MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

New Zealand Government
Te Kāwanatanga o Aotearoa

Pillar Investment Plans

Ngā Mahere Haumitanga Pou
2026 – 2031

For the four pillars of the science system:
Technology for Prosperity
Primary Industries and Bioeconomy
Environmental Sustainability and Resilience
Healthy People and a Thriving Society

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Contents

Foreword
Kupu Whakataki 02

Purpose
Te Kaupapa 03

Strategic context
Te Horopaki Rautaki 05

Approach to investment and delivery
Te Aronga ki te Haumitanga me te Whakatinanatanga 08

The Pillar Investment Plans
Ngā Mahere Haumitanga Pou 12

Technology for Prosperity
Houkura mā te Hangarau 14

Primary Industries and Bioeconomy
Ahu Matua me te Ōhanga Koiora 31

Environmental Sustainability and Resilience
Taiao Toitū, Taiao Toiora 43

Healthy People and a Thriving Society
Tāngata Ora, Pāpori Toiora 57

Strategic system capabilities
Ngā Āheinga Rautaki o te Pūnaha 65

How the Pillar Investment Plans were developed
Te Hanga o ngā Mahere 68

Future iterations of the Pillar Investment Plans
Ngā Putanga ā Mua o ngā Mahere 68

Appendix 1: Pillar summaries
Āpitihanga 1: Ngā Whakarāpopototanga o ngā Pou 69

Foreword

Kupu Whakataki

Research investment is most effective when it is guided by the outcomes New Zealand seeks to achieve. The challenge for public investment is not simply deciding which research to support, but ensuring that investment contributes to the areas of greatest national importance. Lifting productivity, adapting to environmental change, improving health and wellbeing, and building internationally competitive industries all require different forms of expertise to be brought together and applied in new ways.

The Pillar Investment Plans respond to this challenge by organising investment around the results New Zealand is seeking to achieve and the knowledge, capability and technologies needed to support them. This recognises that many of New Zealand's most important opportunities and challenges require a range of disciplines, approaches and capabilities to work together. In doing so, the Pillar Investment Plans will support excellent research with credible pathways through which research can contribute to economic, environmental and social outcomes.

Public investment helps build and sustain the knowledge, capability and technologies needed to achieve outcomes that matter to New Zealand. It is most important where research benefits are widely shared, take time to emerge, or are too early-stage or high-risk for the market. Public funding should also create opportunities for complementary investment and partnership from the private sector, research users and other beneficiaries.

The full value of that investment is realised through the application and use of research. Achieving the outcomes described in these Plans depends on actions beyond the research system, including across government, industry and communities. These broader enablers are important because they influence whether research delivers real-world benefits. While they are not themselves the focus of science investment, understanding their role helps ensure funded activities are positioned to support New Zealand's long-term goals.

This integrated investment framework brings together four connected areas of focus: Technology for Prosperity, Primary Industries and Bioeconomy, Environmental Sustainability and Resilience, and Healthy People and a Thriving Society. Together, they provide a coherent framework for identifying priorities and guiding investment across the science, innovation and technology system. Technology for Prosperity plays a distinctive role, both as an investment priority and as an enabler of progress across the wider portfolio, reflecting the growing importance of advanced technologies to productivity, competitiveness and prosperity.

The Pillar Investment Plans give effect to the Science Investment Plan by translating national priorities into a framework for research investment. They identify the outcomes New Zealand seeks to achieve and the investment priorities needed to support them. In doing so, they provide strategic direction for public investment and clearer signals for researchers, investors and other users of research.

Hon Penny Simmonds
Minister of Science, Innovation and Technology

Dr. Emma Blott
Chair, Research Funding New Zealand Board

Purpose

Te Kaupapa

Relationship to the Science Investment Plan

Te Hononga ki te Mahere Haumitanga Pūtaiao

The Science Investment Plan establishes four pillars as the strategic priorities for public investment in science, innovation and technology. These are:

- **Technology for Prosperity**
  Building advanced technology capabilities that lift productivity and competitiveness, enable high-value products, industries and exports, generate broad economic spillovers, and strengthen New Zealand's connections to global value chains, capital, talent and strategic partnerships.
- **Primary Industries and Bioeconomy**
  Lifting productivity, resilience and sustainability in sectors that depend on biological and natural resources, while enabling diversification into higher-value products, services and markets.
- **Environmental Sustainability and Resilience**
  Strengthening New Zealand's ability to anticipate and respond to environmental risks, protecting and restoring natural capital, and building the evidence, tools and capability required for resilient and resource-efficient systems.
- **Healthy People and a Thriving Society**
  Enabling more effective, equitable and efficient health, social and economic outcomes, while generating robust evidence and solutions of global relevance.

It sets a series of long-term opportunities that each pillar is expected to deliver, and annual funding allocations for the research and development activities that will be supported through that pillar. The Pillar Investment Plans give effect to the Science Investment Plan by translating those long-term opportunities into tangible outcomes, objectives, and investment intentions that will guide investment decisions over the period 2026 to 2031.

The Pillar Investment Plans focus investment on areas where:

- public investment is needed to build or sustain research capability;
- benefits are long term, cross-sector or not fully captured by private investors;
- coordination is required to address shared challenges and opportunities at a national scale; and
- investment can deliver enduring capability, national benefit or strengthen New Zealand's future potential.

All public science, innovation and technology investments are expected to align with the priorities, outcomes, objectives and investment intentions outlined in the relevant Pillar Investment Plans. This includes, but is not limited to, investments made through Research Funding New Zealand, the New Zealand Institute for Advanced Technology, the Health Research Council (until its transition to Research Funding New Zealand), and Ministry of Business, Innovation and Employment-administered funding and investment mechanisms.

The Pillar Investment Plans work together to form an integrated approach to investments. Technology development supports innovation and capability across all four pillars, and advanced technology capability developed through the Technology for Prosperity pillar will include applications across Primary Industries and Bioeconomy, Environmental Sustainability and Resilience, and Healthy People and a Thriving Society contexts. Similarly, environmental knowledge, resilience, capability, and health and wellbeing outcomes underpin activity across many sectors. Effective delivery will therefore require collaboration across pillars and strong connections between research, capability development and investment activities.

The Pillar Investment Plans do not detail how individual funding decisions will be made. This will be determined through the investment processes and funding mechanisms set by the Minister of Science, Innovation and Technology through Gazette Notices developed on the advice of Research Funding New Zealand. Research Funding New Zealand will be the primary decision-maker for science, innovation and technology funding that falls under its decision-making remit.

Role within the wider system

Te Tūranga i roto i te Pūnaha Whānui

In addition to guiding Science, Innovation and Technology portfolio investments, the Pillar Investment Plans will inform the decisions of other participants in the wider science ecosystem. This will support greater alignment between investment decisions, research activity, partnerships and co-investment to create the greatest benefit for New Zealand.

The Pillar Investment Plans:

- Provide **researchers and research organisations** with greater clarity about priority outcomes and areas of investment focus.
- Provide **government agencies** with visibility of priority science investment areas to allow for better alignment of resources.
- Give **businesses and industry partners** visibility of where public research investment will be focused, to encourage greater collaboration and co-investment between the public science system and the private sector.
- Give **investors** clear signals about areas with the potential for growth, adoption and future value.
- Provide **communities**, including Māori and Pacific communities, with visibility of the opportunity areas for public research investment, to coordinate action to improve outcomes for New Zealand.

Navigating the document

He Aratohu ki tēnei Tuhinga

The remainder of this document sets out:

- The strategic context for public science investment, including its relationship to relevant government, industry, sector and other stakeholder strategies.
- The principles that have underpinned the development of the pillar outcomes and an overview of the funders, research organisations and research users that will contribute to delivering the outcomes of each pillar.
- Each pillar's outcomes, objectives and investment priorities, including the interactions between and across the four pillars.
- How system capabilities, including pathways for early-career researchers, Māori leadership and innovation, Pacific capability and partnerships, and research infrastructure enable and benefit from the outcomes.
- The process for developing the document and how it will evolve over time, including planned updates to the Pillar Investment Plans in 2027.

Strategic context

Te Horopaki Rautaki

To inform the development of the Pillar Investment Plans, an extensive review of government and sector strategies was undertaken and four Pillar Advisory Groups, consisting of relevant experts from science, industry, government and communities, were consulted. While each sector and stakeholder group has their own unique priorities or emphasise particular science needs, a clear set of common themes emerged.

System-wide themes

Ngā Kaupapa Whānui o te Pūnaha

Government and sector strategies broadly align on the role of science, innovation and technology in supporting New Zealand's long-term prosperity, resilience and wellbeing. Shared ambitions include lifting productivity and value creation, strengthening resilience and sustainability, improving wellbeing, enabling future industries, and responding to emerging opportunities and challenges. Other common areas include environmental stewardship, regulatory coherence, transparent decision-making, and stronger links between environmental, social and economic outcomes.

Strengthening Māori science and innovation leadership is important to New Zealand's future prosperity and aligns with the Government's Vision Mātauranga policy and Māori Health Strategy – Whiria Te Ora.

Hapū, iwi, and Māori researchers, organisations, enterprises and entrepreneurs contribute knowledge, capability, assets and investment to the sector, enabling distinctive opportunities from the Māori economy, and mātauranga Māori to be realised.

The strategies also emphasise the importance of accessible and trusted data, fit for purpose infrastructure, workforce and capability development, and the knowledge systems needed to support effective decision-making, innovation, adoption and impact. Common themes include strengthening the pathways for translating knowledge into practical use, supporting adoption and implementation, and improving connections between research, innovation, investment, service delivery and real-world decision-making.

Together, these priorities highlight the importance of sustained investment in people, capability, knowledge systems and technologies to support a productive, resilient and high-value economy, healthy and thriving communities, and the sustainable stewardship of natural and social assets. Achieving these outcomes also relies on infrastructure, data and evidence systems, modelling and analysis, and stronger connections among research, innovation, industry, services, policy and end-users.

Credit: Rocket Lab

Context for individual pillars

Te Horopaki mō ia Pou

The sector strategies provide a more detailed picture of the opportunities, challenges and future needs facing different domains and help identify where science, innovation and technology can make a distinctive contribution. This context informed the development of the Pillar Investment Plans, providing greater specificity on the opportunities, capability requirements, and demand for science and technologies reflected within each pillar.

Technology for Prosperity

The Technology for Prosperity pillar sits within a broad set of government, industry and technology strategies focused on lifting productivity, strengthening economic resilience, growing high-value exports, and supporting the development of future industries. While there are limited strategies specific to this pillar, there is increasing recognition that advanced technologies will be central to New Zealand's future economic performance and international competitiveness.

Future growth will increasingly depend on New Zealand's ability to develop, adopt and scale advanced technologies while connecting to domestic and global capital, markets, talent and knowledge networks. This requires building the technical and commercial capabilities, infrastructure, workforce, connections, and ecosystem conditions needed to support technology development, commercialisation and scale.

Investment must therefore extend beyond technology development to the infrastructure, workforce, and innovation pathways that convert research into deployable products and services, productivity, and economic value.

The role of the New Zealand Institute for Advanced Technology (NZIAT)

The Technology for Prosperity Pillar Investment Plan provides common priorities for Research Funding New Zealand and the NZIAT, recognising that delivery requires investment along the full innovation pathway, from discovery and capability development through to technology deployment and commercialisation. This includes sustaining the research, capability, and opportunity pipeline needed to grow New Zealand's advanced technology sectors.

While the Technology for Prosperity Pillar Investment Plan sets a common direction, Research Funding New Zealand and the NZIAT play complementary roles in its delivery. Research Funding New Zealand supports research and capability development, while the NZIAT focuses on identifying, shaping and investing in nationally significant advanced technology opportunities with the potential to drive New Zealand's productivity, economic growth and international competitiveness.

Rather than undertaking most research directly, the NZIAT operates as an active, mission-led portfolio investor, bringing together research, industry, investors and commercialisation capability to develop promising technology opportunities into investable propositions and pathways to commercial and public value.

Initial areas of NZIAT investment and activity include the Future Magnetic and Materials Technologies Platform, a national AI research and commercialisation platform, and a quantum technologies discovery programme. Through these and future investments, the NZIAT will help build and scale areas of advanced technology capability identified as having significant potential for New Zealand's future economic growth.

Primary Industries and Bioeconomy

Primary industries underpin New Zealand's exports, regional livelihoods and growth, but face pressure from climate change, biosecurity risks, environmental constraints, changing market expectations, rising costs and limits to productivity growth with existing use of technology.

The strategic opportunity for New Zealand extends beyond maintaining existing production systems. Investment in the bioeconomy represents a transition toward higher-value products, advanced processing, biomanufacturing, biomaterials, intellectual property and other knowledge-intensive products and services that build on New Zealand's biological strengths.

Government and sector strategies consistently identify science and technology as critical inputs to increased productivity, resilience, sustainability and value capture. Areas include genetics and breeding, digital systems, automation, advanced processing, and research on catchment-level and regional systems.

Environmental Sustainability and Resilience

Environmental strategies highlight growing pressures from climate change, natural hazards, biosecurity risks and resource constraints. Increasingly, communities, industries and governments require robust evidence to support decisions about adaptation, infrastructure, land use, environmental management and long-term resilience.

The challenge is to protect environmental integrity and natural capital while strengthening resilience through integrated approaches across climate, water, hazards, infrastructure and energy systems.

Demand for science, innovation and technology investment is centred on environmental intelligence, evidence systems, monitoring capability and decision support. A common requirement across strategies is for credible, accessible and durable environmental evidence capable of supporting planning, regulation, infrastructure and investment decisions over extended timeframes.

Healthy People and a Thriving Society

Health and social strategies recognise that health and wellbeing are shaped not only by clinical care, but also by the economic, social, cultural, educational and community conditions in which individuals and communities live, work, learn, innovate and adopt new technologies and services.

Demand for science, innovation and technology investment centres on improving prevention, intervention, long-term condition management, service delivery and system performance. Research should generate evidence and innovation that improve decisions and outcomes, and enable new technologies, interventions and services to be tested and embedded in practice. This includes contributing to improved policy settings and services, stronger workforce capability, better health and social outcomes, and the development, validation and adoption of new products, technologies, diagnostics, therapeutics and interventions.

The opportunity for New Zealand is to improve health and wellbeing, while strengthening the social, education and workforce systems that support productivity, resilience and fiscal sustainability. Research should generate evidence and innovation to improve outcomes, services and decisions for individuals and communities across health and social systems. Public investment provides an essential foundation, while lasting impact will be amplified through strong connections between researchers, communities, iwi, hapū and Māori organisations, Pacific communities, public agencies, health and social service providers, industry and investors.

It is critical to involve people and communities as the intended recipients of discoveries and innovation from the outset. Māori health strategies and the Vision Mātauranga policy further recognise the importance of Māori knowledge and innovation in improving outcomes for individuals, families and communities and strengthening the responsiveness of health and social systems. Increasing demographic diversity, population ageing, and the growing contribution of younger Māori and Pacific populations to New Zealand's future workforce are reshaping demand across health and social systems.

The role of the Health Research Council (HRC)

The HRC will continue to play an important role in funding health research during the transition to the future investment system. Consistent with Government expectations and wider science system reforms, the HRC will maintain continuity of its functions while aligning its investments, priorities and decision-making processes with the Science Investment Plan and these Pillar Investment Plans.

The HRC will continue to administer the Health Research Fund and manage health research contracts during this transition period, helping to ensure ongoing support for health research and its contribution to improved health outcomes, innovation and health system performance. Subject to legislative change, the HRC's functions will transition to Research Funding New Zealand, the Ministry of Business, Innovation and Employment, the Ministry of Health, and the National Ethics Advisory Council (an independent advisor to the Ministry of Health), ensuring key responsibilities continue within the future science system.

Approach to investment and delivery

Te Aronga ki te Haumitanga me te Whakatinanatanga

The Science Investment Plan sets out the overarching principles that direct public investment in science, innovation and technology. Across the four pillars, these principles are applied through investment decisions that respond to the distinct opportunities, challenges and capabilities relevant to each pillar.

Consistent with the Science Investment Plan, investments will be expected to demonstrate relevance to New Zealand, justification for taxpayer investment, research excellence, and credible pathways to economic or public-good impact.

Factors that informed the Pillar Investment Plans

Ngā Āhuatanga i Ārahi i ngā Mahere Haumitanga Pou

The development of the outcomes and the allocation of funding between the Pillar Investment Plans have been informed by the following considerations:

- **National importance**: whether the outcome addresses a clearly defined national need, opportunity or challenge.
- **Value to New Zealand**: the potential to create and retain value for New Zealand, including through productivity improvements, higher-value products and services, new firms and industries, stronger public services or more effective stewardship.
- **Need for public investment**: the extent to which public investment is needed to achieve outcomes that are unlikely to be achieved through private funding alone.
- **Capability and infrastructure**: the extent to which the outcome develops or sustains nationally important capability, expertise, data, facilities or infrastructure.
- **Pathways to impact**: the credibility of pathways to implementation, adoption, translation, commercialisation or other forms of impact.
- **End-user involvement**: the extent to which end-users are involved in shaping, testing and applying research outcomes through co-design, collaboration and ongoing engagement.
- **System-wide value**: the extent to which the outcome addresses evidence or capability gaps, builds on existing capability or supports multiple sectors.
- **Portfolio balance**: the contribution the outcome makes to maintaining existing strengths while developing future opportunities, capabilities and industries.

For clarity, these factors do not represent a set of generic criteria for investment decisions; individual funding mechanisms will specify the relevant assessment criteria.

Realising the opportunities identified in the Science Investment Plan requires a deliberate balance between investment that protects existing strengths, including biosecurity, productivity, and environmental performance, and investment that builds future strengths through new products, technologies, intellectual property, processing capability, firms and industries.

Pillar-specific considerations

In addition to the considerations outlined above, the strategic priorities and distinct outcomes of each pillar give rise to further areas of emphasis:

- **Technology for Prosperity** will give particular consideration to industry pull, end-user validation, international competitiveness and adherence to Dual Use and Sensitive Technology principles.[1]
- **Primary Industries and Bioeconomy** will emphasise value creation and retention, industry adoption, and partnerships that support productivity, resilience and sustainability.
- **Environmental Sustainability and Resilience** will emphasise long-term investment in shared capability, monitoring and data systems, environmental stewardship, and evidence that supports decision-making across multiple sectors and users.
- **Healthy People and a Thriving Society** will place particular emphasis on the use of evidence to improve public services, health and societal outcomes, the development of new treatments and therapeutics with health benefits and economic potential, and on ensuring that innovation can be translated effectively into practice.

Partnering and co-investment

Te Mahi Ngātahi me te Haumitanga Tahi

Partnerships can strengthen the relevance and impact of science, innovation and technology investment. Contributions of time, expertise, infrastructure or capital from investors, businesses and other partners signal that an opportunity matters. They also help research address real needs and establish credible pathways to adoption, impact or commercialisation.

The nature and scale of partnership will vary. In established sectors, mature technology areas, or where identifiable beneficiaries capture substantial benefits, co-investment and direct partner involvement will generally be expected. Government may play a larger role in emerging areas where markets and returns are still developing, or where investment supports foundational capability, infrastructure or widely dispersed public benefits.

These differences may be particularly apparent in comparing, for example, mature sectors within the **Primary Industries and Bioeconomy** pillar, emerging opportunities within the **Technology for Prosperity** pillar, and public-good capability within the **Environmental Sustainability and Resilience** and **Healthy People and a Thriving Society** pillars.

