



Manaaki Whenua
Landcare Research

Statement of Corporate Intent 2021–2026



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 (2021–2026).

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 whenua 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 2021–2026.

Cover: Nikki Harcourt and Jade Hyslop, members of the Manaaki Taiao team, at Waiwhakareke Natural Heritage Park in Hamilton.

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Statement of Corporate Intent 2021–2026

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Chair and CEO overview

Manaaki Whenua exists to ensure that New Zealanders can live in harmony with their natural environment for the benefit of the present and future generations. From our work comes new understanding and capability, and from our ways of working with others come the trust, partnership, and confidence people need to embrace change. This Statement of Corporate Intent (SCI) reflects an organisation focused on conducting excellent research that achieves positive impact for society in a changing world.

Our 5-year Strategy 22 will finish in 2022. It has delivered immense benefits across our organisation, with gains in our culture, ways of working, and science reflected in positive external stakeholder feedback, staff engagement, and the financial sustainability needed to re-invest in our work. Many of the Strategy 22 initiatives are now incorporated into business-as-usual. The significant changes in our operating environment mean it is timely to refresh our strategy, which we are doing in the first half of 2021.

The culture of Manaaki Whenua is a precious asset built over many years by people from a multitude of backgrounds. We aspire to an enduring culture in which our people feel safe and have a sense of belonging, their skills are developed and achievements appreciated, and they feel empowered to work with our partners to make a difference for Aotearoa New Zealand and the wider world. We have built a strong team of 440 in recent years, and have confidence in its qualities and ability to deliver on our strategic priorities.

Looking ahead, we will focus on areas that contribute to our purpose, who we are, and the difference we can make. Central to this contribution is how we partner with Māori, enhance their participation, and proactively protect their interests as kaitiaki of the whenua. We will continue to bring our research disciplines and multiple partnerships together to address society's challenges and opportunities: climate change's impacts on the land and our biodiversity, the pressures of land-use change, and increasing threats to biodiversity from invasive species.

Our research will continue to focus on Aotearoa New Zealand's land and biodiversity, and on mitigating and adapting to climate change as the major threat facing humanity and the natural environment. Our work recognises the interactions between these areas of focus and the importance of the human dimension in managing change. Our work recognises the different world views of our partners, and especially that of Māori. We will continue to strengthen our work with the Crown Research Institutes (CRIs) and other elements of the national and global science community to maximise benefit to people and environment. This will include pursuing opportunities from co-locating people and infrastructure at our major sites.

The coming years present challenges for us as large, multi-year research contracts come to an end and there is risk in what new contracts will be secured. Non-science costs, such as compliance and depreciation, continue to increase. Our ability to reinvest in our business is critical to our role and to our future success. We look forward to working constructively with our shareholders to ensure we can meet their expectations of Manaaki Whenua as a CRI, as owner of Toitū Envirocare, as host of the New Zealand's Biological Heritage National Science Challenge, and as partner to many Māori, public, and private sector entities.



Jane Taylor
Chair



Dr Richard Gordon
Chief Executive

About this document

Our Statement of Corporate Intent for the period 2021–2026 provides information for the reader using the same layout as last year but limited to content that outlines changes or new initiatives. This was done deliberately to avoid unnecessary repetition and keep the document as short and impactful as possible. As with last year’s report, it is organised into three key sections.

Context



To provide the reader with a wider perspective, in this section we explore the strategic and operating environment within which Manaaki Whenua exists. We consider the priorities of our shareholder (the New Zealand Government), a changing workforce, trends in scientific research and technology, our role within the broader science ecosystem, and indicators for future investment.

Intent



We present our commitment to New Zealand through our strategic priorities outlined in our 5-year strategy, Strategy 22, our four ambitions for New Zealand and the aligned science priorities, and several key areas that all Crown Research Institutes consider important for the future of research in New Zealand to ensure our research benefits all New Zealanders.

Performance



Finally, we explain how we will measure our performance against our strategic intent, which includes review panels and advisory groups to provide guidance and ensure we are producing high-quality impact for New Zealand. We also describe our framework for performance monitoring and reporting, and for financial reporting, which we report against in our Annual Report.



Shareholder priorities

The Shareholding Ministers' priorities have been expressed in the 2021 Letter of Expectations. In this section we set out those expectations and our plans in response to them.

Accelerate New Zealand's economic recovery and deliver on Government priorities

- Assist in the implementation of government and industry strategies, such as the Fit for a Better World Roadmap and the Conservation and Environment Science Roadmap.
- Actively co-operate in advancing the consistency of environmental datasets and insights following the Parliamentary Commissioner for the Environment's report to Parliament.
- Align with work undertaken in relation to the Carbon Neutral Government Programme.
- Act in accordance with the expectations of the Public Service Commission's key principles on pay restraint for executive remuneration, and senior staff when applicable, as a result of COVID-19.
- Ensure pay equity principles are implemented across the organisation, and that remuneration packages are in line with government organisations.

We will:

- Shape research priorities and programmes addressing the Fit for a Better World Roadmap with MPI, industry, Māori and other CRIs.
- Proactively work with DOC, MfE and relevant stakeholders to revitalise the Conservation and Environment Science Roadmap as a description of the research priorities and a framework for identifying our role and sources of consistent research investment. A series of workshops will be held to help align relevant science strategies (DOC science prospectus, Aotearoa New Zealand Biodiversity strategy, MfE's 5-year science and data, and the regional government sector Research Science and Technology Strategy 2020) to the environment and conservation roadmap.
- Progress the development of national environmental datasets with other CRIs and relevant participants (e.g. regional councils) to ensure fit-for-purpose data and information are readily accessed by users.
- Contribute to delivering the Carbon Neutral Government Programme through our subsidiary, Toitū Envirocare, which is a principal provider to the public sector of programmes for carbon footprint assessment, management, and certification.
- Act in accordance with the Public Service Commission's guidance and work to ensure pay equity and alignment with government organisations.

Te Pae Kahurangi report

- Incorporate a system-wide perspective in collective strategic planning, and meaningfully engage with key participants in the system.
- Implement a collective approach to capital planning, co-locating, and resource sharing with relevant parties where this opportunity exists, to provide resilient investments across the Crown.
- Have a pan-CRI approach to the use and sharing of resources, services, capability, assets, and people. It is appreciated that progress is being made in this area, but I expect this to be an important priority for CRIs going forward.
- Have a 'no wrong door' approach for CRIs to the public, such as the National Environmental Data Centre.

- Build strategic relationships with government, other research organisations, Māori, businesses, international organisations, and other key stakeholders.

We will:

- Continue to work with other CRIs and members of the wider system to optimise collective action in matters of strategic planning, infrastructure development, and resource and capability sharing. Examples are the science centre concept for Auckland (mentioned below), mapping collective science capability and specific gaps, and co-developing the National Environmental Data Centre and Service. In the last example, Manaaki Whenua has provided the technical feasibility assessment and co-leads the project team.
- Continue to build strategic relationships and partnerships as a key pillar in our Strategy 22. We have formal agreements in place with DOC, MfE, and several businesses, and strategic engagement plans with Māori entities.

