G.40 Statement of Corporate Intent (2024)



Manaaki Whenua Landcare Research

STATEMENT OF CORPORATE INTENT 2024–2029







He Kupu Whakamihi

Ki o tātou tini mate kua wheturangitia ki te pō, moe mai rā i te okiokinga roa. Ki a tātou e mahue mai nei ki te ao tūroa hei manaaki tonu, hei tiaki tonu i te whenua me ngā momo koiora kanorau katoa o runga, tēnā tātou katoa. Anei e whai ake nei te Tauākī Whakamaunga Atu a Manaaki Whenua mo ngā tau e haere ake nei (2024–2029).

To those who have gone before us and who now adorn the night sky as stars, we acknowledge you and trust you rest easily in the long sleep. To those of us who still reside here in the world of the living and who continue to nurture and care for the land and the many and varied life forms upon it, we acknowledge and greet you also. We present here the Statement of Corporate Intent for Manaaki Whenua for the years 2024–2029.

Cover: *Left:* Dr Suzanne Lambie, Senior Researcher in soil biochemistry, sampling water in a constructed wetland system in Taupiri, Waikato. *Centre:* Pedologist Dr Kirstin Deuss sampling soil in the Blind River area south of Seddon, Marlborough. *Right:* Senior Researcher in biocontrol and molecular ecology, Dr Manpreet Dhami, treating mānuka flowers in Makuri, near Palmerston North.

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Chair and CEO overview

This Statement of Corporate Intent (SCI) describes Manaaki Whenua – Landcare Research's (Manaaki Whenua's) approach to creating value for Aotearoa New Zealand through its research, people, and partnerships. It describes how we align our research priorities and organisational strategy with government priorities and the broader research and development needs of Aotearoa New Zealand. This SCI also indicates our financial position and expected performance over the period 2024–2029.

Context

Manaaki Whenua has maintained its fiscal sustainability over the past 6 years, with year-on-year growth in science revenue reflecting our strong alignment with government and primary sector priorities for environmental research. We have seen significant growth in our Climate Change Adaptation and Mitigation research portfolio, in line with Aotearoa New Zealand's commitment to international climate goals. We have seen an increase in demand for social research capability that underpins the uptake of research within society. We have also seen an increasing demand for digital products that put research outputs into the hands of land-use decision-makers, enabling them to apply research and environmental data in real-world decision-making.

In fact, we have seen sustainable growth in research and associated revenues across all seven of our research portfolios. Each portfolio is planning its research direction for the next few years in response to government priorities as well as priorities for research and development within the commercial sector. Later in this SCI we go into further detail about these priorities for each portfolio.

Looking ahead over the next 5 years, we are aware of and responding to several key signals from the Government and commercial sector, including an expected reduction in central government expenditure. Over the past few years, Manaaki Whenua revenue from government sources has included circa 30% from MBIE's Strategic Science Investment Fund (SSIF, sometimes referred to as Core funding), 35% directly and indirectly from other MBIE sources (this includes around \$7.5 million per year from the National Science Challenges, which end in June 2024), and 20% from other central government funding.

We also appreciate our shareholding Ministers' expectations that science, innovation and technology sector partners will work more closely with the commercial sector to drive investment in environmental and economic outcomes. This signal is well received, and we expect partnerships within the commercial sector to be central to ensuring the sustainability of Manaaki Whenua's important work in the coming years.

Our national role

As the Crown Research Institute for our land environment and biodiversity, we are dedicated to helping the people of Aotearoa New Zealand understand and live well with our land. Our research spans four impact areas:

- enhancing our soils, water, and land
- restoring biodiversity and beating invasives
- action on climate change
- people and the environment.

Our 266¹ researchers and 152¹ support staff work across seven research portfolios on projects that include partners from the government sector, the primary sector, the broader commercial sector, the education sector, Māori business and iwi, hapū and whānau, as well as the international science sector. In the 2023/24 financial year (FY) we have more than 700 revenue-generating research projects underway, which support improved outcomes for Aotearoa New Zealand's land environment and biodiversity.

Our future priorities are driven by the needs of our partners, with key signals from the Government and our Outcome Advisory Panel and Science Advisory Panel shaping our forward-looking research programme.

¹ FTE totals.

Te Āpōpōtanga – our strategy

Our current organisational strategy, Te Āpōpōtanga, is centred on a strategic priority to drive research impact with our partners, drawing on MBIE's definition of research impact: 'A change to the economy, society or environment, beyond contribution to knowledge and skills in research organisations.'

We know that our work generally contributes to meaningful impact, but historically it has been challenging to actively manage for increased impact at the time research is planned, conducted, and delivered. In response, our new Impact Management Framework supports decision-making at the level of a research project, enabling choices to be made and specific interventions identified that can increase the probability of meaningful impact resulting from the project. This work will lead to our teams driving more consistently in pursuit of a single set of objectives, and will support us to gain a more meaningful understanding of the breadth of our research and the factors that contribute to variability in realising impact across projects and portfolios.

Driving research impact with our partners is also supported by an increased focus on and investment in research data management and digital technology. Emerging technology, such as AI, offers significant potential for accelerating high-impact research and addressing the increasingly complex problems society faces. Digital technologies also represent a critical pathway to impact, because they enable us to turn research outputs into useful tools for decision-makers.

Te Āpōpōtanga identifies two other key strategic outcomes: weave the principles of Te Tiriti o Waitangi (Treaty of Waitangi) into our fabric, and create an environment for our people and research to thrive. These strategies underpin our pursuit of research impact.

We work extensively with Māori businesses, iwi, hapū, and whānau. Māori have a growing influence over land use and biodiversity outcomes. The Māori economy is expected to exceed \$100 billion by 2030, making them significant potential investors in environmental research. As kaitiaki (guardians) of the land and environment, Māori are key partners as we prioritise our research and drive impact for Aotearoa New Zealand.

Investment in internal systems, processes, and our wider operating model focuses on creating a sustainable working environment for our research and our people to be successful. Our models for supporting research delivery have evolved over 30-plus years of growth, and there is great potential to optimise them for our future. Our Mahi Tahi programme will deliver significant efficiency gains – targeting 60 hours per research FTE per year – through process simplification, system enhancements, and clarifying roles in project delivery. This investment underpins our future sustainability.

New Zealand's Biological Heritage National Science Challenge

As we publish this SCI we are closing in on the end of the National Science Challenges (NSCs). These have been vehicles for sector-wide focus on critical research priorities supported by targeted government funding. Manaaki Whenua hosted the New Zealand's Biological Heritage National Science Challenge (BioHeritage NSC) with a mission to reverse the decline of our biological heritage by protecting and managing biodiversity, improving biosecurity, and enhancing resilience to harmful organisms.

Manaaki Whenua is committed to ensuring that the research outputs, tools, practices, data, and partnerships developed through the BioHeritage NSC can continue to support outcomes and impacts for Aotearoa New Zealand. In this way we will ensure the investment in this priority area delivers targeted benefits.

With the NSC funding ending in June 2024, to capitalise on the achievements of the BioHeritage NSC we are pivoting to explore new commercial opportunities and revenue generation for biodiversity and biosecurity science.

Toitū Envirocare

Our subsidiary, Toitū Envirocare, supports our impact strategy by enabling the delivery of a market service supporting carbon measurement and reduction based on Manaaki Whenua's science. Toitū works with a wide range of Aotearoa New Zealand organisations across the government and commercial sectors, as well as supporting a range of international organisations through a partner in the UK.

Toitū continues to experience high demand for its carbon measurement and reduction programmes and expert advisory support, with revenue expected to increase from \$17 million in FY23 to \$18 million in FY24 (up 6%). This is less than originally forecast due to the difficult trading period leading up to the 2023 General Election, and the impact of the economic slowdown on Aotearoa New Zealand businesses' ability to afford both our programmes and the internal resources required to maintain them. While market conditions remain tight, business confidence has improved over the past 3 months, leading to a strong improvement in the sales pipeline. Toitū continues to expect significant growth over the next 5 years, linked to increased consumer demand, including international markets. Revenue for FY25 is expected to be \$19.8 million, an increase of 10% over FY24.

Financial sustainability

Later in this SCI we present a 5-year projection of our financial performance. The projections recognise that there will be revenue challenges, as we forecast a contraction in government spending, the end of several Endeavour programmes, remuneration expectations, SSIF contracts not being adjusted for inflation, and the end of National Science Challenge contracts in June 2024.

Despite these challenges we remain confident in our outlook for Manaaki Whenua. This position is supported by several key areas of focus.

- We are currently reviewing our cost base, with a focus on FY 24/25 to ensure we have the capacity for necessary investment in our operating model and to account for near-term revenue contraction.
- We are investing in critical operational improvements to drive efficiency and sustainability in research delivery and operations.
- Government-funded research will continue to make up a large proportion of our research programme and revenues. Research portfolios will continue to focus on developing these relationships and projects, building on the excellent relationships we have with key government partners.
- We are establishing a more systematic approach to developing new business in the commercial sector. This will require us to pivot from bidding for funding, to proactively identifying the needs of commercial customers and co-designing new projects.

Progress on the Impact Management Framework complements our focus on revenue diversification, as it will help us to navigate what new opportunities we will be chasing and manage trade-offs and priorities. Efforts to diversify revenue will also drive new partnerships and impact pathways, supporting our strategic objectives within Te Āpōpōtanga.

Colin Dawson Chair James Stevenson-Wallace Chief Executive

Our ambition and purpose

Our ambition

Kia mauriora te whenua me tōna taiao (make the life-force and vitality of the land strong). This requires a positive, reciprocal relationship between people and their natural environment – between iwi Māori and their ancestral lands.

Our purpose

Agreed in 2010, our Statement of Core Purpose (SCP) is 'to drive innovation in New Zealand's management of terrestrial biodiversity and land resources to protect and enhance the terrestrial environment and grow New Zealand's prosperity'. Under the Crown's SCP for Manaaki Whenua, we are mandated to be the lead Crown Research Institute provider for:

- improving the measurement, management, and protection of Aotearoa New Zealand's terrestrial ecosystems and biodiversity, including those in the conservation estate
- achieving the sustainable use of land resources and their ecosystem services across catchments and sectors
- improving the measurement and mitigation of greenhouse gases in the terrestrial biosphere
- increasing the ability of Aotearoa New Zealand industries and organisations to develop within environmental limits and meet market and community requirements.

Our science

Our focus on Aotearoa New Zealand's priorities

Aotearoa New Zealand and the wider world face a barrage of wicked environmental problems. Manaaki Whenua's wide-ranging and complementary research capabilities uniquely position us to address and help mitigate these matters of national priority. We respond to the complex social, cultural, and economic effects of the environmental challenges of climate change and environmental degradation (including soil erosion and biodiversity loss), and the effects of invasive species on Aotearoa New Zealand's taonga species. We work across four science areas for impact, outlined below. In the section 'Our research programme' we summarise how our research portfolio objectives contribute to these impact areas.

