To whom it may concern

Please find attached a submission to Te Ara Paerangi - Future Pathways co-authored by social science researchers from across the CRIs and Cawthron.

We support the direction this green paper is signalling, and make six main observations and recommendations:

- Whole of system prioritisation will enable positionality to be addressed as a core research activity, this is essential for transformative research.
- Social science leadership supports the reflexive practice necessary to work across knowledge systems.
- Social science contributions to transformative research enable impact, this should be resourced appropriately.
- We expect duplication of social research outputs will be reduced when collaboration and co-ordination across organisations is prioritised.
- We expect evaluations in the next 5 years will show a Tiriti led RSI system embraces and highlights the value of diverse social science contributions.
- Sustainable efficient and enabling research infrastructure demands a planned approach to investing in social knowledge.

Please contact me if further elaboration will be helpful. Indeed, the Pan CRI Social Science Network would be delighted to host you for a workshop or conversation during your consultation process.

We wish you all the best for this important work.

Ngā manaakitanga

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Submitter information

This submission shares social science perspectives from across Crown Research Institutes and Cawthron. It has been co-authored by 12 researchers. On Friday 11th February 2022 the Pan CRI Social Science network met to discuss this green paper. The Pan CRI Social Science network meets

regularly to explore issues related to the social sciences and ideas of interest across the CRIs. Whilst not all participants are trained social scientists, all have experience with social science and are keenly interested in social science contributions in the RSI system. Several of the members of the Social Science network have also undertaken research on the Aotearoa New Zealand RSI system, covering topics such as the science-society relationship, transdisciplinary research, transformative research, and how the science system contributes to societal benefits and system transformation (Lundquist et al., 2016; Rijswijk et al., 2018; Duncan et al., 2020; Kirk et al., 2020; Small et al., 2021). The views expressed here are those of the co-authors; they do not necessarily represent the views of the organisations we are employed by.

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Research Priorities

Exploring the role that whole-of-system priorities could play in focusing research activities and concentrating resources towards achieving national goals.

> Whole of system prioritisation will enable positionality to be addressed as a core research activity, this is essential for transformative research.

Taking a holistic perspective and designing the RSI system holistically is important. Research about systems thinking shows that there are often a plurality of mental maps or perceptions of the whole system. It is therefore important to develop capabilities for working in connected, integrated ways, that recognise whole system interactions without marginalising the range of world views actively shaping the whole system. This has been shown in the New Zealand context to lead to a better understanding of real-world problems (Vereijssen et al., 2017), as well as solutions to these problems (Small et al., 2021).

Mission-led, impact-focused research priorities supported by inter- and transdisciplinary research will be key. Lessons learned through the National Science Challenges show how we can fund and

support transdisciplinary research. The National Science Challenges now have seven years' experience of trialling transdisciplinary research (e.g. Duncan et al., 2020) and the Biological Heritage NSC is sharing their insights in separate submissions. Research and research priorities are value laden and transformation may be challenging for those who are invested in and benefiting from the status quo. This needs to be recognised and managed when setting research priorities that call for transformation (Turner et al., 2020), i.e. to ensure that those vested in the status quo do not block transformational research.

The social sciences in Aotearoa New Zealand's CRIs and Cawthron are diverse and whilst we do span the Frascati spectrum of foundational to application of knowledge, most of our social research is on the H2 and H1 Frascati horizons. However, there is a legacy of social research across the CRIs that enables knowledge to be produced across all three horizons at the same time. This generation of excellent and impactful research should be explored further to identify the potential for developing further capabilities across the RSI system (Greenaway et al., 2022).

Key to this form of transformative social research is attention to the positionality of the research and all those involved (see Maclean et al., 2022). So, we would like to see a higher priority for research that seeks to understand the context and system it is working in. This requires investment in capability building across all roles (research, management, funding, support) in the RSI system to develop reflexive practice (e.g. Montana et al., 2020) so that assumptions about knowledge systems and knowledge processes are more transparent and openly addressed in all knowledge production activities. This will draw attention to positionality by questioning "Who benefits from this research?", "Who is excluded from the benefits?", "Whose knowledge is included and whose is excluded?" "What could be unanticipated negative impacts?" Internationally recognised methodologies such as Responsible Innovation are one way of answering these questions and are beginning to be applied in Manaaki Whenua, ESR and AgResearch (Finlay-Smits et al., 2022; Espig et al., 2022).

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Te Tiriti, mātauranga Māori, and Māori aspirations

Exploring how the research system can best honour Te Tiriti obligations and opportunities, give life to Māori research aspirations and enable mātauranga Māori.

> Social science leadership supports the reflexive practice necessary to work across knowledge systems.

We support the recommendations in the Te Pūtahitanga report for a Tiriti led science policy approach.

In addition, we note that for many in the current system it seems a hard first step to recognise that there is already more than one knowledge system shaping Aotearoa. This goal requires development of reflexive practices across the system, and critical analysis of knowledge processes, positionality, and power (Allen et al., 2014; Thompson et al., 2017; Ruckstuhl et al., 2019; Le Heron et al., 2020). As evident by the references we include in this submission there is much social science already available to support this capability building.

One of the challenges is that, whilst this support exists within the RSI system, it is not always present in the leadership roles for research management and funding prioritisation. On this basis, we recommend giving greater recognition to the role social sciences (including kaupapa Māori or Māori centric social research) can play in leadership through the RSI system. Understanding and supporting reflexive practice will be important for working across different knowledge systems. Social research has supported this in the National Science Challenges (e.g.; Fielke et al., 2017; Le Heron, 2020).

References:

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Funding

Exploring potential ways to reshape the RSI funding system for the future. It covers how funding can be used to give effect to national priorities, reduce unproductive competition, and ensure our institutions can respond to emerging opportunities.

