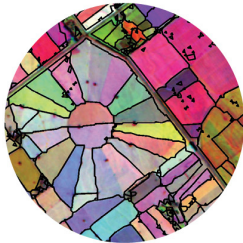


STATEMENT OF CORPORATE INTENT 2016-21

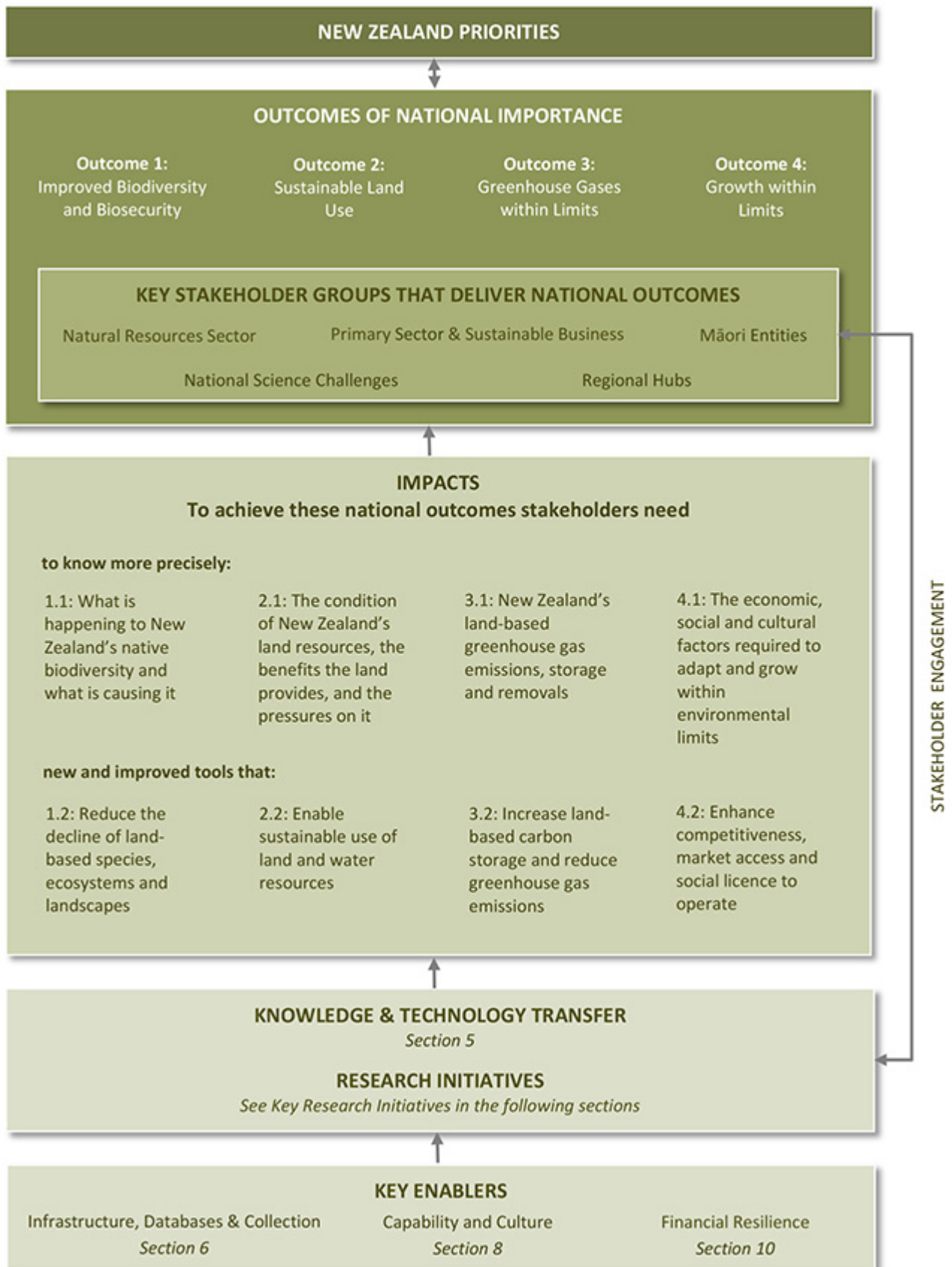


LANDCARE RESEARCH
MANAAKI WHENUA

Table of Contents

1. **Our National Outcomes & Impacts**
2. **Chair & CEO Report**
3. **Our Strategic Focus**
4. **Landcare Research's Core Purpose**
 - 4.1. **National Outcome 1: Improved Biodiversity and Biosecurity**
 - 4.2. **National Outcome 2: Sustainable Management of Land and Water**
 - 4.3. **National Outcome 3: Greenhouse Gases within Limits**
 - 4.4. **National Outcome 4: Greening New Zealand's Growth**
5. **Knowledge and technology transfer**
6. **Infrastructure**
7. **Enviro-Mark Solutions**
8. **Capability and Culture**
9. **Performance Monitoring & Reporting**
10. **Financial Resilience**
11. **Appendix 1: Nationally Significant Collections, Databases & Information Systems**
12. **Appendix 2: Business Policies**
13. **Appendix 3: Matters required by the Crown Research Institutes Act 1992**
14. **Directory**
15. **Guide to Acronyms**

1. Our National Outcomes & Impacts



2. Chair & CEO Report

We are pleased to present Landcare Research's Statement of Corporate Intent (SCI) for the period 2016–21. This sets out how we will contribute to our shareholders' and customers' goals. Landcare Research's expertise is aligned strongly with the needs of the public sector. Increasingly, we are using that expertise to add value to organisations in the primary sector and Māori entities. This SCI represents a drive to a more dynamic and responsive role across sectors based on excellent and relevant science.

Contributing to government priorities

Landcare Research provides science and innovation that complement good public sector policy in achieving positive outcomes for New Zealand. We will continue to align our work closely with the government's priorities laid out in the Business Growth Agenda and the National Statement of Science Innovation (2015–2025). In particular, we will enhance our ability to support the Natural Resources and Innovation goals, which include biodiversity protection and maximising land productivity while reducing environmental effects.

We will increase our focus on regional development opportunities and challenges. In doing so, we will meet the rising demands of government agencies for insights and tools that integrate policy and regulation. This demand is both at catchment and regional scales and also across research disciplines and timescales. We will build on our current initiatives across many regions from Northland to Southland. We will meet increasing demands for science and innovation to support the national water reforms. We will continue to co-lead the implementation of a national strategy for soils, on which our economy depends heavily and which are both vulnerable and poorly understood. We will also continue to support collaborative predator control, biodiversity restoration and species conservation initiatives at landscape-scale.

Our distinctive ability to integrate environmental, cultural and economic aspects of development enables us to contribute to the holistic approach taken by Māori to long-term, sustainable development. Our long-term relationships with Māori organisations provide a foundation on which we are successfully building new relationships and capacity to support Māori development.

We are proud to host the New Zealand Biological Heritage National Science Challenge and are committed to its success in leading a reversal in the decline of our nation's biological heritage. Our science and innovation will support an increasing number of regional and national bio-heritage initiatives, through better understanding risks and providing more effective management tools. We manage seven Nationally Significant Collections and Databases that provide an increasingly important foundation for natural resources management. We will continue to enhance the value derived from these assets in achieving economic and environmental goals, and we will create new pathways for gaining the financial support needed to maximise the benefit of these assets. One such pathway is the Manaaki Whenua Research Trust, which we have established to support both research and research assets such as the national Collections and Databases that Landcare Research is custodian for on behalf of all New Zealanders. The Trust will provide a pathway for both the public and philanthropists to become involved personally in our science, building upon our knowledge, assets and existing projects. The Trust's patron is Sir Rob Fenwick, a former Chair of Landcare Research.

Results and impact focus

A significant focus in science sectors globally is on enhancing the impact of science and its visibility, and measuring its contribution. Landcare Research will invest to achieve these goals through our own strategic efforts to increase communication, knowledge and technology transfer. We will build on a strong track record of making data accessible and helping to shape and adopt international best practice.

Landcare Research is presently in the top 10% of research institutes globally for its science excellence in nine of the thirteen major areas of its science, measured by publication impact. We aspire to be in the top 10% for all areas of our science, including those areas where we are building new capability to meet changing needs in New Zealand. We will grow our collaborations with the most successful institutes.

We aim to transform the value of our science to its users and will implement the findings of our recent study of value. This includes changing how and when we engage users and will build on our capacity to integrate different disciplines and tools to address complex issues and needs.

Our contribution is founded on excellent science across the spectra from exploratory to applied and from insight to innovation. We will continuously strengthen partnerships to complement our capacity. This will include a greater focus on involving the public through 'citizen science' initiatives.

Our MBIE Strategic Funding will be invested across our target outcomes and the priorities of science excellence and impact. The profile of our investment will evolve in this last year (2016–17) of the current model of MBIE Strategic Funding, to ensure that New Zealand has science capacity in areas of future national need. We will also invest to provide a reliable foundation for our scientists to achieve excellence, and from which they can grow the close relationships with stakeholders that ensure science impact.

Working with others

The National Science Challenges are an important vehicle for the vision, leadership and coordination between agencies in the pursuit of national goals. Similarly, the Lincoln Hub is a new collaborative model to accelerate science, innovation and progress in the primary sector. Both models represent strategic investments by Landcare Research at Board and executive levels to transform the way in which New Zealand science makes a difference. We are committed to the success of these initiatives and will ensure that infrastructure development being planned for our Lincoln site enhances the success of both the Hub and the two major Challenges centred at Lincoln (NZ Biological Heritage and Our Land & Water).

Increasingly, the intellectual property that we generate from our science is of value overseas. Examples include materials from our biological Collections, technology needed by agricultural enterprises, and the certification programmes in Enviro-Mark Solutions Ltd. Accordingly, we will work more closely with the Government-2-Government initiative, NZTE, Te Hono (a primary sector initiative), KiwiNet and Callaghan Innovation to ensure our intellectual property supports New Zealand economic growth.

Performance improvement

We are implementing changes to the way science is carried out, the way we collaborate with other organisations, and the way in which we interact with and transfer technology to our stakeholders. There is a significant leadership role and cultural dimension to these changes, especially in respect of collaboration with the users of our science, and we will continue to invest in these needs. Asset investment is also critical to our effectiveness, and our planned investment at the Lincoln site will facilitate new ways of working and collaborating, especially within the Lincoln Hub environment. Through Science New Zealand we will work to share resources and increase efficiency.

Sustainability is central to our business. Our contribution is largely through the impact of our science in New Zealand and overseas. Sustainability is also a core principle in our corporate development and it has important social aspects. Health and safety are paramount in our business, which has staff working in remote locations and in laboratories, and also operating in a business environment that is characterised by complexity and uncertainty. The well-being of our staff is a major focus of our Board and Executive, especially as our staff face change and uncertainty. We will continue to invest to support staff through our Track-Suit © wellness programme and to achieve continuous performance improvement through staff training, processes and infrastructure.



Jane Taylor
Chairman



Dr Richard Gordon
Chief Executive

3. Our Strategic Focus

The value of our science

Complex challenges face New Zealanders in managing our natural resources sustainably. We have developed a framework to assess the internal and external value of our research, to understand how we can more effectively respond to this complexity, and increase the impact of our work¹. The framework has provided a means of learning from our own experience and identifying how to best meet the needs of stakeholders, with a view to applying key learnings across all our research and development activity. This process has influenced our thinking about the scope of our research, and how we undertake it, as well as the ways in which we engage with our clients and other stakeholders to facilitate adoption and impact.