People and environment

Our social, cultural, and economic research capability builds understanding of people's decision-making in matters related to the natural environment. The audience for results from this research is diverse – including central and local government, Māori organisations, primary industry, businesses, NGOs, and communities – because all parts of society affect natural resource management. Our research spans rural, conservation, and urban landscapes, and the full range of ecosystem services viewed from both Western science and indigenous knowledge perspectives. It supports improved natural resource decision-making in Aotearoa New Zealand and in the Pacific. This research is integrated with our work in all impact areas where people need improved tools for decision-making, policy, governance, regulation, planning, and strategic development.

Action on climate change

Climate change is the major challenge of our generation and is of specific concern to Pacific Island nations. Over two decades we have redirected our research to focus on understanding Aotearoa New Zealand's emissions balance, supporting mitigation, and enabling adaptation and resilience to climate change. Our research has supported Aotearoa New Zealand's international emissions reporting and has provided an understanding of carbon stocks in our indigenous forests and in the soil. We have designed and supported pathways for carbon sequestration, and for businesses and communities to take meaningful climate action.

Enhancing our soils, water, and land

Soil health is central to our society's well-being. Soils hold more water than found in all our rivers, lakes, and aquifers, and are the pathway for pollutants and sediments entering waterways. Critically, soils are being lost by erosion from productive lands at unsustainable rates. One of the greatest challenges facing regional and national agencies, and the food and fibre sector, is managing land and water use to provide sustainable production while protecting downstream ecosystems and supporting diverse community and iwi values. Our work helps to understand soils, improve capability to manage land-use effects, and build confidence to deploy mitigation approaches.

Restoring biodiversity, beating invasive species

Having evolved in isolation, much of Aotearoa New Zealand's indigenous biodiversity is unique. Manaaki Whenua curates national and Pacific land biodiversity collections that include plants, invertebrates, fungi, and microorganisms. By clarifying how ecosystems function, the threats they face, and how they can be restored, our research helps improve understanding of the richness of Aotearoa New Zealand's biodiversity and the risks to it from exotic species.

Collections and databases

Manaaki Whenua creates, maintains, curates, and builds on several important scientific collections and databases. The specimens and data held in these resources underpin land environment, biodiversity, biosecurity, and climate research at Manaaki Whenua and in other research institutes in Aotearoa New Zealand and internationally. They hold taonga and associated data important to Māori. They also directly support industry and government with decision-making. This includes supporting the Ministry for Primary Industries with its biosecurity response, and supporting regional councils and industry with land-use decision-making. These resources represent critical public good research infrastructure that needs to be maintained for the good of all New Zealanders.

Several of the collections and databases we curate were identified in 1992 as nationally significant. Manaaki Whenua is responsible for maintaining nearly one-third of Aotearoa New Zealand's Nationally Significant Collections and Databases (NSCDs). Figure 1 identifies the nine NSCDs managed by Manaaki Whenua and supported by an SSIF funding platform.

The NSCDs provide fundamental information about our environment, are a critical part of Aotearoa New Zealand's research infrastructure, and are central to protecting our natural resources. They:

- underpin our biosecurity system, protecting valuable primary industry, tourism, and recreation sectors, and conservation efforts, by providing authoritative identification of new plants, insects, fungi or bacteria that may threaten the economy or the environment
- support Māori aspirations, contributing knowledge of taonga, and supporting kaitiakitanga in a rapidly changing world
- provide information that helps central and local government create, monitor, evaluate and improve evidence-based climate change, conservation, land and water policies
- provide evidence for farmers and other land managers to make land-use decisions and investments
- enable researchers to do better research, more efficiently, with access to specialist support
- support Aotearoa New Zealand's international citizenship, agreements, and obligations (e.g. environmental reporting).

The NSCDs have special significance for Māori, who have whanaunga (kinship) with the material in the collections. They are taonga (treasures) to Māori because they contain thousands of specimens of indigenous species, plus thousands of soil samples and associated data, and they are the physical aspect of whenua (land)

in all its forms. They hold ancestral connections and are the root of tūrangawaewae (the place where one has the right to stand, place of belonging) and whakapapa (genealogy).

Manaaki Whenua's Collections and Databases Te Tiriti Partnership Group, Te Rōpū Rangapūtanga Tiriti, was established to oversee the implementation of a comprehensive strategic plan for our collections and databases, and to advise us on how best to connect hapū and iwi to the taonga we hold on their behalf as their Te Tiriti partner.

The NSCDs are also internationally significant as a repository for specimens and voucher material of plants, fungi, bacteria, plant diseases, and terrestrial invertebrates for Pacific Island nations. As part of the international collections and databases network, Manaaki Whenua often loans objects internationally and supports overseas research of benefit to Aotearoa New Zealand and the world.

In addition, Manaaki Whenua has continued to develop important public good databases, which we support through contestable and commercial funding pathways for Aotearoa New Zealand. S-map – a national system that provides comprehensive, quantitative, national soil information to support sustainable development and scientific modelling – is one such example. S-map also feeds into other important tools, such as Overseer.

NATIONALLY SIGNIFICANT DATABASES



National Soils Data Repository (NSDR)

7,900+ New Zealand soil profile descriptions, plus analytical data on their chemical, physical, and mineralogical characteristics. Includes the National Soils Archive, a reference collection of 35,000+ soil samples for the NSDR

https://viewer-nsdr.landcareresearch.co.nz/

Land Resource Information Systems (LRIS)

Includes the New Zealand Land Resource Inventory [NZLRI], Land Use Capability [LUC], Fundamental Soils Layer [FSL], and related datasets and materials.

Presents general land characteristics and land evaluation information. It includes a range of land and soil data and information on environmental, climatic, land management and production attributes.

http://lris.scinfo.org.nz

https://ourenvironment.scinfo.org.nz/ https://soils.landcareresearch.co.nz/ https://irp.landcareresearch.co.nz/ https://antarctic-soils.landcareresearch.co.nz/

Ngā Rauropi Whakaoranga

2,400+ records on Māori names and cultural uses of New Zealand native plants, fungi, and algae. https://rauroplwhakaoranga.landcareresearch.co.nz

National Vegetation Survey (NVS) Databank

A national repository of plot-based vegetation survey data from 132,000+ survey plots going back over 75 years. Covers Northland to Stewart Island, the Kermadec and Chatham Islands, and from coastal to forests to high alpine.

http://nvs.landcareresearch.co.nz

SIGNIFICANT DATABASES



S-map

The digital soil map for New Zealand that provides comprehensive, quantitative soil information to support sustainable development and scientific modelling. https://smap.landcareresearch.co.nz http://lris.scinfo.org.nz

COLLECTIONS

Te Kohinga Tipu o Aotearoa – Allan Herbarium (CHR)

New Zealand's national herbarium with 800,000+ objects of New Zealand and South Pacific algae, lichens, liverworts, mosses, ferns, and seed plants.

www.landcareresearch.co.nz/allanherbarium

Ko te Aitanga Pepeke o Aotearoa – New Zealand Arthropod Collection (NZAC)

Largest collection of New Zealand's insects and related arthropods with 1,600.000 objects. Includes the National Nematode Collection of New Zealand [NNCNZ].

www.landcareresearch.co.nz/nzac

Te Kohinga Hekaheka o Aotearoa – New Zealand Fungarium (PDD)

Primary information source on New Zealand and Pacific fungi with 109,500+ dried fungal specimens, and voucher specimens documenting most plant diseases recorded in New Zealand.

www.landcareresearch.co.nz/pdd

Te Kohinga Moroiti Ora o Aotearoa – International Collection of Microorganisms from Plants (ICMP)

One of three major international collections for plant and soil bacteria, with living cultures of 23,500+ strains of bacteria and fungi from plants and soil.

www.landcareresearch.co.nz/lcmp

Te Kohinga Harakeke o Aotearoa – National New Zealand Flax Collection (TKHA)

Living collection of 240+ *Phormium* stions of cultural, economic, and historical interest

www.landcareresearch.co.nz/harakeke

Land Cover Database (LCDB)

A classification of land-cover change across New Zealand in a series of 5 snapshots dating back to 1996. Contains 33 mainland classes [35 including the Chatham Islands].

http://lris.scinfo.org.nz

https://lris.scinfo.org.nz/layer/104400-lcdb-v50-land-cover-database-version-50-mainland-new-zealand/ https://vizbe.landcareresearch.co.nz/

Figure 1. The Nationally Significant Collections and Databases (NSCDs) and significant databases curated by Manaaki Whenua. These hold important scientific and cultural information about the plants, invertebrates, fungi, bacteria, and soil and land resources in Aotearoa New Zealand and the Pacific.

Shareholding Ministers' priorities

Below are the priorities for Manaaki Whenua as expressed in the 2024 Letter of Expectations. This Statement of Corporate Intent shows how we intend to contribute to and address each of these expectations.

Doing our primary role

Our guiding strategy, Te Āpōpōtanga, and our annual portfolio work programme organise our activities to ensure we connect back to our core purpose. Our Senior Leadership Team reviews these plans regularly, provides oversight, and monitors progress and performance.

We will continue to deliver agile, timely, and collective responses to environmental issues that require multiagency collaboration, and we will continue to strengthen our relationships with our Te Tiriti partners.

We are currently embedding an impact-based framework to assess our activities and the areas in which we invest. This framework guides our activities towards areas most likely to lead to real change for Aotearoa New Zealand.

Working in the most efficient and effective way

Implementing new commercial arrangements will help us to drive efficiency, better deploy funding and resources, and improve targeted outcomes. Our impact-based assessment will improve our productivity and ensure we are delivering in the most efficient manner possible.

Being fiscally responsible

We recognise the constrained fiscal environment and the need to remain financially responsible. We have an active work programme, focused on both lifting performance and maintaining our financial resilience, to ensure we generate a return on shareholder funds. We monitor investment decisions very closely to ensure value for money.

Our 5-year revenue plan highlights the need for us to further deepen and diversify our commercial activities and private-sector relationships. We continue to explore opportunities to work alongside markets and commercial entities to help them realise a return in climate- and environment-positive actions from their investments.

Our first priority is to implement a sector-facing commercial strategy to diversify revenue, improve financial resilience, and lift the uptake of our science by the private sector.

In the following sections we outline the actions we have planned to meet the ministers' expectations.

Stakeholders' priorities

Science and Outcome Advisory Panels

In the 2023/24 financial year we reviewed our biodiversity and biosecurity research excellence over the past 4 years. For this we constituted a new **Science Advisory Panel (SAP)** to ensure we had the correct breadth and depth of expertise needed. The SAP included members from overseas.

