intent outlined in the Platform Plan and the kauri dieback (KDB) and myrtle rust (MR) SSAG science plans;
- Explains the need for any changes to the NRT SSIF investment strategy; and
- Identifies any risks to the delivery of the Platform objectives.

Strategic Drivers

NRT is tapping into NZ BioHeritage processes and expertise where appropriate to ensure a **strategic** and **"whole of system" view across the entire innovation pathway and all relevant investments.** This is vital over the FY21 period as RSI investment responds to evolving priorities. Now more than ever the NRT Platform will need to optimize coordinated national effort in KDB/MR research. Several positive and negative drivers, external and internal, have influenced the NRT SSIF plans for the coming year, as detailed below.

External

- The MR SSAG Science Plan (including research prioritisation) has been completed and, together with the KDB Science Plan, was used to allocate proportions of funding to seven themes in NRT.
- Ongoing spread of both pathogens has highlighted need for focus on tools to support mapping of pathogen distributions and to share this information quickly to support management decisions.
- Lack of certainty around the National Pest Management Plan (NPMP) for kauri dieback, and funding for operational work including implementation of research, has driven stakeholder pressure to fund research not currently considered priority for SSIF. The Challenge has been informed by Privacy of natural pe [redacted] (MPI Kauri Dieback Programme (KDP) Manager) that the KDP was unsuccessful in obtaining any programme funding in the May 2020 Budget. We are therefore working closely with stakeholders to manage expectations and align science priorities where possible, while remaining focussed on strategic science.
- There is growing participation of Māori in biosecurity and the protection of forests, and in the Platform we continue to build new and extend existing networks to support collaborative effort as these opportunities arise. The need for these trusted networks has been highlighted following COVID-19, when access to field sites has been limited. Some areas may remain off limits to researchers for some time and in FY21 we will work instead to support kaitiaki who continue to play key roles in surveillance and management within rohe so that research can continue with appropriate physical distancing under COVID alert Levels 2 and 1 and so that we can respond rapidly if a 'second wave' of COVID emerges and the nation is required to move to levels 3 or 4 again.
- COVID-19 response and recovery has presented challenges and potential risks to delivery. We have continued to build teams and relationships in readiness for science delivery when containment levels are eased. Contraction of agency funding will be a key driver in the coming year, and we are working closely with agencies to maintain alignment and ensure key research initiatives are maintained.

Internal

- Significant progress in process development developed within the BioHeritage Challenge funding envelope has been adopted by NRT, including strong criteria for building the right teams, using a flexible and agile contracting model, etc.
- Resource allocations across seven priority Themes in NRT have been aligned closely with the SSAG priorities and were subsequently approved by the Challenge Governance Group, Mana Rangatira. Because there is significant pressure on this funding, we have called this process 'prioritising the priorities.' In FY21 we will continue to prioritise the priorities to ensure maximum gains/impacts from the SSIF platform.
- The Challenge Host, Manaaki Whenua, has sought extra assurance on key aspects of Mana Rangatira's approval of our investments. The Challenge team has now complied fully with an audit by them. Compliance (which included documenting record management, risk and assurance processes, and criteria for decision-making) has taken some time and resulted in contracting delays for both the surge investment as well as for the SSIF top-up. The delays have affected the execution of head contracts as well as subcontracts and in turn impacted research progress. Now that the audit has been completed, we are hopeful that research can accelerate and that the Host is satisfied that in future we have robust and flexible systems in place build teams that will create impact by 2023.
- The extra workload related to COVID-19 response and recovery activities has flow-on implications for our lead organisations, co-leads and research teams. While we continue to see a high level of engagement and commitment to NRT, in FY21 we will maintain close contact with research teams to identify any potential delays/risks to delivery, being cognisant of the continued effect of COVID on individuals and organisations in the science sector.

SSIF Funding

In FY20, NRT agreed on seven key strategic Themes (Appendix 1). These reflect nine Indicative Research Priority Areas that were originally included in the SSIF plan, which were refined during the 2019 scoping process following mapping of the landscape of existing research investments, and in consultation with a wide range of stakeholders. The Themes also align closely with themes in the SSAGs' KDB and MR science plans.

Funding allocations to the seven Themes (Appendix 1) are based on the initial "surge funding" of $8.75M for KDB and $5M for MR, and supplementary allocation of $20.75M for KDB. These allocations not only reflect the research prioritisation and funding recommendations of the MR and KDB SSAGs, but also redress historical chronic under-funding in areas essential to deliver impact, in particular:

- Māori-centered research, kaupapa Māori and research involving Māori, and application of Mātauranga Māori-derived solutions, starting at $4M
- Mobilising for Action investment to develop new communication tools: c. $4M
- Risk assessment and ecosystem impacts: c. $4.9M

In FY21, teams will continue to build on initial research efforts across all seven Themes.

Strategic intent

NRT will continue to implement and deliver to its strategic intent as outlined in the original SSIF plan. In FY21, NRT will build on substantial groundwork undertaken in initial SSIF investment in FY20; from Challenge investments in Tranche 1; and from previous MPI investments in KDB and MR.

Key examples include:

- Building on the learnings from the highly successful *Kauri Rescue* community-led project in NRT's *Mobilising for Action* Theme to develop new communication tools.
- Building on novel rongoā approaches and early work to develop culturally acceptable seed banking approaches in NRT's *Oranga* Theme.
- Mātauranga-based solutions for KDB inactivation are part of *Tools for Detection and Management (TDM)* (*Control, protect and cure* Theme).

Impact

We will focus on three areas in FY21: 2021:

Novel tools and technologies to combat kauri dieback and myrtle rust
In FY21, the focus will be on critical tools and technologies for rapid deployment in the fight against KDB and MR. This includes expediting research to drive implementation of options already under development; and investment in fundamental science needed to underpin longer term goals such as pathogen resilient forest ecosystems. Urgent delivery for FY21 includes high throughput rapid detection and surveillance tools to determine the presence or absence of KDB and MR. In the first instance, four fast-fail "seed and scope" investments in the *Tools for Detection and Management* (TDM) Theme will run for eight months (depending on the impact of COVID on progress) to provide proof-of concept and/or prototypes with one promising solution being selected for further evaluation in subsequent years. Two projects are looking to adapt technologies already under development, one involves proof-of-concept of new IP relating to KDB detection, while the fourth will progress research on novel bioactives for KDB inactivation initiated in Tranche 1. This work will be integrated with research progress across all seven NRT Themes.

Testing a Mātauranga Māori-based surveillance framework (MMSF)
A novel surveillance framework has been developed and in FY21 will be tested with a wide range of surveillance stakeholders and researchers. The team will build on consensus reached at well-attended hui in March 2020, to develop a plan and infrastructure for safe management and sharing of national pathogen surveillance data. By November 2020 the Hapū-centric MMSF will be tested with tangata kokiri (tangata Māori traditional practitioners and cultural authority) as well as agencies and end-users using the modelling developed by the project team to determine proof of freedom from KDB and MR. This will culminate in a workshop in February 2021 to evaluate the online system, and co-create a list for improvements with end-users to guide further technical development. As with research in the TDM Theme, this research will be integrated with research in the other Themes with the intention of delivering a nationally-coordinated and joined up research approach to combating these pathogens.

Co-innovation and co-investment

Significant up-front effort has been put into either building, rebuilding, or maintaining relationships across a very wide community of interest for this SSIF Platform. To that end, we will maintain a strong focus on co-design to ensure outcomes can be rapidly implemented. NRT teams and agencies have identified numerous opportunities for co-innovation and co-investment to expedite delivery of management solutions for KDB and MR, including:

- DOC is seeking information on best practice around seed banking and effectiveness of disinfectants, so will be co-funding the *Tools for Detection and Management* (TDM) and *Oranga* Themes;
- MPI have agreed areas of complementarity with TDM and have indicated they may contribute co-funding to develop management methods for infected areas.
- NZTA and the Forest Owners Association are supporting an initiative to address potential transport of plant pathogens in their sectors.
- Co-investment through Manaaki Whenua aligned SSIF will continue to support high priority research investigating Kauri landscape genomics in NRT's *Conservation and Restoration* theme.
- New collaboration within the Mātauranga Māori-based surveillance framework underpins an application that will be made to the SfTI Challenge's Biosecurity Mission to support extension and further development of the framework.
- Tangata whenua / mana whenua have been contributing considerable amounts of their time in kind to all of our teams, supporting them to develop their workplans including rongoā practitioners from Ngāti Hine, Tūhoe and Ngāti Ruapani.
- A number of iwi/hapū who have been supported, via the Oranga theme, to develop biosecurity and forest restoration plans have expressed a keen desire to align their new work programmes with NRT, including Te Arawa.

We note, however, that co-investment opportunities may be limited during the COVID-19 recovery phase and that several NRT-aligned Smart Ideas proposals will not be progressing.

Science excellence

Criteria for selection of Theme co-leaders were developed in FY20 and applied to select credible leaders for all seven Themes; co-leads have strong track records in delivery of excellent relevant science and/or are highly respected Mātauranga knowledge holders.

Key focus areas for FY21:

- Working with Theme co-leads to support their teams to operate in an inclusive and committed manner, especially teams of newly-contracted investment areas. By way of example, the MMSF team already includes researchers from three CRIs, MPI, DOC, Māori communities and industry and will broaden further as research progresses.
- Identification of 2-3 further opportunities to leverage international expertise as teams complete Annual Workplans in FY20 ready to begin new research in FY21.
- Review of planned research by the Challenge's International Science Advisory Panel (ISAP) and independent Mātauranga Māori/Indigenous knowledge holders.
- Application of flexible contracting processes to as required to pivot research in response to early findings, changes in the funding landscape, or new discoveries emerging from the fast-fail investments.
- Annual wānanga to identify synergies and co-design research across multiple themes, building on progress and delivering underpinning transdisciplinary science. These wānanga will feature

inclusion of kāumatua, kaitiaki and rongoā practitioners, some of whom may be members of research teams. They will act as facilitators, teachers and testers of the research to ensure it is meeting all definitions of science excellence.

Horizons and co-funding/leverage

The stock-takes of KDB and MR research (completed in FY20) will continue to be updated with new information of delivery and publications. Ongoing analysis of any progress and changes from current research investments will continue to provide clarity of the relative proportion of investment in generating new ideas, developing emerging ideas, or leveraging proven ideas (Horizons 1-3). We will continue to bolster research effort in areas of greatest need across the research horizons, and to leverage the SSIF Platform to encourage new investment, to deliver the greatest impact. This includes our focus on proportionately greater SSIF investment into H2-H3 research for both pathogens. FY21 will also see a strong focus on leveraging the Challenge Tranche 2 envelope to amplify research delivery and impact in the NRT Platform.

Investing in people

Investing in and developing inter- and trans-disciplinary research teams
Key focus areas for 2020-2021:

- Building capability in KDB/MR research by embedding emerging researchers and students, Māori researchers and kaitiaki into teams (NRT KPI);
- Maintaining a strong focus and funding for generation of new ideas or developing emerging ideas research by resourcing and consolidating diverse high performing research teams (NRT KPI), with a particular focus on sourcing new talent and expertise not previously involved in plant pathogen research.
- Continue collaborating with international expertise (see International Collaboration section).

Developing new capability
We will continue to reach out and actively embed/include: Māori researchers, knowledge holders; students/rangatahi and kaitiaki across all of NRTs high performing teams (NRT KPI), and to ensure that early-career capability is supported and retained.

Vision Mātauranga (VM)

A key focus is the continuation of our successful efforts to add value through integration of Mātauranga Māori and Te Ao Māori, including investment in Māori-centred research, kaupapa Māori: *Te mauri o te rakau, te mauri o te ngahere, te mauri o te tāngata (Mauri ora)*. This research builds on investments in Tranche 1 of the Challenge, and includes a suite of kaupapa Māori projects that aim to restore the collective health of trees, forests and people, by connecting to and resourcing Māori communities and their environmental knowledge holders to explore solutions embedded in mātauranga Māori. In FY21 the team will continue to reach out to new knowledge holders and Māori researchers to ensure ongoing co-development and testing of progress being made across all investment areas. The aim is to address and fulfil the needs and priorities of hapū and kaitiaki, and clearly builds on the links made across all NRT Themes. This kaupapa will be supported by a strong network of Māori co-leads, coordinated by a Māori Knowledge Broker that is funded via the Challenge Tranche 2 envelope, to provide guidance on inclusion of Mātauranga Māori and Te Ao Māori.

Key focus areas for FY21:

- Ensuring 100% of investments (Themes) have Māori collaborators embedded (NRT KPI) and all investments score an average of "4" on the VM scale[1] as evaluated by members of the Cross-VM Challenge rōpū and signed off by Mana Rangatira;
- Culturally appropriate protocols and agreements have been developed and are in place for collection, use and management of Māori data arising from this SSIF Platform;
- A myrtle rust wānanga will be held with kaitiaki to: implement ongoing information exchanges and knowledge transfer between NRT researchers and kaitiaki; determine their aspirations for the NRT programme; clarify disease spread and impact in their rohe; and how NRT should align with Budget 2020 'shovel ready conservation programmes that iwi/hapū might be involved in with Government agencies. These wānanga are scheduled to run with Te Tira Whakamātaki for June-August 2020 (subject to Covid restrictions being lifted);
- Further seed conservation wānanga will be held with kaitiaki to ensure alignment across Māori aspirations, DOC needs and NRT deliverables. Initial discussions between Theme 1 (Oranga) and DOC have already taken place and a draft strategy paper will be developed for discussion with kaitiaki early in FY21 (July);
- Best practice culturally acceptable methodology for seed/germplasm collection and protection will be agreed and shared with MR and KDB communities of practice (NRT KPI); and
- We will establish a baseline measure of confidence of Māori in networking and research progress.

Domestic and international collaboration

Establishing inclusive collaborations will be achieved through these key initiatives for FY21 to enhance our ability to deliver impact (NRT KPI):

- Domestic collaboration will continue through the successful monthly MR and KDB community information hui. These hui allow NRT research teams to share research outcomes and connect directly with the wider research community, agencies and communities. We aim to grow attendance and diversity at these hui to build cohesion across KDB and MR communities.
- BioHeritage's ISAP panel will continue to provide science review of all research and work plans.
- Information sharing with the KDB/MR SSAG will continue on a regular basis, their feedback and will be sought and built into workplans as they are refreshed to reflect research progress and external changes. Joint work programmes will be highlighted at a joint symposium in FY21.
- Building new and strengthening existing international linkages between researchers within Mauri Ora and UK based Kew Gardens/Millennium seedbank, the Australian Seed Bank Partnership, and Forest Research UK.

h. Support for nationally significant databases and collections

A new initiative is planned in FY21:

[1] VM Score (4); Māori-centred research: Māori-led project, where a large amount of mātauranga Māori is used and understood (about 50%+) and combined with science (e.g. through frameworks, models, methods, tools etc.). Kaupapa Māori research is a key focus of the project. Māori are primary end-users/supporters of the work. Research is typically collaborative or consultative, with direct input from Māori groups. Commonly a collaboration with Māori researchers or researchers under the guidance/mentoring of Māori. Typically contributes to Māori (e.g. iwi/hapū, organisations) aspirations and outcomes.

- Our Conservation and Restoration Theme (led by Privacy of natural persons, MW and Privacy of natural persons, PFR) will participate in a review of the future curation of the living kauri germplasm collection (initiated during Scion's Healthy Trees Healthy Future (HTHF) programme, which ended in 2019). We will be contributing to the future plans for this collection which we expect to be resolved by the end of 2020. Our team will ensure key decision making involves each mana whenua who have contributed their germplasm and knowledge to the HTHF programme.

Key Actions

- Māori co-leads network have developed a coordinated approach to working with iwi/hapū/whānau affected by KDB and MR and are providing guidance across all investment areas in NRT – July 2020.
- Baseline data of confidence of Māori and key stakeholders in connections made and potential to contribute through co-design has been collated and plans adjusted if required – September 2020.
- Metrics capturing excellence identified and developed, including kaupapa Māori research, research involving Māori, and inclusion of Mātauranga Maori – September 2020.
- Specific project areas agreed and co-funded with agencies (DOC, MPI, Councils) in post-COVID environment to support collective to achieve NRT goals – October 2020.
- Best practice culturally acceptable methodology for seed/germplasm collection and protection has been agreed and shared with MR and KDB communities of practice – November 2020.
- Research priorities and progress reviewed by stakeholders in appropriate forum, co-designed with SSAGs – December 2020.
- Novel communication tool to support community engagement in management of KDB and MR has been developed and effectiveness tested – December 2020.
- Prototype tools for management of KDB and MR selected, and preliminary evaluation completed – June 2021.
- Mātauranga Māori-based surveillance framework tested by agencies and key stakeholders for capacity to hold, protect and share data needed to guide management decisions at hapū and agency levels – June 2021.

Additional or Confidential Comment

Given the rapidly evolving situation with COVID-19, we note there are significant risks for the foreseeable future. COVID-19 will disrupt research, and there will be necessary adjustments to the way we communicate and engage with stakeholders, which will impact various work programmes. However, there are early signals that Levels 4 and 3 may have been to the advantage of NRT at a critical time in the annual planning cycle: several Zoom hui held during lockdown attracted 35-50 people from across a diverse range of organisations in the sector, suggesting they place importance on staying engaged, and are comfortable using the technology even in challenging times. If we can build on this planning phase and actively manage risks bi-monthly as part of Mana Rangatira meetings, significant risks to delivery will be mitigated in short order. Based on the outcomes from a May 2020 hui on the impacts of COVID-19 on our NRT community, we identified some unique opportunities to support our research teams and will implement these through FY21.

The Challenge team has worked hard to address concerns around risk assurance processes that were raised by the Challenge Host in FY20. Whilst an audit has largely now been completed, the time taken by the research teams, NRT and Challenge leadership teams, Mana Rangatira, Support Team, and co-Directors in responding to the audit has meant that implementation of FY21 research has been delayed by 3 months at a minimum. Research teams are working hard to make up for lost time and ensure continued support for the programme by mana whenua, communities and stakeholders. We believe it

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was important to note here.