In developing the value framework, we conducted a series of case studies with stakeholders in the Natural Resources (government) and Primary Industry Sectors and with Māori partners. These case studies have highlighted the value of working with our science users 'on the whole journey' from concept to adoption, and of building the 'headroom' for innovation into our projects that are otherwise tightly constrained by contracts. In particular, we have identified a growing demand for fully-integrated, applied research programmes spanning the environmental, social, economic and cultural elements of natural resource management. Part of our planned work will be to strengthen internal practices and culture to support the delivery of more integrated research. We have also identified a set of national priorities to which Landcare Research can add particular value through its research leadership, science excellence and expertise in delivering integrated research (*see sections below*).

Enhancing environmental information

Demand is growing for readily available, high-quality environmental information. New Zealanders, who manage natural resources, and policy and management agencies, need accurate information about our environment and the pressures on it. The growing need for evidence-based information reflects a shift in the resource management system to set 'hard' environmental limits. New Zealanders also need information to participate in an informed debate about balancing environmental goals with social, cultural and economic aspirations. Landcare Research has a strong track record in providing environmental information to support policies, plans, regulation and land management practices. We have played a leading role in developing national biodiversity and carbon monitoring systems, as well as fundamental information on New Zealand's land resources, soils and vegetation. Landcare Research is also the custodian for S-map, the national soils information system, which provides key information to manage land-use effects on water quality.

In the coming year, we will continue to deliver data-driven analysis and advice to support implementation of the Environmental Reporting Act, regional council plans and regulations, and forthcoming changes to the RMA. We will work closely with central government agencies and regional councils to develop indicators for environmental reporting. Our expertise in carbon accounting will support MfE's reporting on national greenhouse gas emissions, and our national leadership in biodiversity research is also well-placed to support any future collaborative process under the RMA to better protect New Zealand's valuable native species and landscapes.

Improving freshwater management

New Zealand is currently undertaking wide-ranging reforms to how fresh water is managed. The reforms aim to address deteriorating water quality and water demand outstripping supply in some areas, and balance different interests and values in water. Increasingly, the reforms are focused on managing the effects on water of land-based activities. Landcare Research has significant expertise in improving water outcomes, including national leadership in soils, sediment and erosion, integrated catchment management, wetlands, riparian management, modelling the economic and environmental impacts of policies, and knowledge of mātauranga Māori and cultural values. We lead a national research programme to help councils and communities use collaborative processes to set objectives and limits for water, in line with the National Objectives Framework. In the coming year, we will build on this work, increasing our focus on the primary sector, and contributing expert advice to the 2016 suite of freshwater reforms currently in development. We also offer niche expertise to support irrigation development through our soil moisture sensing and mapping technology, spatial modelling of

environmental and economic effects of irrigation schemes, and our work with others to model the impacts of different irrigation water allocations on reliability of supply, leaching and profit.

Sustainable primary sector growth

Increasingly, Landcare Research's work supports sustainable land management in the primary sector, regional development initiatives to lift land productivity, and Māori aspirations to unlock the value of Māori-owned land. Our expertise supports growth in New Zealand's native honey sector, land owners who wish to more sustainably develop marginal land, and Māori agribusinesses who have cultural and environmental – as well as economic – aspirations for their land (see *Vision Mātauranga* section).

The same research expertise we use to help set policies and regulation is also increasingly relevant to private sector interests wishing to manage their land-based activities within regulatory limits, and to meet market and community expectations for sound environmental practices. In particular, our expertise in soils, erosion and sediment management, pests and invasive weeds, riparian management, wetlands and biodiversity restoration, management of weeds and pests, and resilience to climate will be key to supporting sustainable land management on-farm. To this, we can add the expertise of Enviro-Mark Solutions, our subsidiary, which specialises in carbon and environmental management certification and related services for private sector clients. We will work closely with primary sector organisations and explore joint initiatives with key partners such as Māori agribusinesses, Federated Farmers, Fonterra, Beef + Lamb New Zealand, DairyNZ and FAR. We recently invited Federated Farmers onto our Outcome Advisory Panel that helps us set our strategic priorities.

Predator control and biodiversity protection

We continue to provide important underpinning science to achieve and demonstrate freedom from bovine TB, working with OSPRI. An increasing focus of our work is to develop and apply new, more effective and socially acceptable tools to manage predators and other pests that threaten New Zealand's valued species and landscapes. Our national leadership in predator, pest and weed control – and assessing the benefits of this for biodiversity outcomes – supports national campaigns, such as the Department of Conservation's *Battle for our Birds*, and other large-scale initiatives such as Cape to City, Zero Invasive Predators, Taranaki Mouna, Kiwis for Kiwi, Reconnecting Northland, and the Pan-Regional Predator Control initiative.

New Zealand's Biological Heritage National Science Challenge

New Zealand's economic, environmental and cultural prosperity are heavily dependent on our biological heritage – elements of which are in decline or at risk from exotic weeds, pests and diseases. The Biological Heritage National Science Challenge (BioHeritage Challenge) mission is to reverse this decline through national partnerships that bring together researchers from across institutions and disciplines to transform the way we manage biodiversity, improve biosecurity, and enhance New Zealand's resilience to harmful organisms. Landcare Research is the host for the BioHeritage Challenge. We are contractually responsible to MBIE for delivery of the Challenge work programme. Over \$25 million has been committed to the Challenge over the first five years (2014–19), with substantial further funding aligned from Challenge partners, including Landcare Research. We lead two of the three Challenge research programmes and provide operational support to the Challenge governance and management. Seventeen parties are collaborating in the BioHeritage Challenge – the most of any Challenge. The parties span the research community, government agencies, NGOs, business, Māori and the public. A Challenge Parties Group, Kāhui Māori, Science Advisory Panel, and an End User Advisory Panel provide advice to the Challenge on strategic direction, Vision Mātauranga and user priorities.

The Challenge and MBIE have agreed on a set of committed and aspirational targets: indicators of success towards achieving the Challenge's Intermediate Outcomes. The Challenge has now refined a set of priority areas of research, representing critical issues where research-based solutions should have a major impact on delivery of these Intermediate Outcomes and the Challenge Mission. Five projects have started, with a further four being developed. The focus for the 2016/17 financial year is to expand the number of projects supported by the Challenge, including through a contestable process, and to broaden and deepen engagement with stakeholders.

www.biologicalheritage.nz

Vision Mātauranga

Landcare Research has had a long association with Māori through our relationships with iwi and hapū in projects such as the sustainable harvest of seabirds and of indigenous timber. Our integration of ecological, cultural and economic research combined with the long-term sustainable development ethos of our work, means our research is aligned to the intergenerational and holistic worldview of Māori. A 2013 MPI report '*Growing the Productive Base of Māori Freehold Land*' estimates c. 1 million hectares of Māori freehold land could be brought into productive pastoral use, highlighting the opportunity for Landcare Research to help lift the performance of these under-utilised land resources. We will continue to work closely with organisations such as MBIE, TPK, LINZ, FOMA and Te Tumu Paeroa to add value to cross-sector work supporting the development of Māori land through the use of our land information and tools such as WhenuaViz. We will also focus on knowledge transfer to Māori collectives and agri-businesses, particularly in regard to sustainable land management and governance. Landcare Research is one of only a small number of providers selected to deliver training and advice through MBIE's Māori Innovation Fund in support of the 'He Kai Kei Aku Ringa' Action Plan.

Engaging directly with Māori decision makers on Māori land and with kaitiaki responsibility over natural resources will be another key focus for this year. Landcare Research will work with iwi, Māori landowners and others to identify research priorities that will provide tools and information to make more informed decisions. Priority areas identified to date include land and soil information, soil erosion and flood mitigation, provenance and future proofing mānuka honey production, biodiversity, pest and weed control and improved catchment health and water quality. Landcare Research will engage in a process to identify research priorities with Māori partners to co-design research proposals. Partnership with Māori will also be reflected in the co-implementation of research projects including Landcare Research's commitment to building Māori science capability. Landcare Research is also committed to building upon its internal expertise in mātauranga Māori. Two new appointments will be made to support our commitment to mātauranga Māori research and an investment plan to support Māori PhDs and summer internships. Increasingly, we are working with Natural Resources Sector agencies, such as MPI, to identify how we can support regional development initiatives, many of which add momentum to natural asset development by Māori interests.

The Lincoln Hub

The Lincoln Hub partners² will collectively deliver innovative land-based research, education and precinct opportunities to customers to grow a sustainable land-based sector in New Zealand and internationally. The Hub is a key part of Landcare Research's strategy to create impact from our science through working with the primary sector as it aims to operate within environmental limits and meet the expectations of its customers and local communities. Our science and experience with the regulatory environment are very relevant to these needs. Working with the Hub partners we will create opportunities in three strategic areas. The first is to engage international agri-sector customers in the Hub. Landcare Research is taking the science lead on an early example with a global irrigation company. Such engagement will connect our science with the global cutting edge, accelerate technology development in New Zealand and take our technology to the world. The second strategic aim is to accelerate multi-disciplinary and co-design science projects. Landcare Research intends to replace major infrastructure in 2017/18 using a design that enables co-location of partner science staff and science users in project-based teams for the duration of projects. This is an especially important strategy for the NZ Biological Heritage NSC, which we host at Lincoln. The third strategic aim is to create new educational programmes in partnership with Lincoln University that integrate students and professionals with the science and research activities at Landcare Research.

Manaaki Whenua Research Trust

Helping Kiwis solve NZ's environmental problems

Increasingly, New Zealanders want to help protect our unique native species and environments, which are an important part of our natural heritage and what it means to be a New Zealander. Through the Manaaki Whenua Research Trust, all New Zealanders can support critical research to solve New Zealand's worst environmental problems. Donations to the Trust help Landcare Research to deliver research in areas important to New Zealand's future, as well as support talented New Zealand researchers.

The Trust was established in March 2016 to support world-class environmental research to develop new innovations, technologies and tools to

- protect New Zealand's treasured species and ecosystems
- enable more sustainable management of New Zealand soils and landscapes
- improve weed and pest control
- manage the impacts of climate change and
- maintain and develop the Nationally Significant Collections and Databases that Landcare Research looks after on behalf of all New Zealanders.

www.landcareresearch.co.nz/about/our-research-trust

Footnote [1] More information about the framework can be found at **www.landcareresearch.co.nz**

Footnote [2] AgResearch, Landcare Research, Plant & Food Research, Lincoln University and DairyNZ

4. Landcare Research's Core Purpose

Landcare Research's Core Purpose³, is to drive innovation in New Zealand's management of terrestrial biodiversity and land resources in order to protect and enhance the terrestrial environment and grow New Zealand's prosperity.

Our National Outcomes

With innovative science leadership and effective collaboration with our stakeholder partners to apply research, we will

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

Our key stakeholder partners are the Natural Resources Sector, businesses implementing sustainable good practice, and Māori organisations.