> Social science contributions to transformative research enable impact, this should be resourced appropriately.

Relationship building between researchers, their organisations, and the communities they work within needs to be adequately funded as it is central to impactful science. This will drive a change from short term research contracts where relationship building is unfunded, to seeing research bid development as relationship building and using these relationships to shape opportunities for long term impactful research.

Retrospective assessment of past funding on the proposed 'Benefits to NZ' could also be a useful social science contribution to the RSI system. Impacts of transformational research can take a long time to emerge, and it can be difficult to trace cause and effect. Nonetheless, the RSI system should invest more in evaluation of research impact, which in turn will likely require investing in more capacity for this work. Funding research that includes a monitoring and evaluation component after the research outputs are completed and/or implemented would provide valuable insights into ensuring that the research is having the desired impacts.

We hold mixed views about whether targeted base funding will adequately address the duplication and lack of collaboration in the system, especially depending on the level of resourcing. Unless funding is increased, competitive behaviour will continue. Alternatively, more attention needs to be given to research cultures and the way power is enacted through these and how this gets embedded in institutional processes. For example, if the RSI system shifted to more base funding, attention needs to be given to how this would change the dynamic between researchers and their managers. (Wreford et al., 2019).

Again, this calls for greater inclusion of reflexive questioning about implications of research structures and decision-making processes, and the extent to which a plurality of voices is being articulated and heard across the system. Specifically, more and more diverse social science expertise is needed on the MBIE assessor panels.

Too much emphasis on novel research devalues commitments to and relationships in places. Funding is required for longer term (10-15 years) research and maintaining the relationships across organisations (often at regional levels and led by hapū) able to sustain this research. This is not to say that novel research and competition for limited resources is not important for opening new boundaries of knowledge. However, attention to the raft of changes that innovation presents means that we need capacities for self-critique as well as ethical considerations to be openly addressed.

Funding needs to reflect a desire for critical capacity not just investments in novelty. A more socially aware approach to RSI investment would be welcome. Greater public confidence and trust in RSI will

likely come from a more engaged citizenry that can debate the pros and cons of opportunities and risks (Goven et al., 2012). Again, there are methodologies such as Responsible Innovation that can guide these activities. Important are institutional support for and the explicit funding of these activities as part of the research process from the outset (Owen, 2021 a&b).

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Institutions

Re-examining how we design and shape public research institutions (focussing on CRIs and Callaghan) to enable them to give effect to national priorities, encourage greater connectivity, and be adaptable in a fast changing world.

> We expect duplication of social research outputs will be reduced when collaboration and co-ordination across organisations is prioritised.

We are pleased to see greater recognition across government agencies that for knowledge to support 'change on the ground' social research must be a core component of mission-led/ impactful science. Accordingly, the social sciences in Aotearoa New Zealand need more visibility across the whole RSI system. Development and promotion of social scientists into leadership roles across the system will drive this visibility as well as build capabilities for working across knowledge systems and research cultures. Social scientists working in CRIs and Cawthron have a track record of leading dynamic teams able to work across disciplinary and organisational cultures. There is much to be built on from this legacy.

However social science research has been constrained by short term funding, a narrow view of social science disciplines, and unsophisticated framing of the contributions of social science as primarily about social and behavioural change, often overlooking the potential for social science to reveal fundamental conditions that are replicating inequitable social and economic relations.

Duplication of social research outputs will be reduced if collaboration and co-ordination across organisations is prioritised. Enabling research collaboration that can support complementary investments can only come from awareness of what each other is doing.

Research workforce

Exploring how we best develop our workforce, ensure the RSI workforce is connected, diverse and dynamic and they are offered attractive and flexible careers and career pathways.

> We expect evaluations in the next 5 years will show a Tiriti led RSI system embraces and highlights the value of diverse social science contributions.

We are hopeful that a Tiriti led RSI system will result in greater understanding across the whole science workforce about what social sciences are, and the diversity of social sciences required to achieve desired impacts (e.g., human geography, rural sociology, innovation systems, social psychology, economic modelling, evaluation, anthropology, communication, media studies, politics, gender studies, demography…).

Enabling increased mobility within the RSI workforce, across organisations such as government ministries and agencies, CRIs, polytechnics, universities, councils, and NGOs, will foster new workforce identities and practices. We would like to see the development of more 'Research Practitioners' who not only advance theories but drive impact at the same time. Social science methodologies such as participatory action research are one way to achieve this (Goven et al., 2009). They would be able to do this because their relationships with people in places are valued and they are resourced to co-produce knowledge across a variety of interests and perspectives.

Reference

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Research infrastructure

Exploring effective funding, governance and ownership arrangements for national research infrastructures and how we should support sustainable, efficient and enabling investment in research infrastructure

> Sustainable efficient and enabling research infrastructure demands a planned approach to investing in social knowledge.

As stated above we support a research system that can create impact in places through strong relationships with the people of those places and by working across organisations and knowledge systems. Core to this system will be leaders who enable a high standard of collaboration and sustain long term diverse relationships. RSI requires an infrastructure that can empower local communities and perspectives in a way that builds trust in the RSI system. This requires attention to the social infrastructure which allows for community building, regular interactions across groupings and regular reflection on how these relationships are developing and being maintained.

To have sustainable efficient and enabling infrastructure a planned approach to investing in social knowledge is also required. This might include:

- A regular conference or forum that is led by CRI and Cawthron social scientists
- A formalised role for Social Science in ScienceNZ leadership
- Support staff to enable co-ordinated peer review of social ethics across the CRIs
- Co-ordinated shared access to journals and library resources
- Critical engagement on the status of social science with peers in other science disciplines