

## Cabinet Paper material Proactive release

Minister & portfolio Hon Jenny Salesa, Associate Minister of Education  
Name of package Performance-Based Research Fund Review: Report Back  
Date considered 27 July 2020

### These documents have been proactively released:

**Cabinet Paper:** Performance-Based Research Fund Review: Report Back  
27 July 2020  
Ministry of Education

**Appendix 1 Summary of Proposed Changes and Options for Strengthening the PBRF**  
27 July 2020  
Ministry of Education

**Appendix 2 Full Detail and Analysis of Changes to Be Tested by the Ministry of Education during Targeted Consultation**  
27 July 2020  
Ministry of Education

**Appendix 3 Terms of Reference for the PBRF Review**  
27 July 2020  
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**Appendix 4 Modelling of Potential Financial Implications for TEOs**  
27 July 2020  
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**Appendix 5 Further Detail on the Current Operation of the PBRF**  
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**Appendix 6 The Report of the PBRF Review Panel - E koekoe te tūi, e ketekete te kākā, e kūkū te kereru**  
27 July 2020  
Ministry of Education

**Appendix 7 Proposed Changes and Options for Strengthening the Performance-Based Research Fund (PBRF)**  
27 July 2020  
Ministry of Education

**Cabinet Minute: SWC-20-MIN-0102**

27 July 2020  
Cabinet Office

**CAB-20-MIN-0352 Report of the Cabinet Social Wellbeing Committee  
Minute**

27 July 2020  
Cabinet Office

**Material redacted**

Some deletions have been made from the documents in line with withholding grounds under the Official Information Act 1982. Where information has been withheld, no public interest has been identified that would outweigh the reasons for withholding it.

The applicable withholding grounds under the Act are as follows:

Some deletions have been made from the documents as the information withheld does not fall within scope of the Minister's portfolio responsibilities, and is not relevant to the proactive release of this material.

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<http://legislation.govt.nz/act/public/1982/0156/latest/DLM64785.html>

In Confidence

Office of the Associate Minister of Education

Chair, Cabinet Social Wellbeing Committee

## **REPORT BACK ON THE PERFORMANCE-BASED RESEARCH FUND REVIEW**

### **Proposal**

1. This paper reports back on the Review of the Performance-Based Research Fund (PBRF), and seeks agreement for the Ministry of Education to undertake targeted consultation on proposals to strengthen the PBRF.

### **Relation to Government Priorities**

2. As part of the Education Work Programme Minister Hipkins and I agreed to a review of the PBRF, which is now complete. I plan to publicly consult on proposed changes and options that will strengthen the PBRF and help achieve our 12 Government priorities. These proposed changes will contribute to a research system that helps us to grow and share New Zealand's prosperity more fairly, to support healthier, safe and more connected communities, and create an international reputation we can be proud of.
3. My proposed changes are especially relevant in a post-COVID environment, as I seek to address existing inequities experienced in different aspects of tertiary research, research assessment and by researchers themselves. I know researchers will be vulnerable to the impacts of economic downturn. I seek to support research and know this will be critical in New Zealand's COVID-19 recovery.

### **Executive Summary**

4. The PBRF allocates \$315 million per year to our tertiary education organisations (TEOs) through a mixed performance-assessment regime and is designed to reward and encourage high quality tertiary education research and research-led teaching.
5. As part of the Education Work Programme Minister Hipkins and I agreed to review the PBRF. Terms of Reference (Appendix 3) agreed by Cabinet covered a range of aspects including revisiting the objectives of the PBRF, ensuring that it adequately supports the full spectrum of research activity, and minimising transaction costs.
6. I appointed an independent panel to carry out the Review of the PBRF. The panel engaged extensively with the tertiary education and research sectors to inform their recommendations, which they provided in January 2020.
7. I have heard from the panel that the fundamentals of the PBRF are working well, with a measured improvement in research quality since the PBRF's establishment in 2002. PBRF funding is used for a wide range of different research that provides economic, social, cultural and environmental benefits to New Zealand.

8. However, there is scope to build a better system that reflects our Government's commitments to equity and wellbeing outcomes and our vision for a sustainable and diverse research workforce, particularly with regard to Māori and Pacific researchers.
9. More can be done to ensure that the PBRF plays a key role in achieving the ambitious goals we have set for our Government, by creating more inclusive tertiary research, science and innovation systems that value different ways of working and all types of research activity.
10. While the independent panel carried out their work prior to COVID-19, I believe that the importance of these changes and the need to support an inclusive tertiary research sector has only been enhanced by the impacts of COVID-19.

### ***Proposed Package of Changes***

11. I propose that the Ministry of Education conducts a targeted consultation on a range of proposed changes and options to strengthen the PBRF, informed by the work of the panel, and grouped under three key objectives.
  - 11.1. **Broadening the PBRF conception of research excellence.** I am looking to modify the current objectives of the PBRF, refresh how the PBRF defines research excellence and signal a longer term piece of work to review weightings to better reflect the cost of research in different subjects.
  - 11.2. **Enabling a more sustainable and diverse research workforce.** Here I propose options for better recognising and rewarding mātauranga Māori and Pacific research and supporting researchers who identify as Māori or Pacific. I would also look at bringing in a 'merit relative to opportunity' concept when assessing the work of researchers, which in the short term will help account for the varying impacts of COVID-19 on researchers' outputs, and I would look at simplifying the criteria for new and emerging researchers.
  - 11.3. **Improving how Government supports research across the tertiary sector.** Under this objective I propose a wider work programme across Government, provide a temporary backstop of funding for the New Zealand Institute of Skills and Technology (NZIST), and look at options for modifying the current guiding principles of the PBRF. I also propose options for rebalancing the components of the PBRF and replacing the average quality score metrics and signal a longer term piece of work of research and evaluation.
12. I am also proposing operational matters for the Tertiary Education Commission (TEC) to consider, these are designed to support these three key objectives.
13. I propose that during the pre-Election period, the Ministry of Education will consult publicly on these proposals for reform of the PBRF. I expect to bring a final package of changes to the PBRF, based on feedback from consultation, to Cabinet for approval by the end of 2020.

## **Background**

14. The PBRF was established in 2002 and is designed to reward and encourage high-quality tertiary education research and research-led teaching across all subject areas and types of research. All of New Zealand's TEOs are eligible to participate in the PBRF – universities, wānanga, the NZIST and Private Training Establishments (PTEs).
15. The PBRF supports TEOs' capability and ability to maintain a responsive and effective network of provision. It does not fund research directly, but instead supports research, including postgraduate level teaching support. The PBRF differs from some of our other major research funding mechanisms, which tend to fund future research directly, rather than providing funding based on past research quality.
16. The PBRF is a capped pool that can only be increased through Budget decisions (currently \$315 million per year) and a mixed performance-assessment regime that employs both peer review processes and performance measures. The three different components are the Quality Evaluation (55% of funding), Research Degree Completions (25% of funding) and External Research Income (20% of funding).

## ***Current Components of the PBRF***

17. The Quality Evaluation component of the PBRF is based on a periodic assessment of the research performance of staff at eligible TEOs. TEOs present staff research in Evidence Portfolios (EPs) that are assessed for quality by expert peer review panels.
18. The Research Degree Completions component of the PBRF is an annual measurement of the number of PBRF eligible postgraduate research-based degrees completed at participating TEOs. This helps to capture the connection between research staff and research training.
19. The External Research Income component of the PBRF is an annual measurement of the amount and type of income received by participating TEOs from external sources for research purposes.

## ***Process for the PBRF Review***

20. Cabinet agreed in February 2018 that as part of the Education Work Programme the PBRF would be reviewed [SWC-18-MIN-004 refers]. In September 2018, Cabinet approved the Terms of Reference for this Review (the Review), and the Minister of Education and I committed to report back to Cabinet with any proposals for change [SWC-18-MIN-0121 refers]. This was due to the possibility of financial implications from the Review, as the Minister of Education holds the financial delegations for the portfolio. However there are no financial implications included in my proposed package of changes, so I am seeking Cabinet approval for targeted consultation solely as the Associate Minister of Education.
21. An independent panel (chaired by Professor Linda Tuhiwai Smith) was appointed in July 2019 to carry out the Review and the panel provided their final report on 31 January 2020. My proposed changes and options are largely informed by the panel's recommendations.

## **Findings of the Independent Review Panel's Report on the PBRF**

22. I have heard from the panel and its sector consultation with TEOs, individual researchers and interested stakeholders that the fundamentals of the PBRF are working well, with a measured improvement in research quality and the rewarding of previously unrecognised research strengths in our tertiary system.
23. The Terms of Reference for the Review asked the panel to consider a range of specific elements that currently make up the PBRF and whether they should be changed. I believe that the panel was correct in its reasoning and conclusions that many of the elements should be kept, including:
  - 23.1. The Quality Evaluation and Research Degree Completion components,
  - 23.2. Research excellence evaluated using peer-review assessment,
  - 23.3. The individual as the unit of assessment,
  - 23.4. A six year period between Quality Evaluations.
24. The panel made 34 recommendations in total, which aim to better recognise the full diversity of research excellence, enable more equitable assessment outcomes and support a more diverse research workforce and research system.

## **My Proposed Approach to Strengthening the PBRF**

25. I propose that the Ministry of Education consults on a range of changes and options, informed by the work of the panel and the recommendations that it made. These are grouped under three key objectives:
  - 25.1. Broadening the PBRF conception of research excellence.
  - 25.2. Enabling a more sustainable and diverse research workforce.
  - 25.3. Improving how Government supports research across the tertiary sector.
26. I also propose that the Ministry of Education consults on operational changes that support these objectives.
27. I have annexed the full detail of these changes and the analysis that sits behind them as appendix 2.
28. One of the strengths of the PBRF is that it is generally seen by the sector as a robust process. Much of this is due to the high levels of consultation and co-design that take place during each Quality Evaluation. Consulting on proposed changes and options is vital to maintaining this trust in the PBRF.

## **Implementation**

29. I will provide a high-level implementation timeline when I report back to Cabinet with a final package of changes for approval following targeted consultation. The TEC will

be responsible for the implementation of any changes and I anticipate that this will take place over the next few years, in the lead-up to the next Quality Evaluation.

### **Financial Implications**

30. There are no financial implications arising from this paper. Any future funding required will be sought through the Budget process.

### **Legislative Implications**

31. There are no legislative implications arising from this paper.

### **Impact Analysis**

32. A Regulatory Impact Analysis or Climate Implications of Policy Assessment is not required for this paper.

### **Population Implications**

33. Many of the proposed changes and options, as detailed in appendix one, seek to address existing inequities experienced in different aspects of tertiary research, research assessment and by researchers themselves
34. The signalled longer term piece of work to review the extraordinary circumstances provision is in part intended to provide a more equitable assessment for part-time researchers, who are more likely to be female. It will also look to ensure that people with disabilities are equitably assessed.
35. Currently the percentage of researchers who identified as Māori when participating in the PBRF is 4.8% (as compared to 16.5% of the wider population) and for Pacific it is 1.4% (as compared to 8.1% of the wider population).
36. I anticipate that proposed options for better recognising and rewarding mātauranga Māori and Pacific research and supporting researchers who identify as Māori or Pacific would have a positive impact. This impact would be on both the numbers and experience of Māori and Pacific researchers in our tertiary research system, as TEOs react to strong incentives to ensure those researchers are supported throughout their careers.

### **Human Rights**

37. There are no human rights implications arising from this paper.

### **Consultation**

38. The following agencies were consulted during the development of this paper, which occurred prior to the COVID-19 lockdown: MBIE, the TEC, Treasury, Te Puni Kōkiri, the Ministry of Primary Industries (MPI), the Ministry for Pacific Peoples, the Health Research Council, the Ministry of Health, Education New Zealand, the Department of Prime Minister and Cabinet, and the Office of the Prime Minister's Chief Science Advisor.

39. While MBIE is broadly supportive of the changes I am proposing, it has also indicated that it would like to see even greater weightings than what I have proposed for better recognising and rewarding mātauranga Māori and Pacific research and supporting researchers who identify as Māori or Pacific. However I believe that the shifts in funding would already be significant, and keeping the weightings within existing parameters lessens the likelihood of 'gaming' of the PBRF.
40. MBIE has also indicated that it would like to see any funding reallocated from the External Research Income component (currently 20 percent of the PBRF) to a new component, aimed at assessing the non-academic impact of research. My conclusion at this time is that the panel were correct in concluding that compulsory assessment of impact at that level would not be the best way to encourage researchers and TEOs to carry out impactful research and that the transaction costs associated with this would outweigh any benefits. There are also many difficulties with measuring impact, even at the institutional level, and it is not possible to model the potential financial implications.
41. MPI has indicated it is particularly concerned about the potential impact on Lincoln University if the External Research Income component was discontinued, due to its position as a major provider of primary sector research and capability. I consider that these impacts will be manageable, given the long timeframe for implementation.
42. Education officials will seek the views of other agencies on the final package of changes to the PBRF, as informed by targeted consultation, before I seek final Cabinet approval.

## **Communications**

43. I propose that the Ministry of Education finalises the attached discussion document for targeted consultation, and will lead the communications for this consultation. While it is usual practice to refrain from this type of consultation during the pre-election period, the proposed package of changes are not likely to be seen as political. In addition, I am not proposing any additional funding.
44. Following Cabinet agreement, and before public announcements are made, I will consult National's tertiary education spokesperson on this consultation approach and timeline.
45. The Review panel engaged extensively with the tertiary education research sector during the Review, meeting with a range of expert informants and key stakeholders. Many of the recommendations made by the panel were directly informed by the feedback received from the sector. In particular, the decision to retain current elements of the PBRF and not endorse a shift to group-based assessment.
46. Two of the changes I am proposing are likely to elicit significant feedback from the sector.
  - 46.1. Firstly, the options for increasing the weightings for mātauranga Māori and Pacific research and Māori and Pacific researchers. While many TEOs were in support of this change, they also advocated for this to be in the

form of additional funding, rather than coming from the existing pool of funding.

- 46.2. Secondly, the options for rebalancing the components of the PBRF may not be expected by the sector as the Terms of Reference did not ask the panel to specifically consider the removal of any components and it did not specifically consult on this. TEOs who are more likely to suffer a loss in funding due if the External Research Income component is discontinued are likely to have a particularly strong response to the options I am proposing.

### **Proactive Release**

47. The Associate Minister of Education proposes that the Ministry of Education release this paper proactively as part of the targeted consultation.

### **Recommendations**

The Associate Minister of Education (Hon Jenny Salesa) recommends that the Committee:

1. **Note** that the PBRF allocates \$315 million per annum to our tertiary education organisations to reward and encourage high quality tertiary education research and research-led teaching
2. **Note** that the PBRF was reviewed by an independent panel, who were guided by the Terms of Reference approved by Cabinet and engaged extensively with the sector
3. **Note** that I agree with the panel that the fundamentals of the PBRF are working well, with a measured improvement in research quality in the tertiary research sector
4. **Note** that the need to support an inclusive tertiary research sector has only been enhanced by the impacts of COVID-19
5. **Agree** that the Ministry of Education will consult publicly on a discussion document with changes and options for strengthening the PBRF
6. **Authorise** the Ministry of Education to make minor or technical amendments to this discussion document prior to targeted consultation, including to respond to COVID-19.
7. **Agree** that the discussion document will outline the following changes and options for targeted consultation, grouped under three key objectives:
  - 7.1. Broadening the PBRF conception of research excellence
    - 7.1.1. Modifying the current objectives of the PBRF to better reflect Government's priorities
    - 7.1.2. Refreshing the PBRF definition of research excellence
    - 7.1.3. Reviewing the subject area weightings
  - 7.2. Enabling a more sustainable and diverse research workforce

- 7.2.1. Improving support for mātauranga Māori and Pacific research, and Māori and Pacific researchers
- 7.2.2. Reviewing qualifying criteria of the extraordinary circumstances provision and for new and emerging researchers
- 7.3. Improving how Government supports research across the tertiary sector
  - 7.3.1. Progressing a wider work programme, including through the NZIST and the Wānanga Research Aspirations Project
  - 7.3.2. Reflecting the strengthened PBRF by renaming the PBRF and modifying the principles
  - 7.3.3. Rebalancing the components of the PBRF by potentially discontinuing ERI
  - 7.3.4. Seeking new PBRF metrics
  - 7.3.5. Researching and assessing the PBRF
  - 7.3.6. Retaining current elements of the PBRF
  - 7.3.7. Building on the success of the PBRF
- 8. **Note** that I propose to bring a final package of change to strengthen the PBRF to Cabinet for approval following public consultation

Authorised for lodgement

Hon Jenny Salesa

Associate Minister of Education

### Table of Appendices

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## Appendix 1: Summary of Proposed Changes and Options for Strengthening the PBRF

Broadening the PBRF conception of research excellence	<ol style="list-style-type: none"> <li>1. Modifying the current objectives of the PBRF             <ol style="list-style-type: none"> <li>a. Adding a new objective</li> </ol> </li> <li>2. Refreshing the PBRF definition of research excellence;             <ol style="list-style-type: none"> <li>b. Rewording the PBRF definition of research to emphasise excellence</li> <li>c. Replacing the NRO component with <i>Examples of Research Excellence</i></li> <li>d. Replacing the ORO component with <i>Other Examples of Research Excellence</i>, and reducing the maximum number</li> <li>e. Refocusing Research Contributions</li> </ol> </li> <li>3. Reviewing subject areas             <ol style="list-style-type: none"> <li>f. Reviewing subject area weightings for accuracy</li> </ol> </li> </ol>
Enabling a more sustainable and diverse research workforce	<ol style="list-style-type: none"> <li>4. Improving support for mātauranga Māori and Pacific research, and Māori and Pacific researchers             <ol style="list-style-type: none"> <li>g. Increasing the subject area weighting for EPs assessed by the MKD and PR panels</li> <li>h. Additional funding weighting of 2 for EPs submitted by staff who identify as Māori or Pacific</li> <li>i. Adopting both of the above options</li> </ol> </li> <li>5. Reviewing qualifying criteria             <ol style="list-style-type: none"> <li>j. Refreshing the extraordinary circumstances qualifying criteria</li> <li>k. Reviewing the new and emerging qualifying criteria</li> </ol> </li> </ol>
Improving how Government supports research across the tertiary sector	<ol style="list-style-type: none"> <li>6. Progressing work that builds tertiary sector research capability and capacity             <ol style="list-style-type: none"> <li>l. Supporting the NZIST</li> <li>m. Co-designing with wānanga</li> <li>n. Working across Government to support a sustainable Māori and Pacific research workforce and a diverse system</li> </ol> </li> <li>7. Funding backstop for the NZIST in the next Quality Evaluation;             <ol style="list-style-type: none"> <li>o. Fixing a minimum allocation for the NZIST based on the proportion allocated through the 2018 QE to the ITPs</li> </ol> </li> <li>8. Reflecting the strengthened PBRF;             <ol style="list-style-type: none"> <li>p. Renaming the PBRF in English and/or te reo Māori</li> <li>q. Modifying the guiding principles</li> </ol> </li> <li>9. Rebalancing the components of the PBRF;             <ol style="list-style-type: none"> <li>r. Potentially discontinuing ERI</li> <li>s. Redistributing ERI funding into QE, or a new component</li> </ol> </li> <li>10. Seeking new PBRF metrics;             <ol style="list-style-type: none"> <li>t. Replacing AQS metrics</li> </ol> </li> <li>11. Researching and assessing the PBRF;             <ol style="list-style-type: none"> <li>u. Establishing a programme of research into PBRF processes and impacts</li> </ol> </li> </ol>
Operational changes to the PBRF	<ol style="list-style-type: none"> <li>12. Building on the successes of the PBRF;             <ol style="list-style-type: none"> <li>v. Ensuring peer-review panels are diverse</li> <li>w. Ensuring peer-review panels are well supported</li> <li>x. Improving understanding of the PBRF</li> <li>y. Adopting ORCID</li> <li>z. Consulting SRG on change implementation following this Review</li> </ol> </li> </ol>

## Appendix 2: Full Detail and Analysis of Changes to Be Tested by the Ministry of Education during targeted Consultation

### *Broadening the PBRF's conception of research excellence*

#### 1. *Modifying the current objectives of the PBRF to better reflect Government's priorities*

The PBRF is guided by its objectives, such as increasing the quality of research in our degree-granting TEOs. These objectives could be updated to better reflect the changing research environment in New Zealand and Government's long-term strategic direction and priorities for the tertiary education system.

- a. *Adding a new objective:* "That the PBRF ensure a flourishing and inclusive system for developing and sustaining research excellence in New Zealand".

This was suggested by the panel and would signal Government's expectations for a more inclusive system.

#### 2. *Refreshing the PBRF's definition of research excellence*

Peer-review panels put into action the PBRF definition of research excellence within their disciplines. To support this work, and to recognise a wider range of world-class research excellence, refreshing how the PBRF defines and assesses research excellence could be done in four ways:

- b. *Rewording the PBRF definition of research to emphasise excellence* to encompass the production of research, engagement and impact relating to that research and support for vibrant, diverse research cultures.
- c. *Replacing 'Nominated Research Outputs' (NRO) with 'Examples of Research Excellence' (ERE).*

The shift to EREs could allow researchers to present up to four examples of research excellence across research production, engagement, impact and support for research cultures. These examples would still need to be anchored in specific research outputs. The panel saw this change as allowing researchers to more easily describe the impact of their work

For example, many researchers from our TEOs played a key role during the COVID-19 response, communicating to officials and the public about their research and its implications. The shift to EREs would allow those researchers to have greater emphasis not only on the actual research but also on how that research changed policies and/or behaviours.

- d. *Replacing 'Other Nominated Research Outputs' (ONRO) with 'Other Examples of Research Excellence' (OERE) and reducing the maximum number from twelve to six.*
- e. *Refocusing the 'Research Contributions' section on the best examples of activities that contribute to the sustainability and viability of the research system, using the panel's reductions as a starting point.*

This is intended to place more weight on research contributions that improve the sustainability of the research system (e.g. mentoring, research impact development, industry collaboration). Currently the 'Research Contributions' section makes up 30% of

a researcher's grade, and while it covers a broad range of contributions, 'peer esteem' is generally held as key.

### 3. *Reviewing the subject area weightings*

The PBRF uses subject area weightings to assign more funding to research in higher cost areas, ranging from a weighting of '1' to a weighting of '2.5'. These are linked to the relative cost of teaching each subject in TEOs. It is unclear whether these are still accurate proxies for the cost of research in different subject areas. These weightings are used in the Quality Evaluation and Research Degree Completion components.

#### *f. Reviewing subject area weightings for accuracy:*

Subject area weightings could be reviewed to ensure they accurately reflect the costs to TEOs of undertaking research. This work would be aligned with other planned reviews of tertiary funding systems, due to the relativities with the rest of the system. In addition, changes to the subject area weightings have the potential to substantially shift funding allocations and should be carefully considered.

### ***Enabling a more sustainable and diverse research workforce***

#### 4. *Improving support for mātauranga Māori and Pacific research, and Māori and Pacific researchers*

There are longstanding concerns that the PBRF does not understand and value mātauranga Māori and Pacific research, and that Māori and Pacific researchers have been underrepresented in the research workforce. These issues could be exacerbated by the impacts of COVID-19. Increasing particular funding weightings in the PBRF will strengthen incentives linked to supporting and building a more diverse research workforce and research system.

There are three options for increasing the weightings in the Quality Evaluation component:

#### *g. Increasing the subject area funding weighting for portfolios assessed by the Māori Knowledge and Development (MKD) and Pacific Research (PR) panels from '1' to '2.5'; or*

This is intended to incentivise TEOs to support research staff who will submit EPs to these panels. This would also better reflect the complexities and costs associated with this research; for example, the need to develop and sustain deep and intense personal connections with iwi and hapū as part of carrying out research.

This would be implemented in advance of the review of subject area weightings due to the longer term nature of that review. Putting in place these weightings now will mean they can be used for the next Quality Evaluation.

#### *h. Assigning an additional funding weighting of 2 for Evidence Portfolios submitted by staff who identify as Māori or Pacific; or*

The modelled potential financial implications reflect the current makeup of research areas and researcher ethnicities within TEOs. However, a TEO with a smaller proportion of Māori and Pacific researchers could take steps to build their workforce for the next Quality Evaluation to mitigate a potential loss of funding.

There is a risk that TEOs would instead look to actively recruit Māori and Pacific researchers from other TEOs, particularly if they do not feel they have enough time to grow that cohort within their own institution before the next Quality Evaluation. This

could result in a shift of Māori and Pacific researchers to the larger, better resourced TEOs in the short term. However in the longer term this change will likely to lead to an increase in the Māori and Pacific research workforce, as TEOs respond to the funding incentive.