We completed the review in early December 2023, and the SAP report and recommendations were presented to the Manaaki Whenua Board. In the upcoming 2024/25 financial year we will undertake a similar review of science excellence for our soils, land-use, and climate change research. Following the same process used for the 2023/24 review, we will convene a panel with the most appropriate skills and knowledge in these areas.

The 2023/24 SAP recommendations were as follows.

• Manaaki Whenua clearly defines impact and spheres of influence, and explores internal and external evaluation and monitoring approaches to better inform the progress of research programmes and environmental policy and regulatory settings without unnecessarily burdening staff.

- Manaaki Whenua considers strategies to facilitate opportunities for the strategic thinking that is essential for innovation, and the development of effective and targeted science through helping to de-fragment productive researchers' capacity, where possible.
- When considering the structure of the institute, the Panel suggests exploring alternative models to maximise the capability of researchers to deliver science, and the capacity of science managers to provide contributions to science given the value of their knowledge and experience, and the valuable role they can play in attracting resources and in staff development and mentoring.
- Manaaki Whenua looks to create and develop ways to maintain or enhance momentum achieved thus
 far in the reflexive collective learning between tangata whenua and manuhiri and seeks to expand this
 into areas that rely on support from hapū/iwi and/or hapori Māori (section of a kinship group, family,
 society, community).

In 2024/25 and beyond we will work to define priority impacts and enhance pathways to achieve these impacts. We are working with our principal researchers to provide mentoring, and using a small amount of our SSIF funding to provide time to develop ideas. We also have a major project in progress to refine our project delivery model (Mahi Tahi), which focuses on maximising researchers' capacity to deliver research. Finally, our Māori leadership team is bringing in a regular 'korero on the couch' session to support other leaders in their collective learning. This is in addition to our Tangata Tiriti wānanga (meetings) being run as part of our Kia Maīa programme.

The **Outcome Advisory Panel (OAP)** was formed to understand current and future stakeholder/customer needs, how we are delivering on information required, and, importantly, what organisational challenges we are facing that may affect the delivery of information. The OAP make-up reflects current drivers and the direction of Te Āpōpōtanga, with representation from central and local government and industry.

The OAP continues to provide valuable feedback six times a year. This is achieved through specific workshop sessions, as well as an annual meeting with the Board, to provide the Board with feedback from the sectors represented by the OAP members. Our current focus is to continue to engage the OAP with Manaaki Whenua's strategic direction and how we are creating impact.

Feedback from the meetings is also used to: help understand critical pressures on the economic and environmental situation for Aotearoa New Zealand, enable our research direction and science services to better meet the needs of our stakeholder/customers, and identify pathways for achieving the greatest impact given the challenges we are facing.

The OAP has identified the following challenges.

Climate change

- How will Aotearoa New Zealand's primary industries adapt, what are the opportunities, what tools do we need, how do we avoid unintended consequences, and what will the economic impacts be?
- The effects of extreme weather events and the increased likelihood of their recurrence.
- Resilience in the face of future events, drawing on lessons learned from Covid and Cyclone Gabrielle.

Social complexity

- Moving from theory to application, and using social practice and change theory to run appropriate processes for enduring approaches to environmental stewardship.
- Working with multiple goals and navigating complexity.
- Maintaining vibrant communities through change.
- Navigating the rise of post-truth groups and polarised viewpoints via influence in informed decisionmaking processes.

Understanding our environment

• Better characterisation of our soils and soil processes, water quality, and biodiversity through improved spatial representation.

• Getting the fundamental base layers of environmental data in place to enable evidence-based decisionmaking.

Mātauranga Māori, data sovereignty and Te Tiriti commitments

• Increasing our knowledge, understanding, and use of Māori knowledge systems for and with iwi/hapū.

Data innovations, AI, and remote sensing

- The use of new and emerging technologies to provide future solutions, especially in complex environments.
- The increasing need to recognise and accommodate data maturity and work within fragmented data systems.

Biodiversity outcomes

• Nature-based solutions, community-based solutions, improving biodiversity extent, and predator-free initiatives.

Navigating complex problems

- Using systems approaches to develop more dynamic management opportunities for primary industries.
- Taking more integrated approaches in our research.
- Avoiding unintended consequences through understanding complexity.

Panel members

Science Advisory Panel	Outcome Advisory Panel		
Professor Emily Parker (Co-Chair), Associate Dean of Science, Victoria University of Wellington	Sam McIvor (Chair), CEO, Beef & Lamb New Zealand, Wellington		
Dr Simon Lambert (Co-Chair), Chief Scientist / Kaitohutohu Mātanga Pūtaiao Matua, Te Tira	David Burger , General Manager, Sustainable Dairy, DairyNZ, Hamilton		
Whakamātaki Professor Andrew Sih , Environmental Science and Policy, University of California, Davis	Stephanie Rowe , Deputy Director-General (DDG) Biodiversity, Heritage and Visitors, Department of Conservation, Wellington		
Professor Shaun Ogilvie , Professor of Ecology and the Environment, University of Canterbury	Natasha Lewis , Deputy Secretary, Strategy, Stewardship and Performance, Ministry for the Environment,		
Dr Margaret Byrne , Managing Director of Biodiversity and Conservation Science, Western Australia	Wellington Karen Adair , DDG Agriculture and Investment Services, Ministry for Primary Inductries, Wellington		
Associate Professor Daniel Hikuroa, Māori Studies, University of Auckland	Cameron McIntosh, CEO, Southland District Council, Invercargill		
	Stephen England-Hall , Chief Retail Officer, Genesis Energy, Auckland		

Our research programme

How our seven research portfolios will deliver benefit to Aotearoa New Zealand over the next 5 years

Biota

Our collections and databases, managed in line with the principles of Te Tiriti o Waitangi and indigenous data governance, are a national treasure underpinning research to understand and protect our unique biodiversity and biosecurity.

Critical issues

- The collections are not fully inventoried, which limits the value they can provide as part of protecting Aotearoa New Zealand's biodiversity and the well-being of the land.
- Not all end-users can access the collections and databases, or easily use the information.

What we will deliver, 2024–2029	Benefits
 A waharoa (gateway) to the databases: information and data to Māori collection and paper-based information digitised for easier access. 	Partners, end-users, and kaitiaki are more aware of the information contained in the collections and databases. There is an increase in hāpu and iwi use through the waharoa.
Improved care and curation of the collections and databases through comprehensive policy and procedure manuals. Increased documentation of, and information on, the biodiversity of Aotearoa New Zealand.	Regional and central government use critical knowledge of the wealth, state, and trends in our biodiversity to inform natural resource decision-making.

Characterising Land Resources

To provide characterisation and modelling of Aotearoa New Zealand's soil, land cover, land use, and terrain, including state, trends, risks, and opportunities

- Our understanding of Aotearoa New Zealand's soil, land cover, land use and terrain its current state, trends, risks, and opportunities is inadequate, leading to poor land-use decisions.
- Land environmental data inequalities hold back Māori community aspirations and affect the mauri (life force) of the whenua, and data are often at a scale that is difficult for all landowners to use.
- There is reduced effectiveness of policy implementation and monitoring for climate change adaptation, greenhouse gas accounting, freshwater quality, soil and food security, and land-use suitability.

What we will deliver, 2024–2029	Benefits
 Expanded and improved, fit-for-purpose, national geospatial data sets; for example: S-map and National Soil Data Repository 	Māori have meaningful and readily available information and use it to make decisions that align with their aspirations.
 Highly Productive land, Land Use Capability, Land Fragmentation, and Land Cover Databases historical wetland extent. 	Regional and central government policies on climate change, freshwater, and land are better formulated, monitored, and improved.
 The data sets need to be: meaningfully framed for Māori and other key user groups supported by experts, and readily accessible via data and information delivery services seamlessly integrated into tools, decision-making, and monitoring frameworks. 	Farmers and other land managers make land- use decisions and investments based on stronger evidence. Researchers can do research more efficiently and effectively, and can easily access associated specialist support.

Climate Change Adaptation and Mitigation

To enable the creation of multifunctional landscapes in Aotearoa New Zealand and support synergistic climate change mitigation and adaptation that delivers a range of ecosystem services

Critical issues

- Greenhouse gas (GHG) emissions are increasing and our climate is changing, affecting our ecosystems, infrastructure, communities, and economy, but New Zealanders lack an understanding of the cumulative effects of a changing climate.
- To adapt and respond to climate change we need practical, cost-effective solutions to: help land stewards, ensure low-emission land use/products, support decision-making that includes ecosystem and social/economic implications, and ensure access for Māori to science that supports their aspirations to care for their environment.

What we will deliver, 2024–2029	Benefits
Improved tools and knowledge , informed by mātauranga Māori, for developing policies, making decisions, and taking action to adapt to or mitigate the effects of climate change. Tools for our stakeholders and partners will include:	Regional and central government use our information and advice for national policy development, planning, and reporting processes.
 maps and models of carbon storage in soils and vegetation validated approaches for mitigating GHGs and nutrient loss, and building resilience to climate change, and web-based tools to explore climate change scenarios climate-smart landscape templates to support multiple ecosystem services and adaptation to climate change. 	 Primary producers have trusted information and clear options when deciding how to engage with carbon markets or regulations. Māori landowners and other land stewards use our adaptation, mitigation, and transition tools and technologies.
Targeted work on peatlands will be carried out for an updated GHG inventory, ways to reduce GHG emissions and subsidence from productive use, and restoration techniques for drained peatlands.	Kaitiaki use our modelling to understand tohu (environmental indicators) within a changing climate.

Managing Land and Water

To enable kaitiaki and other stewards to better manage their land's natural capital and its impact on water

- Landscapes are managed piecemeal without considering their interactions and complexities. This results in not knowing the contaminants present and their impacts, insufficient landscape resilience to a warming climate, and accelerated erosion, causing degraded freshwater quality.
- Highly productive land is taken for granted and not protected for the ecosystem services it provides.
- Aotearoa New Zealand's science and innovation are led by global perspectives that do not involve indigenous knowledge systems.

What we will deliver, 2024–2029	Benefits
 We will deliver: issues framed in a way that supports mātauranga Māori new geospatial data sets and model outputs to better inform land and water management at national, regional, and farm scales guidance to encourage effective decisions on managing soil security, erosion, rehabilitation, and contaminants better targeting of mitigation measures that increase land and water resilience to climate change identification of catchment source areas and the impacts of sediment, nutrients, and bacteria. 	 Te ao Māori and mātauranga inform soil, land use, and water management, which enables kaitiakitanga, improving human and environmental well-being. Regional and central government set policies and targeting strategies that better mitigate erosion, sediment, and contaminants, and address climate change adaptation. Consultants and farm managers use digital data to improve fertiliser and water-use efficiency.