Appendix 1:

Table 1 – Funding allocations to date (out years indicative)

NRT Research Investments $'000	2018/19	2019/20	2020/21	2021/22	2022/23	TOTAL
1. Oranga - Kauri Dieback/Myrtle Rust Rongoa Māori led solutions	100	500	1,106	1,200	1,100	**4,006**
2. Mobilizing for Action		500	1,206	1,200	1,100	**4,006**
3. Integrated Surveillance	400	710	1,000	800	480	**3,390**
4. Conservation and Restoration		700	1,700	1,700	1,447	**5,547**
5. Risk assessment & Ecosystem Impacts		700	1,400	1,600	1,231	**4,903**
6. Host/Pathogen/Environment, incl. urgent seasonal MR biology work		297 204	1,700	1,500		**3,700**
7. Tools for detection and management		500	1,100	1,100	998	**3,698**
Total allocations to date						**29,278**

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MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

16 April 2020

To: support@bioheritage.nz;
Cc: director@bioheritage.nz ; Privacy of natural persons

Kia ora s9(2)(a) Andrea and Mel

Thank you, Privacy of natural p for your email of 14 April requesting further guidance on use of Strategic Science Investment Fund (SSIF) funding by the NZ Biological Heritage National Science Challenge in its Ngā Rakau Taketake research programmes.

The Ngā Rakau Taketake (NRT) SSIF investment is provided for research needed urgently to combat myrtle rust and kauri dieback. The NRT SSIF contract requires that the funding is used to support research for this purpose. The funding was announced by the Government as two investments, over terms of three years and four years. We expect that NRT's expenditure of funds across the four-year term of the SSIF contact will reflect the timing and level of research activity in programmes that deliver optimum benefits for management of myrtle rust and kauri dieback.

As we have previously indicated in earlier correspondence, there is no requirement in SSIF investment contracts for SSIF funding to be spent within the financial year in which it is received. That is, nothing in SSIF investment contracts precludes deferral of SSIF funds received from MBIE between financial years within the term of the contract.

It is the role of the Challenge to make decisions about distribution of NRT funding. The Challenge's decisions need to be supported by Manaaki Whenua, as both Challenge host and the SSIF contract holder, by ensuring funds to support NRT research programmes are available when needed, in the relevant financial years.

Ngā mihi

s9(2)(a)

Privacy of natural persons

Acting Manager, Strategic Investments
Science System Investment and Performance

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Correspondence 2 – Draft Te Nohonga Kaitiaki Guidelines for Genomic – Feedback from BioH Challenge

NEW ZEALAND'S BIOLOGICAL HERITAGE
Ngā Koiora Tuku Iho
National Science Challenges

15 May 2020

RE: Draft Te Nohonga Kaitiaki Guidelines for Genomic – feedback from Biological Heritage Challenge

A number of key Biological Heritage Challenge Māori researchers and the Challenge Director discussed the draft document and the following are their comments.

General Comments

The Biological Heritage Challenge is very supportive of the need to develop guidelines for genomic research relating to taonga species. This document is certainly a contribution towards greater understanding of some of the relevant issues in genomic research, and it is clear that a lot of thought has been put into the contents however we consider that the document in its current form is better suited as a tool kit rather than 'Guidelines'.

This is because in its current form the document does not explain the nature, scope and potential application of genomic research and nor does it adequately cover the specific issues of genomic research involving taonga species.

Where one would expect to read the substance of guidelines in the main text this document:

- covers a broad range of issues, to varying degrees of detail and relevance,
- poses questions but does not provide responses,
- uses bullet points with no explanatory text.,
- includes 'special topics' and appendices which in some cases contain more substance than the main text

As such, the document does not read cohesively as one would expect guidelines to do, but if compiled as a tool kit would make more sense.

The most important discussion this document was tasked with progressing, i.e. the specific issues relevant to genomic research involving taonga species, we considered to be the weakest component of this draft.

Specific comments

(1) Scope of the document – According to the introduction the following objectives were identified as motivators for the development of this document:

- To affirm rangatiratanga of kaitiaki over taonga species
- To support Māori data sovereignty over data generated from research
- To address the need for ABS arrangements in compliance with the Nagoya Protocol
- To establish a practical standard for institutions to plan and execute research in a manner exemplifying good science and is culturally appropriate.

Missing from the objectives is honouring the Treaty of Waitangi and promoting a Treaty partnership approach to collaborative research. Compliance with the CBD Nagoya protocol is a worthy objective, but NZ is not yet a signatory to the Protocol whereas it is a signatory to Te Tiriti o Waitangi.

While some attention has been given to Māori issues, it would be useful to discuss genomic research and the different research activities currently underway in general and also of particular interest to Māori which is why the development of guidelines are necessary.

Greater inclusion of relevant international processes and guidelines as well as relevant global indigenous initiatives would also be helpful.

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c/o Landcare Research New Zealand Limited | P.O. Box 69040 | Lincoln 7640 | New Zealand
Gerald Street | Lincoln 7608 | New Zealand | Tel: + 64 3 321 9999 | Fax: + 64 3 321 9998 | W: www.biologicalheritage.co.nz

(2) Role of contributing authors – it would be useful to include a section outlining each author's contribution. A section on authorship and contribution is becoming standard practice in many science contexts. https://www.epj.org/images/stories/faq/examples-of-author-contributions.pdf

(3) Taonga Species the focus of these guidelines compared to any other type of guidelines, is the specific issue of taonga species. As such one would expect to see in depth coverage of the term, a section of its' own covering such issues as, what is a taonga species? where does the term originate from? How has it been used in other contexts? Why is it of such significance to warrant special guidelines?

Taonga species as a term is not discussed until page 22, and, is only briefly mentioned alongside other Māori cultural values and concepts. The 'definition' used is a citation from one of the author's previous papers. It would be more fitting to cite the Waitangi Tribunal's definition as the term originates from the Treaty of Waitangi Article 2 and to provide an example(s) of why a hapu or Iwi consider a specific species to be a 'taonga', and/or examples of Treaty settlements where Iwi have been acknowledged as kaitiaki of specific species.

The document requires more explicit text advising the reader that genomic sequences of some taonga species belongs to mana whenua. Data and information custody should be determined once, provenance (origin) is determined, in discussion with the affected mana whenua authority.

The distinction between taonga species in a general sense and inclusion of additional elements could be more clearly drawn, e.g. data arising from genomic research, samples, bioata, bioactive, second and third generation seed.

Table 3 Taonga Relationships is highly contestable. The three 'taonga relationships' identified - provenance, opportunity and utility would not be widely accepted by Māori. A detailed explanation of how the authors decided upon 'rights that arise from interest' is also needed. Did the authors articulate these rights themselves or do they stem from court cases and/or Waitangi Tribunal findings? This makes the difference between expressing an opinion or being based on evidence.

(4) Wai262

It was great to see the inclusion of specific text about the Wai262 Treaty of Waitangi Claim. It is important to note the difference between what the claimants sought and what the Tribunal recommended as there is a deep chasm between the two. This document's Executive Summary suggests that the Guidelines should "adhere to the Waitangi Tribunal's Wai262 recommendations", without mentioning which ones in particular (there are over 100) and without noting that the Tribunal's key findings were not consistent with what the claimants sought.

(5) Engagement with Māori

We are aware that a number of hui were held, presentations made to various networks and the drafts widely disseminated for comment. As engagement with Māori is one of the more important messages of the document, it is surprising that a full list of those who participated in meetings and provided comments were not included either as an Appendix or in the acknowledgements. One of the valuable lesson's readers can take from the document is that meaningful engagement requires considerable thought being put into who best to engage with and being prepared to have more than one conversation or presentation.

(6) Whakapapa

The section on Māori cultural values lists a range of values as if they are all of the same priority, but we know that in any discussion about genetics and genomics, it is the impact of such research on the integrity of whakapapa that is most consistently raised.

Whakapapa is given minimal attention in this document and the explanation given (pg.20) doesn't address or recognise that a genomic sequence is whakapapa in a cultural sense, and that for some kaitiaki, genomic research could violate that whakapapa, and rewrite the hapū/iwi narrative. Readers need to be made aware of the full ethical, cultural and legal landscape in play in genomic research of taonga species. This is a highly contentious area and robust guidelines would acknowledge this.

(7) Other Frameworks - Pgs. 13-16 lists "other frameworks' but only include frameworks developed by Hudson and Wilcox. While other frameworks are listed in the appendix, they could be more usefully applied and referred to in the main text. Of the other frameworks cited in the Appendix B, there are many others missing.

A greater coverage of other frameworks would expand the social, cultural, legal, ethical considerations relevant to genomic research than what is currently covered. For instance, the issue of free, prior informed consent is not highlighted in this document as being of paramount importance. Mention of kaupapa Māori research principles would be highly relevant here

The Convention on Biological Diversity is briefly covered in pg. 11, but there are specific areas of focus in the CBD highly relevant to this document that are not mentioned. In particular CBD's work on synthetic biology & biodiversity https://bch.cbd.int/synbio/ , and the CBD Working Group on Article 8(j) traditional knowledge, innovations and practices of indigenous peoples https://www.cbd.int/convention/wg8j.shtml The Article 8j WG has developed a number of relevant guidelines relating to researching with indigenous peoples relating to biodiversity and TK (e.g. Akwe Kon Guidelines)

(8) Limited References - This leads to a further observation that for a document to have authoritative status and credibility to be regarded as 'guidelines' across a specialist field, a reader would expect a substantive reference section. This document has 33 references of which 8 are papers where the lead author of this document is lead or contributing author to the cited documents. (The RSNZ publication on Scenario Summaries for Gene Editing has 133 references and many peer review journal papers have between 50-150 references.)

IUCN developed guidelines on the use of synthetic biology (and processes) in conservation as well as guidelines on creating proxies of extinct species for conservation purposes. Both of these Guidelines have some relevance to this discussion.

(9) Māori Enterprise Development - this section contains interesting information but comes without explanation as to why the Māori economy was selected as an area of focus rather than other sectors, e.g. hapu, Iwi development. This section contains a lot of charts and question but lacks actual guidance about how these questions should be approached. There is insufficient text to bring all the various charts together so the whole section comes across as disjointed.

(10) Conclusion/Summary – there is no conclusion for these proposed guidelines, no summarising of the essential points. Hence our earlier suggestion that this document would be better as a background document or part of a tool kit.

We recommend the document be re-written to address these concerns and in order to ensure the eventual Guidelines are of the highest standard, value and relevance to researchers.

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s9(2)(a)

Dr Andrea Byrom
Challenge Director

s9(2)(a)

Melanie Mark-Shadbolt
Kaihautū Ngātahi

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Gerald Street | Lincoln 7608 | New Zealand | Tel: + 64 3 321 9999 | Fax: + 64 3 321 9998 | W: www.biologicalheritage.co.nz

Correspondence 3 – Correspondence with MBIE re-Ministerial Request

Correspondence with Privacy of natural persons (MBIE) on 29 May 2020 regarding Ministerial request for information on funding contracted in Ngā Rākai Taketake

---

From: Privacy of natural person s9(2)(a) mbie.govt.nz>
Sent: Friday, 29 May 2020 2:41 PM
To: s9(2)(a) Director BioHeritage <director@bioheritage.nz>; Melanie Mark-Shadbolt s9(2)(a) .s9(2)(a)
Subject: RE: URGENT : Update on Kauri dieback funding. National Science Challenge [IN-CONFIDENCE:RELEASE EXTERNAL]

Thanks s9(2)(a)

Allocated is OK with the subsequent clarification.

Cheers

Privacy of natural person

From: Privacy of natural persons
Sent: Friday, 29 May 2020 2:05 p.m.
To: Privacy of natural persons; Director BioHeritage; Melanie Mark-Shadbolt; s9(2)(a)
Subject: RE: URGENT : Update on Kauri dieback funding. National Science Challenge [IN-CONFIDENCE:RELEASE EXTERNAL]

Technically speaking (as a number of contracts are unsigned – finally got MWLR approval yesterday) $14.07 has been *allocated* (budgeted) to June 2021 (and actually we have *allocated* in our budget about $30M to June 2023, but we need further approvals to contract (commit) for that period), rather than *committed* (signed contracts). I use the word allocated in attached, but you can change to committed if that is more appropriate.

From: Privacy of natural persons .s9(2)(a) mbie.govt.nz>
Sent: Friday, 29 May 2020 1:48 PM
To: s9(2)(a) Director BioHeritage <director@bioheritage.nz>; Melanie Mark-Shadbolt s9(2)(a) s9(2)(a)
Subject: RE: URGENT : Update on Kauri dieback funding. National Science Challenge [IN-CONFIDENCE:RELEASE EXTERNAL]

Thanks All

Just a few minor tweak pleases, as soon as you can:

- In the table, "n" I assume is number of programmes so could you please change to "3 programmes"
- I suggest rephrasing the payment sentence as follows

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Of the Ngā Rakau Takektake (SSIF) funding, $14.07 million has been committed to fund research programmes to June 2021. $2.7M has been contracted/paid to date, and contracting is in progress committing a further $2.16M of funds to June 2020 (total $4.86M) and $9.21M to June 2021.

Could you also please add affiliations for all the project leaders in the list of projects. You might also consider listing just affiliations and not names, as the affiliations will be more meaningful than names of individuals, most of whom wont be recognised.

Thanks

Privacy of natural perso

From: s9(2)(a)
Sent: Friday, 29 May 2020 1:15 p.m.
To: Privacy of natural persons; Director BioHeritage; Melanie Mark-Shadbolt;s9(2)(a)
Subject: RE: URGENT : Update on Kauri dieback funding. National Science Challenge [IN-CONFIDENCE:RELEASE EXTERNAL]

See attached

From: Privacy of natural persons s9(2)(a) @mbie.govt.nz>
Sent: Friday, 29 May 2020 9:47 AM
To: s9(2)(a) Director BioHeritage <director@bioheritage.nz>; Melanie Mark-Shadbolt s9(2)(a)
Subject: RE: URGENT : Update on Kauri dieback funding. National Science Challenge [IN-CONFIDENCE:RELEASE EXTERNAL]

Thanks s9(2)(a)

Yes, that looks good thanks
Please DO include myrtle rust figures as well.

Have confirmed that it is figures only and not project detail that is needed.
However, brief info (eg a list of projects or topic/ priority areas funded; or the Science plan priorities that current research is addressing) to provide context might be helpful.

Cheers

Privacy of natural

From: s9(2)(a)
Sent: Friday, 29 May 2020 9:36 a.m.
To: Privacy of natural persons; Director BioHeritage; Melanie Mark-Shadbolt; s9(2)(a)
Subject: RE: URGENT : Update on Kauri dieback funding. National Science Challenge [IN-CONFIDENCE:RELEASE EXTERNAL]

Hi, would a table something like below be suitable, I can remove the MR only line if that is a distraction they're not interested in.

FYI for stuff that is both, I have used a formula to apportion how much is paid for from the MR allocation, and how much from KDB based (simplistically speaking) on the proportion of the total $34.5m budget that is KDB vs MR.

[DRAFT TABLE REMOVED FOR CLARITY – FINAL TABLE IS THE ONE BELOW THAT WAS SUBMITTED TO MBIE]

Privacy of natural

From: Privacy of natural persons s9(2)(a) @mbie.govt.nz>
Sent: Friday, 29 May 2020 9:03 AM
To: s9(2)(a) Director BioHeritage <director@bioheritage.nz>; Melanie Mark-Shadbolt s9(2)(a)
Subject: RE: URGENT : Update on Kauri dieback funding. National Science Challenge [IN-CONFIDENCE:RELEASE EXTERNAL]

Hi Privacy of natural

Yes, I suggest include those and we can indicate that the figures include payments in progress for current invoices.
The request didn't include myrtle rust, but if it provides a clearer picture you could include those figures, separately, as well - especially for any fundamental work applicable to both that is funded as a myrtle rust project.

Cheers

Privacy of natural

From: s9(2)(a)
Sent: Friday, 29 May 2020 8:39 a.m.
To: Privacy of natural persons; Director BioHeritage; Melanie Mark-Shadbolt s9(2)(a)
Subject: RE: URGENT : Update on Kauri dieback funding. National Science Challenge [IN-CONFIDENCE:RELEASE EXTERNAL]

Hi Privacy of natural pe

We're just about to pay a number of invoices to June 30th – can we use those figures – they'll be quicker to compile as I won't need to cross check which ones have actually been paid at this instance in time. So I'd give you the figures for T1 to June 30 2019, and then NRT to June 30 2020?

I presume this is to exclude $ for Myrtle Rust?

Cheers
Privacy of natural

From: Privacy of natural persons s9(2)(a) @mbie.govt.nz>
Sent: [redacted]y, 29 May 2020 8:25 AM
To: [redacted]ctor BioHeritage <director@bioheritage.nz>; Melanie Mark-Shadbolt s9(2)(a)

Subject: URGENT : Update on Kauri dieback funding. National Science Challenge [IN-CONFIDENCE:RELEASE EXTERNAL]
Importance: High

Hi Andrea, Mel and Privacy of natural

Please see request below.
Could you please provide figures for NRT and NZBH kauri dieback separately **by noon at latest if possible.**

I have (at the moment) no background on anything that might have prompted this request but will chat to Privacy of natural p

Cheers

Privacy of natural

From: Privacy of natural persons s9(2)(a) parliament.govt.nz]
Sent: Thursday, 28 May 2020 6:15 p.m.
To: Privacy of natural persons
Cc: Danette Olsen; Privacy of natural persons
Subject: Update on Kauri dieback funding. National Science Challenge

Kia Ora Privacy of natural

Hopping you are well.
Minister Woods' colleuges have requested an update from her on NSC's funding for kauri dieback.
Could you please provide the office with an update on how many research contracts have been signed and the total funding delivered out the door to scientists to date?

