MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Contract Review Report

Ngā Rākau Taketake Platform

Strategic Science Investment Fund Programmes

September 2023

New Zealand Government

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

This report has been prepared by Dr Bruce Campbell CNZM for the Ministry of Business, Innovation and Employment (MBIE).

Except where otherwise noted or apparent, all information used in the preparation of the report was supplied by the Ngā Rākau Taketake Platform and interviewees. MBIE did not verify independently the accuracy of the information provided and accordingly provides no guarantees as to information accuracy or sufficiency. In particular, information supplied to MBIE includes statements, opinions, estimates, assumptions, projections and analyses made by others that may or may not prove correct.

The independent reviewer has approached this review in good faith, with the objective of providing constructive comment from his analysis of the information provided.

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Executive Summary

This review of the Ngā Rākau Taketake (NRT) Platform has been undertaken to assess the performance of the contract holder by the end of the fourth year of the contract term (June 2023). The review was led by the Ministry of Business, Innovation and Employment (MBIE) Strategic Investments Team and conducted by an independent expert reviewer Dr Bruce Campbell CNZM, with support from MBIE Investment Managers. Dr Campbell has expertise in the wider Research, Science & Innovation (RS&I) sector, understanding of mātauranga Māori and western science knowledge systems and experience in delivering impact from research investments. The review delivered 10 key findings and made 7 recommendations.

Summary of Findings

Finding 1:	The Ngā Rākau Taketake Platform has made good progress, appropriate to the level of investment, to deliver on the Ngā Rākau Taketake SSIF Platform Plan, including achieving important KPIs and progressing themes detailed in the National Science Plans for kauri dieback and myrtle rust.
Finding 2:	New partnerships are delivering new strategic tikanga-led mātauranga knowledge and western science knowledge approaches to kauri dieback and myrtle rust, consistent with the purpose of SSIF investment.
Finding 3:	Ngā Rākau Taketake is delivering some practical outputs but not all end-users are satisfied with tools and outputs from the Ngā Rākau Taketake Platform to date.
Finding 4:	Engagement with mana whenua communities is creating significant benefits for the Ngā Rākau Taketake Platform and its direction and is helping apply knowledge on the ground.
Finding 5:	Factors including differences between the strategic research intentions of the investment and the operational needs of agencies have led to a gap in the relationship between Ngā Rākau Taketake and operational Crown agencies charged with the kauri dieback and myrtle rust response, and action from all parties is needed to improve communication and the transfer of knowledge.
Finding 6:	COVID-19 resulted in deviations from the Ngā Rākau Taketake Platform Plan but these were justified.
Finding 7:	Ngā Rākau Taketake has a valuable potential impact on wider RS&I sector by demonstrating current best practice in developing mātauranga and mana whenua relationships with western science.
Finding 8:	Not all knowledge needed to inform the development of practical tools required to address kauri dieback and myrtle rust can be delivered within the current term of investment.

Finding 9:	Consideration must be given to establishing longer-term investment with similar investment settings to ensure there is a clear go-forward plan to continue the work of Ngā Rākau Taketake.
Finding 10:	A future host must have a mission focus, be independent to deliver "right teams" and able to ensure trust and confidence from mana whenua groups and other stakeholders.

Summary of Recommendations

Recommendation 1:	Build closer engagement between Ngā Rākau Taketake, the Ministry for Primary Industries, Tiakina Kauri and Department of Conservation to improve relationships, communicate progress and align strategic and operational research.
Recommendation 2:	Urgently prepare an inventory and research brief of all the practical tools and outcomes for the ngahere that (a) have been delivered over the life of Ngā Rākau Taketake and (b) are possible in the future now as a result of the strategic work undertaken.
Recommendation 3:	Increase communication of results and these expected practical tools and outcomes to end users and participants.
Recommendation 4:	Continue the work of Ngā Rākau Taketake by providing long-term investment beyond 2024 and adding ecosystem health approaches.
Recommendation 5:	Give future responsibility for delivery to an entity that can pick best teams and ensures trust and confidence from mana whenua groups and operational agency stakeholders.
Recommendation 6:	Structure future research investment to have an integrated set of activities that link from strategic research through to operational research.
Recommendation 7:	Increase support for mana whenua groups to engage and to develop mātauranga and build capability for tikanga-led approaches to build on the existing relationships and approach started in Ngā Rākau Taketake.

Glossary of Acronyms

AWP	Annual Workplan
BMA	Biodiversity Management Area
CAAs	Cultural Authority Agreements
COVID-19	Disease caused by the SARS-CoV-2 coronavirus
CRI	Crown Research Institute
DOC	Department of Conservation
FY	Financial Year
KAG	Knowledge Advisory Group
KDB	Kauri Dieback Disease
KPI	Key Performance Indicator
MBIE	Ministry of Business, Innovation and Employment
MPI	Ministry for Primary Industries
MR	Myrtle Rust Disease
MWLR	Manaaki Whenua Landcare Research
NGO	Non-government Organisation
NRT	Ngā Rākau Taketake - Saving our Iconic Trees
NZBH	New Zealand's Biological Heritage National Science Challenge
NZPPI	New Zealand Plant Producers Incorporated
PhD	Doctor of Philosophy
RS&I	Research, Science and Investment
SSIF	Strategic Science Investment Fund
SSIP	Science System Investment and Performance
TK	Tiakina Kauri - Kauri Protection Agency
VM	Vision Mātauranga

Introduction

Background on Ngā Rākau Taketake

Kauri dieback (KDB) is threatening Aotearoa New Zealand's taonga (treasured) kauri with extinction, and myrtle rust (MR) is threatening many iconic native species as well as plants important to primary industries. More knowledge is urgently needed to underpin future approaches and tools to fight the two pathogens.

Ngā Rākau Taketake (NRT) is a $34.5m, four-year programme funded through the Strategic Science Investment Fund (SSIF) mechanism to address this threat. The intent of the funding that underpins the NRT SSIF Platform is to address the critical need for research to generate long-term solutions and inform the development of tools and approaches to counter the spread of KDB and MR.

NRT was initiated in 2018 against a background of concern from a number of stakeholders that existing approaches to research and management of KDB were not working, that there was suboptimal coordination of research and that there were poor relationships with mana whenua – mana held by tangata whenua who have customary cultural authority over land or taonga in a particular place[1]. There had been a significant under-investment in fundamental research for KDB and MR, and few peer-reviewed publications to test and document the limited work that had been done.

NRT was established to provide more strategic leadership and coordination of the research effort. The purpose of NRT, agreed with MBIE during contracting, is to deliver science, data and solutions to enable Aotearoa to more effectively manage the kauri dieback and myrtle rust pathogens. NRT set out to apply a systems level approach to tool development by ensuring the wider sector works together, engages with mana whenua and empowers communities to assist in protecting our ngahere.