COVID-19, hazard management and emergency response

- Maintain critical scientific capability, build resilience, and support the ongoing development of connected systems.
- Provide scientific support to the relevant critical functions of government to ensure decision-making is soundly evidence based.

We will:

- Continue to provide expert epidemiological modelling support to the national COVID-19 response.
- Work system-wide to ensure scientific capability gaps are addressed in our specialist field of plant biosecurity.
- Maintain business continuity plans to ensure the resilience of our critical scientific capability and support role for critical government functions.

Vision Mātauranga

- Support Vision Mātauranga, and develop appropriate capability and capacity to contribute to Māori aspirations, form strong relevant partnerships, and take a co-development approach in the science sector.

We will:

- Commit to upholding the principles of the Treaty of Waitangi (partnership, participation and active protection of Māori interests in our scope of work) and implement strategic plans that express our commitment.

Well-being and workplace diversity

- Act as a good employer and act in accordance with corporate social responsibility practices.
- Have employer policies and procedures that support diversity and inclusion (gender, age, ethnicity, disability, and sexual orientation) and have a positive culture.
- Continue to build and maintain a diverse workforce at all levels, including building Māori knowledge and expertise, and the number of Māori researchers, and increase the level of diversity at the senior management level.

We will:

- Align work done through our Strategy 22 on our social responsibility practices and to support diversity and inclusion with the UN Sustainable Development Goals (see later section).
- Actively build a culture with which Māori want to engage and that supports Māori recruitment and career development.

Specific priorities for Manaaki Whenua

Manaaki Whenua will proactively engage with Plant & Food Research and relevant organisations on the proposed developments at Mt Albert by:

- Continuing to work alongside Plant & Food Research and ESR in developing the business case for an Auckland science centre, and alongside MPI as plans for their future plant biosecurity capability and infrastructure emerge and can be aligned with that centre.

Policy and sector trends

- The Government is implementing policies for freshwater, biodiversity, and climate change mitigation that provide impetus and focus for us in these key areas of our research. Freshwater quality is heavily influenced by land use. Biodiversity is under pressure from both land-use change and predators. Climate change mitigation requires solid understanding of our national, sector-based and land-based emissions profile and management options. All are core strengths in Manaaki Whenua's research.
- The national budgets for greenhouse gas emissions and proposals for achieving those budgets issued by the Climate Change Commission (CCC)¹ are highly relevant to our carbon and indigenous forest research and the work of our subsidiary, Toitū Envirocare. In addition to our research on carbon stocks and emissions, our work on indigenous forest and soils as carbon sinks and potential removals will play an increasing role in meeting the national budgets, as recognised in the CCC report. Manaaki Whenua is also investing in how to create 'climate smart' landscapes that will allow mitigation and adaptation to occur in tandem. Toitū is helping hundreds of New Zealand organisations to measure, manage, and mitigate their carbon emissions, and demand is increasing as organisations recognise the need and benefits of taking action in this area.
- The Ministry for the Environment (MfE) and Statistics NZ continue their work on State of Environment reporting, which calls on our land and biodiversity knowledge, monitoring, and databases. Manaaki Whenua collaborates in this work, providing many of the information sources for land and biodiversity national reporting. We also contribute to New Zealand's role in the International Panel for Biodiversity and Ecosystem Services (IPBES).
- The Ministry for Primary Industries (MPI) is running the Fit for a Better World initiative, which includes a research accelerator model for creating science-based solutions faster than has been possible through traditional investment pathways. Our skills and research are central to proposed projects on the human dimension of supporting change by land managers addressing climate change, and the landscape-level scenarios for climate change adaptation and resilience.
- Pan-sector groups such as the Aotearoa Circle have initiated projects to lead change towards sustainable and regenerative outcomes. Examples are the Sustainable Finance Forum, Sustainable Finance in the Primary Sector, and indigenous forest carbon sinks, which call on a scientific evidence base. Manaaki Whenua will contribute strongly as a member of the Aotearoa Circle.

Science and technology trends

- The global trend is to solve complex problems by harnessing big data and capitalising on the opportunities afforded by emerging technologies such as machine learning and AI applications. For Manaaki Whenua, the value is in the ability of these technologies to deliver greater granularity in spatial and environmental data and assist in their interpretation; for example, using neural network analysis as a technique to differentiate individual tree crowns from satellite imagery.
- Molecular biology continues to be a growing field of science that offers new insights and solutions in plant, animal and soil science.

¹ National budgets in draft at the time of writing.

- Genomic technologies continue to offer solutions in different fields relevant to our work, but social licence to operate remains a hurdle in New Zealand. Manaaki Whenua has an interest through its membership of Genomics Aotearoa and will monitor developments as the public debate continues.

Science system trends

- Cross-CRI collaboration is a tool of growing importance for providing more impactful science and research. Examples of this are the Joint CRI COVID response taskforce, the cross-CRI Resilient Agriculture initiative, and the MPI research accelerator within the Fit for a Better World programme.
- We await the publication of the *National Statement of Science Investment* by MBIE and discussion of measures that could improve how the science system operates. These will be significant for our contribution to meeting New Zealand's research needs.

Te Tiriti

Māori and the Crown are partners in Te Tiriti. As a Crown Research Institute Manaaki Whenua seeks to fulfil its role and responsibilities to uphold the principles of Te Tiriti, the first of which is partnership. After 30 years of working closely with Māori in various rohe (tribal regions) and with a number of hapū and iwi, we consider that we are still at an early stage of our journey towards genuine partnership. Manaaki Whenua shares many interests with Māori in te taiao (the environment) and its relationship with tangata whenua, the indigenous people of this land. Our common interests extend to understanding environmental change and the institutions and processes used in society for managing that change.

Our common interests also include exploring the opportunities for future land use to meet the aspirations of tangata whenua as kaitiaki (guardians) of the land and environment to sustain their people. As Māori develop future land uses, Manaaki Whenua can play an increasing role by bringing research-based understanding and capability to evaluating land-use options.

These common interests reflect another principle of Te Tiriti: the active protection of Māori interests (here, in te taiao). In this context, the plants, animals and fungi held in the national collections that we curate are taonga (treasures) collected from the rohe of individual hapū and iwi. We therefore have a common interest in the governance of those collections and the taonga they contain.

Partnering for impact

Finding and implementing solutions to the complex environmental problems facing New Zealand requires multiple stakeholder inputs and a research approach that can integrate those inputs and the relevant research disciplines. This need goes beyond simple collaboration in research projects to encompass enduring, partnership-based relationships.

Partnerships take many forms across the science system and the public and private sectors. Through our subsidiary, Toitū Envirocare, we can partner with and support New Zealand businesses with their carbon management goals; through the National Science Challenges we can partner across the science system for impact on some of New Zealand's greatest environmental challenges; and by partnering with the private and public sector we can develop real-world solutions based on our research.

National Science Challenges

Manaaki Whenua is proud to host the New Zealand's Biological Heritage National Science Challenge (Bioheritage NSC), which is one of New Zealand's 11 NSCs. We share common goals with the Bioheritage NSC and seek to maximise the impact of our research through alignment with the Challenge and its extensive network of collaborating parties and Māori stakeholders.