Our scope of operation

Landcare Research is recognised as the lead CRI in the following areas:

- Catchment-level ecosystems (including wetlands) and related ecosystem services
- Terrestrial vertebrate pest control
- Terrestrial carbon processes and inventory, and other greenhouse gases from soil and land
- Land cover, land use capability and effects, and spatial land information that integrates across sectors and scales
- Soil characterisation, processes and services
- Integrated social and biophysical research to support the sustainable management of terrestrial biodiversity and land resources

Landcare Research is expected to work with other research providers and end users to contribute to the following:

- Biosecurity, land, soil and freshwater management
- Climate change adaptation and mitigation
- Industry and business environmental performance including verification
- Indigenous forestry
- Urban environments
- Antarctica

Landcare Research contributes to a set of four National Outcomes, defined in our Statement of Core Purpose. We have a direct role in achieving a set of eight Impacts (see figure section 1). In improving the outlook for biodiversity, society, the economy and Māori, Landcare Research works where society and the economy intersect with the environment. A key part of our role is empowering the users of our research and technology with new and improved tools and the ability to make better decisions on natural resource conservation, management and sustainable use.

To facilitate this, Landcare Research must maintain and build enduring relationships with the users. A key mechanism for achieving this is our Outcome Advisory Panel, which consists of senior representatives from key stakeholder organisations in central and local government, industry and business, the primary sector and iwi. The Panel meets with our Senior Leadership Team and provides high-level strategic advice to our Board of Directors. National Science Challenges and regional hubs are furthering such connections, entailing much wider collaborations with stakeholders and other research providers.

Within research initiatives our citizen science is growing. Citizen science cultivates public engagement with science and technology and builds trust between New Zealand's science system and the public, which contribute to outcomes signalled in the NSSI. Citizen science also contributes directly to our research.

To achieve our national Outcomes, we must also ensure strong financial resilience, grow the capability and leadership potential of our people, ensure effective communications and engagement with our key stakeholders – clients, national and international collaborators – and maintain and develop critical research and other infrastructure.

Annual planning and process for allocating MBIE Strategic Funding

Our key Strategy 2017 document is used by senior science staff to set our future strategy and direction. Other important strategic documents and inputs include our Māori strategy, our digital and collections strategies, our capability priorities and positioning alongside National Science Challenges. Our thinking is influenced and shaped by leadership from the Minister and our Board, guidance from our Outcome and Science Advisory Panels, and our market knowledge and research driven opportunities. Together these provide direction and input for our annual planning workshops.

Following the workshops, Science General Managers propose research priorities, focus areas and portfolio funding allocations to SLT and then the Board. Funding allocation proposals include an accompanying analysis of rationale for the proposed portfolio investment, including expected impacts internally from any funding shifts. Our allocation process is guided by a set of principles to enhance delivery against our SCP outcomes. Key principles are enhancing our science excellence and impact as expected by the NSSI. Other principles are enabling our stakeholder partnerships, developing our capability and growing the value from our Collections and Databases. Annual planning and allocation of MBIE Strategic Funding culminate in our Statement of Corporate Intent and more detailed internal documents such as our Annual Science Plan.

Performance monitoring and reporting

As part of our performance monitoring framework, we regularly assess and report on progress against our activities, impacts and outcomes, including via quarterly reports to MBIE and our annual report. The NSSI has signalled the need for improved evaluation, monitoring and reporting across the science sector, with a focus on impact. The NSSI also calls for a system-wide monitoring, evaluation and information system. To advance this, we have made some key changes:

- Revised Outcome KPIs to those that are nationally recognised best measures. 'Sharing' Outcome measures across agencies signals that we are one of many contributors to these national goals and creates a common starting point for collaboration discussions. It also aligns with the State Services Commission call for improved state service collaboration.
- Re-worded our Impact statements. They have the same intent, but with reduced jargon to be more accessible and meaningful to our stakeholders.
- We have taken a wider view of impact KPIs. Moving from the previous narrow focus on single examples to an integrated suite of quantitative and qualitative measures that span from resource inputs to project completion rates to the difference we have made to the environment and the social, cultural and economic well-being of New Zealanders.

Footnote [3] Landcare Research's Statement of Core Purpose, National Outcomes and scope of operation were agreed with stakeholders, including our shareholding Ministers, in 2010, in a process that included all Crown research institutes. The statement was intended to be enduring for at least ten years.

4.1. National Outcome 1: Improved Biodiversity and Biosecurity

Improve measurement, management and protection of New Zealand’s terrestrial biodiversity, including in the conservation estate

Relevant national goals:

- By 2025, New Zealand’s biological heritage is more resilient and its decline is reversed (BioHeritage).
- New Zealand is protected from biological risks through an effective biosecurity system (MPI).
- Māori are managing their interests in biodiversity reflecting different iwi and hāpu priorities, and sharing in the benefits of its use, to support their economic and social aspirations and fulfil their responsibilities as kaitiaki (NZ Biodiversity Strategy).

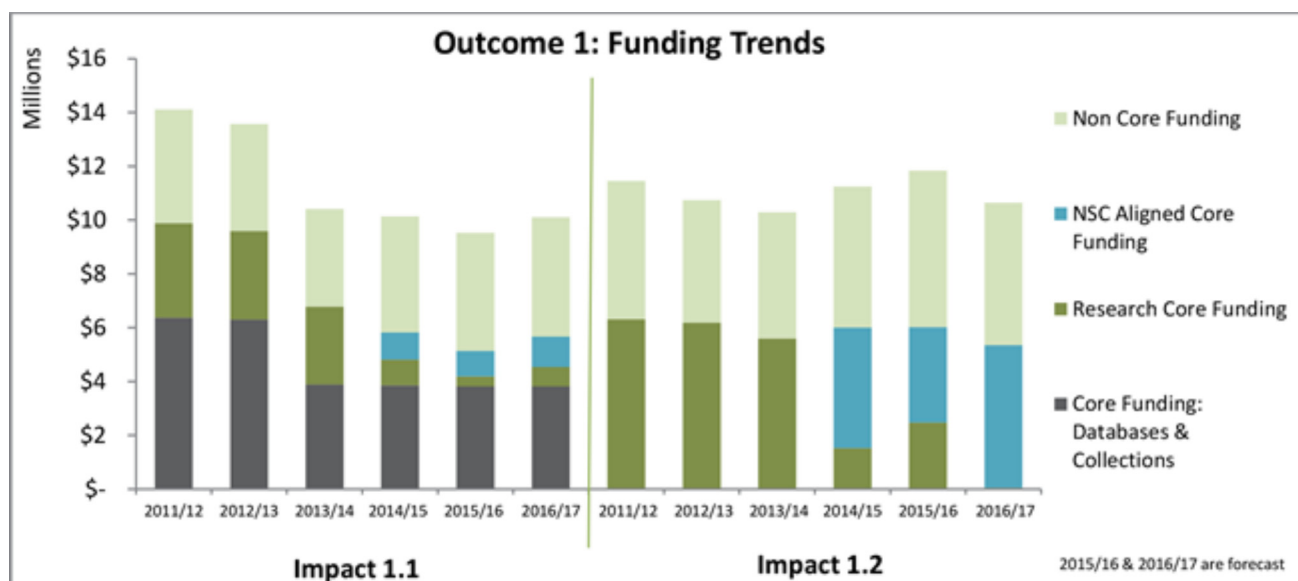
Background

The integrity of New Zealand’s iconic natural heritage is central to our identity, culture and lifestyle. It is also important to our economy, through its market access value and the provision and regulation of fresh water, pollination, waste clean-up and other ecosystem services. Intergenerational responsibility for the management of native ecosystems, expressed through kaitiakitanga, is central to Māori aspirations.

New Zealand’s biodiversity is in decline. It is under increasing threat from invasive species, climate change, land use intensification and conversion, mining, urban development and a variety of other pressures.

We work with DOC, MPI, regional councils, iwi, wildlife sanctuaries, non-governmental and community groups, as well as business, to improve New Zealand’s biodiversity management and biosecurity. We also contribute through major national initiatives such as the BioHeritage Science Challenge, Better Border Biosecurity and Predator Free New Zealand.

Outcome 1 MBIE Strategic Funding



Non-MBIE Strategic Funding excludes BioHeritage Challenge funds dispersed to other organisations

The relatively large allocation of MBIE Strategic Funding to Outcome 1 reflects Landcare Research's national leadership in public-good biodiversity research, as well as our custodianship of several biologically-based Nationally Significant Databases and Collections, which are critical to Impact 1 and also support Impact 2. Our biological Databases and Collections play a critical role in protecting New Zealand's native and productive species and landscapes from biological risk by providing authoritative species identification and risk assessments. This is a key activity in demonstrating pest and disease freedom to maintain market access for New Zealand primary sector goods.

In 2013/14, some Outcome 1 funding was realigned to Outcome 4 to better support New Zealand's access to export markets through greater focus on high-risk species and species of specific interest to the primary sector. In 2014/15, we reprioritised some resources to focus more on biodiversity management to better support conservation agency and community efforts to protect species, restore habitat and better manage and monitor valued biodiversity. In 2015/16, a small amount of Outcome 1 funding was realigned to support Outcome 2, reflecting the increased focus on supporting biodiversity preservation and enhancement through more sustainable land management practices on private land.

In 2016/17, we continue to recognise that much of New Zealand's biodiversity is on private land, outside the Conservation estate, and new tools, approaches, policy instruments and incentives are needed to protect biodiversity on private land, including Māori-owned land. We are also investing more in research to better protect New Zealand's valued species. These shifts are well-aligned with the National Statement of Science Investment directions of improving New Zealand's environmental evidence base, and balancing productivity and sustainability.

A significant proportion of our Outcome 1 MBIE Strategic Funding will be aligned to New Zealand's Biological Heritage National Science Challenge. This recognises that, overall, Landcare Research is the largest provider in New Zealand of biodiversity research, and much of our research will be crucial to the Challenge achieving its mission of reversing the decline in New Zealand's biodiversity.

MBIE Strategic Funding of collections and associated information systems supporting this work

Around a third of Landcare Research's total MBIE Strategic Funding is allocated to the maintenance and curation of seven of New Zealand's 25 Nationally Significant Databases and Collections. Most of these are biologically-based Collections which chart New Zealand's plants, insects, fungi and bacteria and which represent important national science assets for the country. The following Collections and information systems provide underpinning information for Outcome 1 activity in support of national biodiversity and biosecurity goals:

- New Zealand Arthropod Collection
- New Zealand Fungal and Plant Disease Collection and the associated International Collection of Micro-Organisms from Plants
- Allan Herbarium
- National New Zealand Flax Collection and the associated Ngā Tipu Whakaoranga Database on cultural uses of plants
- National Vegetation Survey (NVS) Databank

Impact 1.1

The status, trend and resilience of native biodiversity and its pressures are understood and support management and protection of terrestrial species, ecosystems and landscapes.

16/17 Research Focus Areas

- Continue to enhance the relevance, impact and use of collections-derived knowledge by
 - developing new species identification tools on high-priority species for end users
 - digitising and developing information systems to improve access to species information online.
- Increase the use of nationally-consistent biodiversity measures by
 - scaling national metrics to regional, local and project-scales
 - co-producing biodiversity indicators within kaupapa Māori frameworks to support use of valued

- species by Māori
 - new methods to identify tipping points for ecosystems and enhance ecosystem resilience.
- Pursue new techniques to make biodiversity measurement more cost-effective by
 - continuing to develop 'next generation' biodiversity monitoring
 - improving techniques to quantify and integrate uncertainty into environmental reporting indicators.