*i. Doing both of the above.*

The financial modelling of potential financial implications for TEOs (annexed in full below) shows that wānanga and some PTEs are likely to experience substantial increases in funding. Different individual universities show increases or decreases depending on the option chosen (with the biggest loss in funding for a university being a 5.3% decrease in their annual funding received under the Quality Evaluation component of the PBRF).

These options are not the only solution to the underrepresentation of Māori and Pacific researchers and the lack of recognition for research assessed by the MKD and PR panels. The PBRF is one mechanism for changing the wider research and tertiary systems, however many of the issues with underrepresentation could be addressed through cross-government work and within TEOs.

**5. Reviewing qualifying criteria for extraordinary circumstances and for new and emerging researchers**

*j. Refreshing the extraordinary circumstances qualifying criteria*

In the Quality Evaluation, there is provision for researchers to provide a reduced quantity of research outputs for assessment. However the qualifying criteria are fairly stringent, i.e. simply working part-time for a TEO is not sufficient. A review of this provision, to introduce a 'merit relative to opportunity' concept when panels assess the quantity of research to promote equity, diversity and inclusion.

How this would work in practice would be determined following consultation with the sector, however it would likely include ensuring a researcher's work is assessed relative to their current career stage and opportunities given to them, taking into account factors such as different working arrangements and personal circumstances.

This review would also examine whether particular provision needs to be made for researchers who suffered detrimental effects due to COVID-19, i.e. being unable to work as normal due to the lockdown or having difficulty with international partnerships. A similar provision was put in place following the Canterbury earthquakes.

A more equitable assessment has the potential to have a particularly positive impact for the women in our research workforce. The 2018 Quality Evaluation results showed that 16.4% of women researchers who submitted an Evidence Portfolio were employed on a part-time basis (as compared to 8.0% of men).

*k. Reviewing the new and emerging qualifying criteria*

The Quality Evaluation component also assigns a higher weighting to new and emerging researchers. This is designed to encourage TEOs to focus on development of their more junior researchers and ensure a sustainable pipeline through the research workforce. However there have been concerns that this has become overly complex and the criteria would be reviewed to simplify the process.

## ***Improving how Government supports research across the tertiary sector***

### ***6. Progressing work that builds tertiary sector research capability and capacity***

The PBRF sits within both the wider tertiary and research systems. So while the settings of the PBRF can have a strong influence on both systems, it is not always the most appropriate mechanism for effecting change. Some of the issues identified by the panel require a wider Government response.

#### ***l. Supporting the NZIST***

The NZIST would be encouraged to have an appropriate focus on researcher support, and research capability and development, during its transition period.

#### ***m. Co-designing with wānanga***

The Wānanga Research Aspirations (WRA) project is considered to be part of this broader response. The Crown has committed to co-designing an appropriate and sustainable funding solution to support the research ambitions of wānanga, work that is now sitting within a broader reform work programme with the wānanga sector.

#### ***n. Working across Government to support a sustainable Māori and Pacific research workforce and a diverse system***

Further work will also be explored on the best ways to incentivise TEOs to grow their pipeline of Māori and Pacific researchers and make links with the Equity Diversity and Inclusion work led by the Ministry of Business Innovation and Employment.

### ***7. Funding backstop for the NZIST in the next Quality Evaluation***

The NZIST was stood up on 1 April 2020 as part of our Reform of Vocational Education. The next Quality Evaluation will be the first that the NZIST has participated in as a new entity. The consolidation of different research cultures, processes and systems will take time (14 of the 16 ITPs participated in the 2018 Quality Evaluation).

#### ***o. Fixing a minimum allocation for the NZIST based on the proportion allocated through the 2018 QE to the ITPs***

The minimum proportion of funding allocated to the NZIST in the next Quality Evaluation would be fixed at the proportion allocated through the 2018 Quality Evaluation to the ITPs, contingent on the NZIST participating fully in the Quality Evaluation. This backstop of funding will help the NZIST to retain its research capability through the period of change as it becomes established.

### ***8. Reflecting the strengthened PBRF***

#### ***p. Renaming the PBRF in English and/or te reo Māori***

The name of the PBRF has not been altered since its establishment in 2002. Renaming it in English and/or te reo Māori could better reflect the aims and objectives of the strengthened PBRF.

#### ***q. Modifying the guiding principles***

While the principles currently talk about 'cultural inclusiveness', this could be altered to reflect a more modern understanding of equity, diversity and inclusion and te Tiriti o

Waitangi. The principles would be modified to better reflect 'partnership', 'inclusiveness', and 'equity'.

## 9. Rebalancing the components of the PBRF

### r. Potentially discontinuing ERI

Twenty per cent of the PBRF is allocated through the External Research Income component, which is based on the amount and type of income received by TEOs from external sources for research purposes.

While this was originally intended to incentivise TEOs to seek more funding from external sources, this behaviour has been firmly established. Currently the External Research Income component duplicates existing incentives, privileges particular disciplines (such as medicine) and is intrinsically tied to the investment decisions of business and Government.

Options for discontinuing the External Research Income component, include:

- Full removal of the External Research Income component starting after the next Quality Evaluation, or
- Phased removal of the External Research Income component starting after the next Quality Evaluation over four years.

### s. Redistributing ERI funding into QE, or a new component

The funding formerly distributed by the External Research Income component could be reallocated to:

- The Quality Evaluation component, or
- A new component, or
- A mixture of the Quality Evaluation component and a new component.

Feedback will be sought through consultation on what a new component could be. The Ministry of Business, Innovation and Employment's (MBIE) view is that it would be best targeted at an assessment of non-academic impact.

Any changes to the ERI would not take effect until the next Quality Evaluation. This will allow for consistency with other proposed changes, and will allow TEOs time to prepare.

The modelling of potential financial implications for TEOs (annexed in full below) shows substantial funding increases for the majority of TEOs. This is balanced by some small decreases in funding for many universities (up to 3.9%), with the notable exception of Lincoln University, which would suffer a drop of 19%. If discontinuation of the External Research Income was taken forward, further work would likely have to be done on the particular implications for Lincoln University.

## 10. Seeking new PBRF metrics

The PBRF uses average quality score metrics as part of the Quality Evaluation, which show the intensity of research at each TEO relative to staffing numbers and equivalent full-time students.

However they have been criticised as an ineffective measure of quality, being most used by TEOs for ranking purposes and marketing.

*t. Replacing AQS metrics*

Feedback will be sought on options for replacing the average quality score metrics with a more appropriate measure of quality that could be used to motivate positive behaviour at an institutional level.

*11. Researching and assessing the PBRF*

The Quality Evaluation component produces a significant amount of data about the research carried out in TEOs and their research workforce. While some analysis of this data has occurred, this is not commissioned by the TEC and thus relies on interested researchers.

*u. Establishing a programme of research into PBRF processes and impacts*

Longer term work to establish an ongoing programme of research and evaluation of PBRF processes and its impact on the sector and the research workforce would be put in place. This would include a focus on gender, ethnicity and career progression impacts. This would provide both Government and the sector with valuable information on the research sector and workforce for their decision-making.

Taking this proposal forward would be contingent on further funding that would be sought through a future Budget initiative.

***Operational changes to the PBRF to support these objectives***

*12. Building on the successes of the PBRF*

The panel's report made several recommendations in relation to the TEC and how it carries out the Quality Evaluation process, particularly in relation to how it works with the sector.

The TEC would be required to consider the following matters when carrying out a Quality Evaluation:

*v. Ensuring peer-review panels are diverse and well supported*

That the peer-review panels, as much as possible, reflect the epistemological and demographic diversity of the research workforce including ensuring gender parity, significant representation of Māori and Pacific researchers and a broad representation of researchers and other experts across career stages and organisational contexts.

*w. Ensuring peer-review panels are well supported*

That the programme of training for peer-review panels includes a strengthening of their capacity to take account of the diversity of research excellence and the application of the 'merit relative to opportunity' approach.

*x. Improving understanding of the PBRF*

That communication material for the Quality Evaluation continues to provide a strong focus on improving understanding of and addressing myths about the Quality Evaluation and this is highlighted wherever possible.

*y. Adopting ORCID*

That the adoption of the Open Researcher and Contributor ID as the unique identifier for PBRF-eligible staff should be explored.

*z. Consulting SRG on change implementation following this Review*

That the Sector Reference Group (SRG) for the next Quality Evaluation will also have responsibility for giving advice on the implementation of all proposals for change that are approved and where possible it should include significant representation of Māori and Pacific researchers and a broad representation of researchers across career stages and organisational context.

### **Remaining Panel Recommendations**

- The proposed package of changes and options is largely informed by the findings in the panel's report, however there are some recommendations that are not being taken forward at this time.
- This includes a recommendation that the value of the fund should increase by at least \$100 million per year. While the per-point funding for both the Quality Evaluation and Research Degree Completion components has declined over time, this is due to the increased number of researchers participating in the PBRF and students completing research degrees. The total value of the funding pool for research (which includes research top-ups and PBRF allocations) has tripled in nominal terms and more than doubled in real terms between 2000 and 2019.
- Changes proposed in this paper will not have any financial effect for TEOs until after the next Quality Evaluation, so additional funding designed to help mitigate any shifts in funding could be sought through future Budget processes before that time.

### **Appendix 3: Terms of Reference for the PBRF Review**

The Terms of Reference outlined that the following aspects would be considered by the Review:

- Revisiting the current objectives of the PBRF given changes in the wider tertiary sector and science, research and innovation sector.
- Supporting greater collaboration in research, both working across tertiary education organisations and with end-users of research.
- Minimising transaction costs of the PBRF for participating staff and tertiary organisations while also maintaining relevant assessment metrics to ensure the gains in quality research continue.
- Maintaining a sustainable, diverse research workforce that supports applied researchers, new and emerging researchers, greater gender and ethnic diversity and supports the participation of older and senior researchers.
- Ensuring the PBRF adequately supports the full spectrum of research activity undertaken by the broader tertiary sector, including basic, creative, applied, mātauranga Māori research and new fields of research that employ indigenous perspectives.
- Improving the measurement, assessment and rewards for research with a tangible impact on the outcomes for local communities, businesses or government sectors and wider society.

## Appendix 4: Modelling of Potential Financial Implications for TEOs

The following tables are based on the 2018 Quality Evaluation results and show the shift in funding from the 2019 funding allocations for the Quality Evaluation component of the PBRF. The estimated totals are based on individual unit data held by the Ministry of Education, (needed to carry out the modelling), and are therefore slightly differ from the final published allocations, which account for slight movements in staff between TEOs.

This is designed to give an indication of how funding could shift between different TEOs. However, I anticipate that shifting the funding incentives would result in changed behaviour from TEOs (i.e. by looking to hire more Māori or Pacific researchers). Therefore they should not be read as an accurate forecast of future funding allocations.

### An increase in the subject area weighting for portfolios assessed by the Māori Knowledge and Development panel and the Pacific Research panel to 2.5

TEO	Estimated 2019 Funding Allocation	Modelling of Higher Weighting	Difference	Percentage Difference
University of Auckland	\$47,957,092	\$47,739,905	-\$217,187	-0.5%
University of Waikato	\$8,555,916	\$8,986,706	\$430,790	5.0%
Massey University	\$22,290,599	\$22,045,153	-\$245,446	-1.1%
Victoria University of Wellington	\$19,424,883	\$19,536,978	\$112,096	0.6%
University of Canterbury	\$14,497,735	\$14,526,552	\$28,817	0.2%
Lincoln University	\$4,572,602	\$4,503,140	-\$69,462	-1.5%
University of Otago	\$35,782,703	\$35,324,707	-\$457,996	-1.3%
Auckland University of Technology	\$12,625,510	\$12,679,820	\$54,309	0.4%
Universities Total	\$165,707,039	\$165,342,961	-\$364,078	-0.2%
NZIST	\$6,298,618	\$6,313,862	\$15,243	0.2%
Te Wānanga o Aotearoa	\$174,149	\$361,361	\$187,213	107.5%
Te Whare Wānanga o Awanuiārangī	\$160,473	\$280,181	\$119,708	74.6%
Wānanga Total	\$334,621	\$641,542	\$306,921	91.7%
ICL Graduate Business School	\$26,634	\$26,098	-\$536	-2.0%
Media Design School	\$153,660	\$150,567	-\$3,093	-2.0%
New Zealand College of Chiropractic	\$176,197	\$172,650	-\$3,547	-2.0%
Whitecliffe College of Arts and Design	\$224,754	\$220,230	-\$4,524	-2.0%
Auckland Institute of Studies	\$87,074	\$107,907	\$20,832	23.9%
IPU New Zealand	\$33,908	\$48,282	\$14,374	42.4%
Laidlaw College Inc	\$70,223	\$83,866	\$13,643	19.4%
New Zealand Tertiary College	\$5,122	\$12,547	\$7,425	145.0%
Bethlehem Tertiary Institute	\$40,976	\$40,151	-\$825	-2.0%
Good Shepherd College - Te Heparā Pai	\$30,732	\$30,113	-\$619	-2.0%
Carey Baptist College	\$60,440	\$59,223	-\$1,217	-2.0%
Total PTEs	\$909,721	\$951,635	\$41,914	4.6%

In order for no TEO to suffer a loss of funding under this scenario, the PBRF would need to increase by around \$3.6 million per year, to \$318.6 million per year (up from \$315 million per year).

**Assign an additional funding weighting of 2 for Evidence Portfolios submitted by staff who identify as Māori or Pacific**

TEO	Estimated 2019 Funding Allocation	Modelling of Higher Weighting	Difference	Percentage Difference
University of Auckland	\$47,957,092	\$48,651,617	\$694,525	1.4%
University of Waikato	\$8,555,916	\$8,897,009	\$341,093	4.0%
Massey University	\$22,290,599	\$22,145,788	-\$144,811	-0.6%
Victoria University of Wellington	\$19,424,883	\$18,984,756	-\$440,127	-2.3%
University of Canterbury	\$14,497,735	\$13,977,047	-\$520,688	-3.6%
Lincoln University	\$4,572,602	\$4,651,786	\$79,184	1.7%
University of Otago	\$35,782,703	\$34,791,624	-\$991,079	-2.8%
Auckland University of Technology	\$12,625,510	\$12,817,641	\$192,131	1.5%
Universities Total	\$165,707,039	\$164,917,268	-\$789,771	-0.5%
NZIST	\$6,298,618	\$6,611,357	\$312,738	5.0%
Te Wānanga o Aotearoa	\$174,149	\$490,530	\$316,381	181.7%
Te Whare Wānanga o Awanuiāraangi	\$160,473	\$290,134	\$129,661	80.8%
Wānanga Total	\$334,621	\$780,664	\$446,043	133.3%
ICL Graduate Business School	\$26,634	\$25,007	-\$1,627	-6.1%
Media Design School	\$153,660	\$144,273	-\$9,387	-6.1%
New Zealand College of Chiropractic	\$176,197	\$165,434	-\$10,764	-6.1%
Whitecliffe College of Arts and Design	\$224,754	\$220,642	-\$4,112	-1.8%
Auckland Institute of Studies	\$87,074	\$96,182	\$9,108	10.5%
IPU New Zealand	\$33,908	\$60,691	\$26,783	79.0%
Laidlaw College Inc	\$70,223	\$94,788	\$24,565	35.0%
New Zealand Tertiary College	\$5,122	\$9,618	\$4,496	87.8%
Bethlehem Tertiary Institute	\$40,976	\$38,473	-\$2,503	-6.1%
Good Shepherd College - Te Heparā Pai	\$30,732	\$28,855	-\$1,877	-6.1%
Carey Baptist College	\$60,440	\$56,748	-\$3,692	-6.1%
Total PTEs	\$909,721	\$940,711	\$30,990	3.4%

In order for no TEO to suffer a loss of funding, the PBRF would need to increase by around \$11.3 million per year, to \$326.3 million per year (up from \$315 million per year). That figure is to account for the relatively large shifts in funding for some of the PTEs. If instead the fund was increased to ensure no university, wānanga or the NZIST suffered a loss of funding, the PBRF would need to increase by around \$6.5 million per year, to \$321.5 million per year.

If all TEOs choose to increase the number of Māori and Pacific new and emerging researchers they hire, then this tends to exacerbate the figures above (i.e. the increases and decreases in funding become larger).

**Cumulative effect of an increase in the subject area weighting for portfolios assessed by the Māori Knowledge and Development panel and the Pacific Research panel to 2.5**

**AND**

**An additional funding weighting of 2 for Evidence Portfolios submitted by staff who identify as Māori or Pacific**

TEO	Estimated 2019 Funding Allocation	Modelling of Higher Weighting	Difference	Percentage Difference
University of Auckland	\$47,957,092	\$48,172,786	\$215,694	0.4%
University of Waikato	\$8,555,916	\$9,700,598	\$1,144,682	13.4%
Massey University	\$22,290,599	\$21,625,190	-\$665,409	-3.0%
Victoria University of Wellington	\$19,424,883	\$19,250,973	-\$173,910	0.9%
University of Canterbury	\$14,497,735	\$13,932,933	-\$564,802	-3.9%
Lincoln University	\$4,572,602	\$4,511,224	-\$61,378	-1.3%
University of Otago	\$35,782,703	\$33,875,340	-\$1,907,363	-5.3%
Auckland University of Technology	\$12,625,510	\$12,943,526	\$318,015	2.5%
Universities Total	\$165,707,039	\$164,012,569	\$1,694,470	-1.0%
NZIST	\$6,298,618	\$6,647,769	\$349,151	5.5%
Te Wānanga o Aotearoa	\$174,149	\$1,023,509	\$849,360	487.7%
Te Whare Wānanga o Awanuiāraangi	\$160,473	\$495,928	\$335,455	209.0%
Wānanga Total	\$334,621	\$1,519,437	\$1,184,815	354.1%
ICL Graduate Business School	\$26,634	\$24,028	-\$2,606	-9.8%
Media Design School	\$153,660	\$138,624	-\$15,036	-9.8%
New Zealand College of Chiropractic	\$176,197	\$158,956	-\$17,242	-9.8%
Whitecliffe College of Arts and Design	\$224,754	\$212,003	-\$12,751	-5.7%
Auckland Institute of Studies	\$87,074	\$134,003	\$46,929	53.9%
IPU New Zealand	\$33,908	\$113,764	\$79,857	235.5%
Laidlaw College Inc	\$70,223	\$146,526	\$76,303	108.7%
New Zealand Tertiary College	\$5,122	\$23,104	\$17,982	351.1%
Bethlehem Tertiary Institute	\$40,976	\$36,966	-\$4,010	-9.8%
Good Shepherd College - Te Heparā Pai	\$30,732	\$27,725	-\$3,007	-9.8%
Carey Baptist College	\$60,440	\$54,526	-\$5,914	-9.8%
Total PTEs	\$909,721	\$1,070,225	\$160,504	17.6%

In order for no TEO to suffer a loss of funding, the PBRF would need to increase by around \$19 million per year, to \$334 million per year (up from \$315 million per year). That figure is to account for the relatively large shifts in funding for some of the PTEs. If instead the fund was increased to ensure no university, wānanga or the NZIST suffered a loss of funding, the PBRF would need to increase by around \$10 million per year, to \$325 million per year.

## Discontinue the External Research Income component of the PBRF

TEO	Estimated 2019 Funding Allocation	Modelling of Complete Removal of ERI	Difference	Percentage Difference
University of Auckland	\$93,835,682	\$90,198,654	-\$3,637,028	-3.9%
University of Waikato	\$15,457,481	\$15,875,615	\$418,135	2.7%
Massey University	\$39,081,117	\$39,044,528	-\$36,589	-0.1%
Victoria University of Wellington	\$35,573,988	\$35,910,178	\$336,190	0.9%
University of Canterbury	\$28,175,128	\$28,855,825	\$680,697	2.4%
Lincoln University	\$10,106,711	\$8,182,292	-\$1,924,419	-19.0%
University of Otago	\$62,460,375	\$61,185,465	-\$1,274,910	-2.0%
Auckland University of Technology	\$19,909,893	\$23,091,925	\$3,182,032	16.0%
Universities Total	\$304,600,375	\$302,344,482	-\$2,255,893	-0.7%
NZIST	\$8,556,203	\$10,478,709	\$1,922,506	22.5%
Te Wānanga o Aotearoa	\$177,357	\$237,448	\$60,091	33.9%
Te Whare Wānanga o Awanuiārangī	\$533,639	\$550,627	\$16,988	3.2%
Wānanga Total	\$710,996	\$788,076	\$77,079	10.8%
ICL Graduate Business School	\$26,222	\$35,757	\$9,535	36.4%
Media Design School	\$153,643	\$209,513	\$55,870	36.4%
New Zealand College of Chiropractic	\$217,718	\$240,242	\$22,524	10.3%
Whitecliffe College of Arts and Design	\$322,823	\$404,542	\$81,720	25.3%
Auckland Institute of Studies	\$87,064	\$118,724	\$31,660	36.4%
IPU New Zealand	\$33,904	\$46,233	\$12,329	36.4%
Laidlaw College Inc	\$103,561	\$128,641	\$25,081	24.2%
New Zealand Tertiary College	\$5,542	\$6,984	\$1,442	26.0%
Bethlehem Tertiary Institute	\$85,250	\$73,786	-\$11,464	-13.4%
Good Shepherd College - Te Heparā Pai	\$30,729	\$41,903	\$11,174	36.4%
Carey Baptist College	\$65,970	\$82,409	\$16,438	24.9%
Total PTEs	\$1,132,426	\$1,388,734	\$256,308	22.6%

In order for no TEO to suffer a loss of funding, the PBRF would need to increase by around \$74 million per year, to \$389 million per year (up from \$315 million per year). However that figure is relatively high to account for the large drop in funding Lincoln University and Bethlehem Tertiary Institute would experience.

If instead we looked at the figure needed for all TEOS other than Lincoln University and Bethlehem Tertiary Institute not to suffer a loss of funding, the PBRF would need to increase by around \$12 million per year, to \$327 million per year.

This table shows all three components of the PBRF combined, and models the complete shift (so how the figures would look in 2029 if a decision was made to shift the funding to the Quality Evaluation starting in 2026).

However it does not show the effect of combining a change to weightings (such as one of the three options in this paper) and a removal of ERI.

## Appendix 5: Further Detail on the Current Operation of the PBRF

### The Current Objectives of the PBRF

The primary objectives of the PBRF are to:

- increase the quality of basic and applied research at New Zealand's degree-granting tertiary education organisations (TEOs)
- support world-leading teaching and learning at degree and postgraduate levels
- assist New Zealand's TEOs to maintain and lift their competitive rankings relative to their international peers, and
- provide robust public information to stakeholders about research performance within and across TEOs.

In doing so, the PBRF will also:

- support the development of postgraduate student researchers and new and emerging researchers
- support research activities that provide economic, social, cultural, and environmental benefits to New Zealand, including the advancement of Mātauranga Māori, and
- support technology and knowledge transfer to New Zealand businesses, iwi and communities.

### Current PBRF Definition of Research

For the purposes of the PBRF, research is original, independent investigation undertaken to contribute to knowledge and understanding and, in the case of some disciplines, cultural innovation or aesthetic refinement.<sup>1</sup>

Research typically involves inquiry of an experimental or critical nature driven by hypotheses or intellectual positions capable of rigorous assessment by experts in a given discipline.

Research includes work of direct relevance to the specific needs of iwi, communities, government, industry and commerce. In some disciplines, research may be embodied in the form of artistic works, performances or designs that lead to new or substantially improved insights. Research may include:

- contributions to the intellectual underpinning of subjects and disciplines (for example, dictionaries and scholarly editions)<sup>2</sup>,
- the use of existing knowledge in experimental development to produce new or substantially improved, materials, devices, products, communications or processes,
- the synthesis and analysis of previous research to the extent that it is new and creative.

Research findings must be open to scrutiny or formal evaluation by experts within the field. This may be achieved through various forms of dissemination including, but not limited to,

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<sup>1</sup> The term 'independent' does not exclude collaborative work.

<sup>2</sup> The term 'scholarly' is defined as the creation, development and maintenance of the intellectual infrastructure of subjects and disciplines, in forms such as dictionaries, scholarly editions, catalogues and contributions to major research databases.

publication, manufacture, construction, public presentation, or provision of confidential reports.

Activities that are part of routine standard practice and do not embody original research are excluded, such as:

- routine testing,
- data collection,
- preparation for teaching,
- the legal and administrative aspects of intellectual property protection and commercialisation activities.

### Current Criteria for Extraordinary Circumstances

The two extraordinary circumstances provisions for the 2018 Quality Evaluation (general and Canterbury) aimed to ensure staff members who have experienced circumstances that have seriously affected the quantity of research and research-related activities during the assessment period are treated equitably.

Extraordinary circumstances will be considered by the peer-review panel only in relation to the quantity of research outputs and other aspects of research activity produced during the assessment period.

Extraordinary circumstances are not relevant to the assessment of the quality of research outputs and activities.

Staff members may claim one or both extraordinary circumstances provisions if they are eligible.

