



## COVERSHEET

<b>Minister</b>	Hon Dr Ayesha Verrall	<b>Portfolio</b>	Research, Science and Innovation
<b>Title of Cabinet paper</b>	Te Ara Paerangi – Future Pathways - National Research Priorities	<b>Date to be published</b>	19 July 2023

### List of documents that have been proactively released

<b>Date</b>	<b>Title</b>	<b>Author</b>
May 2022	Te Ara Paerangi – Future Pathways: National Research Priorities	Office of the Minister of Research, Science and Innovation
3 May 2022	Te Ara Paerangi – Future Pathways: National Research Priorities DEV-23-MIN-0063 Minute	Cabinet Office

### Information redacted

**YES**

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Some information has been withheld for the reasons of free and frank opinions and confidential advice to government.

## In Confidence

Office of the Minister of Research, Science and Innovation

Cabinet Economic Development Committee

## Te Ara Paerangi – Future Pathways: National Research Priorities

### Proposal

- 1 This paper seeks Cabinet agreement to establish National Research Priorities (NRPs) and commence the process to identify NRPs, as part of the Te Ara Paerangi – Future Pathways reform.
- 2 NRPs will be a portfolio of the most important challenges and opportunities facing Aotearoa New Zealand that research, science and innovation (RSI) can address.

### Relation to government priorities

- 3 NRPs are a pillar of the Te Ara Paerangi – Future Pathways programme to reform Aotearoa New Zealand's RSI system. Establishing NRPs was a policy direction in the Te Ara Paerangi – Future Pathways White Paper to achieve the objective of 'Creating New Futures' through an RSI system that makes an impact of national and international significance. This objective also emphasised the need for a much greater focus on alignment and co-ordination (Kotahitanga) to grow the impact we want and need from our RSI system, which NRPs will provide.
- 4 NRPs will harness and direct the RSI system to address key national, social, environmental, economic and health challenges and improve alignment with existing policies in this space (eg Economic Plan, Industry Transformation Plans, National Adaptation Plan, Emissions Reduction Plan). This alignment will provide clear pathways to impact for research funded through NRPs. For example, Industry Transformation Plans could act as a bridge between research funded through NRPs and the needs of Aotearoa New Zealand's industry.
- 5 By driving collaboration between research and industry, impact generation, technological diffusion throughout society and the diversification of our economy, NRPs will contribute to the Government's Economic Plan, as reiterated by the Minister of Finance's Economic Strategy letter to Ministerial colleagues (June 2022). The plan focuses on building a high wage, low emissions economy that gives economic security in good times and bad. NRPs that direct RSI funding and resources where it is needed most will help address the major long-term challenges and opportunities our economy faces.

### Executive Summary

- 6 National Research Priorities (NRPs) will be the government's primary mechanism to direct mission-led research and focus activities to achieve the

most important social, health, environmental and economic outcomes for Aotearoa New Zealand.

- 7 NRPs will be transformative and focused on impact delivery to make a material shift towards the achievement of those outcomes. They will create impact by setting ambitious missions and supporting strong connections between researchers and the people who will ultimately implement their innovation – government, private industry, Māori and iwi, end users and communities.
- 8 NRPs will function as hubs of coordination, collaboration and capability for priority areas across the RSI system. This will facilitate transdisciplinary connections and collaborations between researchers across all parts of the RSI system, and with users of research, in part by leveraging the increasing digitalisation of research. They will form a locus for sufficient long-term funding to support research, impact delivery, capability building, critical infrastructure and technical services relevant to NRPs.

## Background

- 9 RSI is critical to meeting many of the big challenges and opportunities facing Aotearoa New Zealand, such as combating climate change, preparing for and responding to disasters, generating sustained improvements to our health and wellbeing, and improving our productivity and the prosperity of New Zealanders.
- 10 In 2021, the OECD<sup>1</sup> paper on the design and implementation of mission-oriented innovation policies noted that tackling current challenges at the unprecedented scale of climate change, required the better strategic orientation and holistic coordination of RSI activities.
- 11 Focusing research and impact activities around clear missions that involve collaboration between government, researchers and users of research (like industry) is common internationally. For example, Singapore's Research, Innovation and Enterprise 2025 Plan builds on their National Artificial Intelligence Strategy, where there is an overarching vision is for Singapore to be a leader in developing and deploying scalable, impactful artificial intelligence solutions, in key sectors of high value and relevance to citizens and businesses by 2030.
- 12 The lack of clear and express government direction about priorities has led to a strategic gap, resulting in a cluttered RSI landscape that lacks consistency and clarity. This was reflected in submissions on the Te Ara Paerangi – Future Pathways Green Paper, which highlighted:
  - 12.1 Proliferation of priorities: National Science Challenges (NSCs), Strategic Science Investment Fund (SSIF) platforms, sector-specific research plans developed by agencies, and organisational priorities for