Impact Key Performance Indicators:

- 70–80% MBIE Strategic Funding of research outputs are on-track or completed.
- 80–90% of Research Focus Area key research initiatives success measures achieved (3-year rolling average, noting that, as a new measure, it will be only partially reported in the first two years)

Impact 1.2

New and improved tools are available to reduce the decline of terrestrial species, ecosystems and landscapes.

16/17 Research Focus Areas

- Improve identification of the most threatened ecosystems, habitats and species through
 - tools to predict where native biodiversity is under most threat
 - tools to predict the social, economic and policy factors most likely to reverse the decline in biodiversity.
- Boost protection of threatened and/or treasured native ecosystems, habitats and species by
 - developing new approaches and tools to restore the most threatened ecosystems and species
 - developing new methods to improve the resilience of iconic species to critical risks and threats
 - co-developing biodiversity management plans with iwi
 - refining methods and approaches to increase the success rate of weed biocontrol agents
 - scaling up activity to optimise large-scale approaches to pest control
 - improving surveillance, detection and control technologies and strategies for pest organisms

Impact Key Performance Indicators:

- 70–80% MBIE Strategic Funding of research outputs are on-track or completed.
- 80–90% of Research Focus Area key research initiatives success measures achieved (3-year rolling average, noting that, as a new measure, it will be only partially reported in the first two years).

Outcome Key Performance Indicators

Measurement of progress towards Outcome 1 is informed by a suite of agency KPIs to which Landcare Research Impacts contribute:

- Improving trends in the conservation status of indigenous species (Statistics NZ/MfE)
- By 2025, 50% of New Zealand's natural ecosystems benefit from pest management (DOC, stretch goal)
- Health of the biosecurity system is improving (MPI).

4.2. National Outcome 2: Sustainable Management of Land and Water

Achieve the sustainable use of land resources and their ecosystem services across catchments and sectors.

Relevant national goals:

- By 2025, New Zealand has achieved a 20% improvement in key indicators of land and water resources at farm and catchment scales (OLWNSC).
- The quality of our natural resource base improves over time, while sustaining the growth needed from key sectors to meet our 40% exports to GDP target (Business Growth Agenda).
- New Zealand realises the potential of Māori-owned natural resources (He Kai Kei Aku Ringa, The Crown-Māori Economic Growth Partnership).
- New Zealand's fresh water is well governed and sustainably managed (Natural Resources Sector).

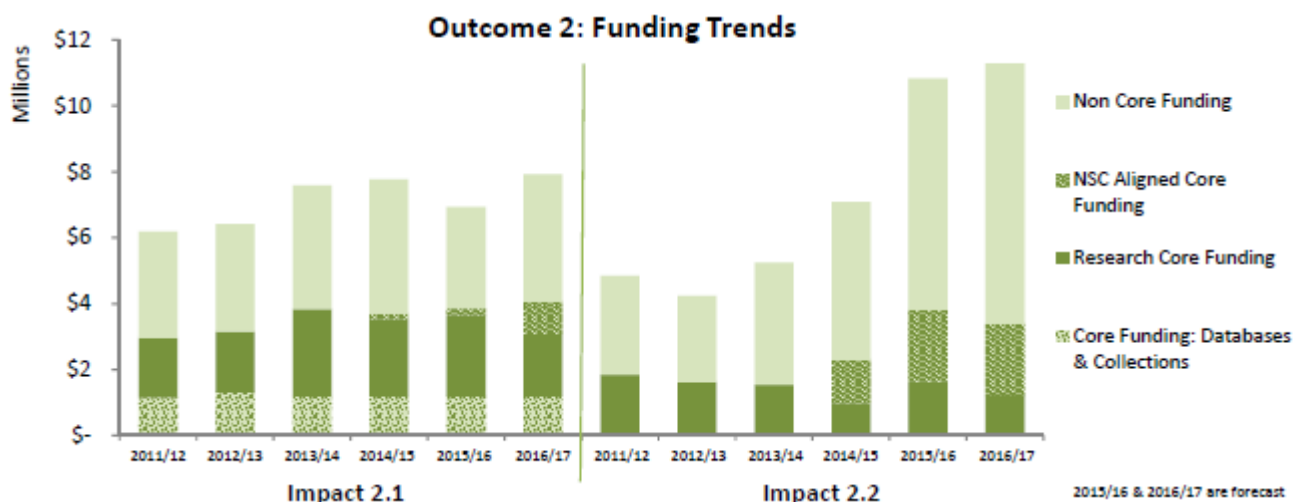
Background

New Zealand's land resources sustain primary sector production, provide habitat for our valued biodiversity, and provide ecosystem services (e.g. clean water, fertile soils and the aesthetic and intrinsic values upon which New Zealand's economy, tourism and identity are based).

The demand for environmental information and new tools to support effective management of land resources in New Zealand is both urgent and growing. Some of our most important natural resources have been over-allocated or have reached critical environmental thresholds as a result of unsustainable land-use practices.

Effective management of land resources requires improved knowledge of their variability and change over time and across catchments and landscapes (natural, managed and urban), their response to human impacts, and potential limits for land-use intensification and other development. New and improved tools are required to meet these challenges. Such knowledge supports sustainable land use and resource allocation, improves the economic and environmental performance of the primary sector, and supports the provision of wider ecosystem services.

Outcome 2 MBIE Strategic Funding



Non-MBIE Strategic Funding excludes BioHeritage Challenge funds dispersed to other organisations.

Since 2012/13, MBIE Strategic Funding has increased to this Outcome area to meet the growing demand for information on the status of and pressures on New Zealand's land and to boost research on tools, methods and technologies to support more sustainable land use. In addition, some MBIE Strategic Funding was realigned from Outcome 3 to this Outcome to integrate research on soil carbon and nitrogen with other soils research (previously, specifically focused on greenhouse gas measurement).

In 2015/16, we increased funding to support remote sensing and land use research to meet demand for cost-effective, large-scale environmental information and accurate data on land use and land-use impacts to support more sustainable land use, and setting and meeting water quality limits as part of the water management reforms. In 2016/17, we continue to scale up our nationally-leading soils and sediment research, as well as invest in new technologies and approaches to advance soil and land resource mapping, and deliver this in more effective ways to users. We have also increased our support for research of high relevance to Māori agribusinesses, including those active in the native honeys business.

These shifts are well aligned with the National Statement of Science Investment directions of improving New Zealand's environmental evidence base, and our understanding of environmental opportunities and limits to underpin economic goals, and with balancing productivity and sustainability.

We expect to align some MBIE Strategic Funding to the Our Land and Water National Science Challenge once the major research directions for the Challenge have been determined.

MBIE Strategic Funding of Databases and Collections and associated infrastructure:

The following Collections and information systems provide underpinning information in support of sustainable land and water management practices:

- Land Resource Information System (LRIS), which comprises the New Zealand Land Resource Inventory (NZLRI) and the National Soils Database (NSD).

Impact 2.1

The status, trend and resilience of land resources, their ecosystem services and its pressures are understood and support sustainable management of land and water

16/17 Research Focus Areas

- Improve the relevance, accuracy and credibility of national land and soils information by
 - extending digital soil mapping techniques to improve coverage of hilly and complex terrain
 - refining and generating new land and soils data and indicators to support national reporting
 - innovating in remote sensing, 'big data' analysis techniques and modelling
 - improving the information infrastructure for land and soils data, including data standards.

Impact Key Performance Indicators:

- 70–80% MBIE Strategic Funding of research outputs are on-track or completed.
- 80–90% of Research Focus Area key research initiatives success measures achieved (3-year rolling average, noting that, as a new measure, it will be only partially reported in the first two years).

Impact 2.2

Land and water resources are sustainably managed through the use of new and improved tools.

16/17 Research Focus Areas

- Improve knowledge about the pressures on New Zealand's land resources and ecosystem services by
 - better understanding soil C and N dynamics and leaching and microbial interactions
 - better quantifying the impact of agricultural and irrigation intensification on soils and ecosystems
 - new approaches to assess land resources, including erosion and sediment susceptibility.
- Support more sustainable land and water management practices, policy and regulation by
 - extending coverage, functionality and interoperability of online soils information (S-map)
 - developing new approaches and tools to support Māori agribusiness and Māori land development
 - improving tools to manage and mitigate contaminants such as sediment, microbes and metals
 - quantifying the benefits of diverse pastures by evaluating soil functions and resource-use efficiency
 - refining novel soil–water devices to increase water and energy efficiency.

Impact Key Performance Indicators:

- 70-80% MBIE Strategic Funding of research outputs are on-track or completed.
- 80-90% of Research Focus Area key research initiatives success measures achieved (3-year rolling average, noting that, as a new measure, it will be only partially reported in the first two years).

Outcome Key Performance Indicators

Measurement of progress towards Outcome 2 is informed by a suite of agency KPIs to which Landcare Research Impacts contribute:

- Improving trends in soil health (Statistics NZ/MfE)
- Reducing soil erosion risk (Statistics NZ/MfE)
- An increasing number of monitored sites showing maintained or improved water quality (MfE)
- Productivity of Māori assets equals national averages by 2040 (He Kai Kei Aku Ringa, The Crown-Māori Economic Growth Partnership)
- Increasing GDP from land-based primary production (Statistics NZ data)

4.3. National Outcome 3: Greenhouse Gases within Limits

Improved measurement and mitigation of greenhouse gases from the terrestrial biosphere.

Relevant national goals:

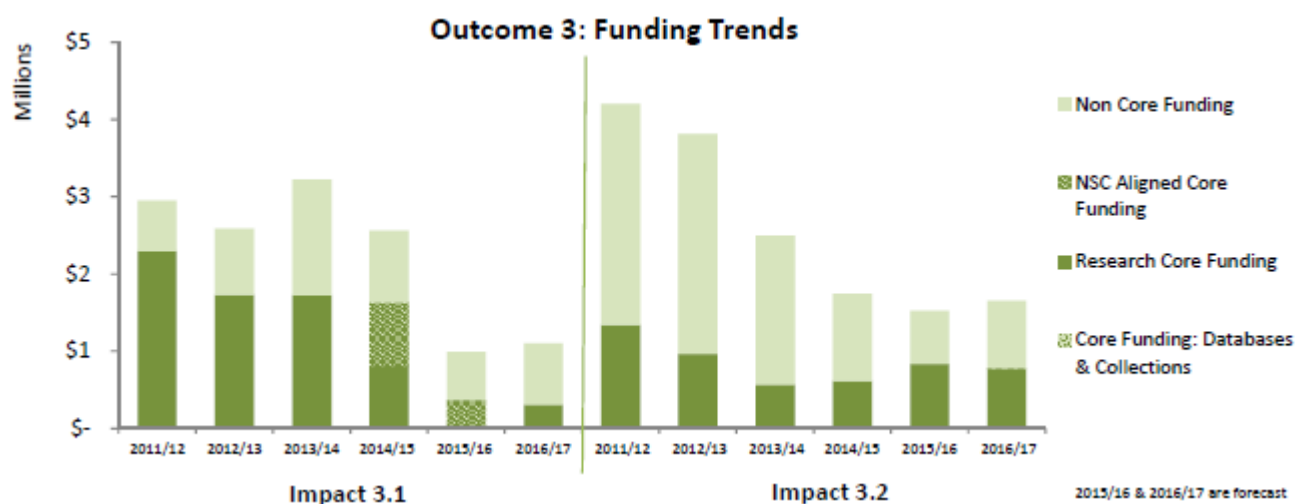
- By 2030, New Zealand has reduced its greenhouse gas emissions to 30% below 2005 levels (New Zealand's 2030 climate change target).

