In-Confidence

Office of the Minister for the Environment

Cabinet Economic Development Committee

Environment and Climate Research Strategy report back

Proposal

1 This paper seeks your agreement to the scope, public consultation approach, and oversight arrangements for the Environment and Climate Research Strategy.

2 This work programme responds to the recommendation of the Parliamentary Commissioner for the Environment (PCE) to develop an environmental research strategy that sets out priorities and research goals for the natural resources sector.

Relation to government priorities

3 This work supports the following government priorities:

3.1 improve the health of New Zealand's freshwater and coastal areas; protect, preserve, and restore our natural heritage and biodiversity; and work with the agricultural sector to achieve our goals of clean water, lowering emissions, and sustainable farming

3.2 improve New Zealand's environmental reporting system, informed by the PCE's 2019 report, *Focusing Aotearoa New Zealand's environmental reporting system*

3.3 achieving the purpose and goals of the Zero Carbon Act, transition to a clean, green carbon neutral New Zealand and increase investment in world leading research that helps us reduce emissions

3.4 support wider work in research, science and innovation to advance Mātauranga Māori.

Executive Summary

4 Current public investment in environmental research is disconnected from government priorities. The current fragmented and ad hoc approach has been criticised for leading to inconsistent delivery of environmental research, science, and data. This makes it difficult to fill the information needs that would drive better decision-making for Aotearoa New Zealand's environment, now and into the future.

5 In May 2021 the Cabinet Economic Development Committee invited the Minister of Research, Science and Innovation and Climate Ministers to undertake work on an environmental and climate research strategy as part of the Future Pathways programme, and report back on progress [DEV-21-MIN-0099].

6 MfE is leading a cross-agency working group to develop an environment and climate research (ECR) strategy to act as a single point of reference and prioritise research needs according to outcomes.

7 I have met with the Minister of Research, Science and Innovation, Minister of Agriculture, Minister of Conservation, and Minister of Climate Change to discuss the approach for developing the ECR strategy. I intend to work with this group to provide Ministerial oversight during development of the strategy.

8 The ECR strategy will act as a 'pathfinder' as part of the wider Future Pathways reform of the research, science and innovation (RSI) system currently under way, which includes reforming the funding system to give effect to a clear set of national research priorities.

9 9(2)(f)(iv)

Background

10 In his 2020 review of the funding and prioritisation of environmental research, the PCE noted the need for a clear, unambiguous national-level environmental research strategy.

11 The PCE stated this strategy is needed to address systemic issues with our current public research system which has at times been disconnected from government priorities, is fragmented and ad hoc, and struggles to support Māori researchers and research, and to develop mātauranga Māori. This has led to inconsistent delivery of environmental research, science, and data.

12 The PCE estimates the total investment in environmental research being approximately $427-$516 million per year[1]. This investment is fragmented across a variety of Government agencies and from numerous RSI funds. A breakdown of this investment estimate is attached (Appendix 1). MfE, the Department of Conservation (DOC) and the Ministry for Primary Industries (MPI) have little influence over where this research funding is directed, other than their investment from their own departmental baselines.

13 To address these issues and the PCE's recommendation, in May 2021 the Cabinet Economic Development Committee invited the Minister of Research, Science and Innovation and Climate Ministers to develop an environmental and climate research strategy" as part of the Future Pathways programme [DEV-21-MIN-0099] and report back on the work undertaken on it. This paper fulfils that requirement.

Reform of the research, science and innovation system is under way

14 The Ministry for Business, Innovation and Employment (MBIE) has recently consulted on the Te Ara Paerangi Future Pathways[2] programme to reform the RSI system that funds public research. This reform intends to address the disconnect between Government's long-term policy needs, RSI system fragmentation, and a lack of strategic input in the RSI system. The ECR Strategy is being progressed in parallel to Future Pathways to ensure urgent environment and climate research priorities are established quickly. The ECR Strategy will also test an approach for prioritising research in the reformed RSI system and provide learnings for other sectors.

15 MfE has been leading a cross-agency working group to develop the strategy. The working group consists of core representatives from MfE, MBIE, DOC, MPI, Ministry

[1] Depending on the definition used to identify environmental research.
[2] https://www.mbie.govt.nz/have-your-say/future-pathways/.

of Health (MOH), and a representative for regional councils. Further guidance is provided by other government agencies, Māori advisors and Chief Science Advisors.

16 I have met with the Minister of Research, Science and Innovation, Minister of Agriculture, Minister of Conservation, and Minister of Climate Change to discuss commissioning for the strategy. Continued engagement with this group to provide oversight as the strategy is developed will be vital for its success and uptake.

Analysis

17 As noted by the PCE, our current RSI system struggles to systemically fill the information needs that will drive better decision-making for Aotearoa New Zealand's environment now and into the future.