We also contribute to five more NSCs, an important pathway for Manaaki Whenua's work to achieve our ambitions. Our social researchers are also becoming increasingly involved as the importance of the human dimension in achieving the challenges' aspirations becomes clearer.

- Our Land and Water – Toitū te Whenua, Toiora te Wai
- Deep South Challenge: Changing with our Climate – Te Kōmata o Te Tonga (e.g. risk-based flood insurance pricing in New Zealand)
- Resilience to Nature's Challenges – Kia manawaroa – Ngā Ākina o te Ao Tūroa (e.g. Rural and Resilience in Practice Model programmes)
- Building Better Homes, Towns and Cities – Ko Ngā wā Kāinga hei whakamahorahora (e.g. Huritanga – Towards socio-ecological wellbeing-led urban systems in an era of emergency)
- Sustainable Seas – Ko ngā moana whakauka.

Toitū Envirocare

Toitū Envirocare (formerly Enviro-Mark Solutions) is a wholly owned subsidiary of Manaaki Whenua. It contributes to Manaaki Whenua's ambition 'Our Environment' by growing the number of organisations measuring and reducing their greenhouse gas emissions and other environmental impacts. The fact that Toitū is founded on science and in government ownership means a great deal to members of Toitū's programmes.

Having a subsidiary that can engage organisations at scale contributes greatly to Manaaki Whenua's purpose of ensuring New Zealanders have the knowledge, understanding, and tools to live in harmony with the natural environment. We will continue to invest in growing Toitū's ability to scale its offerings and extend its scope across sectors to help achieve 'zero carbon New Zealand' and carbon neutral government.

Science and private sector partnerships

Science and private sector partnerships are key to Manaaki Whenua's approach, including:

- emerging international research partnerships
- relationships with key government Ministries (e.g. the Ministry for the Environment, Ministry for Primary Industries, Ministry of Foreign Affairs and Trade, and the Department of Conservation)
- commercial entities.

These partnerships are critical for delivering impacts that benefit New Zealand. Areas of emerging focus for partnerships are:

- links where good strategic alignment exists, both in New Zealand and overseas
- new horizons for our data science
- capability and capacity
- community connections
- predator control technologies.

Disruption

In the past year we experienced global disruption first-hand, giving us a chance to test and refine Manaaki Whenua's ability to respond. The lessons learned through the global pandemic will leave lasting changes in how Manaaki Whenua thinks about and prepares for future disruptions.

Looking to the future, our task is to imagine possible sources of change and disruption and manage the impact of those. Here are some examples.

- Technology disruption is almost constant. For example, advances in genomics, remote-sensing technology, big data, machine learning, and artificial intelligence (AI) will, in time, reshape the way we do research and deliver benefit to our users.
- Our market, once a stronghold of institutes and universities, is increasingly open to a range of entrepreneurial providers. We will see the advance of this entrepreneurial influence in applied research and technology development.
- The CRI review *Te Pae Kahurangi* is one input into the change likely to occur in the wider science sector.
- The global impact of COVID-19 is seen by many people as a 'dress-rehearsal' for the increasing impacts of climate change and the climatic extremes that scientists have for many years predicted.

Manaaki Whenua is likely to greet any disruption with an open mind, looking for opportunity as well as the need to manage risk. Each disruption may represent a significant change to how we work and deliver impact for New Zealand. Manaaki Whenua's response will be designed to ensure we can realise the opportunity of any disruption, predicted or not, while minimising the damaging effects such events can have on our people and on our business.

Our response will be built around three key elements:

1. *culture* – developing a culture that supports our people through disruption, ensuring we are agile, adaptive, and resilient
2. *research competencies* – investing in the research competencies needed to support and navigate society through disruption
3. *partnerships* – continuing to seek partnership with others, combining talents to deliver benefit to New Zealand.



OUR AMBITIONS



Our Biodiversity



Our Biosecurity



Our Land



Our Environment

We will enable New Zealanders to:

- | | | | |
|--|---|--|---|
| <ul style="list-style-type: none"> - reverse the decline of native species, habitats, and ecosystems - makuru ana ngā mahinga kai [gather food from abundant and flourishing areas] - increase the resilience of natural ecosystems | <ul style="list-style-type: none"> - kia tiakina ngā taonga tuku iho [better protect taonga species] - better respond to biosecurity threats - reduce pest, weed and disease impacts | <ul style="list-style-type: none"> - use land more sustainably - he whenua koiora [better utilise resources for intergenerational well-being] - better protect and restore land and soil resources - reduce the impact of land use on freshwater resources | <ul style="list-style-type: none"> - kia tautokohia te kaupapa kaitiakitanga [better enable kaitiakitanga to be practised] - be more inclusive and effective in environmental policy, planning, governance, and decision making - better adapt to climate change and mitigate its impact - transition to a zero carbon New Zealand - be a more resilient society and economy |
|--|---|--|---|

We will deliver the knowledge, tools, and confidence to:

- | | | | |
|--|--|--|--|
| <ul style="list-style-type: none"> - conserve and restore native terrestrial species, habitats, and ecosystems - identify and characterise biota and ecosystems, and measure changes to support evidence-based responses | <ul style="list-style-type: none"> - detect, identify, characterise, monitor, and control invasive species - use new and improved biosecurity tools and approaches | <ul style="list-style-type: none"> - monitor, manage, and mitigate key risks to land, soils, and water - develop sustainable economic value from land resources - identify and characterise soil and land resources and related ecosystem services, and measure changes to support evidence-based responses | <ul style="list-style-type: none"> - account for people's values, attitudes, and behaviours in managing environments - mitigate the factors contributing to climate change and improve adaptation to its impact - operate businesses in a more sustainable, restorative way |
|--|--|--|--|
- | | | |
|---|---|--|
| <ul style="list-style-type: none"> - understand our whenua and engage people in its care and protection - understand, value, and use te ao Māori and Treaty-informed approaches | <ul style="list-style-type: none"> - access accurate and integrated data, information, and knowledge - make robust and integrated longer-term natural resource policy, planning, and investment decisions | <ul style="list-style-type: none"> - take action at local to national scale - adapt and adopt smart tools and be a trusted partner internationally |
|---|---|--|

PRIORITY RESEARCH AREAS

Wildlife management and conservation ecology	Managing land and water	Climate change adaptation and mitigation
Plant biosecurity and biodiversity	Characterising land resources	Toitū Envirocare Ltd 
Biota		
Society, culture, and policy		

Our vision and purpose

Kia matomato te tupu a Tāne, a Rongo, a Haumia-Tiketike

Our vision: Let it be that the land and all its fruits may flourish

Acknowledging the unique and special relationship Māori have with Aotearoa, their land, and the environment, we draw on a uniquely Māori perspective of the world around us.

Tāne, Rongo, and Haumia-Tiketike are tamariki (children) of Rangi, our sky father, and Papa, our earth mother. Together they hold dominion over the forests, cultivated and uncultivated food, and the land-based realms within which they exist. If we use the land wisely, while acknowledging the special connection between manawhenua and the land, then the domains of Tāne, Rongo, and Haumia-Tiketike will be in balance and will support the well-being of all people. This concept of wise land use forms the vision of Manaaki Whenua and is inherent in kaitiakitanga – custodianship of our natural taonga and resources for future generations.