When NRT was contracted, the New Zealand's Biological Heritage National Science Challenge (NZBH) was selected as the most suitable host (lead contractor) for the investment due to their alignment with the kaupapa and ability to provide an independent governance structure. Manaaki Whenua Landcare Research (MWLR) is the host of the NZBH National Science Challenge, and has many researchers and employees involved with the NRT SSIF Platform which means they also have interest in the success of this Platform.

NRT is governed by the overarching purpose and principles set out in the SSIF Investment Plan 2017-2024. The purpose of SSIF is to support longer-term underpinning infrastructure and programmes of mission-led science critical to the future of New Zealand's economy, environment and wellbeing.

[1] Mana whenua is a reference to the mana held by local people who have demonstrated cultural authority over land or tāonga in a particular place, authority which is derived through whakapapa links. Whilst tangata whenua refers to "people of the land", the term "mana whenua group" is used here to refer to the people who are considered to have local tribal or sub-tribal authority for a particular place.

The NRT contract commenced on 1 May 2019 and the original end date was 30 June 2023. In December 2021, NRT management was granted a nine-month no-cost extension until 30 March 2024 to account for lost field work time during the 2021 COVID-19 lockdowns in Auckland and Northland regions. There was no modification to the payment schedule through this variation and funding still ends in June 2023, however research will continue until 30 March 2024.

Purpose and Scope of this Review

The purpose of this review is to fulfil the Ministry of Business, Innovation and Employment's contractual obligation to review the performance of the contract holder (with respect to the investment contract) by the end of the fourth year of the contract term (June 2023) as written under Section 4.11 of Schedule 2 of the NRT SSIF Investment Contract.

The review examines:

- The delivery of the NRT SSIF Platform Plan, which includes achievement of KPIs and progress against themes detailed in the National Science Plans for kauri dieback and myrtle rust.
- Whether any deviations from the Platform Plan were justified and contributed positively to the wider kauri and myrtle rust research landscape.
- Whether Māori partners, government agencies and other stakeholders are satisfied with the approach that NRT has taken to research development and whether they regard the Platform as being impactful.
- Whether next/end-users are satisfied with tools and outputs from the NRT Platform to date, and progress toward delivering tools by the end of the contract is satisfactory.
- Whether the current investment settings are appropriate for delivering future research.

The Terms of Reference for the Review (Appendix 1) define the review process and have been agreed to by the General Manager Science System Investment and Performance (SSIP) at MBIE, with input from the NRT leadership team, Ministry for Primary Industries (MPI) representatives from Tiakina Kauri (TK) and the Pest Management team, the Department of Conservation (DOC) Chief Science Advisor, MBIE Science Policy, and the Manager of Strategic Investments and Manager of Investment Operations from MBIE's SSIP Branch.

Methodology for Review and Assessment

The review was led by the MBIE Strategic Investments Team and conducted by an independent expert reviewer Dr Bruce Campbell CNZM, with support from MBIE Investment Managers. Dr Campbell has expertise in the wider Research, Science and Innovation sector and has understanding of impact pathways from large scale government investments, research to meet the needs and aspirations of Māori (including understanding of Māori perspectives and connection to taonga species such as kauri and myrtaceae), and expertise in stakeholder management and expectations, including government and Māori relationships across the wider research sector.

The review was primarily undertaken through interviews with people selected by MBIE who are engaged with the NRT Platform.

The following groups were approached for interviews:

- Members of NZBH and NRT governance and leadership teams
- Mana whenua groups working with NRT or using outputs from NRT
- Crown and local government agencies working with NRT or using outputs from NRT
- Members of the KAG for kauri ora and myrtle ora
- MBIE science policy and investment
- Other persons associated with NRT

In total 20 interviews were undertaken involving 29 people from a range of organisations (Appendix 2).

The independent reviewer led the documentation of findings of the review in the form of this report. The draft report was shared with the Directors of NRT to check for any errors of fact. The final report will be made publicly available on the MBIE website.

This report may be used to inform advice on future funding related to the NRT Platform, or the funding for research on the kauri dieback and myrtle rust pathogens. The report may also inform policy work to consider future approaches for national research priorities, public good science and Māori-led RS&I activities, in the context of Te Ara Paerangi Future Pathways reforms.

The outcomes of this review will be made available to MPI, TK and DOC, who are the Crown agencies in charge of managing kauri dieback and myrtle rust biosecurity incursions. The findings of this review may be used by these agencies to inform decisions about how best to support uptake of new research and tool development for management and response activities. Decisions around the general use of the SSIF investment mechanism and decisions on future funding allocation for KDB and MR (if funding is available) may be dependent on the outcomes of this review.

Findings

Contractor Performance

Finding 1: The Ngā Rākau Taketake Platform has made good progress, appropriate to the level of investment, to deliver on the Ngā Rākau Taketake SSIF Platform Plan, including achieving important KPIs and progressing themes detailed in the National Science Plans for kauri dieback and myrtle rust.

- *A coordinated, nationwide, systems-level effort is resulting using a "right teams" approach*
- *NRT is achieving appropriate progress against Plan and KPIs*
- *NRT is engaging strongly with mana whenua groups and is building trust for effective planning and action*
- *Faster progress is sought on delivering tools and outcomes and connecting with Crown operational agencies*

NRT is well managed by the host and by MBIE with effective controls in place. Overall it is achieving appropriate progress against Plan and KPIs. There are opportunities for further improvement in specific performance areas and these are noted later in this review report.

NRT is applying a "right teams" approach with inclusion, building trust and encouraging working together to create a *national partnership* to deliver a *step change in research innovation*, *globally leading technologies* and *community and sector action*.

A key first step taken by NRT has been to progress unification of a very fractured community, especially iwi and hapū who were very anxious about KDB. This is a remarkable achievement against a background of different viewpoints, intensely competitive funding models and often quite contrasting organisational values.

Building from the outset a co-governance structure involving tangata whenua and tangata Tiriti has been a critical step forward to progress the NRT Platform. This is a significant achievement to bring mātauranga and science together in this positive way. This "right teams" approach for forming governance, leadership and research groups took significant time but meant that new people came into the mix. Getting this co-governance and leadership model right has been critical. This process of building trust with mana whenua groups and between researchers was inclusive and took significant time and focus for more than the first 12 months.

Mana whenua groups are now within the system which is seen as a huge positive. There is Māori involvement from the beginning in the governance group, leadership Co-directors and science leads, with both Māori and non-Māori co-leads. The structure is reported to be working well but could be balanced by greater agency involvement at the governance level, whilst still maintaining the co-governance structure.