Plant Biodiversity and Biosecurity

To be the lead science provider to enable the restoration of Aotearoa New Zealand's plant-based ecosystems

Critical issues

historical time points

resilience to climate change.

- Invasive weeds affect all ecosystems in Aotearoa New Zealand and are close to outnumbering the native • flora.
- Maori need easier access to knowledge that will support their aspirations for their lands as kaitiaki, and . for delivering cultural, environmental, and commercial outcomes for whānau and hapū.
- Reconstructing resilient ecosystems requires deep understanding of the matauranga and science to achieve the best outcomes for managing rare and common taxa, and for understanding past assemblages and specialised/significant environments such as wetlands.

What we will deliver, 2024–2029	Benefits
Tools and knowledge to help develop policies, make decisions, and take action to protect and restore Aotearoa New Zealand's plant-based ecosystems. We will partner with hapū and iwi to:	Ecosystem and species restoration is informed by the past, cutting-edge genomic information, and modelling of future states to produce resilient natural
 co-design restoration plans and explore the ways native biota can help meet cultural and economic aspirations for their land develop a framework from a kaupapa Māori perspective for weed biocontrol assessment projects. Tools for our stakeholders and partners will include:	Conservation action outcomes are understood , along with how they alter the state and trends of biodiversity at local and national scales.
 a unified scheme for wetland extent and condition, for councils to meet their commitments under the National Policy Statement for Freshwater Management improved models using remote-sensed imageny for biodiversity 	The effects of invasive plants can be mitigated, and we understand how to tip ecosystems from domination by weed species to native species.
 Improved models using remote-sensed imagery for biodiversity monitoring of canopy species an update of the Quaternary Vegetation of New Zealand, to provide national-scale layers of past vegetation communities at different 	Kaitiaki are empowered to realise their aspirations and priorities for their taonga, including restoring cultural practice and providing economic

opportunities.

Society, Culture, and Policy

guidelines to better inform translocation/planting sources and provide

To improve natural resource and environmental decision-making in Aotearoa New Zealand, with Māori as Te Tiriti o Waitangi partners in our science and implementation

- Land managers face multiple cascading environmental issues due to the continuing decline in water quality, the prevalence of erosion, declining indigenous biodiversity (particularly in lowlands and agricultural land), and the impacts of climate change, all while food security concerns and environmental and natural hazards are increasing.
- Policy development is challenging for most New Zealanders. The number of reforms can be overwhelming, policy responses are siloed, there are inconsistencies between different policies for resource management, and policy implementation is slow across environmental domains.

What we will deliver, 2024–2029	Benefits
 Improved information on: attitudes, perceptions and behaviour towards the environment, disruptions, and responses over time the types and extent of vulnerabilities to disasters and natural 	Industry and regional and central government use strategies and management that account for and address multiple environmental pressures and incorporate mātauranga Māori.
hazardseffective governance/co-governance models and how to	Kaitiaki, hapū, and iwi are empowered and co- governing their whenua.
enable them. Collaboration frameworks, engagement processes, and tools to:	Education initiatives, natural resource agencies, and the primary sector empower New Zealanders to restore and protect the environment .
 bring together Māori and non-Māori world views, and assess the effectiveness of decisions based on multiple world views better connect New Zealanders to the environment and connect environmental outcomes to well-being 	Aotearoa New Zealand is prepared for change: regional councils have plans to reduce exposure to environmental disruptions, and industry and iwi are able to implement resilience measures.
 guide implementation and assess policy and management decision impacts across multiple environmental issues design policy instruments. 	The Asia–Pacific nations we work with have the tools and knowledge to manage their natural resources and improve climate change resilience.

Wildlife Management and Conservation Ecology

To provide research, tools, and technologies for controlling invasive predators and herbivores. To better understand the needs of native wildlife to support the regeneration of biological diversity and function, and cultural heritage

- Māori values and perspectives are increasingly represented in policy, but knowledge and practices are often poorly implemented in management.
- Understanding all the factors affecting species recovery (e.g. mammalian predators, vegetation, pests, diseases, and how these interact with management) is essential to sustaining native species.

What we will deliver, 2024–2029	Benefits
 Understanding of bicultural approaches and customary practices, identification of Māori values and aspirations for ecosystem restoration, and the creation of a whata kōrero framework (kaupapa Māori learning and knowledge transmission platform) to reconnect tangata whenua to place. Informed landscape-scale biodiversity management through forecasting introduced predator population dynamics in forests, determining how pests and native species use complex landscapes, providing novel management solutions, and better understanding disease risks in livestock and native wildlife. We will: provide new tools to support cost-effective management and eradication of invasive animal pests support native species recovery by understanding and predicting management outcomes at a range of scales. 	 Māori are supported to express kaitiakitanga. Community groups have access to wildlife management best practice. Regional and central government strategies and policies are more effective at managing animal pests and supporting native biodiversity. Land-based industries are better able to predict and manage the impacts of animal pests and diseases.

Te Āpōpōtanga (our future)

Overview

Te Āpōpōtanga outlines Manaaki Whenua's strategic priorities for the 5 years from 2022. It describes our approach to creating value and impact for Aotearoa New Zealand through our research, people, and partnerships.

Te Āpōpōtanga identifies three strategic pillars and associated initiatives that underpin our ability to deliver on our research priorities over the next 2 to 3 years.

Pillar 1: drive research impact with our partners – sets the core direction for the organisation. Our work within this pillar pushes us to consider how the research we do contributes to meaningful, positive change for Aotearoa New Zealand. Pillars 2 and 3 support this focus on research impact.

Pillar 2: weave the principles of Te Tiriti into our fabric – recognises that Māori, iwi, hapū and whānau are key partners for Manaaki Whenua as we seek to deliver on our ambition: Kia mauriora te whenua me tōna taiao. Māori have a growing influence over land use and biodiversity outcomes. The Māori economy is expected to exceed \$100 billion by 2030, making them significant potential investors in environmental research. As kaitiaki of the whenua (land) and taiao (environment), Māori are key partners as we prioritise our research and drive impact for Aotearoa New Zealand.

Pillar 3: create a sustainable environment for our people and our research to thrive – focuses on ensuring that our operating model, processes and systems are optimised to support efficient, high-impact research delivery.

Figure 2 illustrates these pillars and our priority initiatives within each pillar for the next financial year.

Strategy 1. Drive research impact with our partners Drive the partners Drive research impact with our partners Drive the partne	Impact Management Framework A framework to enable our science to increase its environmental, economic and social impact. Data and digital transformation Leveraging data science & digital technology to increase research impact.
Strategy 2. Weave the principles of Te Tiriti into our fabric The Treaty principles will guide Manaaki Whenua to a balanced state of partnership: in finding inspiration and value while engaging science and måtauranga; in influencing our strategic leadership towards equitable outcomes; and in growing both the number of Måori in the organisation and our networks among iwi and hapú.	Building our capacity to partner with Māori Developing our bicultural competencies to help honour our Te Tiriti commitment. Partnership in the collections and databases "Connect before you collect" – early engagement with hapū and iwi. Partnering with Māori for impact Engaging deliberately with Māori businesses.
Strategy 3. Create a sustainable environment for our research and people to thrive We will ensure our people have the right environment and personal development in which to work to their greatest potential, so that Manaaki Whenua fulfils its national role and sustains and grows its national and global impact.	Mahi TahiEnsuring our people have the processes and systems they need to deliver high-impact research.Future of our Auckland campus Investigation of pooling resources in partnership with Plant & Food Research.Future of workHelping our people to find the combination of environment, tools, and approaches to best achieve their daily goals.

Figure 2. *Te Āpōpōtanga*: strategy pillars and initiatives.

Strategy 1: Drive research impact with our partners

Science can have a reputation for focusing on inputs, activities, and outputs, but Manaaki Whenua has a long history of doing more, driven by the passion our people have for real-world change. Over the past few years there has been a growing focus on 'impact' and an understanding that most clients contract research that focuses on inputs, activities (the research), and outputs. This results in a systemic lack of investment of time and resources in the other activities required to support impact. The developing focus on impact also highlights the need to strengthen pathways to impact, including how they are planned for and supported.

Manaaki Whenua wants to strengthen support for our people to generate impact. We will take the best of what we already do and apply new thinking and tools to enable us and our partners and end-users to deliver greater impact. This focus on improving the real-world value from investment is common across Aotearoa New Zealand's science system.

Manaaki Whenua uses the Crown Research Institutes' Impact Planning and Evaluation Network (iPEN) impact creation cycle to conceptualise how impact from science is generated. While in reality this is more an iterative than a linear process, the cycle presents the key stages and activities required.



Figure 3. The iPEN impact creation cycle.

Acknowledging the increased focus on impact and other critical drivers, Manaaki Whenua has developed a tool, the Impact Management Framework, to drive increased impact from its research.

Initiative 1: Manaaki Whenua's Impact Management Framework

The Manaaki Whenua Impact Management Framework (the framework) seeks to identify opportunities and address barriers to increase the environmental, economic, and social impact of our work. It acknowledges, and focuses on addressing, the systemic lack of understanding and investment in impact creation activities outside of 'inputs', 'activities', and 'outputs'. By aggregating impact scores from across the organisation, we have a dashboard view of strengths, weaknesses, and best opportunities to increase impact.

The framework helps our science leaders to explore these areas that are critical to the creation of impact, and seeks to identify what we can do – from individual projects to the whole of Manaaki Whenua – to increase the impact of our research. It does this by posing these key questions.

- 1. Are we doing the research needed? For example, do we understand user needs sufficiently, is the research framed correctly (particularly for Māori), are we undertaking sufficient levels of co-development?
- 2. Are we confident there is a credible 'pathway' for translating our research into a solution? For example, do we understand any regulatory and social barriers and what is needed to overcome them, and are our partners committed to helping with implementation?
- 3. Are we confident the solution will be adopted by users? For example, are users in a financial position to adopt outputs from our research, or do they need help making a compelling internal business case for change?
- 4. Is the work financially positive, such that Manaaki Whenua can reinvest and grow impact?
- 5. Are Manaaki Whenua's objectives, strategy, and reputation reinforced?

The framework:

- generates impact-focused conversations across Manaaki Whenua
- will be an integral tool to support research impact planning and delivery
- identifies barriers and opportunities to increase impact
- is a mechanism to request and organise support and actions to increase impact
- produces metrics that can support decision-making.

The framework also supports the development of better ways to demonstrate the real-world economic, environmental, and social benefits from our work, and seeks to work equally well for Māori and recognise the value mātauranga can bring to all Manaaki Whenua work.