18 Identifying and prioritising critical environmental research needs will support long-term natural resource policy development and decision-making for intergenerational wellbeing. A clear set of research priorities will also ensure the most important research is invested in to support the Government's ambitious environment and climate goals. Through prioritisation of research that supports government priorities, the ECR Strategy will provide greater direction to where funding is allocated.

19 Immediate research needs include evidence for setting environmental limits and targets under a proposed new resource management system, future conservation system work, and enabling a range of programmes such as the National Adaptation Plan, Emissions Reduction Plan, Essential Freshwater, Te Mana o Te Taiao – Aotearoa New Zealand Biodiversity Strategy, Fit for a Better World, Biosecurity 2025 Direction Statement for New Zealand's biosecurity system, and Stats NZ's Data Investment Plan.

20 I have asked officials to develop an environment and climate research strategy that builds on existing strategies. This will allow the whole of Government to speak with one voice and make efficiency gains by taking a more strategic and coordinated approach to prioritising and investing in environment and climate research, data, capability and infrastructure.

This work will align with the Future Pathways programme

21 The strategy will be nested in the Future Pathways programme and be consistent with the direction of the RSI system reforms. It will test an approach for sector strategies to prioritise research in the reformed RSI system, where the funding system gives effect to a clear set of research needs. It will also provide learnings for other sectors.

22 Given the breadth and complexity of the RSI system, the broader Future Pathways reform programme is likely to take a minimum of three to five years. While that reform is under way, this strategy will provide the direction needed to fill critical and immediate research needs, such as those noted in paragraph 19.

23 In time, the strategy will serve to link government environment and climate research priorities to funding in the reformed RSI system, addressing the issues raised by the PCE and delivering the data, research and innovation needed by the natural resource sector.

Work programme to deliver the strategy

24 The work programme to deliver the final strategy 9(2)(f)(iv) includes:

24.1 developing the design approach - the outcomes, principles, high-level scope and engagement process to develop the draft strategy

24.2 synthesising and connecting existing environment and climate focused strategies and plans

24.3 developing criteria for prioritising research needs

24.4 ensuring alignment with wider reforms under way

24.5 developing a stakeholder engagement plan

24.6 drafting the strategy

24.7 testing the strategy with stakeholders and Māori

24.8 preparing the final strategy for Cabinet approval and release.

The design approach for the strategy is complete

25 The cross-agency working group has completed work to design the strategy, including outcomes for the implemented strategy, principles for how it will be developed, and an approach for how to prioritise research.

26 The strategy will direct mission-driven[3] research and guide investigator-led research. The strategy will span the research spectrum from generating to developing to leveraging ideas. It will span all types of research and identify the data, collections, monitoring, capability and infrastructure needed to enable research to take place.

27 Mātauranga Māori and kaupapa Māori research will be central to the strategy and will span all portfolio areas.

28 The scope of the strategy will go beyond the biophysical state of the environment. It will recognise interactions between the environment and society: how human actions directly and indirectly cause changes in the biophysical environment; and in turn, how changes in the biophysical environment affect society.

29 A key feature of the scope of the strategy is that it links across disciplines and sectors to achieve national environment and climate outcomes. As a result, the strategy could include several areas of research which also support outcomes of high relevance to other sectors.

30 I am seeking your agreement on the scope boundaries for research topics the strategy will support. This will enable officials to finalise synthesising and connecting the relevant existing strategies. We expect scope boundaries will be further refined during the strategy development process.

[3] Mission-driven: Research that is focused on delivering impact for New Zealand, through excellent, relevant science that reflects a clear goal, agreed between government and research provider. Mission-driven research can be delivered across a range of horizons to generate new ideas, develop emerging ideas or leverage proven ideas *(derived from the 2016 National Statement for Science Investment)*

31 Decisions on research topic scope boundaries should take into consideration the holistic Māori view of the environment, clarity on links to environment and climate outcomes and other disciplines, and the ability to fit into the wider RSI reforms.

32 I have considered options for a narrow, targeted, or wide research topic scope for the strategy. I recommend a targeted scope, as I consider this provides the best opportunity for an impactful strategy that is inclusive enough to link across disciplines and sectors relevant to the environment and climate, but not so wide that it encroaches on other sectors or becomes unwieldy. This approach also offers the opportunity to dovetail into RSI system reforms.