Background

For New Zealand to meet its international greenhouse gas obligations, it is necessary to have a robust inventory of net emissions and carbon storage at a national scale, and appropriate mitigation tools. In July 2015, the New Zealand Government announced that our post-2020 climate change target is to reduce greenhouse gas emissions to 30% below 2005 levels by 2030. This target was tabled at a United Nations meeting in Paris in December 2015 and signed at a ceremony in New York, 22 April, 2016. It will come into force for New Zealand once it has been ratified by at least 55 countries representing at least an estimated 55 per cent of global emissions.

New Zealand will meet its responsibility targets through a mix of domestic emissions reductions, the removal of carbon dioxide by forests, and participation in international carbon markets. It will be important for New Zealand to be able to model the environmental and economic impacts of proposed emissions reduction targets, and have access to effective mitigation options for reducing net emissions. The science challenges are substantial, as are the policy and land management challenges. Collaborative partnerships between research groups, government agencies and the primary industries sector are the key to meeting these challenges and delivering the National Outcome.

Outcome 3 MBIE Strategic Funding



Some MBIE Strategic Funding to this Outcome has been realigned to support related research in Outcomes 2 and 4 where the focus on sustainable management of productive land and soils also supports management of greenhouse gases and soil carbon. In 2016/17, we are continuing this shift and also investing in research that will support on-farm greenhouse gas emissions reductions.

These shifts are well aligned with the National Statement of Science Investment directions of improving New Zealand's environmental evidence base, and our understanding of environmental opportunities and limits to underpin economic goals, and with balancing productivity and sustainability.

MBIE Strategic Funding of Databases and Collections and associated infrastructure:

Although no MBIE Strategic Funding for Databases and Collections sits within this Outcome, Outcome 3 research programmes draw on the Land Resource Information System (LRIS), the National Soils Database (NSD), and the National Vegetation Survey (NVS).

Impact 3.1

The status and trend of terrestrial greenhouse gas emissions, storage and removal and their drivers are understood and used to report, predict and manage greenhouse gas emissions and removals.

16/17 Research Focus Areas

- Improve national greenhouse gas inventory reporting and forecasting by
 - continuing to improve the accuracy of greenhouse gas emissions measurement and modelling
 - more accurate scaling-up and mapping of emissions/removals via new technologies and methods
 - developing more accurate assessment of on-farm greenhouse gas emissions and removals
 - improving advice on carbon stocks in soil, forests and scrubland, and emissions from deforestation.

Impact Key Performance Indicators:

- 70–80% MBIE Strategic Funding of research outputs are on-track or completed.
- 80–90% of Research Focus Area key research initiatives success measures achieved (3-year rolling average, noting that, as a new measure, it will be only partially reported in the first two years).

Impact 3.2

New and improved tools increase terrestrial carbon storage and reduce greenhouse gas emissions.

16/17 Research Focus Areas

- Reduce the greenhouse gas impacts of land management practices by
 - improving evaluation of the impact of mitigation options on emissions and removals
 - measuring and modelling the potential for pasture systems to optimise soil carbon storage
 - improving whole ecosystem modelling of the carbon cycle
 - improving understanding of key system responses to climate change (e.g. plant growth to CO₂).

Impact Key Performance Indicators:

- 70–80% MBIE Strategic Funding of research outputs are on-track or completed.
- 80–90% of Research Focus Area key research initiatives success measures achieved (3-year rolling average, noting that, as a new measure, it will be only partially reported in the first two years)

Outcome Key Performance Indicators

Measurement of progress towards Outcome 3 is informed by a suite of agency KPIs to which Landcare Research Impacts contribute:

- Improving trends in greenhouse gas emissions and removals in the annual National Greenhouse Gas Inventory (MfE)
- Downward trends in greenhouse gas intensity of the economy by emissions per unit of GDP and emissions per capita (MfE)

4.4. National Outcome 4: Greening New Zealand's Growth

Increase the ability of New Zealand industries and organisations to develop within environmental limits and meet market and community requirements.

Relevant national goals:

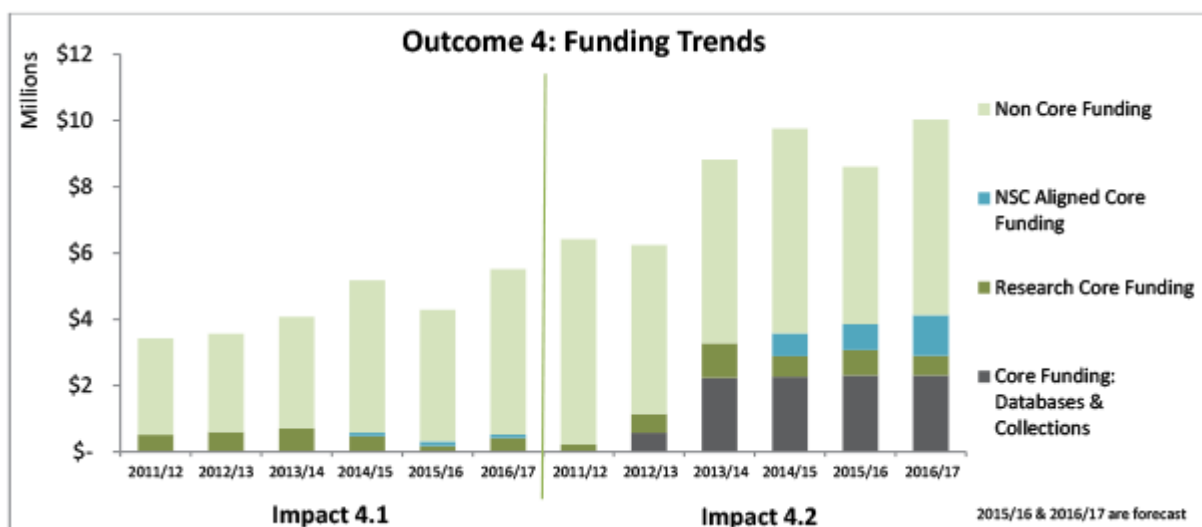
- The quality of our natural resource base improves over time, while sustaining the growth needed from key sectors to meet our 40% exports to GDP target (Business Growth Agenda).
- People are enabled to make and implement decisions that benefit society and the environment, enabling a prosperous New Zealand (MfE).
- Transforming the primary sector to realise the opportunity for Aotearoa, New Zealand to be recognised for our natural environment and products (Te Hono Movement).

Background

New Zealand's prosperity is heavily dependent on our environment. The prominence in our economy of primary sector production, tourism and niche (e.g. film) sectors reliant on our landscapes highlight that, in the long term, New Zealand's economic development can only be sustained by industries and businesses operating within complex environmental limits. This often entails balancing the diverse needs of multiple stakeholders, including government and local government, the private sector, Māori and the community. Increasingly, our work under this outcome supports Māori, business and community groups to engage in local decision-making on the future uses of, and values relating to, natural resources of importance to them.

Our research supports natural resources agencies tasked with developing and implementing effective environmental policy, regulation, and land management practices for the sustainable management of land, water and ecosystem services. This includes supporting MPI and the operational agencies tasked with managing New Zealand's biosecurity, and DOC, regional councils and land managers responsible for weed and pest management, as well as primary sector and Māori stakeholders whose livelihood and well-being depends on the sustainable management of natural resources into the future.

Outcome 4 MBIE Strategic Funding



Non-MBIE Strategic Funding excludes BioHeritage Challenge funds dispersed to other organisations.

The significant increase in MBIE Strategic Funding in Impact 4.2 in 2013/14 reflects a decision to redirect a portion of funding for our biological Collections and Databases from Outcome 1 to better support market access goals and primary sector biosecurity objectives. We also increased funding to this Outcome in 2015/16 to support the application of our core biodiversity, land and water research to meet the needs of the private sector and primary produce exporters. As an example, there is increasing interest by the private sector in valuing natural capital and ecosystem services, and having access to information and tools to facilitate on-farm land-use decisions that take into account the impacts on ecosystem functions.

In 2016/17, we are reinforcing these earlier shifts in focus by investing more in research to support the sustainable development of the native honey industry; improve resilience in the primary sector; improve tools to optimise land use through more informed trade-off choices and better knowledge of how – and where – to maximise economic returns while minimising environmental effects; and build greater social 'licence to operate' for natural resource management activities (including pest control) where different perspectives can lead to conflict. All of this research integrates consideration of economic, environmental, cultural and societal drivers, values and needs.

The focus in 2016/17 is well aligned with the National Statement of Science Investment directions which recognise that: "Primary industries are a significant user of natural resources, resulting in competition and conflict over issues such as freshwater, mineral extraction, biodiversity and climate change."

MBIE Strategic Funding of Collections and associated information systems supporting this work:

The following Collections and information systems underpin Outcome 4 activity in supporting national biosecurity goals and informing more sustainable land and soils management by primary sector organisations.

- New Zealand Arthropod Collection
- New Zealand Fungal and Plant Disease Collection
- International Collection of Micro-Organisms from Plants
- Allan Herbarium
- Land Resource Information System (LRIS), which comprises the New Zealand Land Resource Inventory (NZLRI) and the National Soils Database (NSD)

Impact 4.1

Economic, social, cultural factors required to resolve complex environmental issues are understood and used by industries and organisations to adapt and grow within environmental limits.

16/17 Research Focus Areas

- Improve iwi, community and private sector engagement in complex environmental decisions by
 - developing appropriate tools to support iwi decision-making on natural resources
 - enhancing participatory processes to support policies, regulation and practice
 - increasing capacity to undertake cost/benefit analyses
 - better integrating the value of ecosystem services in policy, regulation and practice.
- Improve New Zealanders' ability to adapt to and become more resilient to environmental change by
 - refining economic and economic assessment models to develop climate change policy and practice
 - improving decision-support tools to better show the impacts of resource management choices.

Impact Key Performance Indicators:

- 70–80% MBIE Strategic Funding of research outputs are on-track or completed.
- 80–90% of Research Focus Area key research initiatives success measures achieved (3-year rolling average, noting that, as a new measure, it will be only partially reported in the first two years).

Impact 4.2

New and improved tools integrate economic, social, cultural and environmental values, and enhance competitiveness, market access and social licence to operate.

16/17 Research Focus Areas

- Increase delivery of integrated tools and approaches to support government, business and industry by
 - enhancing our economic modelling to support more informed land management decisions
 - developing culturally appropriate tools to support iwi decision-making relating to natural resources
 - continuing to develop surveys to provide insight on primary sector decision-making drivers.
- Maintain and enhance social licence for business and industry to operate by
 - developing weed biocontrol agents to reduce cost and pesticide use by landowners and industry
 - developing new tools to reduce costs and increase acceptability and effectiveness of possum and rabbit control
 - developing new, more effective approaches to multi-species predator control.
- Maintain and enhance market access for New Zealand business through
 - new high-tech tools to reduce the number and extent of invasive mammals
 - more effective ways of demonstrating TB freedom in support of agricultural market access
 - improved surveillance, detection and control technologies and strategies for pest species
 - new DNA diagnostic tools for rapid identification of high-priority species of biosecurity concern.