This has elevated mana whenua into the research and science space and led to the development of data sovereignty and cultural sovereignty agreements to create a better platform for sharing of data and information needed to manage the whenua, linking data and knowledge through whakapapa back to the whenua. Cultural Authority Agreements allowed relationships to be established with individual Biodiversity Management Areas (BMAs). This creates an effective new way for researchers to work with mana whenua.

The "right teams" approach has resulted in a two-pronged approach – the people aspects and the strategic knowledge aspects being brought together. This is not easy to do and NRT appears to have created the balance extremely well, as an exemplar of best current practice.

"Right teams" have been drawn across a range of organisations including mana whenua iwi and hapū, CRIs and universities. This has created a diverse and effective team with mātauranga Māori and western science skills. It was noted that there has been care taken by the host and governance group to ensure there is not patch protection in selecting suitable partners. NRT has seen a distribution of funds to a range of diverse parties selected as best to provide particular skills. A greater priority was placed on social science and this was appropriate.

This has taken significant time in the initial stages of establishing the Platform but was a vital step towards new ways of prioritising science effort in true partnership and working collaboratively across a wide range of organisations to address KDB and MR.

On the downside, while it was necessary for time to be taken to build relationships and trust, ecosystems have continued to degrade. There is a perception that solutions and mitigation management are not as far ahead as could have been. This is a challenge for NRT to accelerate efforts now to deliver practical outputs and tools for KDB and MR mitigation. A mechanism is required to speed up delivery of tools and outcomes in the ngahere.

However, there is significantly more to do to partner effectively and build trust with Crown operational agencies involved with KDB and MR and this is examined in greater detail later.

Both of these diseases are long-term issues, and given there has only been five years to work on this, strong progress has been made to date. A systems approach to the development and application of tools to map, forecast spread and control of KDB and MR now exists.

A total budget of $29,500,000 was allocated for KDB and a smaller total budget of $5,000,000 for MR. The resulting productivity and outputs from NRT look appropriate for the level of resourcing (Table 1), given amount of consultation and relationship building required.

Table 1. Ngā Rākau Taketake Budget

FY18-19	FY19-20	FY20-21	FY21-22	FY22-23	FY23-24	TOTAL
$519,078	$4,059,768	$10,598,814	$7,551,056	$8,722,562	$3,048,722	$34,500,000

There has been good progress made on practical solutions and tools, based off deeper strategic knowledge being developed. However, a number of these will be delivered beyond the time of the current programme. Up to January 2023 there have been 28 research articles, 12 reports, 19 webinars, 80 on-line articles, 15 radio and television interviews and 58 other resources produced.

The work is responding appropriately to the National Science Plans drawn up for KDB in 2018 and MR in 2019. These Plans contained more needs than could be addressed with the available investment and prioritisation needed to happen. These KDB and MR Science Plans both called for a true Te Tiriti o Waitangi partnership evident throughout the research programmes, with Māori participating at all levels of planning and investment and this is what happened. The subset of priorities selected by NRT in this partnership are appropriate to deliver on the intent of NRT and are delivering on the priority areas identified in the Plans.

The long-term vision is to co-develop a successful toolbox for protecting the ngahere from both KDB and MR pathogens, being used by the kaitiaki mana whenua and by the Crown agencies. The approach is intended to allow the landowner to choose what tool is best for their rohe and each stakeholder will input into how it needs to work in their environment.

It is noted that COVID has caused significant deviations from the initial NRT Plan and resulted in an extension to 2024. This is addressed in more detail later.

Finding 2: New partnerships are delivering new strategic tikanga-led mātauranga knowledge and western science knowledge approaches to kauri dieback and myrtle rust, consistent with the purpose of SSIF investment.

- *Mātauranga and western science teams are working together and creating tools and outputs for long-term ecosystem-level approaches for te taiao*
- *NRT is significantly increasing effort in Māori-centred research, Kaupapa Māori research and research involving Māori, and applying mātauranga Māori-derived solutions*
- *New strategic science has been initiated to fill underlying knowledge gaps using latest technologies*

NRT is responding to the fundamental purpose of the SSIF funding instrument which is to support longer term underpinning infrastructure and programmes of mission-led science critical to the future of Aotearoa New Zealand's economy, environment and wellbeing.

The progress of NRT in now having built an effective partnership between mātauranga and western science is impressive. A major success of NRT has been the investment in Māori researchers. The ability to bring them and their communities to the table to share values has created space for new

ideas in the science plans. Building the strategic science plans in this way took time but NRT is now considered to be demonstrating best current practice. Further progress can be made to extend and develop this over time.

NRT is employing four approaches to developing strategic knowledge which complement each other and are all valid:

- Mātauranga Māori knowledge
- Western science knowledge
- Combining māturanga Māori-led knowledge and western knowledge
- Combining western science-led and mātauranga Māori knowledge

Substantial progress has been made to empower mana whenua groups and communities to increase protection for the ngahere for future generations. As part of this, there have been significant efforts to increase support for Māori-centred research, Kaupapa Māori research and research involving Māori, and to apply mātauranga Māori-derived solutions to enhance resilience of forest ecosystems.

Kaupapa Māori research is appropriately recognised in NRT as a knowledge and science system in its own right that may not need to interact with "western science" and can continue to have its own space without validation by another science system. For example, the rongoā approaches being explored are not about the ingredients, they are an integrated system that does not need proving if it is working and the forest is thriving. There is still much more that can be done in this area.

Over half (53%) of NRT research is reported as being Māori-led or Kaupapa Māori research in FY22. The Platform has actively built a significant increase in the numbers of Māori researchers, with 42 actively involved in FY22, up from 41 in FY21 and 13 in FY20. This is a strong investment in Māori capability development. Nationally, the capability includes kaumātua, kaitiaki and environmental technicians working in the rohe. Students are aligned to several NRT themes to bolster research effort in a range of disciplines including social science, ecology, plant pathology and entomology. NRT's 2022 student cohort includes seven PhD students, 12 Masters and four undergraduate/summer students. Fifty-nine early career researchers are supported through NRT themes and funded activities with mentorship by seniors, including nine post-docs and other opportunities provided to engage and build capability. It is not clear what exact percentage of total investment is Kaupapa Māori research but this is believed to be around 10%.

This is giving effect to the Crown's Vision Mātauranga (VM) policy and enabling the government's obligations under te Tiriti in RS&I.

Innovative science approaches are being developed and there are also good examples of applying the approach of partnering mātauranga and western science across the breadth of NRT. Examples of cutting-edge new science approaches being brought to NRT include: genome sequencing, annotation and assembly; predictive modelling of disease distribution and spread; identification of pathogen gene function; predictive seasonal growth models under different climate change scenarios; seed conservation; effectors involved in pathogenicity; social research; DNA fingerprinting; phosphite treatment; molecular basis of MR disease and potential development of RNA interference (RNAi).