The extraordinary circumstances provisions were assessed at the holistic assessment stage of the 2018 Quality Evaluation assessment process.

### **Eligibility of extraordinary circumstances**

TEOs must only submit extraordinary circumstances in EPs where they have determined and verified:

- that the staff member's circumstances are legitimate and the staff member has experienced a reduction in the quantity of research outputs or research related activity, or both, during the assessment period
- the staff member's circumstances have occurred over a minimum period of three years (that do not have to be continuous) during the assessment period.

### **General extraordinary circumstances**

One or more of the following three extraordinary circumstances types can be claimed under this provision:

- Long-term illness or disability that would reduce the quantity of research outputs or activities during the assessment period. This could include ill health or injury,

mental health conditions, sensory or developmental conditions, or other health conditions or diseases that may be progressive or have fluctuating or recurring effects.

- Extended personal leave that prevents research activity from occurring during the assessment period. This could include shorter-term leave due to ill health, mental health conditions or injury and parental leave relating to pregnancy, maternity, paternity, adoption or childcare. Sabbatical leave is not considered in this circumstance.
- Significant family or community responsibilities that prevent research activity from occurring during the assessment period. This includes responsibility for dependants, including caring for elderly or ill, injured or disabled family members, or to specific communities, such as iwi or Pacific communities, to a level that reduces the opportunities to undertake research.

One or more types can be claimed.

### **Canterbury extraordinary circumstances**

One or more of the following five impact types can be claimed under the Canterbury extraordinary circumstances provision:

- Ongoing trauma, stress and fatigue, which could include the ongoing impacts of death or injury to a family member, friend or close colleague; an injury to self; a personal psychological impact; and ongoing fatigue or stress.
- Loss or damage to house and/or contents, which could include loss of home or displacement from home; substandard housing or alternative housing; ongoing or protracted issues dealing with the Earthquake Commission, insurers, builders; and care and advocacy for extended family who have been displaced or need support.
- Disruption related to facilities or resources, which could include the ongoing inability to access facilities or equipment or resources or venues; disruption caused by temporary office or laboratory spaces, decanting and/or deconstruction or construction nearby; lost samples or data, or resources or consumables; and damaged equipment.
- Significant additional responsibilities, which could include increased teaching loads; additional administration related to building activity, for example, construction and decanting; increased financial administration; additional or increased personal or community responsibilities, such as caring for family members or board of trustee duties; and increased head of department responsibilities associated with the earthquakes.
- Reduced research opportunities, which could include disruption to the research pipeline affecting research outputs years later; disruption to postgraduates – reduced recruitment, lost students, PhDs downgraded to Master's, loss of preferred candidates, increased pastoral care; reduced research support or lost opportunities due to reduction in travel funding and research funding; lost networking opportunities due to travel restrictions; lost funding opportunities (unable to submit applications,

unable to commit to new research contracts), with subsequent impact on the research pipeline and publications; and reduced research time due to increased student recruitment activity and teaching loads.

### ***Past Reviews of the PBRF***

When the PBRF was first introduced, a three phase review was outlined. The first phase took place in 2004, the second in 2008, and the third in 2012/13.

Following the 2012/13 review, some changes were made to the PBRF. The most significant was increasing the weighting for new and emerging researchers [SOC Min(14) 2/3 refers].

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*E koekoe te tūī,  
e ketekete te kākā,  
e kūkū te kererū*

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Toward the Tertiary Research  
Excellence Evaluation (TREE)

The Report  
of the PBRF  
Review Panel



# E koekoe te tūī, e ketekete te kākā, e kūkū te kererū

*The tui chatters, the kākā cackles, the kererū coos*

The whakataukī that provides the title for this report has been variously translated in English as 'It takes all kinds of people' (Moorfield, 2005) or 'By appreciating all our voices, our different songs, we make good music for the future'.

It conveys the sense that while the tūī, kākā and kereru are all birds, each has its own distinctive sound and they are positively different and significant for their own reasons (Edwards, 2009).

For the panel, this whakataukī aligned well with our recommendations that seek to foster and better recognise the diversity of research excellence.

Published on 31 January 2020 by the PBRF Review Panel, New Zealand

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ation

# Preface

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The research and research-informed teaching in the New Zealand tertiary education system helps to underpin the government's ambition to bring about a productive, sustainable and inclusive future that works for all New Zealanders.

The Performance-Based Research Fund (PBRF) has increased the overall quality and quantity of research in New Zealand, research is more central to tertiary education, we have much more information about research activity and the system is producing more people with excellent research skills than ever before.

At the same time, there are persistent concerns. The fund is believed by some to incur heavy transaction costs, devalue certain types of research, discourage collaboration and draw staff away from teaching and realising their role as critic and conscience of society.

These contrasting views are hardly surprising – the fund creates powerful incentives throughout the tertiary education system. But many submissions and key informants told us that the fundamentals of the PBRF were working well.

The panel was grateful for the generous contributions of the many key informants we met with and the detailed submissions we received. These contributions were vital in shaping how we thought about the issues and possible responses.

It was clear to us that our research funders, ethical frameworks and codes of conduct are increasingly demanding more openness to different research approaches, Tertiary Education Organisations (TEOs) are committed to a more inclusive research workforce and the research community understands that research excellence can take many forms.

They affirmed for us that we were pushing against 'half-opened' doors with sophisticated and uniquely New Zealand approaches that build on changes in the way research and researchers are supported.

We appreciated greatly the support we received throughout the process, including from the staff of the Ministry of Education, the Ministry of Business, Innovation and Employment (MBIE) and the Tertiary Education Commission (TEC).

Finally, we would like to thank the researchers and research support staff working in the tertiary education system. Your commitment to excellence is clear in the work you do to build the research workforce and push the boundaries of knowledge.

Professor Linda Tuhiwai Smith

**Chair, PBRF Review Panel**

## **Members, PBRF Review Panel**

Professor Wendy Larner

Dr David Phipps

Dr Ian Town

Associate Professor Yvonne Underhill-Sem

Associate Professor Marcus Williams

## **Independent Support Person**

Brenden Mischewski

# Executive summary

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Over the past 15 years, the PBRF has transformed the way research and research support is undertaken in our TEOs. The fund has contributed to a doubling of the number of staff making a significant contribution to research activity and rewarded previously unrecognised research strengths.

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The improvement in measured research quality is encouraging but we should redouble our efforts to put diversity and inclusion at the heart of how we assess research quality.

We can broaden how we think about research excellence and impact, ensure our research workforce better reflects society and make sure that the way we assess excellence reflects our shared values.

To achieve these shifts, we recommend several major changes:

- Introducing a more capacious definition of research excellence supported by a new section of evidence portfolios, Examples of Research Excellence, to replace the Nominated Research Outputs. This section will allow researchers to detail the research they produce, the engagement and impact relating to that research and how they support vibrant, diverse research cultures (see *Adopting a more capacious definition of excellence*).
- Integrating the concept of 'merit relative to opportunity' into the assessment framework to replace the current Extraordinary Circumstances provision. This change will align with other efforts to address systematic disparities in assessment outcomes. We also recommend changes to the composition of panels to make them more representative (see *Working toward more equitable assessment outcomes*).
- Increasing the funding weighting for the subject areas of Māori Knowledge and Development and Pacific Research and for Māori and Pacific researchers. This change will create stronger incentives to address the critical undersupply of historically underrepresented groups and better resource research that has been hitherto undervalued, particularly among wānanga (see *Introducing new funding incentives*).
- Renaming the fund, the Tertiary Research Excellence Evaluation or TREE, to better reflect the focus and objectives of the fund. This change will complement other changes designed to anchor the fund in the distinctive cultural heritage of Aotearoa New Zealand (see *Adopting more inclusive language*).
- Retaining most of the elements of the fund's design recognising that these are working well, but discontinuing the External Research Income measure and the reporting of average quality scores (see *Building on our successes*).

Our 34 recommendations are designed to better recognise the full diversity of research excellence, enable more equitable assessment outcomes and support a more diverse research workforce and research system (see *Recommendations*).

We expect that these changes will increasingly allow researchers to have and see a place for themselves in the fund, building on the strong foundations of the fund's key design elements.

**TABLE 1: COMMENTS ON THE TERMS OF REFERENCE**

The following table summarises the views of the panel and our recommendations in relation to the Terms of Reference for the review.

Terms of Reference	Panel comment
<p><b>Revisiting the objectives of the PBRF</b></p> <p>The Review will consider whether the current objectives need to be further modified to ensure the PBRF meets current and future challenges and priorities in the research system and in the research-led teaching environment.</p>	<ul style="list-style-type: none"> <li>› A new objective to promote a more holistic approach to research excellence (recommendation 15) and three new principles to better reflect the distinctive partnership between the Crown and Māori, the growing diversity of New Zealand's population and the need to address persistent inequalities (recommendations 18 and 19) should be adopted.</li> <li>› To help embed the values underpinning these changes, the panel also recommended a new name for the fund (recommendation 15) and adoption of te reo Māori names for the fund and key aspects of the process (recommendation 16).</li> <li>› The cumulative effect of these changes is set out in <i>Appendix B: Principles and objectives</i>.</li> <li>› The panel was concerned that the publication of average quality scores was not necessarily compatible with the objective of providing robust public information (recommendation 32).</li> </ul>
<p><b>Improving research collaboration and engagement with end-users</b></p> <p>The Review will examine the merits of moving from individual-based assessment to a group-based assessment, in terms of boosting collaboration, supporting workforce development and sustainability, reducing compliance costs and measuring the impact of research.</p> <p>If the individual is to be retained as the unit of assessment, the Review will identify options within the PBRF settings to improve collaboration and impact assessment via other PBRF settings.</p>	<ul style="list-style-type: none"> <li>› The panel was not persuaded by the evidence and submissions it received that a change to the unit of assessment would boost collaboration, support workforce development and sustainability, reduce compliance costs or aid in the measurement of impact (recommendation 24).</li> <li>› The panel recognized that the assessment framework has not yet been able to fully recognize and reward research collaboration and engagement with end-users appropriately.</li> <li>› To better recognise collaboration and engagement, particularly with end-users, the panel recommended that a more capacious definition of research excellence should be adopted that encompasses the production of research, engagement and impact relating to that research and support for vibrant, diverse research cultures. (recommendation 1).</li> <li>› A new section, 'Examples of Research Excellence', in evidence portfolios should be introduced to allow more scope for researchers to describe research activities that conform to the new more capacious definition of research excellence (recommendation 2).</li> <li>› The subject area weightings should be reviewed because they may no longer be fit for purpose and may impact on workforce development and sustainability (recommendation 14).</li> </ul>

Terms of Reference	Panel comment
<p><b><i>Boosting the impact of tertiary education research</i></b></p> <p>The Review will examine options for improving the assessment and rewards for research that has a tangible impact for communities, the environment, businesses or government sectors. The Review will provide advice on the costs and benefits of introducing further measures to assess impact into the PBRF.</p>	<ul style="list-style-type: none"> <li>› The panel considered that the more capacious definition of research excellence (recommendation 1) and new 'Examples of Research Excellence' section (recommendation 2) would build on the existing opportunities to describe impact in evidence portfolios.</li> <li>› The TEC should work with key stakeholders to develop suitable exemplars that demonstrate how impact can be presented effectively in evidence portfolios, and address other myths about how the assessment system privileges certain kinds of research, research outlets or disciplines (recommendation 9).</li> </ul>
<p><b><i>Assessing excellent research with lower transaction costs</i></b></p> <p>The Review will identify options for modifying current PBRF settings to reduce transaction costs for research staff, tertiary organisations and government, including changes to the unit of assessment, changes in the time period(s) for Quality Evaluation, use of new metrics to assess research quality, use of self-assessment and the funding proportions allocated across the current three measures (Quality Evaluation, Research Degree Completions and External Research Income).</p>	<ul style="list-style-type: none"> <li>› Based on feedback and evidence provided, the panel was not persuaded that the transaction costs incurred are undue or excessive, and many of the alternative options mooted would tend to increase transaction costs.</li> <li>› The way research excellence is measured should be simplified, focusing on the assessment of research excellence (the Quality Evaluation) and completion of advanced degrees (the Research Degree Completions measure) (recommendation 20).</li> <li>› External Research Income, which is one of the proxy measures of research quality, should be discontinued progressively between 2024 and 2029, with the weighting of the Quality Evaluation measure increased commensurately (recommendation 21).</li> <li>› The Quality Evaluation measure using peer review assessments of research excellence (recommendation 22) undertaken independently of TEOs (recommendation 23) should be retained.</li> <li>› The Quality Evaluation measure should retain the individual as the unit of assessment (recommendation 24) and continue to be conducted periodically every six years (recommendation 25).</li> <li>› The eligibility criteria for new and emerging researchers should be reviewed so that it is simpler to administer (recommendation 26).</li> <li>› The maximum number of other research outputs should be reduced from 12 to six to reinforce the preference for quality (recommendation 3).</li> <li>› The research contribution section of evidence portfolios should be simplified (recommendation 4)</li> <li>› Open Researcher and Contributor ID identifiers for researchers should be used to link to efforts to improve the quality of research information in New Zealand (recommendation 31).</li> </ul>

Terms of Reference	Panel comment
<p><b><i>Sustainable and diverse workforce with investigator-led research capability</i></b></p> <p>The Review will examine the effectiveness of the PBRF on the development of highly-skilled and diverse research workforce for New Zealand in the context of the changing nature of work and workplaces. This will include consideration of whether any adjustments to PBRF settings are required to support a sustainable mix of gender, ethnicity and ages across the tertiary research workforce.</p> <p>The Review will also consider whether the PBRF creates any incentives or disincentives within TEOs given the changing nature of work and the continued evolution of new types of working arrangements, ways of working and workforce development.</p>	<ul style="list-style-type: none"> <li>› The research workforce does not reflect the diversity in New Zealand society. The PBRF is not the sole cause and may not be a significant factor, but there are opportunities to use the way we recognize and reward research excellence to contribute to a research workforce that better reflects New Zealand's population.</li> <li>› The provision in the assessment framework relating to exceptional circumstances should be reviewed to ensure that it recognizes meaningful impacts in a sensitive way and incorporates the concept of 'merit relative to opportunity' (recommendation 5).</li> <li>› There should be a more proactive approach to shaping the composition of peer review panels to ensure diversity of perspectives (recommendation 6), continued training for panel members (recommendation 7) and increased investment in the training of researchers and research managers (recommendation 8).</li> <li>› Higher funding weightings should apply to the funded evidence portfolios of Māori and Pacific researchers, particularly new and emerging researchers (recommendation 10) and the subject area weightings of Māori Knowledge and Development (recommendation 11) and Pacific Research (recommendation 12).</li> <li>› The targeted investment in the capability of wānanga in engage with the fund should be continued (recommendation 27).</li> <li>› As there is a need to maintain the significant collective research capability in the vocational education sector, a funding guarantee for the new national provider of vocational education should apply (recommendation 13) and the transition arrangements as part of the reform of vocational education should consider researcher support and capability (recommendation 28).</li> <li>› The TEC should commission an ongoing programme of research and evaluation relating to the conduct and effects of the fund (recommendation 29) and to improve the quality of information about the research workforce (recommendation 30).</li> <li>› The level of funding allocated through the fund needs to increase considerably to maintain strong financial incentives to ensure that the required investment in the research workforce occurs (recommendation 32).</li> <li>› The approach of co-designing the fund with a group that reflects the diversity of research workforce needs to continue (recommendation 34).</li> </ul>

# Recommendations

The recommendations of the panel are set out below.

## Adopting a more capacious definition of research excellence

The assessment framework should adopt a more capacious definition of research excellence that encompasses the production of research, engagement and impact relating to that research and support for vibrant, diverse research cultures. Rather than simplistic categorisation of research as basic or applied, or traditional or non-traditional, we need to draw out the richest examples of research excellence, focusing on research outputs of the highest quality and the most important research contributions.

1. A more capacious definition of excellence should be adopted to create new opportunities for excellent research to be recognised, encompassing the production of research, engagement and impact relating to that research and support for vibrant, diverse research cultures.
2. The nominated research output section should be replaced with a new section 'Examples of Research Excellence', which can be used to present up to four examples of research of how these outputs exemplify research excellence including scholarly and non-scholarly (broadly defined) impacts.
3. The number of 'Other Examples of Research Excellence' should be reduced from twelve to six to further indicate a preference for the quality of research outputs over quantity.
4. The research contribution component of evidence portfolios should be refocused on the best examples of those activities that contribute to the sustainability and vitality of the research system.

## Working toward more equitable assessment outcomes

We should be more ambitious in recognising the particular circumstances of individuals, particularly where differences are systemic, ensuring panel members are more representative and addressing misconceptions about the assessment framework.

5. The exceptional circumstances provision should be reviewed in consultation with the sector with a view to:
  - a. normalising the very great diversity of career trajectories of academic staff so that there are no particular parts of the human experience that are categorised as 'exceptional' or 'special'.
  - b. introducing a 'merit relative to opportunity' concept when panels assess the quantity of research to promote equity, diversity and inclusion.
  - c. limiting the number of people who have access to sensitive or confidential information relating to individuals, such as through some assessment at the TEO level or a tightly constrained group of peer review panel members.

6. The TEC should take a more proactive role in identifying candidates for the peer review panels to ensure that members better reflect the current and growing epistemological and demographic diversity of the research workforce including ensuring gender parity, significant representation of Māori and Pacific researchers and a broad representation of researchers and other experts across career stages and organizational context in each panel.
7. The TEC should continue to build on the successful programme of training for peer review panel members, particularly strengthening the capacity of panels to take account of the diversity of research excellence and the application of the 'merit relative to opportunity' approach.
8. The TEC should invest in a comprehensive programme of training for researchers and research managers, using a panel of suitably experienced people, to improve understanding and address myths about the assessment framework.
9. The TEC should develop exemplars of evidence portfolios that demonstrate how the assessment framework enables researchers to describe impact collaboration and engagement with end-users effectively as part of wider work to improve understanding, address myths and explain the new more capacious definition of excellence.

## Introducing new funding incentives

Changes to the funding system will support work underway to address the critical undersupply of Māori and Pacific researchers, shift resources toward the Māori Knowledge and Development and Pacific Research subject areas, and better support excellent research across the system including among the staff of wānanga and the new national provider of vocational education.

10. The design of the fund should reinforce the efforts to address the underrepresentation of Māori and Pacific researchers in the research workforce by assigning an additional funding weighting to evidence portfolios submitted by staff who identify as New Zealand Māori or with a Pacific ethnicity of:
  - a. '2' for all evidence portfolios that meet the standard for a funded Quality Category, and
  - b. '4' for evidence portfolios assigned a 'C(NE)' Quality Category.
11. The design of the fund should reinforce the efforts to strengthen research based on kaupapa Māori and mātauranga Māori by applying the subject-area weighting of '2.5' to the Māori Knowledge and Development subject area.
12. The design of the fund should reinforce the efforts to strengthen research based on Pacific-based research methodologies and methods, or that involve Pacific-centred subject matter, or that impact on Pacific peoples by applying the subject-area weighting of '2.5' to the Pacific Research subject area.
13. The share of funding allocated through the Quality Evaluation measure to the new national provider of vocational education should be fixed at the proportion allocated through the 2018 Quality Evaluation to Institutes of Technology and Polytechnics until 2030 unless the level of research quality measured through the 2024 Quality Evaluation indicates a higher share is warranted.

14. The subject-area weightings that apply to the fund should be reviewed because they may not accurately reflect either the costs of undertaking certain types of research or the incentives required to give effect to the new more capacious definition of research excellence.

## Adopting more inclusive language

We should find a new language to talk about the fund, its principles and objectives and how research excellence is understood. Te reo Māori names will connect with the excellent work underway across the sector to anchor research in the distinctive cultural heritage of Aotearoa New Zealand.

15. A new objective for the fund should be added; which is 'To ensure a flourishing and inclusive system for developing and sustaining research excellence in New Zealand'.
16. The TEC should seek the guidance on appropriate te reo Māori names for the fund as a whole and key elements of the process including evidence portfolios and their components that better reflect the distinctive kaupapa that informs the ethical and professional expectations of researchers in Aotearoa New Zealand.
17. The fund should be renamed as the Tertiary Research Excellence Evaluation or TREE, to better reflect the focus of the fund and the greater emphasis that should be placed on diversity and inclusiveness.
18. Three new principles for the fund should be added:
  - a. 'Partnership: The fund should reflect the bicultural nature of New Zealand and the special role and status of the Treaty of Waitangi (Te Tiriti o Waitangi)', to reflect the significance of the partnership that underpins the relationship between Crown and iwi.
  - b. 'Inclusiveness: The fund should encourage and recognise the full diversity of epistemologies, knowledges and methodologies to reflect New Zealand's people', to reflect diversity in society and our commitment to a capacious definition of research excellence.
  - c. 'Equity: Different approaches and resources are needed to ensure that the measurement of research excellence leads to equitable outcomes', to underline the vital importance of addressing persistent, embedded and inherited inequities and their negative effects on the capacity of women, Māori and Pacific peoples among other groups to participate in the research, science and innovation system.
19. The existing principle of 'Cultural inclusiveness' should be removed as it will be superseded by the changes set out in recommendation 18.

## Building on our successes

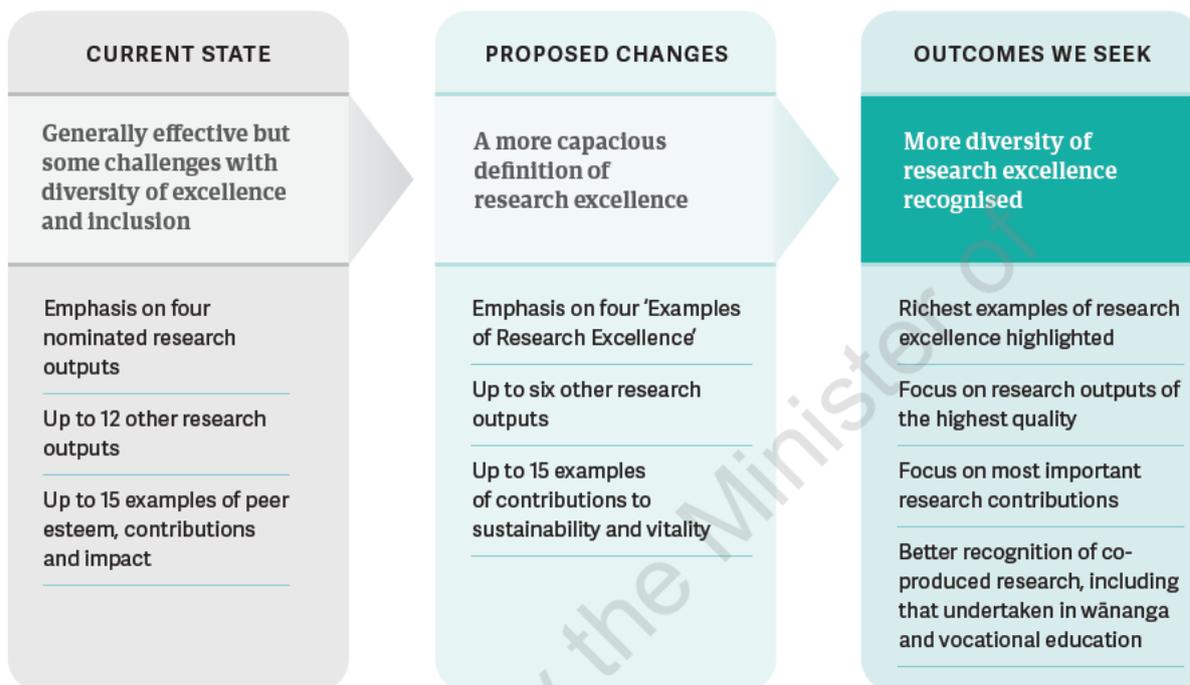
The key design elements of the fund and the Quality Evaluation, in particular, are working well. We recommend some changes to focus the fund on recognising and rewarding research excellence and research workforce development, refine some aspects of the fund's design and deepen our collective understanding of the effects of the fund.