Impact Key Performance Indicators:

- 70–80% MBIE Strategic Funding of research outputs are on-track or completed.
- 80–90% of Research Focus Area key research initiatives success measures achieved (3-year rolling average, noting that, as a new measure, it will be only partially reported in the first two years).

Outcome Key Performance Indicators

Measurement of progress towards Outcome 4 is informed by a suite of agency KPIs to which Landcare Research Impacts contribute:

- Improvement in the quality of analysis and community involvement in plan-making, including Māori engagement (MfE)
- By 2026, verified eradication of TB from wildlife from at least 2.5 million hectares (OSPRI)
- Positive trends in the Te Hono Ake Ake Dashboard (Te Hono Movement)
- Market access is maintained and opportunities enhanced, with trading partners having confidence in New Zealand's biosecurity system (MPI)
- Increasing GDP from land-based primary production (Statistics NZ data)

5. Knowledge and technology transfer

Landcare Research participates in a variety of activities to support knowledge and technology transfer to end users and drive the adoption of new approaches, tools and techniques that we have developed. In addition to scientific papers and commissioned contract reports, Landcare Research uses a multitude of channels to disseminate information. They include existing industry pathways (professional magazines, conferences, newsletters, outreach networks, social and other media) and national and regional policy and regulatory agencies, hui, training workshops, embedding knowledge through secondments, and through our own regular newsletters and publications. Our online resources are becoming increasingly important and are experiencing strong growth. Such initiatives are particularly important for community groups, who are increasingly well-informed and expect access to up-to-date information. Ultimately, our successful history of knowledge transfer relies on the strong collaborative relationships we develop and grow

Knowledge and technology transfer pathways are increasingly related to formal collaborative networks, although communicating more effectively with the public is a growing focus in terms of raising awareness about the environmental challenges facing New Zealand and how research can help solve them. The BioHeritage Challenge will provide new approaches linked to knowledge and technology transfer activities, as well as enabling our work to have much wider uptake. Landcare Research also participates in other National Science Challenges and the Lincoln Hub, which will be significant in terms of knowledge and technology transfer. The National Land Resource Centre (www.nlrc.org.nz), a consortium initiated and led by Landcare Research, plays a vital role in knowledge and technology transfer.

Key 2016/17 knowledge and technology transfer activities include:

- Continuing to make new, authoritative information readily available through
 - high-profile, internationally recognised scientific papers, authoritative online publications and newsletters targeted to specific end users
 - open access to web-based data portals, including biodiversity and taxonomic and other digitised information with user-friendly 'how to' guidelines and resources that synthesise the latest information.
 - specialist species identification services (including DNA technologies) and risk management advice to support biosecurity agencies and the primary.
- Developing stakeholder awareness, capability and capacity, including through
 - strengthening partnerships with industry (e.g. dairy sector on riparian management), councils (e.g. integrating local authorities in research) and communities (e.g. iwi involvement in research)
 - developing new relationships with Māori collectives and trusts to identify development opportunities within a kaitiakitanga framework
 - new marae-based training courses on land-use capability, soils and ecosystem services
 - providing training workshops for biodiversity and biocontrol officers and disseminating information via publications, newsletters and our websites
 - growing awareness of the policy relevance of our research through our LINK seminars, Regional Council roadshows and policy briefs.

As well as activities focused on driving uptake of research by public sector and industry end users, we have a strong and strategic focus on communicating and raising awareness of our research and how to access it. We engage and share our success stories with the general public via our range of websites and social media platforms (Facebook, Twitter, YouTube, LinkedIn) and engage with mainstream and specialist media, science and agribusiness publications and their digital platforms. We participate in and host public events such as BioBlitz, Biosecurity Bonanza and NatureHack, and communicate with the community via school talks and visits to our Collections and stalls at community events, and we engage with teachers on RSNZ Fellowships. Increasingly, we are engaging with young New Zealanders through our Unlocking Curious Minds projects.

Central to our knowledge and technology transfer strategy is the ongoing development of web-based information resources, data portals and user-friendly online guides. Key initiatives planned for 2016/17 include enhancing the relevance, impact and use of Collections-derived knowledge, including eBiota; improving web service infrastructure; making key information available to biosecurity agencies and the primary sector via development of online diagnostic tools.

6. Infrastructure

Landcare Research has an ongoing programme to upgrade buildings and research infrastructure at our various sites. This is to ensure we have fit-for-purpose facilities to deliver effective research and outcomes in the future, and smart systems and processes to support our people in their work.

At Lincoln (our largest site) we are working closely with our partners in the Lincoln Hub (section 3) to ensure our redevelopment plans are consistent with opportunities for shared infrastructure and access to specialist facilities. Similarly, our other larger sites are located on or near university campuses to facilitate shared access to specialist infrastructure, research collaboration, lecturing and supervising postgraduate students.

Our key priority in 2016/17 is to redevelop aspects of the Lincoln site consistent with the concept of the Lincoln Hub and to provide modern fit-for-purpose facilities for our people. The reconstructed area will be designed to cater for our people, co-located Hub staff and co-creation with science users. The redevelopment will be completed with repurposing for private sector use in mind, should that be appropriate in future.

We will continue to co-locate and support the Biological Heritage Challenge centre and to identify opportunities to further enhance the efficiency and effectiveness of resources.

We remain committed to a number of collaborations, such as the National Science Challenges (section 3), Centres of Research Excellence (CoREs), and national and global research consortia, such as collaborative research centres. We also partner in the National eScience Infrastructure (NeSI) (*see below*).

National eScience Infrastructure (NeSI)

Landcare Research is a partner in the NeSI investment by Government, universities and CRIs to build and operate High Performance Computing facilities. The NeSI enables us to carry out advanced modelling and other 'big data' analyses cost-effectively and time-efficiently. It also facilitates collaborations with international researchers. We continue to use the NeSI platform to advance our research and develop applications for end users in a wide range of areas, including environmental and ecosystems management, invasive species, genomics, global change processes, and land information.

Enhancing the value of our Databases and Collections

Landcare Research is custodian of seven of New Zealand's 25 Nationally Significant Databases and Collections. These are national science assets for the country, some of which have been built up over more than a century. We periodically review Collections policies and infrastructure to ensure they are fit-for-purpose, meet the curatorial standards required to maintain these valuable assets in perpetuity, and support systematics science undertaken by our staff and other researchers across the New Zealand science system.

In recent years, we have made strategic investments to significantly enhance our Collections infrastructure and protect these important national taonga on behalf of New Zealand (e.g. investment in improved temperature and humidity control to meet good practice standards). We are now investing significantly to put Collections' information and images online in digital format to increase the relevance, impact and reach of our Collections. This will enhance the value of many years of Crown investment in them.

Collection digitisation and biological distribution modelling

'Digitising' high-priority insect, plant, fungal and bacterial specimens and associated data from our MBIE Strategic Funding of biological Collections helps safeguard this information for future generations. Putting information online also ensures that New Zealand's biosecurity and biodiversity agencies can access critical data whenever they need it.

We are investing in online availability of high-definition images, authoritative information on morphological and molecular characterisation, and accurate provenance and identification data derived from our biological Collections. We are also using these online data to develop a real-time species distribution modelling platform to support biosecurity and biodiversity management decisions by policy, regulatory and operational agencies.

The platform will support end users who need predictive information on high-risk biosecurity incursions and to undertake biodiversity risk assessments. It enhances New Zealand's ability to answer fundamental questions such as, 'what is this organism?', 'how do we recognise it?', 'is it a threat or threatened species?', and 'where did it come from, when did it arrive, and where might it spread under various scenarios?'

7. Enviro-Mark Solutions

Enviro-Mark Solutions Ltd (E-MS) provides certification credibility for environmental performance of businesses and is best known for the CEMARS, carboNZero and Enviro-Mark programmes. It has clients in five countries, especially New Zealand and the UK, with over 400 organisations and 500 products benefiting from the programmes. Enviro-Mark Solutions is a wholly-owned subsidiary of Landcare Research Ltd. It was established as a stand-alone business in 2011 but has ten years' experience in servicing NZ and UK businesses. Enviro-Mark Solutions is accredited by the Joint Accreditation System of Australia and New Zealand (JAS-ANZ), and also licensed by the UK Environment Agency and accredited by the Carbon Disclosure Project (CDP).

The services offered are widely recognised to be among the most robust and credible tools available globally. They enable organisations to improve their sustainable business practices, understand their carbon footprint, work towards carbon neutrality and implement robust environmental management systems. Through its service to New Zealand businesses, E-MS contributes to Landcare Research delivering on Outcome 4 (Development within Environmental Limits). Through all of its programmes and services, E-MS adds value to its customers through giving credibility to performance claims, through cost savings and efficiencies, building capability, improving systems, changing culture and inspiring innovation.

Enviro-Mark Solutions will maintain a clear market, geography and sector focus to grow its market presence. Strategic relationships form an integral part of the business model, especially in respect of client auditing and overseas growth. Relationships will be strengthened or initiated in order to extend the range and value of services available to customers. Our recent focus on software development solutions will support scaling the business for growth. Growth will be targeted in international markets where governments and businesses are responding to compliance and voluntary developments arising from the 2015 Paris Climate Change agreements. Through international engagement E-MS will also maintain at a high level its knowledge of, influence on and alignment with global standards and initiatives such as the Carbon Disclosure Project.

			
carboNZero CERTIFICATION	CEMARS CERTIFICATION	Enviro-Mark CERTIFICATION	Energy-Mark CERTIFICATION
manage and offset your carbon footprint	manage your carbon footprint	manage environmental impacts	manage energy use

Enviro-Mark Solutions provides a number of other related environmental services including training, audit against the relevant standards, development of specific greenhouse gas calculators and emissions factors, assessment of integrity of carbon credits, and supply chain assessment for carbon and environmental impact.

The CEMARS and carboNZero certification programmes have been assessed through independent research undertaken by the University of Toronto as being best in class in the world as carbon programmes and in the top 20 of all types of eco-label.

While Enviro-Mark Solutions is a standalone company with separate premises in Auckland, it shares facilities and resources at our Lincoln and Wellington sites; it follows the same accounting and general business, good employer and EEO practices and processes as the parent company.

For further information, see www.enviro-mark.com

8. Capability and Culture

Our goal is to ensure science capability meets the changing needs of the business and the external environment in which we operate. We focus on the quality of science capability ensuring its integrity and on our ability to attract further high-calibre talent. A significant part of this ensures establishing a high performance culture where ongoing development is supported at all levels. Our values drive a continual focus on health and safety, performance management and development, reward and recognition, internal communications and staff well-being.