Ko te pūtaiao mō tō tātou whenua, mō āpōpō

Our purpose: Ensure that all New Zealanders have the knowledge, understanding, and tools to truly live in harmony with our land, enjoy its many gifts, preserve its unique diversity, and enrich it through our creativity, care, industry, and culture. In brief: science for our land and our future.

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 CRI provider for:

- improving the measurement, management, and protection of 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 New Zealand industries and organisations to develop within environmental limits and meet market and community requirements.

Strategy 22

01 AN IRRESISTIBLE CULTURE

Our people

Our culture of empowerment comes from diverse talents, great leadership and communication. We bring together best teams and provide staff with career development. Everyone is 100% committed to health, safety and well-being.

Science working with mātauranga Māori

Our work and impacts are enriched when we build understanding between scientific and Māori worldviews. Mātauranga Māori stands alongside our science in providing insights into our land and our future for all New Zealanders.

STRATEGY 22

02 A BETTER WAY OF WORKING

Our infrastructure

Our Collections and ICT support excellent research. Our sites provide great working environments, support our partnerships and are a base of interaction with New Zealanders.

Our sustainability

We invest wisely to deliver our strategy including financial resilience. We set challenging Sustainable Development Goals that reflect our vision.

Our partners

Our partnerships are enduring and are based on trust and mutual support. Through long term partnership we increase our capacity and achieve our ambitions.

03 SCIENCE FOR IMPACT

Innovative & Challenging

We are tackling greater science challenges with greater rewards for New Zealand. We actively seek and support innovation.

Strategic & integrated

We work on longer and larger scales and more complex problems, integrating across disciplines & stakeholders.

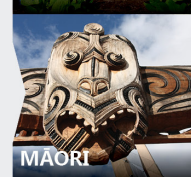
Valued & trusted

We are responsive to the needs of our clients and partners. We produce whole solutions with and for them. Our advice is trusted.

Engaged with all New Zealanders

We have a strong identity and we engage citizens in our research and speak with authority.

DELIVERING FOR OUR PARTNERS



In 2021 we are nearing the end of the 5-year period of Strategy 22 and we will be working on a strategy refresh. Many of our major initiatives are now (or will soon be) complete or have become business-as-usual. Below are those initiatives that will conclude the Strategy 22 period.

Key initiatives for 2021/22

- *Our people* will strengthen our Diversity and Inclusion (D&I) culture through the D&I group, developing strategies to address areas of under-representation, such as women in leadership roles, and Māori and Pasifika capability. We will continue to refine how we adapt to the Future of Work, building on the lessons from the lockdown.
- *Science working with mātauranga Māori* will support an enhanced Māori student summer internship programme, led by our Manaaki Taiao group, who will coordinate the cultural mentorship/supervision requirements of the taura. Technical supervision will be provided by those researchers leading the approved projects.
- *Our infrastructure* will complete and maximise the benefits of our new building in Lincoln, and further develop the concept of a joint science facility in Auckland with other CRIs.
- *Our sustainability* will develop a project leadership and delivery support model that will contribute to Manaaki Whenua's financial sustainability. We will continue our work of aligning our research and support goals with the UN Sustainable Development Goals, setting targets and reporting against them in our annual reports.
- *Our partners* will seek greater alignment and partnership with: local government, as a sector and individually; iwi in their role as kaitiaki; government departments and other CRIs to progress initiatives supporting the food and fibre industry; and international science partnerships, including other CRIs, where possible.

- *Innovative and challenging* will continue to build on guidance from our international Science Advisory Panel. Earlier initiatives such as the Science Den (an internal innovation fund) and Outside Thinking & Brilliant Writing (national and international engagement to develop novel research agendas) are now well established. An example of the latter is collaborating with research groups from Australia and the USA to develop novel approaches for eradicating pests.
- *Strategic and integrated* will focus on building collaboration with AgResearch, Plant & Food Research, the University of Canterbury, and Lincoln University through a Joint Postgraduate School with an applied integrative approach at its heart. We continue to encourage use of Our Pathway to Impact as a tool for linking research projects to outcome and impact, and ensuring relevant skills are included.
- *Valued and trusted* will implement our information management and engagement frameworks to underpin growing trust in our relationships with partners, clients, and investors.
- *Engaged with all New Zealanders* will focus on: supporting our researchers to share the progress and outcomes of their work with partners and stakeholders; strategic marketing to both lift our profile and create and convert opportunities for new research; and improving public engagement with science and research through exceptional research communication and engagement design.

Looking ahead

Strategy 22, outlining our 5-year goals and initiatives, has delivered benefits across our organisation. Gains in our culture, ways of working, and science are reflected in positive external stakeholder feedback, staff engagement, and the financial sustainability needed to be able to re-invest in our work and resources. With significant change in our operating environment and lessons learned from the global response to the COVID-19 pandemic, it is timely to evolve our strategy.

Through the first half of the 2021 calendar year the Senior Leadership Team will be working with our Board of Directors, staff, and key external stakeholders with the goal of developing a strategic direction for our next 3 to 5 years of impact. The review process will focus on three areas:

1. *our purpose*, to ensure it accurately and clearly represents our role within New Zealand and the wider world – we will take the opportunity to reflect a stronger alignment with and commitment to Māori as they seek to build the mauri of the whenua
2. *our impacts*, to ensure our work is applied to the most pressing needs of New Zealand, including the mitigation of and adaptation to climate change and the protection of our unique flora and fauna
3. *our strategic goals and pathways*, to deliver our purpose while maintaining the ability to re-invest in our business.

Our science and technology goals

Research priorities by portfolio

Society, Culture and Policy

- enable integrated policy and management across landscapes and people
- rangahau mō te kaitiaki (research for the kaitiaki)
- understand environmental preferences, attitudes, and behaviour (e.g. Survey of Rural Decision Makers)
- enable better-informed and more transparent resource management decisions to enhance system resilience (e.g. work with BBHTC and NRC)
- inform and improve environmental policy and governance.

Climate Change Adaptation and Mitigation

- integrate the management of carbon, water, and nutrients (e.g. improved pasture management for multiple outcomes)
- develop accurate quantification of, and changes in, terrestrial GHGs and carbon stocks to further refine New Zealand's reporting under the Emissions Trading Scheme
- develop and evaluate cost-effective technologies to mitigate terrestrial GHG emissions (e.g. inhibitors of nitrous oxide emissions from pastures)
- determine the biophysical and socio-economic consequences of climate change
- design land-based climate adaptation solutions and pathways for New Zealand that build on biodiversity and ecosystem services.

Characterising Land Resources

- characterise soil attributes and their spatial variability (e.g. S-map for improved land-use decisions at local and government level)
- generate credible spatiotemporal land-cover and land-use data (e.g. Land Cover Database to enable understanding of how Aotearoa New Zealand's land cover is changing and to help inform environmental reporting and policy development)
- map and characterise ecosystem services, and enable scenario analysis to test policy interventions
- integrated modelling of land resource information, including uncertainty and its implications for land sustainability and resilience (e.g. policy development, community-led decision making, and economic and social development)
- deliver online multi-platform access for stakeholders to New Zealand land resource data.