20. The Quality Evaluation and Research Degree Completions measures should be retained as they provide a comprehensive measure of the distribution of research excellence and the completion of research degrees.
21. The External Research Income measure should be discontinued as it is input-focused, skewed by investment decisions of government and business, is unduly concentrated and duplicates existing incentives. Funding allocated through this measure would be reduced progressively to zero between 2024 and 2029 and the share associated with the Quality Evaluation measure increased commensurately.
22. Peer assessment should be retained as the primary mechanism whereby research excellence is assessed given the weight of international evidence supporting such models and the contribution that this model makes to the objectives of the fund.
23. Peer assessment should be undertaken independently of TEOs, given the potential for self-review to impact negatively on the collegiality that is vital for research.
24. The individual should be retained as the unit of assessment in the absence of any compelling evidence that different assessment models would result in any of the claimed benefits or a more accurate measurement of research quality.
25. The period of six years between Quality Evaluations should be retained to a) allow for timely adjustments in funding for TEOs based on the measured change in research excellence, and b) give government timely information on the overall change in measured research excellence.
26. The provision for new and emerging researchers should be retained; however the eligibility and assessment criteria should be reviewed and simplified.
27. The panel endorses the investment in the capability of wānanga and ongoing support to engage with the fund.
28. The Reform of Vocational Education and the transitional support for the new national provider of vocational education and training should make appropriate provisions for researcher support and research capability and development.
29. The TEC should, in conjunction with stakeholders, commission an ongoing programme of research and evaluation to ensure that the moderators for future Quality Evaluations and review processes have access to analysis about systemic biases in assessment outcomes and the results and effects of the fund.
30. The TEC should, in conjunction with stakeholders, take steps to improve the quality of publicly-available information about the research workforce.
31. The TEC should explore the adoption of the Open Researcher and Contributor ID as the unique identifier for PBRF-eligible staff and opportunities for better integration with the New Zealand Research Information System.

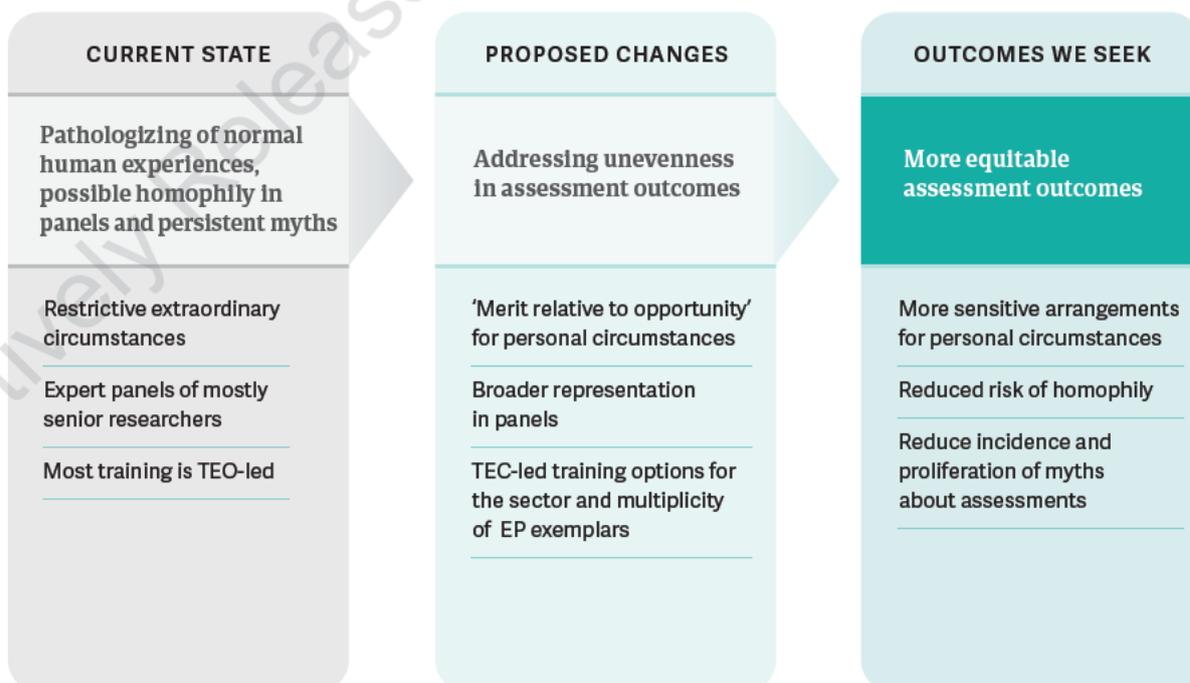
32. The value of the fund should increase by at least \$100m per annum as an uplift with annual adjustments thereafter to maintain the rates of real funding on a per capita basis through the Quality Evaluation and Research Degree Completions measures.
33. The TEC should retain the focus on the increase in the total number of funded Quality Categories when reporting the results of the Quality Evaluation, and discontinue the average quality score metrics.
34. A Sector Reference Group should be established to advise on the implementation of the changes to the fund agreed by government and this group should include significant representation of Māori and Pacific researchers and a broad representation of researchers across career stages and organizational context.

# Our proposed model

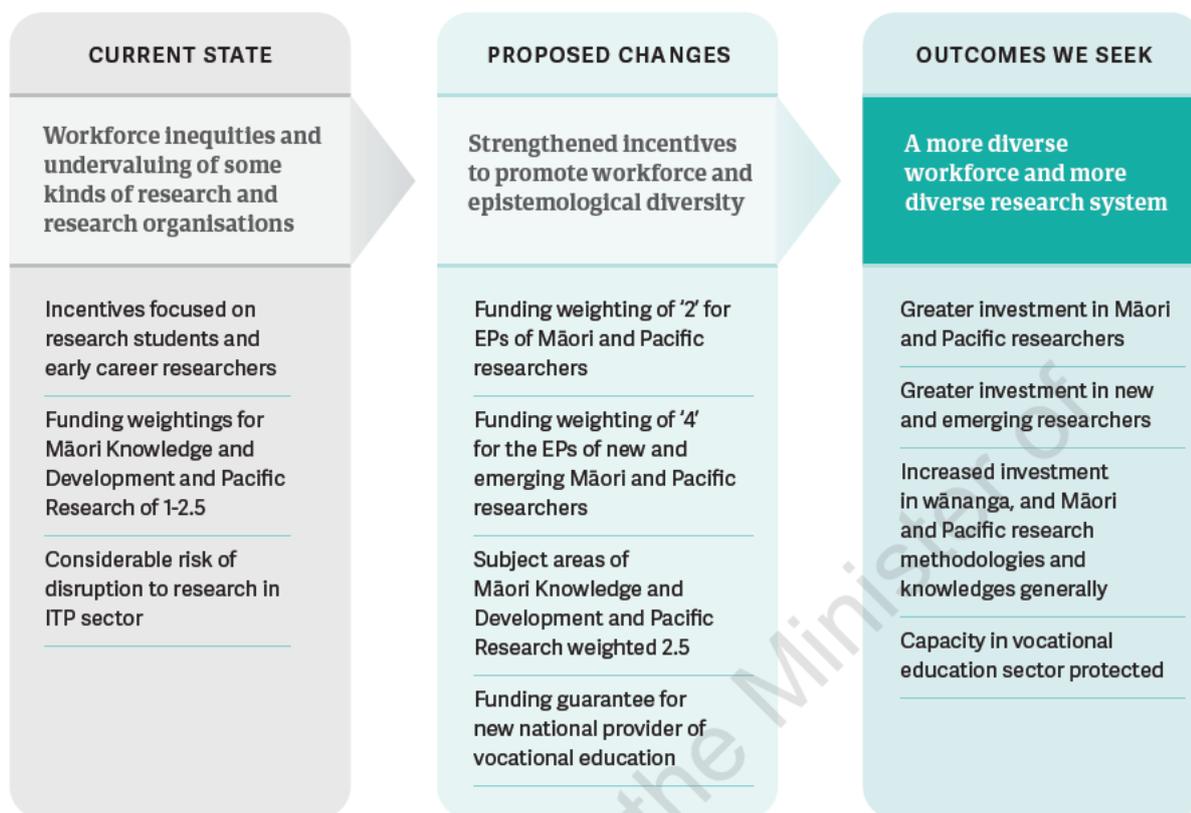
## Adopting a more capacious definition of research excellence



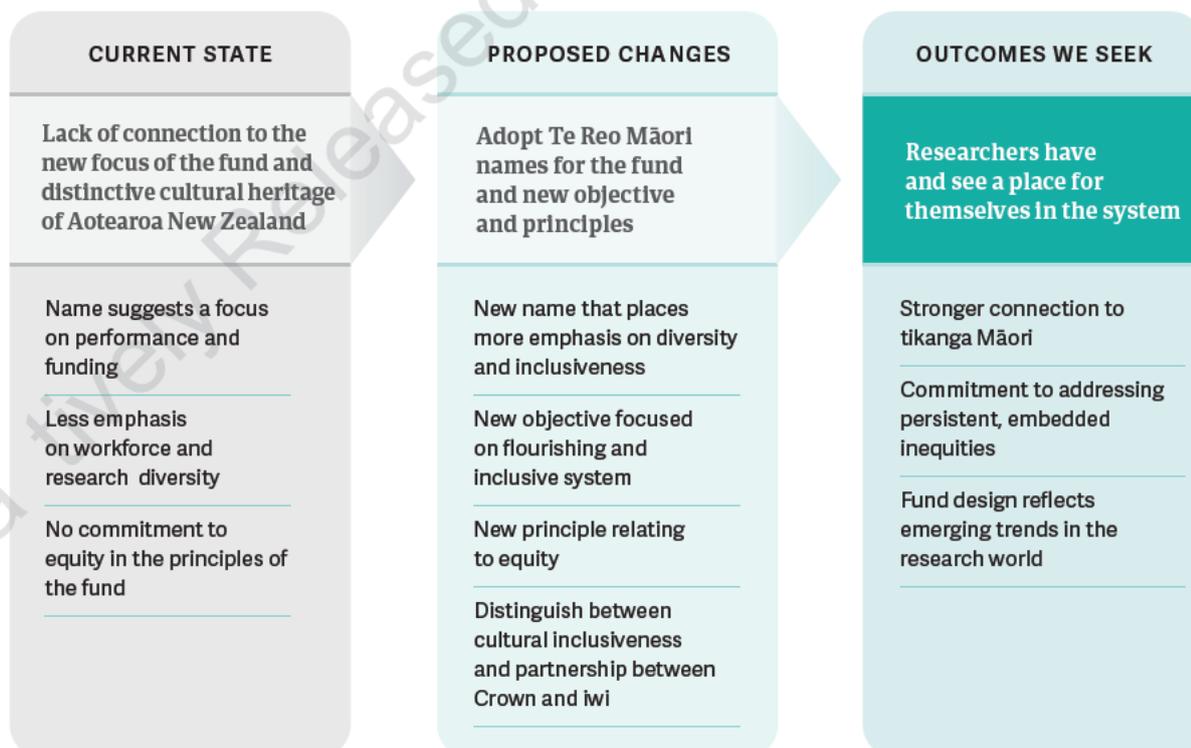
## Working toward more equitable assessment outcomes



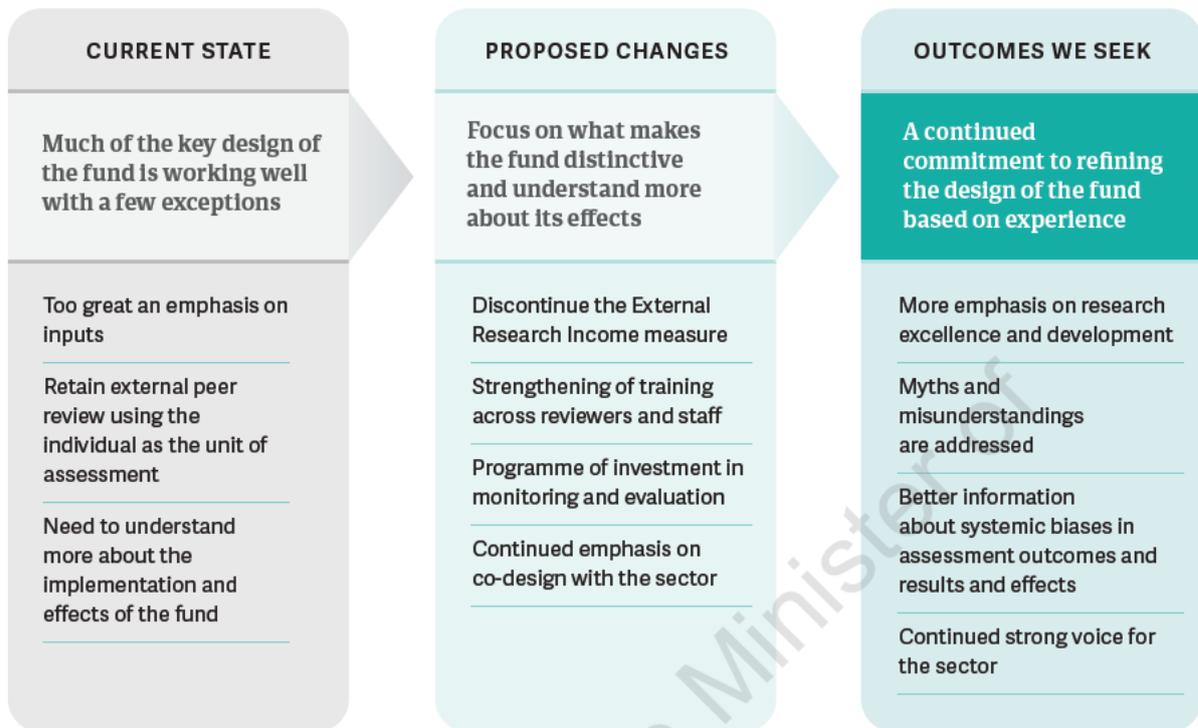
## Introducing new funding incentives



## Adopting more inclusive language



## Building on our success



# Process

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This report presents the results of the deliberations of the PBRF Review Panel.

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In reaching the conclusions set out in this report, the panel:

- met five times over nine full days between July 2019 and January 2020,
- interviewed 60 key informants generally organised into groups based on common characteristics and engaged with representatives of the major tertiary education sub-sectors,
- undertook a public submissions process which attracted 51 written submissions from a range of individuals and organisations,
- received four additional presentations and reports from people with expertise in interpreting the data generated by the fund and its operation and implementation,
- met with officials of the Ministry of Education, MBIE and TEC, and
- met with the Associate Minister of Education, Hon. Jenny Salesa, three times to update her on the panel's progress.

## Meetings

The meetings of the panel were all held in Wellington with generally all panel members attending in person. The panel was assisted by an independent support person.

## Key informants

The panel recognised the importance of engaging with as broad a group of key informants as possible. We met with 60 key informants organised into panels including groupings based on their level of experience such as senior and early career researchers, disciplines such as creative arts researchers, demographic characteristics such as Māori and Pacific researchers and their role in the research, science and innovation system. We also met with researchers who offered insights into the experience of women working in the research sector.

We met with people who gave us insights into the experience of managing research at TEOs, including the groups of research leaders from the university sector, institutes of technology and polytechnics and private training establishments. The chair also met separately with the Chief Executives and/or people in research leadership roles in the wānanga sector. We met with the Tertiary Education Union and researchers that they nominated to speak with us. In light of the significance of the fund for universities, we also met with the Vice-Chancellors and Universities New Zealand.

Officials from the Ministry of Education, MBIE and the TEC attended the panel's meetings. These staff offered valuable insights into the design and implementation of the PBRF and its role in the wider research, science and innovation system.

A full list of the key informants that we met with is presented in **Table 7** as part of *Appendix C: Informants and submissions*.

## Submissions

The panel sought public submissions with the support of the Ministry of Education. An online template with a set of questions to help guide submitters was published on the Ministry of Education's website. Submissions were open during September and October 2019.

The panel received 51 submissions from TEOs, research organisations, peak bodies and individual researchers or groups of researchers. More than half (51%) of the submissions were made by researchers, either as individuals or groups. Submissions by TEOs including all of the universities accounted for 35% of the total number made. Research organisations and peak bodies, including Universities New Zealand, accounted for the balance.

The panel collectively read all the submissions we received, and we also considered a summary of the submissions prepared by the staff of the Ministry of Education.

No panel members were involved in the preparation of submissions by the institutions that they were employed by.

A full list of the organisations that made submissions is presented in **Table 9** as part of *Appendix C: Informants and submissions*.

## Supporting papers

The panel considered a series of papers relating to each of the sections of the Terms of Reference. These papers prepared by the Ministry of Education informed how we approached our deliberations

The panel also received a briefing relating to the impact of the assessment framework on the results assigned to the evidence portfolios of women researchers and several presentations on the process and results of the 2018 Quality Evaluation from TEC staff.

The panel also reviewed the large and growing research literature relating to the design, implementation and effects of the fund and other relative research and analysis (see *Bibliography*).

## Reaching our decisions

The panel's decisions were informed by our understanding of the design of the fund (see *Context*), the way those design elements interact with the sector (see *Opportunities and challenges*) and the valuable input from key informants and the many thoughtful submissions we received.

In reaching these decisions, we were guided by the recognition that the fund:

- is only a part of the research, science and innovation funding system and is not the sole lever for all of the goals that government, research organisations, communities and business have for the research system. Nonetheless we sought opportunities to connect the fund to other government initiatives particularly the investment system outlined in the draft Research, Science and Innovation Strategy, and the MBIE position paper, “The Impact of Research”, which were released during our deliberations.
- offers a valuable development opportunity for research. TEOs should see the process as providing useful external validation and feedback on their efforts to enhance research excellence and demonstrate accountability, rather than simply being a compliance exercise undertaken solely for the purpose of allocating funding.
- can always be improved but has several elements that are working well for many stakeholders and participants. We saw opportunities to encourage and build on emergent practices that had the potential to deliver better outcomes while retaining well-established and successful aspects of the design of the fund.
- has several powerful incentives, but it can take time for institutions and individuals to respond to changes. We recognised a need to maintain a sense of humility in the changes we expect in the short-term, but longer-term be much more ambitious about what is possible.

# Context

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This section of the report sets out how the PBRF operates and considers various matters that the design and implementation of the fund influences and in turn should take account of.

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## Contributing to wellbeing

The government is committed to a productive, sustainable and inclusive future that works for all New Zealanders (Robertson, 2019). Realising that goal involves some big challenges such as transitioning to a zero-carbon economy by 2050, ensuring that everyone has a warm, dry home and making New Zealand the best place in the world to be a child (MBIE, 2019).

The concept of sustainable intergenerational wellbeing underpins the government's ambitions (New Zealand Treasury, 2018). The growth, distribution and sustainability of financial, human, natural and social capital is necessary to deliver on this wellbeing (NZ Government, 2019). The promotion of social cohesion, inclusion and diversity is at the heart of efforts to share New Zealand's prosperity (Ardern, 2018).

The research and education delivered by our tertiary education system plays a crucial role in developing and sustaining these 'capitals'. Education and training help people live enriched lives and lead to lifelong benefits in terms of health, wealth and life satisfaction. It also brings public benefits, including a stronger civic society, the advancement of knowledge, preservation of cultural heritage and the development of a skilled workforce (NZPC, 2017).

Research, science and innovation create new knowledge, generate ideas and technologies and create capabilities, products and services that make a difference to people, the environment and the economy (MBIE, 2019). The system also has a role to play in capturing the best ideas and talent by promoting an inclusive and diverse workforce and environment (MBIE, 2019).

## The place of the PBRF

The PBRF has multiple objectives (see *Revisiting objectives*). The primary objectives of the fund are to increase the quality of research, support teaching and learning, maintain and lift the competitive rankings of TEOs and provide robust public information. The fund is also intended to support the development of the future research workforce, support research that provides benefits to New Zealand and supports technology and knowledge transfer.

The multitude of objectives belies a more straightforward purpose. The funding enables staff in participating TEOs to undertake those activities needed to demonstrate that degree-level and higher teaching is delivered by people undertaking research, and partly offsets the costs of supervising and supporting postgraduate research students, primarily at the Masters and Doctoral level.

Research workforce development is more important for the PBRF than other investments. The fund supports TEOs to develop the national research infrastructure and the skills people need to contribute to the research workforce and to the knowledge economy more generally. It differs from most other research, science and innovation investments which tend to fund specific research programmes or projects, or are focused on different parts of the pathways to research careers, such as postdoctoral or early career researchers. Additionally, the other investments by government in tertiary education are focused on undergraduate (or other lower level) education and training.

Similarly, the way TEOs use the PBRF is not constrained by government objectives, specific research foci or discipline areas, other than the broad incentives at play (see *How the PBRF operates*). TEOs are autonomous institutions which decide how best to allocate the funding they receive to ensure that internal resourcing supports both institutional and individual research efforts and have no direct obligation to justify the way they spend funding received from PBRF.

## A mixed model assessment

The PBRF involves assessing the research performance of TEOs and allocating funding accordingly. The fund uses a mixed model of assessment. Most of the funding (55%) is allocated on the basis of peer review assessment of the research outputs and research contributions of individual staff, the Quality Evaluation measure.

The balance of funding is allocated on the basis of proxy measures: the Research Degree Completions measure which rewards TEOs based on the number of graduates of research degrees (25%) and the External Research Income measure which rewards research income (20%) attracted by each TEO.

The Quality Evaluation measure involves the periodic (six-yearly) review of evidence portfolios submitted by TEOs on behalf of their staff. These evidence portfolios are assessed by thirteen peer review panels comprising senior researchers from New Zealand and overseas. Each portfolio is assigned a 'Quality Category' which denotes differences in measured research quality based on evidence from the preceding six years. Funding is weighted on the basis of the employment commitment of staff to the relevant TEO, that is their full-time equivalent (FTE) status.

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*“(there is) something about the simplicity of the thing, the signals, that is valuable”*

**KEY INFORMANT, UNIVERSITY MANAGER**

Information on the relative performance of TEOs is published following each of the six-yearly Quality Evaluations and funding adjusted accordingly. The performance of TEOs in terms of the other two measures are updated annually, and a rolling average used to smooth changes over time.

Funding allocations are based on the number of evidence portfolios that met the standard for funding, the number of completions of research degrees and the amount of research income each TEO attracts. Weightings are applied to the Quality Evaluation and Research Degree Completions measures to reflect relative quality, workforce development priorities and the estimated cost of research and research-led teaching in different subject areas.

For example, the highest-funded Quality Category, an 'A', in the highest 'cost' subject area attracts 12.5 times the funding as the lowest in each category. Similarly, completions associated with Māori and Pacific learners attract twice the funding of other completions.

## Changes in the design

There has been a considerable investment by researchers and TEOs in refining and improving the assessment framework over the past seventeen years. The system is, in large part, co-designed with the sector with experts from the sector leading in the original design and the reviews that followed each Quality Evaluation

The tentative design of the PBRF mooted in 2002 aimed to deliver a high quality assessment with low transaction costs and little impact on individual researchers. The high-quality assessment would be achieved by peer review panels assessing up to four research outputs submitted by individual researchers.

The low compliance costs would be achieved by avoiding the complexities of selecting groups for assessment and limiting the assessable material to research outputs only. The limited impact on researchers would result from withholding the assessment results of individuals from researchers and TEOs (Boston, 2019).

Peer review assessment was chosen because it provided the most credible means of assessing quality, would offer a complete view of research excellence including research outputs, peer esteem and contributions to the research environment and offered a means to favour quality over quantity of research outputs (MoE, 2002).

An unanticipated issue was that the Privacy Act 1993 meant that any information held about individuals, including scores assigned through the Quality Evaluation, would be available to them. Principles around transparency of funding decisions also necessitated the sharing of results with TEOs.

The perceived desirability of reducing information asymmetries between TEOs and students, business and research funders meant that comprehensive public reporting of the results was pursued. Two proxy measures of research quality were also introduced to augment the results of the peer review (MoE, 2002).

The design of the PBRF has been relatively stable since the detailed design work, in line with international experience that changes to such systems tended to be evolutionary (Kolarz, et al., 2019).

Operational policy reviews followed each of the 2003, 2006 and 2012 Quality Evaluations involving extensive engagement with the sector (for example, (TEC, 2019g). These reviews were informed by the results of a process evaluation (WebResearch, 2004), an independent evaluation (Adams, 2008), and a policy review in 2013 (EAP, 2013).

There has been emerging research exploring the impacts and functioning of the PBRF considering issues such as the suitability of other proxy measures of research quality (Smith, 2008), the design of the reporting framework (Buckle & Creedy, 2017), workplace culture (Middleton, 2005), (Ruth, et al., 2018), (Narayan, 2019), staffing (Buckle & Creedy, 2018), analysis of funding outcomes (Smart, 2019), and research quality (Smart & Engler, 2013), (Harland & Wald, 2017) and research concentrations (Buckle & Creedy, 2019).

There has also been an effort to improve the accessibility of performance information through online tools covering researcher demographics (TEC, 2019c), dissemination of research (TEC, 2019h), collaborations (TEC, 2019k) and co-authorship (TEC, 2019i), as well as ongoing efforts to encourage re-use of PBRF data for research purposes.

Key changes that have been made since the original design was mooted included:

- an assessment pathway for new and emerging researchers (2006),
- establishment of professional and applied expert advisory panels (2012 only),
- a broadening of the definition of research (2006, 2012 and 2018),
- explicit reference to the advancement of mātauranga Māori in the objectives of the PBRF (2012),
- changes to the reporting framework (2012 and 2018) including the introduction of commentaries on the relationship between measured research quality and researcher demographics (2018),
- a progressive circumscribing of the provisions to take account of issues that might impact on the productivity of staff (2012 and 2018),
- a reduction of the maximum length of many text fields in evidence portfolios (2012) and the number of items that may be included in evidence portfolios (2018),
- discontinuing of specialist advisors to panels and more explicit provisions to capture information about research impact (2018),
- the establishment of Pacific research panel (2018), and
- adjustments to the proportion of funding allocated on the basis of the Quality Evaluation and Research Degree Completions measures (2018).

