

We are making this submission as the science team of a start-up company which is enabling impact investment to mobilise frontline action in the environmental and climate space. Our job is to help connect frontline environmental action with scientific experts, to provide scientific evidence for prioritising climate and environment action, to identify knowledge gaps that are key barriers to effective action, and to enable the reliable collection of data at a networked scale.

In this context, our submission is focused on three areas of the green paper which are most relevant to our experiences connecting with - but standing outside - the government-supported research ecosystem:

Priorities, Institutions, and Funding.

Rather than directly answering questions, we have elected to make three key recommendations which are relevant to these areas.

Priorities

There have been a number of attempts to set national research priorities, the most recent being the National Science Challenges. As an independent organisation, we believe the most important role of government-directed research is to be responsive to issues of national scale and public importance. Government-funded research also has the opportunity and in fact the responsibility to take on questions which can only be answered over long time-scales, and which require ongoing monitoring programmes not collecting the kind of 'novel' data that is most attractive to competitive funding sources.

Under the current system, this is challenging; for example, the "Growing Up In New Zealand" longitudinal study was the subject of a petition to ensure its continued funding¹ and there is no coherent prioritisation of environmental monitoring, as outlined by the Parliamentary Commissioner for the Environment².

We think any process identifying specific priorities must aim to be:

- Responsive to new challenges, but principally by forecasting broad research areas where those challenges could emerge (e.g. COVID-19 was not specifically foreseeable but the potential for a significant global pandemic was).
- Committed to identifying long-term and large-scale priorities that nationally-coordinated research programmes and projects are best suited to address, even if individual components of those programmes are carried out at smaller scales.
- Resilient to the government of the day, so that long-term monitoring of national import is not imperilled (or need to be saved) by political shifts.
- Consultative and representative, bringing together researchers across academia and industry, communities, and including researchers at all career stages.

The mechanism we think can best achieve this is **an independent advisory group responsible for setting and reviewing priorities**, which is representative in itself as well as engaged with communities. We suggest that such a body **must be weighted towards Māori and early career representation** to ensure meaningful co-governance and forward thinking, rather than merely providing an additional outlet for institutionally powerful voices. Having only one Māori or one early career position is not sufficient for those voices to have input.

¹<https://www.scoop.co.nz/stories/PO1709/S00372/growing-up-in-nz-longitudinal-study.htm>

²Parliamentary Commissioner for the Environment, December 2020. A review of the funding and prioritisation of environmental research in New Zealand. <https://www.pce.parliament.nz/media/197111/report-environmental-research-funding-review-pdf-32mb.pdf>

Institutions

As a science team within a private organisation we are constantly thinking about the movement of knowledge between the academic and the private spheres. There are undoubtedly many areas of science, particularly where public good is involved, that Government institutions are best-placed to address.

However, especially as we consider the need for localised responses to climate, environmental, and social crises, there is also a great deal of work that can most effectively be done by smaller-scale organisations which can more effectively establish connections on the ground. This kind of work is often precluded by the high overheads charged by large institutions, especially in the realm of science communication. Institutional support for a more diverse science ecosystem could also increase employment capacity for PhD-level researchers as over the last decade, the number of PhD graduates trained in Aotearoa New Zealand has grown significantly without increasing the total number of employed PhD-level researchers, and without private sector growth coming close to matching training capacity³.

We see the role of institutions - universities and research organisations - in this space as providing support for a wider science ecosystem. Specifically, we want to see:

- Easier, faster, less onerous processes for socially and/or environmentally beneficial research, particularly where it is non-commercialisable, to be funded through independent research organisations and researchers, or by independents in collaboration with larger institutions.
- Core research infrastructure made available to independent research organisations and researchers, particularly legal access to the scientific literature, but also access to services such as DNA sequencing or laboratory access. There could be scope here for nationally standardised 'visiting researcher' arrangements.

³Stewart, L.C. and Baisden, W.T. *Postgraduate Students and the Aotearoa New Zealand Research Workforce*, 2022. <https://doi.org/10.5281/zenodo.6342485>

Funding and Te Tiriti

At Toha, our science team operates within a Māori-led organisation, although none of us are Māori.

Our key recommendation from this perspective and from work we have done is that when considering funding, who has governance over the funding is at least as important as how much is handed out, or what principles are set for its distribution. For Māori communities, researchers, and organisations, we strongly believe the best way to ensure that funding addresses their needs and supports their work is to **give governance of funding to Māori**.

Tangata tiriti researchers may be best-placed to do specific pieces of work, but rather than positioning them as research leads who are tasked with acquiring sufficient context to support Māori needs, they can be funded by Māori to address specific issues, where their input and expertise are useful. We think this will also relieve a burden on tangata tiriti researchers by allowing them to focus first on building necessary relationships with Māori institutions and communities.

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