Parliamentary Commissioner for the Environment
Te Kaitiaki Taiao a Te Whare Pāremata

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Hon. Dr. Shane Reti
Minister of Science, Innovation and Technology
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Dear Dr Reti

I am writing to raise with you a most concerning aspect of the proposed restructuring of public research establishments that you have inherited from your predecessor.

Under the Environment Act 1986, I am charged with keeping under review the system of agencies established by the Government to manage the environment. I consider the Government's network of Crown Research Institutes and the work they are funded to do a critical element of our ability to manage the environment. Your Government has decided to disestablish them and create new 'public research organisations' (PROs).

I won't comment on the wisdom of embarking on such a significant round of restructuring other than to note that, in my experience, such upheavals are rarely worth the loss in productivity and morale that ensue. One is tempted to warn against fixing something that doesn't appear to be broken.

But I have a particular concern with the plan to designate the Bioeconomy PRO as the home for Manaaki Whenua Landcare Research (MWLR). In my view this represents a serious misconception about the focus of its work and its linkages with other parts of the science system. For the reasons I set out, below, I consider that most of the research effort currently undertaken by MWLR belongs in the Earth Sciences PRO.

It may be of some interest to you to understand the background to MWLR's establishment. At the time of the disestablishment of the DSIR, MAFTech and other elements of departmental research in 1991, it was clear that some teams were much more obviously market-facing than others. The decision was taken to create some CRIs upstream of key productive sectors of the economy (agriculture, horticulture, forestry etc) and some that were more directly related to the biophysical environment (e.g. land, soil, freshwater, ocean and natural hazard) on which we all rely.

In the end it was decided to create three institutes focused on three domains: our slice of the earth's crust (the dynamic structural geology of our micro-continent and the minerals

in it); the linked ocean-atmosphere system that drives the hydrological cycle and climate in our corner of the south-west Pacific; and the diversity of living systems that populate our terrestrial and coastal environment. These domains mapped, respectively, onto three institutions - the Institute of Geological and Nuclear Sciences (GNS Science), The National Institute of Water and Atmospheric Research (NIWA) and MWLR.

Naturally, the practical realities of things like physical kit meant that the division of labour was not quite so clean. For example, the need to put scientists on the water meant that someone had to operate research vessels with a broader focus than just one domain. NIWA ended up engaging in substantial marine sedimentology research while MWLR focused on terrestrial soils even though you could argue that sediment and soils are indivisible. On the same basis, GNS Science concentrated its research efforts on superficial sediment stability in the form of landslide dynamics and soil drainage, with some clear connections to surficial geological composition.

The division of labour was not perfect, and I am pleased to see that the MetService is finally to be united with NIWA's research capability in the proposed Earth Sciences PRO. But broadly speaking, pragmatic solutions were taken in the knowledge that there would never be a perfect allocation of research teams, and it was always understood that research contracts were the way to ensure collaboration at the boundaries of research fields and the institutes that catered to them. Despite an excessively competitive environment for public funding, all three institutes have been extremely successful prosecuting a wide range of public good research that underpins the risks and opportunities that the physical environment presents in our region. They have attracted private sector money and they have grown (until recently) without recourse to the Crown for capital injections.

MWLR embraces the largest single body of research capability into our biophysical setting. The institute can provide you with all the details, but the following three research areas lie at the core of the institute's mission:

- understanding New Zealand's unique biodiversity and the biosecurity risks to which we are exposed
- understanding the ecological processes that operate across our terrestrial environment and how best to manage the risks to which our indigenous biota are exposed (by the huge number of plants and animals that have been released here).
- understanding land use and how people make decisions about how they manage stresses to soil, water and biodiversity while maintaining sustainable food and forest production systems.

MWLR is home to a large number of collections, databases and information systems that are critical to inform ongoing research. I am attaching a list of the nationally significant and

tier two databases that MWLR looks after. There has been no meaningful increase in the funding available to database management and extension in years and it is only the perseverance of the institute and its dedication to its core functions that has maintained these for the nation.

Unsurprisingly, MWLR finds itself working closely with NIWA and GNS on a wide range of fronts. Challenges like climate adaptation, declining water quality and soil contamination draw on expertise in biogeochemistry, deep-ecology, biosystematics, soil science, environmental toxicology and carbon cycling, as well as numerical modelling including geospatial data analysis, and social science - none of which uniquely resides in one institute but many of which are found in MWLR. MWLR's strength resides in the multidisciplinary nature of its integration of these fields.

While it is clearly better placed within the Earth Science PRO, there are elements of MWLR's work that have synergies with the proposed Bioeconomy PRO. It has undertaken excellent work alongside farmers, foresters and other land users in understanding not just the physical but the sociological barriers to more sustainable land management. Some of this might well find resonance with research currently being undertaken in AgResearch or Plant and Food.

But much of MWLR's work is the work we have to do regardless of whether or not there is an economic incentive. Being able to understand and interpret our biophysical environment so that we can manage the pressures our society places on it requires fundamental environmental and ecological research. If that research is going to be conducted anywhere, it should be alongside the rest of the bio-geophysical research that is at the core of much of NIWA's and GNS's mandates. That way we will bond land, freshwater and the marine environments together and enable stronger collaboration and better outcomes.

(I would note, in passing, that some of the work undertaken by NIWA may fit better in the bioeconomy PRO, in particular the research undertaken in aquaculture and fisheries.)

Splitting the existing CRIs the way that is proposed, would, in my view, do grave damage to our national research capability – a capability that lies at the core of the Government's responsibilities. There may be debate about whether public money should subsidise research that aims to promote economic growth but much of the research endeavour I have outlined above is public good research which no-one else is going to fund if we don't. This research is relied upon heavily by many of the Government's own agencies, by regional councils, by landowners and by Māori. MWLR has made huge efforts to engage with mana whenua who are responsible for some of the most precious elements of our heritage such as te Urewera or Taranaki.

I can see that a newly configured Bioeconomy research organisation could bring significant benefits. A focus on how we can transform biomass for a wide range of end uses rather than a focus on traditional sectors could help ensure our research is linked to the future rather than the defence of historical industries. But most of MWLR's work does not belong there.

Could you please supply me with the detailed briefing papers that describe the case for placing MWLR in the Bioeconomy PRO together with any advice on what such a move would mean for research staff and the maintenance and curation of collections and databases held by the institute (please treat this as a request under section 19 of the Environment Act).

Finally, can I express the view to you that playing around with the boundaries of research providers is a second order issue alongside the question of how any public research system is funded. I am not talking about the quantum of investment but rather the mechanisms through which funding is allocated. This element of the reform remains to be announced. I find it extraordinary that institutional changes have been announced without an equally clear indication of how these new institutions will bid for money. The abolition of a dedicated funding agency and the decision to hand its role back to the core bureaucracy was, in my view, a major step backwards.

For the environmental sector at least, the Crown needs a dedicated funding agency. It also needs a way to ensure that its strategic priorities for environmental research are clearly communicated to that funder so that we can be sure that government research investments map to the most important environmental challenges we face. I have provided advice on this subject as part of my review of the environmental research system – a hard copy of which has been sent to your office. Despite being released in December 2020, its analysis remains on point. I urge you to read it. I would be happy to discuss it with you when you have an opportunity.

Yours sincerely

Simon Upton

Parliamentary Commissioner for the Environment
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