Finding 3: Ngā Rākau Taketake is delivering some practical outputs but not all end-users are satisfied with tools and outputs from the Ngā Rākau Taketake Platform to date.

- *There are examples of practical tools and outputs generated from NRT but there is no clear, simple inventory of these*
- *Further significant practical tools and outputs are anticipated beyond the current funding horizon due to end in 2024*
- *The practical tools were not evident to several key end users, in particular operational agencies*

The practical tools and outputs expected to result from NRT are linked to a set of 26 critical steps identified in the NRT Platform Plan.

The Platform appears on target to deliver these 26 critical steps on time by the end of the NRT extension in 2024. As at March 2023, 12 critical steps are completed and 14 are still in progress. Some practical tools will be delivered by NRT during the life of the investment and others will require further strategic and operational research investment.

There are some examples of practical outputs and tools completed or anticipated to be completed by 2024:

- Best practice, culturally acceptable methodology for seed/germplasm collection and protection, with seed banking drum kits, training and Māori seed conservation guides
- Resources from mātauranga Māori and western science research to support and mobilise actions for forest health management accessible on the Mobilising for Action website
- Myrtle Rust Risk Prediction Model and resources shared across the myrtle rust community linked to a New Zealand Plant Producers Incorporated (NZPPI)-funded MR control module that advises on practical chemical methods to control MR in nurseries
- Rongoā (traditional medicine) tools for restoring kauri health showing promising early results involving tohorā, karakia, mōteatea, and a kahikatoa spray
- Cultural Authority Agreements and processes for engagement between researchers and mana whenua, available to mana whenua groups to use with other organisations or modify for their purposes
- Training of mana whenua groups through those NRT-engaged BMAs for conducting research and for carrying out disease detection, management and control
- Map-based surveillance tools for myrtle rust surveillance with Tauranga Moana Biosecurity Capital (funded by the BioHeritage National Science Challenge)
- Compounds for anti-*Phytophthora* activity for future in-field and in-nursery application, and a robust assay for evaluation of anti-*Phytophthora* compounds
- Evaluation of commercially available diagnostic devices under field and nursery settings to quickly and simply identify *P. agathidicida* in plant and or soil samples

- Conceptual models of where in the landscape to protect and restore to maximise chances of taonga surviving in the ngahere
- Phosphite treatment for kauri trees threatened by KDB
- Quantitative agent-based models developed, informed by mātauranga-a-iwi/hapū, to predict landscape-level regeneration of kauri and pōhutukawa under different scenarios of land use, pathogen loading, competition with weeds, and climate change
- Trained oranga practitioners for further application of solutions for kauri ora
- DNA fingerprinting to map the genetic diversity of kauri and document unique kauri populations
- Te Whakahononga onboarded hapū and iwi in 12 BMAs, training kaitiaki to undertake surveillance and research for both myrtle rust and kauri dieback
- Evidence to support closure of parks and the denial of access (rahui), with science giving community groups the tools to communicate the rationale for the closure to their members and raise compliance

Practical outputs and tools in development and requiring further investment beyond the current term of NRT investment include:

- Models and mapping of the value of direct economic impacts, ecosystem services and indirect impacts and baseline measures of socio-cultural values
- Ecosystem impact indicators
- Frameworks for measuring ecosystem health and resilience
- Prototype *Phytophthora* zoospore biosensor
- Gene targets for disease control, new genetic tools for screening for natural resistance, development of elicitors enabled by work completed mapping the *P. agathidicida* genome
- An app to include cultural indicators in surveillance and monitoring
- RNAi technologies for MR disease control

Although valuable practical tools and outputs could result from the knowledge being developed in NRT, many of those interviewed in this review were not able to easily identify or explain these. The root cause of this appears to be that NRT has not communicated a clear and simple line of sight between the science outputs and the practical tools that can be delivered for the ngahere. The understanding of these practical tools by operational agencies is particularly poor and this is addressed further under Finding 5.

Finding 4: Engagement with mana whenua communities is creating significant benefits for the Ngā Rākau Taketake Platform and its direction and is helping apply knowledge on the ground.

- *Te Whakahononga is empowering mana whenua involvement in research and enabling the use and building of mātauranga within 12 BMAs*
- *This is now allowing an unprecedented level of community/hapū participation*
- *NRT is changing the way scientists work with mana whenua groups and is applying knowledge in the ngahere to benefit te taiao*
- *Māori partners that were consulted are generally satisfied with NRT*

Māori as end users are without a doubt the most engaged end users with the Platform. Before NRT there was a substantial lack of connectivity among the scientific community and Māori in the KDB space. Also, there was a lot of anxiety amongst Māori communities on the direction and effectiveness of research. NRT is seen as having done an excellent job of building cohesion and more collaborative attitudes are now evident.

Māori partners were suspicious to begin with as scientists had been unable to share their work because of Crown agency restrictions on data access and contracting partners.

NRT has addressed the need to engage iwi throughout the development and implementation of Biodiversity Management Areas (BMAs). It is acknowledged to have not been perfect, and there are still issues and tensions, particularly in the Māori space but what has been done well is to include Māori from the outset in the design and being open with thinking on Māori research. The number of mana whenua kaitiaki in each BMA is between two to eight.

The result has been a broadening of the science to include the social science space, which is a challenge given funding constraints. NRT has at times needed to move slower in the Māori space and this is a potential tension. Researchers and agencies want to move at pace but Māori need to trust and spend time getting to know everyone before they will share their ideas. Interviewees noted that NRT did not anticipate how long this would take, most likely because it was thought the relationships already existed. However this was not the case as NRT was a new entity and process.

Te Whakahononga is a very innovative approach developed by NRT to coordinating a multi-disciplinary response, and is seen as a real strength. It is connecting people who have mātauranga Māori skills and unique localised knowledge with other NRT scientists across 12 areas impacted by KDB or MR. With 12 different mana whenua groups coming on board, this is a strong level of community/hapū participation enabling the use and building of mātauranga. Te Whakahononga is a te Tiriti-led approach to conservation. It has taken time to develop this inclusive, co-developed approach but this is likely to deliver better outcomes in the long-term.

These initiatives, driven by NRT to create benefit to kauri and myrtle species, are giving effect to the Vision Mātauranga (VM) policy and government obligations under te Tiriti in RS&I, enabling opportunities for mātauranga Māori, Māori researchers and Māori-led research to deliver Māori

aspirations. The strong relationships and trust NRT has built with Māori is helping bridge the gap between Māori communities and the Crown.