Where appropriate, research should involve those closest to the opportunity or challenge from the outset, rather than treating research, adoption and implementation as separate stages. Ongoing involvement in development, testing, commercialisation and adoption helps address real needs, identify practical barriers early, and create credible pathways to use and impact.

Investors, providers and users of science

Ngā Kaihaumi, ngā Kaiwhakarato me ngā Kaiwhakamahi Pūtaiao

Achieving the outcomes identified in these Pillar Investment Plans will require investment, capability and action across a wider ecosystem of organisations. Public science investment plays an important role, but outcomes will also depend on complementary investment, strong research capability, and effective pathways to adoption and implementation. Understanding these relationships helps inform investment decisions, identify opportunities for collaboration and co-investment, and ensure public investment complements, rather than duplicates, other activity within the science, innovation and technology system.

Other investors in science

Investment decisions under these Pillar Investment Plans will occur alongside significant investment by government agencies, industry, levy-funded organisations, private research organisations, universities, iwi, Māori research organisations, Māori enterprises, and international partners, where relevant. Understanding this wider investment landscape is important when considering the additionality of public investment, opportunities for co-investment, and the pathways through which research can contribute to outcomes.

1 Sensitive Technologies – Trusted Research policy

Government agencies directly purchase research, monitoring, data and evidence systems to support policy, regulatory and operational functions. Alongside the Ministry of Business, Innovation and Employment and Research Funding New Zealand, significant public investment is also provided through organisations and portfolios including the Ministry of Education and the Tertiary Education Commission, the Ministry for Primary Industries, the Ministry for the Environment, the Department of Conservation, and Defence Science and Technology.

Agency funding is appropriate where it purchases agency-specific operational, regulatory, policy and service-delivery needs. This funding will be most significant in areas where research supports regulatory, operational or stewardship responsibilities, including environmental management, health and social services, biosecurity, natural hazards and national security.

Industry invests in research and development to improve productivity, competitiveness, resilience and commercial outcomes. Such investments can be pre-competitive or competitive in nature. Levy-funded investment provides an important source of industry-led research, capability development, extension and coordination in some sectors.

Māori organisations are increasingly important investors and partners within the science, innovation and technology system, bringing long-term perspectives and significant investment capability. International and philanthropic investment can further strengthen capability by providing access to expertise, infrastructure, markets, capital and partnerships.

Research ecosystem

Delivering the outcomes identified in these Pillar Investment Plans will require capability distributed across a diverse research ecosystem. Investment decisions will recognise the complementary roles performed by different organisations and seek to strengthen connections between them where these improve capability development, research excellence, translation and impact.

Universities play a critical role through discovery and applied research, workforce development and the maintenance of broad scientific capability. Public Research Organisations provide long-term strategic capability, specialised infrastructure and mission-led research aligned to areas of national importance. Centres of Research Excellence bring together expertise from across institutions to support scientific excellence, capability development and nationally significant research.

Independent research organisations, industry-linked research platforms and research infrastructure providers contribute specialist expertise, translational capability and access to facilities, data and networks that support research and innovation across the four pillars.

National research infrastructure and platform investments provide shared capability that individual organisations could not efficiently maintain alone. These shared investments are particularly important where capability supports multiple sectors, disciplines or decision-making systems, including environmental monitoring, advanced technologies, health and population data, and specialised scientific facilities.

Different outcomes will require different combinations of discovery research, mission-led research, translational capability, end-user engagement and specialised infrastructure. Investment decisions will consider not only the quality of individual activities, but also how they contribute to the broader capability, connections and shared assets needed to support long-term outcomes across the four pillars.

Delivering outcomes

The outcomes identified in these Pillar Investment Plans will not be achieved through research activity alone. Realising value from public investment requires the active involvement of those responsible for adopting, implementing and applying knowledge, technologies, services and evidence. Understanding these delivery pathways is important when making investment decisions, as the likelihood of impact often depends on the strength of the connections between researchers, users and decision-makers.

Industry and sector organisations

Industry and sector organisations play a critical role in adopting, scaling and commercialising new knowledge and technologies. In many cases, the benefits of research are realised through changes in products, services, business practices, production systems and investment decisions. Strong connections between researchers and industry can help accelerate adoption, strengthen pathways to impact and improve value creation and retention in New Zealand. They can also help translate research into higher-value products and services, intellectual property, advanced processing capability, new firms and industries, and greater participation in global value chains.

Government agencies

Government agencies use science and evidence to inform policy development, regulation, planning, operational delivery and stewardship responsibilities. Research can contribute to more effective public services, reduced uncertainty in decision-making, improved management of risks and resources, and better long-term outcomes for New Zealand.

Regional and local government

Regional and local authorities play important roles in translating research into planning, infrastructure investment, resource management and resilience initiatives. Their decisions influence how science is applied within communities and can provide important pathways through which research contributes to environmental, economic and social outcomes.

Communities and end users

Communities and research users – including, hapū and iwi, Māori organisations, service providers and practitioners – play important roles in shaping research priorities, informing implementation and applying research outcomes in practice. Their knowledge, perspectives and experience can strengthen the relevance, implementation and uptake of research.

Their involvement can help ensure that investment responds to real needs, reflects implementation constraints and opportunities, and supports outcomes that are relevant, durable and widely used. Early and ongoing engagement can strengthen pathways to impact by helping researchers understand the contexts in which knowledge, technologies and services will be applied, adopted and delivered.

Pathways to impact

Ngā Ara ki te Hua

The pathways through which research creates value will differ across the four pillars. In some cases, outcomes will be realised through the adoption and commercialisation of new technologies, products and services. In others, value may arise through improved policy and regulatory decisions, more effective environmental and resource management, strengthened public services, reduced uncertainty in decision-making, or enhanced resilience and preparedness.

Effective delivery requires end-users to be engaged throughout the research process, rather than only after research has been completed. Early engagement improves the relevance of research, identify barriers to implementation and support stronger pathways to translation, adoption and impact.

While the pathways to impact differ across the four pillars, all require strong connections between researchers and those responsible for implementing, adopting or applying research outcomes. In the **Technology for Prosperity** and **Primary Industries and Bioeconomy** pillars, impacts may be realised through commercialisation, adoption and value creation. In the **Environmental Sustainability and Resilience** and **Healthy People and a Thriving Society** pillars, impacts may more often be realised through improved decision-making, stewardship, public services and societal outcomes.

The Pillar Investment Plans

Ngā Mahere Haumitanga Pou

As part of the shift to a strategy-led science system, the Science Investment Plan articulates a series of long-term opportunities for each pillar. The following four sections set out the Pillar Investment Plans for each of the four pillars of the New Zealand science system. Each section contains:

- a set of five-year system **outcomes** describing the change in the economy, society or environment we expect to see over the course of this Plan
- a series of science **objectives** that that set out the contribution we expect science to make to achieving the outcome
- a small number of investment **intentions** that outline how public science investment will be used to deliver each of the objectives.

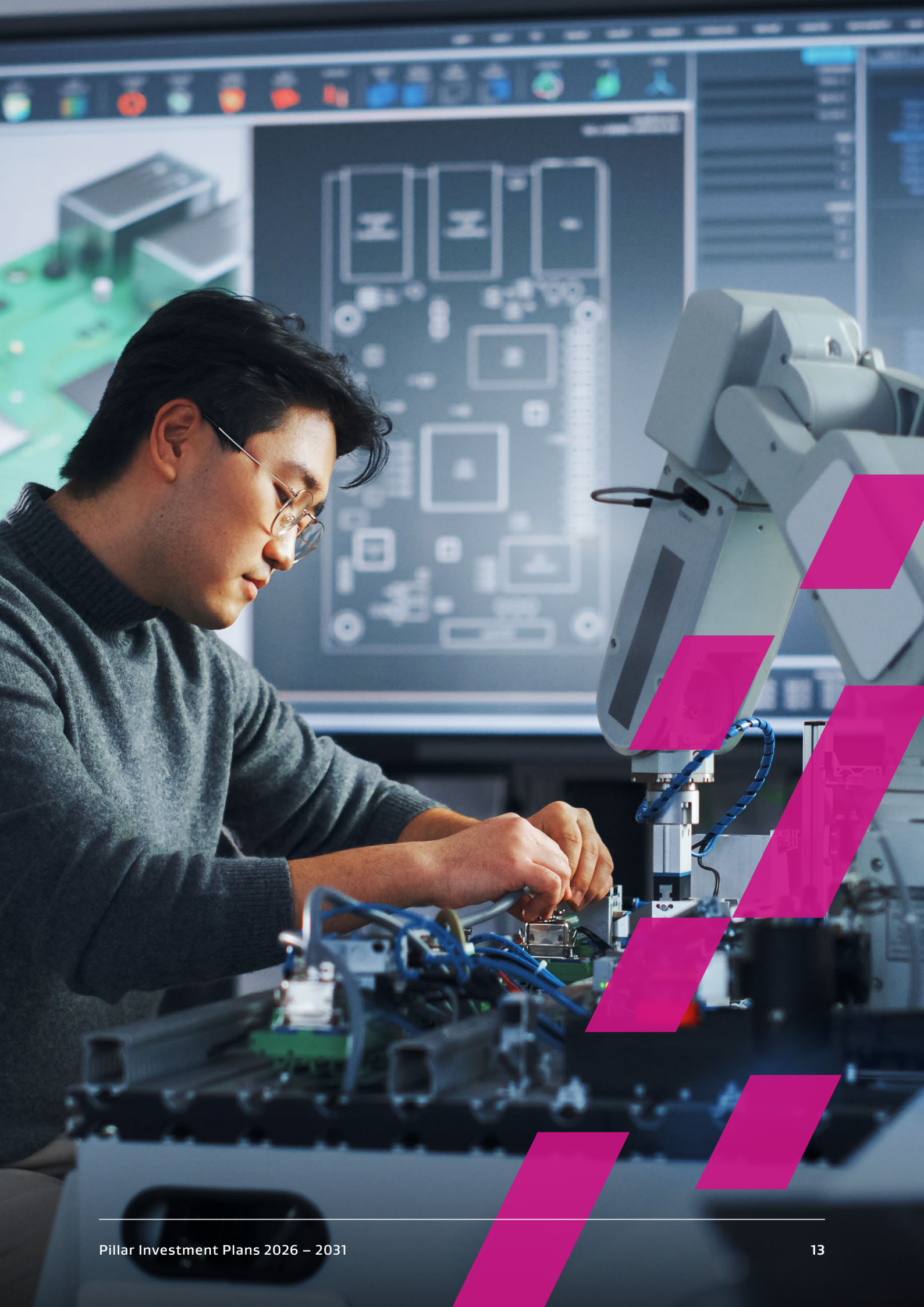
Achieving these system-level outcomes will depend on wider factors including industry investment and adoption, workforce capability, enabling infrastructure, effective policy and regulatory settings, commercialisation pathways and coordinated action across government, industry and communities.

The Pillar Investment Plans provide a high-level indication of how funding will be allocated between outcomes. Each pillar will also fund cross-cutting capability and infrastructure, including national datasets and modelling systems, that support multiple outcomes both within and across pillars.

While each pillar has a distinct focus, many challenges and opportunities span more than one pillar. The indicative funding statements included under each outcome area represent investment where that outcome is the primary purpose of the research. Together, they form an integrated investment framework that supports connections across outcomes and recognises the wider benefits, applications and contributions of research allocated to each pillar.

Integrated research across outcomes or pillars will be supported where it generates greater national value, makes use of complementary capability, or strengthens the pathway from research to application and impact. Cross-pillar research and coordinated investment will be particularly important where outcomes depend on interactions between technologies, production systems, environmental systems, health outcomes or societal resilience. The strongest areas of alignment are indicated under each outcome, with the relevant pillars highlighted.

Across all pillars, investment will emphasise both research excellence and credible pathways to impact. Collaboration across organisations, disciplines and sectors is encouraged where it strengthens capability, improves pathways to impact, or increases the likelihood of achieving outcomes. Partnerships should be driven by the needs of the opportunity and the capabilities required to deliver it, rather than undertaken solely to satisfy an expectation of collaboration.



Technology for Prosperity

Houkura mā te Hangarau

The mission of the Technology for Prosperity pillar establishes that the next wave of economic growth and human development will depend on advanced technologies that are being rapidly developed and scaled both in New Zealand and offshore.

This pillar plays a distinct role by focusing on the development and prioritisation of advanced technology capability that can be adapted and applied across different contexts over time, enabling new industries and economic growth. As many of these technologies will continue to be advanced globally, New Zealand's future economic performance will depend on its ability to build, apply and scale distinctive technology capability that reflects our strengths, opportunities and priorities.

Technology for Prosperity is a cross-cutting and enabling pillar

Technologies developed through the **Technology for Prosperity** pillar may enable outcomes across all other pillars' outcomes while challenges identified within other pillars may drive the development of new technologies, solutions and capabilities. These relationships are expected and encouraged, recognising that technology development and application occur as part of an iterative and interconnected innovation process.

The Technology for Prosperity pillar is distinct from other pillars in that it spans rapidly evolving technologies and emerging applications. As understanding of these areas continues to develop, achieving the pillar's mission will require activities that strengthen connections, improve alignment and build a more detailed understanding of emerging opportunities. The priorities below therefore reflect the dual role of this document in identifying investment priorities and signalling areas of future focus for this evolving field.

Pillar investment trajectory

This pillar will move through a staged transition as the future science investment system is implemented. In 2025/26, research within the scope of the pillar accounted for approximately 15% of total Science, Innovation and Technology portfolio investment. By 2029/30, the pillar is expected to represent around 32% of the overall Science, Innovation and Technology portfolio investment, with an indicative annual investment of approximately $278 million. This reflects the rebalanced investment profile signalled through the Science Investment Plan and wider science system reforms.

Over the five-year investment period of this Plan, investment in all opportunity areas will grow. Most outcomes maintain the same relative weightings in the Pillar, but the innovation sandbox [TFP 6] and space and advanced aviation [TFP 5] outcomes will grow proportionally.

These two areas will see their relative proportion of funding increase, drawing from not-aligned investments, and wider enabling functions funded by the pillar.

Translating long-term opportunities into outcomes and investments

Table 1 shows the relationship between the Science Investment Plan opportunities and the pillar outcomes and indicates the relative direction of investment over the five-year period.

Table 1. Relative investment size of opportunity areas, currently (2025/26) and by the end of this Pillar Investment Plans period (2030/31). These weightings should be considered in the context of the overall increase in pillar funding.

Science Investment Plan opportunity	**Outcome**	**Current investment**	**Future investment**
Build **advanced computing and AI** capability for adaptive decision-making across complex, end-to-end systems – with a specific focus on applied AI tools that leverage New Zealand's size, unique domain datasets and shared platforms that make this capability accessible to small and medium operators across the country.	TFP 1	Medium	Medium
Back **engineering biology, biomedical science, synthetic biology and biomanufacturing** to create new high-value products, processes and platforms, linking innovation with advanced engineering, data and processing capability to enable new biological and medical industries and exports.	TFP 2 TFP 3	Medium	Medium
Support **enabling technologies that underpin high-value products**, efficiencies and participation in global value chains. Areas of niche strength include advanced materials, photonics and sensing, autonomous systems, and applications in agritech and medtech.	TFP 4	Large	Large
Support **space-enabled innovation** so New Zealand becomes preferred global launch partner, supporting the development of downstream space applications that translate capability into economic, environmental and security value.	TFP 5	Small	Medium
Position New Zealand as a trusted real-world **innovation sandbox**, enabled through investment in workforce capability, secure environments, regulatory science and de-risking and living laboratories that attract global capital, talent and partners.	TFP 6	Small	Medium
Create smarter, **intelligent energy systems** supported by **advanced generation and storage**, digital control and system intelligence, grid optimisation and emerging hydrogen and ammonia energy vectors.	TFP 7 TFP 8	Small	Small
Enabling activities across outcomes and pillars.		Large	Medium

[TFP 1] Artificial Intelligence and Advanced Computing

New Zealand's opportunity lies in developing Artificial Intelligence (AI) capability that can be applied, tested and deployed in real-world settings, rather than across the full spectrum of AI development. Within that opportunity, this outcome focuses on applied and deployable capability, drawing on New Zealand's unique operating environments, datasets, indigenous knowledge and leadership, and existing areas of strength to support both domestic and internationally relevant applications.

Over the next five years, New Zealand will build internationally recognised capability, including a sustainable workforce, in applied and embodied AI for physical and edge operating environments as a priority area within a broader AI capability base.

Progress will be seen through the development of adaptive AI systems that perform reliably in New Zealand's variable, remote and resource-constrained operating conditions and are globally relevant as well as locally applicable.

This outcome is expected to underpin technology-enabled innovation across and between **all other pillars**, with applications adopted and deployed through sector-specific pathways.

We aim to strengthen the research system's ability to develop and validate AI systems for physical deployment.

This includes edge AI, embedded sensing, autonomous decision-making, adaptive systems, and human-machine teaming in environments characterised by connectivity constraints, disruption, environmental variability and distance from centralised infrastructure.

Therefore, we will prioritise:

- Applied AI research programmes focused on physical deployment.
- Edge AI, adaptive systems and human-machine teaming in remote and variable environments.
- Distinctive applied AI capability and associated compute for physical deployment, using New Zealand operating conditions and supporting sovereign AI resilience. This will develop and validate AI systems that are globally relevant as well as locally applicable, rather than competing in general-purpose AI.

We aim to build coordinated research capability across AI development and deployment.

New Zealand's AI capability will be strengthened by connecting algorithm development, world models, indigenous AI and capability, sensing technologies, hardware-software integration, ethical approaches, and domain-specific deployment. A more integrated approach will ensure research is systematically tested, refined and validated against real-world operating conditions.

Therefore, we will prioritise:

- Integrated research across the AI development stack, from sensing and data acquisition through to model adaptation and real-world validation.
- Real-world testing and validation of AI systems in New Zealand environments that provide a strong proving ground for global markets. Early-stage AI research connected to deployment opportunities and real-world operating environments.

We aim to ensure physical and edge AI capability is accessible to small and medium enterprises and builds frontier firms.

Many organisations lack the scale, expertise or resources needed to independently develop advanced AI systems. Shared tools, open approaches and collaborative research partnerships can reduce barriers to adoption and support wider diffusion of capability across the economy.

Therefore, we will prioritise:

- Shared and open tools, and research partnerships that make physical and edge AI capabilities accessible to small and medium enterprises (SMEs).
- Compute capability, and consideration of the support needed to maintain local control, security and alignment with New Zealand values.
- The development of technology solutions and expertise across areas of existing domain capabilities and productivity opportunities, including agriculture, energy, environmental management, national resilience, logistics, defence, space, advanced aviation, health, engineering, and creative industries.

Key dependencies: Delivery will depend on access to sustainable advanced computing and data infrastructure (including, but not limited to, continued investment in the e-research infrastructure platform which underpins multiple pillars' objectives), investment in growing specialist talent, trusted governance settings, sovereign capability considerations, and coordination across research, commercial and government investment. The balance of sovereign infrastructure vs that which is internationally sourced must be carefully considered.

Biotechnology

[TFP 2] Synthetic and Engineering Biology

New Zealand's opportunity lies in translating advances in engineering biology, synthetic biology and biomanufacturing into new products, processes and industries, rather than across the full range of biological and medical applications encompassed by the SIP opportunity. Engineering biology and synthetic biology apply engineering principles to biological systems, enabling the systematic design, testing and optimisation of biological components and processes that can be applied across multiple industries. Within that opportunity, this outcome focuses on industrial applications of biotechnology, including those emerging from the convergence of biology with AI, advanced computing and other advanced technologies, reflecting their distinct development pathways and routes to market.