The most salient trends are toward a broadening of the types of evidence of research excellence that might be submitted and moves to create a simpler model of evaluation, and a greater awareness and recognition of diversity in terms of the workforce and research methods.

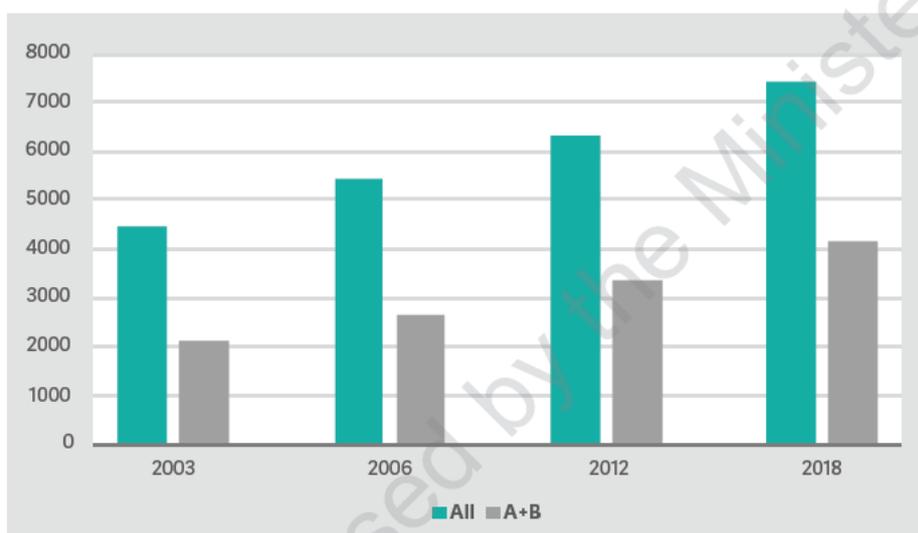
## Results of the PBRF

The PBRF has contributed to an increase in measured research quality, the number of completions of research degrees and the amount of research income from external sources.

The number of staff whose evidence portfolios met the standard for a funded Quality Category increased considerably between 2003 and 2018. The number of funded quality categories increased from 4,461.51 in 2003 to 7,408.40 in 2018, an increase of 66.1%. Each Quality Evaluation since 2003 has seen an increase of roughly 1,000 staff whose evidence portfolios met that standard.

The growth in the highest-ranked portfolios – those assigned an 'A' or 'B' Quality Category – was even more striking, up from 2,141.53 to 4,148.70 over the period, an increase of 93.7% (adapted from (TEC, 2019a) (see Figure 1).

**FIGURE 1: CHANGE IN THE NUMBER OF (FTE-WEIGHTED) FUNDED QUALITY CATEGORIES, 2003 TO 2018**



Source: (TEC, 2019a)

The number of completions of research degrees is higher – increasing from 1,730 in 2003 to 4,117 in 2017. Similarly, research income increased from \$194.5 million to \$515.1 million over the same period (TEC, 2004), (TEC, 2017).

Analysis of the changes in measured research quality suggested that there was a statistically significant increase in the average quality of research between 2003 and 2012 (Smart & Engler, 2013).

The limited international research into the results of performance-based funding systems indicates that the increased research quality and production in New Zealand is consistent with the experience overseas (Arnold, et al., 2018).

## Investment allocations

The government currently invests \$315.0 million per annum in the PBRF, up from \$131.8 million in 2004. The increase in measured research quality gave successive governments the confidence to invest in research and research-led teaching (Cullen, 2006) (Joyce, 2013).

Almost all of this funding is allocated to the university sector, although their share reduced slightly between 2003 and 2018 from 98.2% to 96.6% (TEC, 2019a). This reduction is largely due to changes in the mix of TEOs participating in the PBRF rather than any relative reduction in the measured research quality of universities (TEC, 2013), (TEC, 2019j), (Smart, 2019). The fund has been only modestly redistributive, the share of research top-ups (the former basis on which research and research-led teaching was funded) attracted by the universities in 2003 was 94% (Smart, 2019).

It is the second-largest source of funding for the tertiary education system, albeit one that is dwarfed by funding for tertiary tuition and training (\$2.55 billion in the same year) (TEC, 2019m). Funding allocated through the PBRF tripled in nominal terms and doubled in real terms between 2000 and 2019 (Smart, 2019), in sharp contrast to the main public subsidy for teaching and learning (MoE, 2018).

The PBRF is also the single largest source of funding in the research, science and innovation system. Yet it accounts for only a little more than one-fifth (22.0%) of the government's direct investment in this area. If investment in research and development and the accompanying tax credits are included, the PBRF accounts for only 7.8% of the total (MBIE, 2019).

## Reporting

The reporting framework for the PBRF currently involves:

- a public report of the results of each Quality Evaluation (TEC, 2019f) with a variety of interactive reporting tools, which tends to attract some sector, media and public comment.
- reporting of detailed funding tables including allocations by subject area by TEO, the number of completions of research degrees including the ethnicity and subject areas of graduates and amount of research income by TEO (TEC, 2018).
- the provision of detailed results from the Quality Evaluation measure to participating TEOs for the purpose of transparency about funding outcomes, and, in line with the Privacy Act, the ability of individuals to access information held about them.

Key shifts in the way information about the PBRF is reported include changes to the way the rankings of TEOs are calculated, the discontinuing of rankings of subject-areas at the level of TEOs or nominated academic unit of TEOs, the greater use of online data visualisation tools to enable self-service analysis by stakeholders and the availability of considerably more detailed information about Research Degree Completions.

The use of Quality Evaluation results by TEO is governed by a protocol set out in the PBRF Guidelines that aims to tightly restrict access to these results. The protocol recommends that TEOs do not use the results as the basis for salary determinations, recruitment decisions or performance appraisals (TEC, 2016a).

Individuals themselves are under no restrictions about the uses to which they put the information they receive. Such information normally comprises some scoring information, including the final Quality Category and may include information about key assessment events (cross-referrals or transfer of evidence portfolios) (TEC, 2016a).

# Opportunities and challenges

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This section of the report discusses several matters that are relevant to the design and implementation of the PBRF. These include:

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- the financial incentives of the fund are weakening (see *The incentives of the fund remain strong, but we see risks emerging*)
- women, Māori and Pacific people are underrepresented in the workforce (see *A research workforce that does not reflect New Zealand society*)
- the systematic biases in assessment outcomes (see *Individual circumstances should matter more*)
- the cost/benefit analysis that TEOs apply to participation in the fund (see *Transaction costs do not appear to be excessive and Smaller TEOs see non-financial benefits from participation*)
- persistent issues with the way the fund assesses the research produced by the staff of wānanga (see *Wānanga do not have a clear place in the PBRF*)
- the ongoing debate about whether to assess research quality on the basis of individuals or groups (see *Thinking about the unit of assessment*)
- concerns about whether the assessment framework disadvantages certain kinds of research (see *Research excellence is diverse*)
- the balance between peer review and metrics (see *How best to assess excellence*)
- the impact of the fund on individuals (see *Looking after our people*).

Each of these matters is discussed below, incorporating some of the key themes from our discussions with key informants and the submissions we received.

## The incentives remain strong, but we see risks emerging

- › The panel heard through submissions and from key informants that the PBRF creates strong incentives but that the funding incentives have weakened over time.

The PBRF operates through reputational, professional and financial incentives. Universities, in particular, are highly sensitive to reputational factors because they are associated with their capacity to attract high-quality staff and students and the influence they can project. Reputational effects are thought to have a stronger effect on organisational behaviour than the funding incentives (Jonkers & Zacharewicz, 2016).

Professional incentives are strongly felt by many staff with the Quality Category assigned to 'their' evidence portfolio taken as validation of the fulfilment of aspects of their academic roles.

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*“The funding is understood as a sinking lid, which tends to weaken the incentives. Funding is visibly reduced”*

**KEY INFORMANT, CREATIVE ARTS RESEARCHER**

Financial incentives result from the allocation of a large, and relatively fast-growing, pool of funding. Funding is allocated on a 'zero-sum' basis – increases in performance relative to other TEOs attract more funding to the 'better performing' TEO at the expense of its peers. Success in the PBRF should, in theory, result in increased scope for better performing TEOs to invest in the capacity needed to generate ever-greater performance.

The broad-based and relatively open nature of the fund means that even the smallest TEOs have the opportunity to see a direct link between a focus on research excellence and financial rewards.

The cumulative effects of these incentives appear to have been significant over time. The number of staff whose evidence portfolios met the standard for a funded Quality Category, the number of students graduating with research degrees and the amount of research income from external sources are all much higher than in 2003 (see *Context*).

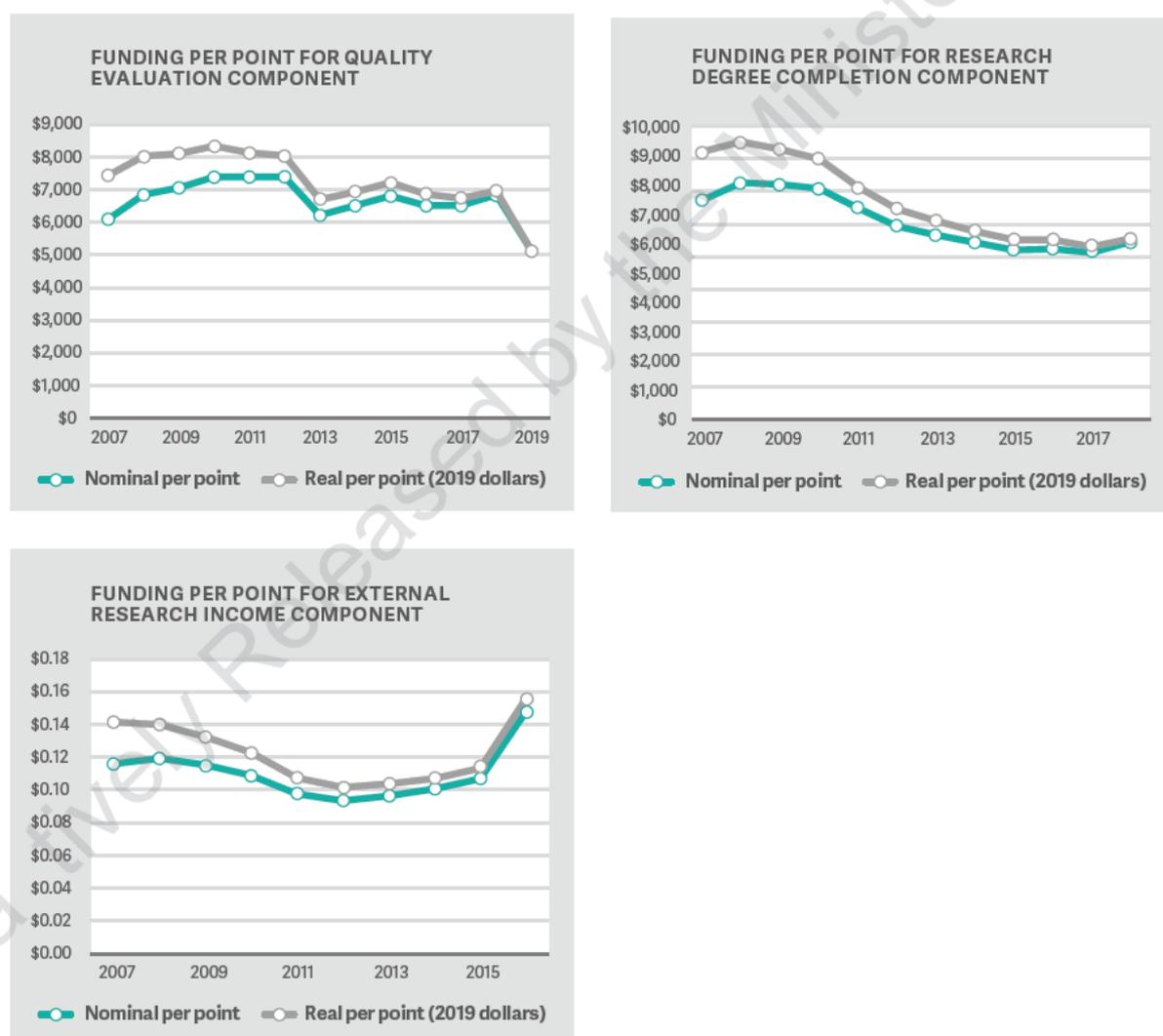
› The funding incentive is weakening

Analysis by the Ministry of Education indicated that the large increases in funding had not kept pace with the increase in measured research quality (see Figure 2).

Funding for the highest-ranked evidence portfolio in the most expensive subject area fell from \$100,000 in 2012 to \$64,000 in 2019. Similarly, the funding attracted by a Research Degree Completion is much lower – a doctoral completion in the most expensive subject area was ‘worth’ \$67,000 in 2007 and \$46,000 in 2019. Conversely, the additional premium associated with success in the External Research Income measure increased slightly from almost 12 per cent to almost 16 per cent (Smart, 2019).

Analysis prepared for the panel indicated that the fund should be around \$100m larger to generate the same price signal as in 2012.

FIGURE 2: CHANGES IN PBRF FUNDING PER POINT OVER TIME



Source: (Smart, 2019)

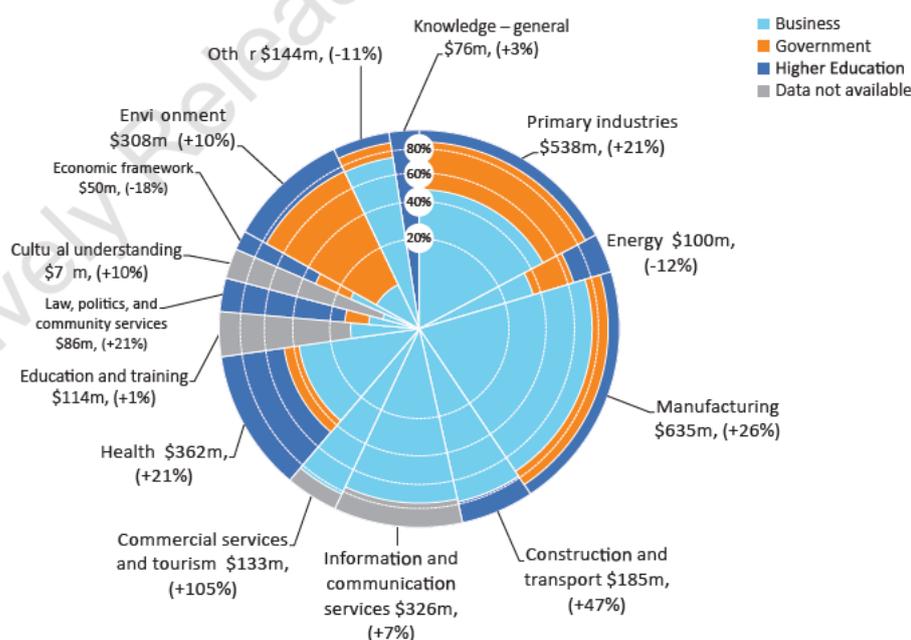
› The External Research Income measure is skewed

The External Research Income measure is a proxy measure of research quality. It assumes that external funders will be discerning in where they invest scarce resources and so acts as a proxy for quality and peer or stakeholder esteem (MoE, 2002).

The panel considered External Research Income to be the least valuable of the current measures of research quality for six reasons, which are that:

- External Research Income differs from the other measures because it measures an input (funding) into research, rather than the outputs or outcomes that arise from research.
- the measure tends to be a stronger indicator of where government and business prefers to invest research funding, rather than the intrinsic quality of research at given TEOs. It will, therefore, tend to favour research related to manufacturing, primary industries, health and information and communication services which account for the majority of research and development expenditure (see Figure 3).
- two TEOs accounted for 56.9% of all eligible External Research Income in the 2017, a share that largely unchanged since the beginning of the decade. This pattern is largely due to the presence of large, high-quality medical and health faculties at those institutions.
- the circumstances that provided some of the impetus for the measure, a perceived need to create strong incentives for the pursuit of external research funding, appear to have been fulfilled. The level of eligible research income increased between 2002 and 2018 by 264.8% from \$194.5m to \$515.1m (TEC, 2004), (TEC, 2018).

FIGURE 3: EXPENDITURE ON R&D BY PURPOSE OF RESEARCH AND SECTOR OF EXPENDITURE, 2016



Source: (MBIE, 2018)

- the measure is not particularly sensitive to the principles of excellence, impact and connections (set out in (MBIE, 2019)). The measure arguably tells us little about the wider diversity of excellence we seek to encourage, the 'line of sight' to impact that should be demonstrated, and the kinds of connections that our system needs to foster.
- there are considerable existing incentives for researchers to pursue contestable research funding suggesting that the measure might be duplicative. Staff can also make reference to external grants in their evidence portfolios giving an alternative avenue to have their success in this regard recognised.

There may, therefore, be a case to reconsider the balance between the three measures or indeed, the continued use of the External Research Income measure.

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### › Our take

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We heard concerns about the way the incentives for the PBRF are structured and the material support that individual researchers receive. Key informants and submitters noted that the mechanisms that underpin the reputational and financial incentives are not working as well as they might. These concerns included:

- the publication of average quality scores was not a useful way to communicate differences in research excellence.
- the funding allocated through the PBRF is welcome but should keep pace with both increases in measured research quality and the aspirations for the research quality and capability in the tertiary education system.
- the premium associated with each dollar of External Research Income is higher now than in 2007, even as the rewards of the Quality Evaluation and Research Degree Completions measure have fallen.

We explore how we might address these issues in the section '*Building on our successes*'.

## A research workforce that does not reflect our society

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- › The panel heard through submissions and from key informants that the PBRF could play a stronger role in shaping the composition of the research workforce

Taking steps to ensure that the research workforce better reflects wider society is associated with several benefits including better results (Nielsen, et al., 2017) and greater impact (Freeman & Huang, 2014) from research.

The research workforce does not reflect the diversity of New Zealand society. Surveys of the research workforce show that women, Māori and Pacific people are underrepresented both in the wider research, science and innovation system (Sommer, 2010) and among those who participate in the Quality Evaluation (TEC, 2019e).

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*“The most important component... must be to act with urgency to improve the diversity of the people in RSI in New Zealand”*

MBIE, 2019

There is mixed evidence about the change in the diversity of the workforce. The results of the Quality Evaluation suggest that the number of women, Māori and Pacific staff are growing (see Table 2), although some have argued that the practical effects have been less than transformational, particularly in terms of Māori and Pacific academics (McAllister, et al., 2019), (Naepi, 2019).

It is indisputable that the proportion of the workforce who identify as female, Māori or Pacific remains below their share of the national population (see Table 3). If each of these groups were represented in the pool of staff whose evidence portfolios were assigned a funded Quality Category, there would be an additional 600 female staff almost 750 more Māori staff and around 450 more Pacific staff.

**TABLE 2: CHANGE IN FTE-WEIGHTED STAFF BY SELECTED DEMOGRAPHIC CHARACTERISTICS, 2003 TO 2018 QUALITY EVALUATION**

Group/Quality Evaluation	2003	2006	2012	2018	Change (%)
All	4,462	5,449	6,313	7,408	66%
Female	1,298	1,836	2,450	3,178	145%
Māori	122	186	234	357	193%
Pacific	14	34	82	104	655%

Source: Adapted from published data visualization on researcher demographics (TEC, 2019c).

Note: Staff whose evidence portfolios were assigned a funded Quality Category only meaning that the baseline and growth in the workforce may be understated. Staff may, of course, identify as female and one or more ethnicity.

Only one ethnicity reported per staff member. Use of FTE-weighted data will understate the actual number of individuals involved. Change in the mix of participating TEOs will influence the results provided.

Ethnicity data based on staffing census data for eligibility purposes, and may not accurately reflect the identit(ies) of the relevant individuals.

**TABLE 3: CHANGES IN SHARE OF ALL STAFF, 2003 TO 2018 QUALITY EVALUATION**

Group/Quality Evaluation	2003 (%)	2006 (%)	2012 (%)	2018 (%)	Share of national population (2013)
Female	29.1%	33.7%	38.8%	42.9%	51.0%
Māori	2.7%	3.4%	3.7%	4.8%	14.9%
Pacific	0.3%	0.6%	1.3%	1.4%	7.4%

Source: PBRF data adapted from published data visualization on researcher demographics (TEC, 2019c). Census 2013 data from (StatsNZ, 2014).

Notes: Please refer to Table 2

The pool from which the future research workforce may be drawn is small. There are few Māori and Pacific people with such qualifications – at the 2013 census, there were just 669 Māori and 177 Pacific people with doctorates (StatsNZ, 2019). Progress in increasing the number of people with these skills has been slow – there were just 45 doctoral completions by Māori and 25 by Pacific in 2016 (MoE, 2017).

Based on current rates of change in the workforce measured through the PBRF and forecast population data to 2050, it appears that Māori may account for a share of the research workforce commensurate with their share of the national population around 2096, and Pacific around 2150.

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## › The reasons for these disparities are complex

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Some reasons cited include lower participation and poorer outcomes throughout the educational system (Bishop, et al., 2009), (Marriott, 2015) including in advanced degrees (Wensvoort, 2011) and during academic employment (Naepi, et al., 2019), structural and overt discrimination in academic environments (James, Alex; Chisnall, Rose; Plank, Michael, 2019), (Kidman, et al., 2015), (Sutherland & Hall, 2017), (Patterson, 2018), (Kidman & Chu, 2019) and a lack of systematic action by TEOs (McAllister, et al., 2019), (Naepi, 2019).

We also heard from key informants that the process of transitioning from study into the academic workforce was complex, and there were many competing opportunities.

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*“Pacific researchers are scattered here and there in the world... the challenge is how they flow through as a common river”*

KEY INFORMANT, PACIFIC RESEARCHER

Implicit and unconscious biases influence who is employed in the research workforce and what research is undertaken, funded and recognised. These biases have been demonstrated in terms of the peer review of funding applications (Tamblyn, et al., 2018), (Ginther, et al., 2011) and within nearly every indicator of scientific merit including publications and citations (Caplar, et al., 2017), (Budden, et al., 2008), academic appointments (Brower, et al., 2017) and granting of science prizes (AWIS, 2011).

The PBRF is identified as a factor in the lack of diversity in the workforce. Reasons include discrimination against interdisciplinary, long-term and community-validated research, an incompatibility with tikanga Māori (Roa, et al., 2009), (Cole, 2019), structural issues with the way research is produced and assessed more broadly (Smith et al., 2016), and a view that it engenders a sense of isolation (Crimms, 2018) (Asirvatham & Humphries, 2019).

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## › Our take

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We heard many perspectives about the way the design and, particularly, the implementation of the PBRF shapes the academic workforce. These perspectives include the views that:

- the focus on research excellence has supported an expansion in the number of researchers and greater diversity in the kinds of research pursued.
- the system actively works against the goal of a more diverse workforce and exhibits a degree of systematic discrimination.

We explore how we might address these issues in the sections ‘Working toward more equitable assessment outcomes’ and ‘Introducing new funding incentives’.

## Individual circumstances should matter more

- › The panel heard through submissions and from key informants that the assessment framework for the Quality Evaluation could be strengthened

It is axiomatic that the Quality Evaluation should result in different assessment outcomes for individual evidence portfolios. Each portfolio is intended to be a summative (albeit truncated and partial) view of the research output and contribution to research more generally of individuals.

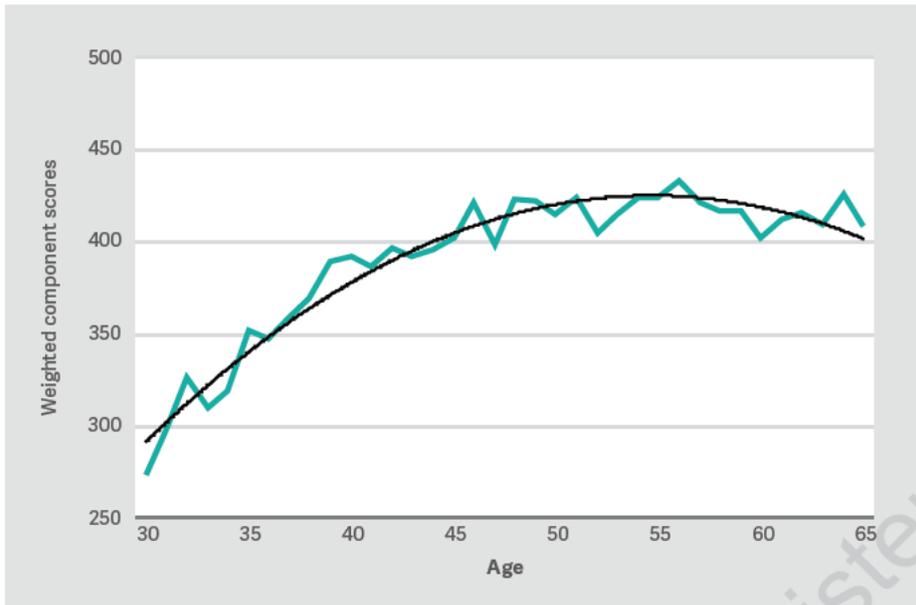
Considerable effort is put into ensuring, however, that peer review panels apply the assessment standards in a reasonably consistent way. Training both in-person and online is augmented by mock assessment exercises which reveal a high degree of consistency both across panels and over time, extensive analysis of assessment results and participation by moderators in significant proportions of panel meetings (TEC, 2019b).