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<sup>1</sup> 2021. 'The design and Implementation of Mission-Oriented Innovation Policies: A New Systemic Policy Approach to Address Societal Challenges'. OECD Science, Technology and Industry Policy Papers. No. 100.

institutions has led to a system that lacks overall coordination and coherency.

- 12.2 Inefficient resource allocation: Without a clear tool to direct funding, people and efforts to the matters government considers most important, resource allocation is sub-optimal. The haze of investment signals fails to give clear direction to funders, institutions and researchers over where to focus their activities. It also undermines attempts to prioritise research because any activity can be justified under one of the many existing "priorities".
  - 12.3 Underinvestment in mātauranga Māori and areas of transformational change: These problems also result in relative underinvestment in mātauranga Māori, effective support of Māori aspirations, and research that supports transformational change. Without direct investment, the system struggles to be responsive and tends towards incumbents and entrenched approaches.
- 13 Over the past decade, mission-led research in Aotearoa New Zealand has mostly been driven by the NSCs, which were established in 2014. Their conclusion in 2024 provides an opportunity to build on lessons learned from that process, focus our efforts on the issues and opportunities that matter most and generate meaningful impact on the lives and wellbeing of New Zealanders.

## Analysis

### What are National Research Priorities?

- 14 NRPs will be the government's primary mechanism to direct mission-led research and focus activities to achieve the most important social, health, environmental and economic outcomes for Aotearoa New Zealand. They will offer clear, long-term and strategic direction from government, reduce fragmentation, and promote collaboration over unproductive competition.
- 15 NRPs will be the high-level challenges and opportunities of greatest importance to Aotearoa New Zealand to which RSI can make a significant contribution. These missions will describe the impact government is seeking to achieve through the funding of research under each Priority. I anticipate there will be around eight NRPs, including Māori-led and Māori-focussed Priorities.
- 16 Each NRP will define a number of research outcomes and research activities to achieve its mission. They will have their own leadership bodies that will provide functions such as decisions on relevant research outcomes and activities, impact assessment, and reporting and accountability. A cross-Priorities governance group will provide strategic oversight across the portfolio of Priorities.
- 17 NRPs will mark a step-change from NSCs to deliver transformative change through their level of ambition, focus on delivering impact through excellent

research, complementarity to government strategies and priorities, and responsiveness to Māori aspirations in the RSI system through Māori-led and Māori-focused NRPs.

- 18 To achieve this transformative change, NRPs will serve a dual role in the RSI system, as:
  - 18.1 a funding mechanism to proactively invest in the determined priority research areas; and
  - 18.2 a hub of collaboration, coordination and capability across the RSI system.
- 19 By setting ambitious and future-focused missions through NRPs, we will proactively identify the most important matters facing Aotearoa New Zealand and then build research systems and capability to service those missions, including talent development. This is a marked difference from thematic priorities (eg NSCs), which can tend towards funding existing capability and lack the impetus to translate research into impact.