I believe the requested update was specific to funding from NSC's, but I think is probably referencing the SSIF platform pulled together by NZBH.

Ideally we'd be able to pass this information on tomorrow, if possible.

Happy to discuss,

Privacy of natura

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Expenditure on Kauri Dieback and Myrtle Rust Research

As of 29 May 2020

In response to an enquiry from Minister Megan Woods' office, below please find a summary of expenditure to date in the NZ's Biological Heritage National Science Challenge Tranche 1 (to June 2019) and (from July 2019 to June 2020) expenditure in the SSIF Platform Ngā Rākau Taketake.

Funds spent

Kauri Dieback Research contracted/paid to June 30 2020

	$'000	July 2015 - June 2019	May 2019 - June 2020	TOTAL
NZBH Challenge Tranche 1	Kauri dieback (KDB) 3 programmes	1,383.0		1,383.0
	KDB and MR 2 programmes	767.3		767.3
	Total	*2,150.3*		*2,150.3*
	c. Total T1 just KDB	**1,766.7**		**1,766.7**
Nga Rakau Taketake (NRT) SSIF	Kauri dieback 3 programmes		1,780.0	1,780.0
	Myrtle Rust (MR) 1 programme		505.0	505.0
	KDB and MR 3 programmes		2,574.3	2,574.3
	Total		*4,859.3*	*4,859.3*
	c. Total NRT just KDB		**3,859.0**	**3,859.0**
TOTAL July 2015-June 2020		Kauri Dieback (11 programmes)		5,625.7
		Kauri Dieback & Myrtle Rust (12 programmes)		**7,009.63**

Of the Ngā Rakau Takektake (SSIF) funding, $14.07M has been allocated to fund research programmes to June 2021. $2.7M has been contracted/paid to date, and contracting is in progress committing a further $2.16M of funds to June 2020 (total $4.86M) and $9.21M to June 2021.

Information on research projects

Ngā Rākau Taketake investments

Oranga (wellbeing): Mātauranga Māori based solutions for kauri dieback and myrtle rust. Led by Te Tira Whatamātaki.

Mobilising for Action: Focusing on the human dimensions of forest health management, specifically kauri dieback and myrtle rust. Led by University of Auckland

Integrated Surveillance: A hapū-centric surveillance framework that focuses on the holistic health of the forest. Led by Manaaki Whenua – Landcare Research.

Host, Pathogen & Environment: Looking into the role environmental factors play on disease expression and severity, as well as investigating plant pathogen genomes.Led by Plant & Food Research.

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Conservation & Restoration: Ensuring susceptible plant species survive myrtle rust and kauri dieback. Led by Manaaki Whenua – Landcare Research.

Risk Assessment & Ecosystem Impacts: standardised measures to quantify the impact both kauri dieback and myrtle rust are having on the wider ecosystem. Led by Scion.

Control, Protect, Cure: novel tools and approaches. Led by Scion.

Tranche 1 Research Programmes

Combatting pathogen risk using genomics Led by Manaaki Whenua – Landcare Research.

Stopping kauri dieback in its tracks Led by Otago University/Victoria University of Wellington.

Tiaki mō kauri: citizens combatting kauri dieback Led by Plant & Food Research.

Whakawātea riha rāwaho: Māori solutions to biosecurity threats Led Plant & Food Research.

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NEW ZEALAND'S BIOLOGICAL HERITAGE Ngā Koiora Tuku Iho National SCIENCE Challenges

NZ's Biological Heritage National Science Challenge

Mana Rangatira Governance Group (MRGG) Agenda

Date: Wednesday, 6 August 2020

Time: 8:30am – 3:00pm

Venue: Ellerslie International Hotel and Conference Centre 2 Wilkinson Road, Ellerslie, Auckland,

Connect via ZOOM: https://us02web.zoom.us/j/81019678851

MRGG Attendees in Person: James Buwalda (Co-Chair), Glenice Paine (Co-Chair), Emily Parker, Jan Hania, Rob Phillips, Erina Watene-Rawiri, Edward Ellison, David MacLeod

MRGG Attendees via Zoom: Daniel Walker

BioH Challenge Attendees in Person: Andrea Byrom (Director), Melanie Mark-Shadbolt (Kaihautū Ngātahi), s 9(2)(a)

Observers in Person: Privacy of natural persons (UoW), Privacy of natural persons (PFR)

Observers via Zoom: Privacy of natural persons (MBIE), Privacy of natural persons (MBIE)

Apologies:

Time	Item	Format	Led/tabled	Paper No.
8:30am	**Karakia tīmatanga**			
8:35am	MRGG only	Closed Session	James B/Glenice P	
9:00am	MRGG + Director + Kaihautū Ngātahi	Closed Session	James B/Glenice P	
10:00am	**Break and Morning Tea (15 min) – BioH Challenge Attendees & Observers to join MRGG**			
10:15am	***Standing Items***			
	• Apologies			
	• Confirm Agenda			
	• DRAFT Minutes of previous meeting	Approval	All	2020/08/01
	- Action Register	Approval	All	2020/08/02
	Risk Registers – Challenge and NRT	Discussion	Andrea B/Melanie M-S	2020/08/03
	• Interest Register – & declaration of relevant interests prior to meeting	Information	All	2020/08/04
	• Outcomes Frameworks	Discussion	All	2020/08/05
11:10am	**Short break for those on Zoom**			
11:15am	***Financial Statements***			
	• Financial Update	Discussion	s 9(2)(a)	2020/08/06
11:30am	Challenge Update from Director and Kaihautū Ngātahi • Includes Annual Workplan approvals	Decision	Melanie MS/Andrea B	2020/08/07
12:30pm	**Lunch (30 min)**			
1:00	Co-investment Landscape	Decision	Melanie M-S/Andrea B	2020/08/08
2:00	Challenge position on WAI-262	Decision	Privacy of natural persons/Melanie M-S/Andrea B	2020/08/09
3:00pm	**Finish and Karakia whakamutunga**			

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NZ's Biological Heritage National Science Challenge

Mana Rangatira Governance Group Minutes of the Previous Meeting

Date: Wednesday, 3 June 2020, 8:30am – 3:00pm

Venue: Rydges Wellington and via Zoom*

MRGG Attendees: James Buwalda (Co-Chair), Glenice Paine (Co-Chair) Devon McLean, Emily Parker, Erina Watene-Rawiri*, Jan Hania, Daniel Walker*, Rob Phillips*, Kevin Prime*

BioH Challenge Attendees: Andrea Byrom (Director), Melanie Mark-Shadbolt (Director Māori), Privacy of natu Privacy of natural persons (Challenge Operations Manager)

Observers: Privacy of natural persons * (UoW), Privacy of natural persons * (MBIE), Privacy of natural persons (MBIE), Privacy of natural persons * (PFR)

Apologies: Dan (left 10.30am), Mel (on flights, joined periodically when practicable), Kevin (left midday).

Topic	Details	Action
Closed Session		
Prior to the formal meeting, MRGG met privately, and then with the Directors.		**Andrea/Mel** provide PDs for leadership team positions x3 to Mana Rangatira for review and endorsement **James** contact Decipher (on back of contract tor Director recruitment) for independent job-sizing once PDs agreed by MRGG
General Business		
Welcome	James Buwalda welcomed the observers, and formally opened the meeting at 10.30am.	
Apologies	Apologies noted as above	
Agenda Confirmed	Agenda for the meeting was introduced by the Chair.	
Governance Group Members Interest Register		
▪ Erina – add Waikato River Authority Board (get details by email) ▪ Jan emailed some updates		Update Interests Register s 9(2)(a)
Minutes of the previous meeting		
The minutes of the previous meeting were agreed as true and accurate with minor corrections: ▪ Wording on closed session – note minor adjustment to wording.		

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DRAFT

Moved Devon, Second Glenice. Carried.	Correct and finalise previous meetings minutes s 9(2)(a)
Matters arising	
▪ Last meeting for Kevin and Devon, James thanked them for their contribution. Will have proper farewell at a future time. Privacy of natur also noted appreciation and thanks. [Privacy of natur and Privacy of natu arrived 10.30am]	
Action Register	
▪ Remove Feb 2020 #3 and have as standing 'intention' going forward ▪ Remove 21 and 22 ▪ Leadership paper completed ▪ Outcome framework – remove as action; becomes regular item at every meeting	
Risk Register	
▪ Comprehensive comment this time, but in future will focus commentary only on those with current risk yellow or red. ▪ Risk to capability in current Covid environment. ▪ Keeping engaged with stakeholders via zooms, including Kauri dieback community. ▪ Opportunities with environmental jobs on the ground. ▪ Paper to next meeting on co-investment landscape with Covid focus ▪ #10 need to work on gaining trust with the MWLR board. An active priority for MRGG. ▪ Obstacles in relationship building due to COVID. Working with MPI after their KDB contract ceases. Good comments heard by MBIE around relationship building, good consultation in NRT. MRGG are assured that following end of MPI KDB research contract that the NRT programme being implemented by Challenge is consistent with long standing ASSAG priorities for KDB. ▪ NRT #7 = keep steady -> ▪ Acknowledged Privacy of r and Privacy of natural persons preparation of NRT commentary.	Co-investment landscape paper next MRGG given Covid situation (**Andrea/Mel)** Update Risk Register **(Completed)**
Privacy of natural persons – *CRI view* ▪ CRI physical ability to do work pretty good, most lab/fieldwork back up and running, >50% staff working at CRI sites, rest at home. ▪ Economic support in discussion with Shareholder. Announcement to come.	

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▪ Forward revenue a bit unknown, variability amongst CRIs but general unease => financial caution. ▪ Agreement to retain subcontracts and keep funds flowing. ▪ Protecting capability emphasis. ▪ Staff engagement up, some good learnings for organisations to keep post crisis. ▪ Some people thrived, others struggled for variety of reasons. May be some mental health impacts to deal with in future. ▪ CRIs in reasonable shape. ▪ With uncertainty in revenue CRIs will shift to short term contracts. $ from Challenge can provide some certainty.	
Privacy of natural persons – *University view* ▪ Universities and CRIs similar – echo most of what Privacy of natu noted. Student numbers are a key difference, won't know full effect until 'B semester', first 3-4 weeks of July will be telling period. ▪ International students affected by closed border. ▪ Getting back to face to face teaching, but keeping the good elements of online delivery that have developed. ▪ Universities discussing with govt to allow international student return, but remains unknown.	
Finance Report	
▪ The finance report was tabled. Noted the actual 40% due to MBIE payment schedule change, and delayed contracting, lack of contracts finalised = no accruals/actuals, will catch up to Forecast by end June as contracts established. ▪ Figures consistent with investment approvals. ▪ T2 Budget for FY21 endorsed by MRGG. ▪ NRT Budget for FY21 endorsed by MRGG.	
Directors Update	
Process for AWPs: ▪ Noted/reiterated AWPs are critical device for contracting, monitoring and review of Challenge investments (T2 and NRT) ▪ Not getting into the detail, but assurance to MRGG that the detail is there. How confident that it is the critical work being undertaken. ▪ Contracts up and running, write into AWP approval any requirements to be addressed ▪ Future years review of AWPs more a by exception approach e.g. not always requiring ISAP review, seeking MRGG input in cases where team proposes to pivot. If things still progressing on track, MRGG take that assurance into account in their annual review/approval process.	**Director** to provide advice to MRGG for each AWP, highlighting critical issues for attention and seeking MRGG approval (with option for MRGG to probe deeper as/where needed)

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▪ Teams encouraged to come to the Challenge/MRGG to self-identify when changes in approach/emphasis might be warranted. 20% funding held in reserve to encourage such thinking. ▪ Directors will bring areas to MRGG attention as needed, as has been done through the investments being identified, and initial team forming. ▪ MRGG do not need to read every last page of detail. But can access full AWP if they desired. Builds on the high trust relationship. ▪ MRGG comfortable with the approach. ▪ How does this AWP model impact long term commitments such as PhD students. Need to commit contract values to June 2024 – let's see if we can get that approval now (subject to the annual approval process). ▪ MRGG endorse approach to AWPs, and will approve AWPs on a rolling basis (not relying on formal scheduled bi-monthly meetings). If enough to discuss can arrange a zoom call (co-Directors to make that call as to whether Zoom meeting needed for a particular batch of AWPs). *Outcomes Frameworks (Challenge T2 and NRT:* ▪ A powerful tool for governance and to tell the story of the Challenge. Tracking - are we getting to our 2024 Goals. ▪ Link to other layers, KPIs. ▪ Regularly refer to, keep confidence that the AWPs will deliver to the Outcome Framework. Continue to populate as AWPs are developed. ▪ More useful internally, better ways to tell our stories externally.	**Emily** to flag to the MWLR Board intention/need to commit funding to June 2024, and come back with how best to implement. Attach outcomes frameworks as an ongoing 'appendix' to future meeting papers (e.g. after the Risk Register). s 9(2)(a)
Challenge Forward looking Plan ▪ Lighter touch required by MBIE this year due to COVID uncertainty. ▪ MRGG endorsed the FLP	
Correspondence: Ministerial request for spend to date on KDB ▪ MBIE noted happy to receive the figures sent through from the Challenge support team, and the links to contextual material	
CP meeting – replacement of MRGG members ▪ Two names will be recommended to CP meeting ▪ What happens after CPs make recommendation e.g. discussion with Privacy of natural persons, or just send paper through. Board meeting 22 June -> Phone call makes sense (Privacy of natura	
Next MRGG Meeting?	
The next MRGG meeting/venue is still to be scheduled; preference for face-to-face meeting and include opportunity to recognise contribution of retiring members (KP DM)	
Meeting closed at 12.30pm	

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Action Register

Actions from the most recent meeting are shaded. Red = any items that are off track.

Meeting	Action	Responsibility	Status
Feb 2020	12. Investment Prospectuses - Revise IPs concisely	Privacy of natural persons	In Progress
Apr 2020	6. Think piece around COVID-19 situation and opportunities/ways forward (also contact Privacy [redacted]).	Andrea B/Melanie/James	Completed
June 2020	**1.** Provide PDs for leadership team positions x3 to Mana Rangatira for review and endorsement	Andrea/Mel	Completed
	2. Contact Decipher (on back of contract tor Director recruitment) for independent job-sizing once PDs agreed by MRGG	James	Completed
	3. Update the Interest Register	Privacy of na	Completed
	4. Correct and finalise previous meetings minutes	Privacy of nat	Completed
	5. Paper on co-investment landscape for next MRGG meeting	Andrea/Melanie	Completed
	6. Director to provide advice to MRGG for each AWP, highlighting critical issues for attention and seeking MRGG approval (with option for MRGG to probe deeper as/where needed)	Andrea/Melanie	Completed
	7. Flag to the MWLR Board intention/need to commit funding to June 2024, and come back with how best to implement	Emily	Completed
	8. Note in future attach Outcomes Frameworks as an ongoing 'appendix' in meeting papers (e.g. after the Risk Register)	Privacy of na	Completed

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Risk Register

Purpose

The purpose of this paper is to provide commentary on risks identified for the Challenge and the *Ngā Rākau Taketake* SSIF Platform.

T2 BioHeritage Challenge Risk Register

Inherent risk	BioHeritage Challenge Risk	Likelihood of occurrence / risk direction	Current residual risk	Target risk
	1. Our failure to build sufficient stakeholder commitment results in loss of momentum for initiatives and action on pathways to impact	Likely ↓		
	2. Our failure to embed partnerships with Māori throughout all Challenge operations and relationship, which in turn results in Māori disengagement and or disenfranchisement from Challenge and Challenge-related activities	Possible →		
	3. Our failure to build the 'right teams' via innovation pathways, and/or 'loss of national capability', results in a loss of momentum towards outcomes and impact	Possible →		
	4. Our failure to scan the external environment results in barriers to adoption and scale-out of Challenge outcomes and impact	Unlikely →		
	5. Our failure to adequately consider sustaining and developing fit-for-purpose science capability (people and infrastructure) in our investment decisions results in an inability to deliver impacts	Possible →		
	6. Our failure to critically review and refresh Challenge investment portfolios, so we maximise progress towards our Mission and the legacy we leave in 2024, results in loss of cohesion and focus	Possible ↓		
	7. Our failure to spot and avert misappropriation/misuse of resources results in intervention by MBIE, and suboptimal delivery of impacts	Possible →		
	8. Our failure to identify and manage risk aversion by Challenge Parties results in a reduced ability to deliver impacts	Possible →		
	9. Our failure to manage the risk that we are asked to do more than we can reasonably do – stretching capacity and detracting from core purpose, contributes to increased risk in the categories above.	Possible →		
	10. Our failure to build and maintain a constructive working relationship with the Host hinders delivery of the Challenge mission and associated NRT surge/SSIF investment	Possible ↓		
	11. Factors affect successful implementation of Tranche 2 investments	Possible →		
	12. Interruption to ability of researchers/stakeholders to undertake the work	Possible ↓		

NRT Surge Risk Register

Inherent risk	NgRakau Taketake Risk	Likelihood of occurrence / risk direction	Current residual risk	Target risk
	1. Lack of progress combatting KDB/MR (including reliance on external agencies to implement learnings)	Possible →		
	2. We are unable to engage fatigued stakeholders, particularly Maori	Possible ↓		
	3. Criticism around the Challenge leading this research	Likely ↓		
	4. Lack of transparency and sharing of information	Possible ↓		
	5. Factions within kauri dieback research mean some people are reluctant or unwilling to work together	Possible ↓		
	6. Expectations are higher than scope	Possible ↓		
	7. Factors affect successful implementation of NRT investments	Possible →		
	8. Interruption to ability of researchers/stakeholders to undertake the work	Possible ↓		

Commentary on risk elements (and any recommended changes to status)

COVID-19 – general risk for Challenge Tranche 2 and NRT

The immediate risk to delays in delivery of research for COVID-related reasons has reduced now that the country is in Level 1 although some teams – particularly in NRT – are still catching up on lab and field work where they can.