Leadership and Bicultural Development

Following the implementation of a comprehensive leadership development programme in 2015, which focused on building operational and strategic leadership skills, phase two of the programme is now under development. This phase will concentrate on identifying and developing future leaders and supporting our senior and mid-level leaders to build their external leadership capability. A further focus for 2016 onwards will be on developing our bicultural capability through a comprehensive programme initially focused on staff with Vision Mātauranga objectives in their research projects and later across the wider organisation.;

Good employer

Our achievements against the seven key elements of being a good employer, as set out by the New Zealand Human Rights Commission, is reported on our public website and in our annual report.

Health and Safety

We continue to promote a healthy work environment for all our employees through our well-being programme. Landcare Research focuses on building a culture where a safe workplace for all workers is a priority. This is achieved through the provision of comprehensive guidelines, training, supervision, mentoring and support to ensure their well-being on-site and in the field. Significant effort continues on ensuring compliance from governance to 'grass roots' with the new Health and Safety at Work Act 2016. Further developing our induction practices for all workers will be a focus for the coming year.

Research excellence and collaboration

Our scientists are recognised internationally for their research excellence, as evidenced by the number and quality of our publications and extensive co-authorship with overseas colleagues on global issues. The internationally accepted measure of science excellence is the number of citations from papers published. During the last year, our citations were ranked in the top 16% of research organisations globally with a score equal to that for University of Auckland.;

Within our 13 specialist disciplines, we rank within the top 10% of research organisations globally. For all research organisations and universities in New Zealand, we rank third equal. Our Science Advisory Panel of highly regarded scientists provides valuable guidance and international perspectives. Many of our scientists hold positions on editorial boards of prestigious national and international science journals, and are invited or elected onto national and international panels, advisory boards and technical working groups.

We continue to collaborate with a large number of organisations overseas. Recognition of the excellence and relevance of our contributions at scientific meetings worldwide is highlighted by the number of invitations to our scientists to present keynote papers.

Landcare Research is a partner in several collaborative research centres, networks and consortia and we are currently contributing our expertise to five National Science Challenges and two Centres of Research Excellence (CoREs).

Writing scholarships and fellowships

We offer writing scholarships for up to 20 staff, facilitating peer-reviewed, high-quality publications from existing data and reports. For two years, the scholarships have been very successful and we will continue this initiative. We support our scientists to travel overseas to work in prestigious, targeted organisations to encourage development of new ideas. We also support three Post Graduate Scholarships to attract PhD students and grow our capabilities.

Capability planning and development

The development of Strategy 2017 has provided a focus for a review of our capability needs to support changing client needs. We have assessed science capabilities across Landcare Research in relation to new opportunities, increasing our science excellence and research priorities. This has highlighted critical gaps in our capability, particularly skills and experience working in the primary sector. We will actively address these capability gaps over the next three years through new appointments and training for existing research staff. We also intend to narrow our focus in some low priority areas to enable us to deepen capabilities in high priority areas.

We expect to make 18 new appointments over the next three financial years to fill vacancies in critical research areas resulting from retirements and to increase capability in priority growth areas. To grow opportunities, we will also be appointing new staff with specialist capabilities in the preparation of proposals, knowledge brokering, and development of commercial products and services for the primary sector and other private sector clients.

Science Advisory Panel

The high priority areas for capability growth have been endorsed by our Science Advisory Panel. The Panel comprises active, internationally recognised scientists who are able to provide strategic perspectives on changing global research activities in the context of New Zealand needs (more information about the Panel is available on our website www.landcareresearch.co.nz/about/people). The Panel reviews our research performance and capabilities and provides advice to our Board on the allocation of resources to priority areas.

Links with universities and the Lincoln Hub

We have long worked with universities to grow capabilities and support the training of emerging scientists. We continue our commitment to our joint graduate school with the University of Auckland with five of our scientists holding Professorial or Assistant Professorial part-time roles. We are also contributing to the establishment of a postgraduate school with Lincoln University and other partners in the Lincoln Hub.

The vision is that the Lincoln Hub will attract the most able minds internationally to study and undertake research at Lincoln. The ultimate goal is for shared developments in infrastructure and collaborative research and teaching activity to result in the better management of New Zealand's land and water resources.

9. Performance Monitoring & Reporting

Milestones for Landcare Research's strategic focus (see section 3)

- **Increasing the value of our science:** Develop at least two integrated research projects spanning environmental, social, economic and cultural elements of natural resource management.
- **Enhancing environmental information:** Incorporate our research methodologies and datasets into at least two environmental indicators and support at least one major national policy initiative and/or Environmental Standard.
- **Improving freshwater management:** Inform at least two processes under the National Policy Statement on Freshwater Management through our research and models.
- **Sustainable primary sector growth:** Initiate at least one major new partnership and/or joint programme.
- **Implementing Vision Mātauranga:** Initiate at least one new major partnership and/or joint programme with Māori entities and agri-business.
- **BioHeritage Challenge:** As a host, successfully fulfil all governance and support unit responsibilities.
- **Lincoln Hub:** MOU (or equivalent) signed with at least two private sector entities for joint R&D activities.

Additional indicators covering 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

Indicator	Measure	2014/15 Actual	2016/17 Target
End user collaboration	Revenue per FTE from commercial sources (\$000s) ¹	\$51.5	>\$55
Research collaboration	Percentage of papers co-authored ¹ – total	81.4%	80%
	Co-authored with other New Zealand organisations	22.1%	30–35%
	Overseas co-authors	35.8%	30–35%
	Both New Zealand and overseas co-authors	23.5%	20-25%
Technology and knowledge transfer	Commercial reports per scientist FTE ¹	0.88	0.80
	Availability of data from our MBIE Strategic Funding of biological Collections and information systems (assessed by a variety of metrics appropriate to each; metrics online)	Refer 2015 annual report	Increasing trends
	Response rate for requests to for our MBIE Strategic Funding of biological Collections and associated infrastructure (specimen transactions, identifications, visits)	96–100% service delivery	>95%
	New and improved products, processes and services	60	40
	Presentations to stakeholders and community groups	278	260
Science quality	Impact of scientific publications (mean citation score) ¹	3.0	2.9–3.3
Financial indicator	Revenue per FTE (\$000s) ¹	\$173.8	>175
Stakeholder engagement	Percentage of relevant end users who have adopted knowledge and/or technology from Landcare Research ²	94%	>95%
	Percentage of relevant funding partners and other end users that have a high level of confidence in our ability to set research priorities ²	72%	>75%
	Percentage of relevant national and international research providers that have a high level of confidence in our ability to form the best teams to deliver on its Impacts and Outcomes ²	92%	>90%
	Staff invited to participate in stakeholder meetings or workshops	227	230
Māori development	Number of partnerships with iwi and Māori organisations linking science and mātauranga to Māori goals and aspirations	23	18–23
Commercialisation	Number of new and existing licensing deals of Landcare Research-derived IP (including technologies, products and services)	12	7–14
High performance culture	Staff engagement in survey evaluations	71.7%	>70%
	Turnover of key science staff	6.7%	3–5%

Explanatory notes to table:

Footnote [1] Generic indicators as required by MBIE across all CRIs are at the Landcare Research Group level; the rest are at Parent level

Footnote [2] Data provided from the MBIE-commissioned biennial external client survey; next survey 2015/16

10. Financial Resilience

Landcare Research needs flexibility to respond to changes in the external environment and pursue strategic opportunities. In determining a tailored rate of return to shareholders, we use the following principles:

- The rate of return on equity (RoE) needs to be sustainable to support the organisation.
- The Board proposes a lower tailored return on equity 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 return on equity will be reviewed by the Board over the planning period as other strategic investment opportunities with long-term benefits are presented.

The MBIE Strategic Funding Agreement, which is extended to 30 June 2017, has historically provided a degree of certainty but no recovery of inflation (continuing its erosion in real terms). We expect strong competition in the science sector for other sources of government and private sector revenue. We have made the financial assumption that equivalent funding will continue to be received to support our Statement of Core Purpose. Our ability to ensure financial viability through a sustained period of fiscal pressure will be critical to the ongoing success of Landcare Research.

Financial Operating Plan

The 5 year financial plan reflects modest but steady revenue growth and continuing tight control and efficiency gains on operating costs.

Financial performance and position (consolidated group)

For the year ending 30 June	2016		2017	2018	2019	2020	2021
	Target	Forecast	Target	Target	Target	Target	Target
Revenue	59.2	57.3	61.9	62.3	62.9	63.7	64.8
EBIT ²	2.1	1.1	1.3	1.5	2.1	2.6	2.9
Total Assets	50.0	52.0	53.8	53.5	53.9	55.9	58.3
Capital Expenditure	5.5	4.1	7.8	7.1	4.1	3.6	4.1
Dividend	0	0	0	0	0	0	0
Equity ratio ³	66%	64%	62%	63%	66%	68%	69%
Gearing ⁴	0	0%	0%	0%	0%	0%	0%

Explanatory notes to table:

Footnote [1] Revenue growth in 2016 and 2017 includes BioHeritage Challenge funds dispersed to other organisations. Landcare Research is the host for this Challenge and we are contractually responsible to MBIE for delivery of the Challenge work programme

Footnote [2] EBIT: Earnings before interest, financial lease charges and tax, and after committed business development expenditure and technology service expenditure

Footnote [3] Equity ratio: Average shareholders' funds ÷ Average total assets

Footnote [4] Gearing: Interest bearing debt ÷ Interest bearing debt + shareholders' funds, expressed as a percentage

Financial strength and flexibility

In 2017 Landcare Research revenue is budgeted at \$61.9M, up by \$4.6M compared with the 2016 year, driven by Landcare Research's leadership of the BioHeritage National Science Challenge. Of this, \$4.4M is accounted for by subcontractor costs associated with the BioHeritage Challenge, resulting in underlying net revenue increases for Landcare Research of \$0.2M compared with the 2016 year. This year's SCI continues the approach of prior years, reflecting an expectation of only limited underlying revenue growth opportunity through the period beyond that associated with the National Science Challenges.

Tailored Return on Equity

Landcare Research's tailored return on equity in 2017 is 6.9%. The tailored return on equity recognises

- the investment made in Collections and Databases for the benefit of New Zealand, and for which a commercial return cannot be expected. In addition to the \$7.3m of MBIE Strategic Funding focused on Collections and Databases, we invest an additional \$1 M per annum.
- the continued reinvestment of surpluses in strategic investment opportunities that will create long-term benefits. We intend to reinvest surpluses with an EBIT impact of \$0.8 M each year. This will be financed from both science research surplus and the performance of prior investments.

Balance Sheet

Landcare Research's science requires an ongoing investment in scientific equipment if we are to secure revenue and be financially sustainable. Beyond this underlying capital spending requirement, the priority for 2017 and 2018 is to redevelop aspects of the Lincoln site consistent with the concept of the Lincoln Hub and to provide modern fit-for-purpose facilities for our people.

Cashflow and Dividend

Landcare Research expects to continue to deliver steady operating cash flows, with an EBITDAF of \$5.1M in 2017, which is forecast to improve or remain at similar levels through the 5 years of this SCI, with a predicted EBITDAF of \$6.9M in 2021.

Based on the strategic capital investment needs identified above, no dividends are planned during the period of this SCI; however, the Landcare Research Board will review this on an annual basis.