Over the next five years, New Zealand will build a globally competitive synthetic and engineering biology capability that translates biological resources, genomic, proteomic and metabolomic capability and research excellence into high-value products, scalable biomanufacturing, waste valorisation processes and export-led companies.

Progress will be seen through stronger synthetic biology and bioprocessing intellectual property and increased business development, stronger commercialisation outcomes, and companies contributing to a circular economy and reduced reliance on fossil-derived feedstocks.

The adoption of solutions and capability developed through this outcome will be supported predominantly through the **Primary Industries and Bioeconomy** pillar and its focus on higher-value bio-based products and industries [PIB 2]. More broadly, this outcome is expected to underpin technology-enabled innovation across all other pillars, with applications adopted and deployed through sector-specific pathways.

We aim to strengthen mission-led synthetic and engineering biology activity that translates New Zealand's biological resources and research capability into scalable industrial applications.

New Zealand has opportunities in the bioeconomy, primary sector integration, sustainable materials, and high-value medical applications. Realising these opportunities requires stronger capability across biological design, translation and scale-up.

Therefore, we will prioritise:

- Investment in mission-led research and innovation activity that connects universities, public research organisations, industry, iwi, Māori research organisations, Māori enterprises and aligned public investments to deliver outcomes in the bioeconomy, sustainable primary production, waste valorisation, synfuels and industrial biotechnology, and medical applications, adapted to New Zealand needs and scale.
- Capability in biological design, microbial development, scale-up, regulatory science and translation from discovery to market. These will reduce technical and regulatory barriers to facilitate deployment and commercialisation.
- Industry-led innovation through co-funding, collaborative R&D programmes and international partnerships to build a pipeline of commercially viable products and companies.

Key dependencies: Delivery will depend on enabling regulatory settings, biological design and scale-up capability, specialist infrastructure, workforce capability, regulatory science expertise, and stronger connections between research capability, industry demand and investment. Delivery will also require improved pathways for translating research into commercial outcomes, including access to scale-up capability, biomanufacturing capacity and shared facilities. High-quality, connected and accessible data systems will be important enablers of future innovation, alongside the ability to integrate biological science with complementary technologies such as AI, advanced computing, engineering and automation.

[TFP 3] Biomedical Technologies

New Zealand's opportunity lies in translating biomedical and animal health research into products, companies and manufacturing capability, rather than focusing solely on strengthening foundational research. Within that opportunity, this outcome focuses on the pathway from research through to translation, trials, development and manufacturing, reflecting the distinct clinical, regulatory and commercial conditions required for success.

Over the next five years, New Zealand will strengthen its biomedical and animal health innovation system, resulting in more high-value compounds entering trials, the development of diagnostics, and enabling technologies and industrial biotechnology processes that support a measurable shift toward locally based development and manufacturing.

Progress will be seen through stronger pathways from discovery and translation through to commercial development and global engagement.

The adoption of solutions and capability developed through this outcome will be supported through the **Healthy People and a Thriving Society** and **Primary Industries and Bioeconomy** pillars as appropriate.

We aim to invest in both biomedical and animal health innovation pipelines, from AI-enabled discovery and world-class medicinal chemistry through to novel manufacturing.

Research being carried out to address technical challenges (i.e., preclinical science for drug discovery or medtech) is relevant to this pillar, whereas research needed to evaluate and apply the technical outputs (i.e. preparatory work to set up clinical trials for drug discovery or medical devices) is relevant to the **Healthy People and a Thriving Society** pillar.

We will focus on areas of demonstrated research excellence and unmet global need, including opportunities where relevant to iwi, Māori research organisations, Māori enterprises and Pacific Peoples, while improving connections between research organisations, health systems, communities and commercial partners.

The application of animal health research developed in this pillar will be supported through the **Primary Industries and Bioeconomy** pillar [PIB 4].

Therefore, we will prioritise:

- Translational biomedical research capability in advanced therapeutics and diagnostics, including technologies such as RNA, cell and gene technologies, and advanced medicinal chemistry approaches, supported by coordinated clinical and regulatory pathways.
- Domestic manufacturing and product scale-up capability, including access to international GMP capability where local scale is insufficient.
- Supporting company formation, growth and internationalisation through co-investment mechanisms, global partnerships and access to capital, recognising New Zealand's structural constraints in venture funding and market scale.

Key dependencies: Delivery will depend on coordinated clinical and regulatory pathways, translational facilities, manufacturing and scale-up capability, access to capital, international partnerships, and stronger connections between research organisations, health systems and industry. Access to capital, co-investment mechanisms and international partnerships will help companies form, grow and internationalise.

[TFP 4] Advanced Manufacturing

New Zealand's opportunity lies in strengthening the pathways that support technology development and commercial adoption, rather than prioritising a static set of enabling technologies. Within that opportunity, this outcome focuses on the mechanisms that connect capability, industry need and commercial opportunity across evolving areas of strength, including advanced materials, photonics, sensing and autonomous systems.

Over the next five years, New Zealand will strengthen nationally connected technology development clusters that link foundational science, applied research, and process innovation to industry partners, iwi, Māori research organisations, Māori enterprises and end-users, including government. This will occur across advanced technologies that offer economic opportunities in advanced manufacturing, such as materials science, agritech (including the tech associated with veterinary science), medtech, sensing, robotics, autonomous systems, quantum and photonics. This is supported by shared technology development pathways, such as technology domain roadmaps, that align researchers, industry, iwi Māori, government and international partners around common technology opportunities and the actions needed to realise them.

Progress will be seen through stronger pathways from research to domestically produced, export-ready high-value goods; growth in high-value manufactured exports; greater domestic and international R&D investment; more internationally significant technology pilots, test programmes and research partnerships; and demonstrable revenue and job growth attributable to publicly funded science.

This outcome is expected to underpin technology-enabled innovation **across all other pillars**, with applications adopted and deployed through sector-specific pathways.

Public investment in advanced manufacturing will be directed towards opportunities with clear pathways to economic benefit and managed in a way that supports both impact and adaptability. This includes considering economic impact from the outset, establishing clear milestones to assess progress, and using decision points that enable investment to be scaled, redirected or concluded as evidence emerges. An adaptable portfolio approach will help ensure investment remains focused on opportunities with the greatest potential to generate returns while remaining responsive to changing circumstances and new opportunities.

We aim to build shared pathways to advanced tech development and commercialisation.

New Zealand needs clearer and more coordinated pathways for developing advanced technologies from discovery through to commercial outcomes. This includes identifying priority technology opportunities, the capabilities and resources needed to realise them, and the actions required to translate research into commercial impact.

Therefore, we will prioritise:

- Investment in nationally connected clusters of research across institutions that link foundational science, applied research, engineering challenges, industry partners, iwi, Māori enterprises and end-users, and maintain renewable, future-facing roadmaps identifying research challenges and pathways to commercial outcomes.
- Supporting shared technology development pathways, such as technology domain roadmaps, that align capability development, partnerships and investment around priority technology opportunities and pathways to commercial impact.
- Supporting capability building through access pathways, cohort opportunities and industry partnerships that develop production processes, tooling and commercialisation pathways needed to compete globally.

We aim to establish structured mechanisms where industry-defined problems are addressed through research partnerships with shared investment.

Research should focus on problems worth solving and real challenges faced by industry. Public investment should support recurring mechanisms that connect firms and researchers around commercially relevant technology opportunities.

Therefore, we will prioritise:

- Structured, sequential industry–research challenge programmes focused on commercially relevant technology opportunities with co-funding, significant industry partnerships, and well-developed commercialisation strategies.

Key dependencies: Delivery will depend on industry participation and co-investment, access to testing and development infrastructure, engineering and commercialisation capability, and coordinated approaches to identifying future technology opportunities and investment priorities. NZIAT will also be critical to delivering these outcomes.

[TFP 5] Space and Advanced Aviation

New Zealand's opportunity lies in developing globally relevant capability that generates value from participation in space and advanced aviation activities, rather than establishing capability across the full value chain. Within that opportunity, this outcome focuses on areas where New Zealand has existing strengths, strategic advantages or credible pathways to international relevance, while recognising strong connections with advanced manufacturing, sensing, communications and AI.

Over the next five years, New Zealand will increase export value from contributions to global space and advanced aviation systems by building a focused set of scalable, internationally relevant capabilities that deliver high-value operational outcomes for domestic and international partners.

Progress will be seen through stronger international partnerships, greater participation in mission-led and co-funded programmes, the coordination of integrated New Zealand-centred missions, and growth in globally relevant capability areas where New Zealand has enduring competitive advantage.

Data generated through initiatives and technologies developed through this outcome will have implications for the **Environmental Sustainability and Resilience** pillar, and applications will be deployed in the appropriate sector-specific pathway.

We aim to align research, industry and government investment around industry-supported, internationally linked challenges that convert New Zealand's geostrategic and technical advantages into commercially scalable programmes.

Public investment should strengthen connections between researchers, industry and international partners so New Zealand organisations can participate in mission-led space and advanced aviation opportunities and respond to globally relevant challenges.

Therefore, we will prioritise:

- Capability that strengthens international market intelligence, partner engagement and deal formation, linking New Zealand research and industry organisations to mission-led opportunities and co-funded programmes.
- Testing, evaluation and validation of capability across advanced manufacturing, edge computing, systems integration and regulated field environments.
- Access to the specialist infrastructure, expertise, equipment and regulatory settings needed to develop, test and deploy space and advanced aviation technologies.

We aim to support integrated, multi-organisation New Zealand-centred space missions that build flight heritage and strengthen national capability in alignment with national values.

New Zealand-centred missions provide opportunities to integrate technologies across the ecosystem while developing capability in systems integration, mission operations and ground segment activities.

Therefore, we will prioritise:

- Nationally coordinated demonstration missions that integrate technologies from across the New Zealand ecosystem.
- System integration capability, flight qualification experience and credible flight heritage for New Zealand technologies.
- Alignment of demonstration missions with commercial opportunities and national capability development.

We aim to focus national effort on a small number of globally relevant and defensible capability areas where New Zealand can achieve sustained competitive advantage.

Investment should build on New Zealand's geographic advantages, existing research strengths and industry capability in space and advanced aviation areas with strong international demand and long-term growth potential.

Therefore, we will prioritise:

- Reusable launch, advanced propulsion and onboard power systems, including green propulsion, green aviation fuels, ion thrusters, battery-electric systems, and hydrogen or ammonia fuel systems.
- Free-space optical communications, quantum-safe communication protocols and space domain awareness technologies that build on New Zealand's geographic and technical advantages.
- Development and application of edge AI and onboard computing for autonomous flight planning, autonomous operations, debris avoidance and spacecraft platform system management.

Key dependencies: Any meaningful delivery will critically depend on agile regulatory settings, specialist testing and operational environments, systems integration capability, advanced manufacturing capability, international partnerships and strong links between research activities and commercial opportunities. Significant land purchases or new infrastructure developments will require strong connections and relationships with iwi, Māori research organisations, and Māori enterprises and innovators.

Credit: NASA/ISS.

[TFP 6] Innovation Sandbox

Innovation sandboxes are controlled real-world environments, spanning regulatory sandboxes, IP sandboxes, testbeds and proving grounds, where advanced technologies are developed, validated and deployed under conditions that manage risk and generate evidence. New Zealand's differentiator is not any single setting but a deliberately assembled package: regulatory access, physical sites, operational partners, data capability and trusted relationships, brought together for a sandbox purpose. Public investment assembles and maintains this package, which no single participant could build alone. Within that opportunity, this outcome focuses on building the capability, partnerships and access pathways needed to host international co-development and ensure technologies validated in one setting can be adapted, adopted and commercialised across the wider innovation system.

Over the next five years, New Zealand will strengthen its position as a recognised environment for the development, validation and deployment of advanced technologies that interact with sovereign infrastructure and natural systems.

Progress will be seen through active international co-development programmes, technologies validated and deployed in New Zealand and adopted in comparable jurisdictions, and stronger institutional capability to provide testability as a deliberate and enduring research asset. This includes regulatory science, data capabilities and operational protocols that support advanced technology development and validation.

The Innovation Sandbox outcome should be viewed as a starting point for initial investment and further coordination across the system. This outcome will have significant overlap with other Technology for Prosperity opportunities, and with **all other pillars**. This overlap, and a more detailed approach, will be further articulated in an update to this Pillar Investment Plan scheduled for 2027.

We aim to strengthen the capability, partnerships and access pathways needed to attract, develop and validate advanced technologies in New Zealand.

New Zealand offers a complete operating environment for technology development and real-world validation. Public investment should strengthen the capability, partnerships and access pathways needed to translate this advantage into sustained research, innovation and investment outcomes.

Therefore, we will prioritise:

- Development through participation, placing early career researchers and cohorts within sandboxes, testbeds and validation programmes so that talent grows alongside the research and technologies being proven.
- Working with Invest New Zealand and other partners to support mechanisms that build the institutional capability needed to host international co-development and validation activity in New Zealand.

We aim to strengthen New Zealand's entrepreneurial environment and advanced technology innovation pathways.

Entrepreneurial capability, global connections and effective commercialisation support are needed to help new ideas progress quickly from research to application and business growth.

Therefore, we will prioritise:

- Investment in incentives and opportunities that enable talented people to rapidly develop and advance new ideas.
- Connections between New Zealand researchers, leading international researchers, innovators and entrepreneurs to strengthen skills, capability and global networks, particularly within universities.
- Strengthening technology transfer, commercialisation capability and postgraduate pathways that encourage innovation, company formation and business growth.

We aim to strengthen connections between technology development and the wider research and innovation system.

Advanced technologies often enable outcomes delivered through other sectors and pillars. Stronger connections across disciplines and investment areas will support implementation, uptake and impact.

Therefore, we will prioritise:

- Mechanisms that carry advanced technologies across sector and pillar boundaries, so that capabilities proven in one setting are rapidly adapted and validated in others.
- Building connections between researchers, developers and adopters across disciplines, opportunity areas and investment portfolios, recognising that people moving between domains are the primary channel through which technologies cross-fertilise.
- Ensuring evidence from validation activity flows to those who can act on it, linking sandbox outcomes to commercialisation pathways, investment partners and adoption opportunities across the research and innovation system.

Key dependencies: Delivery will depend on regulatory settings that enable technology testing and validation, access to public and shared data, appropriate intellectual property arrangements (including trial-before-licence approaches), and liability settings that support innovation while managing risk. Success will also rely on attracting international partners, capital and market pathways, supported by the capability, infrastructure and commercialisation systems needed to move technologies from testing and validation through to adoption and scale. Many of these settings sit outside science funding but are important enablers of successful sandbox activity.

Advanced Energy

[TFP 7] Powering New Zealand's Future

New Zealand's opportunity lies in creating smarter and more integrated energy systems that improve productivity, resilience and long-term economic competitiveness, rather than focusing solely on the development of individual energy technologies. Within that opportunity, this outcome focuses on the system-level planning, optimisation and transition pathways needed to make effective use of New Zealand's renewable energy resources across electricity, transport and industrial energy use, reflecting the importance of affordability, reliability and system-wide coordination to future prosperity.

Over the next five years, New Zealand will improve economic productivity through greater access to abundant, renewable domestic and industrial energy sources, supported by research-informed integrated energy system design across transport, process heat and electricity supply.

Progress will be seen through more coordinated energy system planning, improved use of New Zealand's renewable energy advantages, and energy pathways that strengthen cost competitiveness relative to key trading partners. Implementation of these pathways will also support New Zealand's longer-term transition toward net zero energy-related greenhouse gas emissions by 2050.

The adoption of solutions and capability developed through this outcome will be supported through the **Environmental Sustainability and Resilience** pillar.

We aim to concentrate research investment on the most significant opportunities and challenges in New Zealand's energy system.

New Zealand has significant advantages, including the potential for increased renewable energy production and globally significant geothermal resources. It also faces challenges arising from its geography and continued reliance on fossil fuels for transport and industrial process heat. Research should support integrated system design and identify the most effective pathways for transition.

Therefore, we will prioritise:

- Mission focused research priorities developed with strong input from industry, iwi, Māori enterprises, peak bodies, regulators and energy users.
- Understanding the system, business and individual adoption behaviours, including the incentives, culture change and social factors that influence energy transitions.
- Research addressing key energy system bottlenecks and opportunities linked to New Zealand's geographic and economic circumstances.

We aim to weight research investment towards system-level planning and technologies based on New Zealand's geography and economic profile.

Research should support smart and sensitive resource management and resource use processes to gain the highest value at the lowest cost from New Zealand's renewable energy resources, including cultural and environmental costs.

Therefore, we will prioritise:

- Research into smart resource management and resource use that facilitates high-value, low-cost use of New Zealand's renewable energy resources.
- Research on DC electricity transmission, network innovation, and integrated renewable energy generation, storage and distribution systems.
- Supply and demand management innovations that balance daily and seasonal demand across renewable energy generation, storage and distribution.

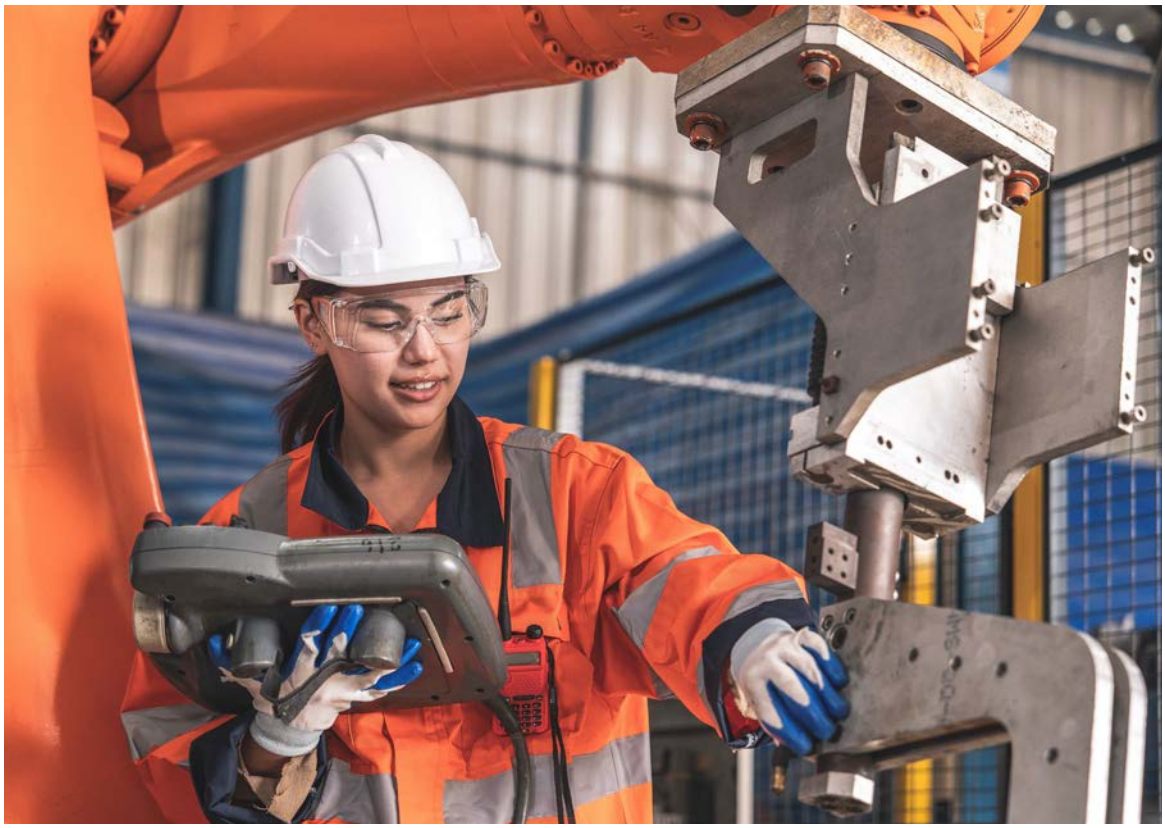
We aim to identify optimal transition strategies for economically decarbonising industrial process heat, transport fuels and potential renewable energy export pathways.