Currently the biggest risk to the Challenge and NRT around COVID is our ability to obtain peer reviews from international reviewers, some of whom are significantly impacted by the crisis. This has resulted in minor delays because we have needed to approach alternative reviewers for some Annual Workplans.

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Challenge risks

Risk 1

This risk is covered in depth in the investment paper ***2020/08/08***. Building momentum with stakeholders remains an ongoing area of active work for the Challenge leadership team, but there are currently no significant red flags and indeed some opportunities emerging for better alignment with key sectors (e.g. the opportunity to partner with DOC on Farms as Barriers to support PF2050). **No change recommended.**

Risk 2

Green – no comment required unless advising to change to yellow or red.

Risk 3

There has been significant effort focused on building the 'right teams' over the past six months. Overall the Challenge leadership team feel that we need more confidence that the research co-leads have identified all the relevant expertise in building their teams, but confidence is increasing. Recommend **changing Likelihood of occurrence to POSSIBLE AND DECREASING**.

Risk 4

The Challenge Director, Kaihautū Ngātahi, and Knowledge Brokers have worked together on more targeted approaches to external scanning for opportunities and issues, including ongoing engagement with the executive teams of key agencies (e.g. DOC, MfE, MPI, LINZ) to ensure alignment of strategic directions. **No change recommended.**

Risk 5

Like risk 3, this risk area has also seen active effort over the last several months. Research co-leads have been coached to include early-career researchers and Māori researchers or knowledge holders in their teams, and many have spotted and included some amazing emerging talent. **No change recommended**, but we suggest active review and a possible change in residual risk to GREEN after the next meeting depending on how well the teams are functioning.

Risk 6

The Challenge Support and leadership teams are now confident we have developed and finalised a robust process for active review of Annual Workplans such that the process can be rolled out annually over the next four years. As noted in the Directors' report, there is still work to do to get all Annual Workplans over the line, so **no change is recommended** at the present time but we suggest active review and a possible change in residual risk to GREEN after the next meeting depending on how well the process is finalised.

Risk 7

Green – no comment required unless advising to change to yellow or red.

Risk 8

Little change to this risk since the last meeting. The Challenge Parties' meeting in June was well-attended. Many of the issues we have discussed (e.g. delays in contracting) were raised and discussed with them in a constructive fashion. Appointment of the Innovation Strategist in the ELG will ensure that the Challenge has an active focus on this risk from now on. **No change recommended** yet however.

Risk 9

While there are always high expectations of the Challenge, and while the Directors are often called on for advice or assistance by various organisations (e.g. DOC seeking advice on strategic directions in a recent refresh of their biodiversity group), we have not noticed any particular uptick in issues that would heighten this risk. The pros and cons of taking on the 'Farms as Barriers' work with DOC is discussed in the investment paper and as we note in that paper, that opportunity is strongly aligned with Challenge

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core business and is therefore considered a low risk in terms of diverting the team from core business. **No change recommended.**

Risk 10

Now that the audit has been completed and we have received approval for the ELG structure and appointment process, we are not aware of any new concerns raised by the Host. Challenge Director Andrea Byrom continues to meet monthly with MW SLT to discuss issues and opportunities (recent topics of discussion for example included WAI-262, biosecurity capability in NZ, aligned research, and opportunities for working in partnership with Māori). The Co-Chairs have also made an active effort to address key relationships. **No change recommended**, but we suggest active review and a possible change in residual risk to GREEN after the next meeting depending on how this relationship is tracking.

Risk 11

This risk was initially added in response to COVID. There are no particular factors that would impede successful implementation of our investments at this time, other than those discussed elsewhere. **Suggest changing residual risk to POSSIBLE AND DECREASING**.

Risk 12

We are not aware of any major interruptions to planned research at the present time. However, capacity remains an ongoing issue in the NZ science system, with many researchers thinly stretched and often called into new projects at short notice. This area requires active management by the Challenge leadership team, which we do through frequent short meetings with Challenge co-leads. On the flip side, many teams are hugely excited by the opportunity they have been presented and often tend to 'drop' other work in favour of their Challenge activities. **No change recommended**, but this risk should be re-visited in the second half of FY21 when we have greater oversight of how much momentum the teams have been able to build over a 12-month period.

NRT risks

Risk 1

Lockdown prevented some field and lab work but this has now recommenced. Delays resulting from teams not having contracts in place have eased but subcontracting from lead providers to research teams has been slow owing to heavy workloads at end of financial year. We expect research progress to increase significantly in the coming months.

Significant reductions in regional and national government agency funding for operational work has increased the risk of the Challenge being unable to build successful pathways to impact. Further, with the general election looming it is possible that kauri dieback will be raised as an election issue by one or more political parties, increasing political scrutiny of progress to date and pressure to deliver results.

We recommend **maintaining 'likelihood of occurrence' at LIKELY AND INCREASING and 'current residual risk' at HIGH (RED).**

Special recommendation: it may be worth considering a pro-active '2-pager' targeted at relevant Ministers, outlining progress and early highlights in Ngā Rākau Taketake.

Risk 2

Stakeholders continue to be impacted by COVID19, as communities and organisations prioritise safety and wellbeing of their own. However, as stated previously, we have been heartened by the high level of engagement with NRT that has been sustained in recent months under difficult circumstances. In particular, the NRT Māori co-leads are now playing a key role in coordinating NRT engagement and involvement of Māori, with the express purpose of preventing further fatigue and fragmentation of people's efforts. We **recommend no change.**

Risk 3

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There remains significant reputational risk to the Challenge, NRT and the Host because of previous delays in contracting research as a result of the MW Board audit. Lead providers were all anxious about delays in contracting as were the co-leads and their team members, causing a loss of confidence and potential damage to the Challenge reputation, especially because the reasons for the delays could not be disclosed. Receiving approval from the Board's Audit & Risk Committee to proceed to contracting (28 May) eased this pressure. We expect this risk to reduce as more research outcomes are reported from NRT but for now we **recommend maintaining 'current residual risk' at HIGH (RED).**

Risk 4

The Challenge team has continued to work hard on this throughout lockdown. For example, the completed the kauri dieback stocktake has been made available online and we continue to convene regular KDB and MR community information sharing hui, which are popular and well attended (~45 people per hui). NRT progress is shared at these meetings and circulated widely through the meeting notes. These hui together with newsletters and attendance at SSAG meetings are increasing transparency and information sharing. Now that contracting is well underway, we are able to disclose more information about ongoing research which will also aid transparency so we **recommend changing "risk direction" to DECREASING**.

Risk 5

This is still a medium risk. While some new teams have been formed, we are still seeing pockets of competitive behaviour and this may be exacerbated in the post-COVID environment. We **recommend no change.**

Risk 6

Expectations are higher than scope and have increased due to recent uncertainty arising from loss or deferral of other research funding in the system (e.g. no KDP budget allocation to MPI; MBIE Smart Ideas deferral; agency funding on hold/cancelled (e.g. Auckland Council's Kauri Rescue funding & co-funding of KDP research budget). Lack of certainty or deferrals of current/future research projects has led to increased interest in, and scrutiny of, the NRT research programme & budget. Expectations are well beyond scope as the NRT budget cannot support all or any of these requests and the investment signals for the SSIF Platform from MBIE stipulate that we cannot fund operational research. We **recommend changing "likelihood of occurrence" to LIKELY AND INCREASING.**

Risk 7

Delayed approval of all proposed research plans, associated budget and contracts for NRT, and COVID-related disruption has placed progress and implementation of the NRT investment plan at risk. Significant funding cuts to agencies expected to partner with us to achieve implementation has added to this risk. We **recommend increasing "likelihood of occurrence" to LIKELY AND INCREASING and 'current residual risk' to HIGH (RED)**

Risk 8

As above, delays in approval of research plans led to significant levels of frustration for NRT researchers with some close to pulling out. The delays, which could not be fully explained externally, have undermined confidence in the Challenge processes but we expect this to improve as more research gets underway. Most (all) Maori co-leads appear to be over-extended, reflecting national lack of capacity; and our co-leads are pulled in many directions. As noted above, planned collaborative work with some stakeholders (e.g. Auckland Council, MPI) is now unlikely to occur, so we **recommend maintaining "likelihood of occurrence" at LIKELY AND INCREASING and 'current residual risk' at HIGH (RED)**

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Biological Heritage National Science Challenge Interest Register

GG Member (as an individual)	**Association* – Relationship** (personal, professional, or family)	**Organisation**	**Role**	**Financial Interest**	**Nature of Interest**
James Buwalda	Out of Scope				
Glenice Paine					

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GG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
Daniel Walker	Out of Scope				
Rob Phillips					
Emily Parker					
Jan Hania					

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GG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
	Out of Scope				
Erina Watene-Rawiri					
Edward Ellison					

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GG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
David MacLeod	Out of Scope				
Andrea Byrom					
Melanie Mark-Shadbolt	Out of Scope				

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GG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
	Out of Scope				
	Professional	MPI – Myrtle Rust Stakeholder Group, Kauri Dieback/Myrtle Rust Joint-SSAG	Member	No	Represent TTW on this groups, but both work with the Challenge on NRT.
	Out of Scope				
	Professional	Te Tira Whakamātaki Limited (Charity)	Director	No	Director and CEO of TTW. There is the potential for me to have a financial interest if I were to receive a dividend or salary though at present I do not. TTW is a partner of the Challenge via MOU, and has received funding from the Challenge.
	Out of Scope				
	Professional	Te Tira Whakamātaki Foundation (Charity)	Trustee	No	As a Trustee of the Charitable TTW Foundation I do not receive payment or benefit, though TTW Foundation may benefit from contract work directly or indirectly.
	Out of Scope				

- Association – relationship (personal or professional) between potential external counter party and Biological Heritage National Science Challenge Senior Leadership Group (SLG) Member that is of a tenure or standing that it could give rise to render the SLG member less than independent in his/her judgement of alternatives and selection of the party. Close family members include spouse/partner, siblings, children, parents
- Note: The SLG/ELG, other than the Director and Kaihautū Ngātahi above, have a separate register of interests which is stored on the Challenge's Sharepoint site at Manaaki Whenua.

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Outcomes Frameworks

1. T2 BioHeritage Logic Framework – July 2020
2. NRT Logic Framework – July 2020

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MISSION: To reverse the decline of New Zealand Biological Heritage, through a Engaging and influencing Te Pae Tawhiti national partnership to deliver a step change in research innovation, globally leading technologies and community and sector action.

Impacts

New Zealanders value our biological heritage, understand how it is changing, and are inspired to take action to protect it

By 2024, a majority of New Zealanders value our biological heritage, & are enabled to actively contribute to positive change

New Zealand's biosecurity system is world class

By 2024, New Zealand's biosecurity system is fit for purpose

New Zealand's natural and production ecosystems are resilient and thriving

By 2024, we understand social and ecological linkages in natural and production ecosystems, and will be designing technical, policy and governance frameworks to ensure our ecosystems are resilient to current & future threats

Strategic Outcomes

SO1: We report progress using a biological heritage scorecard for Aotearaoa

SO2: We empower New Zealanders to demand and enact environmental stewardship and kaitiakitanga

SO3: We anticipate both emerging & latent biosecurity risks, and avoid new or recurring invasions

SO4: We have state-of-the-art biosecurity surveillance systems

SO5: We deploy novel tools, technologies & strategies for control or eradication of biotic threats

SO6: We quantify social-ecological linkages for use in managing, protecting and restoring ecosystems

SO7: We enable people to build biological heritage resilience with the right policy and governance instruments

2024 Goals

We know what & how to measure

Influential, adaptive scorecards empower people

Local scorecards are catalysts for action

Local communities develop & realise BioHeritage aspirations

There is legislative and socio-cultural licence supporting the tools, frameworks & tikanga protocols developed elsewhere in BioH

Participation: Mana whenua & key participants active in risk ID

Values: Biosecurity risks prioritised through Te Ao Māori lens

Impact: Dynamic and adaptable biosecurity

Much earlier detection & real-time monitoring of system changes

Surveillance systems co-designed with Māori; communities involved in surveillance

New tools for surveillance developed & used

Virtual Biosecurity Hub for Aotearoa being used for 'fast fail' projects co-designed with mana whenua

2-3 new tools for border biosecurity pests and/or vertebrate & invertebrate legacy pests developed & used and deployment 'at scale' accelerated

PF2050 supported through partnerships

Diverse, successful, & practical pathways to regeneration identified

Connections between people and nature valued & characterised

Capability to reverse the decline lifted and sustained

Mana whenua enabled and resourced to participate as partner

New governance architecture for biological heritage resilience developed

Critical Steps – the pathway to impact

	SO1	SO2	SO3	SO4	SO5		SO6	SO7
2023	Scorecards scaled nationwide & report against national bioheritage indicator set & vision		At least one industry body has agreed in principle to adopt framework		One tech tested against target species	Non-fence option for preventing small mammal predator movements is available	Methods that support effective collective action are being used	Different leadership models have emerged and are being used
2022	Impact of sector-specific Scorecards evaluated & Scorecards improved		Co-designed risk assessment framework is being implemented		Technology consultation completed	Novel tool or approach has been developed to target introduced predators	Ecosystem regeneration exemplars developed and showcased	New policies developed based on the models
2021	National 100-year bioheritage vision and bicultural indicator set developed		Stakeholders and champions actively testing framework		Simulations demonstrate potential of tech	Agreed steps that incorporate tūturu Māori input for a novel tool are established	Adaptive approaches to scale-up ecosystem regeneration	Models of treaty-based governance across Aotearoa compared for success in delivery of transformative outcomes
2020	Case study co-designers/investors in three major sectors engaged & their Scorecards developed	Groundwork laid to integrate across Challenge & NRT	Knowledge gaps prioritised and align with stakeholders		Invert pest and technology identified through stakeholder survey	Artificial Intelligence in Pest Control working group has held its first workshop	Barriers to enhancing the success of restoration initiatives identified	System co-design principles developed

Supporting Architecture (Pou)

Champions & Influencers
Developing a network of BioHeritage Champions

Early Career Network Ngā Pī Ka Rere
Grow/build capability & capacity in BioH ECs

Māori Rōpū (Te Ohu Māori Rangahau)
Grow & build capability & capacity emerging Māori Leaders

Biosecurity Hub
Streamline and collaboratively develop fast-fail approaches to combat pathogens and pests

Crazy Ambitious Think Tank
High-Impact think pieces to support research excellence

Measuring Impact
Critical reflections and impact measurement

Data Connectivity
A technical tool for partner agencies to "pool" data sets

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MISSION: To reverse the decline of New Zealand Biological Heritage, through a national partnership to deliver a step change in research innovation, globally leading technologies and community and sector action. Our vision for success is that the mauri of kauri and our native myrtle species is safeguarded, sustained and enhanced for our tamariki and mokopuna.

IMPACTS

New Zealanders value our biological heritage, understand how it is changing, and are inspired to take action to protect it
Whakamana – Empower

New Zealand's biosecurity system is world class
Tiaki – Protect

New Zealand's natural and production ecosystems are resilient and thriving
Whakahou – Restore

THEMES

Oranga (Te Mauri o Te Rākau)

Mobilising for Action

Risk Assessment & Ecosystem Impact

Integrated Surveillance (Mātauranga Māori Framework for Surveillance (MMFS))

Control, Protect, Cure (Tools for Detection and Management)

Host, Pathogen & Environment

Conservation & Restoration

2023 GOALS

Affected Maori communities empowered to protect & restore their ngahere

Māori leading positive system change in forest biosecurity

Te Ao Māori worldview intrinsic in ngahere restoration in Aotearoa

Key stakeholders & communities confident of their ability to deliver impact

Human dimensions of forest well-being underpin kaitiakitanga & management of ngahere

New communication tools empower community engagement

Best practice learnings shared for application in future community-led projects

Risk assessment framework used in conservation & management decisions

Risk analysis & indicators used to prioritise vulnerable ecosystems

Key ecosystem impacts of KDB & MR quantified & included in risk assessment

Methodologies to assess priority social, cultural economic and ecological indicators

MMFS guiding biosecurity management & research practices

Data protocols, principles & tools agreed and adopted

High value tangata Māori engagement demonstrated by 'Huarahi Tika' framework

Disease distribution, severity & probability of absence information freely available

At least two tools for detection &/or protection validated

Methods for early detection & ID of incursion of new MR strains in place (by 2022)

Efficacy of disinfection method(s) evaluated & DOC protocols validated

Tool prototypes for KDB and MR field tested

Epidemiological data & models guiding NRT Themes

Kaitiaki & agencies using MR predictive tools & information resources (by 2022)

MR genomics guiding future novel plant protection strategies

KDB pathogen genomics & origin guides development of novel control strategies

Tikanga based approaches to seed/germplasm protection implemented at 90% sites

DOC's mana whenua engagement strategy guided by co-designed best practice protocols

Mana whenua-led restoration initiatives for kauri & pōhutukawa initiated

Kaupapa Ngāti Kuri approach preserving endangered taonga

Critical Steps – the pathway to impact

	Oranga	Mobilising for Action	Risk Assessment & Ecosystem Impact	Integrated Surveillance	Control, Protect, Cure	Host, Pathogen & Environment	Conservation & Restoration
2023	Rongoā tools developed, tested & learnings shared as appropriate ④	Values (below) embedded in strategic planning & programmes ⑥	Framework for measuring ecosystem health & resilience developed & tested ⑦	MMFS co-developed & tested using map-based surveillance tool ③	Tool prototypes for KDB (by 2023) & MR (by 2022) tested by kaitiaki and investment team ④⑤	Field sites established to measure pathogen spatial variability in distribution & spread across forest landscapes	Mātauranga Māori led restoration research options identified, co-developed and implemented ②⑥⑦
2022	Rongoā KDB solutions and kupu Māori (mimicking forest sounds) developed & tested ④	Values (below) applied to proactively engage users developing practices that enhance forest well-being ⑥	Ecosystem impact indicators identified & gaps in baseline data addressed ⑦	MMFS data gaps & application improvements identified & communicated ③	Potential tools "socialised" & responses monitored to build confidence for tool adoption & knowledge application ④⑤	Simulation model of MR myrtle rust constructed; predictive tools developed (by 2022) ③	Quantitative agent-based models developed to identify where in landscape to protect & restore to maximise chances of taonga surviving in future ngahere ②
2021\2022	Best practice culturally acceptable methodology for seed/germplasm collection & protection agreed & shared (by 2021) ①⑥⑦	Understand shared & relational values related to te Taiao, ngahere & taonga species ⑥	Kaupapa Maori process used to develop indicators for Maori-specific social, cultural, & economic impacts (by 2022) ⑦	Biodiversity Management Areas spatially defined & Tangata kokiri identified across NRT themes ③	Mātauranga Māori-based tools & bioactives investigated in partnership (link to Oranga) ④⑤	High quality *Phytophthora agathidicida* genome assembled and differential expression of key genes investigated (2021/22) ⑤	Culturally appropriate protocols for seed/ germplasm protection co-developed with mana whenua & DOC ①
2021	Monitoring & evaluation framework established to drive synergy & impact across Te Mauri projects		Broadly agreed set of values & indicators established & prioritised ⑦	Principles & prototypes of data & modelling tools developed ③	High risk seed & scope projects completed & novel tool selected for further development ④⑤	Appropriate cultural authority arrangements established; ngāhere matai developed & in use ①	Mana whenua support for genetic marker research for conservation of taonga determined ⑦

Supporting Architecture (Pou)

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Financial Statements – June 2020

The position for the Challenge and NRT as at end June 2020 is summarised below. Key points are indicated (any areas of risk in red).

