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Te Ara Paerangi
Ministry for Business, Innovation and Employment
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Tēnā koe

Canterbury Regional Council (Environment Canterbury) submission: Te Ara Paerangi

Thank you for the opportunity to provide comment on the *Te Ara Paerangi – Future Pathways green paper*. Please find Environment Canterbury's submission attached.

We would welcome the opportunity to work further with the Ministry for Business, Innovation and Employment on future pathways for our Research and Science System.

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Ngā mihi,

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Encl: Canterbury Regional Council (Environment Canterbury) Submission to MBIE on *Te Ara Paerangi – Future Pathways*

Canterbury Regional Council (Environment Canterbury) submission – *Te Ara Paerangi Future Pathways Green Paper*

1. Canterbury Regional Council ('Environment Canterbury' 'the Council') welcomes the opportunity to comment on the Te Ara Paerangi Future Pathways Green Paper. We provide our submission as both a producer and end user of research, and in the context of our roles and responsibilities as a regional council, including those under the Resource Management Act 1991 and the Local Government Act 2002.

2. Environment Canterbury is the regional council for the largest geographical region and second most populous region in New Zealand. Our region encompasses substantial diversity, both in terms of our geography and population, which contributes to a wide range of community needs and expectations.

3. We support the need and opportunities to position the Research, Science, and Innovation (RSI) sector to address New Zealand's significant environmental challenges. The case for change in New Zealand's research system is well made. Environment Canterbury agrees that the current research system has elements of unproductive competition and duplication and has been aware of, and impacted by, the fragmentation and weak connectivity between researchers for some time.

4. The six areas of proposed opportunity for change are supported in principle by Environment Canterbury. Whilst research is a global activity, an effective research system needs to be anchored through regional and local priorities and have practical application at a local level.

5. While noting the importance of a strong RSI system as a whole, the focus of our submission is on key issues and matters that are of most relevance to Environment Canterbury and our regional government functions – namely Te Tiriti, mātauranga Māori and Māori aspirations, research priorities, and funding.

6. To maximise the impact of New Zealand's RSI investment, any review of the RSI system must consider the wider Government reform programme underway (e.g., Resource Management reform) as it will significantly impact the shape of local and regional government, and other roles and responsibilities in the future. Any review should therefore consider the implications of the various reforms on the RSI system and those interacting with it, so that the system addresses future needs.

Environment Canterbury's strategic direction and the role of science

7. Environment Canterbury's work is grounded in a strong understanding that we can only be successful in enhancing environmental outcomes if we work closely in partnership with mana whenua, central and other local government agencies, businesses, industry sectors, and community and volunteer groups to manage natural resources. Achieving this strategic environmental imperative requires the support of the wider RSI system, of which we are a part.

8. Our science is in the service of our strategic priorities and statutory responsibilities, and is aligned with our organisational values and operating principles – *taking action together to shape a thriving and resilient Canterbury, now and for future generations | Toitū te marae o Tāne, toitū te marae o Tangaroa, toitū te iwi.*

9. Research and science are at the core of regional government environmental management, providing evidence to inform decision-making and policy. The underpinning data are a key tool to engage with our communities about the actions we can collectively take to improve environmental outcomes.

10. Effective resource management requires us to demonstrate the rigour, integrity, and transparency of our evidence base, whether produced by us or the wider RSI system. As such, engaging with a well-functioning, coordinated and collaborative RSI system is fundamental.

11. Environment Canterbury sits within the RSI system as a producer of high-quality science. Consultants and scientists access and use our data for their research. We also work closely with other science providers to influence research and inform policy.

12. The vision for Environment Canterbury science is set out in our Science Strategy (2018) as being “nationally recognised for delivering the right science, at the right time & in the right way for the benefit of our communities and the environment”.

13. Our approach to science recognises that mātauranga Māori, social sciences, and economics are complementary bodies of knowledge that are integral for effective environmental management.

14. Environment Canterbury’s Science Group has 109 FTE involved in the collection, curation and interpretation of environmental data. Science undertaken by Environment Canterbury includes bio-geophysical sciences across disciplines relevant to our environmental management responsibilities.