Research should focus on practical and cost-effective mechanisms that reflect New Zealand's relatively isolated location, economic profile, key industry sectors, and opportunities to create prosperity from renewable energy.

Therefore, we will prioritise:

- Economically viable transition strategies for industrial process heat, with emphasis on decarbonising high-temperature (>150°C) process heat and industrial processes, including electrification and substitution with renewable biofuels, hydrogen and ammonia.
- Transport fuels optimisation and innovation relevant to New Zealand's key industries, including aviation and other sectors where decarbonisation is most challenging.
- Research into potential pathways for domestic renewable energy transitions, including whether intentionally building more renewable generation than the domestic grid requires (i.e. a "120% renewables pathway" approach) could generate significant prosperity, and what mechanisms and system design would be most appropriate and cost-effective for New Zealand.

Key dependencies: Delivery will depend on access to high-quality energy system data, modelling capability and decision-support tools that can inform long-term system planning. Success will also require coordination across researchers, regulators, network operators, energy users and investors, supported by regulatory and market settings that enable efficient investment and system integration. Understanding the economic, behavioural and social factors that influence energy adoption and transition decisions will be an important complement to technology development.



Advanced Energy

[TFP 8] Advanced Energy Technologies

New Zealand's opportunity lies in developing advanced energy technologies that strengthen the performance, intelligence and flexibility of future energy systems, rather than pursuing capability across the full range of energy technologies and energy vectors encompassed by the SIP opportunity. Within that opportunity, this outcome focuses on technologies and capabilities that can be developed, tested and commercialised in New Zealand, including smart energy systems, digital control, sensing, optimisation and enabling energy technologies that build on New Zealand's existing strengths, comparative advantages and pathways to international relevance.

Over the next five years, New Zealand will develop a globally competitive advanced energy sector that translates research capability, renewable energy advantages and innovation into high-value low-carbon products, services and technologies for global consumer and industrial energy markets.

Progress will be seen through New Zealand increasingly recognised as a location for energy system development, testing and deployment, attracting inward investment and supporting the growth of both existing and emerging energy companies. Strong advanced energy research capability is translated into commercial opportunities, supporting founder-led and investor-backed firms, the expansion of established energy companies, and greater participation in global low-carbon energy value chains.

The adoption of solutions and capability developed through this outcome will be supported through the **Environmental Sustainability and Resilience** pillar.

We aim to invest across a range of technology readiness levels where there is a clear need for advanced energy innovation and clear market opportunity.

New Zealand benefits from maintaining strong fundamental and applied research capability while strengthening the pathways through which research connects with commercial developers, international partners, investors and emerging energy companies.

Therefore, we will prioritise:

- Balancing fundamental and early-stage applied research capability and growing productive connections with commercial developers, international partners and investors.
- Research and innovation across technologies and systems that address New Zealand's energy needs and build on areas of natural advantage.

We aim to develop advanced energy technologies and systems that address New Zealand's unique conditions and create internationally relevant commercial opportunities.

New Zealand's geography, scale, economic profile and regulatory environment provide opportunities to develop, test, demonstrate and deploy advanced energy solutions, creating commercially relevant technologies and services with global market potential.

Therefore, we will prioritise:

- Cleantech systems and processes, power systems and power electronics, geothermal and marine energy, and technologies that could support affordable, decarbonised, sustainable aviation.
- Smart energy use, storage and management systems, including sensor-enabled approaches that better match supply, storage and time-critical demand.
- Chemical and biochemical energy storage, conversion and process technologies, and innovations in electricity transmission, storage and distribution that respond to New Zealand's geographic context and strengthen links between research, regulation and commercial deployment.

We aim to strengthen resilient, secure and integrated energy systems.

Energy systems must remain reliable and adaptable across local, regional and national scales while supporting commercial adoption and responding to natural hazards and changing energy demands.

Therefore, we will prioritise:

- Research supporting electricity grid resilience and security, from integrated household, business-level or on-farm generation and storage systems through to system-level resilience modelling and mitigation.
- Coordinating with the **Environmental Sustainability and Resilience** pillar to invest in research addressing energy system performance, reliability and continuity in response to natural hazards such as floods, fires, high-wind events, earthquakes and solar weather risks

Key dependencies: Delivery will depend on access to specialist testing and demonstration environments, engineering capability, digital and physical research infrastructure, and strong pathways between research organisations, technology developers, energy companies and investors. Success will also require commercialisation capability, international partnerships and investment settings that support the development, validation and deployment of technologies with credible pathways to adoption and market impact. Outcomes will leverage or build on existing or new industry energy policies, as appropriate.

Primary Industries and Bioeconomy

Ahu Matua me te Ōhanga Koiora

The Primary Industries and Bioeconomy pillar will play a central role in supporting New Zealand's economic growth by strengthening the productivity, resilience, sustainability and value capture of sectors that rely on biological and natural resources. For the purposes of this pillar, the primary industries and bioeconomy encompass the core bioeconomy and wider sectors, including primary production (horticulture, agriculture, livestock, forestry, fisheries, aquaculture and viticulture), resource sectors (minerals, oil and gas), and bio-based manufacturing, including bio-based products, ingredients and nutraceuticals. This Pillar Investment Plan adopts a system-wide perspective, recognising not only primary production and immediate processing, but also the wider industries that depend on, and add value to, biological resources.

The pillar will invest across the innovation pathway, from foundational science and enabling capability through to applied research, technology adoption and commercialisation. Investment will support the responsible use of biological and natural resources, including distinctive opportunities arising from the relationship of iwi and Māori enterprises with these resources, and the development of new products, processes and markets. The pillar should be viewed both as a sector-focused investment portfolio and as an application environment for advanced technologies developed across the wider science, innovation and technology system. Future performance will increasingly depend on combining biological science with artificial intelligence, automation, sensing, engineering, advanced materials, digital platforms and low-emissions processing technologies. Investment design will therefore support innovation flows across pillars and avoid artificial boundaries between biological and technological innovation.

Pillar investment trajectory

This Pillar Investment Plan has been developed in the context of a rebalancing of public Science, Innovation and Technology portfolio investment across the system, alongside growing expectations that private investment and public-private co-investment will play a greater role in lifting productivity and accelerating the adoption of new technologies and ideas. In 2025/26, research within the scope of the pillar accounted for approximately 29% of total Science, Innovation and Technology portfolio investment. By 2029/30, the pillar is expected to represent around 22% of the overall Science, Innovation and Technology portfolio investment, with an indicative annual investment of approximately $194 million. This reflects the rebalanced investment profile signalled through the Science Investment Plan and wider science system reforms, while maintaining a strong focus on areas that can deliver long-term economic, environmental and social benefits for New Zealand.

As existing commitments conclude and funding becomes available for reinvestment, investment will increasingly be directed towards the pillar's priority opportunities. While investment will continue across all opportunity areas, the future portfolio places greater emphasis on high-value bio-based products and advanced processing capability, high-tech enabled production systems, and opportunities that strengthen technology adoption and value capture across the bioeconomy.

Translating long-term opportunities into outcomes and investments

Table 2 shows the relationship between the Science Investment Plan opportunities and the pillar outcomes and indicates the relative direction of investment over the five-year period.

Table 2. Relative investment size of opportunity areas, currently (2025/26) and by the end of this Pillar Investment Plans period (2030/31). These weightings should be considered in the context of the overall decrease in pillar funding.

Science Investment Plan opportunity	**Outcome**	**Current investment**	**Future investment**
Support world-leading approaches to **biosecurity**, by enabling prevention, early detection and rapid response to diseases and invasive species, through integrated surveillance, diagnostics and system-level monitoring of value chains.	PIB 1	Medium	Medium
Create **high-value products, advanced processing capability and IP** by building on New Zealand's primary strengths, including premium foods, ingredients, nutraceuticals, advanced materials, chemicals and **bio manufactured products**.	PIB 2	Medium	Large
	PIB 3	Small	Small
Promote resilient, **productive and sustainable production** systems, by developing science that supports adaptive, low-impact production systems, including through the genetic improvement of plant, animal, fish and forestry species to lift productivity and climate resilience	PIB 4	Very Large	Large
Develop **high-tech enabled production systems** – technology to be integrated, tested and adapted to real-world primary production, unlocking precision production, resource efficiency and robust traceability across supply chains.	PIB 5	Small	Medium
Work to become a trusted, low-impact supplier of **critical minerals** by doing science that supports lower-impact exploration, extraction, and processing of mineral and **energy resources**.	PIB 6	Small	Small
Enabling activities across all four pillars.		Small	Small

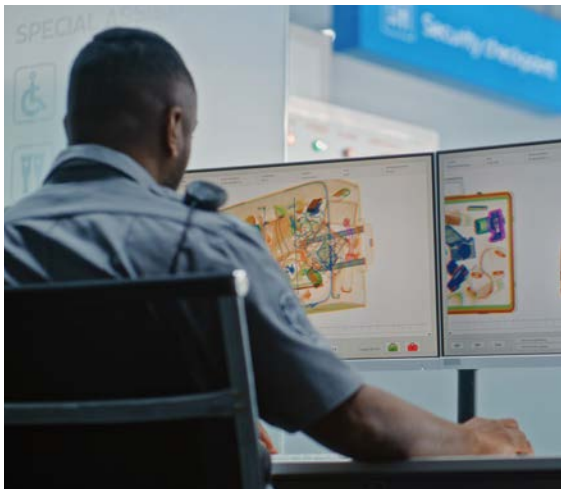
[PIB 1] Biosecurity surveillance, detection and response

New Zealand's biosecurity system will make greater use of integrated surveillance, advanced diagnostics and system-level monitoring to protect the primary sector and economically significant indigenous flora and fauna from diseases and invasive species. Within five years, progress will be evident through connected surveillance and diagnostic systems, prevention through earlier detection of priority and emerging threats, and faster responses that reduce economic and productivity losses.

This opportunity underpins the viability of New Zealand's bioeconomy by reducing the risk that major incursions disrupt production, biodiversity or regional economies and protecting our major bio-based exports. Success will require science investments that support coordinated action by industry, government and other system participants.

The Government expects to maintain current levels of science funding for biosecurity in the context of overall reprioritisation between pillars. The Ministry for Primary Industries, working with relevant industries, will continue to be responsible for putting this science into practice through monitoring, readiness and response.

Biosecurity proposals should be aligned to the pillar that best reflects their primary objective: supporting production systems (this pillar) or protecting ecosystems (**Environmental Sustainability and Resilience** [ESR 3]). This pillar will coordinate with the **Technology for Prosperity** pillar on the development and adoption of relevant novel technologies with biosecurity applications.



We aim to strengthen integrated surveillance and diagnostic capability across biosecurity settings.

New Zealand needs interoperable tools, data standards and governance arrangements that connect surveillance and diagnostics across border, environmental, production and processing settings, drawing on Indigenous knowledge systems where relevant.

Therefore, we will prioritise:

- Science underpinning standards, data architecture and governance needed for a national integrated information surveillance platform.
- Research into tools and methods that improve the speed, reliability and scalability of pest and disease detection, including high-throughput and field-deployable capabilities.

We aim to enable earlier, more reliable detection of priority pests, pathogens and invasive species.

Earlier detection depends on better risk intelligence, pathway monitoring and prioritisation of threats with the greatest likelihood and potential economic impact.

Therefore, we will prioritise:

- Predictive modelling, risk assessment and pathway monitoring to reduce uncertainty about incursion likelihood, spread and impact, and target surveillance towards high-risk threats.
- Research into the detection of low-prevalence and emerging threats across value chains.

We aim to improve the speed, targeting and effectiveness of biosecurity responses.

Science should support faster decisions, better coordination and more effective control and eradication tools.

Therefore, we will prioritise:

- Incursion modelling and decision-support systems research.
- Development of affordable, effective and socially acceptable tools for border control and eradication that target high-value and high-risk incursions.

[PIB 2] High-value bio-based products, processing and IP

Over the next five years, New Zealand will strengthen its position as a high-value bioeconomy by turning primary-sector biomass, biological resources and side-streams into biofuels, premium food and non-food products, advanced ingredients, biomaterials, biochemicals and bio-manufactured products, taking advantage of New Zealand's established biological knowledge base.

Progress will be evident through stronger product platforms, grewater domestic scale-up capability, and improved value capture through IP, standards, provenance, regulatory readiness and partnerships, including Māori and iwi partnerships.

The Government considers this outcome merits a high level of ongoing investment and expects to maintain current funding levels in this area in the context of wider reprioritisation.

Investment will focus on a small number of high-potential sectors, identified through future investment processes. This outcome will prioritise industry-led and partnered research.

This opportunity will be closely aligned to biotechnology solutions and capability developed through the **Technology for Prosperity** pillar [TFP 2], and, where relevant, the clinical evaluation of biologically active substances and functional ingredients through the **Healthy People and a Thriving Society** pillar [HPTS 3]. Circular economy proposals should be aligned to the pillar based on their primary feedstock, biological resources and side streams (this pillar) or non-biological resources (**Environmental Sustainability and Resilience** [ESR 4]).

We aim to support industry-led research that develops high-value product and ingredient platforms from New Zealand's biological strengths with the potential to scale.

Public investment should connect discovery science, product development and early commercial validation, enabling promising ideas to move into product-ready platforms and generate value through physical products, knowledge-intensive exports and international value chains.

This will enable startups and bioeconomy entrepreneurs to demonstrate performance, validate production processes and de-risk new technologies and products before investing in full-scale commercial facilities.

Therefore, we will prioritise:

- Investing, alongside industry, in science that identifies, characterises and validates biological materials, bioactive compounds, ingredient functionality and product performance to support high-value products, market differentiation, and the responsible use and stewardship of indigenous species and related mātauranga Māori.
- Programmes with industry co-investment and demonstrated market demand that integrate product, process and commercial validation, including early IP assessment, techno-economic assessment and regulatory alignment.

We aim to build advanced processing and biomanufacturing capability that creates Intellectual Property and retains more value in New Zealand.

New Zealand needs stronger domestic capability to scale and manufacture bio-based products, including shared facilities accessible across sectors and regions.

Therefore, we will prioritise:

- Future research infrastructure investments in pilot-scale and pre-commercial processing capability, including extraction, separation, fermentation conversion and integrated bioprocessing technologies.
- Science that applies integrated biorefinery a nd cascading-use approaches to transform side-streams, residues and underused biomass into higher-value ingredients, biomaterials and biochemicals.
- Bringing together diverse feedstocks and complementary processes across sectors to maximise the value of whole biomass systems, using process modelling, life-cycle assessment and market-validation signals to identify synergies and prioritise scalable opportunities.

We aim to strengthen systems that enable market access, trust and value capture.

High-value, bio-based products need robust evidence, standards, regulatory pathways and commercial models to succeed in premium markets. While strengthening product assurance, regulatory readiness and commercialisation pathways is a whole-of-system challenge requiring coordinated action across government, industry, investors and research organisations, science investment provides the evidence, capabilities and tools that underpin market access, trust and value creation.

Therefore, we will prioritise:

- Investing, alongside industry, in substantiating product claims, provenance, traceability, safety, efficacy and environmental performance.
- Science that underpins regulatory standards development and risk assessment to enable faster entry into global markets.

[PIB 3] Building bio-based value systems from our unique biological resources

New Zealand's primary industries and bioeconomy will increasingly develop globally differentiated bio-based commercial value systems grounded in New Zealand's unique biological resources, indigenous knowledge systems, provenance and integrated wellbeing approaches.

Progress will be evident through next-generation indigenous value chains that connect food and ingredients, health, biotech, environmental integrity and cultural identity into trusted platforms for domestic and export markets. This will retain more value for New Zealand while supporting intergenerational stewardship of biological resources.

The Government considers this outcome merits a modest level of ongoing investment; however, we expect this outcome to also be supported through investment in the high-value bio-based products [PIB 2] and the high-tech enabled production systems [PIB 5] outcomes.

We aim to enable indigenous innovation models and ecosystem-based commercialisation pathways.

The Māori economy is growing significantly faster than the overall New Zealand economy. Science investment can enhance this growth by bolstering pathways that integrate Māori innovation, cultural integrity, environmental stewardship and market differentiation.

Therefore, we will prioritise:

- Research involving biological resources that is guided by responsible frameworks, including IP, data, access, utilisation and benefit-sharing frameworks to strengthen accountability, trust and social licence among iwi, hapū, families and wider communities, enabling growth in innovation and value creation (in coordination with the **Environmental Sustainability and Resilience** pillar).
- Enabling pathways that increase domestic value capture from biological resources through investment, enterprise development and market participation, including distinctive opportunities arising from the relationship of Māori enterprises with these resources.
- Investing in provenance validation and digital traceability systems that strengthen trust, authenticity and market differentiation

We aim to validate bioactive products that are unique to New Zealand for domestic and export markets.

New Zealand needs stronger evidence of quality, safety and efficacy for bioactive products and novel foods and ingredients that are grounded in our unique biological resources and knowledge systems to meet market expectations.

Therefore, we will prioritise:

- Investing in technology-enabled discovery and development of novel foods, bioactive ingredients and wellbeing products that meet future consumer demand.
- Enabling market access by investing in science that supports quality, safety and efficacy requirements for novel foods and bioactive products in domestic and international markets.

We aim to build capability in next-gen bio-based value chains and ethical production at scale.

To enable next-gen bio-based value chains and ethical production at scale, capability is needed in key areas, including synthetic biology, bioprocessing, responsible cultivation of indigenous species, and relational entrepreneurship.

Therefore, we will prioritise:

- Coordinating with **Technology for Prosperity** pillar investments in synthetic biology and bioprocessing capability [TFP 2] to support the ethical development of unique bio-based products.
- Investing in science and capability that support the responsible stewardship and cultivation of indigenous species alongside advanced lab-scale processing capability.
- Building commercialisation capability, including for Māori research organisations, researchers, entrepreneurs, SMEs and business clusters.

We aim to grow, secure and retain value for New Zealand.

Therefore, we will prioritise:

- Co-investing in research with domestic and international partners to validate product efficacy in priority markets, verify demand, and secure high-value distribution channels.
- Science that supports the development of industry-led standards for the safety, quality and ethical traceability of New Zealand bio-based products for export.
- Transdisciplinary research that supports a coherent domestic approach to the regulatory registration and protection of products, extracts and ingredients derived from our unique biological resources in key overseas markets

[PIB 4] Resilient, high-performing and sustainable production systems

Over the next five years, New Zealand's primary producers will increasingly be using science-validated, low-impact production systems that lift productivity and profitability while reducing climate, biological and environmental risks. This includes improved plant, animal, fish and forestry genetics, data-informed decision tools, robust measurement, and system designs that incorporate a range of land-use models and knowledge systems. These systems should be regionally suitable and able to respond to changing market, environmental and regulatory conditions. Where systems involve mātauranga Māori, Māori-held data, or resources of significance to Māori, consideration will be given to appropriate benefit-sharing, data governance and stewardship arrangements.