1. Research actuals for the Challenge came in $948K under the original budget. This is primarily due to SO2 and SO4 not being sufficiently progressed to contract with a lead provider. In addition some work was delayed due to COVID-19 and will be completed during FY20/21.

   Management costs exceeded budget by $108k due to shifting Melanie Mark-Shadbolt's costs under the same budget item as Andrea Byrom (this had an equivalent saving under the original budget area). Reduced travel following COVID-19 brought the Governance budget which was tracking to overspend back within budget. Together with the delay in senior leadership appointments we had a net underspend of $598k. Total underspend on Research and Management/Governance/Research Support was $1.5m.

2. For Ngā Rākau Taketake actuals for the year came in $6.67m under budget. This was due to:

   - MBIE deferring $3.5m of 2019/20 the extra SSIF funding in order to smooth the funding profile across the duration of NRT.
   - The longer than envisaged time taken for the 2019 scoping process, followed by extended delays in recommended investments being approved for contracting by the MWLR Board, and the coincidence of COVID-19 contributed to $2.3m being carried forward to future years budgets and $600k of contracted payments being deferred pending completion of delayed work.

3. Delays in contracting new work, and subsequent delays to new and existing work due to COVID-19 (all delays previously identified and discussed by MRGG at the June 2020 meeting) make it imperative research teams move quickly in implementing their research programmes in 2020/21, and that where required this is supported by efficient process and swift decision making by Challenge Support /ELG/MRGG and where appropriate, the MW Board.

4. Manaaki Whenua has implemented a new finance system (NetSuite). This necessitates changes in reporting (the tables below are the last which will be produced under the old finance system), and I am working with the accountants on what and how we report going forward.

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NZ Biological Heritage National Science Challenge - Tranche II
Finance - Research Support, Governance, and Management Detail
For the Period Ended 30 June 2020

	Actual YTD June 2020	Budget YTD June	Variance to Budget (+) Over / (-) Under spend	Comments
Research Tranche 2				
IMPACT 1 - Whakamana | Empower	555,513	929,600	(374,087)	SO2 not fully allocated, doing prelim work but no lead contact established
IMPACT 2 - Tiaki | Protect	902,152	1,097,600	(195,448)	SO4 not contracted.
IMPACT 3 - Whakahou | Restore	687,705	929,600	(241,895)	SO6 starting smaller, ramps up in FY20/21
Strategic Initiatives & Supporting Architecture	91,337	170,000	(78,663)	
Research yet to be allocated (c. 20%)	-	449,200	N/A	All research for year fully allocated (hence $Nil YTD actual)
Director Discretionary (944009-0002)	92,206	150,000	(57,794)	COVID-19 delayed some work, some allocations not payable until next FY
Contingency/Yet to allocate	-	25,000	N/A	
Sub Total Research Tranche 2	**2,328,913**	**3,751,000**	**(947,887)**	
Support				
- Research Support Team (0301)	273,543	325,487	(51,944)	
- SLG (0401)	267,220	383,784	(116,564)	Delayed leadership appointments (Innovation Strategist)
- BH Leadership (Exec) (0403)	256,636	413,657	(157,021)	Shifted Co-Director to Management
Sub Total Support	**797,399**	**1,122,928**	**(325,529)**	
Sub Total Research and Support	**3,126,311**	**4,873,928**	**(1,273,417)**	
Science Engagement (Outreach)				
- Communications (0501)	19,232	362,000	(342,768)	Delayed Strategic Partnerships Mgr appointment (and less operating)
- Engagement/KBs (0502)	280,556	317,907	(37,351)	
Sub Total Engagement (Outreach)	**299,788**	**679,907**	**(380,119)**	
Governance and Management				
- Challenge Governance (0201)	193,498	200,900	(7,402)	Costs came back within budget due to less travel due to COVID-19
- Management (0101)	446,348	331,371	114,977	Moved Co-Director to management budget
Sub Total Governance and Management	**639,846**	**532,271**	**107,575**	
GRAND TOTAL TRANCHE 2	**4,065,945**	**6,086,106**	**(1,545,961)**	

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Nga Rakau Taketake (NRT) Surge & SSIF Funding
Finance - Research Support, Governance, and Management Detail
For the Period Ended 30 June 2020

	Actual YTD June 2020	Budget YTD June (100%)	Variance to Budget (+) Over / (-) Under spend	Comments
Research				
NRT Committed	3,600,931	1,359,852	2,241,079	MBIE defered $3.5m of 2019/20 SSIF funding to smooth profile. Funds allocated to NRT Goals, and $2.3m received FY19/20 to be carried forward to future years. Additional $600k FY20 pending payment.
NRT Yet to be allocated	-	8,802,400	(8,802,400)	
Sub Total Research	**3,600,931**	**10,162,252**	**(6,561,321)**	
NRT Research Support				
- NRT Research Support	25,934	80,234	(54,300)	
- NRT Science Leadership	254,783	282,373	(27,590)	
Sub Total Support	**280,718**	**362,607**	**(81,889)**	
Sub Total Research and Support	**3,881,649**	**10,524,859**	**(6,643,210)**	
NRT Comms & Engagement (KBs)				
- NRT Science Communications	84,922	86,753	(1,831)	Split some operating & contingency between Challenge and NRT
- NRT Engagement	93,197	119,310	(26,113)	Extended KB contract, increased allowance for travel.
Sub Total NRT Comms & Engagement	**178,119**	**206,063**	**(27,944)**	
GRAND TOTAL	**4,059,768**	**10,730,922**	**(6,671,154)**	

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Challenge Update from the Director and Kaihautū Ngātahi

Purpose

The purpose of this paper is to provide Mana Rangatira with an overview of Challenge Tranche 2 (T2) progress including *Ngā Rākau Taketake* (NRT).

Overview

Key areas of progress since the previous meeting:

- Most Annual Workplans (AWPs) completed for T2 and NRT and out for international peer review; 8 ready for formal approval of FY21 from Mana Rangatira; two making slower progress but with plans in place to address delays and take advantage of emerging opportunities.
- Appointment processes in train for new Challenge Director and Executive Leadership Group (ELG).
- Appointment of two new Mana Rangatira (MRGG) members; induction completed mid-July. We would like to take the opportunity to thank Devon and Kevin, and say nau mai, haere mai to Edward and David.
- Challenge Parties updated on progress in T2 and NRT via their regular 6-month meeting in June.
- Approval by Manaaki Whenua Board of investment for NRT and T2 to 2023 and 2024 respectively.
- Met with the International Science Advisory Panel (ISAP) to welcome new members, update them on progress in T2 and NRT, and outline our expectations around the peer-review process for AWPs.
- Formal meetings between the Director/Kaihautū Ngātahi, other members of the leadership team and Knowledge Brokers, and DOC's and MPI's leadership teams held, with key areas of alignment agreed and points of contact identified; numerous other Challenge/NRT team meetings and hui held with a range of central and regional government agencies and key industry stakeholders.
- Several 'community hui' held online to build momentum and strengthen communications around the NRT investment.
- FY20 Stakeholder surveys completed for Challenge T2 and NRT ***Appendix 1***.
- In preparation for MBIE reporting in October, co-investment analyses in progress for T2 and NRT including seeking information from Challenge Parties on aligned research for a 5th consecutive year.
- One Ngā Rākau Taketake newsletter and one Challenge newsletter produced.
- **Two decisions/approvals at this meeting**: (1) approval of 8 Annual Workplans (this paper) and (2) an 'in principle' agreement (or otherwise) for the Challenge to work with DOC to help administer their 'Farms as Barriers' investment as part of their Predator-Free 2050 Strategy and Action Plan ***Paper 2020/08/08***.

MRGG Approval of Annual Workplans

Background and context

The first two paragraphs of this section provide context and background for new MRGG members.

Scoping and design of T2 and NRT investments began prior to completion of T1, with the aim of implementing the 2019-2024 Strategy that was signed off by MBIE in late 2018. Scoping and planning began in March 2019, and was largely completed by December 2019. The scoping and design phase was followed by an establishment phase which began in early 2020, aimed at finalising the planned research programme for the remainder of FY20, and for FY21. Progress in the establishment phase was not as heavily impacted by COVID as we had foreseen, but there were some delays pending formal approval for the research investments by the Manaaki Whenua Board which have now been resolved.

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Research teams are structured around seven Strategic Outcome (SO) areas in the Challenge T2; seven Themes in NRT; and a number of investments into 'Pou', or supporting architecture, that are smaller research investments designed to support or underpin the overall portfolio of work across the Challenge and NRT. Strategic Outcome 5 (novel tools and strategies) is split into three parts that address different aspects of border biosecurity and post-border pest management.

Recent progress

The final steps in the establishment phase for each research team have culminated in delivery of an Annual Workplan (AWP). Each team's AWP is expected to contain enough research detail for the upcoming year (FY21) such that it can undergo peer review by the Challenge's International Science Advisory Panel (ISAP). Most teams are now at various stages of peer review. Eight AWPs have now received international peer review. Four are currently out for review. Two will be submitted for review in the next two weeks. Two have not yet been completed for various reasons which we cover below, and one (the biosecurity Hub) is a small, fast-fail investment that is currently operating more as a Pou (supporting architecture) and for $120K pa, we are not currently recommending a full peer review.

At the June 2020 MRGG meeting, it was agreed that we would provide MRGG with the following:

1. Dashboard summary of progress through the establishment phase towards delivery of an AWP by each team (linked to records management in the background for auditing purposes);
2. Synthesis of reviews provided by the ISAP and by independent member(s) of the leadership team, along with recommendations as to how each team should proceed such that the MRGG can provide formal feedback and (conditional) approval for the annual programme of work in FY21;
3. Further clarity on how research detail outlined in the AWPs tracks towards delivery of the KPIs the Challenge has already agreed with MBIE, and through a series of Critical Steps to creating impact by delivering on the 2024 goals in the Outcomes Frameworks for T2 and NRT.

The information below is currently a mix of 'progress to creating impact' and 'record management'. This is because we are in the final stages of developing a new process and the MRGG needs to complete the last step (approve AWPs for the coming year).

We will give a presentation at the meeting to provide clarity and oversight of the close-off of the establishment phase, and turn everyone's attention to future progress towards the 2024 goals as the teams bed down (something we have collectively aspired to for some time now).

Key documents

The easiest way to gain an overview of progress is to navigate through a set of key documents starting at 'big picture' and working down to 'research detail'. For new MRGG members: this is the first time we have presented the information in this way because until recently the research teams have been focused on finalising AWPs. We now have all the information needed to put all the pieces together. The aim is to provide clear line-of-sight from the detail of daily research activities through to long-term impact.

The **Outcomes Frameworks** - ***Paper 2020/08/05*** are esentially the Challenge's Theory of Change. They provide a big picture overview of the Impacts and Strategic Outcomes, as well as the 2023 (NRT) and 2024 (T2) goals each team is aiming for. They also outline one Critical Step per year for each investment area (T2 Strategic Outcome or NRT Theme). Symbols/numbers on the Framework documents indicate areas of activity that contribute to the Challenge's Key Performance Indicators (KPIs) by research teams. The Outcomes Frameworks are important documents for MRGG because of a long-standing Challenge aspiration to create real-world impact from our investments.

KPIs – *Appendix 2* KPIs for both T2 and NRT were agreed with MBIE prior to signing of the head contracts with the Host organisation. During the establishment phase, members of the leadership team made sure that research teams were focusing planned research activities on the KPIs. We will report more fully on progress towards the KPIs during MBIE reporting in October. While to some extent the KPIs could be regarded more as compliance documents, the MRGG and leadership team have previously

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worked hard to ensure that Challenge aspirations and MBIE's compliance reporting are as closely aligned as possible; we can discuss this further during the meeting.

'At-a-Glance' summary information – ***Appendix 3*** for each investment area. These tables provide dashboard-level information on the co-leads including Māori representation and gender balance, identify key stakeholders, and provide links to online information for each SO and Theme. These will be updated regularly as dashboards using standard 'red, amber, green' colours.

Progress Tracker (next page). This document summarises each team's steps in the establishment phase; it is envisaged that the Challenge will only need to complete all steps once, and thereafter (on an annual basis) only the last 1-2 steps on the progress tracker will be completed and approved by the MRGG.

Summary of records management for audit purposes: (for new MRGG members) in recent months the Manaaki Whenua (Host) Board's audit & risk committee undertook an audit of the Challenge documentation to ensure that the MRGG had satisfactory oversight of the Challenge's investment decision-making. The Audit Documentation has recently been updated to reflect recent progress. (Note: the hyperlink to this document currently only works for the MRGG co-chairs; we can make it available for any MRGG members if requested).

Synthesis documents – ***Appendix 4*** summarising the ISAP peer reviews (compiled by Chief Scientist Privacy of natural persons and the chair of the ISAP Privacy of natural persons) and recommendations to MRGG from the leadership team. The synthesis documents are a key decision point for MRGG and we expand below on the decisions needed.

The co-Chairs requested that we take the time to familiarise everyone with the above documentation during the meeting so that we get the collective governance insights needed. Going forward the aim is to present just two documents to MRGG on a regular basis: the **Outcomes Frameworks** and the **'At-a-Glance' Dashboard** of progress towards Critical Steps. Progress information is obtained from each research team quarterly, and it is also used in reporting to MBIE.

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Progress tracker as of 29 July 2020

- Completed
- In progress and on track – live right now
- On track with issuse being addressed – live right now
- Tracking towards
- Off track/escalate to MRGG
- Step not needed

CHALLENGE	Scoping	ISAP Review Scoping Report	Director & SLG review and Goals prioritised	Goals prioritised and budget allocated	Lead Provider & Co-Leads identified	Summary/nominal budgets approved by MRGG	MWLR Board approve Initial budgets/Contract progressed	SLG work with Co-leads to build teams	MWLR Board approval for full budgets to 2022/23	SLG approved AWP and sent for ISAP review	Communications, engagment and IP plans completed	ISAP reviewed AWP summarised for MRGG	MRGG approve AWP synthesis	Full contract Variations	AWP Annual Refresh (subsequent years)	Notes
					Team construction underway			AWPs being drafted								
								Comms/Engagement plans in progress								
SO1 - BioHeritage Scorecard																
SO2 - Empowering Kaitiakitanga																
SO3 - Risk Framework																
SO4 - Surveillance																
SO5 - Inverts																
- Mammals/PF2050																
- Hub																Pou - no formal peer review
SO6 - Ecosystem Regeneration																
SO7 - Governance Policy																
NGA RAKAU TAKETAKE																
Theme 1 - Oranga																
Theme 2 - Mobilising for Action																
Theme 3 - Risk Assessment																
Theme 4 - Surveillance (MMSF)																
Theme 5 - Tools																
Theme 6 - Host Pathogen																
Theme 7 - Conservation Restoration																
POU																
Crazy & Ambitious Think Tank																

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Synthesis and recommendations for FY21 Annual Workplans

It was always envisaged that MRGG would provide the final approval of each team's AWP. However, at the June meeting we discussed the level of detail needed because each (20-30-page) AWP contains considerable detail: too much for governance oversight. Hence MRGG approved a template for the Support and leadership teams to 'synthesise' (1) the ISAP peer reviews and commentary from the ISAP chair and the Chief Scientist; (2) feedback from the leadership team; and (3) our recommendations based on the aggregated feedback. Each synthesis document is intended as a 'one stop shop' for the MRGG and subsequently the research teams. There is one synthesis document for each SO or Theme investment area (with the exception of SO5 as noted above).

At the previous meeting we also agreed that teams should continue their work (e.g. subcontracting; finalising team members; continuing research or getting it underway) whilst still enabling final 'approval' by MRGG. Challenge/MRGG recommendations will be implemented through the contracts we hold with lead providers: each team must address our collective recommendations during Q1 reporting, which is due to the Challenge at the end of September, and once we are satisfied that the recommendations have been addressed a minor variation to the lead contract will be completed. We have the option of witholding payment if our recommendations are not addressed. Once completed these steps will conclude the establishment phase of T2, and from now on the process of annual approval of AWPs for the coming years should be straightforward.