15. Additionally, in the last five years, Environment Canterbury has commissioned approximately 90 significant pieces of research with Crown Research Institutes and universities. We also work with private environmental consultants.

16. Regional council science is rate payer funded. Regional councils have time, funding, and mandate constraints that don’t easily allow fundamental, process level research to be undertaken. We need to engage with other organisations who can contextualise our findings; this requires a strong RSI system that prioritises and appropriately funds a systematic understanding of environmental processes.

17. Whilst Environment Canterbury undertakes its own monitoring, data from our monitoring programmes are grounded in the work of other research organisations. Our research incorporates work from across the RSI system to provide broader insights into our data. Fundamental research undertaken within the wider RSI system provides context for understanding environmental processes and change. Without this underpinning process level research, our monitoring observations risk being snapshots in time.

18. There are gaps created by the constraints on what local government can fund through Long Term Plans. To fulfil our functions and have greater understanding of what is happening in our regions, local government requires a strong RSI system. However, the primacy given to research focussed on what is good for New Zealand at a national level can leave gaps in understanding at regional scales. The current RSI system, whilst largely pitched at national priorities, needs to better benefit the needs of local government and support regional understanding through recognising that regional challenges are of national significance. Regional government is often central government’s implementation instrument, ensuring that

central government policy and legislation is enacted. As such, our work is integral to delivering central government priorities.

The RSI system and state of the environment monitoring and reporting

19. In addition to interacting with the RSI system, central and local government operate under national laws, and agreed programmes and frameworks to collect and report state of the environment monitoring data. One area where the RSI system has a crucial role is in informing the framework for state of the environment reporting. This framework is premised on human-environment interactions and provides clarity for central and local government as to the science and research needs (and data and evidenced-based information required) to report on and inform New Zealand's sustainable development.

20. Further work is needed to ensure that central government's state of the environment reporting programme and framework connects to the RSI system. An effective RSI system will provide for timely provision of methods and approaches for state of the environment monitoring and reporting to ensure New Zealand has the tools to monitor and report on the environment in an ecologically meaningful way – over time and at differing spatial scales.

21. A nationally coordinated environmental monitoring and reporting system, together with prioritising and adequately funding research to address data and process understanding gaps, is critical to detecting, attributing, projecting, and managing environmental change. We strongly suggest that any design of research priorities supports a comprehensive national environmental reporting system, with aligned funding to support the data requirements, process understanding, and time scales of this reporting.

22. In addition, central coordination and funding of the substantive datasets that are currently held regionally (e.g., by regional councils and research institutions) but have national significance would enhance their utility, both nationally and internationally, now and for future generations. Ensuring discoverability, accessibility, and interoperability of data is critical to ensure that central and local government investment in research and monitoring delivers best value and evidence to inform decision-making.

Research Priorities

23. The National Science Challenges encompass some of New Zealand's research priorities. However, we recognise that delivering on these science challenges under existing frameworks can lead to issues of inefficiencies and duplication. We are supportive of an evaluation of how the priorities are delivered and encourage a timely review of priorities to ensure any ongoing investment is aligned with research needs at both regional and national scales.
24. Within the National Science Challenge approach, research could be further prioritised by considering how it supports both regional and national needs. Research should be directly applicable at both regional and national scales, whilst building on New Zealand's strengths and striving to fill knowledge gaps critical to New Zealand's societal and environmental wellbeing.

25. Whilst it is acknowledged that research is a global activity, national and international coordination and collaboration is critical to avoid duplication of research effort. Aotearoa is

uniquely positioned to deliver fundamental research that will enhance our environmental understanding and support community wellbeing at a range of scales.

26. In setting research priorities, the degree to which priority research will deliver outcomes for New Zealanders should be a key consideration. This approach would likely provide a greater focus on applied research that delivers on regional and national imperatives.