The connection with mana whenua is a critical component for NRT but is likely still under-resourced. This is particularly evident in operational support required for data gathering and technical support as well as for rescuing mātauranga Māori knowledge from kaumātua in order to build up the new generation of knowledge holders and developers.

Māori partners that were consulted are generally satisfied with the approach that NRT has taken to research development and regard the Platform as being impactful. They appear satisfied with tools and outputs from the NRT Platform to date, and progress toward delivering tools by the end of the contract.

Finding 5:Factors including differences between the strategic research intentions of the investment and the operational needs of agencies have led to a gap in the relationship between Ngā Rākau Taketake and operational Crown agencies charged with the kauri dieback and myrtle rust response, and action from all parties is needed to improve communication and the transfer of knowledge .

- *MPI and DOC operational agencies expressed a strong dissatisfaction with the relationship, communication and outputs from NRT*
- *There is a funding gap between strategic and operational research and no specific investment pipeline in place to fix this*
- *This, and the differing needs and expectations of mana whenua groups and of Crown operational agencies, creates a challenging tension that NRT must manage*

NRT has relationships with operational Crown and local government agencies (notably MPI, Biosecurity New Zealand, DOC, Auckland Council) that were part of priority setting for NRT. These agencies are seeking solutions to apply in their operational work on KDB and MR.

Whilst the relationship with Māori end users is very strong, the relationship with Crown agencies is not. It was noted that many times science platforms have been effective at meeting government priorities and not Māori priorities but this Platform is the opposite.

There appears to be a number of factors contributing to this:

- Changes in personnel on both sides mean there has not been continuity of contact
- The NRT funding is for strategic research not for operational research
- A gap exists between where NRT work finishes and where operational research begins
- No funding has been explicitly allocated to close this gap
- Confusion remains over roles and responsibilities

- Sensitivities exist in sharing knowledge developed by tangata whenua, which is subject to Cultural Authority Agreements (CAAs) and cannot be automatically shared with the Crown
- Agencies feel at arm's length and are frustrated that they have been unable to tease out from NRT what can be operationalised from the research

A big part of the problem here appears to be that there is not a deliberate, clear pipeline of investment to allow both strategic research and operational research to continue in partnership with each other in appropriate balance. It was noted in a number of interviews that if you set up something that has this operational need, you must also have a pipeline between fundamental research and operationalising that research. The gap between NRT strategic research and the operation work of agencies was described as a "valley of death", where the research is complete but there is not the resource to convert it into operational actions on the ground.

Interviews revealed that MPI and DOC operational agencies are generally dissatisfied with NRT and do not expect the Platform to be impactful in producing practical tools or outputs. This was not a universal view and other operational agencies were more positive but remained unsure of what practical tools they could get.

There is a tension for NRT to manage in balancing the differing expectations and approaches of its tangata whenua and Crown stakeholders. This is not easy as the degree of trust is low. Cultural Authority Agreements (CAAs) in place across NRT specify sharing of certain data and information. NRT has had meetings with TK and DOC around this to explain the process and expectations of tangata whenua. Specifically, that the scientists are custodians and require mana whenua consultation before data/information that mana whenua groups have sovereign authority over can be shared with Crown agencies. Difficulties arise when Crown agencies develop and use their own processes that may not give effect to agreed NRT protocols under CAAs.

The NRT leadership is aware of these tensions, has been working to fix the relationship and believe that they have been making progress. The KAG was intended to provide a mechanism for improving knowledge transfer by working alongside NRT. However, interviews with the MPI and DOC operational agencies revealed that the tensions are still very apparent.

MBIE has sought to address this tension with NRT over several years, seeking in its feedback to NRT improvements in communication with MPI, DOC and TK of how research results are delivering impact and seeking case studies that demonstrate how NRT research is supporting and being used in operational initiatives to fight myrtle rust and kauri dieback. MBIE also noted the need to remain vigilant about expectations for NRT research and to be clear that SSIF investment is for scientific research, not operational research or expenses.

Additional efforts are required by NRT and Crown agencies MPI, DOC and TK to build an effective relationship. These agencies are intended to be partners in NRT, and are expected to work closely with NRT to ensure that their research priorities are incorporated. Improved relationships with DOC, MPI and TK are necessary to support NRT's work beyond the SSIF contract end date.

Finding 6: COVID-19 resulted in deviations from the Ngā Rākau Taketake Platform Plan but these were justified.

- *COVID-19 caused deviations due to reduced availability of people and disrupted supply chains*
- *These deviations were justified*
- *A revised timeline for delivery has been agreed with an extension to 2024*

Due to COVID-19, approximately $3m of delayed work will carry through to FY24 as agreed with MBIE. This deviation from the plan is justified.

COVID-19 impacted Māori communities and reduced their capacity to be involved in NRT research. Lockdowns, mandates and the need for community and personal protection meant some field research and engagements were unable to proceed effectively. It also affected logistics support, international collaboration and the ability for some areas to recruit new talent at a crucial time. This negatively impacted the overall delivery of nearly all projects.

Research and deliverables were updated in the Annual Workplan (AWP) review process to align with the new contract end date (31 March 2024). The time-only contract extension should enable the affected research to be completed.

Finding 7: Ngā Rākau Taketake has a valuable potential impact on wider RS&I sector by demonstrating current best practice in developing mātauranga and mana whenua relationships with western science.

- *NRT is an exemplar of how to develop mātauranga and mana whenua relationships with western science*

NRT has developed a successful partnership to "bring mātauranga and science together in a good way". As noted above, building from the outset a co-governance structure involving tangata whenua and tangata Tiriti, and making genuine steps forward in connecting with mātauranga and mana whenua have been critical steps to progress the NRT Platform. These experiences should be shared with other science programmes to look at what has worked well and how to replicate the benefits of these deeper, positive engagements with tangata whenua. Interviews indicated that more is possible as well. NRT can give insights on further improvements for building genuine partnerships between mātauranga and science knowledge systems.

Future Focus

Finding 8: Not all the knowledge needed to inform the development of practical tools required to address kauri dieback and myrtle rust can be delivered within the current term of investment.

- *NRT is expected by stakeholders to do more than the resources provided can realistically support*
- *Further work is required beyond the life of the current Platform to take ecosystem-level approaches*

In the future, more work is required to increase knowledge for long-term management of KDB and MR. This requires more holistic, ecosystem health approaches to complement existing disease-based approaches, in order to protect the ngahere as a whole. Taking this more holistic approach is supported by mātauranga, mana whenua and western science. This is likely to be a more effective long-term strategy as there are many aspects that drive disease spread which are hard to manage without taking a whole-of-systems approach. This holistic ecosystem health view must include mātauranga and western science.