Managing Land and Water

- protect and improve soil and ecosystem health (underpinning policy and decision making for regional councils and landowners)
- understand erosion processes and manage sediment impacts in rivers (e.g. SedNet, erosion and sediment prediction model supporting regional councils and the NPS-FM)
- integrate land and water management, including catchment policy implementation (to meet sustainability and NPS-FM requirements).

Biota

- enhance and enable identification and understanding of plants, arthropods, fungi, and bacteria, to underpin New Zealand's biosecurity
- manage and improve the collections and databases that underpin New Zealand's biodiversity and biosecurity management systems
- develop and promote systems to enhance awareness of and access to data from our biological collections and databases (e.g. new informatics platforms to make data easily available).

Plant Biosecurity and Biodiversity

- develop tools and methods to beat weeds (e.g. culturally acceptable ways to manage weeds)
- determine ecological baselines for ecosystem conservation (e.g. DNA techniques to reconstruct our unique biodiversity)
- increase understanding of ecosystem resilience and how to protect and improve it (e.g. potential impact of myrtle rust)
- identify and apply weed biocontrol agents (e.g. broom)
- harness molecular ecology for biosecurity and biodiversity
- measure and interpret biodiversity change and its implications (e.g. remote sensing).

Wildlife Management and Conservation Ecology

- investigate outcomes of different management regimes for species and ecosystem conservation (e.g. modelling outcomes from management)
- support biocultural approaches to biosecurity and biodiversity (e.g. indigenous knowledge of native ecology)
- guide and evaluate effective landscape-scale predator eradication (e.g. supporting eradication initiatives)
- develop safe and cost-effective vertebrate predator control tools and technologies (e.g. species-specific toxins)
- support TB freedom and wildlife disease management (e.g. surveillance and eradication programme design).

Our future capability

Workforce and the future of work

COVID-19 has rapidly reshaped expectations and practices relating to work. Having embraced these drivers, we expect the following to be enduring changes:

- a flexible approach to remote ways of working, which involves continuing to reduce our travel carbon footprint, and efficient use of our physical assets
- an increased use of virtual communication to add value for our partners, including convening stakeholder groups.

Our focus for the year ahead is on ensuring our leaders have the skill sets to lead a hybrid workforce and respond effectively to the changing environment. We are investing in skill development for staff to ensure effective collaboration and the use of virtual tools.

To ensure capability is fit for the future, we will invest in at-risk and emergent skills areas. Working with other CRIs, we are engaged with several universities to ensure graduating students have the skills needed to meet future RS&T demands and to provide a strong, vocational pathway to a CRI environment.

Capability in science

Science staff levels are stable (approximately 260 full-time equivalents). We continue to recruit staff in support of the Government's priorities of improved freshwater quality, climate change mitigation/adaptation, and biodiversity outcomes from predator control. Demand for soil characterisation and digital soil mapping is particularly strong. We are partnering with other CRIs and universities to build capability in data science and modelling. Our dedicated Manaaki Taiao group of researchers will be expanded to meet the increasing demand for environmental management within a Māori world view.

We have increased researchers' confidence in using applied integrative approaches to research, and will expect all large research projects to use these approaches. This drives an increasing need for social and economic skill sets.

Māori partnership

Manaaki Whenua continues to work to embed the Treaty principles into our operating model to guide how we engage with tribal collectives and Māori land trusts and incorporations. We will prioritise our partnerships with tribal and sub-tribal collectives in recognition of their role as the original kaitiaki of Aotearoa, and of the emerging organisational ethos to 'empower iwi as kaitiaki of Aotearoa'. A key platform in this engagement will be indigenous data sovereignty and the biological collections. Hapū

and iwi have a strong interest in both the collections themselves and the data that flow from them (e.g. genomic data).

We will redouble our efforts to build pathways and recruit Māori into Manaaki Whenua across our business. The 2021/22 year will see the roll-out of a more comprehensive Māori student summer intern programme across our major sites.



National SCIENCE Challenges

Stewardship of our unique biological heritage is every New Zealander's responsibility. However, our biological heritage is under threat from invasive organisms and new pressures emerging in a rapidly changing global environment.

The mission of New Zealand's Biological Heritage National Science Challenge (the Bioheritage NSC) is to reverse the decline of New Zealand's biological heritage through a national partnership to deliver a step-change in research innovation, globally leading technologies, and community and sector action.

There is no single solution: it is a complex problem, and New Zealand's environmental, economic, and cultural prosperity are heavily dependent on our biological heritage. The Bioheritage NSC brings together researchers across institutions and disciplines, communities, agencies, and knowledge areas (mātauranga Māori, Western science) to transform understanding and the ways we manage our biodiversity, improve biosecurity, and

enhance resilience to harmful organisms.

The Bioheritage NSC is hosted by Manaaki Whenua. It comprises 18 formal collaborating Challenge Parties, along with a network of communities and partners spanning the research and innovation sector, communities, non-government organisations, business and industry, and the public. Manaaki Whenua is contracted by MBIE to deliver the Bioheritage NSC work programme, along with a national platform, Ngā Rākau Taketake: Saving Our Iconic Trees, via the Strategic Science Investment Fund (SSIF).

With \$37.8 million in National Science funding and an additional \$33.4 million for kauri dieback and myrtle rust research through Ngā Rākau Taketake, the Bioheritage NSC has an integrated research programme and strategy focused on strategic outcomes and impacts. Three impact areas that structure the research are:

- Impact 1: Whakamana • Empower – New Zealanders value our biological heritage, understand how it is changing, and are inspired to take action to protect it
- Impact 2: Tiaki • Protect – New Zealand's biosecurity system is world class
- Impact 3: Whakahou • Restore – New Zealand's natural and production ecosystems are resilient and thriving.

Manaaki Whenua supports and works closely with the Bioheritage NSC to deliver its research strategy and mission through key roles on the leadership team, general management, and administration, along with researchers and strategic alignment of our SSIF and other investments. A commitment to and focus on new ways of doing and approaching science, generating new knowledge and tools, in a Treaty-led model in partnership with Māori, is critical to building additionality and impact, and ultimately reversing the decline of our biological heritage. (<https://bioheritage.nz/>)



Toitū Envirocare continues to grow as climate action becomes more mainstream, as evidenced by the Climate Change Response (Zero Carbon) Amendment Act 2019, the declaration of a climate emergency, and a commitment to a carbon neutral public sector.

While 2020 saw a small loss due to COVID-19 impacts, business picked up again near the end of the year and we expect this momentum to continue as climate action is taken up by mainstream New Zealand organisations. To respond to this growth, Toitū continues to recruit new, client-facing employees, though we expect competition for skilled environmental consultants to intensify.

Toitū's client base continues to expand and includes some of New Zealand's largest organisations. More and more public sector entities are joining Toitū's carbon programmes as they chart their path towards a carbon neutral public sector.

Toitū has recently launched new programme offerings: carbon assess, an online self-assessment tool to enable small businesses to quickly capture their material carbon emissions, and the on-farm carbon programme, a variant of the Toitū carbon programme tailored to farms. Toitū is also expanding the carbonzero product offering, and is currently working on a climate positive programme designed for climate leaders on a pathway to net zero.