Initiative 2: Data and digital transformation

Our vision for this work is for Manaaki Whenua to embrace and leverage the disruptive power of digital technology in pursuit of high-impact research. We will enable Manaaki Whenua researchers to undertake increasingly complex, transdisciplinary research across a wide diversity of research questions. Advanced eResearch tools and techniques will not only power novel approaches to research, but will also enable us to build solutions that address the real-world problems faced by those who manage Aotearoa New Zealand's land environment.

We have prioritised four key areas of focus for our data and digital transformation.

Research data management: this work recognises that Manaaki Whenua's ability to leverage data science and digital technology to increase impact is based on how we manage research data. All research is founded on some collection of data, whether that be primary data collection (e.g. recording new data in the field) or accessing data for reuse. There are significant opportunities for accelerating impact from research through maturing our research data management. This would make Manaaki Whenua's data increasingly findable, accessible, interoperable, and reusable (FAIR). Work in this area will also explore how we support government expectations for publicly funded research to be open access, how we give effect to Māori data governance expectations, and how data might be leveraged for commercial value to support our research sustainability. **Digital product pipeline:** This work directly supports our strategy to develop new pathways to impact for our research. We have proven examples of research outputs being developed into digital services (e.g. apps and web services such as S-map) that deliver significant value to end-users. However, our model for digital product development and management is very immature. We will develop a standard product development pipeline that will support speed to market and a maturing of our product support model.

Digital science ecosystem: Digital science is now so fundamental to high-impact research that terms such as 'eResearch' and 'eScience' are almost losing their meaning. Today all research is eResearch. Our Informatics Team has worked to lift our capability to leverage digital science technologies and techniques. Digital technologies are used in almost all aspects of research delivery, but Manaaki Whenua researchers need support to leverage the current and emerging complex landscape of digital science tools. They need rapid access to the latest infrastructure and help to navigate those platforms. They need help to evaluate the tools available and quickly determine what has promise and what is best avoided. They need a flexible and agile digital science ecosystem.

Research-centric technology support: Manaaki Whenua's core business is research, and research delivery asks more from technology than some other organisational functions. Research is inherently innovative: it needs flexibility to experiment with new technology (e.g. software), and it needs safe environments for experimentation. Attracting and retaining the best researchers can be supported by providing them with the technology they are comfortable with and supporting a level of freedom in how they work with those platforms. Research is highly collaborative, with modern research crossing disciplines and organisational boundaries, requiring effective ways to share data and collaborate. To support these needs, we are evolving our traditional IT support model into a research-centric digital support model that recognises the unique needs of a research institute.

Strategy 2: Weave the principles of Te Tiriti into our fabric

Initiative 1: Building our capability to partner with Māori

Manaaki Whenua continues to build capacity to partner with Māori, whether that be with iwi, hapū, rūnanga or Māori businesses. Acknowledging differences in Māori priorities – which range from the well-being of people and the environment to ensuring economic growth – contributes to determining where we should be building capability, thereby ensuring we are giving effect to our commitment to weave the principles of Te Tiriti o Waitangi into our fabric. It is these principles our strategy adheres to, with an emphasis on increasing Māori partnerships and participation, as well as taking steps to ensure equitable relationships provide confidence that our partners are protected.

The kaihautū, our senior Māori scientists, continue to work alongside Research Portfolio Leaders to refine and maintain previously co-developed 3-year research strategies. Manaaki Whenua continues to look for opportunities where we can better align mātauranga Māori with our scientific expertise and continue to develop co-designing and co-leadership. In addition, our kaitūhonohono (connector) builds on strategic connections between hapū and iwi and the physical collections and databases held by Manaaki Whenua that were collected or sampled from their rohe (traditional tribal territories). The key priority for the role continues to be the development of a hapū and iwi engagement plan to address the need for consistent protocols for how Manaaki Whenua engages with kaitiaki before going out and collecting, sampling or measuring.

Our bicultural competency learning platform, Kia Maia, offers a comprehensive range of modular learning opportunities to all staff, such as basic introductory te reo Māori; a customised pepeha format for staff to introduce themselves in Māori; Te Tiriti workshops (provided by an external tangata Tiriti trainer); and 'Being Manuhiri' training, developed by our tangata Tiriti social researchers and designed specifically for respectful engagement with our tangata whenua partners. Manaaki Whenua is exploring options and opportunities beyond the fundamental baseline competencies.

Initiative 2: Partnership in the collections and databases

Te Rōpū Rangapūtanga Tiriti mō ngā Kohinga, Raraunga hoki a Manaaki Whenua

Manaaki Whenua's collections and databases Te Tiriti partnership group, Te Rōpū Rangapūtanga Tiriti, was established to oversee the implementation of a comprehensive strategic plan for our collections and databases, and to advise us on how best to connect hapū and iwi to the taonga we hold on their behalf as their Te Tiriti partner. In March 2024 we held a one-day workshop to review our strategic plan. The group endorsed our new collection protocol, 'Connect Before You Collect', an ambitious new framing to encourage our staff to reach out to hapū and iwi interests early in the process of gathering material or data for research. The group also acknowledged that hapū and iwi were in different states of readiness to engage with Manaaki Whenua as custodians of their taonga. For this reason, they recommended we consider a range of platforms to make it easier for Māori communities to visualise what we hold from their rohe.

Initiative 3: Partnering with Māori for impact

The Māori economy is on the rise, with an expected growth to exceed \$100 billion by 2030. There is a potential opportunity for Manaaki Whenua to develop a positive and proactive domestic strategy that highlights the research impact, and economic and cultural value, of partnering with iwi, hapū, and Māori businesses with needs that align to our organisation's values and scientific expertise. The strategy will centre on leveraging Manaaki Whenua scientific expertise and innovative technologies specifically for Māori businesses.

Manaaki Whenua is focused on an end-user-centred approach and engaging deliberately with Māori business. This initiative will help to guide how we respond, not only to the end-users of the science, but also to become proactive in discussing, planning, and implementing pathways to address aspirations and priorities that affect all Māori, with the benefits overflowing to Aotearoa New Zealand. Success looks like a 360° sustainable relationship, with an increase in our Māori partners wanting to invest in our science, technology, and innovation as they see our solutions addressing Māori priorities.

Strategy 3: Create a sustainable environment for our research and people to thrive

Initiative 1: Mahi Tahi

In the 2023/24 financial year we completed the first phase of the Mahi Tahi programme. Phase 1 was tasked with analysing our research delivery processes and systems to identify the potential for operational efficiencies within these critical operating processes. This resulted in 717 pain points and 428 opportunities being identified across 73 processes associated with research project delivery.

An analysis of our core Enterprise Resource Planning (ERP) systems showed they were not working well for the organisation, and that we had diverged significantly from best practice in their implementation. An exploration of the accountabilities associated with research project delivery highlighted a lack of clarity within our model for delivery.

Collectively these issues represent a significant burden of inefficiencies within the organisation's operating model. This is not unusual for an organisation that has grown significantly and quickly.

The Manaaki Whenua Board has approved a business case to move Mahi Tahi into a design and implementation phase. Mahi Tahi Phase 2 will deliver:

- **process simplification**: redesign and simplify a suite of processes within our research delivery model, and the design of an ongoing Business Process Management (BPM) function
- **system enhancements**: deliver a range of enhancements to our ERP systems to ensure they work for our people and business needs, which will include adopting best-practice standards for systems and associated processes

• **roles and responsibilities**: refine the RASCI² model associated with research project delivery, a key focus of which will be to explore transferring administrative tasks from researchers to support teams.

The Mahi Tahi programme is primarily an investment in future efficiency and sustainability. The primary target benefit is the freeing-up of 60 hours per research FTE per year through improvements to process, system, and task allocation. Additional benefits include improvements to staff well-being, and improved system functionality for key parts of the organisation.

Initiative 2: Future of our Auckland campus

Acknowledging the need to work across boundaries in partnership with other research agencies, we are in the early stages of investigating whether pooling resources with Plant & Food Research at the Mt Albert site would drive stronger economic outcomes for Aotearoa New Zealand through novel foods and early detection of biosecurity threats.

This hub would match research readiness preparation (for incursions and biodiversity protection) with the response regulatory function of the Ministry for Primary Industries. Biological collections and research on organisms would be combined with expertise in novel foods to accelerate innovation in novel products from Aotearoa New Zealand's biota. The combination of skills from both research organisations would remove the artificial barrier between managed and natural landscapes.

All of this would be achieved in partnership with mana whenua to ensure indigenous data governance and novel revenue sources for the indigenous owners. This initiative is also consistent with building long-term financial resilience and sustainability. Manaaki Whenua will continue to invest in our infrastructure, where appropriate, while constantly challenging itself on co-location opportunities

Initiative 3: Future of work

Our future of work initiative recognises the environment and wider context that our people work in has changed significantly over the past few years – a change accelerated by the COVID-19 lockdowns. Importantly, it also recognises these changes will continue to accelerate.

Digital technology is driving much of this transformation, blurring geopolitical borders and shaping new opportunities to collaborate internationally. It is also redefining the competencies required for traditional workplace roles and even creating entirely new roles.

Equipping our people for the future of work is a critical priority for Manaaki Whenua. An immediate focus for this initiative is experimentation with emerging technologies, in particular generative AI and other AI based technologies (including Machine Learning and Deep Learning). These technologies are already changing the way our people work and challenging us to consider how we upskill and cross-skill staff to use them. The transformational potential of these technologies on our organisation is hard to overstate, with massive potential for gains in efficiency and effectiveness for all workers.

² RASCI = responsible, accountable, supportive, consulted and informed.

Our People & Culture strategy

Manaaki Whenua, Manaaki Tangata, Haere Whakamua – Care for the land, care for the people, go forward!

This whakataukī highlights the relationship between people and the land environment. At Manaaki Whenua, our 472 staff focus on research that explores the connection between people and our land environment as we pursue our strategic ambition: Kia maurioria te whenua me tōna taiao – The life-force and vitality of the land is strong.

Our People & Culture strategy underpins our main strategy Te Āpōpōtanga through building culture and capability that supports our people in their efforts to increase the impact of our research. Responding to the strategic priorities set out in Te Āpōpōtanga and the broader social context our people work within, our People & Culture strategy has 5 pillars:



Figure 4 - People & Culture strategy.

Diversify for impact

Manaaki Whenua is on a journey to transform into a science impact institute. This strategy builds on our foundations as a research institute with a track record of science excellence and asks the question, how might we increase the likelihood of our research resulting in meaningful and positive societal change?