Progress will be evident through wider use of climate-resilient genetics, land-use optimisation, integrated management practices, improved product quality, reduced system losses and verifiable reductions in impacts per unit of output.

The Government considers this outcome merits a high level of ongoing investment, however support for this area will become more targeted because of reprioritisation across pillars. Industry is expected to take a larger role in productivity-enhancing and production-system improvement research. Industry-led and partnered research will be prioritised. We expect research in this outcome to align with the high-tech enabled production systems outcome [PIB 5], the **Environmental Sustainability and Resilience** pillar's ecosystem and climate research [ESR 2,3], and relevant technology solutions and capabilities, including AI and machine learning, developed through the **Technology for Prosperity** pillar.

We aim to accelerate climate-resilient genetic improvement through shared national capability in partnership with sector groups and established businesses.

New Zealand needs coordinated genomics, phenomics and breeding capability that supports productivity, resilience and faster translation from discovery to selection across priority species.

Therefore, we will prioritise:

- Identifying genes and variants that drive commercially valuable traits, creating protectable IP and enduring economic value for New Zealand.
- Partnered investments into shared genomics and phenomics platforms, including reference genomes, biobanks, trait libraries, high-throughput phenotyping and analytics, and new breeding technologies, as regulatory settings allow.
- Long-horizon pre-breeding and genetic improvement research partnerships, including multi-environment trials that test performance under climate, disease and production pressures.

We aim to invest in sector group-led research into integrated low-impact production systems that perform under constraints.

Science should help producers future-proof their industries, enabling agile adaptation to climate variability, environmental limits and changing market expectations while lifting productivity across a range of scales from individual paddocks and pens, through farms and catchment groupings, to regions and national value chains.

Therefore, we will prioritise:

- Whole-system research that integrates genetics, physiology, agronomy, silviculture, aquaculture, climate risk science and relevant mātauranga Māori.
- Investing in transdisciplinary research that works with communities to address adoption barriers, including social license, to maximise the uptake of science and technology solutions that contribute to economic growth and environmental improvement.
- Supporting partnered research into measurement, modelling and verification tools that quantify trade-offs across production, animal wellbeing, emissions, water, soils, biodiversity and resilience

We aim to enable shared data, measurement and decision-support assets for producers and technology providers in emerging sectors.

Trusted data standards and analytical methods are needed to support precision management, traceability tools and evidence-based decision-making across a range of systems. Public investment will prioritise enduring reference datasets and shared national assets where these create value across sectors.

Therefore, we will prioritise:

- Science that underpins interoperable data standards, reference datasets, privacy-preserving data sharing, and common architectures.
- Developing rapid testing methods, decision-support components and benchmarking tools that can be embedded in commercial and regional solutions.
- Research that reduces barriers to adopting data-driven tools and decision-support systems for small and medium-sized businesses.

[PIB 5] High-tech enabled production systems

New Zealand's primary producers, processors, entrepreneurs and technology providers will increasingly use connected real-world testbeds to adapt, integrate and validate high-tech production, quality and integrity systems under New Zealand operating conditions. By the end of the five-year period, testbeds will be emerging that generate trusted evidence and practical guidance to accelerate the use of technology solutions across food, fibre and natural resources value chains. This includes understanding where technologies create value, where they do not, and how they can be deployed in different operating contexts.

Progress will be evident through field-validated technology stacks, clearer evidence of productivity, input-efficiency, environmental and labour benefits, and stronger guidance on how different businesses and value-chain participants can adopt and capture value from high-tech systems.

Agritech for primary sector productivity and technology export growth will be developed through the **Technology for Prosperity** pillar [TFP 4], with this pillar focusing on adaptation, validation and implementation research and uptake in primary-sector contexts.

The Government considers this outcome merits a modest level of ongoing investment to complement investment through the **Technology for Prosperity** pillar; however, we expect this outcome to also be supported through investment in the high-value bio-based products, sustainable production systems and critical minerals outcomes

We aim to partner with established businesses to integrate and validate high-tech production systems in real-world conditions.

Science should help adapt promising technologies to New Zealand's diverse production systems, ownership models and value chains, prioritising opportunities and leverage points where technologies can scale and unlock wider system value.

Therefore, we will prioritise:

- Applied research that tests technologies for productivity, resource efficiency, labour constraints, traceability, product safety and environmental performance across high-impact, scalable food, fibre and natural resource use cases.
- Transdisciplinary testbeds that bring together: production science, engineering, data science, human factors, relevant mātauranga Māori, economics and implementation partners to assess performance, usability, risk and scalability.
- Transdisciplinary research that improves understanding of adoption barriers, implementation pathways and farm- and catchment-group decision-making.

We aim to strengthen the pathways needed for primary sector technology adoption.

Technology adoption depends on trusted evidence, practical deployment models and confidence that tools are usable, scalable and valuable.

Therefore, we will prioritise:

- Horizon scanning, technology assessment and adaptation research to identify promising domestic and international technologies.
- Co-investing into partnerships with technology companies, industry groups, Māori enterprises and public agencies that can demonstrate and scale solutions.
- Supporting testbed and deployment models that demonstrate credible impact within two to three years, and redesigning or discontinuing activities that are not on track to deliver benefits.

[PIB 6] Critical minerals and low-impact resource development

New Zealand will strengthen the science base needed to become a trusted, low-impact supplier of critical minerals and related resource technologies, supporting supply chain resilience and unlocking greater economic value for New Zealand. Within five years, research will support better understanding of New Zealand's resource potential, successful exploration and lower-impact extraction, and new processing, recycling and recovery methods.

Progress will be evident through improved access to evidence on critical mineral resources, pilots for lower-impact extraction and processing technologies, and new intellectual property, technologies and processes with domestic and international relevance.

The Government considers this outcome merits a modest level of initial investment, with public funding expected to grow from a small base. The initial focus will be foundational research to derisk potential future co-investable opportunities, readying the area for larger-scale investment in future Pillar Investment Plan cycles.

We aim to improve understanding of New Zealand's critical mineral resources and their potential value.

Better understanding of New Zealand's mineral systems and resource potential, both onshore and offshore, will support the discovery of new mineral resources, inform investment decisions, and address adoption barriers through working with communities and other stakeholders.

Therefore, we will prioritise:

- Mineral systems science, geological surveys and exploratory science, including the adoption of technology solutions and capabilities developed through the **Technology for Prosperity** pillar [TFP 1,4], to support mineral discovery and improve understanding of resource location, composition and accessibility.
- Science and long-term capability that underpin the public datasets needed for decision-making, including work on in-ground resources, tailings and other potential feedstocks.

We aim to support lower-impact design, extraction and rehabilitation methods.

Science should help ensure critical minerals activity is developed responsibly, with strong environmental performance, transparency and meaningful engagement.

Therefore, we will prioritise:

- Investing, alongside industry, in research and pilots that support best practice in mine design, extraction methods, automation and site rehabilitation.
- Coordinating with the **Environmental Sustainability and Resilience** pillar [ESR 3] to better understand the ecosystems around critical mineral deposits. This will ensure environmental governance is informed by robust evidence and supports the responsible economic development of New Zealand's mineral endowment.

We aim to develop processing, recycling and recovery technologies that increase domestic value capture.

New Zealand has opportunities to move further along selected critical mineral value chains and develop exportable expertise in lower-impact processing.

Therefore, we will prioritise:

- Investing, alongside industry, in applied science for low-impact minerals processing, recycling and recovery, including approaches that support circularity.
- Applications of materials science, including technology solutions and capabilities developed through the **Technology for Prosperity** pillar [TFP 4], with the potential to extract value from novel resources and waste streams, prioritising credible pathways to domestic value capture, industry uptake and co-investment.
- Coordinating with the **Environmental Sustainability and Resilience** pillar [ESR 4] on science that enables circular solutions to be designed, integrated and scaled across the economy.

Environmental Sustainability and Resilience

Taiao Toitū, Taiao Toiora

The Environmental Sustainability and Resilience pillar will provide the foundational understanding of environmental systems, climate change, risks and resilience needed to support informed decision-making across New Zealand. It focuses on the science, data, monitoring, modelling, capability and infrastructure required to protect and restore natural capital, manage environmental risks and strengthen long-term resilience.

The pillar takes a system-wide approach, recognising the connections between climate, natural hazards, biodiversity, biosecurity, land, freshwater, oceans, energy and resource use. Investment will support trusted environmental evidence and decision tools that help government, hapū, iwi, businesses and communities anticipate change, assess trade-offs and make better decisions about planning, infrastructure, investment and environmental management. Trusted environmental intelligence depends on appropriate arrangements for the collection, sharing, use and stewardship of environmental data and knowledge. This supports stronger decision-making, long-term monitoring and the effective application of research across New Zealand

Many critical capabilities depend on long-term funding and specialised expertise that can be difficult to rebuild once lost. Monitoring networks, national datasets, modelling systems and specialist research capability are essential for decision-making but often lack natural commercial customers and rely heavily on science infrastructure investment. The concentration of investment in major capability areas also creates dependencies on a relatively small number of institutions, infrastructure assets and expert communities.

Pillar investment trajectory

In 2025/26, research within the scope of the pillar accounted for approximately 30% of total science investment. By 2029/30, the pillar is expected to represent around 24% of the overall science investment portfolio, with an indicative annual investment of approximately $204 million. This reflects the rebalanced investment profile signalled through the Science Investment Plan.

As existing commitments conclude and funding becomes available for reinvestment, investment will increasingly be directed towards the pillar's priority opportunities. While investment will continue across all opportunity areas, the future portfolio places greater emphasis on maintaining nationally significant capability in integrated multi-hazard and climate risk science, and increasing investment in actionable climate science.

Translating long-term opportunities into outcomes and investments

These outcomes reflect the different ways in which environmental science, evidence and capability contribute to national resilience, environmental stewardship and informed decision-making. Table 3 shows the relationship between the Science Investment Plan opportunities and the pillar outcomes and indicates the relative direction of investment over the five-year period.

Table 3. Relative investment size of opportunity areas, currently (2025/26) and by the end of this Pillar Investment Plans period. These weightings should be considered in the context of the overall decrease in pillar funding.

Science Investment Plan opportunity	Outcome	Current investment	Future investment
Enable integrated multi-hazard and climate risk science that strengthens forecasting, engineered preparedness, land-use and infrastructure decisions at national, regional and local levels.	ESR 1	Large	Large
Actionable climate science that provides robust, accessible evidence, models and decision-support tools to inform mitigation and adaptation choices and build long-term environmental resilience across regions and sectors.	ESR 2	Medium	Large
Supporting system-scale nature recovery through science to deliver real-world tools and integrated methods for prioritised, demonstrable and cost-effective recovery of species and ecosystems across land, freshwater and marine environments.	ESR 3	Medium	Medium
Support cleaner energy systems by investing in effective renewable generation and economy-wide electrification, with evidence to site, design and operate clean electricity and low-emissions fuel systems.	ESR 4	Small	Small
Create integrated circular systems where science supports system-level methods, processes and decision frameworks that allow circular production and Greentech solutions to be designed, integrated and scaled across the economy.			
Science to support environmental governance, policy and regulation – covering settings, standards, incentives, behaviour change, decision frameworks and lifecycle assessment.	ESR 5	Small	Small
Antarctic and Southern Ocean stewardship is a distinct area requiring dedicated visibility and coordination. While relevant to multiple ES&R opportunities, maintaining a focused Antarctic and Southern Ocean science capability is important to support New Zealand's stewardship obligations, international commitments, and strategic interests.	ESR 6	Small	Small
Enabling activities across outcomes and pillars		Small	Small

[ESR 1] Enable integrated multi-hazard risk science that strengthens forecasting, engineered preparedness, land-use and infrastructure decisions at national, regional and local levels

Over the next five years, New Zealand will strengthen its ability to anticipate, manage and reduce multi-hazard (including climate) risk through integrated science, data and decision-support tools.

In this context, "multi-hazard" encompasses a wide range of hazards and their potential interactions, including compound and cascading events. It does not require all hazards to be incorporated into a single universal model or framework; hazard-specific science, methods and tools will continue to be used where appropriate.

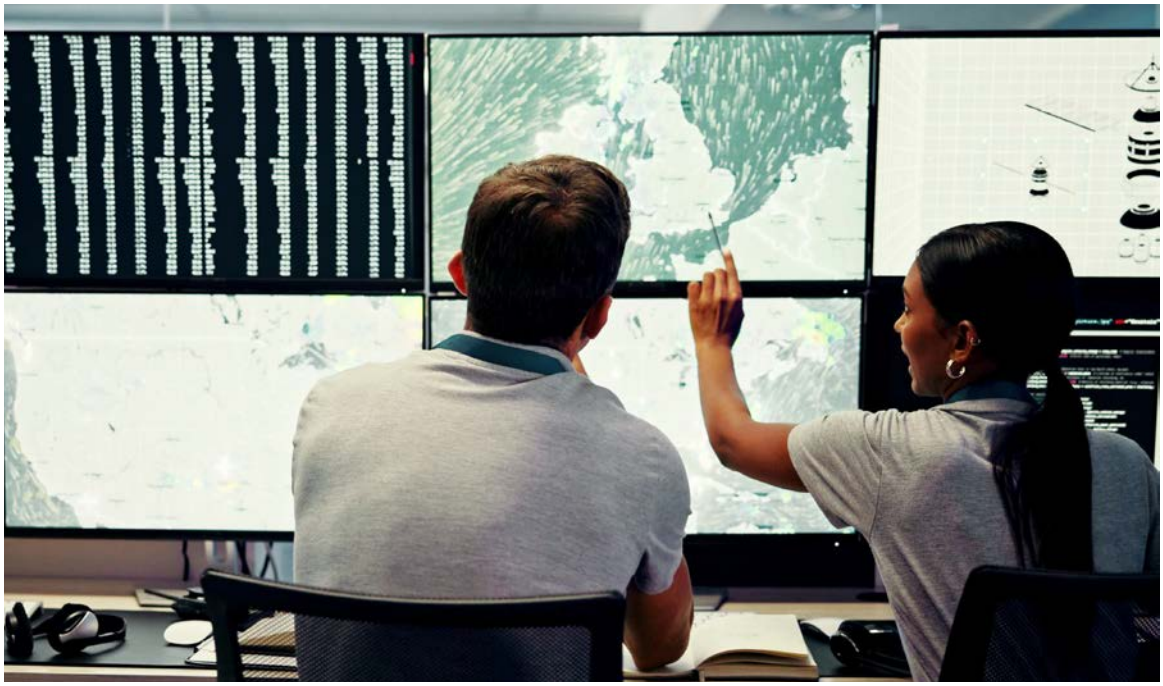
Decision-makers, including government, hapū, iwi, infrastructure providers and communities, will use risk information and consistent frameworks across multiple hazard types to guide land-use planning, infrastructure investment and emergency management. Research will support clear pathways for evaluating costs, benefits and trade-offs and translating information into action, and facilitate continuous learning from post-event experience.

Progress will be evident through better-aligned risk management across hazards and timeframes, stronger forecasting and situational awareness, and more coordinated response and recovery.

Publicly accessible risk information will routinely inform planning, infrastructure investment and emergency response decisions through clear thresholds and shared frameworks.

Preparedness, response, recovery, and long-term adaptation and risk mitigation will become increasingly integrated through shared intelligence and coordinated decision-making and governance across government, hapū, iwi, businesses, researchers and communities. Social, behavioural and cultural dimensions, including relevant mātauranga Māori, will be embedded in risk understanding and decision-making, contributing to more equitable outcomes and reduced exposure and vulnerability to hazards over time.

This outcome will support adaptation and resilience measures across the **Primary Industries and Bioeconomy** pillar, and research into hazard-related health, wellbeing, recovery and community resilience outcomes through the **Healthy People and a Thriving Society** pillar. We will coordinate with the **Technology for Prosperity** pillar on enabling technologies and digital decision-support capabilities relevant to hazard intelligence, response and recovery.



We aim to provide decision makers with trusted risk information that supports resilient planning, investment and adaptation decisions.

Public science investment complemented where appropriate by hapū, iwi or industry co-investment will focus on creating national capability and a consistent, accessible and usable evidence-base to connect hazard, exposure and vulnerability with current and future risk. We will coordinate with the **Technology for Prosperity** pillar [TFP 1] where digital, sensing or modelling capabilities are needed to translate hazard, exposure and vulnerability information into usable risk intelligence.

Therefore, we will prioritise:

- Nationally consistent, interoperable datasets and securely linked national data, such as the Integrated Data Infrastructure, to combine hazard, exposure and vulnerability information across scales within analytical risk assessment pipelines.
- Developing dynamic multi-hazard risk models that incorporate climate, population and economic dimensions to evaluate costs, benefits, trade-offs and decision thresholds.
- Co-designing tools that enable decision-makers, including hapū, iwi, households, communities and organisations, to consistently prioritise and manage climate and natural hazard risks.
- Developing engagement pathways that help decision-makers, including hapū, iwi, households, communities and organisations to translate risk information into adaptation and resilience actions.

We aim to strengthen New Zealand's ability to anticipate, prepare for, respond to and recover from multi-hazard risks.

Public science investment, complemented by partnerships and co-investment where appropriate, will focus on creating a consistent and accessible evidence base that connects hazard, exposure and vulnerability with forecasting and response to hazard events and supports post-event learning and knowledge management.

Therefore, we will prioritise:

- Real-time data sharing and intelligence systems integrating hazard monitoring, lifeline data and social information.
- Developing advanced analytics and data fusion capability to support operational decision-making.
- Establishing consistent national datasets and understanding of natural hazard events, impacts, losses, recovery trajectories and lessons learned across social, cultural and economic dimensions.

We aim to enable an integrated and adaptive risk management system.

Public science investment, complemented by partnerships and co-investment where appropriate, will support more coordinated decision-making, governance and risk management across institutions and sectors. Behavioural and social research supported through this outcome will focus on multi-hazard risk understanding, preparedness and adaptation, while broader wellbeing, recovery and social-system outcomes sit within the **Healthy People and a Thriving Society** pillar [HPTS 4].

Therefore, we will prioritise:

- Research and engagement that improve understanding of how decision-makers, including hapū, iwi, households, communities and organisations, interpret and act on risk and resilience information.
- Supporting community-led resilience and adaptation initiatives that build local capability and enable place-based responses.
- Investing in demonstration programmes that test, evaluate and refine resilience and adaptation approaches in real-world settings.
- Co-developing and analysing governance, policy and economic frameworks supporting consistent risk thresholds and transparent trade-offs.
- Strengthening knowledge translation and capability-building to embed evidence in practice across agencies and communities.

[ESR 2] Actionable climate science that provides robust, accessible evidence, models and decision support tools to inform mitigation and adaptation choices and build long-term environmental resilience across regions and sectors

Over the next five years, New Zealand will strengthen its foundational climate science capability through a coordinated system of observations, physical climate and hydrological science, projections, scenarios, attribution, modelling and climate-information services. As well as quantifying known hazards and anticipating/horizon-scanning for novel ones (e.g. 21st century ozone depletion, effects of nuclear fallout, novel atmospheric and oceanic pollutants), this integrated system will also support identification of climate-related opportunities, enabling sectors and regions to respond proactively to a low-emissions future.