What is equally clear is that some groups experience different outcomes. The greatest variation occurs by age, reflecting the career progression of academic staff, but other factors are at play.

Gender, ethnicity, employment status, circumstances outside of the control of individuals, the composition of the panels and the nature of the research pursued by staff have been cited as issues by researchers (James, et al 2019), moderators (TEC, 2019b) and submitters. The sustained emphasis on research by universities and particular communities of researchers will also influence the results (TEC, 2013).

The relationship between the age of researchers and higher quality categories is well-known (TEC, 2019j), reflecting the progression of academic careers. **Figure 4** shows the relationship between age and component scoring for the 2018 Quality Evaluation.

FIGURE 4: AGE AND WEIGHTED COMPONENT SCORE, 2018 QUALITY EVALUATION



Source: (TEC, 2019d).

Note: Polynomial trendline shown. Average of weighted component scores for all evidence portfolios of staff of a given age. Component scores provide a useful, albeit incomplete, proxy for assessment outcomes. Panels are not bound by particular component scoring results in a signing Quality Categories.

Differences are also apparent in terms of other demographic characteristics. The evidence portfolios of male non-Māori, non-Pacific staff were the most likely to attract an 'A' or 'B' Quality Category in 2018. Those of female non-Māori, non-Pacific staff were around one-quarter less likely.

The greatest difference is associated with Pacific female staff whose portfolios were one-third (65%) less likely. The group with the greatest relative likelihood were Māori female staff for whom the likelihood was 93% (see Table 4).

**TABLE 4: LIKELIHOOD OF AN EVIDENCE PORTFOLIO ATTRACTING A FUNDED QUALITY CATEGORY BY DEMOGRAPHIC CHARACTERISTICS OF STAFF, 2018 QUALITY EVALUATION**

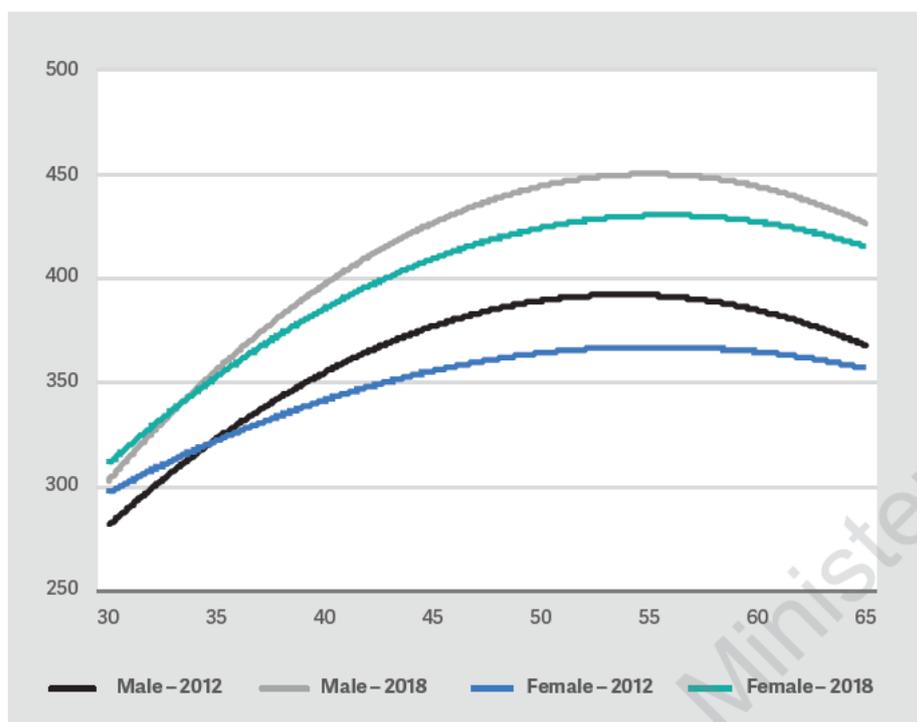
QE Year	Gender	Ethnicity	Odds of 'A' and 'B' Quality Category
2018	All	All	90%
2018	Male	Non-Māori, non-Pacific	100%
2018	Female	Non-Māori, non-Pacific	76%
2018	Male	Pacific	88%
2018	Female	Pacific	65%
2018	Male	Māori	85%
2018	Female	Māori	93%
2018	Male	All	99%
2018	Female	All	77%

Source: Adapted from published data visualization on researcher demographics (TEC, 2019c).

Note: Staff whose evidence portfolios were assigned a funded Quality Category only. Only one ethnicity reported per staff member. Use of FTE-weighted data will understate the actual number of individuals involved.

Analysis of the weighted component scores assigned to the evidence portfolios of female staff for the 2012 Quality Evaluation showed marked differences compared to those of male staff (James, et al., 2019). Extending this analysis to include the results of the 2018 Quality Evaluation indicates that this pattern is persistent over time (see Figure 5).

**FIGURE 5: AVERAGE WEIGHTED COMPONENT SCORES BY AGE AND GENDER, 2012 AND 2018 QUALITY EVALUATION**



Source: (TEC, 2019d).

Note: Polynomial trendlines are shown. Average of weighted component scores for all evidence portfolios of staff of a given age. Component scores provide a useful, albeit incomplete, proxy for assessment outcomes. Panels are not bound by particular component scoring results in assigning Quality Categories. Methodological differences mean that these results are not directly comparable to those produced by other researchers (such as (James, et al., 2019)).

The difference between the weighted component scores assigned to the evidence portfolios of male and female staff remained similar between the 2012 and 2018 Quality Evaluation (see Table 5). This stability is both a reflection of the persistence of the difference in assessment outcomes and the consistent calibration of assessment standards over time. All in the context of a modest overall increase in measured research quality.

**TABLE 5: AVERAGE WEIGHTED COMPONENT SCORES BY GENDER, 2012 AND 2018 QUALITY EVALUATION**

Quality Evaluation	Male	Female	Difference
2018	419	363	56
2012	409	351	58

Source: (TEC, 2019d).

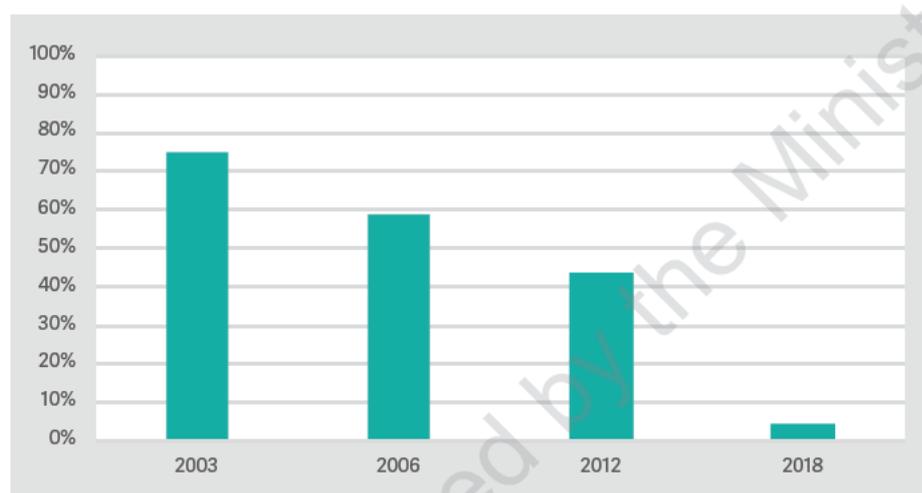
Note: Polynomial trendlines are shown. Average of weighted component scores for all evidence portfolios of staff of a given age. Component scores provide a useful, albeit incomplete, proxy for assessment outcomes. Panels are not bound by particular component scoring results in assigning Quality Categories.

## › Circumstances that influence measured research quality

Circumstances, whether outside the control of individuals or due to choices about how best to allocate time and resources, can influence assessment outcomes. The main effects are likely due to the reduced output and activity of these staff and the judgements of peer review panel members about the way in which the quantity of available evidence might have been influenced.

Since 2003 there have been opportunities for staff to convey these circumstances and for panels to take account of them in assessing the quantity of research produced and research contributions. The proportion of evidence portfolios claiming these circumstances has reduced markedly declining from 75% of all evidence portfolios in 2003 to 5% in 2018 (see Figure 6).

**FIGURE 6: PROPORTION OF EVIDENCE PORTFOLIOS THAT CLAIMED SPECIAL OR EXTRAORDINARY CIRCUMSTANCES, 2003–2018 QUALITY EVALUATION**



Source: (TEC, 2013), (TEC, 2019b)

Note: Proportion of non-FTE weighted Evidence Portfolios. Results for 2018 relate to the extraordinary circumstances provision. All others relate to the special circumstances provision.

The reductions were not reflective of a lessening of the complexity of the working and personal lives of researchers. Rather these changes are the result of better understanding of the process, deliberate decisions to exclude certain circumstances from the 'approved' categories of extraordinary circumstances and the setting of ever more explicit minimum periods over which some impact needed to have occurred

The reduction between:

- 2003 and 2006 reflected better understanding of the application of the criteria and the effects of the 'partial' round when a considerable number of evidence portfolios retained the quality category assigned in 2003.
- 2006 and 2012 when advice was introduced indicating that the circumstances needed to be sustained over at least one half of the assessment period to influence the assigned Quality Category, and removal of the provision to claim special circumstances due to becoming research active for the first time (for 2012) (TEC, 2013a).

- This reduction occurred even as 10.6% of evidence portfolios claimed the new Canterbury earthquakes special circumstances.
- 2012 to 2018 resulted from the renaming of the provision from 'Special Circumstances' to 'Extraordinary Circumstances', the introduction of a formal threshold of three years of impact, and the formal exclusion of part-time employment or leadership positions as a valid type (2018) (TEC, 2016a).
- The latter change did not preclude panels from considering employment arrangements including part-time status during their holistic assessment of evidence portfolios.

The new 'Extraordinary Circumstances' allowed claims on the basis of long-term illness or leave, significant family or community responsibilities or obligations or impacts arising from the Canterbury earthquakes. Staff needed to demonstrate impacts over at least half of the assessment period, that is three years (TEC, 2016a).

The use of the 'Extraordinary Circumstances' provision was influential on assessment outcomes at the margin with these evidence portfolios being slightly more likely than other evidence portfolios to have a higher quality category assigned at the holistic assessment phase. No portfolio that claimed such circumstances was assigned a lower Quality Category at this phase (TEC, 2019b).

Female staff were much more likely to claim the 'Extraordinary Circumstances' of extended personal leave (67% of the 30 claims) and significant family/community responsibilities (76% of the 132 claims). Long-term illness was more equally distributed by gender, with women claiming 55% of the 122 claims (TEC, 2019l).

The effects of the progressive tightening of the provision may also be gendered. Women (16.4% of all evidence portfolios) were twice as likely as men (8.0%) to be employed on a part-time basis in 2018 (TEC, 2019j). Analysis of the results of the 2012 Quality Evaluation showed that the weighted component scores assigned to the evidence portfolios of part-time female staff for the 2012 Quality Evaluation were markedly lower than those of part-time male staff (James, et al., 2019).

The reasons why women might pursue part-time employment differ from their male counterparts. Women are more likely to be part-time due to childcare responsibilities (when aged 30-50) or other care obligations (aged 40-60). Part-time status is linked to the pursuit of other employment or consultancy work for 'high achievers' aged 50 years or older, or those seeking a phased retirement (aged 60 years or older) irrespective of gender (James, et al., 2019).

In the panel's view, these changes have created a three-tier system for staff who experience some impact on their opportunity to undertake research. These tiers relate to those staff:

- who demonstrated impacts relating to the defined 'extraordinary circumstances' over at least three years, relating to long-term illness or disability, extended personal leave, significant family or community responsibilities and a group of effects arising from the Canterbury earthquakes.
- whose employment arrangements included part-time employment, becoming research active during the assessment period, or teaching on sub-degree programmes. These staff may provide commentary about the nature of their employment arrangements and their impact as part of the platform of research contextual summary in evidence portfolios.

- who experienced the kinds of circumstances cited under the 'extraordinary circumstances' provision but which did not meet the threshold for inclusion, and/or experience other barriers than those cited in the guidelines in relation to their employment arrangements.

We lack definitive information about the effects of this tiered system on assessment outcomes, but it seems plausible that women were disadvantaged by the increasingly restrictive nature of the special/extraordinary circumstances provision. Members of peer review panels appeared alert to the risks presented by this differentiated approach, with calls for information on the FTE of staff to be included in evidence portfolios as a matter of course (TEC, 2019b).

It also seems apparent that the design of the extraordinary circumstances provision is increasingly disconnected from good human resource practice. Many organisations have taken steps to promote the concept of merit relative to opportunity – the goal of fair and equitable assessment of staff members' achievements relative to the opportunities given to them (ARC, 2018), (UoA, 2019), (RSNZ, 2018), (Te Pūnaha Matatini, 2019), (Monash, 2019), (UNSW, 2019).

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### › Our take

This evidence was consistent with concerns that we heard about the

- systemic nature of some biases in the assessment framework and particularly the impacts on women given the gendered nature of employment, and
- restrictive nature of the 'Extraordinary Circumstances' provision and the perceived need to share sensitive information to support claims.

We explore how we might address these issues in the section '*Working toward more equitable assessment outcomes*'.

## Transaction costs do not appear to be excessive

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- › The panel heard through submissions and from key informants that transaction costs overall have reduced over time, and many of the activities involved in complying with the PBRF would be undertaken anyway.

The PBRF involves a relatively complex and resource-intensive, but periodic, assessment of research quality, and two, relatively low-cost, proxy measures which are updated annually.

Participation in the Quality Evaluation measure is a requirement to access any PBRF funding (TEC, 2016b). This measure involves the recording and collation of evidence of research excellence and the preparation of evidence portfolios by TEO staff. Undertaking these tasks involves a mix of academic and non-academic staff time and requires investment in the technology and quality assurance systems.

The TEC incurs costs in administering the Quality Evaluation, including detailed design, training, technology, audit, assessment and reporting costs. Peer review panel members will also incur opportunity costs given the mismatch between the modest fees they are paid, and the actual level of effort involved.

The two proxy measures involve relatively modest transaction costs. The Research Degree Completions measure is based on data supplied through the main data reporting system for TEOs, the Single Data Return, augmented by straightforward course level registers and data accuracy reports (TEC, 2014).

The External Research Income measure involves an annual return and, for amounts of \$200,000 or more, an independent audit opinion. Ten of the 21 TEOs that reported External Research Income in the 2017 year were exempt from that requirement (TEC, 2018).

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*“When I (came to New Zealand) research was seen as a kind of hobby, something you did after teaching or on weekends, the PBRF has changed that”*

**KEY INFORMANT, UNIVERSITY MANAGER**

There is little reliable data on transaction costs (MoE, 2013). An attempt was made to quantify these costs as part of the review following the 2012 Quality Evaluation. That review estimated costs for universities of \$56.7 million over six years, with the majority (88.8%) attributed to the Quality Evaluation measure. The main components of these costs were:

- \$40.2 million incurred by universities, largely the time taken by staff to compile and collate information for evidence portfolios estimated at approximately 264,000 hours.
- \$9.5 million incurred by the TEC in administering the Quality Evaluation,
- \$2.4 million of ‘in-kind’ contributions made by members of the peer review panels.
- \$6.4 million for the TEC and the universities to administer the Research Degree Completions and External Research Income measures.

While large in a gross sense, the figure of \$56.7 million was equivalent to 4.0% of the total amount of funding allocated through the PBRF over the same period. These figures were used as part of the 2013 review to support efforts to simplify the design of the Quality Evaluation, such as the reduction in the number of items that might be included in evidence portfolios.

The panel made several observations about the figures cited in this report and their applicability to the current review. These were:

- none of the assumptions besides the direct costs incurred by the TEC have been tested in any rigorous way,
- the time estimated for staff to collect and collate the information required evidence portfolios at approximately 44.8 hours per full-time staff member (or 7.5 hours per year) appears generous. The general quality and ease of use of research management systems in universities ought to have reduced the burden on staff considerably over time, although the panel heard widely varying estimates of the time required of staff.

- the estimates were likely to be more applicable to universities than smaller TEOs, with, for example, some suggestions that the costs of participation outweighed benefits for wānanga, private training establishments and some institutes of technology and polytechnics.
- the compiling of information for evidence portfolios is difficult to disentangle from the normal expectations that staff need to keep a record of their research outputs for promotion and other purposes. Additionally, innovations such as Open Researcher and Contributor ID and the New Zealand Research Management System (NZRIS) will, in the future, address some of the cost of compiling information.
- the simplification of evidence portfolios for 2018 ought to have contributed to a reduced burden in terms of the collation of evidence.
- the estimates for the proxy measures appear high given their simplicity.

Concerns about transaction costs were a reasonable feature of criticisms of the PBRF during the first decade of its implementation. It is apparent that the initial concerns reflected a mix of start-up costs, the learning curve involved in adapting to the new process and the costs of taking a core function of universities more seriously.

These concerns have attenuated over the past several years. We heard from submitters that the costs are increasingly seen as a long-term investment in a refocus on the research mission of universities. This pattern of changing attitudes to costs is consistent with the findings of the independent review of the PBRF conducted in 2008 (Adams, 2008).

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## › Our take

We heard few significant concerns about the transaction costs involved in administering the PBRF. Rather submitters to the panel's public consultation process noted that:

- the transaction costs are not currently excessive for universities, and most ongoing costs would be incurred anyway, given the increased priority those organisations had given to research and research management.
- the transaction costs for smaller TEOs are high in a relative sense, but the non-financial benefits compensate to a very large degree (see *Some smaller TEOs see non-financial benefits from participation*)
- there was a strong, albeit not universal, preference for few or no changes to the design of the PBRF, particularly in terms of the unit of assessment, as a new model would result in large transition costs (see *Thinking about the unit of assessment*).

Some of the panel's recommendations would have the effect of reducing transaction costs, but as discussed above these costs do not appear significant enough to warrant wholesale changes.

## For smaller TEOs the costs and benefits of participating are complex

- › The panel heard through submissions and from key informants that while TEOs with few PBRF-eligible staff incurred significant transaction costs, they valued the opportunity for rigorous benchmarking of their research performance.

All TEOs that receive Student Achievement Component funding and have degree-granting authority are eligible to participate in the PBRF (TEC, 2016a).

The number of TEOs participating in the PBRF grew between 2003 and 2018, from 22 to 36. Fourteen institutes of technology and polytechnics, two wānanga and twelve private training establishments participated in the 2018 Quality Evaluation (TEC, 2019a).

The financial incentives for non-university TEOs to participate are much weaker than those for universities. Collectively these TEOs attracted just 3.0% of the total funding allocated through the PBRF in the 2019 calendar year (TEC, 2019j).

Distributed across 28 TEOs, this share of funding appears is very modest. Indeed, five TEOs attracted less than \$50,000 in the 2019 year. While there is a paucity of good data about the transaction costs incurred by TEOs participating in the PBRF (see *What we know about transaction costs*), it seems likely for at least some TEOs the costs of participation either exceed or are disproportionate relative to the potential financial and other benefits.

Three important considerations paint a more complex picture. These are:

- the PBRF involves a large sum of money so a 3.0% share for the non-university TEOs was \$10.4 million (GST exclusive) in the 2019 year.
- participation in the Quality Evaluation determines funding for the following six years. The median amount of funding allocated to a non-university TEO between 2019 and 2024 (inclusive) will be at least \$1.04m (GST exclusive).
- there are large differences between subsectors. The median funding for private training establishments from the PBRF can be estimated at about \$0.5 million over the next six years. The relevant figures for institutes of technology and polytechnics and wānanga are \$2.2 million and \$2.1 million respectively.

Changes in the sector will also influence institutional decisions about whether to participate. The government's planned reform of vocational education involves the consolidation of the sixteen individual institutes of technology and polytechnics into a single national provider (MoE, 2019). Based on the funding allocated to institutes of technology and polytechnics, the national provider is likely to attract around \$8.5 million per annum through the PBRF, which is about 15% less than Lincoln University.

The new national provider for vocational education also creates opportunities to consolidate research leadership, activity and support. Based on the results of the 2018 Quality Evaluation, the institutes of technology and polytechnics would employ collectively over 430 (FTE) researchers whose evidence portfolios met the standard for a funded Quality Category. This number of staff is more than twice the current size of Lincoln University and about the same size as the University of Waikato.

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*“We do it for academic credibility and benchmarking”*

KEY INFORMANT, PTE RESEARCHER

We heard from submitters and key informants that they were generally comfortable with the trade-offs inherent in participating in the Quality Evaluation. The reputational benefits were considered important, particularly in terms of quality assurance processes, and financial benefits included attracting funding that could be used to support research anchored in engagement with communities.

Many non-university TEOs pass on the financial rewards associated with the Quality Evaluation directly to staff to enable them to sustain their research programmes, which was considered a valuable tool for motivating and retaining highly valued staff.

Others spoke about the perceived value of a robust, albeit indirect, external validation of the quality of degree-level and postgraduate teaching and learning. More directly for individual staff, the peer assessment provided an affirmation about where they fit into the wider research, science and innovation system.

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#### › Our take

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It is apparent based on the evidence we have seen that:

- many smaller TEOs assess the financial costs of participating as outweighing the financial return, and
- there are many non-financial benefits associated with participation.

These effects are experienced differently depending on the type of organisation. We explore how we might address the issues relating to the wānanga sector below, and the possible responses to those relevant to institutes of technology and polytechnics in the section *Introducing new funding incentives*.

## Wānanga do not have a clear place in the PBRF

- › The panel heard through submissions and from key informants that the PBRF is not working well for wānanga and more should be done to support the development of research capability in these organisations.

The wānanga sector is an integral part of the tertiary education system in Aotearoa New Zealand offering a vehicle for educational development of Māori in a Māori-controlled environment (Waitangi Tribunal, 1999).

These TEOs have been a significant factor in the increased participation by Māori in tertiary education, mostly built around indigenous world views and tribal knowledge but also addressing contemporary Māori society (Durie, 2009).

Ngā wānanga have engaged selectively with the PBRF. All have participated in the PBRF in some way since 2003 (see sidebar), but express persistent concerns about the appropriateness of the model for assessing the kinds of research that their staff are engaged in.

Wānanga have expressed a range of concerns about the PBRF including:

- that the PBRF definition of research does not conform with their conceptions of Rangahau (an inquiry platform grounded in tikanga Māori and ahuatanga Māori (culture and traditions)).
- a lack of trust among staff that panels can assess their research contributions equitably.
- a discomfort with the notion of competitive assessment and self-promotion due to cultural norms, and a preference for some form of group-based assessment and the valuing of research output as a form of contribution to iwi and whānau development.
- past underinvestment in the sector means that the staff of wānanga lack of suitable systems and support resources.
- the modes amount of funding allocated to wānanga reinforces stereotypes about the relative quality of these TEOs.
- a lack of reciprocity in the partnership with other TEOs, particularly the lack of support with PBRF processes despite some extensive research collaborations.
- an implied devaluing of mātauranga Māori through the funding weighting assigned to the Māori Knowledge and Development subject area.

### Participation by ngā wānanga

Te Wānanga o Aotearoa participated in the 2003, 2006 and 2018 Quality Evaluations. The number of (FTE-weighted) staff whose evidence portfolios met the standard for a funded Quality Category increased over that period from 8.8 to 17.0.

Te Wānanga o Aotearoa was allocated \$177,357 (GST exclusive) in funding in 2019 from its participation in the Quality Evaluation and a small component from the External Research Income measure. The wānanga received no Research Degree Completion funding.

Te Whare Wānanga o Awanuiārangi participated in the 2006, 2012 and 2018 Quality Evaluations. The number of (FTE-weighted) staff whose evidence portfolios met the standard for a funded Quality Category increased over that period from 14.75 to 18.33.