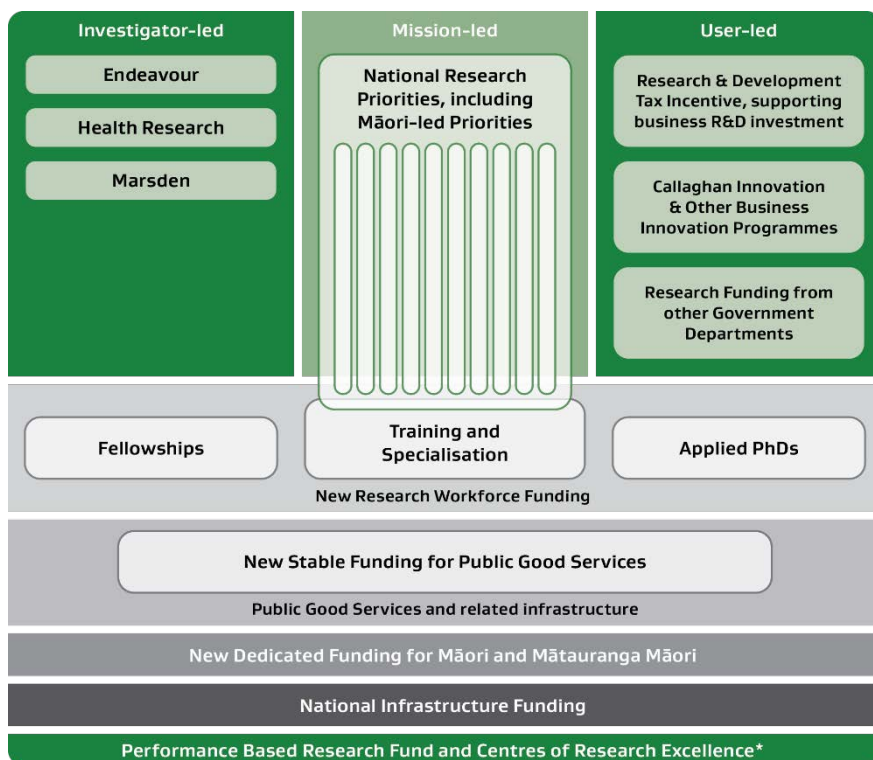
#### **NRPs as hubs of connectivity and capability development**

- 20 NRPs will create impact by setting ambitious missions and supporting strong connections between researchers and the people who will ultimately implement their innovation – government, private industry, Māori and iwi, end users and communities. They will connect to industry, the health system, the environmental sector, research next-users and other end-users so that NRPs align with opportunities in new and existing sectors.
- 21 These connections are critical to ensure that NRPs generate impact, accelerate innovation and are relevant to Aotearoa New Zealand and the rest of the world. They will make connections and establish relationships that support end-users to be involved in research from the outset including shaping research activities, as well better enabling research to be utilised and taken up by maximising knowledge exchange. These functions can provide an enduring and visible point of connection that can build and nurture long-term relationships with communities, end-users, other researchers and international partners. This is particularly important for relationships with Māori and Pacific communities that require personal connection and reciprocity.
- 22 I expect that there will be synergies between NRPs and national priorities set by our major international RSI partners, which will enhance mutual benefit from research collaboration. The United Kingdom, Australia and the European Union have each determined a set of research areas to which they have dedicated significant funding and sector-wide co-ordination mechanisms. The likely congruence of the European Union's six thematic priority clusters with NRPs contributed to my decision to pursue New Zealand's Associate Membership to Pillar Two of Horizon Europe.

- 23 NRPs will form a locus of capability development in the RSI system, including training and skills development, building capability to work with Māori and Pacific communities, and physical and digital infrastructure.
- 24 Building and maintaining transferable and soft skills, including Māori and Pacific capability, is important to support wider research and impact activities. Moreover, it is essential to making the workforce sustainable and therefore our ability to deliver on NRPs over the long term. Shared training and learning opportunities provide a valuable mechanism to drive skills growth across the sector by leveraging existing expertise, as well as to organically establish connections across areas without a strong research driver to do the same.

**Scope of National Research Priorities**

- 25 As demonstrated in the Te Ara Paerangi – Future Pathways White Paper, NRPs will provide a clear and consistent statement of mission-led research priorities across government, while still providing space for activities to be funded and progressed outside of NRPs (eg the Endeavour and Marsden Funds; see Figure 1). Where relevant, the NRP collaboration and coordination functions will support connection between activities across the system, regardless of funding mechanism.



\*Funding administered by the TEC to eligible education organisations to support research activity and research-led teaching. Not to scale.

**Figure 1: Indicative schematic of the future RSI system (Te Ara Paerangi – Future Pathways White Paper 2022)**

- 26 NRPs are intended to be long-term and enduring to enable the RSI system to solve big problems and deliver meaningful impact. The duration of each

Priority will depend on the nature of its mission.  
Free and frank opinions

Free and frank opinions

- 27 There will be regular review mechanisms to assess progress of NRPs towards their desired impact, and whether the overall portfolio of NRPs still reflect the largest challenges and opportunities for Aotearoa New Zealand.

