

Kia ora

1.1 I am not sure I agree with the statement that "The NSCs have worked extremely well in improving collaboration across the system". I would need to see the evidence. The mid-term report on the NSCs was not released as far as I can tell, and I don't know if the planned 2021 MBIE review of the NSCs was conducted, or if the research community would have confidence in it. The NSC process has been criticised and some think it has resulted in manoeuvring, ring-fencing, and poor quality research. Gluckman's original idea that reducing competition for funding would lead to overall benefits needs examining.

<https://www.sciencemediacentre.co.nz/2018/11/17/national-science-challenges-mid-way-review-expert-reaction/>

3.1.2, "Marsden will remain" – the Marsden Fund should also be examined by this review. The success rate is too low (7-10% vs 30% in Australia) and the selection process unreliable. Even the suggestion that second-round winners be chosen by lot has some merit over the present system. Overheads swallow a lot of the money, to little benefit to the researcher. A senior researcher might think that applying for \$500,000 in order to fund a single PhD student and which, if successful, would prevent a mid-career researcher being funded, is not worth it. At the same time, there is no funding avenue for smaller researcher-directed grants.

I was surprised to see no mention at all of the Centres of Research Excellence. These were set up hastily without a long-term plan. Some centres have been funded continuously since the scheme was launched, while other centres that were first-rate scientifically have been terminated. The volume of funding appeared to lead to intense squabbling. At a meeting of the Association of CoREs that I attended, the main topic of business was how to use existing CoRE funding to lobby MPs for continued funding.

3.3: "Vote: Tertiary Education funds, such as the Performance-Based Research Fund (PBRF), are out of scope for this green paper." - this is surprising as it is a large component of New Zealand's research funding. I am not sure that PBRF has led to an improvement in the quality or impact of university research. (Quantity, yes.) Universities have struggled in the rankings. One issue is that the PBRF funding is too low to actually fund research directly. Most of it covers the salaries of researchers for the 30% of their time that is nominally spent on research. This leads to an "all or nothing" funding environment in which many good-quality researchers (e.g. high Bs in PBRF) can have almost no access to specific research funds at all.

It also means that a lot of research funding is tied to student enrolment, so that, for example, Massey's College of Sciences can propose to shed 1/3 of its permanent researchers without this being considered relevant to the overall picture of science research in New Zealand.

4. A further issue with the CRIs is their lack of a public-facing role. For example, most of the country's water quality experts are in NIWA, but the regional councils (who are required to achieve freshwater quality standards) often cannot afford to hire NIWA; some do the work in-house, resulting in duplication. Secondly, many CRI staff are not encouraged or not allowed to speak to the media which cuts a lot of researchers out of the "critic and conscience" role which is then limited to the universities. In other countries this role is also played by NGOs and independent research entities, but these sectors are tiny in New Zealand.

5.1 "New Zealand has generally followed the traditional international model where post-doctoral roles are fixed-term positions before progression to permanent senior positions. We are interested in your views on whether this model is working well." - It is not working well.

First, I am not sure that we ever followed that model. The UK is estimated to have 80,000 postdocs. That would be equivalent to 6000 in New Zealand. I would be surprised if we had 5% of that amount. Australia has 6000 postdoc positions and 10000 PhD graduates per year. I would like to see a more detailed international comparison here.

The Paper notes that there are relatively few funding mechanisms for ECRs. True, but anecdotally, there has been an increase in fixed-term ECR positions e.g. due to CoRE and NSC funding. At the 2019 Research Honours Aotearoa event, Dr Ocean Mercier, receiving the Callaghan Medal, spoke about how she knew large numbers of early career Māori researchers desperate for permanent jobs to move into. She called on universities to create those positions. In other words, both the ECR and the non-ECR employment system is broken. Meanwhile, the employment of permanent staff is also precarious.

Some of the changes that have been made (e.g. Fast-start and Rutherford), while positive, have focussed so narrowly that they have created winners and losers. Rutherford Fellows are typically promoted to Associate Professor immediately. We should not aim for a system where only a tiny proportion of high flyers can have a successful research career.

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