This outcome provides the foundational climate and hydrological science that underpins other outcomes, providing essential inputs to the multi-hazard and risk [ESR 1], clean energy and circular systems [ESR 4], nature recovery [ESR 3], and place-based knowledge, governance and decision-making outcomes [ESR 5]. The actionable climate science outcome will directly inform mitigation, adaptation and productivity research within the **Primary Industries and Bioeconomy** pillar [PIB 4], and research into climate-related health, wellbeing and societal impacts through the **Healthy People and a Thriving Society** pillar [HPTS 4].

While being heavily dependent on existing technology infrastructure (supercomputing, long-term records, expeditions, etc) we will embrace new technology as it emerges, and coordinate with the **Technology for Prosperity** pillar on novel technologies to enable nationally consistent climate and water projections, climate services and decision-support tools.

Progress will be evident through consistent use of climate and water projections, scenarios and impact information across government, hapū, iwi, businesses, researchers and communities. Improved understanding of climate variability, extremes and long-term trends will enable more robust assessment of emerging challenges and opportunities.

Climate impact information will increasingly inform land-use planning, infrastructure design, economic decisions and adaptation pathways, including improved understanding of impacts on whenua, production systems and community assets. Climate impact information will also support understanding and management of effects on terrestrial, freshwater, coastal and marine ecosystems, including biodiversity change, changing species distributions, cumulative pressures, thresholds and implications for environmental resilience. Partnerships with hapū, iwi, Māori research organisations and Māori enterprise, where relevant, will support locally relevant insights and strengthen capability, with appropriate arrangements for the access, use and stewardship of data and knowledge.

The Government expects to increase investment in this area, focusing additional investment on nationally significant observations, climate and hydrological science, modelling, projections and accessible climate and water information services.

We aim to maintain an integrated national system of foundational climate science.

Public science investment, complemented by partnerships and co-investment where appropriate, will ensure New Zealand has evidence-informed, relevant climate and water resource information linking global change to national conditions.

Therefore, we will prioritise:

- Earth-system and climate modelling, regional downscaling and scenario development to maintain nationally consistent projections.
- Supporting sustained observation systems and analysis of climate variability, extremes and attribution, on decadal to centennial timescales.
- Maintaining capability across Earth-system science and Southern Hemisphere processes to support ongoing improvement in climate understanding.
- Integrating capability across climate and water domains to better prepare for emerging opportunities and long-term challenges.

We aim to generate decision-grade climate and water impact information.

Public science investment, complemented by partnerships and co-investment where appropriate, will connect foundational climate and water science with environmental impact information that can be used in downstream risk, adaptation and sector-specific decisions.

Therefore, we will prioritise:

- Integrating climate data with hydrological, marine, coastal and land-system modelling, sea-level rise and ecosystem impacts.
- Coordinating with the **Primary Industries and Bioeconomy** pillar [PIB 4] to support sector-specific applications for infrastructure, primary industries and economic systems, to support climate adaptation and natural hazard risk management.
- Providing integrated climate and water resource information that supports biodiversity and coastal management adaptation decisions.

We aim to ensure climate science is accessible, usable and trusted.

Public science investment, complemented by partnerships and co-investment where appropriate, will ensure climate information is consistently applied and understood across decision-making contexts.

Therefore, we will prioritise:

- Developing national climate and water data services, standards and synthesis outputs, including maps and guidance for users.
- Supporting climate and hydrological information and analysis that strengthens preparedness and resilience for iwi and hapū, with appropriate arrangements for the governance, use and stewardship of data and information where relevant.
- Investing in decision-support tools, knowledge translation and uptake pathways across agencies, infrastructure providers and communities.

[ESR 3] Supporting system-scale nature recovery through science to deliver real-world tools and integrated methods for prioritised, demonstrable and cost-effective recovery of species and ecosystems across land, freshwater and marine environments

Over the next five years, New Zealand will strengthen its ability to restore terrestrial biodiversity, freshwater and coastal ecosystems at scale, through integrated and relevant science, mātauranga Māori and decision-support tools. Investment will initially focus on places, species and connected ecosystems where evidence indicates significant decline or risk, where pressures are cumulative or cross ecosystem boundaries, and where research can materially improve the effectiveness, durability or cost-effectiveness of recovery action.

Progress will be evident through greater coordination and uptake of outcome-focused recovery approaches, including source-to-sea methodologies integrating land, freshwater and marine environments. Decision-makers will have access to clearer and more accessible evidence about environmental limits, ecosystem condition, biotic threats and environmental pressures, thresholds and recovery pathways. This information will help prioritise where and how to target strategic and management interventions. Investment will be tightly linked to scaled-up on-ground delivery, guided by monitoring and evaluation, resulting in demonstrably improved whole-catchment condition, connectivity and resilience; and stronger alignment between environmental outcomes and long-term economic and community prosperity.

Research undertaken through this outcome will inform production-system responses developed through the **Primary Industries and Bioeconomy** pillar and contribute evidence relevant to wellbeing and community outcomes explored through the **Healthy People and a Thriving Society** pillar.

We will coordinate with the **Technology for Prosperity** pillar to support the development and deployment of novel technologies relevant to this outcome, such as remote sensing, autonomous monitoring, environmental intelligence and data-integration technologies.

The Government expects to increase investment in this area, focusing additional investment on system-scale monitoring and understanding, environmental biosecurity, prioritisation and evidence about which recovery interventions are effective, where and under what conditions.

We aim to strengthen our understanding of ecosystem connectivity from source-to-sea.

Public science investment, complemented by partnerships and co-investment where appropriate, will support a shared, accessible evidence base on catchment-scale ecosystem condition, pressures, connectivity and recovery pathways across all ecosystem types.

Therefore, we will prioritise:

- Integrated surveillance and monitoring, modelling, tools, and data systems to understand connections across terrestrial, freshwater and coastal ecosystems, and access the spread, status and impacts of invasive species. This includes addressing critical gaps in knowledge and monitoring that limit credible recovery decisions.
- Research on cumulative and interacting environmental pressures, including weeds, pests, pathogens, contaminants and habitat fragmentation.
- Improving understanding of ecosystem connectivity, limits, thresholds, tipping points and recovery trajectories.
- Place-based knowledge and research that support the resilience, stewardship and flourishing of indigenous species and mahinga kai.
- Strengthening understanding of environmental biosecurity risks to indigenous biodiversity and ecosystems, coordinating with the **Primary Industries and Bioeconomy** pillar [PIB 1] where evidence can also support production biosecurity.*

*Biosecurity proposals should be aligned to the pillar that best reflects their primary objective: protecting ecosystems (this pillar) or supporting production systems (**Primary Industries and Bioeconomy**).

We aim to ensure that prioritised investment in nature recovery creates strong environmental, cultural and economic resilience.

Public science investment, complemented by partnerships and co-investment where appropriate, will be informed by shared and transparent prioritisation principles, evidence and decision approaches. These will support consistent, transparent decisions on where to intervene and how to design recovery packages. Examples of transparent decision criteria include ecological significance, cultural value, current condition and trend, urgency, cumulative pressures, feasibility, additionality and the potential for durable recovery, to identify where public science investment can make the greatest contribution.

We will coordinate with the **Primary Industries and Bioeconomy** pillar to ensure research into production-system interventions contributes to ecosystem recovery where appropriate.

Therefore, we will prioritise:

- Investing in models and research to improve understanding of environmental limits, trade-offs and cumulative pressures across catchments and connected ecosystems including pressures arising from invasive pests, pathogens and weeds.
- Supporting applied research to design integrated recovery packages that work across land uses, habitats and ownership boundaries.

We aim to validate and scale cost-effective recovery interventions to deliver durable environmental outcomes.

Public science investment, complemented by partnerships and co-investment where appropriate, will ensure recovery efforts focus on quantifying and valuing ecosystem services, measuring impact from efforts to mitigate environmental biosecurity risks, and delivering measurable outcomes that can be applied at scale.

Knowledge generated through this objective will inform the design, testing and adoption of land-use and production-system responses within the **Primary Industries and Bioeconomy** pillar [PIB 4,6].

Therefore, we will prioritise:

- Field trials, invasive species control tools and comparative studies to establish what works, where, for whom and under what ecological and management conditions.
- Developing cost, durability and scalability evidence, including approaches that demonstrate ecological, cultural and social value, natural-capital and economic value over time.
- Establishing monitoring, evaluation, impact measurement and learning systems that support continuous improvement and confidence in recovery interventions, invasive species control, and investment decisions.

[ESR 4] Enabling integrated clean energy and circular production systems to improve resource productivity, strengthen resilience and reduce environmental impacts

Over the next five years, New Zealand will strengthen its ability to transition to clean energy and circular production systems through improved system intelligence, modelling, forecasting and decision frameworks. These capabilities will enable a coordinated, whole-system transition that supports more productive businesses, resilient communities, efficient infrastructure, and enhanced national energy and materials security while reducing emissions, waste and environmental harm.

Progress will be evident through improved productivity and competitiveness across key sectors, lower environmental impacts, greater prevention, reduction, reuse and repair of materials, and enhanced energy and materials resilience. Businesses, investors, hapū, iwi, communities and government will use shared evidence, interoperable data, system intelligence and decision frameworks for clean energy generation and critical resource choices and support an affordable, secure and environmentally sustainable transition to a low-emissions, circular economy.

This will help New Zealand make productive use of its renewable energy resources and material assets, supporting future economic opportunities while improving environmental outcomes, resource security and resilience.

The development of technologies for clean-energy and advanced production systems will be led through the **Technology for Prosperity** pillar [TFP 4,7]. Bio-based circular economy solutions will be developed and applied through the **Primary Industries and Bioeconomy** [PIB 2] pillar, while this outcome focuses on broader resource-system intelligence, environmental performance and non-biological resource flows.

This opportunity will contribute evidence to the **Healthy People and a Thriving Society** [HPTS 6] pillar on the environmental, health and wellbeing, community resilience and technology-adoption implications of clean energy and circular production systems, supporting informed decision-making across government, industry, hapū, iwi and communities.

The Government expects to maintain investment at approximately current levels, focusing on a small number of nationally significant opportunities to improve resource productivity, recover value from major waste streams, reduce strategic material dependencies, and strengthen energy and material resilience. Increased emphasis will be placed on partnered and co-invested initiatives, complemented by support for public-good system research to maximise impact and leverage. Technology development and commercial applications of biological waste streams and biomass will be supported through relevant pillars, industry channels, and co-investment pathways.

We aim to build integrated intelligence and decision frameworks that support clean energy and circular production systems across the economy.

Public and private investment, policy and planning decisions are informed by an integrated understanding of energy, materials and waste flows through the economy and environment, including high-value intervention points and the trade-offs between transition pathways. Shared evidence and analytical tools will help decision makers maximise productivity, and economic, environmental, sovereignty, resource-security and resilience benefits.

We will coordinate with the **Technology for Prosperity** pillar [TfP 7] on research investment led through this pillar to strengthen resilient, secure and integrated energy systems.

Therefore, we will prioritise:

- Whole-of-system data, interoperable resource accounting, scenarios, modelling and assessment methods that connect energy, materials and resource flows across sectors, regions, terrestrial, freshwater and marine environments, and value chains.
- Developing integrated reporting frameworks and decision-support tools that enable transparent evaluation of the productivity, environmental sustainability, resource-security and national resilience implications of clean energy and circular production systems.
- Developing forecasting and systems intelligence to identify, prioritise and sequence high-impact opportunities for reducing material throughput and generating value from waste. Priority will be given to waste streams expected to increase materially in volume, present significant environmental problems, and contain materials with potential for high-value recovery or reuse; for example, batteries and other critical-mineral-bearing products.

We aim to generate the evidence, capabilities and insights needed to accelerate adoption of clean energy and circular systems that create enduring national value.

Production, consumption and infrastructure systems will make greater use of clean energy, resource-efficient practices and lower-emissions alternatives, resulting in clear economic, resilience and environmental benefits.

Therefore, we will prioritise:

- Supporting targeted pilots or demonstrations only where they test a nationally significant system-level opportunity, generate transferable evidence and have a credible pathway to co-investment or scale.
- Coordination with the **Primary Industries and Bioeconomy** pillar [PIB 2,6] will occur where primary-sector biomass, biological or mineral resources and side-streams contribute to clean energy and circular systems, for example through biofuels.
- Coordinating with the **Technology for Prosperity** pillar [TFP 7] on applied research into clean energy, electrification, demand flexibility, energy efficiency and low-emissions fuels where new technologies are likely to improve productivity, affordability, system resilience and emissions performance.
- Supporting research on the governance arrangements, regulatory settings, institutions and investment settings needed to accelerate adoption of clean energy and circular production systems across the economy.
- Supporting research on behavioural, social, cultural and organisational factors influencing adoption, including social innovation and place-based and community-led approaches.
- Developing monitoring and evaluation frameworks that assess economic, environmental and social outcomes from clean energy and circular production systems, to support the wider adoption and scaling of successful approaches.

[ESR 5] Place-based knowledge, governance and decision-making for environmental sustainability and resilience

Over the next five years, New Zealand will strengthen its ability to make evidence-informed environmental decisions that support environmental sustainability, resilience and long-term prosperity. Māori, community and regional leadership, capability and governance are strengthened by relevant environmental, hazard, social and economic research, alongside mātauranga Māori and place-based knowledge, to support better decision-making, environmental stewardship and investment.

This outcome connects science, data, relevant mātauranga Māori and local knowledge with the policy, planning, governance, management and investment decisions that shape environmental outcomes. It supports integrated, interoperable knowledge systems that enable evidence to be captured, shared and applied across national, regional and local scales. Appropriate arrangements for the governance, access, use and stewardship of data and knowledge will be supported where relevant, including where information is held by iwi and hapū, communities, government or other organisations.

Investment will prioritise research that improves the use of environmental knowledge in decision-making. Priority will be given to research that strengthens the pathways between evidence and action, including governance arrangements, decision frameworks, incentives, behavioural insights, monitoring and evaluation approaches, and the integration of relevant mātauranga Māori and place-based knowledge. Research should demonstrate a clear pathway to improving how research is interpreted, adopted and applied in real-world decisions.

Progress will be evident through stronger use of environmental data, relevant mātauranga Māori, lifecycle assessment, cumulative-effects analysis, social and economic evidence, and community-generated knowledge in policy, planning, regulation, environmental management and investment decisions. Efficient co-designed monitoring systems and management interventions will be established and able to demonstrate ecological, cultural, social and economic impacts.

The Government expects to maintain a small base of funding for this outcome, supported by ongoing public investment across government agencies and with an emphasis on enabling co-funding opportunities and partnerships.

Knowledge systems, environmental intelligence and decision-support capabilities developed through this outcome should be accessible and transferable across the wider research and innovation system, supporting environmental stewardship through this pillar, production-system innovation through the **Primary Industries and Bioeconomy** pillar, community wellbeing through the **Healthy People and a Thriving Society** pillar, and enabling digital capabilities through the **Technology for Prosperity** pillar.

We aim to strengthen integrated environmental knowledge systems that support place-based decision-making.

Effective environmental and risk management depends on knowledge systems that bring together environmental science, relevant mātauranga Māori and place-based knowledge. Public investment will strengthen monitoring, environmental intelligence and the integration of environmental and multi-hazard risk information. This will support environmental stewardship, resilient planning and informed decision-making across national, regional and local scales.

Therefore, we will prioritise:

- Place-based research and co-designed action that brings together environmental science, relevant mātauranga Māori and local knowledge to support environmental decision-making.
- Investing in integrated monitoring, environmental intelligence and knowledge systems that improve how environmental and multi-hazard risk information is generated, shared and applied. This will support risk-informed land-use, infrastructure and community decisions across national, regional and local scales.

We aim to improve environmental governance, policy and decision-making through better use of evidence.

Strong environmental outcomes depend on governance, policy and regulatory settings that are informed by robust evidence and capable of adapting over time. Public investment will help decision-makers understand environmental limits, assess cumulative effects and evaluate trade-offs. It will also strengthen policy effectiveness and support more transparent, consistent and defensible decisions. Environmental governance is inherently interdisciplinary, drawing on environmental science, social sciences, behavioural science, economics, policy research and kaupapa Māori approaches. Monitoring, evaluation and adaptive management will support continual learning and improvement across environmental and risk management systems.

Therefore, we will prioritise:

- Decision-support, governance and adaptive management approaches that strengthen environmental and risk-informed planning, regulation and investment decisions across local, regional and national scales.
- Behavioural, economic, policy and institutional research that improves understanding of environmental limits, cumulative effects, trade-offs, incentives and policy effectiveness, and supports more effective environmental governance and risk management.

[ESR 6] Supporting Antarctic and Southern Ocean stewardship through targeted science, sustained observations and international partnerships to inform climate understanding, ecosystem management and governance

Over the next five years, New Zealand will maintain a focused Antarctic and Southern Ocean science capability that supports stewardship obligations and strategic interests. Targeted investment in science, observations and partnerships will ensure New Zealand continues to generate credible evidence that contributes to global understanding of climate, ocean and ecosystem change and informs international decision-making.

Progress will be evident through stronger alignment between national research priorities, capability and logistics, and increased use of New Zealand-generated evidence in Antarctic Treaty System processes and marine governance. Sustained observation systems will support improved understanding of long-term environmental change, including climate dynamics, ocean processes and ecosystem responses. This will reinforce New Zealand's role as a credible contributor to international science and environmental stewardship, while supporting domestic priorities in areas such as fisheries, marine protection and climate understanding.

Data, sensing, communications and space-enabled capabilities developed through the **Technology for Prosperity** pillar [TFP 4,5] will strengthen Antarctic and Southern Ocean observation, monitoring and decision-support systems. Evidence, capability and observations generated through this outcome will contribute across other pillars and strengthen larger investments within the Environmental Sustainability and Resilience portfolio, particularly by improving understanding of environmental change and supporting long-term decision-making.

The Government expects to maintain a small but strategically important base of funding for this outcome, recognising its role in sustaining nationally and regionally significant Antarctic and Southern Ocean capability, long-term observations, and international scientific partnerships.

Credit: Earth Sciences New Zealand.

We aim to support targeted Antarctic and Southern Ocean research aligned to national interests.

Public science investment, complemented by partnerships and co-investment where appropriate, will focus on areas where New Zealand has clear stewardship responsibilities, strategic interests, international partnerships or distinctive capability, and where science contributes directly to policy and decision-making.

Therefore, we will:

- Investing selectively in Antarctic and Southern Ocean research that supports climate science, ocean processes and environmental change.
- Supporting science that informs ecosystem management, biodiversity protection, fisheries and marine governance, including Antarctic Treaty-relevant evidence.
- Maintaining long-term observation systems and accessible datasets that contribute to global, regional and national understanding.
- Aligning research investment with international partnerships and Antarctic Treaty System processes, ensuring science supports policy and governance outcomes.

Healthy People and a Thriving Society

Tāngata Ora, Pāpori Toiora

A key strength of the Healthy People and a Thriving Society pillar is that it addresses both individual health outcomes and broader societal wellbeing. Its scope spans from individuals, families and communities through to impacts at the national level. The pillar encompasses research that drives societal and health change to deliver benefits to individuals, families and communities, through to biomedical discoveries that are translated into health, social, and commercial outcomes. This includes addressing factors such as trust and public confidence in technology and community engagement, which are critical to the successful adoption and impact of research.

Research is expected to address multiple investment signals and be delivered by diverse, transdisciplinary teams. By bringing together different disciplines, perspectives, and approaches, greater value and more enduring impacts will be achieved.