### Process to set National Research Priorities

- 28 The NRP-setting process needs to deliver a portfolio of Aotearoa New Zealand's most important strategic-level challenges and opportunities where RSI can make the most significant contribution. This is broader than the consideration for NSCs, which focused on the most important science-based issues facing Aotearoa New Zealand.
- 29 The strategic level of NRPs means that government plays a greater role in the decision-making process, whereas decisions regarding specific research activities undertaken under each NRP require a greater degree of expertise and would be led by NRP governing bodies in collaboration with researchers, research users, the private sector, Māori and communities.
- 30 As such, I propose that Cabinet is the appropriate final decision-maker for NRPs, as it is ultimately a decision regarding the allocation of government resources toward government priorities. Government involvement at this level is standard practice internationally, including in the United Kingdom, Singapore, Australia, Ireland and Canada, and is broadly accepted by respective RSI sectors. The Te Ara Paerangi – Future Pathways Green Paper submissions indicate a general acceptance of this position.
- 31 To ensure Cabinet's decision has legitimacy and credibility, I propose to establish an Independent Strategic Panel (the Panel) to recommend a portfolio of NRPs to government. The Panel would operate above sector interests, ensure strategic Māori views are represented and have members of sufficient mana that its recommendations will be widely respected by researchers and users of research alike.
- 32 I expect that Panel members will collectively hold a set of skills and experience including leadership; independence; understanding of the Aotearoa New Zealand context, including giving effect to Te Tiriti; understanding of the contribution of RSI to productivity and wellbeing; and an international perspective.
- 33 The criteria to choose the Priorities will be confirmed alongside the Panel's terms of reference. My expectation is that the criteria will support the selection of NRPs that have potential for transformative impact; honour Te Tiriti o Waitangi / Treaty of Waitangi (Te Tiriti); are future focused; contribute to wellbeing and public good; are relevant to Aotearoa New Zealand and enhance international connectedness. The criteria will be set out in more detail to guide Cabinet's final decision on the NRPs at the end of this year.

34 Free and frank opinions

35 I propose to direct officials to undertake targeted engagement to collect input from sector experts, sector strategic thinkers, business, international and futures experts where relevant, and Māori, Pacific Peoples and communities (including ethnic communities) to inform the Panel's recommendations. MBIE officials will provide secretariat support to the Panel.

36 Government agencies will have the opportunity to support the operation of the Panel through a working group and an interagency steering committee. They will also have opportunity to provide input into the process as both research funders and users of research.

37 This model will support Cabinet to make an informed decision with strategic input that can be developed in a manner that is timely, consultative, transparent and meets Te Tiriti obligations.

38 Free and frank opinions

**Māori participation and honouring Te Tiriti**

39 Appropriate Māori participation in the process to set NRPs is critical to ensuring that our RSI system supports Māori aspirations and delivers positive outcomes for Māori.

40 Māori will be involved throughout the process as sector experts, strategic experts and Tiriti partners.

40.1 Māori as sector experts – Māori will provide input into the process as RSI experts and users of research at various stages of the NRP process. RSI experts will be invited to provide input into development



of NRP, with guidance of the Panel as to the information needed, which could be via testing, analysis and/or development of draft NRPs.

- 40.2 Māori as strategic experts on the Panel – The Panel will have appropriate Māori representation and leadership to provide an opportunity for Māori to help shape and deliver NRPs and allow for Māori-focused and Māori-led Priorities.
- 40.3 Māori as Tiriti partners – The process to set NRPs will allow iwi to engage with government as Tiriti partners, acknowledging that iwi have many competing priorities and interests other than RSI. Flexible approaches and options for Tiriti partners to participate may be needed to ensure iwi Māori interests are upheld in the NRP process. Cabinet will make decisions after an opportunity to engage with Iwi Leaders.

41 I expect that the participation of Māori and iwi in the process to set NRPs will lead to increased:

- 41.1 Investment in Māori-led and community-led RSI activity;
- 41.2 Investment in mātauranga Māori, including protection of mātauranga and taonga where relevant;
- 41.3 Māori leadership in the RSI system;
- 41.4 Allocation of resources for Māori within the RSI system; and
- 41.5 Acknowledgement of Māori rights and interests in the RSI system.


**Financial Implications**

42 Free and frank opinions



**2024 establishment funding**

43 Confidential advice to Government



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45 Free and frank opinions



Free and frank opinions

### **Legislative Implications**

46 There are no legislative implications to this proposal.

### **Impact Analysis**

#### **Regulatory Impact Statement**

47 A Regulatory Impact Analysis is not required.

#### **Climate Implications of Policy Assessment**

48 A Climate Implications of Policy Assessment (CIPA) requirements are not required at this stage of the proposal. However, as NRPs are developed and may include work on greenhouse gas emissions, a CIPA may be completed.