Te Whare Wānanga o Awanuiārangi was allocated \$533,639 (GST exclusive) in funding in 2019 largely from the Research Degree Completions measure (64.0%). The Quality Evaluation accounted for 28.7% and the balance (7.3%) came from the External Research Income measure.

Te Wānanga o Raukawa received a small amount of funding from the External Research Income measure between 2003 and 2006 – before a requirement that TEOs participate in the Quality Evaluation was introduced in 2006.

The panel also heard from key informants about the mismatch between the expectations of wānanga in the Education Act 1989 and the government's investment in the sector. These institutions are characterised '...by teaching and research that maintains, advances, and disseminates knowledge and develops intellectual independence, and assists the application of knowledge regarding ahuatanga Māori according to tikanga Māori.' (Parliamentary Counsel Office, 2019).

Modest efforts started in 2014 to address the mismatch between the government's investment in wānanga and the expectations placed on these organisations. Since 2014, each wānanga received \$500,000 per annum through a targeted fund, the Wānanga Research Capability Fund. This fund aims to support research capability building within wānanga, particularly in the area of wānanga specialisation in mātauranga Māori/Māori knowledge.

While the panel was preparing this report, agreement was reached between the Crown and Te Wānanga o Raukawa to address the issues raised by the wānanga in its Waitangi Tribunal claim. (Davis & Hipkins, 2019). The panel was encouraged by the planned investment in the research capacity and capability of the wānanga and noted the possible implications for the rest of the wānanga sector (Johnsen, 2019)

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*“The PBRF is irrelevant to what we do”*

KEY INFORMANT, WĀNANGA RESEARCHER

Still, it seemed apparent to the panel that the PBRF is not working well for wānanga for a variety of reasons. Structural factors such as historical underinvestment, heavy teaching burdens on an, often, dispersed workforce, and characteristics of the assessment framework all play a role.

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### › Our take

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It seems apparent that the PBRF is not optimally configured for the research that the staff of wānanga undertake. It was not clear whether some separate mechanism of research assessment would be necessary or desirable, but we heard strong views that:

the current design of the PBRF is not well-suited to the current state of research at wānanga and that more effort is required to develop a more collaborative model focused on nurturing and growing research.

Māori researchers, including those working in wānanga, should be more deeply involved in the design and implementation of the fund.

We explore how we might address the issues relating to the wānanga sector in the sections *'Adopting a more capacious definition of excellence'* and *'Introducing new funding incentives'*.

## Thinking about the unit of assessment

- › The panel heard a general consensus from submissions and key informants that the individual should be retained as the unit of assessment because any change would not fix the problems attributed to it and incur considerable costs.

The Quality Evaluation measure involves the assessment of the quality of research produced and contributions made by individuals by panels of peer reviewers. The results of these assessments are then aggregated to provide a view on the distribution of research excellence across the tertiary education system.

New Zealand is the only country in the world to undertake assessments of individuals. Other systems aim to assess either institutions as a whole or groups of researchers (Kolarz, et al., 2019b).

The model is powerful in terms of leveraging professional incentives of individual and giving TEOs strong reasons to invest in the staff, facilities and support needed to excel. Certainly, based on the feedback the panel received, it seems unlikely that the changes in measured research quality would have occurred without some mechanism to recognise and reward excellence (MoE, 2002).

Focusing on individuals is believed by some to have several serious drawbacks. These include discouraging collaboration, negative impacts on the development and sustainability of the workforce, engendering high compliance costs, having negative effects on staff and making it harder to measure impact.

### ■ Is there too little collaboration?

*Collaboration* is often valued with evidence indicating that it is associated with higher research productivity (Subramanyam, 1983), less variability in research quality (Rigby & Edler, 2005) and higher future research output (He, et al., 2009). Collaboration between academic and non-academic partners (industry, government, community) helps connect research to socioeconomic impacts (Phipps, et al., 2015)

The draft Research, Science and Innovation Strategy emphasises the benefits of connections. The strategy argues that these connections allow a smoother, easier flow of people, knowledge, capabilities, funding and capital, and through the diversity of connections, an increased likelihood that new ideas will be generated (MBIE 2019).

The PBRF is thought by some to discourage collaboration because individuals are strongly incentivised to capture as much of the benefits of their research themselves. Individualistic pursuit of personal progress, promotion and a narrow focus on international research publications is encouraged. The commitment to collaborative success across groups or institutions, research focused on the needs of industry or communities, and broader engagement is thereby diminished.

We saw little evidence to support this view. Empirical evidence suggests that the rate of inter-institutional collaboration in indexed journal articles increased since 2003 (Smart, 2013), (MoE, 2017) and New Zealand researcher have high levels of international collaboration (MBIE, 2018). This trend suggests that, at least, the PBRF is not actively diminishing such collaborations.

We heard also that the idea of the individual as the unit of assessment is not fit for a context where knowledge generation is the result of collective effort. Other key informants suggested that there was often a poor correlation between academic units within institutions and meaningful, substantive research collaborations. Many collaborations tended to be episodic and cross-institutional. In any case, there have been many examples of evidence portfolios where staff had offered complementary descriptions of their contribution to complex projects that involved several researchers.

The panel noted that research connections and collaboration are a long-standing feature of research in New Zealand. We agree in principle that collaboration ought to be encouraged, but we did not think it was credible to conflate the desirability of collaboration with some form of group-based assessment.

The panel was sensitive to concerns that the design of the PBRF might discourage engagement with research stakeholders or the pursuit of research that is aimed at addressing the needs of end-users. Some key informants and submitters raised issues about the way the assessment framework values or recognises certain kinds of research (see Research excellence is diverse), however the extent to which the unit of assessment influences the choices of researchers is unclear.

#### ■ How does the unit of assessment influence the workforce?

*The development and sustainability of the workforce* is a vital concern. A well-functioning system ought to result in a balanced profile with more experienced staff, those consolidating their careers and others who are developing and honing their skills. It should also deliver sufficient diversity of viewpoints, perspectives and capacity to engage learners, communities, business and other stakeholders. Ideally, it should also help to foster a working environment that is positive and conducive (see *Looking after our people*).

The system might not deliver an optimal configuration of the workforce, whether because the short-term incentives of the PBRF lead to poor decisions or staff might experience pressures to deprioritise some important functions.

The combination of using individuals as the unit of assessment and a reporting framework that privileges TEO that can demonstrate high concentrations of 'A' and 'B' Quality Categories creates potential issues.

Managers may respond to short-term pressures to maximise their average quality score and relative ranking by maximising the number of individuals with a strong track record. That might take the form of 'poaching' staff or 'free-riding' on the work of other TEOs to develop new and emerging researchers.

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*“PBRF looks like a grade, and it looks like a grade with a manual”*

KEY INFORMANT, EARLY CAREER RESEARCHER

The literature on the PBRF indicates that staff experience considerable pressures to perform, and TEOs have acted on the imperatives that the fund creates (see *Looking after our people*).

These issues could lead to an underinvestment in the next generation of researchers, lead to environments that are not conducive to the ongoing development and support of more experienced researchers, or academic departments that are vulnerable to the career decisions of a small number of key people.

There are proxies we can use to test how significant these issues are. These include the distribution of quality categories and the staff turnover rates among TEOs. The former helps us understand whether the workforce is becoming unbalanced, and the latter provides an indication of employee satisfaction, albeit with important limitations (Mobley, et al., 1979), (Campion, 1991).

The results of the four Quality Evaluations suggest that there is a reasonably balanced profile of staff overall. The proportion of evidence portfolios assigned an 'A' and 'C(NE)' quality category increased between 2012 and 2018, accounting for around one in six of all quality categories. The proportion made up by 'B' quality categories was stable at a little over 40% over the same period. Only the proportion assigned a 'C' dropped from 32.0% to 29.1%, even as the number of FTE-weighted staff those quality categories related to increased from 2,020,2 to 2,155.7 (see *Context – Results of the PBRF*).

Neither does there appear to have been an exodus of existing staff from the sector. Staff turnover rates in the university sector show that academic staff are leaving employment at much lower rates than general staff – public sector staff generally or people in the wider economy (see **Table 6**). The reasons why individuals might leave employment can vary and the rates shown may, for example, conceal varying patterns of coercion or other forms of involuntary turnover.

**TABLE 6: STAFF TURNOVER RATES BY SELECTED JOB CATEGORIES, 2006-2017**

Category	Average rate
University academic staff	5.7%
University general/professional staff	11.0%
Public sector staff	17.6%
All employees (NZ)	15.8%

Source: University and public sector rates provided as part of a submission to the panel. National data from Statistics New Zealand (StatsNZ, 2019).

Notes: For reference, the average for the ANZSIC06 level 1 classification of Professional, Scientific, and Technical Services was 12.2%, Education and Training was 15.3%, and Healthcare and Social Assistance was 11.8% (StatsNZ, 2019).

There may also be different patterns of turnover specific to subject areas or units within TEOs or the demographic characteristics of the staff concerned.

There may also be other effects that are not measured by turnover rates, including stress and poor morale. We were unable to test these in any systematic way, but staff surveys report that working conditions for academic staff have been deteriorating in New Zealand since 1994 (TEU, 2019), and stress is an issue for academics internationally (Pignata, et al., 2016), (Weale, 2019).

Understanding these patterns may provide insights into whether the design of the Quality Evaluation impacts differently on specific groups of staff. Certainly, the panel heard of concerning practices at some TEOs which might give rise to these differentiated impacts (see also *Looking after our people*).

### ■ Does the unit of assessment drive transaction costs?

*Transaction costs may be a relevant consideration. We have explored the transaction costs incurred by the current model including the different effects depending on the type of TEO and an apparent modest amount of time spent by staff compiling and collating evidence portfolios (see *Transaction costs for universities matter less*, and *Some smaller TEOs see non-financial benefits from participation*).*

We have heard arguments for adopting groups as the unit of assessment, including on the basis that this approach might lead to lower transaction costs. The case made centres on the likelihood that any change would involve fewer people preparing portfolios (or their equivalent).

We heard from submitters and key informants that they saw considerable potential for any transition to a different unit of assessment to involve large costs. The experience of the initial implementation of the PBRF suggested that the start-up costs can be high (Adams, 2008) even if the costs on an ongoing basis could be lower.

Several universities noted that they had made large investments in information technology, staff training and process and systems design to comply with the existing system. There was little appetite to incur a further set of costs to change a policy intervention that appeared to be delivering the intended results.

A further potential issue that may impact on transaction costs is the unknown scope of any group-based assessment, including how such groups might be configured and what kinds of information might be required to be supplied. Submissions to the panel argued for and against several different models such as research groups, subject areas, disciplines, academic units and organisations as a whole.

We were certainly conscious that many researchers will move fluidly between different collaborations and research 'groups' during the six-year assessment period making attribution difficult. Academic units might seem like a suitable choice, but we recognised that they may often be an administrative convenience primarily related to teaching, rather than a signal of some coherent or common research purpose.

We also heard that changing the unit of assessment might allow insights into the strategy, effectiveness and impact of groups. The potential for lower transaction costs might be attenuated if any new model requires different kinds of information to be collected and collated.

## ■ Would a different unit of assessment ameliorate impacts on individuals?

*Reducing negative impacts on individuals* is offered as a reason to change the unit of assessment. Changing the unit of assessment is often cited as a potential fix for some of the negative effects on individuals associated with the current Quality Evaluation. The evidence that changing the unit of assessment would deliver such benefits is mixed.

We heard from key informants and through submissions that using the group as the unit of assessment would reduce stress on individual academics and categories of academics and reduce damaging human resource practices. Others noted that a group-based model might offer a pathway to more meaningful academic management and leadership of research.

A review of the effects of the Research Excellence Framework in the United Kingdom, a group-based model, found that system was associated with a de-emphasising of functions other than the production of research outputs, discouraged publication for non-academic audiences and led to an increase in journal outputs, contributed to a two-tier workforce with non-research roles having considerably less status and gave more power to research managers to shape research priorities and the careers of academics (Arnold, et al., 2018).

Further, a survey of members of the University and College Union found that 71.6% thought that not being included in a Research Excellence Framework submission would damage their career prospects and 48.0% thought that if their performance was below expectations then less support would be forthcoming for their research in the future (Arnold, et al., 2018).

Changes were made to the Research Excellence Framework for 2021 to ensure that all staff with significant responsibility for research were included in the periodic staff census (REE, 2019), in part to mitigate the effects on individuals (Stern, 2016).

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### › Our take

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We heard strong advocates for both retaining the current unit of assessment and for shifting to the group as the unit of assessment. It was apparent that:

- There are many potential issues where changes should be considered to the design and implementation of the Quality Evaluation.
- The evidence attributing particular issues to the current unit of assessment is mixed, as is the evidence that any change would necessarily result in better outcomes.
- There were concerns that shifting to a group-based assessment might create perverse incentives for TEOs that might impact on employment relationships, particularly where staff are excluded from any groups put forward for assessment.
- We should do more to recognise high-calibre researchers where-ever they are working

We explore how we might address the issues relating to the unit of assessment and possible responses in the section '*Building on our successes*'.

## Research excellence is diverse

- › The panel heard that while the research excellence takes many forms, the assessment framework does not value them all equally.

The definition of research for the PBRF and the kinds of evidence that can be evaluated is intentionally broad (MoE, 2002). The definition of research encompasses cultural innovation, aesthetic refinement, production of new materials, products and processes and contributions to the intellectual underpinnings of subjects and disciplines (TEC, 2016a).

Evidence that can be used to verify these contributions is equally expansive including exhibitions, intellectual property, whaikōrero, software, compositions, as well as books, conference papers and journal articles (TEC, 2016a).

Portfolios include evidence not just of research outputs but also research contributions. These might include initiatives to grow Pacific knowledge bases and capacity, invitations to contribute to iwi projects and fulfilling a 'critic and conscience' role as well as prizes, securing contestable grants and invitations to deliver keynote addresses (TEC, 2016a).

Despite these provisions, there have been persistent concerns that the fund privileges certain kinds of research, discouraging the application of existing knowledge to problems specific to New Zealand (EAP, 2013), engagement with communities (Neilsen, 2019) and undervaluing the impact of research.

Not all of these concerns are valid. The panel was concerned to also note several submissions asserted that the assessment framework discouraged or indicated a preference for certain kinds of research, views that were contrary to the explicit provisions in the assessment guidelines. We also heard from staff about the advice they received to focus on particular outlets for their research or target a particular number of outputs. The panel was concerned about how these 'myths' about the assessment framework are propagated.

We also heard concerns from the staff of wānanga that they felt excluded. There may be an opportunity to recognise the research work of a significant cohort of Māori researchers and research that used Māori methodologies and was relevant to iwi and hapū. This change would be both intrinsically worthwhile and contribute to wider equity and diversity goals.

The contents of evidence portfolios in the 2018 Quality Evaluation indicated that either there are structural issues with the way research is conducted in New Zealand, or researchers are self-editing the kinds of evidence that they put forward for assessment. Among the kinds of research contributions least likely to appear in evidence portfolios were examples of 'uptake and impact' (4.1% of all research contributions). These contributions were slightly more prevalent in the Engineering, Technology and Architecture panel (5.6% of all contributions).

Outreach and engagement contributions were somewhat more common at 7.9% and most likely to be present in evidence portfolios submitted to the Pacific Research (11.1%), Māori Knowledge and Development (10.1%), Creative and Performing Arts (9.8%) and Social Sciences and Other Cultural/Social Studies (9.5%) panels.

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*The system needs to use as many models as possible to make it easy for us”*

KEY INFORMANT, CREATIVE ARTS RESEARCHER

The reasons for the modest use of these types of evidence appear complex and interrelated. The stakes involved in the Quality Evaluation are perceived to be very high for some staff promoting a risk-averse framing. Journal rankings are a commonly used heuristic among academics and those providing guidance and advice to them for the relative quality of research even as their currency among peer review panels is minimal.

Other kinds of research that carry deep value for stakeholders appear less valued through the assessment framework because they can be harder to explain and validate, such as the development of new industrial processes or the kind of engagement and codesign that working with iwi/hapū demand.

The higher weighting for research outputs and the implied primacy of the four nominated research outputs may diminish the relative value of research contributions. The impact of research, processes of engagement and connections with communities are incorporated into evidence portfolios in a way that is disconnected from relevant research outputs.

We heard from some key informants that their research outputs and contributions did not fit well within the Quality Evaluation. Some of these concerns related to institutional capability with some staff reporting a lack of support or a lack of a common understanding of how certain kinds of research are valued by the assessment system.

Others thought that the system failed to adequately recognise the highest performing researchers and the teams that they cultivated. Conversely, some senior researchers described a career trajectory where a heavy emphasis on research outputs evolved to a greater focus on cultivating the impact of their research and other research contributions. Such researchers noted that a lower Quality Category would be the net effect of this transition, even if, as the panel noted, these contributions had the potential to be highly impactful.

Some of the issues may relate to the opacity of the panel process and their coverage. We heard about effective practices within panels to seek out the broadest range of possibly relevant research. For example, the coverage of the Pacific research panel encompasses Pacific research methods, Pacific-centred subject matter, impact on Pacific communities and contributions to Pacific knowledge.

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*“Before colonisation Māori were engineers and scientists and working across all disciplines. So the panels need to reflect that.”*

KEY INFORMANT, PANEL CHAIR

The panel also heard that there was an interplay between the nature of the research being undertaken or submitted for assessment, the characteristics of the researchers involved and the way in which the membership of peer review panels influences assessment outcomes. A notable concern was the perception that panels members might inadvertently favour researchers with whom they share similar characteristics through dynamics such as homophily.

The members of peer review panels were almost exclusively senior researchers, with 91.2% holding the title of professor, more likely to be male (55.3%) and non-Māori, non-Pacific (87.3%). The peer review panel composition compares with a pool of PBRF-eligible staff of which professors account for fewer than one in six staff, where male staff are represented to about the same degree (56.6%) and almost all staff (93.8%) identify with non-Māori, non-Pacific ethnicities.

We also heard from key informants that the major investment required to build meaningful partnerships with iwi, Māori and Pacific communities might not be fully recognised through the Quality Evaluation. Clearly, the concept of partnership ought to underpin how research is approached, designed, undertaken and disseminated. Indeed these values are commonly reflected in policies governing research and research consultation at TEOs (UoO, 2010), (AUT, 2019), (Massey University, 2017), (UoC, 2019) and funding agencies (MoRST, 2007), (HRC, 2010).

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## › Our take

It seems that some researchers think that the design of the assessment framework might devalue some kinds of research and research activity, although it appears that many of these concerns represent ‘myths’ about the process. How best to address that issue is unclear, and we heard strong views that:

- the assessment framework has many strengths and incremental change is the most desirable approach to better recognise the full diversity of research.
- deliberate, proactive steps to change the assessment framework and the composition of peer review panels are needed to enable a more accurate reflection of the diversity of research excellence.

We explore how we might better recognise the diversity of research excellence in the section ‘*Adopting a more capacious definition of excellence*’.

## How best to assess excellence?

- › The panel heard a strong preference for retaining the peer review of research quality, although some enhancements were proposed.

The panel heard a range of perspectives on the most appropriate ways to assess research excellence. We set out below the international practice in research assessments, the arguments we heard about the suitability of metrics and those in favour of peer review.

### ■ The international context

The main axis on which the measurement of research excellence is set is the balance between a reliance on peer review assessments and on metrics. Three models predominate: quantitative/bibliometric research assessments, bibliometrics informed peer review and peer review that de-emphasises metrics (Jonkers & Zacharewicz, 2016), (Kolarz, et al., 2019).

The choices made by countries often reflect the desired level of analysis: bibliometrics can be suitable for assessing organisations, while peer review is often seen as necessary for departments or research groupings. Other jurisdictions appear comfortable accepting a trade-off between simplicity and the ability to recognise the full range of research excellence.

*“Excellence is non-negotiable but is shown in different ways”*

KEY INFORMANT, UNIVERSITY RESEARCHER

Almost all systems that seek to link research performance to funding rely on metrics to some extent. For example, a survey of performance-based funding systems in the European Union found that ten of the fifteen systems with more extensive assessment approaches relied primarily on metrics. Peer review assessments were used by five countries, with four using selected metrics to augment those processes (Jonkers & Zacharewicz, 2016).

Research publications tend to be the main focus, most often based on assessments of the number of publications in national and international journals, increasingly augmented by categorisation of journals and publishers, and/or citation rates. Other metrics such as the number of graduates, patents and research funding are often used and taken account of in making funding allocations.

Quantitative/bibliometric research assessments are not necessarily simple. A mix of metrics is commonly used, reflecting their ease of use and the desire to develop a balanced view of research excellence. Many systems involve intricate weightings and provisions for specific disciplines, such as the model employed by Finland (Kolarz, et al., 2019b).

The smaller group of countries that rely on peer review tend to rely on bibliometrics such as citation rates to inform peer review judgements. These systems also include other metrics such as numbers of graduates and patents, the amount of research funding attracted and the degree of internationalisation.

A key outlier is the United Kingdom, where other metrics and bibliometrics play a lesser role and case studies of societal impact are incorporated (Zacharewicz, et al., 2019).

Notably, only Australia, Hong Kong, Italy, New Zealand, Portugal and the United Kingdom undertake peer review of the quality of individual research outputs. Most peer review involves assessments of institutional self-evaluations or research strategies (Kolarz, et al., 2019).



## › Using metrics

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We received a minority of submissions in favour of making more use of metrics in the assessment of research excellence. These arguments centred around the potential for metrics to replace peer review assessment or to assist with peer review.

Conversely, some submissions and key informants expressed considerable concern about the perceived undue influence of metrics on assessment outcomes.

One submission presented the results of an analysis of the number of publications and citations and funding allocations of the 2018 Quality Evaluation. The results showed a high correlation ( $r=0.97$ ) at an institutional level but provided no insights into the distribution of research excellence at a discipline level.

Other submissions suggested that the wider use of metrics might simplify the work of peer review panels by providing a reference point for assessment. One suggested that metrics might allow some staff to avoid the work involved in preparing evidence portfolios entirely if the results indicated clearly that a particular funded Quality Category was likely

Several submissions recommended developing a complex set of metrics to accommodate particular fields of research or providing the option of peer review for those disciplines that are not well-served by bibliometrics (such as creative arts). Others noted that some groups of staff might experience a kind of 'collection tax' associated with the effort required to gather evidence that sits outside of commonly accepted bibliometrics.

A review of the suitability of bibliometrics argued that they are not appropriate for many subject areas and commonly cited measures such as journal impact factors suffer from considerable limitations, systematically disadvantage women and early career researchers and tend to encourage research output over quality (Boston, 2019).

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## › Our take

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We heard strong advocacy for retaining peer review assessment. It was apparent that:

- peer review panels were crucial in providing a more holistic view of research excellence than bibliometrics could offer.
- the arguments in favour of the wider adoption of metrics tended to focus on their potential for reducing transaction costs and their usefulness in distributing funding.
- the assessment framework already provides opportunities for evidence portfolios to include metrics, albeit as one way to inform judgements about research quality (see sidebar).
- some staff perceived that metrics had an excessive influence on the assessment of research excellence.

We discuss our recommendations in relation to the best ways to assess research quality as part of the section 'Building on our successes'.

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## Looking after our people

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### › The panel heard a mix of perspectives about the impact of the PBRF on individuals and some concerning practices.

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The focus on individuals (see *Thinking about the unit of assessment*) in the Quality Evaluation makes it somewhat pervasive, the link to funding creates strong managerial imperatives and the results of the Quality Evaluation indicate that it has wrought significant change.

Ideally, the PBRF ought to have created a positive dynamic with the measurement of research quality creating incentives for institutions to support the research efforts of staff, and the increased funding enabling that support.

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### › The experiences of some staff are mixed

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Many key informants were positive about the fund. The incentives of the fund have raised the profile of research and enabled greater recognition of their contributions. Some staff saw the Quality Evaluation as a positive opportunity to gain external validation, providing evidence to support their claims for career progression and enabling access to assistance and development resource.

Other staff do not experience the PBRF positively. We heard from key informants that the pressure to perform soon after

### PBRF and the use of metrics

The PBRF uses metrics as part of proxy indicators of research quality, to inform assessments of the quality of research outputs and as an indicator of peer esteem.

The proxy indicators of research quality (External Research Income and Research Degree Completions) account for 45% of the funding allocated through the fund currently.

The fund guidelines emphasise the importance of assessing all research activity on its merits (TEC, 2016a). But many peer review panel-specific guidelines welcome use of one or more metrics such as citations, h-index and journal rankings.

The panels generally take care to emphasise the contributory nature of these data, the importance of supporting commentary and affirm the primacy of the underlying quality of the research (TEC, 2016).

The research contribution component of evidence portfolios includes the category of 'Recognition of research outputs'.

This category is designed to capture the esteem in which a staff member's specific research outputs are held by their peers and other stakeholders.