27. Environment Canterbury would like to contribute to any design and development of national research priorities. If priorities are to be an expression of the most important matters, the process of how this is to be defined and by whom needs to be clear. While the experience from other countries is valuable to consider, the concept of expert or executive decision-making in deciding national research priorities is inconsistent with the principle of collaboration and community involvement; such an approach is unlikely to be considered to give best effect to Te Tiriti o Waitangi.

28. Local government, central government, and mana whenua should all be involved in the priority setting process, along with other partners. A coordinated approach would ensure different sectors could share their priority research needs, and a collaborative research effort to deliver on national requirements could be designed.

29. Environment Canterbury encourages a strong emphasis on priorities being funded over long time periods. Aotearoa's capacity and capability to deliver effective research is reliant on certainty of funding, hence it is critical that research priorities are long-term. Strategy and priority setting should be done in tandem so that any strategy is clearly linked to research priorities, which in turn are appropriately funded. Key stakeholders are critical to this process and will ensure the impacts of the end products are considered.

30. Many of the issues identified in the Green Paper relate to defining priorities to facilitate more efficient resource allocation. It is important to recognise that effective and impactful research is the result of decades of sustained investment and effort in building the underlying capability, capacity, and infrastructure. Research priorities therefore need to be broad enough to cover long-term themes, yet specific enough to ensure effective and ongoing delivery of results.

31. It is crucial to consider how accountability will be measured given the long-term nature of effective research. Assessing return on research investment needs to factor in delivery of results, as well as incorporating additional measures that value long-term development of capacity and capability in areas such as mātauranga Māori and science communication that help ensure a strong and effective RSI system.

Te Tiriti, mātauranga Māori and Māori aspirations

32. Environment Canterbury strongly endorses a strengthened role for Māori in a research system that is guided by Te Tiriti o Waitangi, recognising that collaboration and partnering with Māori will lead to better outcomes for all.

33. Environment Canterbury recognises mātauranga Māori as a distinct and valuable body of knowledge. We support steps to better integrate mātauranga Māori in the research system and actions that will increase Māori participation in a system that is more responsive to Māori priorities and aspirations.

34. Environment Canterbury works closely with Ngāi Tahu Papatipu Rūnanga to realise their aspirations, which improves environmental and social outcomes for all of Canterbury. The

Tuia Relationship Agreement, signed in 2012, underpins our partnership with the ten Papatipu Rūnanga of the region. This agreement acknowledges and brings together the tikanga responsibilities of Ngāi Tahu and the statutory responsibilities of Environment Canterbury. Additionally, two Tumu Taiao (mana whenua experts) were appointed to Council in 2020.

35. To give meaningful effect to our Tuia agreement, and to enhance the mana of our environmental management and outcomes, Environment Canterbury regularly seeks to engage with and learn from the expertise of Māori. The availability of this expertise could be enhanced by a system that recognises, actively supports, and funds iwi/Māori priorities, together with a plan to increase capacity through meaningful and enduring development pathways for Māori researchers.
36. We support collaborative approaches with regards to engaging mana whenua and designing and conducting research that is both relevant and applicable to rūnanga needs. We understand that Rūnanga value collaborative approaches that reduce the risk of duplicating similar research questions. Early engagement with mana whenua helps to shape research, making it more meaningful and accruing benefits to the community as a whole. Often rūnanga are interested in similar research questions and bring a unique perspective that broadens the overall benefits of the research.

37. A coordinated, collaborative RSI system would also deliver significant benefits to mana whenua through reducing competition for rūnanga time and input. Environment Canterbury supports the need for funding and increasing mana whenua capacity to ensure that rūnanga priorities can be discussed and incorporated throughout research programmes. The currently unsustainable burden on mana whenua could be reduced by ensuring mana whenua involvement in setting research priorities, and funding opportunities for co-development and delivery on research questions.

38. The need to understand research questions that are of interest to mana whenua is critical, and institutions may not be aware of key research gaps of relevance and interest to mana whenua. In addition, there is a need to develop and enhance partnerships with mana whenua on research that is focused on their priorities, often at a local level.