Finding 9: Consideration must be given to establishing longer-term investment with similar investment settings to ensure there is a clear go-forward plan to continue the work of Ngā Rākau Taketake .

- *A go – no go decision is required soon on whether to continue the work*
- *Future investment must provide a longer runway for investment of at least five years or more, as there is not a short-term fix*
- *The current investment settings with a long-term strategic focus are appropriate for delivering future research*

There is no current plan apparent for continuing the work of NRT beyond FY 23-24. An investment mechanism is required beyond the term of the current contract. The majority of stakeholders and end users of NRT want to see this important work continue. Future investment should give more certainty for this long-term strategic research alongside the operational needs and this should be of at least five years duration or longer. If funding is secured and certain for this longer period, it gives much greater scope for focusing on the best knowledge creation activities and outcomes. Longer-term investment gives a greater scope to translate new knowledge into practical tools and outcomes.

Finding 10: A future host must have a mission focus, be independent to deliver "right teams" and able to ensure trust and confidence from mana whenua groups and other stakeholders.

- *A future host must ensure a mission focus and have independence to deliver a "right teams" approach*
- *Trust and confidence from mana whenua groups and operational agency stakeholders must be ensured*
- *Opportunities should be pursued to reduce layers of governance and simplify contracting, including new contracting approaches with mana whenua groups*

The mission focus of NRT is valuable and it is a strong base to springboard off that is collaborative and value-led. Relationships will require careful consideration when selecting a host for the future, to ensure progress from NRT is not lost. Perceived independence is critical. However, while existing governance of NRT has been effective there is still room for further improvement in linking with operational agencies.

For a future continuation of this work a "structure" or "platform" is required to be established and hosted somewhere. As long as the people who host it are competent it would not necessarily matter where it was. It must allow the collaborations that have been established to continue, especially as the research moves more towards applications, to facilitate tools being picked up and used. A succinct way of working with communities and stakeholders is required to ensure that tools will be used and acceptable.

A future entity could be hosted by a Māori entity, provided there is an understanding that both a Māori and western science perspective would be supported and that the two systems would need specialised people who work under those systems. It could be hosted by a research provider but not necessarily a university because this may restrict the mission and output focus needed.

Simplified contracting approaches are needed to ensure efficiency, including considering new ways of contracting with mana whenua groups. This should be looked at to balance the need to provide assurance that money is used appropriately, with the need to have te Tiriti-appropriate contracting procedures. Tangata whenua require flexibility to pursue their own appropriate goals and in a true partnership relationship in the spirit of te Tiriti, iwi and hapū would have significant scope to make their own decisions.

Recommendations and Conclusions

Within Remaining Term of NRT Platform in FY23-24

Recommendation 1: Build closer engagement between Ngā Rākau Taketake, the Ministry for Primary Industries, Tiakina Kauri and Department of Conservation to improve relationships, communicate progress and align strategic and operational research.

Further work is required to build respectful and effective working relationships between NRT, MPI, TK and DOC to increase understanding of the value being created by NRT. Consideration should be given to establishing higher level person-to-person relationships between NRT and these Crown agencies at the Chief Science Advisor level or Tier 2 or 3. This would elevate the relationship so it is connected at all levels. Time must also be regularly scheduled for contact between the relationship managers in the respective organisations to ensure continuity. It will be important to more clearly present the practical outcomes and tools that will be available to agencies from NRT. It will also be important to draw a line of sight from the strategic work to the operational needs, particularly where the operational work is not being done within NRT. Opportunities for jointly preparing proposals for a more connected approach to strategic and operational research should be explored.

Recommendation 2: Urgently prepare an inventory and research brief of all the practical tools and outcomes for the ngahere that (a) have been delivered over the life of Ngā Rākau Taketake and (b) are possible in the future now as a result of the strategic work undertaken.

A stocktake should be conducted urgently by Co-Directors to identify and describe the practical tools and outcomes that have already been delivered from NRT, and those that might result in the longer-term from the progress made in developing new strategic knowledge. This simple inventory of practical tools and outcomes does not currently exist and as a consequence these are not well understood by participants or end users. A research brief should also be compiled from this which communicates succinctly the research findings and is usable by both agencies and communities.

Recommendation 3: Increase communication of results and these expected practical tools and outcomes to end users and participants.

Improvements in communication are needed, as many people involved still do not feel well informed of the successes achieved in NRT and want to see summaries of results being shared. In particular there is a gap in clearly and simply communicating the anticipated benefits of the work and the tools and practical outcomes that are expected to come from it. This should be a focus for communication and should be shared face-to-face with key stakeholders to invite feedback, as well as through the more general channels of community hui, newsletters, social media and the annual Kaurilands Summit. Additional effort in management and in more specialised communication approaches are required to meet this need.

Beyond Remaining Term of NRT Platform in FY23-24

Recommendation 4: Continue the work of Ngā Rākau Taketake by providing long-term investment beyond 2024, adding ecosystem health approaches.

An approach such as NRT should be continued beyond 2024 with long-term investment of at least five years. This should be extended into holistic approaches to ecosystem health complementing the existing disease-based focus, in order to protect the ngahere as a whole. As noted above, taking this more holistic approach is supported by mātauranga, mana whenua and western science, and is likely to be a more effective long-term strategy as there are many aspects that drive disease spread which are hard to manage without taking a whole-of-systems approach. SSIF, or its future equivalent, is an appropriate investment mechanism.

Recommendation 5: Give future responsibility for delivery to an entity that can pick "right teams" and ensures trust and confidence from mana whenua groups and operational agency stakeholders.

An entity should be established with a mission focus, creating "right teams" without bias to particular organisations and building off the valuable approaches and relationships that NRT has established. Continuing a co-governance model between tangata whenua and tangata Tiriti and retaining perceived independence is critical. It must allow the collaborations that have been established to continue. This entity could be hosted by a Māori entity, provided there is an understanding that both a Māori and western science perspective would be supported and that the two systems would need specialised people who work under those systems. Simplified contracting approaches are needed to ensure efficiency, including considering new ways of contracting with tangata whenua. This entity must be able to connect with Māori communities and engender strong trust.

Recommendation 6: Structure future research investment to have an integrated set of activities that link from strategic research through to operational research.

More alignment and coordination is required to avoid disconnects in the innovation investment pathway. A pipeline of investment must be created to allow both strategic research and operational research to be conducted in partnership with each other in appropriate balance. This will overcome the current gap which exists between strategic research and the operational research of agencies. This latter operational work is underfunded at present and does not fit as part of an overall package.

