22 Feb 2023
Hon Dr Ayesha Verrall
Minister for Research, Science & Innovation

Dear Minister,

Request for a meeting: Mitigating global catastrophic risk to Aotearoa New Zealand as an important new national science mission.

We commend you and your officials on the publication of the Te Ara Paerangi Future Pathways White Paper 2022, and your intention to set national research, science, and innovation (RSI) priorities.

At present much risk research in Aotearoa New Zealand, including the national science challenge Resilience to Nature's Challenges, focuses on natural hazards and risks local to New Zealand. However, some of the largest threats to New Zealand citizens' wellbeing are global catastrophes (eg, pandemics, global conflict, solar storms). In particular, there are catastrophes that are anthropogenic in origin (eg, ecological degradation, nuclear war, artificial intelligence unaligned to human values, bioengineered pandemics).

A suite of global catastrophic and existential risks was alluded to by the UN Secretary General in his 2021 report Our Common Agenda and a full set of these risks is now explicitly identified in the US Global Catastrophic Risk Management Act 2022. This Act requires US Federal Agencies to characterise and plan for such risks. However, quality research identifying the optimal resilience strategies, their cost-effectiveness, and the interplay between climate mitigation and resilience to other natural and anthropogenic hazards is lacking. This is despite the International Science Council UNDRR Framework for Global Science laying out a research agenda to overcome silo-based risk research.

We are concerned that the focus in New Zealand continues to be on local natural hazards, when much larger potential long-term impact for the country stems from global catastrophes. This focus is evidenced by the National Emergency Management Agency's predominant focus on response to natural hazards, and the new National Security Strategy (in development), which looks like it will have a narrow focus on 'malicious threats to New Zealand' following the Royal Commission of Inquiry into the Christchurch terror attacks.

There is a serious risk that global anthropogenic hazards, threats not directed at New Zealand, but which have global consequences, and low probability devastating global catastrophic risks (GCRs) will slip through the cracks unaddressed. These risks could be unbearable for New Zealand. They are also highly neglected by the New Zealand science community (eg, the Royal Society of NZ last did a Report on Nuclear War in 1985 and the NZ Planning Council did its Report on nuclear war in 1987).

Initiatives such as the Aotearoa NZ Catastrophe Resilience Project (that we are involved with) are attempting to plug this gap and bridge the science-policy divide in areas of anthropogenic GCRs but are perversely dependent on international funding. A future-focused RSI system that advances the wellbeing of New Zealanders would provide mechanisms for addressing the full suite of GCRs. This is arguably the single most important thing that New Zealand science could achieve.

Possibilities for the RSI system in New Zealand to help address global catastrophic risks include:

- Nominate GCRs as the target of a key New Zealand science mission.

- Conduct risk research as an integrated package across the set of GCRs to understand the synergies in resilience measures and the cascading consequence of risk, risk factors and the interplay among hazards.
- Develop political consensus on key action points that focus on GCRs. (Such a bipartisan approach worked with the passing of the US Global Catastrophic Risk Management Act 2022).
- Identify and fund research that identifies low-hanging fruit, ie, neglected global risks where modest investment would have high cost-benefit for New Zealand and potential for downstream cost avoidance.

The increasing focus by government on climate mitigation and resilience science is to be commended, yet the impending impact of climate change was recognised decades ago. New Zealand science and society should not await the impacts of other GCRs before taking concrete action to understand and mitigate them.

New Zealand is in a privileged position as plausibly one of the most resilient nations in the face of GCRs,[1] however, key vulnerabilities exist.[2] Understanding and strategically addressing these vulnerabilities could mean New Zealand survives catastrophe relatively well compared to many nations. Protecting New Zealand as a node of technological/industrial complexity could not only protect New Zealanders' wellbeing but could have global significance for the long-term future of humanity.

We thank you for considering this meeting request.

Dr Matt Boyd[1] (email: matt@adaptresearchwriting.com)
Prof Nick Wilson[2]
Dr Ben Payne[1,3]

[1] Adapt Research Ltd
[2] Department of Public Health, University of Otago Wellington
[3] Joint Centre for Disaster Research, Massey University

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