33 A targeted scope includes research relevant to the following Ministerial portfolios:

Portfolio	**In scope**
Environment	• freshwater, soils, land use, air, estuaries, coastal waters, oceans, biodiversity and ecosystems, including interdisciplinary research across these areas • waste and other pollution, circular economy • impacts the built environment has on the natural environment and climate
Conservation	• biodiversity, ecosystems and biosecurity (where it relates to ecosystem impacts) • conservation research except heritage research
Climate change	• climate change, climate variability, and impacts of climate change on the natural environment • climate change adaptation (including relevant research needs identified in the National Adaptation Plan) • research that helps transition New Zealand to a low-emissions economy (including research needs identified in the Emissions Reduction Plan)
Primary Industries	• primary sector research (including forestry) on impacts and relationships with the natural environment and biodiversity including mitigations • primary sector biosecurity risks that impact on ecosystems • primary sector research with a focus on climate change adaptation • primary sector research with a focus on transitioning to a low-emissions economy
Health	• conservation research with a focus on rongoā species • understanding how the environment impacts on human health (physical, mental, spiritual)
Energy	• energy research on transition to a low-emissions economy included in the National Adaptation Plan and Emissions Reduction Plan
Hazards	• understanding how natural hazards are exacerbated by climate change • understanding and mitigating the natural environment's risks/opportunities from, and resilience to, climate change and climate variability.

34 Research not included in this table such as other primary sector research, or energy research related to climate change mitigation not included in the Emissions Reduction Plan, is considered out of scope. Assuming a National Research Priority approach is confirmed as proposed in the Future Pathways Green Paper (2021), we would expect research considered out of scope here to be included in other research strategies. Also out of scope is Antarctic and Southern Ocean research.

35 The strategy will focus on research conducted or commissioned in New Zealand. In key strategic cases, it will support research to be undertaken offshore (where it makes sense due to strategic partnerships, infrastructure, capability, or capacity constraints).

Public consultation approach

36 Engagement on the strategy is critical to ensure buy-in to an overarching strategy and collective priorities. We will need to engage Treaty partners to understand their aspirations for the strategy and what is key to its success. I plan to undertake targeted engagement with Treaty partners and other key stakeholders to help prioritise research outcomes and test the draft strategy.

37 I am not recommending any public consultation on a draft strategy because of the targeted engagement approach that will be undertaken to prioritise research and draft the strategy. There is a variety of relevant consultation already underway across the natural resources sector, and this feedback will be used to inform the strategy.

Next steps

38 Moving into the implementation phase, the cross-agency working group will develop the draft strategy. This will include using existing strategies to map research needs, developing criteria for prioritising these needs, and carrying out the prioritisation of research needs.

39 Throughout the implementation phase, oversight will be provided by relevant Ministers and a senior leader governance group, and the strategy will be tested and reviewed by Māori advisors and Chief Science Advisors.

40 Subject to Cabinet agreement, the strategy will be developed with the following proposed timelines:

9(2)(f)(iv)

9(2)(f)(iv)

41 I intend to engage with the Minister of Research, Science and Innovation, Minister of Agriculture, Minister of Conservation, and Minister of Climate Change to provide oversight during development of the strategy.

42 9(2)(f)(iv)

Financial Implications

43 The development of the ECR Strategy will provide greater direction to where *existing* research funding should be allocated. This will result in investment being driven into high priority environmental research, data and knowledge needed to achieve the Government's environment and climate goals and improve efficiency in spend.

44 The development of the strategy has no financial implications beyond existing departmental baselines. Where resourcing is needed, this will be managed by Chief Executives and relevant agencies contributing to the work.

Legislative Implications

45 There are no legislative implications.

Impact Analysis

Regulatory Impact Statement

46 A regulatory impact analysis is not required for this paper.

Climate Implications of Policy Assessment

47 A climate implications of policy assessment is not required at this stage.

Population Implications

48 There are no population implications.

Human Rights

49 Development of the strategy is consistent with the New Zealand Bill of Rights Act 1990 and the Human Rights Act 1993.

Consultation

50 MfE has designed the strategy collaboratively through a cross-agency working group with officials from MfE, MPI, DOC, MBIE, MOH and a representative for regional councils.

51 The following agencies were consulted in the development of this paper: Statistics New Zealand; Ministry of Business, Innovation and Employment; The Treasury; Ministry of Health; Ministry for Culture and Heritage; Te Puni Kokiri; Department of Conservation; Ministry for Primary Industries; Ministry of Housing and Urban Development; and National Emergency Management Agency. Their feedback has been addressed.

Communications

52 MfE will manage communications around developing and releasing the strategy and will share communication plans with relevant agencies in advance of any public announcements. Care will be paid to clearly communicating the connection to the Future Pathways reform programme and the timelines of the two projects.

Proactive Release

53 I intend to proactively release this Cabinet paper, with redactions as appropriate under the Official Information Act 1982.