Risks

There is forecasting uncertainty associated with Landcare Research revenue budgets, in particular related to the National Science Challenges, contestable funding and MBIE Strategic Funding:

- In excess of \$3M per annum of contestable MBIE research contracts end in 2016, and there is uncertainty about the contestable process in future and our ability to secure revenues in what is likely to be an increasingly competitive process.
- There are risks and opportunities of competition and disruptive technologies with the potential to impact capability and future business sustainability.
- The MBIE Strategic Funding Agreement, which is extended to 30 June 2017, has historically provided a degree of certainty but no recovery of inflation (continuing its erosion in real terms). A review of MBIE Strategic Funding is underway; the outcome of which could positively or negatively affect our revenues beyond 2017.
- Landcare Research is confident that its plans remain robust in the near-term to potential negative volatility, and we will actively monitor and respond to any emerging risks.

Key performance indicator: The Landcare Research Group shows improvement in efficiency, while maintaining growth, investment and appropriate levels of risk.

	Actual	Forecast	Business Plan				
For year ending 30 June:	2015	2016	2017	2018	2019	2020	2021
<i>Efficiency:</i>							
Operating margin ¹	11.2%	9.0%	8.2%	8.6%	9.7%	10.4%	10.6%
Profit/ FTE	\$19,679	\$16,331	\$16,174	\$16,990	\$19,467	\$21,081	\$21,917
<i>Risk:</i>							
Quick ratio ²	1.33	1.71	1.34	1.06	1.08	1.27	1.45
Interest coverage ³	N/A	1026	34	N/A	N/A	N/A	N/A
Profit volatility	12.8%	15.6%	17.7%	17.1%	11.4%	12.0%	13.1%
Forecasting risk ⁴	1.0%	0.3%	0.4%	0.6%	0.0%	0.1%	0.5%
<i>Tailored return on equity</i>							
RoE before Collections and Databases	10.1%	7.7%	6.9%	7.7%	8.6%	9.3%	9.4%
RoE before Investment	7.2%	4.8%	4.5%	5.3%	6.2%	6.9%	7.0%
RoE NPAT ⁵	5.5%	2.9%	2.8%	3.6%	4.7%	5.4%	5.6%
<i>Growth/Investment:</i>							
Revenue growth	6.4%	-1.6%	8.1%	0.6%	1.1%	1.3%	1.7%
Capital renewal ⁶	0.5	1.0	2.0	1.9	1.0	0.9	1.0

Explanatory notes to table:

1 Operating Margin: EBITDAF ÷ Revenue, expressed as a percentage and per FTE (EBITDAF is Earnings before Income Tax before Depreciation, Amortisation and Fair value adjustments)

2 Quick ratio: (Current assets – Inventory - Prepayments) ÷ (Current liabilities – Revenue in advance)

3 Interest cover: EBITDAF ÷ Interest paid

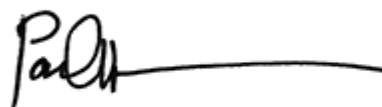
4 Forecasting Risk: 5-year average of return on equity less forecast return on equity

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

6 Capital renewal: Capital expenditure ÷ depreciation expense plus amortisation expense



Jane Taylor
Chairman



Dr Paul Reynolds
Deputy Chair

11. Appendix 1: Nationally Significant Collections, Databases & Information Systems

Allan Herbarium (CHR)

- New Zealand's national herbarium with >600,000 specimens of New Zealand and South Pacific algae, lichens, liverworts, mosses, ferns, and seed plants collected in New Zealand. The oldest samples collected during Captain Cook's first voyage to New Zealand, 1769–1770.
- Online access via the New Zealand Virtual Herbarium, a searchable, downloadable information system.
- A key part of New Zealand's biodiversity and biosecurity systems, of benefit to both conservation and productive sectors.
- <http://scd.landcareresearch.co.nz>
- www.landcareresearch.co.nz/allanherbarium
- <http://nzflora.landcareresearch.co.nz>
- www.landcareresearch.co.nz/floras_guides
- www.nzherbaria.org.nz

International Collection of Micro-Organisms from Plants (ICMP)

- Living cultures of more than 18,000 strains of bacteria and fungi from plants and soil.
- All information fully searchable on-line.
- One of three major international collections for plant and soil bacteria.
- A key part of New Zealand's biosecurity system for the forestry, conservation, horticultural and agricultural sectors.
- www.landcareresearch.co.nz/resources/collections/icmp
- <http://scd.landcareresearch.co.nz>

Land Resource Information System (LRIS), including New Zealand Land Resource Inventory (NZLRI)

- National database depicts general land characteristics (rock, soil, slope, erosion, and vegetation), a derivative general-purpose land evaluation (land use capability), and a range of environmental, climatic, management and production attributes.
- www.landcareresearch.co.nz/resources/data/lris
- <https://lris.scinfo.org.nz>

National New Zealand Flax Collection

- Living collection at Lincoln of over 160 provenances of *Phormium* species of cultural, economic and historical interest. It supports research on both traditional and new uses of *Phormium*.
- <http://scd.landcareresearch.co.nz>
- www.landcareresearch.co.nz/harakeke

National Soils Database (NSD)

- Physical collection of thousands of soil profiles from 1,700 different locations throughout New Zealand, with site descriptions and chemical, physical, and mineralogical characterisations available online.
- <https://viewer-nsdr.landcareresearch.co.nz/search>
- <https://soils.landcareresearch.co.nz/soil-data/national-soils-data-repository-and-the-national-soils-database>

National Vegetation Survey (NVS)

- The national repository for plot-based vegetation (forestry) survey data collected, with over 60 years of data.
- A physical archive and databank of records from >94,000 survey plots including >19,000 permanent plots.
- Broad geographic coverage, from Northland to Stewart Island, the Kermadec and Chatham Islands.
- Survey data can be deposited with NVS for management and is also available by request.
- A key part of New Zealand's biodiversity & biosecurity information infrastructure.
- <http://nvs.landcareresearch.co.nz>

New Zealand Arthropod Collection (NZAC)

- The largest collection of New Zealand land invertebrates (insects and related arthropods), with >7 million specimens. Earliest collections date from 1880s. Many specimens from the South Pacific.
- Contains over 1 million pinned specimens, and approximately 6 million stored in ethanol; over 2,500 primary type specimens
- Includes the National Nematode Collection of New Zealand (NNCNZ)
- Online via the New Zealand Land Invertebrates website, a searchable online information system.
- A key part of New Zealand's biosecurity system for the forestry, conservation, horticultural and agricultural sectors.
- <http://nzac.landcareresearch.co.nz>
- <http://fnz.landcareresearch.co.nz>
- <http://www.landcareresearch.co.nz/resources/collections/nncnz>
- <http://nzinverts.landcareresearch.co.nz>
- <http://scd.landcareresearch.co.nz>

New Zealand Fungal & Plant Disease Collection (PDD)

- Primary source of information on New Zealand and Pacific fungi, with all data fully searchable online.
- Contains 100,000 dried fungal specimens, including 2,000 type collections of New Zealand fungi.
- Contains voucher specimens documenting most plant diseases recorded in New Zealand.
- A key part of New Zealand's biosecurity system for the forestry, conservation, horticultural and agricultural sectors.
- <http://scd.landcareresearch.co.nz>
- <http://nzfungi.landcareresearch.co.nz>
- <http://virtualmycota.landcareresearch.co.nz>
- <http://fungalguide.landcareresearch.co.nz>

Ngā Tipu Whakaoranga Ethnobotany database

- Online access to >2,050 records on cultural uses of New Zealand native plants, fungi, algae, and Māori names.
- <http://maoriplantuse.landcareresearch.co.nz>

12. Appendix 2: 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:

Dividend policy

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

- amount of dividend (if any) recommended to be distributed to the shareholders
- percentage of tax-paid profits that the dividend represents
- 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 and businesses in which equity is held)
- ongoing financial viability of the Company, including its ability to repay debt
- 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

Landcare Research has risk management and compliance processes in place and operating effectively across the organisation. The risk management framework identifies, classifies, reports on and mitigates business risk. Risk reporting is undertaken every six months to the Audit and Risk Committee and the Board, 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 external website:

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, wherever possible in advance, will be notified in the quarterly reports to shareholding Ministers.

13. Appendix 3: Matters required by the Crown Research Institutes Act 1992

Activities where shareholder compensation is required

Where the Government wishes Landcare Research 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 Landcare Research to furnish an estimate of the current commercial value of the Crown's investment.

The Landcare Research 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 2015 was \$31.5 million.

14. Directory

Directors

Jane Taylor (Chair)
Dr Chris Downs
Gavan Herlihy
Prof. Emily Parker
Dr Paul Reynolds (Deputy Chair)
Prof. Caroline Saunders
Steven Saunders
Vicky Taylor

Corporate (Registered) Office

Canterbury Agriculture & Science Centre
Gerald Street
PO Box 69040
Lincoln 7640
New Zealand
Phone +64 3 321 9999
Fax +64 3 321 9998

Senior leadership team

Dr Richard Gordon Chief Executive
Justine Daw General Manager, Partnerships
Katrina Benendetti General Manager, People & Communication
Dr Phil Hart General Manager, Science Investment & Evaluation
Keith Ikin, General Manager Māori Development
Dr Peter Millard General Manager, Science
Nigel Thomson General Manager, Corporate Services
Dr David Whitehead Chief Scientist

Email<surname><initial>@landcareresearch.co.nz

Bankers: ANZ Bank New Zealand Limited

Auditors: Audit New Zealand on behalf of the Auditor-General

Solicitors: Buddle Findlay

Our offices and site locations

www.landcareresearch.co.nz/about/contact-us/site-locations

Contact us

www.landcareresearch.co.nz/about/contact-us

Enviro-Mark Solutions Limited

Dr Ann Smith (CE)
21 Falcon Street, Parnell
PO Box 137182, Parnell 1151
Auckland
Ph: (09) 574 4152

Registered Office

Gerald Street
PO Box 69040
Lincoln 7640
Ph: (03) 321 9999
Fax: (03) 321 9998

15. Guide to Acronyms

ACC	Accident Compensation Corporation	www.acc.co.nz
BioHeritage (BHNSC)	Biological Heritage National Science Challenge	www.biologicalheritage.nz
DOC	Department of Conservation	www.doc.govt.nz
FAR	Foundation for Arable Research	www.far.org.nz
FOMA	Federation of Māori Authorities (Me Uru Kahikatea)	www.foma.org.nz
KPI	Key Performance Indicators	
LINZ	Land Information New Zealand	www.linz.govt.nz
MBIE	Ministry of Business, Innovation and Employment	www.mbie.govt.nz
MfE	Ministry for the Environment	www.mfe.govt.nz
MPI	Ministry for Primary Industries	www.mpi.govt.nz
Natural Resources Sector (NRS)	Comprises the core government agencies responsible for the management and stewardship of New Zealand's natural resources; regional councils are stakeholders	http://nrs.mfe.govt.nz
NSSI	National Statement of Science Investment	www.mbie.govt.nz
OSPRI	Operational Solutions for Primary Industries (TBfree New Zealand Ltd and NAIT Ltd are wholly-owned subsidiaries)	www.ospri.co.nz
RMA	Resource Management Act	www.mfe.govt.nz/rma
RSNZ	Royal Society of New Zealand	www.royalsociety.org.nz
TPK	Te Puni Kōkiri	www.tpk.govt.nz