Approval needed: we are seeking MRGG approval of 8 AWPs based on the recommendations in the synthesis documents in ***Appendix 4***. For the next group of AWPs, we hope to undertake the same process of MRGG approval via email.

Some common themes have already emerged during the peer reviews, mainly because no one reviewer had oversight of the entire portfolio of work across the Challenge and NRT. Common themes included:

- How a team might address issues around data stewardship, integration, sharing and re-use;
- High ambition for an individual team's research relative to resourcing;
- Whether the case studies or sites chosen were the 'right' ones and whether the 'right' people were involved as local champions;
- How collaborative processes work in practice and who will help broker the relationships needed;
- Whether teams have devoted enough attention and resourcing to capability building e.g. for early-career researchers and emerging Māori researchers or leaders;
- The need to better clarify critical gaps across the innovation pathway, where Challenge investment will be the game-changer.

To some extent the generic issues raised by the international reviewers have validated our strategic approach of investing in 'Pou' or supporting architecture, as the Pou are explicitly designed to support T2 and NRT investments. The Director, Kaihautū Ngātahi, and Chief Scientist will meet with the ISAP in late August to discuss Challenge-wide opportunities for synthesis once all the peer reviews are completed.

For teams that are delayed

Currently there are two teams with delayed delivery of AWPs, each for similar reasons.

T2 Strategic Outcome 2 (Stewardship & Kaitiakitanga). The Challenge leadership team were not comfortable with the 2019 Scoping Panel Report for this SO, so we appointed two interim leads to refine the programme of work and develop an AWP. This was delivered at the end of June 2020, but the leadership team were still not comfortable recommending to MRGG that the proposed research should be funded. We sought informal peer review from independent national and international colleagues, which confirmed our concerns that AWP had failed to build on T1 research and was not integrated with other T2/NRT research. On that basis are working to appoint new co-leads and build a different team, which will meet in mid-September to finalise a work programme for this SO. While it is disappointing

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that this work has not moved more quickly, the delay does present significant opportunites for better integration across the Challenge and NRT, which we can discuss.

T2 Strategic Outcome 4 (Surveillance). MRGG will recall that while the leadership team were generally comfortable with the Scoping Panel Report tabled in 2019, it was extremely ambitious for the funds available. Work was also needed to ensure that this work leveraged, and did not duplicate, the Mātauranga Māori Surveillance Framework (Theme 4) in NRT. The leadership team and Knowledge Brokers have been working to identify the right co-leads and finalise the team. In the interim, several strategic opportunities have emerged that need to be taken into account to ensure this work is better-placed to leverage off system-wide activity. These include: (1) an assessment of internal biosecurity and biodiversity capability by DOC, with early indications that they are keen to dovetail that internal work in order to leverage connections with surveillance research; (2) a planned 'biosecurity mission' with the SfTI (Science for Technological Innovation) NSC, with a workshop scheduled for 9 September and which will include a focus on surveillance technologies; and (3) a planned proposal for a new 'biosecurity cluster' by Privacy of natural persons (University of Canterbury) that has a specific focus on biosecurity surveillance and would provide significant opportunities to tap into a range of expertise including engineers, social researchers, data science, computing and forest health, and access to summer students and postgraduates. The plan is for this team to meet in mid-September to finalise a work programme.

Stakeholder surveys – Challenge T2 and NRT

In preparation for October reporting, two stakeholder surveys have been completed: one for the Challenge T2 (run by MBIE) and one for NRT (which the Challenge SLG developed and completed ourselves). Both surveys are in ***Appendix 1***.

For T2, the survey results were very good, with some clear areas for improvement. Key recommendations for creating impact from the 9 stakeholders (4 Māori, 5 non-Māori) surveyed were:

- Make sure relationships (with stakeholders) continue beyond the immediate piece of work
- Clarity around how the Challenge is helping key partners across New Zealand work together to achieve the mission
- Include a broader range of people to define the science that is needed to produce applicable outputs and innovation
- Clearer thinking around how best to link science with policy
- Beware of complacency around Māori engagement – still a long way to go
- More funding for hapū-make sure it has an impact on the ground

Results from the NRT survey are still preliminary, because members of the leadership team are following up the online survey with phone calls to Māori respondents who often prefer to speak to a human. Results are presented a little differently but the overall picture was similarly positive:

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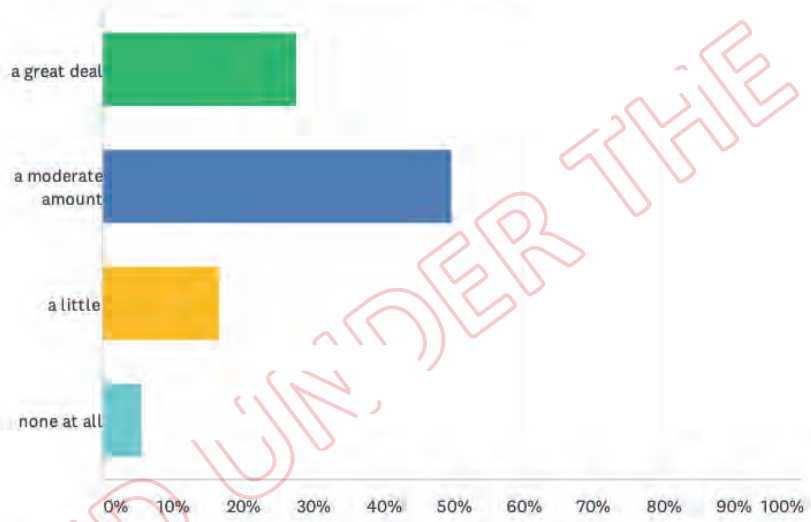
Q9 How much confidence do you have in NRT in terms of connections made with essential stakeholders?

Answered: 18 Skipped: 0



ANSWER CHOICES	RESPONSES	
a great deal	27.78%	5
a moderate amount	50.00%	9
a little	16.67%	3
none at all	5.56%	1
TOTAL		18

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Other activities

Aligned research: Challenge Operations Manager Privacy of natural persons has been working with the Challenge Parties to obtain a 5th year of information on aligned research activity. He has also been updating our visualisations of aligned research ready for MBIE reporting. More importantly, these infographics open the door to discussions with Challenge Parties about potential capability and/or active areas of research aligned with the Challenge. Infographics and more commentary is provided in ***Paper 2020/08/08***.

Report on 2019 scoping and design process: several organisations expressed an interest in learning more about the 2019 Scoping Process conducted by the Challenge. This is because there is an internationally-recognised need to build and run excellent and transparent collaborative processes, but relatively few 'good' examples of how collaborative processes can work in practice to achieve transformational change. Manaaki Whenua social scientist Privacy of natural persons was commissioned to observe the process and produce a report summarising insights. A draft of the report has been tabled with the Director and Kaihautū Ngātahi, and it makes for fascinating reading. Delivery of the final report has been delayed due to COVID but will be available at the end of July. This will be a major output for FY20 MBIE reporting and Privacy of natural per intention is to publish a paper in a peer-reviewed journal.

Strategic relationship building with key agencies: the Director and Kaihautū Ngātahi, as well as Knowledge Brokers and other members of the Challenge leadership team, have planned or completed several meetings with industry groups and agencies including Tauranga Moana Biosecurity Capital; the Forestry sector; MfE; DOC; LINZ; MPI and Regional Councils. This work is ongoing and once the Strategic Relationships Manager is appointed, it is envisaged that they will ease the burden on the Director and Kaihautū Ngātahi. A potential targeted approach is discussed further in ***Paper 2020/08/08***.

The **CRI review** was completed in July and contains important recommendations about how CRIs could work to reduce silo behaviour and focus on strategic goals. It may be worth a discussion with the MRGG

about how the NSCs have worked to drive culture change within organisations, and thus how we are placed to help address some of the recommendations in the review if asked.

Members of the Challenge leadership team, including the Kaihautū Ngātahi, were major contributors to the **Rauika Māngai Report**, which provides insights from a cross-Challenge group of Māori leaders on the realities of implementing the Vision Mātauranga policy. The BioH NSC is looked at as a leader in this space, which we cover in more depth around WAI-262 in ***Paper 2020/08/09***.

Related: the Director and Kaihautū Ngātahi were invited by the University of Auckland to present a **webinar** on A Treaty-Based Approach to Creating Impact as part of an 'Impact through culture change' webinar series. The presentation had over 200 online attendees (including from Australia and the UK).

Priority areas of activity over the next two months

- Finalise remaining AWPs and establish a process for MRGG approval 'out of session'.
- Bed down research activities across all T2 and NRT teams, with a focus on targeted stakeholder engagement and building system alignment.
- Compile material for annual MBIE reporting (deadline delayed by MBIE to 31 October 2020). First drafts of both T2 and NRT reporting should be ready for approval by MRGG at the October meeting.
- Complete ELG interview and appointment process, and make recommendations from the leadership team to MRGG for the preferred candidates for the three roles.
- Negotiate co-investment (see ***Paper 2020/08/09***).
- Appointment of new Challenge Director.
- SfTI Biosecurity Mission (9 September).
- Cross-Challenge wānanga (14-15 September). At the wānanga all co-leads, Knowledge Brokers and ELG will convene to share early progress, identify opportunities for integration of research activities across SOs and/or Themes, and complete a 'sense check' of how T2 and NRT are tracking to deliver FY21 KPIs and Critical Steps). As noted above there will be associated wokshops to refine AWPs for SOs 2 and 4 as well as some of the Pou (supporting architecture investments).

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Building co-investment around the Challenge and Ngā Rākau Taketake

Purpose

The purpose of this paper is:

- To appraise Mana Rangatira of the research investment landscape around the Challenge T2 and NRT, and outline early plans to seek co-investment to support delivery of 2023/4 goals.
- (In response to an approach from the Department of Conservation): To seek agreement in principle from Mana Rangatira to work with DOC to administer their 'Farms as Barriers' investment under the PF2050 Strategy and Action Plan, as an example of how co-investment can work in practice.

In this paper, when referring to co-investment around 'the Challenge' we mean both the Tranche 2 envelope and Ngā Rākau Taketake.

History of Challenge and the innovation pathway

In Tranche 1 of the NSCs, the BioHeritage Challenge had a KPI to quantify 'aligned research' – primarily non-Challenge research investments from our Challenge Parties aligned with the Mission (see aligned research section below for more detail).

One of our earliest observations was that the annual quantum of aligned research investments was an order of magnitude greater than the Challenge's per-annum funding. For example, in the 2015/16 Financial Year, the Parties aligned $55M worth of research; at the time the Challenge envelope was c. $5M pa. This observation was one of the factors in the Challenge's decision to try something different in T2: the 'collective impact' approach by seeking co-investment from partners. Coupled with significant related investments in the 'innovation system' of Aotearoa (e.g. by PF2050 Limited; operational research in regional and national government agencies; and by iwi/Māori entities), we recognised a significant opportunity to use Challenge funding to drive a more 'joined up' approach to achieving aspirational national goals.

The Challenge strategy for T2 consequently has a focus on using Challenge investment to leverage and align the efforts of others to focus on common goals under the 'Empower, Protect, Restore' impact framework. A critical part of the strategy is the **innovation pathway** – a visual representation of how we can plug gaps and invest where we can add the most value in order to de-fragment the science system and drive scale and alignment around seven Strategic Outcomes (and seven Themes in Ngā Rākau Taketake):

Building scale and alignment around Challenge (and NRT) investments requires strong negotiating skills and relationship building, and a solid understanding of annual business planning processes in both science organisations as well as key government agency and industry groups and Māori entities.

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Until recently, the interim SLG has been focused primarily on coaching research teams in development of Annual Workplans. Whilst identifying and building relationships with key stakeholder groups has been a major part of AWP development, there is still much work to do to build scale and alignment around Challenge investments. New appointees in the Challenge ELG (particularly the Innovation Strategist and Strategic Relationships Manager) will significantly boost our capacity to do this, and coupled with a strong team of Knowledge Brokers as well as the strategic relationships and networks held by the Challenge Director and Kaihautū Ngātahi, we are now well set up to put significant effort into building co-investment over the next 12 months.

Definitions: what do we mean by co-investment?

For the purpose of this paper we build on the definitions used by MBIE in Tranche 1 (especially for cash co-funding and aligned research), but add additional types of investment that we defined in the 2019-2024 strategy. The latter is important because it recognises that a wide range of different types of investment can be brought to bear if they are focused and aligned around common strategic priorities. It also fits with the Challenge values of recognising that many different forms of knowledge or effort can (and should) contribute in order to create transformational change for the environment of Aotearoa: not everyone has cash to invest and especially not in a post-COVID world.

We recognise the following types of co-investment:

Co-investment type	Examples
Cash co-funding (MBIE definition)	Direct cash contribution to complement Challenge investment and contribute directly to Outcome/Theme goals
Aligned research (MBIE definition)	Research investment funded from elsewhere e.g. Royal Society; MBIE Endeavour Fund but contributing directly to Challenge goals
Data	Special subset of aligned research but needs to be quantified in own right because it is a major contributor to additionality
Mātauranga	Knowledge that complements Challenge investment and contributes directly to Challenge goals
Other knowledge or expertise	From for example regional council; tech sector or other non-Challenge Party - complements Challenge investment and contributes directly to Challenge goals
In-kind capability	(e.g. project management support; Māori technical expertise; or individual funded by their employer to contribute to Challenge investment) that complements Challenge investment and contributes directly to Challenge goals
Study areas/sites	Predator-Free landscape-scale sites
Infrastructure	Laboratory infrastructure in Challenge Parties

Qualitative assessment of current levels of co-investment

One of the limitations of quantifying aligned research from Challenge Parties in Tranche 1 was that it was low risk to the Parties to align significant amounts of funding 'on paper': the Challenge cannot control the direction of these investments directly. Millions of dollars of research investments were therefore 'aligned' over a four-year period (see next section). However, in practice only a fraction of this quantum was 'actively aligned' – i.e. contributing directly to Challenge goals.

For Tranche 2, the aim is to take a more proactive approach to co-investment, so we have a KPI on 'active alignment' of research activity by Challenge Parties and others, with the following target: "*Demonstrate an increase in 'active' alignment of research investments and/or in-kind contributions focused on Strategic Outcome areas*". The baseline for this target is set in FY20. This means that by the end of October 2020, we need to report on progress towards this KPI.

Significant work by the Directors and SLG, Support Team, and Knowledge Brokers is thus underway to build a picture of active alignment. Building from the bottom up, we work proactively with each research team to help them build relationships (where needed), seek co-funding and/or in-kind contributions, introduce them to new stakeholders, and work in partnership with tangata whenua to ensure that Mātauranga is valued and protected as part of that process. The tables below are a (currently highly qualitative) assessment of actively aligned work. Over the next two months (in time for October

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reporting) the aim is to better quantify aligned effort across all SOs and Themes. It may not be possible or appropriate to quantify all of it in dollar terms (e.g. Mātauranga); nonetheless this assessment will both provide the baseline for FY20 as well as establish a process to capture relevant information for FY21 and beyond.

The bottom up approach is complemented by a 'top down' tactic: conversations by the Director, Kaihautū Ngātahi, and MRGG with senior executives and board members across a range of partner agencies to identify system-level opportunities for strategic alignment. As noted above, boosting ELG capacity to have these strategic conversations through the Innovation Strategist, Tiriti Relationships Manager, and Strategic Relationships Manager will be an important step forward for the Challenge. It may also be possible over the next four years to turn such conversations into formal partnerships or agreements beyond the Collaboration Agreement with our Challenge Parties.

As a reminder, it is not possible for the Challenge to benefit directly from co-investment; cash co-funding for example benefits one of the Challenge Parties or another partner. This is an important selling point for the Challenge as a trusted and neutral broker in building system-wide alignment in order to create collective impact, rather than being viewed as another competitor in an already-fragmented science system.

Challenge Tranche 2

Co-investment type	Examples	SO1 Scorecard	SO2 Stewardship Kaitiakitanga	SO3 Values-Based Risk Framework	SO4 Surveillance	SO5 Biosecurity Hub	SO5 Invertebrate Tools	SO5 Support PF2050	SO6 Ecosystem Regeneration	SO7 Governance & Policy
Cash co-funding (MBIE definition)	Direct cash contribution to complement Challenge investment and contribute directly to Outcome/Theme goals	✓		✓			✓	*$1.6m(ZIP) + $150k (MWLR)*	*$200k*	✓
Aligned research (MBIE definition)	Research investment funded from elsewhere e.g. Royal Society; MBIE Endeavour Fund but contributing directly to Challenge goals	✓		✓		✓	✓	✓	✓	✓
Data	Special subset of aligned research but needs to be quantified in own right because it is a major contributor to additionality	✓		✓		✓			✓	✓
Mātauranga	Knowledge that complements Challenge investment and contributes directly to Challenge goals	✓		✓		✓	✓	✓		✓
Other knowledge or expertise	From for example regional council; tech sector or other non-Challenge Party - complements Challenge investment and contributes directly to Challenge goals	✓		✓		✓	✓	✓	✓	✓
In-kind capability	(e.g. project management support; Māori technical expertise; or individual funded by their employer to contribute to Challenge investment) that complements Challenge investment and contributes directly to Challenge goals	✓		✓		✓	✓		✓	✓
Study areas/sites	Predator-Free landscape-scale sites	✓				✓		✓	✓	
Infrastructure	Laboratory infrastructure in Challenge Parties					✓	✓	✓		

Key:

✓	potential organisation/individual/group mentioned
✓	Investment type mentioned but not organisation or individuals

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Ngā Rākau Taketake								
Co-investment type	**Examples**	**Theme 1 Oranga**	**Theme 2 Mobilising for Action**	**Theme 3 Risk Assessment**	**Theme 4 Integrated Surveillance**	**Theme 5 Control, Protect, Cure**	**Theme 6 Host Pathogen Environment**	**Theme 7 Conservation & Restoration**
Cash co-funding (MBIE definition)	Direct cash contribution to complement Challenge investment and contribute directly to Outcome/Theme goals	✓	✓		✓	$210K $30K	✓	$260K $300K
Aligned research (MBIE definition)	Research investment funded from elsewhere e.g. Royal Society; MBIE Endeavour Fund but contributing directly to Challenge goals	✓				✓	✓	
Data	Special subset of aligned research but needs to be quantified in own right because it is a major contributor to additionality				✓			
Mātauranga	Knowledge that complements Challenge investment and contributes directly to Challenge goals	✓	✓	✓	✓	✓	✓	✓
Other knowledge or expertise	From for example regional council; tech sector or other non-Challenge Party - complements Challenge investment and contributes directly to Challenge goals	✓	✓	✓	✓	✓	✓	✓
In-kind capability	(e.g. project management support; Māori technical expertise; or individual funded by their employer to contribute to Challenge investment) that complements Challenge investment and contributes directly to Challenge goals	✓	✓		✓			✓
Study areas/sites	Predator-Free landscape-scale sites	✓	✓	✓	✓	✓	✓	✓
Infrastructure	Laboratory infrastructure in Challenge Parties	✓			✓	✓	✓	✓

Current landscape: aligned research

Although we noted above that we are moving away from quantifying aligned research just in dollar terms, obtaining this information from Challenge Parties has other benefits. For example, spreadsheets containing detailed information on hundreds of research programmes and projects across 18 organisations were shared (with permission) with scoping teams during the design phase in 2019, enabling them to identify groups doing research they otherwise would have had no oversight of. Such system-level information is not captured elsewhere in the science system (although MBIE are working on better processes to formally capture data on their research investments) and indeed it is often closely guarded due to a competitive systemic culture.