This new approach should be designed to convert strategic knowledge into operational actions on the ground in an integrated investment framework:

- This full investment pipeline could sit with MBIE but there should be a formalised investment of operational research aligned to this with a mechanism for government agencies (MPI, DOC,

TK) that are dependent on the science system to disperse funds so they can deliver on their missions.

- SSIF is a useful mechanism of investment for the strategic work having the advantage of being longer term for this long-term problem. Whatever source of funds is used it should be long-term in nature.
- This will also require greater coordination between operational Crown and local government agencies and tangata whenua, with respect shown for tangata whenua knowledge and rights in line with te Tiriti and "whole of government" common, agreed frameworks for Crown agency partnerships with tangata whenua.

Recommendation 7: Increase support for mana whenua groups to engage and to develop mātauranga and build capability for tikanga-led approaches to build on the existing relationships and approach started in Ngā Rākau Taketake.

The Tiriti model for research leadership must be continued to retain the trust of tangata whenua and application of mātauranga. Relationships with tangata whenua should be continued in a partnership with end-to-end delivery, from tangata whenua co-leadership of design and investment through to tangata whenua actions on the whenua, with resourcing right into the ngahere. Further resourcing is required for the mana whenua group contributions to the work as the current funding distribution remains inequitable. This will help address contributions that occur but are not adequately funded. Examples are the extra burden on tikanga-led work, bringing non-Māori up to speed with Te Ao Māori in addition to doing their own research, rescuing tikanga knowledge from kaumatua and the community and adequately funding mana whenua group operational field work in the ngahere.

Appendices

Appendix 1: Terms of Reference

Appendix 2: Information reviewed as part of the process of preparing this report

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Appendix 1: Terms of Reference

Terms of Reference

Ngā Rākau Taketake Contract Review

14/12/2022

New Zealand Government

1. Motivation

Purpose

The purpose of the review is to fulfil the Ministry of Business, Innovation and Employment's contractual obligation to review the performance of the contract holder (with respect to the investment contract) by the end of the fourth year of the contract term (June 2023). As written under Section 4.11 of Schedule 2 of the Ngā Rākau Taketake (NRT) Strategic Science Investment Fund (SSIF) Investment Contract.

These Terms of Reference define the review process and have been agreed to by the General Manager Science System Investment and Performance (SSIP) at MBIE, with input from the NRT leadership team, Ministry for Primary Industries (MPI) representatives from Tiakina Kauri (the Kauri Protection Agency) and the Pest Management team, the Department of Conservation (DOC) Chief Science Advisor, MBIE Science Policy, and the Manager of Strategic Investments and Manager of Investment Operations from MBIE's SSIP Branch.

Background

The NRT Platform is a $34.5m, four-year programme funded through the Strategic Science Investment Fund (SSIF) mechanism. The intent of the funding that underpins the NRT SSIF Platform is to address the critical need for research to generate long-term solutions and inform the development of tools and approaches to counter the spread of kauri dieback and myrtle rust.

The purpose of the NRT Platform – as agreed to by MBIE during the contracting of this Platform – is to deliver science, data and solutions to enable Aotearoa to more effectively manage the kauri dieback and myrtle rust pathogens. NRT set out to apply a systems level approach to tool development by ensuring the wider sector works together, engages with mana whenua and empowers communities to assist in protecting our ngahere.

When NRT was contracted, the New Zealand's Biological Heritage (NZBH) National Science Challenge was selected as the most suitable host (lead contractor) for the investment due to their alignment with the kaupapa and enabling environment with an independent governance structure. Manaaki Whenua Landcare Research is the lead contractor of the NZBH National Science Challenge, and has many researchers and employees involved with the NRT SSIF Platform which means they also have interest in the success of this Platform.

This is the first and only review stipulated in the NRT investment contract. The contract commenced on 1 May 2019 and the original end date was 30 June 2023. In December 2021, NRT management were granted a nine-month no-cost extension until 30 March 2024 to account for lost field work time during the 2021 COVID-19 lockdowns in Auckland and Northland regions. There was no modification to the payment schedule through this variation and funding still ends in June 2023, however research will continue until 30 March 2024.

The NZBH governance group oversees the strategic direction of the NRT Platform. NRT is also able to leverage aspects of the NZBH National Science Challenge including their administrative and management capacity and capability, the International Science Advisory Panel, the communications team and the expansive NZBH connections across the rohe.

The NRT SSIF Platform is governed by the overarching purpose and principles set out in the SSIF Investment Plan 2017-2024. The purpose of SSIF is to support longer-term underpinning infrastructure and programmes of mission-led science critical to the future of New Zealand's economy, environment and wellbeing. The principles and signals of SSIF Programmes Investments are below.

Principles:

1. The SSIF is a strategy-driven investment
2. SSIF Investments are primarily mission-led
3. The SSIF is a purchase mechanism
4. The performance of SSIF investments is clear (transparent)

Investment Signals:

1. The strategic plan and/or direction
2. The process to ensure the excellence of each platform
3. How the platform will deliver shorter and longer-term impacts
4. How research effort will be distributed across horizons
5. Appropriate arrangements for contributions from industry and other end-users
6. How the platform will contribute to capability development
7. How the platform reflects the approach laid out in the Vision Mātauranga policy
8. How the platform will leverage connections and be conducive to collaboration both domestically and internationally between research organisations and with sector end-users.

Objectives of the review

To determine:

- The delivery of the NRT SSIF Platform Plan, which includes achievement of KPIs and progress against themes detailed in the National Science Plans for kauri dieback and myrtle rust.

- Whether any deviations from the Platform Plan were justified and contributed positively to the wider kauri and myrtle rust research landscape.

- Whether Māori partners, government agencies and other stakeholders are satisfied with the approach that NRT has taken to research development and whether they regard the Platform as being impactful.

- Whether next/end-users are satisfied with tools and outputs from the NRT Platform to date, and progress toward delivering tools by the end of the contract is satisfactory.

- Whether the current investment settings are appropriate for delivering future research.

2. Scope and Process

Scope

The following questions will guide the scope of the review.

1. **How has the NRT SSIF Platform performed since its establishment?**
    a. Against expectations in the Platform Plan including KPIs and National Science Plans
    b. At embedding Mātauranga and achieving Māori aspirations
    c. At working collaboratively and actively managing and enabling meaningful stakeholder relations
    d. At delivering tools, sharing information and techniques to next-users (agencies, Māori, communities)
    e. Considering deliverables or outputs that are yet to be achieved in the remaining contracted period

2. **Is the current mechanism for delivering kauri dieback and myrtle rust related research appropriate going forward, should future funding be available? Considering:**
    a. Independent governance and management structure
    b. Research approach and current Platform Plan objectives
    c. Contractual linkages to the National Science Plans and the Knowledge Advisory Group (KAG) for kauri ora and myrtle ora
    d. The advantages and drawbacks to using SSIF as the mechanism of investment

Topics that are <u>out of scope</u> for the review:

- The delivery of national-level operational frameworks and plans in relation to myrtle rust and kauri dieback management

Process

The review will be led by the MBIE Strategic Investments Team. The review will be conducted by one or two independent reviewers, depending on the knowledge and expertise of the reviewer(s) available, with support from MBIE Investment Managers.