#### **Population Implications**

49 NRPs will be a mechanism to achieve Te Ara Paerangi – Future Pathways' vision of an RSI system that supports wellbeing for all current and future New Zealanders, a high-wage low emissions economy, and a thriving, protected environment through excellent and impactful RSI.

50 Enabling opportunities for Māori-led research will help address the structural disadvantages and systemic inequities Māori face in the RSI system, and will help support Māori ways of knowing, working and being. The impact of these changes will lead to improved outcomes for Rangahau Māori, Māori and Māori communities.

51 NRPs will be a mechanism to help support and explore new opportunities for Pacific researchers within the RSI system. Policy directives on Empowering Pacific Peoples (policy direction 3.3) were part of the Te Ara Paerangi – Future Pathways White Paper. Pacific Peoples' viewpoints will inform the Panel's recommendations recognising the value and contribution of Pacific communities to the RSI system.

52 Communities, including ethnic communities, will have opportunities to feed into and shape NRPs. It will be important to ensure voices from ethnic communities are heard in an environment where the priorities of the majority may be more prominent.

#### **Human Rights**

53 There are no implications under the New Zealand Bill of Rights Act 1990 or the Human Rights Act 1993.

## Consultation

- 54 The following government departments were consulted in the development of this paper: The Ministry of Education, the Treasury, Ministry for the Environment, Ministry for Primary Industries, Tertiary Education Commission, National Emergency Management Agency, Department of Prime Minister and Cabinet, Te Puni Kōkiri, Te Arawhiti, Department of Internal Affairs, Department of Conservation, the Ministry of Health, the Ministry for Women, Ministry for Pacific Peoples, Ministry of Foreign Affairs and Trade, Ministry for Social Development, Ministry of Defence, Ministry of Transport, Department of Corrections, Toka Tū Ake EQC, the Productivity Commission, Inland Revenue Department and Land Information New Zealand.
- 55 MBIE also consulted with its external Reference Group for Te Ara Paerangi – Future Pathways on the development of the NRP framework. The Group consists of representatives from a range of peak bodies and professional organisations within the sector, including business, industry and Māori science and research leaders.

## Communications

Confidential advice to Government

56

## Proactive Release

- 57 I intend to release this paper in accordance with the guidance in Cabinet Office Circular CO (18) 4.

## Recommendations

The Minister of Research, Science and Innovation recommends that the Committee:

- 1 note that in December 2022, Cabinet [CAB-22-MIN-0532]:
- 1.1 agreed to Te Ara Paerangi – Future Pathways being the pathway by which to achieve the significant additional government investment that will be needed to realise the Government’s goal of overall research and development expenditure of two per cent of GDP by 2030;
  - 1.2 agreed to anchor policy development for, and implementation of, Te Ara Paerangi – Future Pathways around three phases:
    - 1.2.1 Phase 1: Immediate workforce and people support - to be delivered in 2023;
    - 1.2.2 Phase 2: NRPs - delivered from 2023 onwards; and
    - 1.2.3 Phase 3: Institutional change (where required) - delivered from 2024 onwards;

- 1.3 agreed in principle, subject to detailed policy proposals being brought to Cabinet, to establish a process for determining NRPs to align resources and focus collective activities on areas of most importance to Aotearoa New Zealand's economic, social and environmental wellbeing;
- 1.4 invited the Minister for RSI to bring detailed policy proposals on a process to determine NRPs, including options for funding, to Cabinet in the second quarter of 2023;
- 2 agree to establish NRPs;
- 3 note that NRPs will be transformative, enduring and focused on impact delivery to make a material shift towards the achievement of the most important social, environmental, health and economic outcomes for Aotearoa New Zealand;
- 4 note that some NRPs will be Māori-focused and Māori-led;
- 5 agree that an Independent Strategic Panel will recommend a portfolio of NRPs to government;
- 6 authorise the Minister for RSI to appoint members of the Independent Strategic Panel, in consultation with relevant Ministers;
- 7 direct officials to conduct targeted engagement to inform the recommendations of the Independent Strategic Panel;
- 8 note that government agencies will have the opportunity to provide input as research funders and users into the Independent Strategic Panel's considerations;

Free and frank opinions

12 Confidential advice to Government

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- 15 note that the Minister for RSI will keep Ministers informed on progress on identifying NRPs.

Authorised for lodgement

Hon Dr Ayesha Verrall

Minister for Research, Science and Innovation