On a practical level, this strategy demands we move further down the impact value chain, exploring ways to drive impact with our partners. To be successful, our People & Culture strategy must consider how we build the requisite capability to drive impact from research within Manaaki Whenua. In the next few years we will drive several key initiatives:

- Work with current and future partners (particularly new commercial partners) to project the needs for future science capability. In the near term, for example, we are seeing significant demand for kairangahau Māori (Māori researchers), data scientists, integrated researchers and economists.
- Develop new skills and capability to support knowledge translation, engagement and commercialisation highlighted through our work to diversify Manaaki Whenua's partnerships and revenue.
- Build our Pacifica and international research capability in line with the needs identified as part of our emerging international strategy.
- To secure the best talent the world has to offer, we must explore and enable new models for engaging talent. We will focus on making it easier for staff to move and work across organisations and borders.

Kia whakatinana ngā mātāpono o Te Tiriti

Kia whakatinana ngā mātāpono o Te Tiriti – Giving substance to our Te Tiriti commitment.

Te Āpōpōtanga recognises that Māori, iwi, hapū and whanau are key partners for Manaaki Whenua. Māori have increasing influence over land use and biodiversity outcomes, and the Māori economy is a growing investor in environmental research. To enable us to work effectively with Māori as a true partner, we have committed as an organisation to weaving the principles of Te Tiriti into our fabric.

Our capability strategy supports this ambition by building Aotearoa New Zealand's leading Māori research team and ensuring the team is backed by a highly capable Tangata Tiriti rōpū. This strategy recognises the importance of building a team of Māori researchers to drive Māori research priorities and partner effectively with iwi, hapū and whānau, but also recognises that such a team will have capacity constraints. To mitigate these constraints, the strategy also focuses on our non-Māori staff (Tangata Tiriti). With the right support they will be able to work effectively with iwi, hapū and whānau, thereby increasing our overall capacity to deliver for Māori as key strategic partners.

Over the past few years, we have seen significant benefits from our investment in Māori research capability. Our Kaihautū (Māori research leaders) partner with our portfolio leaders to set science direction. Our Kaitūhonohono role is supporting increased Māori engagement with the Nationally Significant Collections and Databases. Our Māori intern programme – Poipoiā kia Rere – has helped build future pathways into the organisation, with two of these Māori interns now employees at Manaaki Whenua. To build on early success in this work over the coming years we will:

- develop a Māori capability plan to leverage what has been learnt over the past few years, so we can continue to build and support our Māori research team
- work with Manaaki Taiao (our Māori research rōpū) to ensure Manaaki Whenua's processes and support frameworks are designed and optimised to support this group to thrive.

We will also continue to build on our work to lift the capability of Tangata Tiriti (non-Māori staff) to partner with iwi, hapū and whānau. Our Kia Māia bicultural competency programme has established an initial baseline for all staff and we are making good progress towards achieving this competency. The next step is to focus on turning new knowledge into new practice and process.

Digitally capable

Digital technology underpins all aspects of delivering high impact research, but the technology landscape is also ever-changing and evolving. In the past year we have seen the rise of Generative AI as just one example of technology that is transforming how we do science, and how our people go about their day-to-day work.

This pillar of the People & Culture strategy focuses on supporting our constant evolution towards becoming a more digitally capable organisation. It considers how we support our researchers and our research support staff to best leverage digital technologies to increase the efficiency, effectiveness and ultimately the impact of their work. Over the coming years the technologies available to us will continue to evolve, and our aim is to equip the organisation to navigate that constantly changing toolset. Initiatives for the next financial year are:

- Working closely with our Science Leadership and our Digital Leadership to define future digital science capability needs. Skilled Data Scientists and other technology roles ranging from Research Software Engineers to Developers are in high demand. Our ability to leverage technology in our work will depend on building and supporting a highly capable digital team.
- Our eResearch support team is building our digital science support model, working to lift the capability of all researchers (rather than simply relying on data scientists) to leverage digital science tools and techniques.
- Developing a digital competency baseline for all staff that establishes the skills our people will need to thrive in a digital organisation. This will be supported with a digital skills building programme.
- Using communities of practice approaches to support cross-pollination and rapid adoption of emerging technology such as Generative AI.

Fit for our future

As we look ahead to the next 5 years, the one constant for Manaaki Whenua will be change. This is a fundamental nature of research, and is a core characteristic of our organisation's operating context. We must respond to changes in society, policy, our environment, and technology.

The Science, Technology and Innovation sector is going through its own much-needed change. Manaaki Whenua is committed to supporting that change and supporting our people through the change to ensure the sector as a whole can achieve Aotearoa New Zealand's goals in the future.

Our People & Culture strategy must prepare our people for a future of constant change and evolution. We must also ensure our organisational design is agile and flexible – able to change to meet the needs of our partners and Aotearoa New Zealand. Over the coming years we will:

- Continue to refine our organisational design to ensure it fits the needs of our partners and Aotearoa New Zealand. We are reviewing our current matrix design model with a view to optimising this for the future. Our Mahi Tahi programme is also refining roles and responsibilities within research project delivery processes. We also expect further change and refinement to flow from the Science System Advisory Group (SSAG) led system review.
- Mature our People & Culture systems and processes to support more efficient processes and flexibility for the future.
- Continue to build leadership competencies for our leaders with a focus on leading through change.
- Prepare the wider organisation for to be receptive and ready for change, and support the organisation to navigate through change.

Purpose-led culture

At the heart of any effective organisation is a strong, diverse, strategically aligned culture. A purpose-led culture underpins our ability to attract, grow and retain the best talent, and aligning that talent to a common strategy and purpose.

Manaaki Whenua has a strong sense of common purpose and while our people are engaged with that purpose, there are always ways we can improve. Areas of focus for the coming years will be:

- Strengthening lines of accountability and responsibility across teams to create a clear model for accountability and effective delivery of Manaaki Whenua's purpose and strategy.
- Further refining and strengthening our way of working as a team. Our values and behaviours define our way of working, but great culture is not set and forget. A key focus will be to draw together our science and support teams as one team in pursuit of impact.
- Completing the current review of our remuneration system, which provides an opportunity to further our ambitions around pay equity while also ensuring we can continue to attract and retain the best international talent.
- Continuing our commitment to gender diversity particularly in leadership roles as well as advancing other aspects of diversity and inclusion. Diversity is central to a strong culture as it brings diversity of thought and powers effective problem-solving.

New Zealand's Biological Heritage NSC

New Zealand's Biological Heritage National Science Challenge (NSC), Ngā Koiora Tuku Iho (BioHeritage), was established in 2014 along with 10 other NSCs to undertake purposeful mission-led research through wider collaboration to create impact. NSC funding ends on 30 June 2024.

Hosted by Manaaki Whenua, BioHeritage had a mission to reverse the decline of our biological heritage by protecting and managing biodiversity, improve biosecurity, and enhance resilience to harmful organisms.

With \$62.8 million in funding and an additional \$34.5 million for kauri dieback and myrtle rust research through the MBIE-funded programme Ngā Rākau Taketake, BioHeritage created enduring impact and benefits by:

- **revolutionising pest control**, pioneering RNAi technology targeting the varroa mite, safeguarding honeybees, and providing insights to address legacy threats (such as wasps) and myrtle rust
- **championing traditional knowledge**, spearheading rongoā (Māori herbal medicine) for kauri ora (health), with purpose-built facilities for development and training, and honouring mātauranga Māori solutions for biodiversity
- creating biosecurity surveillance tools, with new advanced light traps, AI and remote sensing, *Phytophthora agathidicida* detection, and empowering proactive surveillance, while respecting data sovereignty
- **empowering people and decision-making**, with user-friendly tools such as Eco-index and Find-A-Pest, enabling informed decision-making for biodiversity investment, efficient predator control, and plant pathogen surveillance
- enhancing the prediction and management of emerging threats, with new frameworks for risk assessment and communication, proof of absence validation, and solutions to enhance Aotearoa New Zealand's biosecurity system
- **building capability and capacity**, strengthening strategic, impact-oriented progress in biodiversity and biosecurity through new and enhanced capability and capacity building
- **producing evidence-based governance and policy tools** aligned with the Te Tiriti o Waitangi, guiding decisions and actions for a flourishing environment
- **developing conservation strategies and practice** to preserve at-risk flora and fauna, ensuring the long-term conservation of Aotearoa New Zealand's biodiversity
- creating new ways of doing science, with the right teams working collaboratively and in partnership.

To ensure the longevity of these science outputs, BioHeritage's data repository³ will house reports, data, and links to papers, and will endure into the future for Manaaki Whenua and others to build upon.

Manaaki Whenua will now pivot to new areas of focus and revenue generation for biodiversity and biosecurity science, including deepening relationships and cross-promoting our capabilities with existing stakeholders, and developing new relationships in the commercial sector.

³ https://data.bioheritage.nz/

Toitū Envirocare

Context

Toitū Envirocare continues to experience high demand for its carbon measurement and reduction programmes and expert advisory support, with revenue expected to increase from \$17 million in FY23, to \$18 million in FY24 (up 6%). This is less than originally forecast, due to the difficult trading period leading up to the 2023 General Election, and the impact of the consumption recession on Aotearoa New Zealand businesses' ability to afford both our programmes and the internal resources required to maintain them. While market conditions remain tight, business confidence has improved over the last 3 months, leading to a strong improvement in the sales pipeline. Toitū continues to expect significant growth over the next 5 years linked to increased consumer demand, including in international markets. Revenue for FY25 is expected to be \$19.8 million, an increase of 10% over FY24.

There is a rapidly growing number of competitors in the sustainability sector providing measurement, advisory and assurance services. This presents both challenges and opportunities for Toitū. Competition in the measurement space is particularly strong, as this is the initial entry point for many new businesses embarking on their carbon reduction journey. Toitū's current position in this increasingly competitive market is that of a credible, science-led organisation offering robust programme certifications and expert advisory services.

Attendance at COP 28 reaffirmed that Toitū's programmes are strongly aligned with current global best practice. We continue to collaborate with leading global organisations to ensure the maintenance of our science and standards-based approach to reducing climate impact. An overarching theme of COP 28 was 'later is too late' – action is needed right now!

Other key themes integral to Toitū's future strategy and offerings were:

- the climate/nature nexus Aotearoa New Zealand can no longer think about climate and nature separately
- although government will set the direction and speed of travel towards global net zero, implementation by the private sector will be key to this being achieved
- engagement of supply chains will be key to a successful outcome
- to drive wide adoption of reduction solutions, it is important that they be cost effective people/organisations will tend to choose the cheapest option
- reduction is key the world cannot offset its way to zero (offsetting the US's emissions alone would take over half the Earth's landmass being planted with trees).