39. Dedicated research funds are required to support coordination and collaboration with mana whenua across the various research communities and to ensure mātauranga Māori is valued, protected and understood across the research sector. This should include baseline funding for Māori core capability so mana whenua can be funded to co-develop research from the start.

Funding

40. A well-functioning RSI system must be appropriately funded, and Environment Canterbury supports a review of the current funding model. Whilst the RSI system can have defined, overarching research priorities, the right funding for an appropriate time period is critical to ensuring delivery. Providing certainty of funding through Strategic Science Investment Fund science platforms (or similar) for long-term programmes that deliver environmental, economic, cultural and social benefits may be one mechanism for enhancing research outcomes.

41. As with all competitive models, there is an opportunity cost to seeking funding, especially for short-term funding rounds. Time spent seeking funding reduces time spent conducting research (and performing other important services), with a disproportionate impact on mid-career researchers. Successful research programmes depend on stable funding that allows

researchers to develop programmes along with the necessary capacity and capability to deliver results.

42. Dedication of consistent funding to research institutions or through research priorities at a high level is preferable to having central government decide on funding for individual research projects. We also note that there does not appear to be any recognition of the funding required for governance and representation within the research system.

43. Funding for New Zealand's nationally significant databases that sit under RSI system curation and stewardship must be dedicated, sufficient, and maintained outside a competitive funding model. For example, a modern and effective RSI system needs to accommodate open-source data sharing to support natural and physical resource management under open access and creative common data sharing policies. Under the current system, there are examples where agencies contribute monitoring data to a national database and are then required to pay to use this database.

44. We see opportunities to improve knowledge transfer. To incentivise knowledge management and transfer to end users, funding for this activity needs to be appropriately accounted for to ensure researchers have time to deliver on this aspect. Research results need to be publicly available in a timely fashion; results and data must be shared so that future research builds on rather than duplicates previous work.

Research Institutions

45. The competitive, profit-driven model can discourage collaboration between organisations and limit the stability of research programmes. Government funded research should deliver free, publicly available data that provides a basis for research and innovation across the country, whilst informing decision-making at both national and regional levels.

46. Environment Canterbury supports greater dynamism across research institutions, central and local government, and mana whenua to ensure research delivers on community needs. This collaborative approach would recognise the roles of Crown Research Institutes and universities, whilst acknowledging the research priorities, funding models, and capacity associated with government bodies and iwi.

47. While larger research institutions might be more stable, they are also likely to be less agile and less responsive to practical local applicability. It is important to consider that the size of the institution is not just about the number of people but also the number of disciplines and associated capacity and capability they provide.

Research Workforce

48. Workforce capability and stability underpin an effective research system. Genuine collaboration requires time, trust, and involvement in research design and delivery. This could be supported through models that foster internships, secondments, and other pathways for shared capacity building.

49. The benefits of co-location may lead to stronger connections and better knowledge exchange. International experience demonstrates that large, co-located property and capital investments operate as centralised resources that many researchers from a variety of fields can utilise. In addition, centralisation and coordination of administrative structures to support fund management would likely result in reduced overhead costs and more time focused on science delivery.

50. The results of the current workforce survey will be informative. Salaries for researchers need to be competitive with other countries and private research organisations, which again underscores the importance of long-term stability of the research system. Researchers need a level of assurance that their employment is not dependent on the next funding round.

Research Infrastructure

51. The design principles for research infrastructure are supported and should be based on the nation's long-term research priorities. This again highlights the importance of long-term investment in core research and associated capabilities. Building broadly resilient infrastructure that is adaptable to the future requires significant investment in core priority areas, maintaining expertise and career pathways, and a long-range view about obtaining results.

52. Currently, a plethora of information and communications technology (ICT) platforms across local and central government makes informed decision-making to support the future needs and expectations of the community difficult. Any research system review should consider and invest in future ICT needs to enable decision-makers timely and simple access to information. The assessment of ICT needs should include how the data infrastructure and digital platforms will facilitate the objectives for the future research system to support collaborative, multifaceted, and interdisciplinary approaches.