Pillar investment trajectory

This pillar will transition as the future science investment system is implemented. In 2025/26, research within the scope of the pillar accounted for approximately 26% of total Science, Innovation and Technology portfolio investment. By 2029/30, the pillar is expected to represent around 22% of the overall Science, Innovation and Technology portfolio investment, with an indicative annual investment of approximately $191 million. This reflects the rebalanced investment profile signalled through the Science Investment Plan and wider science system reforms.

As existing commitments conclude, investment will be directed towards the pillar's priority outcomes. While investment will continue across all outcomes, the future portfolio places greater emphasis on extending healthy lifespans through addressing high-burden physical and mental health conditions, delivering social and economic impact through biomedical innovation, improving the value and efficiency of health and social services, and supporting the adoption and effective use of new technologies. Table 4 indicates the trajectory of future investments within the overall reduction of funding for this pillar.

Translating long-term opportunities into outcomes and investments

Table 4 shows the relationship between the Science Investment Plan opportunities and the pillar outcomes and indicates the relative direction of investment over the five-year period.

While most health-related research investment will sit within this pillar, some activities historically funded within the health portfolio may align more strongly with other pillars. This includes research where the primary focus is technology development, application or adoption funded through the **Technology for Prosperity** pillar, environmental systems, climate change, risks and hazards funded through the **Environmental Sustainability and Resilience** pillar and food safety funded through the **Primary Industries and Bioeconomy** pillar. It is likely that research will transition into this pillar as it focusses and connects more directly on the health, wellbeing and societal impacts of technological, environmental, and food safety factors.

Table 4. Relative investment size of opportunity areas, currently (2025/26) and by the end of this Pillar Investment Plans period. These weightings should be considered in the context of the overall decrease in pillar funding.

Science Investment Plan opportunity	Outcome	Current investment	Future investment
Deliver health and social impact by leveraging New Zealand's unique and diverse population and data to enable earlier effective interventions and disease prevention.	HPTS 1	Large	Large
Extend healthy lifespans by reducing the impact of high-burden physical and mental health conditions to extend productive lives, participation in work and society, and sustainable use of health services.	HPTS 2	Medium	Large
Deliver social and economic impact through biomedical innovation by advancing new diagnostics, therapeutics, and technologies to improve outcomes, and drive life sciences growth.	HPTS 3	Medium	Large
Improve societal resilience, equity and productivity by investing in science, innovation, and technology to strengthen social and education systems to meet New Zealand's needs given the changing social and economic conditions in a small, high-value economy.	HPTS 4	Medium	Medium
Improve value and efficiency of health and social services to deliver smarter healthcare through better models of care, technology, decision-making, and service delivery.	HPTS 5	Medium	Large
Create human-centred innovation to improve adoption and effective use of new technologies in health, address barriers to trust and acceptance, and resolve people's challenges interfacing with technology.	HPTS 6	Small	Small
Enabling activities across outcomes and pillars		Medium	Medium

[HPTS 1] Deliver health and social impact by leveraging our unique and diverse population and data to enable earlier effective interventions and disease prevention

By the end of five years, New Zealand's science system will be making more effective use of population, cohort and integrated data to support earlier and more effective interventions to prevent disease.

Progress will be evident through better evidence on disease drivers, inequities and life-course influences; stronger analytical and collaborative capability; more effective prevention and early intervention strategies; and improved health, wellbeing and social outcomes.

We aim to strengthen population and public health research to inform earlier intervention and prevention.

This will harness new and existing population data from longitudinal and cohort studies incorporating community partnerships to prevent disease, translate knowledge into health and social impact, define positive life-course determinants, improve health service design and provide evidence for policy.

It will include the continued development of an ethical and trusted data governance framework, including Māori data governance and sovereignty considerations where relevant, ensuring data infrastructure, standards and governance arrangements are fit for purpose and protect the value and integrity of data resources.

Research will take advantage of our uniquely diverse population and be designed so that results deliver benefit to all groups across this diversity with a particular focus on areas of greatest need.

Therefore, we will prioritise:

- Population research and longitudinal and cohort studies to discover protective factors, deliver improved and equitable health outcomes, and strengthen lifelong wellbeing.
- Research that collaboratively connects and leverages existing longitudinal and cohort studies and other national datasets to improve health and social outcomes.
- Prevention and early intervention research to improve long-term health and societal outcomes, particularly for children and young people.
- Māori and Pacific leadership and community-partnered research to strengthen community health and social outcomes.

[HPTS 2] Extend healthy lifespans by reducing the impact of high-burden physical and mental health conditions to extend productive lives, participation in work and society, and sustainable use of health services

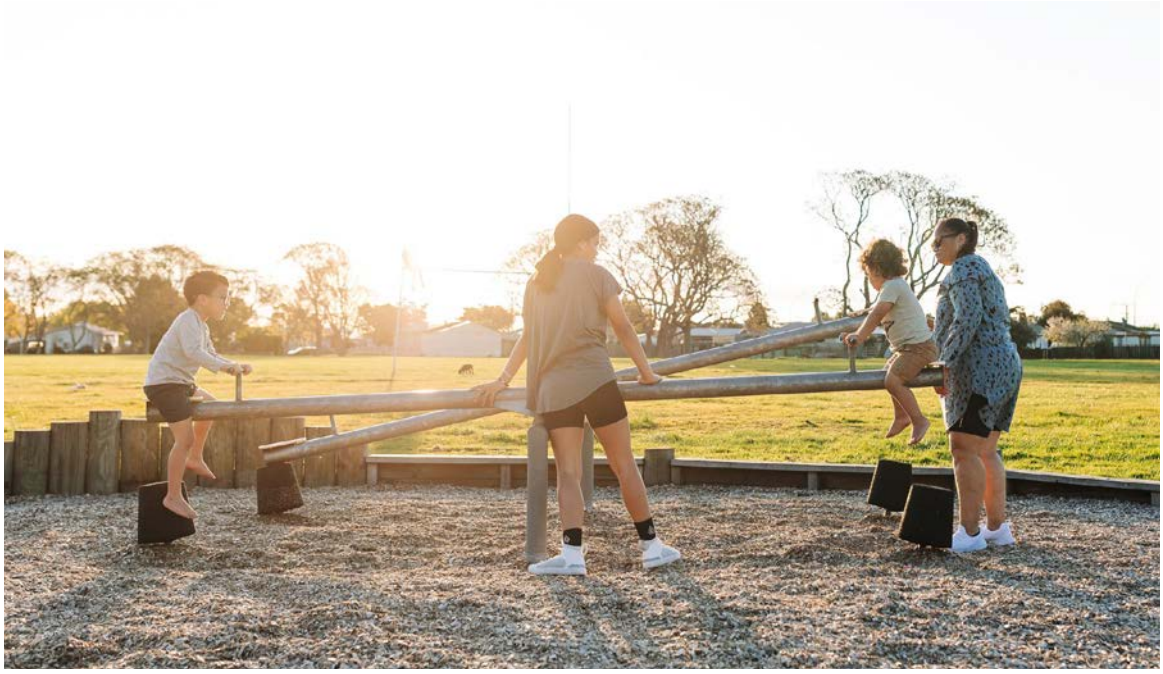
By the end of five years, New Zealand will be able to demonstrate strengthened evidence, effective interventions and enabling systems that reduce the burden of high-burden physical and mental health conditions.

High-burden conditions are those which drive significant national health expenditure and lost participation in work and society where prevention or intervention would make a significant impact. In some cases, these will be common conditions, while others may be less common but highly impactful at an individual level; however, this pillar investment focuses on high-burden conditions where significant scale is demonstrated at the national level. Progress will be reflected in lower prevalence and reduced severity; increased years of healthy work and society participation; more sustainable demand on health services; generation of intellectual property and commercial partnerships; and delivery of equitable health outcomes across the population.

We aim to advance clinical and biomedical research to improve prevention, diagnosis and treatment of high-burden conditions, to extend productive participation in work and society.

Therefore, we will prioritise:

- Discovery research into the causes, mechanisms and prevention of high-burden mental and physical health conditions to extend productive lives.
- Development, testing and validation of innovative diagnostics and treatments to improve care and support sustainable use of healthcare services for high-burden mental and physical health conditions.
- Research into the social determinants of high-burden physical and mental health conditions including the drivers of lifelong health, wellbeing, and participation in work and society.
- Development of Māori and indigenous prevention and treatments for high-burden physical and mental health conditions.



[HPTS 3] Deliver social and economic impact through biomedical innovation by advancing new diagnostics, therapeutics and technologies to improve outcomes and drive life sciences growth

By the end of five years, New Zealand will have stronger pathways and demonstrated success in translating biomedical discovery into diagnostics, therapeutics and devices to improve outcomes and generate economic returns.

Progress will be evident through data and technologies to support better diagnosis, treatment and patient outcomes; more innovative discovery-based research with effective translational pathways; stronger biomedical and life sciences capability; and greater economic value.

Public investment will focus on early-stage biomedical research and innovation where market incentives can be insufficient to gain funding rather than late-stage development or later-phase clinical trials. This investment will help de-risk promising discoveries, generate validation evidence, and strengthen pathways to national and international co-investment, translation and commercialisation.

Innovation will be considered broadly including biologically active substances (including those developed in the **Primary Industries and Bioeconomy** pillar), pharmaceuticals, medical devices and other technologies. It is expected that in many cases, funding will come through the **Technology for Prosperity** pillar during the earlier stages of technical development before transferring to this pillar for more clinically focussed development.

Research should reflect the diversity of New Zealand's population, including Māori and Pacific, and be supported by strong ethical practice, data governance and appropriate stewardship of Māori data and knowledge, where relevant.

We aim to strengthen translation from initial discovery to applied knowledge that secures further investment and partnerships nationally and internationally to drive life-sciences growth, health and social outcomes, and commercial returns.

Therefore, we will prioritise:

- Translational health research that generates early-stage clinical evidence, prototypes, and validation data for promising diagnostics, therapeutics, preventative products and technologies to move discoveries towards commercial partnership funding and clinical use.
- Clinician-led research, early clinical validation, testing platforms and validation capability that move discoveries toward industry investment and clinical adoption.

[HPTS 4] Improve societal resilience, equity, and productivity by strengthening social, education, workforce, and human capital systems to meet workforce capability needs in changing social and economic conditions in a small, high-value economy

By the end of five years, New Zealand will have strong and growing evidence regarding what builds societal resilience, reduces inequality, and supports effective social, educational and workforce systems.

Progress will be evident through more equitable social and economic outcomes; higher levels of social inclusion and justice; integrated and responsive social services; strengthened resilience across communities and institutions; and sustained participation in education and employment over the long term.

We aim to strengthen evidence and deliver outcomes regarding how social, education and workforce systems work together to improve wellbeing, support community renewal, advance equity and intergenerational prosperity, and foster long-term social cohesion and inclusion.

This includes evidence on participation, public safety and access to justice, productivity and innovation, adaptation to technological change, new skills and stronger workforce pathways.

Therefore, we will prioritise:

- Research that strengthens social responses and community resilience to economic, environmental and other significant shocks.
- Research into the factors that promote equitable long-term social outcomes and strengthen social cohesion.
- Research into education, workforce capability, and healthy work environments to lift productivity.
- Māori and Pacific leadership, education, research, and workforce capability to ensure that the talents, aspirations, and contributions of a growing youthful population shape a prosperous and resilient future.

[HPTS 5] Improve value and efficiency of health and social services to deliver smarter healthcare through better models of care, technology, decision-making and service delivery

By the end of five years, New Zealand will be making stronger use of innovation and data to improve health system access, delivery, efficiency and quality of care.

Health and social systems are facing growing pressure from rapid demographic change with an aging population, increasing demand for services, workforce constraints and a challenging fiscal environment. At the same time, the future capability of the workforce will increasingly rely on a young, expanding Māori and Pacific demographic to sustain services.

Progress will be evident through research that demonstrates capability to improve access to timely care; provide the right care, in the right place, by the right workforce, closer to communities and homes; and improve system efficiency and workforce sustainabilitys.

We aim to develop and test new models of care, health technologies and service innovations that improve service delivery and system efficiency, reduce avoidable demand and support the health workforce.

Therefore, we will:

- Development and evaluation of new approaches, technologies, tools and models of care that improve people, family, community and service user outcomes, service delivery and system efficiency, including evaluating their impacts on users and workflows.
- Research that strengthens the effectiveness of self-care, primary, community, Māori, Pacific, iwi, disability and ethnic care, early diagnosis and treatment, and reduces demand and pressure on the health system.
- Development and evaluation of innovative approaches to improve service delivery and system efficiency through access to information, decision support, care coordination and patient and community navigation.
- Development and evaluation of innovations that are designed to support the health workforce to deliver high quality and efficient health services and to improve staff experience and effectiveness.

[HPTS 6] Create human-centred innovation to improve the adoption and effective use of new technologies in health, address barriers to trust and acceptance, and resolve people's challenges interfacing with technology

By the end of five years, New Zealand will increasingly have implemented evidence-based safe, trusted and effective technology-enabled health care.

Progress will be evident through a stronger emphasis on human factors in technology design and research to support widespread adoption; New Zealand-specific human factors being incorporated into the design of new technologies; and better evidence to support trusted adoption that improves equity, access and inclusion, with the longer-term aim of helping to reduce social and economic inequity.

We aim to support the safe, trusted, equitable and effective uptake of new technologies in health by addressing user needs, service design, acceptability and how people interact with technology-enabled care.

Therefore, we will:

- Research on enablers and barriers to trust, uptake and effective use of digital health tools and technologies, factors supporting uptake in real world settings, particularly focused on equity, access, effectiveness and digital inclusion in technology-enabled care.
- Research to improve human-centred design and testing of digital tools, devices and technology-enabled health services.

Strategic system capabilities

Ngā Āheinga Rautaki o te Pūnaha

Achieving the outcomes sought across the four pillars will require more than investment in individual research activities. It will depend on maintaining and strengthening a set of nationally important capabilities that support New Zealand's long-term scientific, innovation and research performance. These include a capable and sustainable research workforce, the contribution of Māori knowledge, leadership and enterprise, Pacific knowledge, leadership and regional connections, and the research infrastructure needed to support discovery, innovation, translation and impact.

Research workforce and early-career researchers

Te Rāngaimahi Rangahau me ngā Kairangahau Tōmua

A capable and sustainable research workforce is fundamental to delivering the outcomes sought across the four pillars. New Zealand's future success will depend on maintaining excellence in existing areas of strength while developing the emerging scientific, technical, analytical and translational capabilities required to respond to future opportunities and challenges. Early-career researchers and emerging talent are critical to renewing and sustaining this capability over the long term.

Delivering the outcomes sought across the pillars will require a highly skilled and adaptable research workforce. In addition to disciplinary expertise, the future research system will increasingly depend on capability in interdisciplinary and transdisciplinary collaboration, stakeholder engagement, co-design, knowledge translation, innovation and commercialisation, and working effectively across research, government, industry and community settings. These capabilities will help ensure research is responsive to national priorities and can be successfully translated into policy, practice, products and services.

Across the pillars, clearer investment signals can support workforce planning, capability development and researcher retention. Research institutions will play an important role in developing the capabilities needed to deliver future pillar outcomes and in helping early-career researchers understand the mission-led approach, future capability needs and the evolving funding landscape.

Wider workforce challenges will continue to be addressed through future science system reforms and future updates to the Pillar Investment Plans.

Māori knowledge, leadership and enterprise

Te Mōhiotanga Māori, te Hautūtanga me te Rakahinonga

The distinctive strengths of Māori knowledge, leadership, enterprise, assets and resources provide significant opportunities to advance the outcomes sought across all four pillars. The Māori economy is growing rapidly, with increasing capability, investment, entrepreneurship and export potential. It is underpinned by an increasingly high-skilled Māori workforce and a rapidly growing, digitally literate Māori youth demographic well-positioned to support New Zealand's evolving knowledge sector. Māori organisations, communities and enterprises also contribute knowledge, leadership and capability that support environmental stewardship, improved health and wellbeing, community resilience and long-term prosperity. Together, these strengths provide a strong foundation for science investment that can generate economic, environmental, health, social and cultural value for New Zealand, with Māori enjoying and contributing to the benefits created.

Investment will focus on opportunities where Māori knowledge, leadership, enterprise, assets or resources can strengthen research quality, relevance and impact. Depending on the opportunity, this may include Māori leadership and governance, research partnerships, enterprise-led innovation, co-investment and pathways that enable Māori to create, contribute to and retain value from research and innovation.

Realising and sustaining these opportunities may require appropriate arrangements for the use and stewardship of relevant mātauranga Māori, Māori-held data, indigenous species and other resources of significance to Māori. Intellectual property, attribution and benefit-sharing arrangements should reflect the nature of the research and support trusted relationships, innovation and enduring value.

The nature of these contributions and opportunities will differ across the pillars:

- **Technology for Prosperity**: Māori knowledge, leadership and innovation can inform the development, application and stewardship of emerging technologies, creating distinctive opportunities to diversify and grow the economy.
- **Primary Industries and Bioeconomy**: The Māori economy has a significant intergenerational asset base, interests in natural resources, relevant mātauranga Māori and a strong regional presence. These strengths provide a foundation for new biological products, services and industries that create economic value while supporting environmental, social and cultural outcomes. Appropriate stewardship, intellectual property and benefit-sharing arrangements can help realise and retain value where research involves relevant mātauranga Māori, indigenous species, Māori-held data or resources of significance to Māori.
- **Environmental Sustainability and Resilience**: Relevant mātauranga Māori, kaitiakitanga, place-based knowledge and intergenerational relationships with whenua and wai can strengthen environmental research, decision-making and stewardship. Investment should support hapū, iwi, Māori research organisations, Māori researchers and Māori enterprise to contribute knowledge and leadership to research priorities, methods, interpretation, application and evaluation, including research relating to indigenous species and resources of significance to Māori.
- **Healthy People and a Thriving Society**: Māori perspectives, experiences, leadership and innovation can strengthen research across prevention and early intervention, health and social services, education, workforce participation, community resilience and the social determinants of wellbeing. This includes kaupapa Māori approaches and Māori leadership that contribute to improved outcomes for individuals, families and communities.

Pacific knowledge, leadership and regional connections

Te Mōhiotanga o Te Moana-nui-a-Kiwa, te Hautūtanga me ngā Hononga ā-Rohe

Pacific peoples contribute knowledge, leadership, research capability, enterprise and strong community and regional connections that can advance the outcomes sought across the four pillars. These strengths support New Zealand's workforce and future prosperity and create opportunities for research and innovation that improve health and wellbeing, strengthen community and environmental resilience, and deepen scientific and economic relationships across the Pacific.

Investment will focus on opportunities where Pacific perspectives, experience, leadership or partnerships can strengthen research quality, relevance and impact. This may include Pacific research leadership, collaboration with Pacific communities and organisations, and reciprocal partnerships with researchers, businesses and governments across the Pacific region.

The nature of these contributions and opportunities will differ across the pillars:

- **Technology for Prosperity**: Pacific knowledge, leadership, entrepreneurship and technical capability can contribute to emerging technology sectors and New Zealand's innovation system, while creating stronger pathways between research, technology and Pacific communities and markets.
- **Primary Industries and Bioeconomy**: Pacific knowledge and regional connections can strengthen research and innovation in resilient food systems, biosecurity, climate adaptation, marine and biological resources, and circular and low-waste production. Reciprocal research relationships can also support stronger scientific, trade and economic connections across the Pacific.
- **Environmental Sustainability and Resilience**: Shared environmental risks, interconnected ocean and ecological systems, and enduring cultural, scientific and strategic relationships create clear opportunities for collaboration across New Zealand and the wider Pacific. Pacific knowledge, leadership and research partnerships can strengthen environmental stewardship, resilience and adaptation.
- **Healthy People and a Thriving Society**: Pacific perspectives, experiences and leadership can strengthen research across prevention and early intervention, health and social services, education, workforce participation and community resilience. Pacific research approaches and leadership can contribute to improved outcomes for individuals, families and communities and strengthen the evidence available to health and social systems.