As at March 2023 Toitū had a total global customer base of over 1,100 business enterprises (740 in our carbon programmes, 178 in our enviromark programme, 185 to whom we provide advisory, training and education services, and 80 via our UK licence partner, Achilles). Toitū's primary focus is emission reductions, with over 8.4 million tonnes of carbon emissions reduced since 2001 and over 256 million tonnes of CO₂ measured over the same timeframe. Organisations that have been Toitū members for at least 5 years have reduced their CO₂ emissions by 38% on average.

Toitū continues to provide a range of carbon credits to clients to offset any remaining or unavoidable emissions. These credits are critically assessed to ensure they meet the best practice principles of the International Carbon Reduction and Offset Alliance (ICROA), of which Toitū is a member. In November 2023 Toitū notified clients and the wider market of a decision to discontinue the use of NZ carbon credits, unless and until they align with international standards.

Recent Integrity Council for Voluntary Council Markets (ICVCM) developments, relating to tagging of units, now means that to align with international expectations, Toitū will be unable to accept non-tagged units, and that the PFSI (Permanent Forest Sinks Initiative) and PP89 (Permanent – post 1989 Forests) carbon credits are unlikely to gain ICVCM approval. Toitū is currently facilitating collaboration among business and other relevant parties to help define what is required to establish a suitable standard for high-quality carbon projects in

Aotearoa New Zealand. Between 2020 and 2023 Toitū clients purchased and cancelled over 1.1 million tonnes of carbon credits, of which just over 10% were from Aotearoa New Zealand projects.

In July 2023 Toitū announced the development of version 4 of its carbon programmes – Toitū Elevate. It is important that Toitū programmes reflect the latest international best practice, and Toitū Elevate will include requirements for full scope 3 emissions measurement, along with more stringent, science-aligned reduction targets. Clients will transition to this new standard over the coming 18 months.

The XRB Assurance Standard was published on 3 August 2023. This provided clarity on assurance and independence requirements relating to the Climate Related Disclosures regime, which will affect all large publicly listed Aotearoa New Zealand organisations, 74 of which are current Toitū clients. Under this Standard, Toitū can no longer provide both tools/support/guidance and assurance to the same client.

Intent

Toitū will continue to evolve its business model by working alongside others, extending our reach both in Aotearoa New Zealand and overseas, and ensuring that all businesses, large and small, are able to access simple and affordable carbon reduction programmes that are grounded in science, world class in terms of robustness, and supported by globally recognised certification.

Toitū is in the first stage of a 3-year strategic change programme, initially focusing on operational excellence through the simplification and automation of internal processes and systems. This work needs to be completed quickly to mitigate productivity and cost-to-serve challenges, and to enhance client satisfaction. It is a critical building block that will enable Toitū to lay the groundwork for rapid scalability and expand its reach and impact.

In the medium term the focus will shift to digitising services to support broader and simpler access to Toitū's programmes while reducing costs to clients. Medium- to long-term strategic goals include partnering with other organisations – both government and private – to offer comprehensive sustainability solutions, and integrating with broader digital platforms to extend our impact beyond carbon reduction. This strategic approach acknowledges that while carbon reduction is pivotal, broader sustainability efforts are essential for addressing climate challenges comprehensively.

Through the development of world-leading, science-based carbon measurement and reduction programmes, Toitū's purpose and intent is to help organisations shift their impact on the environment from negative to positive at pace, enabling Aotearoa New Zealand to achieve net zero by 2050. Toitū's vision and goals fully support and align with the Climate Change Response Act 2002, a framework to enable Aotearoa New Zealand's obligations under the United Nations Framework Convention on Climate Change, the Kyoto Protocol, and the Paris Agreement. Toitū contributes action to the Climate Change Response (Zero Carbon) Amendment Act 2019, which states Aotearoa New Zealand's intent to be carbon-neutral by 2050.

Our people

Flexible and hybrid working continue to be strong elements of Toitū's employment brand. Not only does this enable us to better meet the needs of our Aotearoa New Zealand clients wherever they are located, but engagement survey results highlight this to be a strong attraction for our key talent. With engagement and retention metrics showing healthy improvement over the last 12 months, we will continue to place significant focus on enhancing Toitū's employment brand. This includes the formation of a quarterly people forum to ensure a strong performance culture that embraces all backgrounds and cultures, an ongoing Leadership Development programme for over 30 of our people leaders, a new performance review process specifically designed for Toitū, and regular fortnightly forums for all our people covering a wide variety of topics – both sustainability related and those that help foster personal development.

Corporate sustainability

Our contribution to Aotearoa New Zealand's future is underpinned by a sustainable business model that balances social, economic, and environmental impacts. As a Crown Research Institute we are expected to be self-sufficient and financially sustainable, and with the permission of our shareholding Ministers our surplus is reinvested in our science and infrastructure.

Taking action to combat climate change

Given our focus on the sustainable use of natural resources, it is especially important that we manage our operational activities to minimise any adverse impacts on the environment and our communities. The scope of these activities includes moving our car fleet to electric vehicles, sustainable travel procurement, and making progress towards sustainable energy use in our buildings. We have been certified to the ISO 14001 standard since 1998, maintaining systems to document and manage our environmental impacts. We have been certified carbon neutral since 2011, measuring and managing our greenhouse gas emissions and paying to offset those emissions we cannot eliminate. Maintaining our certification is important to us, and in 2024/25 we plan to adopt the Science Based Targets initiative, which we are currently working with Toitū Envirocare to prepare. We are also refining our sustainability strategy to provide a framework for sustainability initiatives across our organisation.

Sustainable procurement

As a Crown Research Institute we access All of Government (AoG) and syndicated contracts, which incorporate sustainable procurement practices aligned with the Government's broad outcomes. Our own Procurement Policy notes that we 'Require sustainably produced goods and services wherever possible having regard to economic, environmental and social impacts over their life cycle'. We work to ISO 20400 standards for sustainable procurement.

Performance monitoring and reporting

In most years we adjust one or more non-financial key performance indicator (KPI) targets as we consider the possible impact of the material drivers behind them. For the 2024/25 financial year we have softened those targets (for example, co-authorship of papers and presentations to stakeholder and community groups) likely to be affected by the end of the National Science Challenges, since these programmes tended to invest strongly in research collaboration and end-user engagement. Some KPIs are also naturally more volatile; for example, co-authorship KPIs can bounce around by more than 5% between years. For these KPIs we are conservative in setting targets, especially if the current year has had a higher-than-predicated result. We also consider any changes in staff demographic, which can, for example, lower mean journal citation scores when many senior staff retire and early-career researchers are still becoming established.

Indicator	Measure	2022/23 actual	2023/24 forecast	2024/25 target	
End-user collaboration	Revenue per FTE from commercial sources (\$000s) ^a	\$79.5	\$81	>\$75	
Research	Percentage of papers co-authored (total)	93.1%	85%	85–90%	
collaboration ", "	Co-authored with other Aotearoa New Zealand organisations $^{\mbox{\scriptsize b}}$	34.5%	30%	25–30%	
	Overseas co-authors ^b	39.1%	38%	30–35%	
	Both Aotearoa New Zealand and overseas co-authors	19.5%	15%	15–20%	
Technology and	Commercial reports per scientist FTE ^a	0.61	0.57	0.55–0.65	
knowledge exchange	Availability of data from our SSIF-funded databases, collections, and information systems (assessed by a variety of metrics appropriate to each; metrics online)	Inc Refer to	Increasing trends Refer to annual reports for detail		
	Response rate for requests to our SSIF-funded biological collections and associated infrastructure (specimen transactions, identifications, visits)	98%	98%	>95%	
	New and improved products, processes, and services	45	45	>45	
	Presentations to stakeholders and community groups	125	128	>120	
Science quality	Impact of scientific publications (mean journal citation score) ^{a, b, c}	4.6	4.0	3.5–4.5	
Financial indicator	Revenue per FTE (\$000s) ^a	\$242.9	\$225	\$225–230	
Stakeholder engagement and feedback	Percentage of relevant end-users that have adopted knowledge and/or technology from Manaaki Whenua ^{c, d, e}	89%	89%	>80%	
	Percentage of relevant funding partners and other end-users that have a high level of satisfaction in our ability to set research priorities ^{c, d, e}	56%	56%	>60%	
	Percentage of stakeholders involved in a specific research team/partnership that have a high level of confidence in our ability to form the best team for the collaboration we are involved in ^{c, d, e}	69%	69%	>65%	
	Staff invited to participate in stakeholder meetings or workshops		144	>130	
Vision Mātauranga	Number of positive strategic partnerships with iwi and Māori organisations in which we link science and mātauranga, and address Māori goals and aspirations ^{b, f}	184	127	>100	
Commercialisation	Number of new and existing licensing deals involving Manaaki Whenua-derived IP (including technologies, products, and services)	39	39	>35	
High-performance	Staff engagement in survey evaluations	78%	80%	>80%	
culture	Staff retention rate	90%	90%	>90%	

Non-financial performance indicators

^a Generic indicators required by MBIE across all CRIs are at the Manaaki Whenua Group level; the rest are at Parent level.

^b Common with or related to SSIF Programmes Investment Contract key performance indicator(s).

^c Based on an internally run stakeholder survey administered biennially (next due 2025).

^d Does not include survey respondents who were unsure.

^e Those who scored 8, 9, or 10 on a 0–10 scale.

^{f.} The number of VM 3, 4, 5 projects has decreased, but the value has increased by \$4.9 million in FY24.

For the financial year ending 30 June	2023 Target	3/24 Forecast	2024/25 Target	2025/26 Target	2026/27 Target	2027/28 Target	2028/29 Target
Revenue	\$127,585	\$108,474	\$111,514	\$113,443	\$117,162	\$121,469	\$127,462
EBIT ¹	\$(2,735)	\$(3,811)	\$(3,758)	\$(1,341)	\$1,701	\$2,174	\$2,938
NPAT ²	\$(88)	\$(1,515)	\$(2,958)	\$(1,177)	\$1,522	\$2,069	\$2,272
Total assets	\$110,397	\$106,962	\$92,600	\$87,209	\$87,824	\$89,467	\$92,066
Capital expenditure	\$5,904	\$5,640	\$7,227	\$8,456	\$7,274	\$6,538	\$6,757
Dividend	\$Nil	\$Nil	\$Nil	\$Nil	\$Nil	\$Nil	\$Nil
Equity ratio ³	46.8%	49.1%	57.3%	59.6%	61.0%	61.5%	61.7%
Gearing ⁴	9%	9%	8%	9%	8%	8%	8%

Group financial performance and position

Explanatory notes to table:

All dollars in 000s

¹ EBIT: earnings before interest, financial lease charges and tax, and after committed business development expenditure and technology service expenditure.

² NPAT: net profit after tax.

³ Equity ratio: average shareholders' funds ÷ average total assets.