The review will be primarily undertaken through interviews with people selected by MBIE who are engaged with the NRT Platform. Interviews will be organized by MBIE and led by the independent reviewer(s) with Investment Managers from the Strategic Investments Team sitting in as observers. There will also be written information available to reviewers outlined in the resources section below.

One of the independent reviewers will lead the documentation of findings of the review in the form of a report. The final report will be shared with NRT and key stakeholders for comment and then made publicly available.

The report may be used to inform advice on future funding related to the NRT Platform, or the funding for research on the kauri dieback and myrtle rust pathogens. The report may also inform policy work to consider future approaches for national research priorities, public good science and Māori-led RSI activities, in the context of the Te Ara Paerangi Future Pathways reforms.

Roles

The independent reviewer(s) will have expertise in, or have access to additional expertise on:

- The wider Research, Science and Innovation sector and impact pathways from large-scale government funded research programmes
- Research that meets the needs and aspirations of Māori, including understanding of Māori perspectives and connection to taonga species (such as kauri and myrtaceae)
- Expertise in stakeholder management and expectations, including the nuances of government and Māori relationships across the wider research sector

The reviewer(s) will be asked to fill out a conflict of interest register to ensure they are a neutral party without significant bias toward aspects of this investment, the contractor or NRT's stakeholders and partners.

MBIE Investment Managers will:

- prepare the report template and collate background information
- select interviewees
- coordinate, observe and transcribe interviews
- discuss draft findings with independent reviewer/s
- help to finalise the review report (led by the independent reviewer)
- support MBIE decision-making following finalisation of the review report

3. Key Dates and Deliverables

Key deliverables and indicative timings are shown below:

Phase	Milestone or Activity	Timeframe
Pre-Review	*MBIE contacts independent reviewer(s)*	*Dec 2022*
	MBIE organises timings for interviews and contracts reviewer(s)	*January/February 2023*
Reviewer/s undertake Interviews and Desktop Review (February-March 2023)		
Post-Interviews	*Draft Report*	*Early April 2023*
	Final Report	*Late April 2023*
	Communicate outcome of review to the Ministers for RS&I, Biosecurity and Conservation	*Late May 2023*

4. Resources

MBIE will carry the costs of the review, including the production of a final report.

Information sources that are <u>in scope</u> for evaluating NRT:

- Perspectives obtained through interviews

- All MBIE-held monitoring reports including assessments and feedback letters
- The NRT SSIF Platform Plan (including specified MPI Science Plans for both pathogens)
- The SSIF Investment Plan
- Written advice from the past Science Advisory Groups and current KAG on the scope and direction of NRT research
- NRT outcomes framework and outputs document (to be supplied by NRT)

Information sources that are out of scope for evaluating NRT:

- BioHeritage Governance Group meeting papers
- NSC Investment Plan
- Beyond Myrtle Rust Endeavour Research Programme
- National-level papers, plans and frameworks that were developed after the contract commencement and that are not specified in any deliverables e.g. Kauri Dieback National Pest Management Plan (SSIF has some flex to pivot in response to new information, but fundamentally the direction of NRT was pre-determined in the platform plan due to limited timing of the investment).

5. Governance and management

The review will be managed by the MBIE Strategic Investments Team. There is no specific steering group required for governance and oversight of this review, however, the Strategic Investments team will seek input from the MBIE Funding and Priorities Steering Group when necessary.

6. Stakeholder engagement

The following people may be approached for interviews:

- Members of NZBH and NRT governance and leadership teams
- Researchers, Theme Leads and other employees working for NRT
- Stakeholders and Māori partners working with NRT or using outputs from NRT (including but not limited to MPI, DOC, Councils, iwi, hapū)
- Members of the KAG for kauri ora and myrtle ora
- MBIE Investment Managers
- MBIE Policy team members
- Other persons associated with NRT in any capacity
- Other researchers, organisations or community members involved in work for either kauri dieback or myrtle rust but not involved in work with NRT

7. Dependencies and risks

Relationships and dependencies

The outcomes of this review will be made available to the Ministry for Primary Industries, Tiakina Kauri and the Department of Conservation, who are the crown agencies in charge of managing kauri dieback and myrtle rust biosecurity incursions. The findings of this review may be used by these agencies to inform decisions about how best to support uptake of new research and tool development for management and response activities.

Decisions around the general use of the SSIF investment mechanism and decisions on future funding allocation for kauri dieback and myrtle rust (if funding is available) may be dependent on the outcomes of this review.

Key risks and mitigations

The key risks to timely review delivery are:

- Reviewers unavailable within the proposed timeframes
- Interviewees unavailable within the proposed timeframes
- Delays to final report due to unforeseen circumstances with reviewers

Any risks will be managed if they arise by the Strategic Investments team. Backups for both reviewers and interviewees will be identified to ensure availability and delays will be managed as they eventuate.

Appendix 2: Information reviewed as part of the process of preparing this report

Documents

Annual Progress Report NRT 21-22

Approach To Investing Proposed New Funding For Research To Address Biodiversity Threats March 2018

Kauri Dieback Science Plan

MBIE Additional Information Regarding NRT Critical Steps FINAL March 2023

Myrtle Rust Science Plan July 2019

Ngā Rākau Taketake Outputs 2019 to Jan 2023

NRT Info Pack Summary January 2023

NRT SSIF Annual Update for 2022-23 Feedback Letter

NRT SSIF Progress Report for 2018-19 Feedback Letter before Strategic Discussion

NRT SSIF Progress Report for 2018-19 Feedback Letter after Strategic Discussion

NRT SSIF Progress Report for 2019-20 Feedback Letter

NRT SSIF Annual Update for 2021-2022 Summary Feedback Letter

NRT SSIF Progress Report for 2020-21 Feedback and No-Cost Extension Letter

TOR for NRT Review

Interviews

A total of 20 interviews were conducted involving 29 people.

Auckland Council

Biosecurity New Zealand

Department of Conservation

Manaaki Whenua Landcare Research

Ministry of Business, Innovation and Employment

Ministry for Primary Industries

New Zealand Biological Heritage National Science Challenge

Ngā Rākau Taketake Platform Team

Ngāti Hine

Ngāti Kuri

Patuharakeke Trust