Recommendations

The Minister for the Environment recommends that the Committee:

1 **Note** that current public investment in environmental research is fragmented and disconnected from government priorities, which leads to inconsistent delivery of environmental research, science and data

2 **Note** that in 2020 the PCE identified the need for a clear and unambiguous national-level environmental research strategy and recommended that the Ministry for the Environment, working with other agencies, should take leadership for its development

3 **Note** that in May 2021 the Cabinet Economic Development Committee invited the Minister of Research, Science and Innovation and Climate Ministers to undertake work on an environmental and climate research strategy as part of the Future Pathways programme, and report back on progress [DEV-21-MIN-0099]

4 **Note** that the Ministry for the Environment has been working with Ministry for Primary Industries, Department of Conservation, and Ministry for Business, Innovation and Employment, Ministry of Health and a representative for Regional Councils to develop the

5 **Note** that the ECR strategy will align with MBIE's Future Pathways reform programme of the research, science and innovation system

6 **Note** that the design approach for the ECR Strategy, including outcomes, principles, scope and public consultation approach is complete

7 9(2)(f)(iv)

8 **Agree** to use a targeted scope which includes environment and climate research areas that connect directly to government natural resources sector reform priorities, but which reduces potential overlap with other future sector strategies

9 **Agree** to undertake targeted engagement with Treaty partners and stakeholders, but not standalone public consultation

10 **Agree** that the Minister of Research, Science and Innovation, Minister for the Environment, Minister of Agriculture, Minister of Conservation, and Minister of Climate Change will continue to provide Ministerial oversight of the strategy as it is developed

11 **Note** that subject to Cabinet agreement the Ministry for the Environment will continue to work collaboratively across government to develop the Environment and Climate Research Strategy.

Authorised for lodgement

Hon David Parker

Minister for the Environment

Appendix 1

Expenditure in environmental research by central government agencies and regional councils[i][4]

Agency	2015/16 ($ million)	2016/17 ($ million)	2017/18 ($ million)	2018/19 ($ million)
MBIE Strategic Science Investment Fund[ii]	n.d.	n.d.	n.d.	113.0–138.2
MBIE Endeavour[iii]	n.d.	13.6–19.4	31.2–45.8	52.9–74.6
MBIE National Science Challenges[iv]	n.d.	n.d.	n.d.	19.4–30.5
MBIE other[v]	34.3–72.4	23.3–52.3	17.7–42.0	13.3–33.7
Royal Society Te Apārangi[vi]	25.7–26.7	35.0–36.2	27.2–27.8	30.0–31.2
DOC[vii]	14.8–14.8	16.9–16.9	16.9–16.9	21.4–21.4
MfE[viii]	4.5–4.6	3.2–3.5	4.0–4.1	4.1–4.6
MPI[ix]	21.4–40.6	21.1–53.4	16.7–33.8	31.9–38.7
Subtotal central government				285.7–372.9
Tertiary Education Commission[x]	57.0	n.d.	71.0	n.d.
Regional Councils[xi]	57.7–60.3	61.1–63.8	67.1–69.5	69.8–72.3
Total				426.8–516.0

Notes:

i. Expenditure includes MBIE's funds managed by Royal Society Te Apārangi. The range represents the narrow to broad estimates for each agency's contribution to the total funding per year. n.d. indicates no data available.

ii. Data provided by MBIE. Projects have only been categorised by SEO since 2018/19. Includes SSIF Programmes and NSCDs and Genomics Aotearoa, which are part of SSIF infrastructure.

iii. Data provided by MBIE. Endeavour created in 2016. Note values represent amount paid out by MBIE in the respective financial years, not the amount announced.

iv. Data provided by MBIE. Projects have only been categorised by SEO since 2018/19.

v. Data provided by MBIE. Includes all other MBIE administered funds. These include the Catalyst Fund, Partnerships Fund, PreSeed Accelerator Fund and discontinued funds such as Targeted Research and Sandpit rounds prior to 2016.

vi. Data provided by RSNZ. Data include all funds administered by RSNZ such as Marsden, Catalyst and Rutherford Discovery Fellowship. Note: (1) RSNZ projects are based on ANZSRC Field of Research (FoR) codes, as categorisation by SEO began in 2020; (2) no weighting of FoR codes is available, therefore the total amount is likely to be an overestimation as the presence of a single environmental FoR code resulted in a 'narrow' categorisation; (3) value represents the amount announced in the later year, not the amount paid out in the financial year.

vii. Data provided by DOC.

viii. Data provided by MfE.

ix. Data provided by MPI.

x. TEC does not provide environment-specific spending. Figures come from Stats NZ (2019) for higher education environmental expenditure so are likely to be an overestimation, as they will include funds in addition to those from TEC.

[4] Modified from the PCE's 2020 report '*A review of the funding and prioritisation of environmental research in New Zealand*'.

xi. Includes data provided by 14 regional councils who categorised their spending by SEO.

xii. Total includes funding from TEC for the year 2017/18 to generate the most complete picture of expenditure possible.