⁴ Gearing: interest-bearing debt ÷ interest-bearing debt + shareholders' funds, expressed as a percentage.

In 2024/25 Manaaki Whenua's revenue is budgeted at \$111.5 million, down by \$16.1 million compared with the 2023/24 budget. This reflects the following:

- conclusion of the National Science Challenge funding, several MBIE Endeavour research investments coming to end, and a reduction in interest income as deferred work is completed
- SSIF funding remaining constant and not adjusted for inflation (to ensure this funding is sustainable, Manaaki Whenua will work with MBIE to ensure the scope of research to be delivered is aligned to Aotearoa New Zealand priorities)
- Manaaki Whenua focusing on securing commercial partnerships with local government and the private sector, and exploring new industries where we can make an impact.

Return on equity (Appendix 1)

Manaaki Whenua must continue to be flexible in responding to changes in the external environment and pursuing strategic opportunities. In determining a rate of return to shareholders, we use the following principles.

- The rate of return on equity (RoE) needs to ensure the financial sustainability of the organisation.
- The Board may propose a lower RoE to support the databases and collections and strategic investments that will enhance science, provide benefit to Aotearoa New Zealand, and underpin future value, including from Toitū Envirocare.
- The targeted RoE will be reviewed by the Board over the planning period as other strategic investment opportunities with long-term benefits are presented.

Balance sheet

Manaaki Whenua's science requires an ongoing investment in scientific equipment if we are to deliver science, secure revenue, and be financially sustainable. Beyond this underlying capital spending requirement, the priority for 3 years from 2024/25 is the extension of the existing invertebrate containment facility (GEM lab) at our Lincoln site.

Cash balances are used for day-to-day operations or represent funding received in relation to contracted work that is yet to be earned.

Given Manaaki Whenua's strong balance sheet / low gearing, consideration will be given to debt funding to manage any medium-term liquidity issues or significant property refurbishment requirements.

Cash flow and dividend

Manaaki Whenua expects to report a negative operating cash flow in FY24/25 and FY25/26 as we complete deferred work and invest in the Mahi Tahi strategic transformation project.

Consistent with the Minister's Letter of Expectation, Manaaki Whenua will not be planning a dividend but will instead reinvest in the organisation to ensure financial resilience and sustainability.

Risks

Revenue risk is high in 2024/25, as Manaaki Whenua's assumption last year that approximately \$10 million of funding would remain in the system has proven incorrect. Manaaki Whenua is responding to this change by actively pursuing a revenue diversification strategy to move from solely reliant on a funder/bidder model to a customer/partner approach with the commercial sector.

The high inflationary environment continues to be challenging, and there is the risk that further funding reductions will have significant consequences for Manaaki Whenua's operations.

Colin Dawson Chair Dr Paul Reynolds Deputy Chair

30 June 2024

Appendix 1: Additional financial indicators

For the financial year	2023	3/24	2024/25	2025/26	2026/27	2027/28	2028/29
ending 30 June	Target	Forecast	Target	Target	Target	Target	Target
Operating margin ¹	2.1%	1.1%	1.6%	3.1%	5.5%	5.4%	5.9%
Return on invested capital ²	-0.2%	-6.3%	-6.9%	-2.5%	3.1%	3.8%	5.0%
Revenue per employee (\$000's) ³	\$238	\$206	\$210	\$215	\$222	\$230	\$241
Current ratio ⁴	1.06	1.16	1.08	0.93	0.91	0.93	0.95
Cash ratio ⁵	0.18	0.16	0.19	0.22	0.29	0.28	0.27
Net working-capital ratio (\$000's) ⁶	\$3,423	\$7,662	\$2,577	\$(1,916)	\$(2,571)	\$(2,099)	\$(1,647)
Debt to EBITDA ⁷	-13.92	-33.23	-10.44	-2.62	-1.11	-1.30	-1.33
Gearing ratio ⁸	0.09	0.09	0.08	0.09	0.08	0.08	0.08
Return on Equity (ROE) (based on NPAT) ⁹	-0.3%	-2.8%	-6.3%	-2.5%	3.3%	4.2%	5.6%
Capital renewal ¹⁰	115.0%	117.3%	129.0%	172.4%	149.0%	142.4%	140.8%
Revenue Growth ¹¹	109.8%	93.3%	88.6%	102.2%	103.5%	103.6%	104.9%
Underlying EBITDA growth ¹²	50.4%	21.8%	65.1%	196.9%	186.0%	102.7%	113.7%

Explanatory notes to table:

All dollars in 000s. During 2023/24 MBIE released new performance targets. The 2023/24 statement of corporate intent was adopted before the MBIE release. For 2023/24, additional new targets included for comparability.

¹ Operating margin: Underlying EBITDA ÷ revenue

² Return on invest capital: Underlying EBIT ÷ average invested capital

³ Revenue per employee: Revenue ÷ FTEs

- ⁴ Current ratio: Current assets ÷ current liabilities
- ⁵ Cash ratio: Cash and cash equivalents ÷ current liabilities
- ⁶ Net working-capital ratio: Current assets current liabilities
- ⁷ Debt to EBITDA: Net Debt ÷ underlying EBITDA
- ⁸ Gearing ratio: Total debt ÷ total debt + equity
- 9 Return on equity: Net profit after tax \div average equity

¹⁰ Capital replacement: Capital expenditure ÷ depreciation + amortisation expense

 11 Revenue growth: Current year's revenue \div previous year's revenue

¹² Underlying EBITDA growth: Current year's EBITDA ÷ previous year's EBITDA

Appendix 2: Business policies

We operate in accordance with the purpose and principles stated in the Crown Research Institutes Act 1992 and have statutory obligations under other acts, including the Companies Act 1993 and Crown Entities Act 2004. Our business policies include the following.

Dividend policy

The Board will notify the shareholding Ministers within 3 months of the end of each financial year of:

- the amount of dividend (if any) recommended to be distributed to the shareholders
- the percentage of tax-paid profits the dividend represents
- the rationale and analysis used to determine the amount of dividend.

In determining the amount of surplus funds, consideration will be given to:

- shareholder policies on dividends and capital structure
- providing for strategic and capital investment requirements (including equity investments) without recourse to the Crown for equity injections to the company
- working capital requirements (including subsidiaries/businesses in which equity is held)
- the ongoing financial viability of the company, including its ability to repay debt
- the extent of debt financing in relation to the prudent borrowing capacity of the company
- obligations of the Directors under the Companies Act 1993 and other statutory requirements.

With the projected profitability and capital requirements of the organisation in the course of this planning period, we are not projecting to pay dividends to the shareholder.

Risk policy

Manaaki Whenua has risk management and compliance processes in place and operating effectively across the agency. The risk management framework identifies, classifies, reports on and mitigates business risk. Risk reporting to the Audit and Risk Committee and the Board is done every 6 months, or as a risk arises.

Accounting policies

A summary of our accounting policies is included in our Annual Report. The current Annual Report can be found on our website: https://www.landcareresearch.co.nz/publications/annual-reports/.

Shareholder consent for significant transactions

The Board will obtain prior written consent from the shareholding Ministers for any transaction or series of transactions involving full or partial acquisition, disposal or modification of property (buildings, land and capital equipment), and other assets with a value equivalent to or greater than \$10 million or 20% of the company's total assets (before the transaction), whichever is the lesser.

The Board will obtain the prior written consent of shareholding Ministers for any transaction or series of transactions with a value equivalent to or greater than \$5 million or 30% of the company's total assets (before the transaction) involving:

- acquisition, disposal or modification of an interest in a joint venture, partnership or similar association
- acquisition or disposal, in full or in part, of shares or interests in a subsidiary, external company or business unit
- transactions that affect the company's ownership of a subsidiary or a subsidiary's ownership of another entity
- other transactions that fall outside the scope of the definition of the company's core business or that may have a material effect on the company's science capabilities
- intellectual property transactions, which, wherever possible in advance, will be notified in the quarterly reports to shareholding Ministers.

Appendix 3: Other matters required by the Crown Research Institutes Act 1992

Activities where shareholder compensation is required

Where the Government wishes Manaaki Whenua to undertake activities or assume obligations that will result in a reduction of the organisation's profit, or net worth in terms of investment in research, the Board will seek compensation sufficient to allow the organisation's position to be restored.

No requests for compensation are currently under consideration.

Other matters specifically requested by the shareholder

Section 16(3) of the Act requires Manaaki Whenua to furnish an estimate of the current commercial value of the Crown's investment.

The Board is satisfied that the net asset position (or total equity) is a reasonable proxy for the commercial value of the Group. The net asset position, as shown in accordance with the company's accounting policies for 30 June 2023, was \$57.1 million.

Glossary

СОР	Conference of the Parties (United Nations)	
CRI	Crown Research Institute	
DOC	Department of Conservation	www.doc.govt.nz
EBIT	Earnings before interest, financial lease charges and tax, and after committed business development expenditure and technology service expenditure	
EBITDAF	Earnings before income tax before depreciation, amortisation, and fair value adjustments	
FTE	full-time equivalent	
GHG	greenhouse gas	
hapū	kinship group or subtribe	
hapori Māori	section of a kinship group, family, society, community.	
ISO	International Organization for Standardization	
iwi	extended kinship group or tribe	
kaitiaki	trustee, guardian, caregiver	
kaitiakitanga	guardianship and protection	
mana whenua	Māori who have historic and territorial rights over the land	
manuhiri	visitor, guest	
mātauranga	knowledge, wisdom	
mauri	life essence, life energy	
MBIE	Ministry of Business, Innovation and Employment	www.mbie.govt.nz
MPI	Ministry for Primary Industries	www.mpi.govt.nz
NGO	non-governmental organisation	
NSC	National Science Challenge	
NSCDs	Nationally Significant Collections and Databases	
NPAT	net profit after tax	
rohe	boundary, district, region	
SCI	Statement of Corporate Intent	
SCP	Statement of Core Purpose	
S-map	A national system of comprehensive, quantitative soil information to support sustainable development and scientific modelling	www.smap.landcare research.co.nz
SSIF	Strategic Science Investment Fund (MBIE)	www.mbie.govt.nz
taonga	something prized or treasured	
tangata whenua	people of the land	
te ao Māori	Māori world view	
Te Āpōpōtanga	Our updated strategy for the period 2022–2024	
Te Tiriti, Te Tiriti o Waitangi	the Treaty of Waitangi	
UN	United Nations	
waharoa	gateway	
wānanga	seminar, workshop, conference	
whānau	family, extended family	
whenua	land	

Directory

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SCIENCE WORKING FOR AOTEAROA NEW ZEALAND

The Crown Research Institutes (CRIs) proudly work, individually and collectively, to create a more prosperous, sustainable and innovative Aotearoa New Zealand.















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