In 2020 Toitū refined its purpose 'catalysing action for a net zero future', and identified four strategic themes needed to deliver on this promise:

1. expand our reach
2. create the ecosystem (through partnership)
3. educate and advocate
4. make action easy.

As part of delivering on our new strategy, a focus going forward will be on business process improvement, capability development, and strategic partnering.

Our partnership with Achilles, Toitū's licence partner in the UK, continues and their licence has been extended to include carbonzero. We anticipate the client growth they achieved last year will increase, again due to growing momentum for climate action.

Toitū continues to participate in technical forums associated with global standards and best practice, including the Science-Based Targets initiative (SBTi), Carbon Disclosure Project (CDP), International Carbon Reduction and Offset Alliance (ICROA), the International Standards Organisation (ISO), and the Greenhouse Gas (GHG) Protocol.

As New Zealand transitions towards a net zero future, and with the implementation of the Paris Agreement and associated Nationally Determined Contribution, Toitū is actively engaged in the evolution of voluntary offsetting and carbon neutral claims.



Performance

External review and input

Science Advisory Panel

In 2021/22, with input from our Science Advisory Panel (SAP) chair, and supported by specific domain expertise, we will review our (biological) Nationally Significant Collections and associated research. The purpose of the review will be to get external input into our developing strategy for our biological collections and how we can derive greater value for New Zealand.

The review will have two parts: a written submission outlining the context, strategic direction, and future strategy for delivering greater value from the collections; followed by a mix of face-to-face and online meetings with an international panel to review our plans and recommend the future direction and opportunities they see for our research. The panel will present their review findings to senior management and the Board.

Outcome Advisory Panel

We continue to draw on the Outcome Advisory Panel (OAP) to understand current and future stakeholder needs and how we are delivering on information required. The OAP continues to provide valuable feedback on a twice-yearly basis, and one of these meetings provides our Board with an opportunity to hear feedback from the sectors represented by the OAP members. For next year, the focus will be on engaging with the OAP on Manaaki Whenua's strategic direction over the next 5-year period. This process began at the February 2021 meeting, where initial discussions on strategic impact goals were explored, providing necessary feedback to help our direction with the development.

Te Pae Kahurangi

In brief, *Te Pae Kahurangi's* CRI-focused recommendations identify the need for CRIs to work together more effectively and to find ways to work in a more strategically joined-up way with government ministries and departments. It also recommended that CRIs work together to develop more depth in Māori researcher capability and build integrated, Tiriti-based partnerships with Māori.

In response, Manaaki Whenua continues to work closely with other CRIs on several initiatives aimed at developing stronger links between the CRIs as a group, as well as with government ministries and other stakeholders. One initiative is focused on making CRIs' environmental data and information readily accessible through a common portal.

A separate initiative, involving CRI CEOs working with MPI, has identified several accelerator projects that will be progressed through four-party relationships involving government, Māori, industry, and the CRIs. The final shape of these projects is still evolving, but Manaaki Whenua is committed to supporting these initiatives.

Manaaki Whenua continues to see Māori and Māori researchers as critical to achieving our aspirations for New Zealand. We have initiatives underway to strengthen and expand the role of Māori researchers in projects, and to expand the number of iwi we are actively partnering with.

Performance monitoring and reporting

Non-financial performance indicators²

Indicator	Measure	2019/20 actual	2020/21 forecast	2021/22 target
End-user collaboration	Revenue per FTE from commercial sources (\$000s) ^{a,b}	\$59.3	\$60	>\$50
Research collaboration	Percentage of papers co-authored ^a (total)	92%	92%	85–90%
	Co-authored with other New Zealand organisations	30%	29%	25–30%
	Overseas co-authors	38%	39%	35–40%
	Both New Zealand and overseas co-authors ^b	24%	24%	25–30%
Technology and knowledge exchange	Commercial reports per scientist FTE ^a	0.99	0.85	0.75–0.85
	Availability of data from our SSIF-funded databases, collections and information systems (assessed by a variety of metrics appropriate to each; metrics online)	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%	>95%	>95%
	New and improved products, processes and services	46	40	>40
	Presentations to stakeholders and community groups ^c	140	120	150
Science quality	Impact of scientific publications (mean citation score) ^{a,b}	4.2	4.0	3.0–4.0
Financial indicator	Revenue per FTE (\$000s) ^a	\$210	\$196	>\$200
Stakeholder engagement and feedback	Percentage of relevant end-users who have adopted knowledge and/or technology from Manaaki Whenua ^{d, e}	64%	65%	>65%
	Percentage of relevant funding partners and other end-users that have a high level of satisfaction in our ability to set research priorities ^{d, f}	48%	50%	>50%
	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 ^{b, d, f}	58%	60%	>60%
	Staff invited to participate in stakeholder meetings or workshops ^c	155	140	170
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, c}	104	75	80
Commercialisation	Number of new and existing licensing deals involving Manaaki Whenua-derived IP (including technologies, products and services)	23	30–35	30–35
High-performance culture	Staff engagement in survey evaluations	81%	80%	>80%
	Staff retention rate	95.5%	90%	>90%

^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 Uncertainty due to ongoing effects of COVID-19.

^d Based on a new, internally run stakeholder survey, first administered in 2019/20.

^e Does not include survey respondents who were unsure.

^f Those who score 8, 9, or 10 on a 0–10 scale.

² Indicators for operational areas such as good employer, health and safety, and our environmental performance can be found on our website: www.landcareresearch.co.nz/about/sustainability.