Research infrastructure

Ngā Tūāhanga Rangahau

Research infrastructure provides the foundations needed to support research, innovation and impact across all four pillars. This includes shared research platforms, specialist facilities and equipment, testing and validation environments, national datasets, monitoring systems, digital and analytical capabilities, and other enabling assets. These capabilities support activity across multiple outcomes and help connect discovery, development, translation, adoption and impact.

Developing and maintaining nationally important research infrastructure will be critical to achieving the outcomes sought through the Pillar Investment Plans. This includes infrastructure that supports both discovery and mission-led research, strengthens capability across the science system, and contributes to New Zealand's long-term resilience, productivity, sustainability and wellbeing.

The value of research infrastructure depends not only on the assets themselves, but also on the wider settings that enable their effective use. Partnerships, coordination across institutions, and supportive policy and regulatory settings can all play an important role in ensuring research capability is translated into economic, environmental and social benefits for New Zealand.

Wider research infrastructure priorities and challenges will continue to be considered through future science system reforms and future updates to the Pillar Investment Plans.

How the Pillar Investment Plans were developed

Te Hanga o ngā Mahere

In March 2026, The Minister of Science, Innovation and Technology commissioned the Board of the newly established Research Funding New Zealand to develop investment plans for each of the four priority pillars identified in the Science Investment Plan.

The Research Funding New Zealand Ministerial Advisory Group established four Pillar Advisory Groups, one for each pillar, to inform its advice to the Minister. The members of each Pillar Advisory Group brought relevant perspectives from across industry, science, commercialisation and the Māori economy, communities and government agencies.

In developing the outcomes for each pillar, the group drew on the investment principles identified in the Science Investment Plan. It considered the funding available for the pillar, relevant government and sector priorities, industry demand for research and development, potential market opportunities, existing research capability, and the absorptive capacity of the science, innovation and technology system. Proposed investment outcomes and pillar boundaries were tested and refined through targeted engagement with scientific and sector experts and cross-pillar discussions. Feedback from this process was incorporated into the final investment intentions.

Research Funding New Zealand and the Pillar Advisory Groups were also asked to provide advice on the appropriate balance of funding across outcomes. In forming this advice, they considered the strategic importance of each outcome to New Zealand, the likely benefits and potential impact, the contribution that science could make, the role of public science investment, and the investment-readiness of each area. This advice is reflected in the proposed funding trajectory for each outcome, e.g. small, medium and large.

Future iterations of the Pillar Investment Plans

Ngā Putanga ā Mua o ngā Mahere

These Pillar Investment Plans set out specific research priority areas aligned to desired outcomes, indicates the mix of funding mechanisms that will be used to deliver those outcomes and signal the relative weighting of investments against outcomes within each pillar.

The Pillar Investment Plans will be updated in 2027 following advice to the Minister from the Prime Minister's Science, Innovation and Technology Advisory Council and Research Funding New Zealand on the following areas:

- research workforce and capability development
- research infrastructure
- future settings for investigator-led and mission-led funding
- science, innovation and technology system performance monitoring.

The 2027 updates will include specific performance measures for each pillar that Research Funding New Zealand, supported by the Ministry of Business, Innovation and Employment, will use to monitor progress against the pillar outcomes and the long-term opportunities set out in the Science Investment Plan.

Research Funding New Zealand will undertake a mid-term review of progress against the pillar outcomes in 2028/29. Subject to the findings of that review, Research Funding New Zealand will provide advice to the Minister on whether changes to the Pillar Investment Plans are required to ensure outcomes are delivered by 2031.

Appendix 1: Pillar summaries

Āpitihanga 1: Ngā Whakarāpopototanga o ngā Pou

Technology for Prosperity

Total investment

$278m

per year by 2029/30 (from forecast $183m in 26/27)

Expected contributions:

- Capability for smarter decision-making and system performance
- Measurable productivity, competitiveness and stewardship gains
- Knowledge that supports higher positioning in global value chains
- Improved value propositions for international talent, capital and partnerships

TfP = Technology for Prosperity

PI&B = Primary Industries and Bioeconomy

ES&R = Environmental Sustainability and Resilience

H&S = Healthy People and a Thriving Society

TFP 1 | Medium | Artificial Intelligence and Advanced Computing

Research into applied AI systems for physical, edge and remote operating environments, building globally relevant capability from distinctive local conditions.

Invest in science that:

- Develops edge AI, sensing, autonomous systems, and human-machine learning.
- Integrates data, models and hardware for real-world deployment.
- Expands access to AI capability across firms and sectors.

Focuses on physical AI, not general-purpose AI. Leverages NZ operating conditions to develop and validate globally relevant capability. Applications across **PI&B**, **ES&R** and **H&S**.

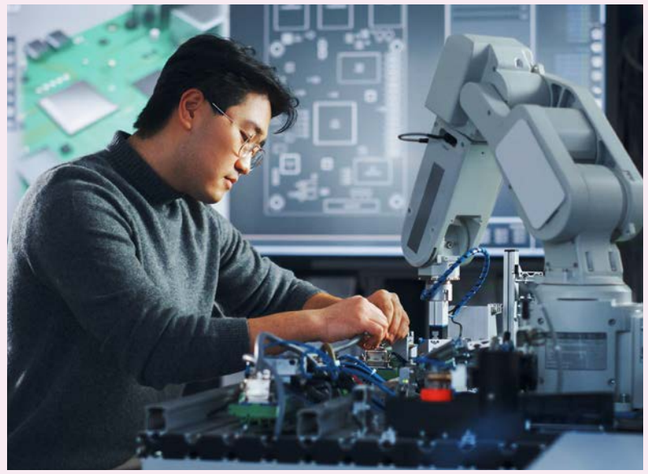
TFP 2 | Medium | Synthetic & Engineering Biology

Mission-led science translates NZ's biological resources and genomics capability into scalable industrial applications, biomanufacturing, and high-value products.

Invest in science that:

- Builds capability in biological design, translation, scale-up and deployment.
- Supports bioeconomy, industrial biotech and waste valorisation.
- Creates commercially viable products and companies through industry-led R&D.

Connects to bio-based value creation, primary integration (**PI&B**), circular economy (**ES&R**).



TFP 3 | Medium | Biomedical Technologies

Strengthens biomedical and animal health innovation pathways from discovery to trials, diagnostics, commercial development and domestic manufacturing capability.

Invest in science that:

- Develops advanced therapeutics and diagnostics through translational research capability.
- Supports translation, trials, manufacturing and scale-up capability.
- Grows firms through co-investment and global partnerships.

Focus on existing research strengths and unmet needs. Health applications supported through **H&S** and animal health applications through **PI&B**.

TFP 4 | Large | Advanced Manufacturing

Nationally connected advanced technology clusters strengthen discovery science to export-ready high-value goods pathways.

Invest in industry-led science that:

- Builds shared technology roadmaps that align capability, partnership, investment and commercial impact, including through industry-research challenge programmes.
- Prioritises investments using economic impact, milestones and stop-go points.

Specific investments will be identified through an industry co-led roadmap process. Connects to primary sector high-value products w/ **PI&B**.

TFP 5 | Medium | Space & Advanced Aviation

Grow export value from space and aerospace systems by focusing research, industry and government effort on scalable, internationally relevant capabilities.

Invest in science that:

- Connects NZ firms and researchers to global missions.
- Builds demonstration missions and flight heritage.
- Develops high-value, defensible capability areas.

Builds on NZ's geographic and technical advantages. Includes shared-use tech developed with investment from defence R&D.

TFP 6 | Medium | Innovation Sandbox

NZ becomes a globally preferred environment for developing, validating and deploying advanced tech in real-world settings through connected innovation sandboxes, testbeds and proving grounds.

Invest in science that:

- Builds innovation pathways, entrepreneurial capability, and commercialisation pathways.
- Attracts international co-development, investment and validation activity w/ InvestNZ.
- Focus on priority technology opportunities with strong cross-pillar application.

TFP 7 | Small | Powering New Zealand's future

Research supports abundant, renewable and economically competitive domestic energy pathways through integrated energy system design.

Invest, alongside NZ's major energy companies, in science that:

- Targets major energy opportunities and constraints.
- Improves generation, storage, transmission and demand management.
- Identifies practical transition pathways and export opportunities.

Focus on system design, adoption, and transition pathways, not just technology, aligned w/ **ES&R**.

TFP 8 | Small | Advanced Energy Technologies

Develop globally relevant advanced energy technologies, services, and products by translating science capability and renewables advantage into commercial opportunities.

Invest in science that:

- Connects research with developers, investors, partners, and emerging energy companies.
- Develops advanced energy, storage, smart energy and cleantech solutions.
- Strengthens secure and resilient energy systems.

Focus on emerging opportunities and NZ advantage, potential alignment to **ES&R** (geothermal) and **PI&B** (biofuels, critical minerals).

Primary Industries and Bioeconomy

Total investment

$194m

per year by 2029/30 (from forecast $292m in 26/27)

Expected contributions:

- Productive, resilient and sustainable primary production systems
- World-leading biosecurity prevention, preparedness and response
- Technology-enabled, data-driven production systems
- Greater value capture and diversification by enabling high-value products, advanced processing and IP

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PIB 1	Medium	Biosecurity surveillance, detection and response

Research enables NZ's biosecurity systems to detect threats earlier and respond faster to reduce economic, environmental and productivity losses.

Invest in science that:

- Connects surveillance, diagnostics and data systems (w/ **TfP**).
- Improves risk intelligence and early detection of priority and emerging threats.
- Develops better decision-support, control and eradication tools to reduce biosecurity impacts (w/ **ES&R**).

Sits within a wider government-led system, including CoRE, BSI, MPI, MCERT and private sector.

PIB 2	Large	High-value bio-based products, processing and IP

Industry-led science enables a more diversified, innovation-led bioeconomy that converts biological strengths into trusted products and enduring national value.

Co-invest in industry-led science that:

- Develops high-value products and ingredients from bio resources (w/ **H&S**).
- Builds bioprocessing/biomanufacturing capability, retaining more value onshore.
- Improves market access, product trust, commercialisation and IP outcomes.

Target a small number of sectors for focused investment, selected through RFNZ's standard assessment processes. Increased focus on industry-led and co-funded research.

PIB 3	Small	Bio-based value systems build from our unique biological resources

Next-gen bio-based value chains create globally differentiated products and services that build on indigenous knowledge, bio-resources and commercial innovation.

Invest in science that:

- Validates NZ's unique high-value bioactive products, foods and solutions for global markets.
- Enables indigenous innovation, commercialisation pathways and helps grow the Māori innovation economy.

Leverages indigenous knowledge systems, capability and resources as a source of competitive advantage to create additional value across other outcome areas.

PIB 4	Large	Resilient, high-performing and sustainable production systems

By 2031, primary producers will increasingly use science-backed production systems that improve productivity while reducing climate, environmental and biological risks.

Co-invest in industry-led and transdisciplinary science that:

- Accelerates climate-resilient genetic improvement across priority species.
- Develop integrated low-impact production systems that perform under changing conditions (w/ **ES&R**).
- Strengthen shared data, measurement and decision-support tools for producers.

Government funding refocused on transformational market opportunities, increased industry role for incremental and near-to-market R&D.

PIB 5	Medium	High-tech enabled production systems

Tech testbeds generate trusted evidence, accelerating adoption of precision agriculture, automation, traceability and resource-efficient technologies.

Invest in science that:

- Tests and validates high-tech production systems in real-world NZ settings.
- Supports adoption through tech assessment, demonstration and co-investment.

Net increase w/ **TfP** funding for primary tech development. Funding in **PI&B** refocused on validation and adoption of tech across other outcomes.

PIB 6	Small	Critical minerals and low-impact resource development

New Zealand better understands its critical minerals potential, establishes capability in low-impact extraction and processing and addesses adoption barriers and value capture.

Invest, alongside industry, in science that:

- Improves knowledge of critical mineral resources and opportunities.
- Enables low-impact exploration, extraction and rehabilitation (w/ **ES&R**).
- Advance processing, recycling and recovery technologies that increase domestic value capture (w/ **TfP** and **ES&R**).

Focus on scoping opportunity and growing existing capabilities, positioning for future growth.

Environmental Sustainability and Resilience

Total investment

$204m

per year by 2029/30 (from forecast $285m in 26/27)

Expected contributions:

- Improved resilience to natural hazards and weather impacts
- Better allocation, efficiency and environment outcomes for natural resources
- Protection and restoration of biodiversity and NZ's distinct natural heritage
- Climate mitigation and adaptation informed by robust science
- Trusted environment data, monitoring and integrated decision support
- International leadership in Antarctic and Southern Ocean stewardship

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ESR 1	Large	Protecting NZ from multi-hazard and climate risk

Decision-makers have access to trusted multi-hazard risk information to guide planning, investment and adaptation.

Invest in science that:

- Builds integrated hazard, exposure and vulnerability datasets.
- Develops dynamic risk models and decision tools.
- Improves real-time monitoring, forecasting and response.

Supports national, regional and community decision-making. Integrates climate adaptation, resilience and emergency management.

ESR 2	Large	Actionable climate science

Climate science provides decision-ready information for adaptation, risk management and future opportunities.

Invest in science that:

- Strengthens climate, earth-system and water modelling.
- Produces decision-grade impact information.
- Builds trusted climate data services and tools.

Foundational capability supporting multiple **ES&R** outcomes and wider system planning.

ESR 3	Medium	Supporting effective system-scale ecosystem interventions

Integrated science supports large-scale recovery of terrestrial, freshwater and marine ecosystems.

Invest in science that:

- Helps understand ecosystem connectivity and recovery.
- Prioritises interventions with highest long-term impact.
- Validates scalable recovery approaches and monitoring systems.

Source-to-sea focus. Aligns environmental, cultural and economic (w/ **PI&B**) outcomes.

ESR 4	Small	Sustainable economic growth through clean energy and circular production systems

Research that integrates clean energy and circular systems, improving productivity, resilience and environmental performance.

Co-invest in industry-led science that:

- Integrates cross-sector energy, materials and waste flow modelling.
- Identifies high-impact circular and low-emissions opportunities.
- Tests clean energy and circular production systems at scale.

Focus on adoption, system performance and long-term value creation. Energy elements closely tied to **TfP**, circular systems connect to **PI&B** critical minerals outcome.

ESR 5	Small	Place-based knowledge, leadership and governance

Integrated knowledge systems support place-based environmental management and informed decision-making across local, regional and national scales.

Invest in science that:

- Combines environmental science, mātauranga Māori and place-based knowledge to support stewardship and resilience.
- Strengthens place-based monitoring and knowledge systems for environmental and risk-informed decisions.
- Supports Māori and community leadership, governance and adaptive management.

Cross-cutting outcome supporting resilience, climate, ecosystem and resource management decisions.

ESR 6	Small	Antarctic and Southern Ocean science leadership

Targeted Antarctic and Southern Ocean science supports stewardship, strategic interests and global influence.

Invest in science that:

- Improves understanding of climate, oceans and ecosystems.
- Supports marine governance and ecosystem management.
- Maintains long-term observations and datasets.

Focus on areas of distinctive NZ capability and responsibility, meeting our international obligations and contributing, where appropriate, to international initiatives.

Healthy People and a Thriving Society

Total investment

$191m

per year by 2029/30 (from forecast $242m in 26/27)

Expected contributions:

- Enable longer, healthier and more participatory lives
- Support smarter, more sustainable communities, social and health systems
- Build inclusive human capital and societal resilience
- Establish NZ as globally recognised, trusted environment for real-world testing
- Translate clinical research and medical innovation into improved diagnosis, treatment and care

Cross Pillar Alignment: The **Healthy People and a Thriving Society** Pillar is the primary home for health- and society-related research. It links to **Technology for Prosperity** for technology-led research and **Environmental Sustainability and Resilience** for research centred on environmental systems, risks and hazards. This Pillar focuses on the related health, wellbeing and societal impacts.

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HPTS 1 | Large | Earlier intervention and disease prevention

Research improves understanding of disease drivers, enabling earlier intervention, prevention and better long-term health outcomes.

Invest in science that:

- Strengthens population and longitudinal studies to modify disease drivers
- Connects longitudinal studies and national datasets to improve health and social outcomes.
- Improves prevention and early-intervention strategies, particularly for children and young people
- Supports Māori and pacific leadership and community partnered research to strengthen community health and social outcomes.

Focus on evidence for early intervention and prevention, not treatment. Strong links to social determinants and community wellbeing.

HPTS 2 | Large | Longer, healthier and more productive lives

Reduce the burden of high-prevalence physical and mental health conditions through fundamental, discovery and translation research.

Invest in science that:

- Improves prevention of high-burden conditions.
- Develops innovative diagnostics and treatments.
- Explores social determinants of health, with a focus on extending healthy and productive life expectancy and strengthening communities.
- Develops Māori and Indigenous approaches to preventing and treating high-burden physical and mental health conditions.

Focus on advancing clinical and biomedical public health research to address high-burden conditions and broader health determinants.

HPTS 3 | Large | Biomedical innovation for health and prosperity

Biomedical innovation strengthens pathways from discovery to diagnostics, therapeutics, clinical use and commercial growth.

Invest in science that:

- Advances translational health research through early-stage evidence, prototypes and validation towards commercial partnerships and clinical use.
- Expands clinician-led research, early clinical validation and testing capability to support industry investment and clinical adoption.

Focus on early-stage translation – turning biomedical discoveries into evidence, prototypes and clinical validation that support industry partnership, clinical adoption and economic value creation.

HPTS 4 | Medium | Improved societal resilience, equity and productivity

Research strengthens social, education and workforce systems that support long-term wellbeing and prosperity.

Invest in science that:

- Strengthens social responses and community resilience to major economic, environmental and societal shocks.
- Promotes equitable long-term social outcomes and social cohesion.
- Builds education, workforce capability and healthy work environments to lift productivity.
- Advances Māori and Pacific leadership, education, research and workforce capability to support a prosperous and resilient future.

Focus on equitable social outcomes, education and workforce capability, and community resilience.

HPTS 5 | Large | Smarter, more efficient health and social services

Evidence supports better models of care, improving access, efficiency and health system performance.

Invest in science that:

- Develops and evaluates new approaches, technologies, tools and models of care to improve outcomes, service delivery and system efficiency.
- Strengthens self-care and primary, community, Māori, Pacific, iwi, disability and ethnic care to enable earlier diagnosis and treatment and reduce health-system pressure.
- Improves access to information, decision support, care coordination, and patient and whānau navigation.
- Develops workforce innovations that improve service quality, efficiency, staff experience and effectiveness.

Focus on evidence-based models of care and workforce innovation that improve access, outcomes and health-system efficiency.

HPTS 6 | Small | Human-centred health innovation

Human-centred research improves safe, trusted and equitable adoption of new health technologies.

Invest in science that:

- Identifies enablers and barriers to trusted, equitable and effective uptake of digital health technologies.
- Improves human-centred design and testing of digital tools, devices and technology-enabled services.

Focus on human-centred design, testing and uptake of digital health technologies to ensure technology-enabled care is safe, trusted, equitable and responsive to user needs.

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