We have also found that visualising the information provided from the Challenge Parties has been one of the most powerful tools available to us to demonstrate the degree of system fragmentation and the total quantum of investment around the Challenge and discuss it with interested partners. Visualising the system in this way helps potential partners understand the value-add from Challenge investments.

For both these reasons, Challenge Operations Manager s 9(2)(a) is currently working with Challenge Parties to capture data on aligned research for FY20. He has also visualised the first 4 years of aligned research from Tranche 1. We include it here partly for new MRGG members. The first diagram captures funding sources, research providers, and total quantum of aligned research over a 4-year period:

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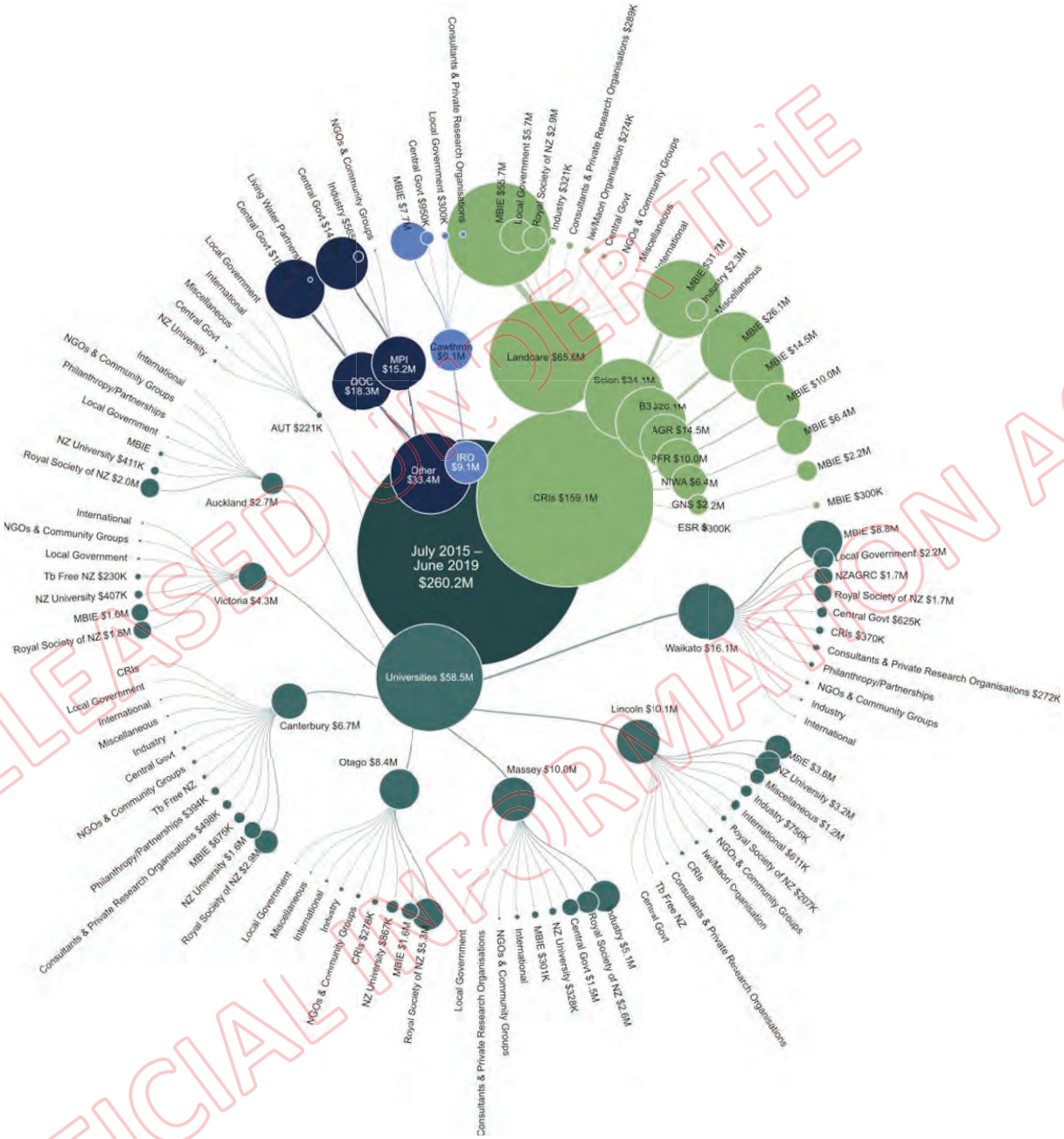

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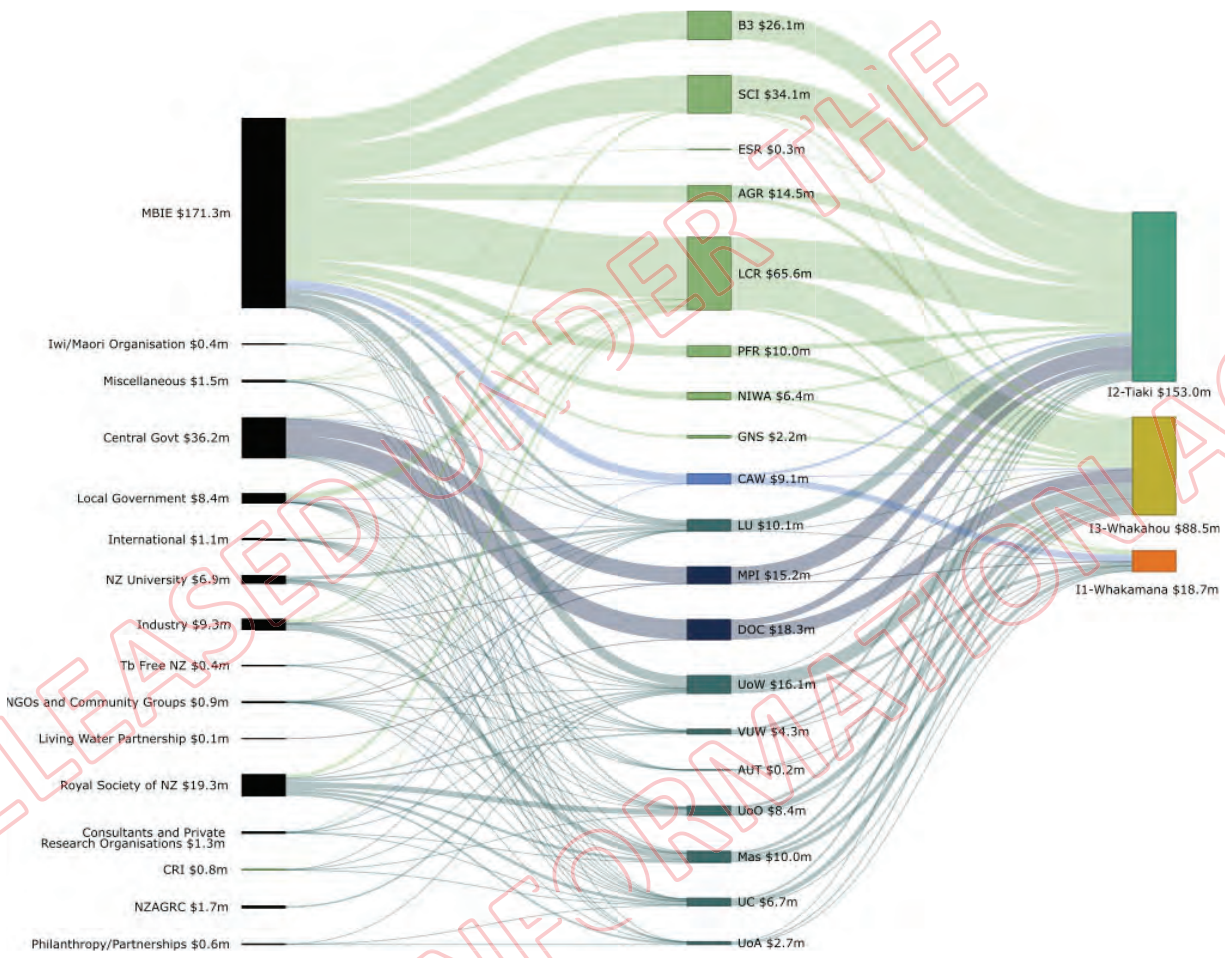
Similarly, a diagram of funding flows quantifies relative investment into the Challenge's three impact areas:



This visualisation is important because at a high level it highlights gaps and opportunities for the Challenge to invest. For example, we have known for some time that system-wide investment into Impact 1 (Whakamana) is lower than Impacts 2 or 3, yet investment into that impact area was often identified as a high priority by stakeholders during consultation when we were developing the T2 strategy.

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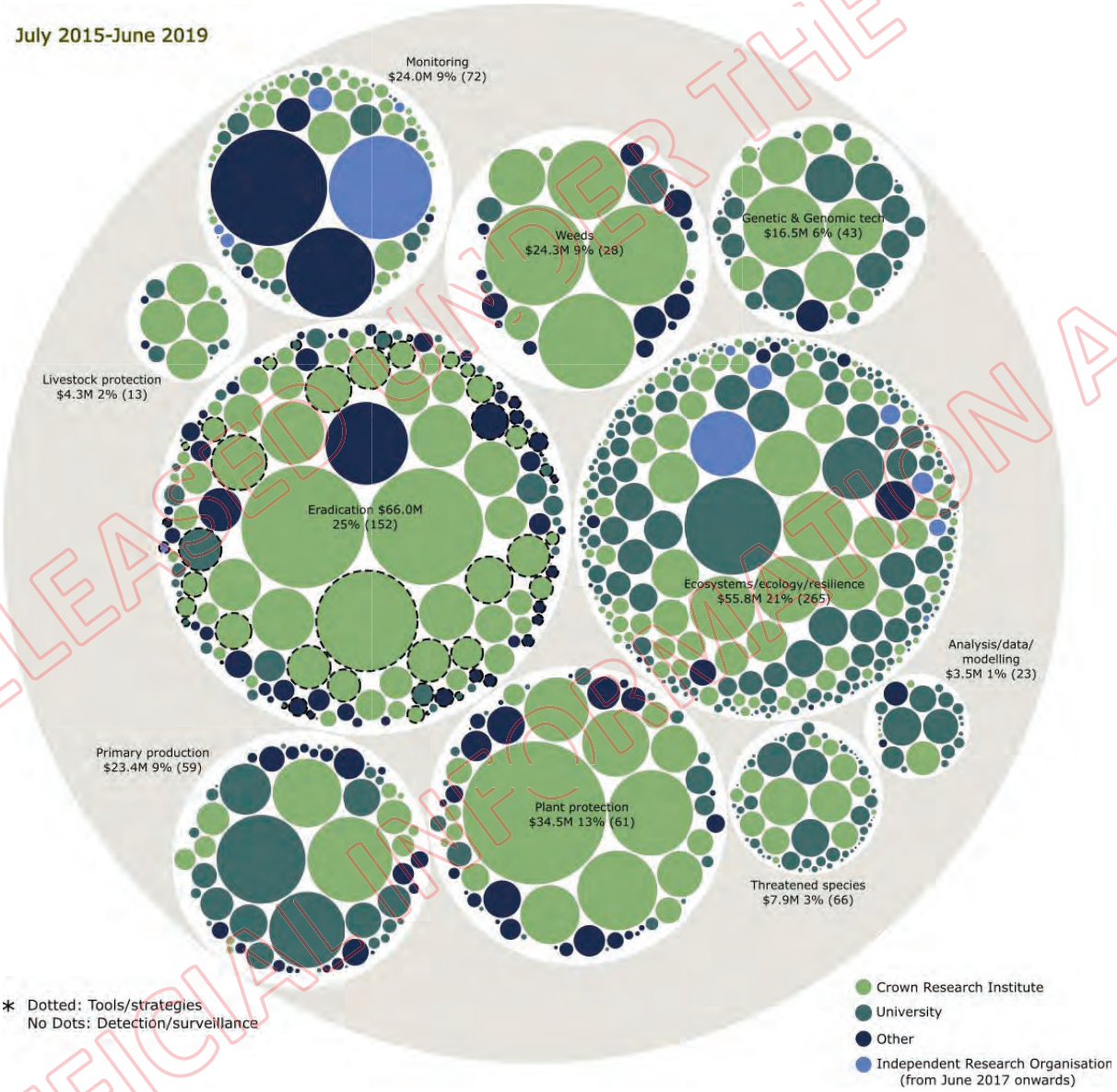
We can also break down funding into different research fields. For new MRGG members: each 'bubble' represents a single research programme or project. This infographic begins to highlight the degree of fragmentation in the innovation system.



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Overall, capturing information on aligned research from our Challenge Parties is an important starting point for strategic conversations, as well as helping our research teams identify who they should be talking to – both important steps towards 'active alignment' of research activity around the Challenge goals and towards addressing Challenge KPIs.

Current landscape: cash co-funding and other forms of co-investment

In Tranche 1, and so far in Tranche 2, cash co-funding from stakeholders other than the Challenge Parties is minimal (see tables). Not surprisingly, current cash co-investments are mainly around T2 SOs and NRT Themes that are investing in novel tools and technologies, but there are early indications of potential investments in restoration activities in both T2 and NRT. This area is a work in progress: all the teams are still actively negotiating cash co-investment, or seeking alignment through other activities.

That said, the qualitative assessment of current levels of co-investment does give us an indication of where we need to target our efforts over the next 12 months and we discuss this in the 'next steps' section below. We should have a clearer picture of the quantum of co-investment in time for T2 and NRT reporting at the October MRGG meeting.

Impact of COVID on potential co-investment opportunities

The Challenge hosted several hui with research partners, stakeholders, and tangata whenua through the lockdown and coming down the various COVID levels to gauge how COVID was impacting the sector. Undoubtedly, COVID has had major impacts in some areas, especially in government agencies which have been required to slash budgets. There is consequently increased pressure on the Challenge – particularly around Ngā Rākau Taketake – to invest in operational research that these organisations may have otherwise funded, rather than being receptive to co-investment.

Further, in previous MRGG meetings we have heard from Challenge Party observers just how much pressure the science sector is facing, with declining revenue streams exacerbating a competitive research culture and having disproportionate effects on early-career and Māori researchers. This pressure is likely to start to bite over the coming months as research organisations seek to further reduce overhead costs (we highlight this in the risk register). This is unlikely in the short term to impact on the quantum of aligned research identified by the Challenge Parties, but will likely be felt in other areas. For example, New Zealand science may face capability or capacity shortages, and there may be a heightened perception of the Challenge as a threat or a competitor instead of a potential avenue to help them create impact

Consequently, across the Challenge and NRT we interact with individuals and groups who, due to COVID, face significant uncertainty in their career prospects in science, as well as agencies that expect the Challenge to 'shore up' investments. It is not possible to address even a fraction of these expectations and we need to stay focused on core business.

On the flip side, there are numerous opportunities emerging for alignment and potential co-investment: examples include the Jobs for Nature programme; predator-free landscape-scale work through the Provincial Growth Fund and PF2050 Limited; and government investments in freshwater restoration and other 'shovel ready' projects. Many of these projects are already articulating their knowledge gaps, including:

- Measuring the positive impacts of investing in environmental restoration post COVID;
- Understanding how to support communities to enact stewardship and kaitiakitanga;
- Determining what good governance and Treaty partnerships look like in the conservation and restoration space;
- A hunger for new tools in the toolbox as management interventions are applied at scale;
- A strong need to develop better ways to share, integrate, analyse and model the significant streams of data emerging from nature-based environmental projects.

The Challenge is already working to address all these knowledge gaps and more, so we are in the perfect position to continue to build strategic partnerships and provide clearer narratives and visible stories about our vision, values and activities – all of which should help with co-investment.

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Next steps

The qualitative assessment of co-investment around the T2 SOs and NRT Themes gives us several pointers as to how to target effort to drive co-investment in FY21. Below we summarise priority areas of work and who will take responsibility for them.

Build on groundwork already competed: The T2 and NRT stakeholder analyses provide a clear focus for where to target effort in building relationships with stakeholders and seeking co-funding or in-kind contributions In FY21. It is no surprise that we need to focus towards the right-hand end of the innovation pathway to purposefully link science with policy and on-ground actions. Boosting ELG capacity and capability to explore key partnerships in depth, and using the Knowledge Brokers (KBs) and ELG to work with the teams on targeted stakeholder and communications plans will be key areas of activity. In the next section we highlight one example of an emerging opportunity (working with DOC on 'Farms as Barriers').