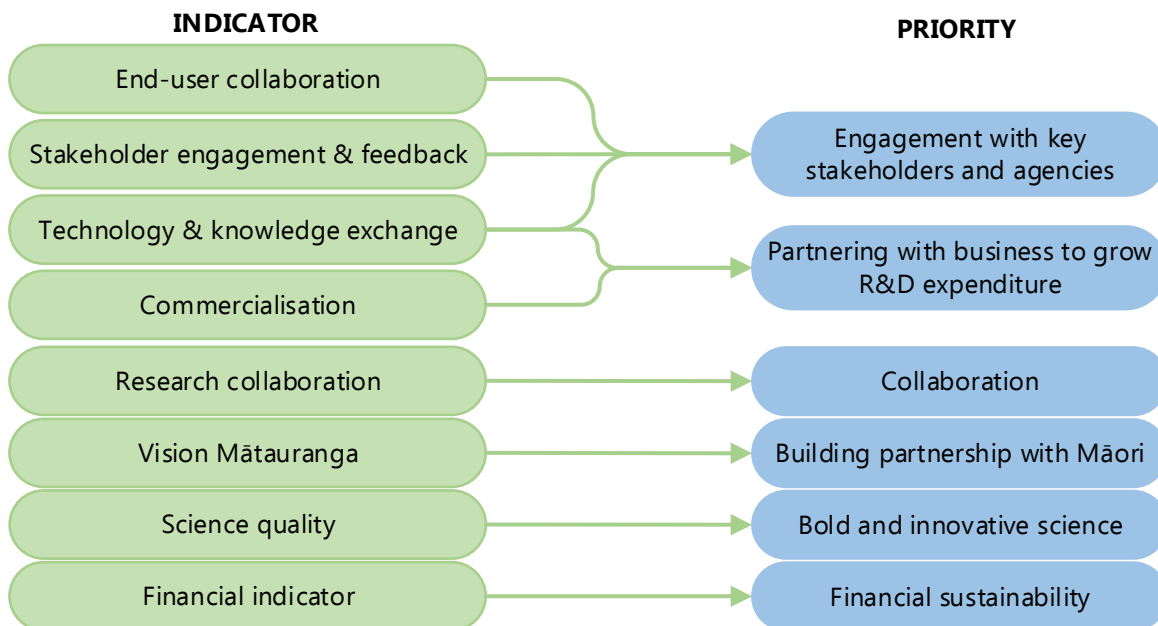
UN SDG and Well-being Targets

As a signatory to the United Nations Sustainable Development Goals (SDGs), New Zealand reports on its progress towards meeting each of the 17 goals. As the Crown Research Institute for our biodiversity and land environment, Manaaki Whenua directly contributes to this country's responses and responsibilities. Since their release in 2015 the SDGs have provided an internationally accepted and comprehensive framework for sustainable development to be used by governments and organisations. In its reporting, New Zealand aligns its well-being framework with the SDGs.

Our assessment of the alignment between our Strategy 22 goals and the SDGs, which involved a materiality evaluation among key stakeholders, was reported in our Annual Report for 2019/20. We then established a priority list of 12 SDGs relating to our science and to our strategy as an organisation. Our process has been certified as meeting the AA1000 global standard. We are now working to determine targets and indicators for our performance against these SDGs, and we will report on our performance in future annual reports. We will also align our work on the SDGs with the Government's well-being framework.

SDGs material to our science goals	SDGs material to our corporate goals
2 Zero hunger	3 Good health and well-being
6 Clean water and sanitation	5 Gender equality
11 Sustainable cities and communities	8 Decent work and economic growth
13 Climate action	10 Reduced inequalities
15 Life on land	12 Responsible consumption and production
16 Peace, justice and strong institutions	13 Climate action
	17 Partnership for the goals

Indicator alignment to Government priorities



Financial reporting

Financial performance and position

For the financial year ending 30 June	2020/21		2021/22	2022/23	2023/24	2024/25
	Target	Forecast	Target	Target	Target	Target
Revenue	\$104.5m	\$101.3m	\$104.1m	\$108.0m	\$107.4m	\$114.6m
EBIT ¹	\$3.2m	\$3.9m	\$1.6m	\$2.7m	\$2.6m	\$4.5m
NPAT ²	\$2.9m	\$2.2m	\$1.0m	\$1.8m	\$1.7m	\$3.0m
Total assets	\$89.2m	\$89.2m	\$83.5m	\$86.9m	\$87.6m	\$91.5m
Capital expenditure	\$16.1m	\$16.2m	\$7.7m	\$6.5m	\$7.9m	\$9.3m
Dividend	\$Nil	\$Nil	\$Nil	\$Nil	\$Nil	\$Nil
Equity ratio ³	64.5%	51.4%	64.5%	64.2%	66.2%	66.6%
Gearing ⁴	\$Nil	\$Nil	\$Nil	\$Nil	\$Nil	\$Nil

Explanatory notes to table

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 2021/22 Manaaki Whenua's revenue is budgeted at \$104.1 million, up by \$2.8 million compared with the 2021 forecast. This reflects:

- increased revenue in relation to the greater activity of the New Zealand's Biological Heritage Challenge, and greater Toitū activity and revenue, reflecting market conditions.
- reduced science revenue and a reduction due to the impact of the Government's Covid-19 Response and Recovery fund received in 2020/21, which is not expected in 2021/22.

As outlined below, revenue risk is high in 2021/22 and 2022/23 as several MBIE Endeavour research investments come to an end. Our emphasis on finding alternative investment from non-MBIE sources is expected to be further constrained by economic restraint during the pandemic.

The years 2021/22 and 2022/23 represent a period of re-investment for Manaaki Whenua, utilising balance sheet reserves generated from past profits to maintain capability while we reposition and continue our emphasis on finding alternative investment.

Return on equity

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 proposes a lower RoE so that it can support the databases and collections and strategic investments, which will enhance science, provide benefit to New Zealand, and underpin future value.
- 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 secure revenue and be financially sustainable.

Cash flow and dividend

Manaaki Whenua expects to continue to deliver positive operating cash flows, with earnings before income tax before depreciation, amortisation and fair value adjustments (EBITDAF) of \$5.8 million in 2021/22. Capital Expenditure in 2021/22 is expected to be \$7.7 million.

Based on the strategic capital investment needs identified above, no dividend is planned during the period of this SCI. However, the Manaaki Whenua Board will review this annually.

Risks

There is forecasting uncertainty associated with Manaaki Whenua's revenue budgets. There are risks and opportunities from competition and disruptive technologies with the potential to affect capability and future business sustainability.

Revenue risk is high in 2021/22 and 2022/23 as several MBIE Endeavour research investments come to an end. The increasing focus of Endeavour investment on 'frontier innovation' is not fully aligned with the CRIs' focus on strategic research, which spans the frontier-to-applied spectrum, with a strong focus on impact for the benefit of New Zealand. Therefore, we have moderated our expectations of continuing the recent level of investment. Our emphasis on finding alternative investment from non-MBIE sources is moderated by the expectation that those sources will still be influenced by pandemic restraint.

Manaaki Whenua will actively monitor and respond to any emerging financial risks.



Jane Taylor
Chair

30 June 2021



Dr Paul Reynolds
Deputy Chair

30 June 2021

Appendix 1: Additional financial indicators

For the financial year ending 30 June	2020/21		2021/22	2022/23	2023/24	2024/25
	Target	Forecast	Target	Target	Target	Target
Operating margin ¹	8.1%	6.1%	7.0%	7.5%	7.0%	8.4%
Profit/FTE	\$19,066	\$14,793	\$14,793	\$15,646	\$14,002	\$17,357
Quick ratio ²	1.72	1.98	2.59	1.27	1.25	1.27
Interest coverage ³	43.0	43.0	27.2	30.5	33.3	43.0
Profit volatility ⁴	19.3%	17.3%	14.8%	15.2%	14.8%	15.7%
Forecasting risk ⁵	0.8%	8.1%	3.8%	2.7%	3.3%	4.3%
RoE NPAT ⁶ (after investment)	6.2%	5.6%	2.0%	3.4%	3.2%	5.5%
Revenue growth	11.6%	13.0%	2.7%	3.7%	-0.6%	6.7%
Capital renewal ⁷	1.40	1.62	1.46	1.10	1.18	1.27

Explanatory notes to table:

¹ Operating margin: EBITDAF ÷ revenue, expressed as a percentage and per FTE (EBITDAF is earnings before interest, income tax, depreciation, amortisation and fair value adjustments).

² Quick ratio: (current assets – inventory – prepayments) ÷ (current liabilities – revenue in advance).

³ Interest cover: EBITDAF ÷ interest paid.






⁴ Profit volatility: the standard deviation of the past 5 years' profit, scaled by average profit.

⁵ Forecasting risk: 5-year average of return on equity, less forecast return on equity.