Utilise new and existing talent: As noted elsewhere, the three new ELG positions currently being advertised will significantly boost our capacity to deepen existing relationships and build new ones. Completing the recruitment process for these roles is vital. We also hold existing talent in the form of the KBs, who are extremely adept at utilising their networks to help the research teams connect with potential co-investors. Each of our five KBs comes with a different network and slightly different skill set, and their expertise will strongly complement and add value to the efforts of the ELG. The KBs are currently working with the leadership team on a targeted plan of annual activities for them.

Clear narratives and infographics: whilst it has taken more time than expected to develop short visual 'investment prospectuses' for each Challenge SO and NRT Theme, once these have been completed they will be invaluable for both the leadership team and MRGG to 'shop around'. We are currently working with Edmund Hillary Fellow Privacy of natural persons to provide a set of targeted questions for each team that focus on investing for impact and help them clarify their own narratives. This work, and finalising the investment prospectuses, will continue to complement the work of the Science Communicator through our social media channels and Challenge/NRT newsletters.

Funding incentives: As a reminder, in the Challenge T2 (but not in NRT) we have 'held back' c. 10% of each team's research budget to incentivise them to identify opportunities to leverage co-investment, and we have held back a further 10% of funding at Challenge level (i.e. not tagged to any one team) to similarly take advantage of emerging opportunities. The teams have not been focused on this funding mechanism up to now because they have mainly been focused on developing their AWPs, but in the upcoming Challenge wānanga in mid-September we will discuss expectations with them and seek to identify opportunities for teams to work together to pool their resources in order to leverage co-investment.

Work across government on an environmental vision: The whole-of-government and business sector response to COVID is an important emerging opportunity for the Challenge in FY21. With increased capacity in the ELG and research teams bedding down their effort in parallel, now is the time to continue the work we have begun in this area. This is also an area where the networks and expertise of the MRGG will be invaluable.

Co-investment type	Responsibility for pursuing
Cash co-funding (MBIE definition)	Director, Kaihautū Ngātahi, Strategic Relationships Manager, Knowledge Brokers
Aligned research (MBIE definition)	Director, Kaihautū Ngātahi, Innovation Strategist, Chief Scientist
Data	Chief Scientist, research leads, Data Pou co-leads
Mātauranga	Tiriti Relationships Manager, research co-leads, emerging Māori rōpū
Other knowledge or expertise	Director, Kaihautū Ngātahi, all of ELG, Knowledge Brokers, research co-leads
In-kind capability	Innovation Strategist, Knowledge Brokers, Tiriti Relationships Manager
Study areas/sites	All
Infrastructure	All

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Farms as Barriers – an example of co-investment (decision needed)

The Department of Conservation (DOC) has approached the Challenge to help them administer funding they have secured as part of the Predator-Free 2050 Strategy and Action Plan. If we are to take on this responsibility, we need to work with DOC to understand what they are asking the Challenge to do. As a first step, we are **seeking agreement in principle** from MRGG to explore this opportunity with them.

Key points:

- The funding is to enable step-change to support PF2050.
- The quantum of funding is c. $800K pa for 3-4 years.
- It is operational science funding (in Challenge terminology: towards the right-hand end of the innovation pathway).
- It is specifically focused on DOC's 2025 Goal: "***By 2025, effective tools and knowledge will be available to achieve predator eradication on farmland***". DOC is looking to work with the Challenge to develop a package of work that will deliver on the 2025 Goal.
- Within the guiding principles of the Predator Free 2050 strategy this work is aimed to be undertaken collaboratively, bring the right team together and use an adaptive management approach. They see the Challenge investment strategy as the best opportunity to achieve this.

DOC have held one workshop on Farms as Barriers. The workshop clarified that the concept was seen not just a project, but a full programme of work. Also, that the work would need to be undertaken in a fully integrated manner between practitioners, scientists and end-users. Given that DOC would have to establish a new programme to do this well, they felt that this would be a duplication given that BioHeritage already has a well-established network and that the proposed work is something that aligns with BioH values. Another perceived advantage to DOC is the strong connection to existing Challenge SOs, mostly SO5 but also SO2 and SO7.

On the face of it this seems like a significant opportunity for the Challenge to leverage co-investment around an area that we have already decided to invest in (i.e. to support PF2050). However, we need to balance the risks against the opportunities and seek greater clarity on the detail of the package of work and what our responsibilities and accountabilities would be. Currently, the Director and Kaihautū Ngātahi have had two conversations with Privacy of natural persons (Director responsible for PF2050) and Privacy of natura (Director, Biodiversity). We have agreed with them that we will explore the following in greater depth, assuming MRGG are agreeable:

1. How Challenge administration of this fund would dovetail with DOC's procurement processes, and how flexible they can be in contracting arrangements, similar to how the Challenge currently contracts its work.
2. What the potential impacts would be of a more constrained annual funding model cf. a multi-year appropriation similar to that for the Challenge and NRT.
3. How comfortable DOC would be with a negotiated (not contestable) procurement process.
4. How much DOC resource can be brought to bear on back-room support e.g. contracting, communications, accounting etc. (early indications are they intend provide resource in this area i.e. the Challenge would not be expected to do this for free).
5. Who would be responsible for reporting and visibility of the investment. Early indications are that Challenge and DOC reporting processes are similar, with expectations around quarterly and annual reporting focused on impact and not on detailed milestone reporting. There will also need to be on-demand reporting and transparency to Ministers.
6. How it will complement and add value to existing Challenge investments in this area.
7. How governance and oversight of the investment will work in practice.
8. What opportunities there will be to partner with Māori in this space and what the opportunities will be for capability building. There are potentially exciting opportunities to partner with Māori agribusiness but this would need to be worked through.

A quick assessment of the pros and cons of taking on this responsibility is as follows.

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Pros:

- Scale: strong alignment and complementarity with existing/emerging Challenge investments.
- Builds on significant efforts by all parties to drive system-wide connections and a joined-up picture, and dovetails with Predator-Free 2050 Limited investments particularly their landscape-scale work.
- Demonstrates confidence in Challenge processes.
- Will facilitate more formal partnerships with industry (e.g. pastoral and/or dairy sectors) through a collective and joined-up approach, with greater opportunities to leverage co-investment from those sectors.
- Stays true to Challenge process by helping deliver on one of the goals in the Scoping Panel Report for Strategic Outcome 5 ('***Demonstrate at least one broadly applicable, non-fence option for defending large-scale, vertebrate, multi-pest eradication sites***').
- Addresses Challenge KPIs on leadership and around active alignment of research co-investment.
- Challenge approach around flexibility in annual planning is a significant plus for DOC: they do not want to be 'locked in' to a milestone-driven programme of work that does not create impact.
- There is at least one potential co-led for this work ready to go.

Cons:

- Could be a potential diversion or distraction at a time when we are still getting our own T2 investments up and running. Strong alignment should mitigate this risk considerably.
- Potential administrative load on the Support Team; early indications are that this will not occur.
- There would be a need for clarity and transparency between DOC and the Challenge in all communications, including to Ministers.
- There will be issues to work through in terms of funding flows, because the transaction costs of operating using the Challenge model mean that such programmes build slowly in the beginning before they accelerate. DOC will need to be comfortable with the financial implications of that approach. Early indications are that they can mitigate this risk.
- We are unable to find the right co-leads for the investment. We have identified and spoken to at least one potential co-lead and are confident we will be able to mitigate this risk.

Recommendations:

We recommend that MRGG:

- **Note** the request from DOC for the Challenge to help administer the Farms as Barriers investment.
- **Agree in principle** that the Challenge Director, Kaihautū Ngātahi, and leadership team should explore the opportunity further with a view to developing a draft arrangement that we would table with both DOC's executive team and MRGG for further consideration.

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Developing a Challenge Policy Statement on WAI-262

Purpose

The purpose of this paper is to seek approval from Mana Rangatira to develop a Challenge policy statement on WAI-262, the contemporary Treaty of Waitangi claim on Indigenous Flora and Fauna.

(Authoritative information on WAI-262 includes the report of the Waitangi Tribunal [Ko Aotearoa Tēnei] or Te Pūni Kokiri's [Ministry of Māori Development] page on Te Pae Tawhiti which introduces 2019 discussions on the long-awaited Crown response).

Background and history – Challenge deliberations on WAI-262 and Mātauranga Māori

- Challenge research investments have always directly or indirectly had the potential to help improve or contribute to any potential Crown response to the WAI-262 Claim.
- Matua Kevin Prime, in his role as chair of the Challenge's Kāhui Māori, wrote a discussion paper on WAI-262 and Mātauranga Māori in May 2015 ***Appendix 5.*** At the time, that discussion paper shaped the relationship between the then-Governance Group for the Challenge, and the then-Kāhui Māori and enabled the two groups to move forward in partnership, driving the strategic directions for Challenge Research in Tranche 1.
- The Challenge has evolved dramatically since that paper was written, with meaningful partnerships with Māori developed (and resourced) at all levels, and much deeper understanding of the importance of Challenge investments in Mātauranga Māori and in the use of kaupapa Māori methodologies.
- However, we are still on a journey, and now is the time to challenge ourselves in fulfilling the unfinished work laid out for us by Matua Kevin. Doing this will ensure integrity in our Tranche 2 investments.
- Over the years, we have discussed a position on WAI-262 but have not formalised anything. However, the Challenge leadership team has recently encountered numerous situations in which a clearer statement as to the Challenge's position on WAI-262 would be helpful.
- Recently, Privacy of natural persons has been working with the Challenge leadership team to broaden and deepen their understanding of WAI-262 and the implications it has for our mahi in Tranche 2 ***Appendix 6***.

Why should the Biological Heritage Challenge develop a WAI-262 policy statement?

The Treaty of Waitangi Indigenous Flora and Fauna Claim WAI-262 raised many issues of direct relevance to the programme of work of the Biological Heritage *Ngā Koiora Tuku Iho* National Science Challenge. Issues such as: bioprospecting, taonga species, the nature of scientific research, mātauranga, cultural and intellectual property rights, and kaitiaki rights and responsibilities.

Although the Crown announced in August 2019 *Te Pae Tawhiti,* a whole of government approach to responding to WAI-262, this process is mainly internal and some distance from holding discussions with others. In fact all discussions about WAI-262 have been delayed until after the September election. In the meantime, a number of CRIs and other science platforms have been considering how WAI-262 impacts on their work with a view to eventually developing their own policies of guidelines. And as a more general example of progress in the science sector, all the National Science Challenges' approaches to Vision Mātauranga were recently (July 2020) summarised for the Challenge chairs ***Appendix 7***.

It is appropriate for the Challenge to develop a policy statement on WAI-262 to guide Challenge researchers and also to provide transparency as a publicly-funded science platform. It is our view that the Policy should be high-level and sit within the Challenge's Vision Mātauranga, building on the existing Māori Strategy by making more explicit references to WAI-262 and/or core issues covered in

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the Claim and the Tribunal's resultant *Ko Aotearoa Tēnei* Report. Developing a clear WAI-262 policy in the BioHeritage Challenge would create a point of difference between the Challenge and many of the individual Challenge Parties, but by showing leadership in this space we may pave the way for others to follow, yet in a non-regulatory manner.

The Policy should be positive and constructive (non-defensive), be affirming rather than qualifying, and declare a commitment to fostering a research culture that is respectful of the Treaty, kaitiaki and mātauranga holders. It is our view that it should endeavour to produce research that wherever possible provides direct benefits for Māori.

Why develop a WAI-262 policy now, at this stage in the life cycle of the Challenge?

Over the last 12 months the Challenge has embarked on Tranche 2 of the research investments. While we acknowledge that we should have developed clarity on WAI262 issues at the outset, doing so now will ensure integrity (that we walk the talk) in our investments over the next four years.

Suggested process for, developing a Challenge policy statement on WAI-262

Ideally, development of the policy statement should come from a process of active engagement with Strategic Outcome and Theme leaders, Knowledge Brokers, and particularly with Māori researchers and the ELG.

Several steps need to be taken to inform the development of policy statement:

Build awareness – To date, a Technical Briefing paper on the Claim ***Appendix 6*** has been disseminated to SLG and Knowledge Brokers, and was made available to MRGG in time to be incorporated into the summary of Challenge approaches to VM ***Appendix 7***. Two seminars with SLT and Knowledge Brokers on the WAI-262 claim have also taken place. It is likely the new ELG and SO/Theme co-leads will hold further seminars.

Identify principles – Core elements of the Claim relating to kaitiaki rights and responsibilities and the conduct of research and researchers could be set out as overarching principles for the Challenge to respect and promote. Indicators of progress on these core principles could be developed for Challenge Tranche 2 Strategic Outcomes and NRT Themes to report progress on via the existing reporting frameworks, particularly in the narrative sections where there is a need to demonstrate impact.

Review existing documentation and approaches – The Challenge has already embedded commitments to Māori in various components, notably: Our Values, the three Impact areas Whakamana, Tiaki, Whakahau, VM statement and 1-5 scoring system, best practice on working in partnership with Māori, and the Māori Strategy. These can be reviewed to strengthen their focus and contribution.

ELG responsibility – it is envisaged that the new Treaty Relationships Manager, when they are appointed, will take on the responsibility of drafting and implementing the policy, with Privacy of natural persons working with them to guide and provide feedback.

By following the steps above, a draft policy statement that will be put in front of MRGG for approval will have the support of all Challenge researchers. We envisage that the draft policy will be ready before the end of 2020.

Risks

We do not anticipate any particular risks in developing a clear policy statement on WAI-262 by the Challenge. We note two risk areas in **not** developing such a policy:

- Of all the challenges, BioHeritage is the one that most would expect to have a clear WAI-262 policy because of the focus on taonga species and mātauranga, working with kaitiaki, and wanting to collaborate and co-design research with hapū and iwi. Not having a policy puts the Challenge at risk of perpetuating the prospecting extractive nature of research rather than promoting collaborative approaches.

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- We know the Crown is in the process of developing a response to WAI-262 issues. We could wait for the Crown to develop policy and reduce our role to one of 'compliance', or we could be proactive and develop our own policy, practices and procedures now, and show integrity and leadership.

Recommendations

- That MRGG **note** the intention of the leadership team to (1) develop a draft WAI-262 policy statement for the Biological Heritage National Science Challenge, and (2) seek approval on the statement from MRGG before the end of 2020.
- That MRGG **give agreement** to proceed in developing the statement.
- ***Appendix 5:*** *The Relevance of the Wai 262 Report and Indigenous IP on the Biological Heritage National Science Challenge (Author: Matua Kevin Prime)*
- ***Appendix 6:*** *Briefing for the leadership team on the WAI-262 Claim (Author:* Privacy of natural persons *)*
- ***Appendix 7:*** *July 2020 summary of National Science Challenges' approaches to Vision Mātauranga (compiled by MBIE)*

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Annex 4

NZ's Biological Heritage National Science Challenge Mana Rangatira Governance Group (MRGG) Agenda Thursday 8 June 2023 (excerpt of interest register relating to Melanie Mark-Shadbolt's interests)

GG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
Out of Scope					
Melanie Mark-Shadbolt	Out of Scope				
	Professional	Te Tira Whakamātaki Limited	CEO	Yes	Contracted as CEO
	Professional	Te Tira Whakamātaki Foundation	Trustee and Cofounder	No	Co-founder
	Out of Scope				
	Professional	Department of Conservation	Advisor	Yes	As member of Te Tira Whakamātaki I sit on the following groups, some of which are paid: - Predator Free Knowledge Innovation Collaborative Group - Predator Free Kaitiakitanga Agency and Technical Collaborative Groups Predator Free Co-Leads Group
	Out of Scope				

GG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
	Out of Scope				

* Association – relationship (personal or professional) between potential external counter party and Biological Heritage National Science Challenge Senior Leadership Group (SLG) Member that is of a tenure or standing that it could give rise to render the SLG member less than independent in his/her judgement of alternatives and selection of the party. Close family members include spouse/partner, siblings, children, parents

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STRATEGIC LEADERSHIP GROUP and KNOWLEDGE BROKERS – INTEREST REGISTER –

SLG Member (as an individual)	**Association* – Relationship** (personal, professional, or family)	**Organisation**	**Role**	**Financial Interest**	**Nature of Interest**
Out of Scope					

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SLG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
	Out of Scope				

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SLG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
Out of Scope					
Melanie Mark-Shadbolt	Out of Scope				

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SLG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
	Out of Scope				
	Professional	MPI – Myrtle Rust & Kauri Dieback SSAG	Member	No	Member representing Māori and TTW
	Out of Scope				
	Professional	Te Tira Whakamātaki Limited (Charity)	Director	No	As a charity TTW Ltd is solely owned by TTW Foundation. Directors do not receive a stipend and provided governance oversight on behalf of the Foundation, supporting and guiding the Operations Manager.

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SLG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
	Professional	Te Tira Whakamātaki Foundation (Charity)	Trustee and CE	No	As a charity the Trustees don't receive a stipend. I am CE in title only and receive no remuneration for my time.
	Out of Scope				
Out of Scope					

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SLG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
Out of Scope					

RELEASED UNDER THE OFFICIAL INFORMATION ACT

SLG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
Out of Scope					

RELEASED UNDER THE OFFICIAL INFORMATION ACT

SLG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
Out of Scope					

RELEASED UNDER THE OFFICIAL INFORMATION ACT

SLG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
Out of Scope					

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SLG Member (as an individual)	Association* – Relationship (personal, professional, or family)	Organisation	Role	Financial Interest	Nature of Interest
Out of Scope					

* Association – relationship (personal or professional) between potential external counter party and Biological Heritage National Science Challenge Senior Leadership Group (SLG) Member that is of a tenure or standing that it could give rise to render the SLG member less than independent in his/her judgement of alternatives and selection of the party. Close family members include spouse/partner, siblings, children, parents.

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