⁶ Return on equity: NPAT ÷ average shareholders' funds, expressed as a percentage (NPAT is net profit after tax). Shareholders' funds include share capital and retained earnings.

⁷ Capital renewal: capital expenditure ÷ depreciation expense + amortisation expense.

Appendix 2: Collections, databases and information systems







		Accessibility Goals and Key Performance Indicators
 <p>National Soils Data Repository (NSDR)</p> <p>5,900+ New Zealand soil profile descriptions, plus analytical data on their chemical, physical, and mineralogical characteristics. Includes the National Soils Archive, a reference collection of soil samples for the NSDR.</p> <p>- https://viewer-nsdr.landcareresearch.co.nz/</p>		<p>ALL</p> <p>Service availability uptime is ≥90%.</p> <p>Number of data sets provided online to users is maintained or increases.</p>
 <p>Land Resource Information Systems (LRIS)</p> <p>Includes the New Zealand Land Resource Inventory (NZLRI), Land Use Capability (LUC), fundamental Soils Layer (FSL), and related datasets and materials.</p> <p>Presents general land characteristics and land evaluation information, plus a range of environmental, climatic, management and production attributes.</p> <p>- http://Iris.scinfo.org.nz - https://ourevironment.scinfo.org.nz/</p>	<p>Used for National and regional state-of-environment monitoring, forest and shrubland inventory, biodiversity assessment, trend analysis, and infrastructure planning.</p>	<p>EACH</p> <p>NSDR and LRIS More services added, and new data sets uploaded.</p> <p>Develop new routes to our data building on test APIs and visualisation created last year.</p> <p>User numbers (direct or indirect) are maintained or increase.</p>
 <p>Land Cover Database (LCDB)</p> <p>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).</p> <p>- http://Iris.scinfo.org.nz - https://Iris.scinfo.org.nz/layer/104400-lcdb-v50-land-cover-database-version-50-mainland-new-zealand/ - https://vizbe.landcareresearch.co.nz/</p>	<p>Used by regional and central government, primary industry, and the finance, environment, and education sectors.</p>	<p>Data support environmental reporting and resource management instruments, and their implementation at the regional level.</p> <p>User confidence is maintained or increases.</p>
 <p>S-map</p> <p>A national system that provides comprehensive, quantitative soil information to support sustainable development and scientific modelling.</p> <p>- https://smap.landcareresearch.co.nz - http://Iris.scinfo.org.nz</p>		<p>S-map The breadth of soil information for users is extended.</p> <p>New tools added to aid users and maximise value of data.</p>
 <p>National Vegetation Survey (NVS) Databank</p> <p>A national repository of plot-based vegetation survey data from 121,000+ survey plots going back over 70 years. Covers Northland to Stewart Island, the Kermadec and Chatham Islands, and from coastal to forests to high alpine.</p> <p>- http://nvs.landcareresearch.co.nz</p>	<p>Key part of New Zealand's biodiversity and biosecurity information infrastructure.</p>	<p>Requests for public domain data met immediately or within 2 weeks if complex.</p> <p>>20 new electronic data sets added annually.</p> <p>Registered NVS user numbers are maintained or increase.</p> <p>NVS data underpins national-scale plant biodiversity trend reporting.</p>

 Database

 Collection

  Nationally significant

 Significant

 <p>Allan Herbarium (CHR)</p>	<p>New Zealand's national herbarium with 700,000+ specimens of New Zealand and South Pacific algae, lichens, liverworts, mosses, ferns, and seed plants. - www.landcareresearch.co.nz/allanherbarium</p>	<p>Used by New Zealand's biodiversity and biosecurity systems, benefiting conservation, forestry, horticultural and agricultural sectors.</p>	<p>ALL</p> <p>A 2-week response time for 90% of loan requests.</p> <p>Page views and visitor numbers for the Systematics Collections Data portal are maintained or increase.</p>
 <p>New Zealand Arthropod Collection (NZAC)</p>	<p>Largest collection of New Zealand insects and related arthropods with 7 million+ specimens. Includes the National Nematode Collection of New Zealand (NNCNZ). - www.landcareresearch.co.nz/nzac</p>		<p>EACH</p> <p>CHR and NZAC The NZ Threat Classification System uses new taxonomic information.</p> <p>PDD and ICMP Maintain or increase cultures and specimens used in scientific literature, and DNA sequences generated. New specimens accessioned.</p> <p>CHR – 6,000+ NZAC – 7,000+ PDD – 500+ ICMP – 300+ new cultures.</p>
 <p>New Zealand Fungarium (PDD)</p>	<p>Primary information source on New Zealand and Pacific fungi with 105,000+ dried fungal specimens, and voucher specimens documenting most plant diseases recorded in New Zealand. - www.landcareresearch.co.nz/pdd</p>		
 <p>International Collection of Microorganisms from Plants (ICMP)</p>	<p>One of three major international collections for plant and soil bacteria, with living cultures of 22,500+ strains of bacteria and fungi from plants and soil. - www.landcareresearch.co.nz/icmp</p>		
 <p>Ngā Tipu Whakaoranga - Māori Plant Use Database</p>	<p>2,400+ records on Māori names and cultural uses of New Zealand native plants, fungi, and algae. - http://maoriplantuse.landcareresearch.co.nz</p>		<p>Used for research into traditional and new uses.</p>
 <p>Te Kohinga Harakeke o Aotearoa (National New Zealand Flax Collection)</p>	<p>Living collection of <i>Phormium</i> species of cultural, economic, and historical interest. - www.landcareresearch.co.nz/harakeke</p>	<p>All weaving cultivars represented online with Māori names and stories.</p>	

 Database

 Collector

 Nationally significant

 Significant

Appendix 3: Business policies

We operate in accordance with the purpose and principles as 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: <http://www.landcareresearch.co.nz/about/sustainability/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 (prior to 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 (prior to 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 4: 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 2020, was \$49 million.

Glossary

CCC	Climate Change Commission	
CDP	Carbon Disclosure Project	
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	
GHG	greenhouse gas	
ICROA	International Carbon Reduction and Offset Alliance	www.icroa.org
ISO	International Standards Organisation	www.iso.org
KPI	key performance indicator	
LCDB	Land Cover Database	www.lris.scinfo.org.nz/layer/104400-lcdb-v50-land-cover-database-version-50-mainland-new-zealand
MBIE	Ministry of Business, Innovation and Employment	www.mbie.govt.nz
MFAT	Ministry of Foreign Affairs and Trade	
MfE	Ministry for the Environment	www.mfe.govt.nz
MPI	Ministry for Primary Industries	www.mpi.govt.nz
NSC	National Science Challenge	
NPAT	Net profit after tax	
RS&T	Research, Science and Technology	
SCI	Statement of Corporate Intent	
SCP	Statement of Core Purpose	www.landcareresearch.co.nz
SDGs	UN Sustainable Development Goals	
S-map	A national system that provides comprehensive, quantitative soil information to support sustainable development and scientific modelling.	www.smap.landcareresearch.co.nz
SSIF	Strategic Science Investment Fund (MBIE)	www.mbie.govt.nz
Te Pae Kahurangi	The CRI review commissioned by MBIE and published in July 2020	www.mbie.govt.nz/assets/te-pae-kahurangi-report.pdf

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