Citation counts are identified as *one of the possible ways* that such recognition might be evidenced (TEC, 2016a).

appointment to their first academic roles is strong, that the PBRF guidelines act as a kind of “rulebook” and some staff felt unsupported by their employers. Some staff attributed their experience to structural discrimination within institutions. We heard that for some staff, the pressures to publish research and meet their service obligations were overwhelming.

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*“(the PBRF) is a blunt stick to beat me with”*

KEY INFORMANT, UNIVERSITY RESEARCHER

There are numerous examples in the literature of more staff reporting stress from expectations to perform to a set of criteria that may not sit comfortably with their self-conception of the role of academics (Middleton, 2005), (Nislev & Cain, 2018), (Asirvatham & Humphries, 2019), (Narayan, 2019), (Puawai Collective, 2019), (Sutherland & Petersen, 2009), (TEU, 2019) (Thomas, et al., 2019).

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» The management imperatives

Research assessment frameworks create considerable pressures for institutional managers. We heard clear evidence that universities had internalised the value system of the Quality Evaluation, which was reflected in the priorities, strategies and investment they made in success in the PBRF.

Some of the responses of institutions will reflect their own organisational culture (Edgar & Geare, 2010) and the extent to which they aligned the internal and external indicators of success (Woelert & McKenzie, 2018).

Notwithstanding the incentives at play, the panel heard concerning stories about the experience of some staff suggesting that whatever the accuracy of these concerns, not all staff access the kind of support they believe they need to realise their potential. Some staff also reported unambiguous advice to increase the number of research outputs, to focus on specific outlets for their research and avoid some topics of research.

Such guidance is broadly speaking incompatible with the emphasis on the intrinsic quality of research and research contributions in the assessment framework for the Quality Evaluation, and may be contrary to the way individual researchers understand the exercise of academic freedom.

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## › Disentangling effects

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The results of the Quality Evaluation, wider changes in the tertiary education workforce and the mere fact of a research evaluation mechanism will have affected staff.

The 2003 Quality Evaluation identified many staff (3,278) whose evidence portfolios did not meet the standard for a funded Quality Category (TEC, 2004). Perhaps coincidentally, the rate of turnover was slightly higher (5.3% per annum) between the 2003 and 2006 Quality Evaluation among PBRF-eligible staff than between 2006 and 2012 (3.2% per annum). The cumulative effect was that 34.6% of those staff reported as PBRF-eligible in 2003 were no longer reported as eligible in the 2012 census (TEC, 2013).

It seems plausible that during the early period of the fund, there was considerable effort put into both understanding and applying the eligibility criteria for the Quality Evaluation and taking active steps to reshape the academic workforce. Certainly, there were some suggestions that TEOs shifted staff into roles that would not be eligible to participate in the Quality Evaluation, allegedly for the purpose of maximising TEO ranking (Farrar, 2013).

It is difficult to disentangle these changes from long-standing trends in the tertiary sector. A 1994 survey of university academic staff found increasing workloads and stress (Boyd & Wylie, 1994), with working conditions reportedly continuing to deteriorate through to the most recent survey in 2018 (TEU, 2019). These results contrast with the relatively modest rates of staff turnover reported through the Quality Evaluation, or by universities (see Table 6).

It is possible that the particular design or implementation of the PBRF is not a decisive factor. A survey of academic staff in the United Kingdom indicated that any mechanism that assesses research quality is associated with a detrimental impact on working conditions and career development (Arnold, et al., 2018).

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## › Our take

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We heard a mix of perspectives about the impacts of the PBRF on staff. It was apparent that:

- many staff report high workload pressures and stress, but it is not clear whether the PBRF is a unique factor and, in any case, rates of staff turnover do not appear excessive.
- some key informants were positive about the influence of the PBRF on their careers and their ability to commit time and resources to research.
- some staff may have received advice that did not fully align with the assessment guidelines or perceived that metrics had an outsized influence on the assessment of research excellence, suggesting some unevenness in the understanding of the assessment framework.

We discuss how we might make the fund more inclusive and address issues with the guidance that staff receive in the sections '*Adopting more inclusive language*' and '*Building on our successes*'.

# Our recommendations

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The following section of the report organises our recommendations into five groups. These groups reflect the key shifts required to realise the potential of the fund more fully, which are:

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- Adopting a more capacious definition of excellence
- Working toward more equitable assessment outcomes
- Introducing new funding incentives
- Adopting more inclusive language
- Building on our successes

We set out the opportunities that we see, the specific recommendations we make and the related rationale, and the potential benefits in the discussion of each set of grouped recommendations.

We also present the wider set of options that we considered as part of our deliberations with a brief overview of the advantages and disadvantages that we identified for each (see *Options for change we considered*).

# Adopting a more capacious definition of excellence

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The assessment framework should adopt a more capacious definition of research excellence that encompasses the production of research, engagement and impact relating to that research and support for vibrant, diverse research cultures. Rather than simplistic categorisation of research as basic or applied, or traditional or non-traditional, we need to draw out the richest examples of research excellence, focusing on research outputs of the highest quality and the most important research contributions.

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We should change the assessment framework to continue the journey begun in 2003. The main changes we seek are:

- more porous boundaries between research outputs and research contributions,
- the placing of ever more weight on excellence rather than volume, and
- a refocusing of the research contribution component on those activities that sustain and develop the research, science and innovation system.

To deliver these shifts, we have made four interrelated recommendations.

## A more capacious definition of research excellence

### RECOMMENDATION 1

A more capacious definition of excellence should be adopted to create new opportunities for excellent research to be recognised, encompassing the production of research, engagement and impact relating to that research and support for vibrant, diverse research cultures.

The assessment framework for the Quality Evaluation has several important characteristics: the definition of research is broad, the range of research outputs that can be included are expansive, and the peer review assessment looks to the intrinsic quality of the evidence presented for assessment.

This approach is powerful. It creates scope for research activities as diverse as a journal article in *Nature* to be assessed on the same basis as *whaikōrero* delivered at a *marae*. The venue or mode through which the research is presented or published is not relevant, rather, each research output is assessed on its merit.

Yet the aspiration for an expansive assessment framework is incomplete. As researchers, we easily default to describing research in simplistic terms such as basic or applied, or categorising it as traditional or non-traditional. There have also been persistent concerns about the ability of peer review panels to assess the quality of research engagement and impact, of activities in some research areas, particularly interdisciplinary research, and the contributions that many researchers make to a vibrant research environment.

A new more capacious definition of research excellence is needed to create space for researchers to see themselves in the assessment, and for the peer review panels to have the flexibility to recognise research excellence in all its diverse forms.

## Examples of research excellence

### RECOMMENDATION 2

The nominated research output section should be replaced with a new section 'Examples of Research Excellence', which can be used to present up to four examples of research of how these outputs exemplify research excellence including scholarly and non-scholarly (broadly defined) impacts.

The design of evidence portfolios should support this more capacious definition. For too long, there has been a sharp distinction between outputs and contributions.

We recommend that a new section in evidence portfolios is created, 'Examples of Research Excellence', to replace the 'Nominated Research Outputs'.

The new section will allow researchers to present up to four examples of research excellence across research production, engagement, impact and support for research cultures. These examples will continue to be anchored in specific research outputs, but we envisage a future where a single evidence portfolio might include four examples of research excellence underpinned by research outputs covering, for example:

- excellence in research production evidenced by a high-quality research output presented in a New Zealand journal;
- excellence in engagement evidenced by co-design with hapū of a research project underpinned by sustained connections and emotional labour which led to a research output;
- excellence in research leading to change in the way an industry handles a by-product of a construction process evidenced by the design and application of the new process; and
- excellence in support for vibrant, diverse research cultures evidenced by significant responsibilities for developing a cohort of emerging researchers and the peer esteem linked to those activities.

A new narrative section will be required for each example to allow staff to convey the level of detail necessary for peer review panels to understand and interpret their contributions.

## Fewer other research outputs

### RECOMMENDATION 3

The number of 'Other Examples of Research Excellence' should be reduced from twelve to six to further indicate a preference for the quality of research outputs over quantity.

The assessment framework has progressively reduced the maximum number of examples of other research outputs to emphasise the preference for quality over quantity. This change tends to simplify the task of selecting research outputs for submission and their assessment by peer review panel members.

The panel agreed that we should build on this trend. Accordingly, we recommend that the number of 'Other Research Outputs' should reduce from twelve to six.

The panel considered that ten research outputs (four linked to examples of research excellence, and six other research outputs) provide a sufficient basis to assess a researcher's platform of research.

## A refocused typology of research contributions

### RECOMMENDATION 4

The research contribution component of evidence portfolios should be refocused on the best examples of those activities that contribute to the sustainability and vitality of the research system.

The panel considered that the current range of items that can be presented as research contributions is too broad. More weight should be placed on the most meaningful contributions.

Some submissions proposed increasing the weighting for the research contribution component to signal greater parity of esteem with research production. The panel considered that the change to introduce the 'Examples of Research Excellence' would achieve that objective but focusing the research contributions would be warranted as it would tend to send a clear signal about where researchers should put their efforts.

We formed a view that the research contributions that matter are, in the language of the Research Excellence Framework in the United Kingdom, those that relate to the sustainability and vitality of the research system.

On that basis, research activity such as leadership roles within disciplines, mentoring of junior colleagues and support for students ought to matter much more than the esteem of peers.

We have developed a straw person model of the kinds of contributions to the research environment (see *Appendix D: Contribution to the Research Environment*) that we would expect to see to better illustrate this new approach.

The Sector Reference Group (see recommendation 34) will need to refine this list, particularly ensuring the examples offered cater to the range of career stages of staff, the specific peer group of some researchers and the importance of a capacious conception of what excellence in research contributions entails.

## The benefits we see

We think that taken together, these changes will build on existing trends that value excellent engagement practice, place more value on the impact of research, reduce the artificial boundary between research production and research contributions and make more explicit the privileging of quality over quantity.

These changes will also help to:

- give clearer signals about the value of both research production and research contributions,
- address some of the unevenness we detected in the understanding of the assessment framework,
- create more opportunities for those staff who bear a disproportionate burden of high-quality research engagement, collaboration and development of the research environment,
- provide a more obvious pathway for staff to have the impact of their research recognised, and
- reduce transaction costs at the margins.

# Working toward more equitable assessment outcomes

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We should be more ambitious and sympathetic in recognising the circumstances of individual researchers, particularly where these differences are systematic, ensuring panel members are more representative and addressing misconceptions about the assessment framework.

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The assessment framework aspires to reasonable judgements about the quality of research of several thousand individuals and demands the marshalling of a significant number of peer review panel members, researchers and research managers to that end.

The design of the Quality Evaluation influences decisions about how researchers and TEOs prioritise their research effort. Evidence portfolios allow researchers to present a rich picture of the results, and this information is then used by almost 300 expert peer review panel members to form judgements against standards-referenced criteria.

These decisions and judgements are reliant on both clearly defined guidelines, appropriate accommodations for the circumstances of individuals and a comprehensive understanding of the rules and expectations of the assessment.

Much progress has been made in our collective understanding of what is required of the PBRF, but we identified some unevenness. The assessment framework is not optimally organised to handle circumstances outside of the control of individuals, many myths about the process persist, and arguably not all the differences in measured research quality can be explained by the contents of evidence portfolios.

We should continue the work toward more equitable assessment outcomes by:

- taking a more sensitive and flexible approach to circumstances that impact on the ability of individuals to produce evidence of research excellence,
- making sure that the membership of peer review panels reflects the future research workforce, and
- investing more in training about the assessment framework.

To deliver these shifts, we have made five interrelated recommendations.

## Reviewing the exceptional circumstances provision

### RECOMMENDATION 5

The exceptional circumstances provision should be reviewed in consultation with the sector with a view to:

- › normalising the very great diversity of career trajectories of academic staff so that there are no particular parts of the human experience that are categorised as 'exceptional' or 'special'.
- › introducing a 'merit relative to opportunity' concept when panels assess the quantity of research.
- › limiting the number of people who have access to sensitive or confidential information relating to any circumstances such as through some assessment at the TEO level or a tightly constrained group of peer review panel members.

The provisions designed to allow peer review panels to take account of the individual circumstances of researchers have been progressively tightened since 2003.

We think that the culmination of that process created the veneer of a simpler, less onerous process, but resulted in a complex, incomplete set of arrangements. They did not address the clear need for some mechanism to take account of the reasonable range of factors that limit the opportunities available to individuals.

We recommend that the way in which the circumstances of individuals are recognised in the assessment framework is changed. Peer review panels must have better tools to take account of the circumstances of individuals, and staff require confidence and clarity about how these circumstances are taken into account.

We should move beyond a view that normal parts of the human experience, for example, ill-health, mental health, pregnancy and caring for others, are somehow 'exceptional'. Rather the assessment framework should recognise that the 'normal' career trajectories of academic staff are diverse.

The concept of 'merit relative to opportunity' should be placed at the centre of this redesigned provision. The redesign should provide for a mechanism to take account of the trajectory of an individual's career considering factors such as mental and physical health, illness and disability, family responsibilities including the full gambit of obligations that might be assumed relating to fertility, childbirth and rearing and care for other family group members, community responsibilities, interruptions to employment, part-time or flexible working arrangements, becoming research active during the assessment period or teaching on sub-degree programmes.

We encourage the Sector Reference Group (see recommendation 34) to engage with the sector to ensure that these factors are described fully. We anticipate that the Tertiary Education Union ought to be in a strong position to contribute examples and insights.

We should be more sensitive to the risks to individuals of declaring intensely personal matters. We recommend that steps are taken to minimise the number of people who might have access to this kind of information. These steps might include strict prohibitions about sharing of the detail of some circumstances (as opposed to their impacts), a separate pathway within the peer review assessment or some role for TEOs in informing judgements.

## Shaping the composition of peer review panels

### RECOMMENDATION 6

The TEC should take a more proactive role in identifying candidates for the peer review panels to ensure that members better reflect the current and growing epistemological and demographic diversity of the research workforce including ensuring gender parity, significant representation of Māori and Pacific researchers and a broad representation of researchers and other experts across career stages and organizational context in *each* panel.

Peer review panel members face a daunting task. It will not be uncommon for panel members to lead the assessment of 60 or more evidence portfolios on behalf of the wider panel and review 200 or more research outputs. They must also contribute to the calibration of scoring across multiple discipline areas, all the while being cognizant of their own biases, whether conscious or unconscious.

We are sympathetic to concerns that the composition of peer review panels might inadvertently introduce biases into the outcomes of assessments. In our view, the reliance of on nominations by TEOs may tend to perpetuate pre-existing assumptions about the desirable characteristics of panel members.

We think that it is possible to refine the membership of peer review panels to ensure that they are better equipped to cope with the epistemological and demographic diversity we anticipate. We heard about how the membership of Marsden fund assessment panels had been changed through a more active and deliberate approach.

We should have many more emerging researchers, those working part-time and women Māori and Pacific people on panels. We also need people who are experts in quality engagement methodologies, are able to assess evidence of impact and who have a successful track record in developing vibrant, diverse research cultures. There will be a place for other experts on panels, particularly individuals who are familiar with research conducted in an academic context but who might not be employed by a research organisation currently.

Accordingly, we recommend that the TEC take a much more proactive role in identifying candidates for the peer review panels. Rather than relying on nominations from TEOs, the TEC should support panel chairs to curate more diverse panels. That support might include a public call for nominations and structured approaches to suitable individuals. This expanded role will be challenging, but other funds have shown how careful planning and active engagement with the sector can deliver good results.

## Continued training of peer review panel members

### RECOMMENDATION 7

The TEC should continue to build on the successful programme of training for peer review panel members, particularly strengthening the capacity of panels to take account of the diversity of research excellence and the application of the 'merit relative to opportunity' approach.

The TEC has considerably improved the quality of the training delivered to peer review panel members and put more effort into tailoring guidelines and other communications collateral to different audiences.

We identified three related challenges that should be faced for the next Quality Evaluation. Panels require support to apply the new more capacious definition of research excellence, there is a persistent unevenness in the understanding of the assessment framework in the academic community, and we lack useful exemplars of good practice to challenge myths about the process.

While the refreshed composition of peer review panels will go some way to preparing for the application of the more capacious definition of excellence, considerable work will be needed to help panels interpret and assess the new kinds of evidence we expect to see. We recommend that the TEC builds on its successful programme of training of peer review panel members to:

- strengthen their capacity to take account of the diversity of research excellence,
- support better understanding of the contemporary and historical contexts for the creation and dissemination of mātauranga Māori research and Pacific research and
- application of the redesigned extraordinary circumstances provision.

## More comprehensive training generally

### RECOMMENDATION 8

The TEC should invest in a comprehensive programme of training for researchers and research managers, using a panel of suitably experienced people, to improve understanding and address myths about the assessment framework.

We identified some unevenness in the understanding of the assessment framework among researchers and research managers. This unevenness results from the episodic nature of the task, the reasonable reliance on casual or short-term staff by both the TEC and TEOs to support the process and the inherent complexity of a deliberately inclusive assessment framework.

We think that tailoring resources to different audiences were a good step but we must professionalise this support. This unevenness is a critical and perhaps underappreciated risk to the credibility of the process, particularly as much responsibility is devolved to TEOs.

The TEC should explore how it can deliver high-quality training both to smaller groups and at scale. We recommend that as a first step, a panel of suitably experienced people be appointed to deliver comprehensive training for researchers and research managers to help address myths about the assessment framework.

There may also be merit in facilitating connections between TEOs with more extensive capacity to deal with the requirements of the fund and those that have relatively less experience, or arrange workshops involving panel chairs and panel members with staff of these TEOs so they can share insights and knowledge about the way the assessment framework is applied.

## Developing exemplars

### RECOMMENDATION 9

The TEC should develop exemplars of evidence portfolios that demonstrate how the assessment framework enables researchers to describe impact, collaboration and engagement with end-users effectively as part of wider work to improve understanding, address myths and explain the new more capacious definition of excellence.

To complement this investment in training, we should bring greater transparency to what constitutes good practice in the construction of evidence portfolios. The presentation of evidence and understanding of the expectations of the assessment framework ought not to be a competitive advantage for researchers or TEOs.

There were attempts to construct exemplar evidence portfolios to support the training of peer review panel members for each of the Quality Evaluations. These exercises were generally either limited in scope (few evidence portfolios were developed), looked backwards (content from previous Quality Evaluations predominated) or were artificial in construction (comprising an amalgam of multiple evidence portfolios).

These constraints reflected a narrow focus on the calibration of assessment standards, a lack of priority and the difficulties of obtaining consent from submitting TEOs.

It would be desirable to invest more effort in preparing evidence portfolios that are reasonably representative across a range of disciplines, more reflective of actual practice and purposeful in terms of addressing new elements of the assessment framework.

Accordingly, we recommend that the TEC develop exemplars of evidence portfolios. These exemplars should help researchers understand the flexibility within the assessment framework and will be useful for the calibration of assessment standards on an inter- and intra-panel basis.

## The benefits we see

We think that these changes will help to ensure that:

- peer review panel members have the skills and competencies they require,
- there is greater consistency in the understanding of the assessment framework across the research workforce and among research managers,
- the barriers that some TEOs experience in engaging with the fund are reduced, and
- training and intra- and inter-panel calibration of assessment standards is enhanced.

# Introducing new funding incentives

Changes to the funding system will help to address the critical undersupply of Māori and Pacific researchers, shift resources toward the Māori Knowledge and Development and Pacific Research subject areas, and better support excellent research across the system including among the staff of wānanga and the new national provider of vocational education.

The PBRF has an important role to play in sustaining and renewing the research workforce in TEOs, across the broader research, science and innovation sector and the economy.

The research workforce does not reflect New Zealand society and progress in increasing the number of Māori and Pacific researchers is slower than we would like. We think that this 'hidden crisis' demands a strong response and that funding incentives can play a role.

The 'hidden costs' of some kinds of research, particularly that which is often dependent on sustained, high-quality engagement with iwi/hapū and Pacific communities, are also not well-recognised. We think that the design of the funding system creates disincentives to engage in research based on Māori world views and Māori methods of research and Pacific-based research methodologies and methods.

We also saw some risks from the transition to a new model for New Zealand's institutes of technology and polytechnics. There is a considerable group of researchers in these institutions who are currently dispersed across several organisations throughout New Zealand. The panel considered that we should attempt to protect that capacity.

The panel was unconvinced that the current subject-area weightings for the PBRF are fit for purpose. The rationale and distinctions between each are not well-articulated or understood. More work is required to ensure that this important influence on funding outcomes is appropriate.

In the panel's view, we should further develop the design of the funding system to:

- create tangible financial incentives for TEOs to recruit, develop and support Māori and Pacific researchers,
- ensure that research that falls within the coverage of the Māori Knowledge and Development Panel and the Pacific Research panel is appropriately rewarded through the funding system, and
- protect important capabilities that enable research that engages Māori and Pacific communities, such as expertise in engagement and deep connections to those communities.

To deliver these shifts, we have made five recommendations.

## Addressing underrepresentation of Māori and Pacific peoples

### RECOMMENDATION 10

The design of the fund should reinforce the efforts to address the underrepresentation of Māori and Pacific researchers in the research workforce by assigning an additional funding weighting to evidence portfolios submitted by staff who identify as New Zealand Māori or with a Pacific ethnicity of:

- a. '2' for all evidence portfolios that meet the standard for a funded Quality Category and
- b. '4' for evidence portfolios assigned a 'C(NE)' Quality Category

There has been a measurable shift in the diversity of research students, the research workforce and research methods since 2003. The Quality Evaluation measure has brought attention to concentrations of research excellence associated with Māori and Pacific researchers.

Yet we are not making enough progress in increasing the number of Māori and Pacific researchers. This lack of success puts at risk the government's aspirations for a more diverse research workforce. It also leads to fewer opportunities for our increasingly diverse communities to see themselves in academic roles.

We heard from many TEOs that they were strongly committed to increasing the diversity of the research workforce. We think that there is a strong case for rewarding TEOs that have a successful track record and create stronger incentives for those who are still making progress.

There is already a weighting of '2' that applies to Research Degree Completions associated with students who identify as Māori and/or Pacific peoples. The panel recommended that this higher weighting be extended to funded quality categories associated with researchers who identify with these ethnic groups.

A higher weighting of '4' is recommended for staff who identify as Māori and/or Pacific peoples, meet the criteria for new and emerging researchers and whose evidence portfolios are assigned a 'C(NE)' quality category. This provision would strengthen incentives for TEOs to invest in the transition of the growing number of Research Degree Completions into research employment.

The panel was not persuaded that the weighting of '4' should apply to those new and emerging staff assigned an 'A' or 'B' quality category given the small numbers involved.

The panel gave some thought to the effect of the changes to the funding weightings (including recommendations 11 and 12) on the relativities between different mixes of quality categories and subject areas and the level of funding allocated for particular subject-areas and TEOs. The panel was not convinced that these effects were sufficiently large to warrant transitional arrangements given the relatively small number of evidence portfolios involved.

## Strengthening research based on kaupapa Māori and mātauranga Māori

### RECOMMENDATION 11

The design of the fund should reinforce the efforts to strengthen research based on kaupapa Māori and mātauranga Māori by applying the subject-area weighting of '2.5' to the Māori Knowledge and Development subject area.

Research that is based on Māori world views and Māori methods of research is a unique taonga of Aotearoa New Zealand. The Māori Knowledge and Development panel provides a vehicle for relevant research excellence to be recognised and rewarded.

The panel recommended applying a higher weighting of '2.5' evidence portfolio relating to the subject area of Māori Knowledge and Development. The panel considered that this change more appropriately reflects both the particular complexities and costs associated with the relevant research. These might include the need to develop and sustain deep and intense personal connections and relationships with iwi and hapū. It also recognises the additional benefits that research in other subject areas derives from the relatively few staff undertaking research using these relationships and methods.

This change provides a tangible expression of the partnership between Crown and iwi by recognising past underinvestment in relevant research and research methodologies.

The existing provision for the underlying subject area weighting of evidence portfolios assessed by the Māori Knowledge and Development panel to be applied would be retained. For example, an evidence portfolio that involved research in the subject area of 'Psychology' and included evidence of Māori methods of research could be both assessed by the panel and retain the subject-area weighting of '2'.

## Strengthening Pacific research

### RECOMMENDATION 12

The design of the fund should reinforce the efforts to strengthen research based on Pacific-based research methodologies and methods, or that involve Pacific-centred subject matter, or that impact on Pacific peoples by applying the subject-area weighting of '2.5' to the Pacific Research subject area.

The Pacific Research panel established for the 2018 Quality Evaluation provides a means to recognise research based on Pacific-based research methodologies and methods, or that involve Pacific-centred subject matter, or that impact on Pacific communities.

The panel recommended applying a higher weighting of '2.5' evidence portfolio relating to the subject area of Pacific Research. The panel considered that this change also more appropriately reflects both the particular complexities and costs associated with the relevant research. The change also recognises the demands for the New Zealand Research, Science and Innovation system to be more responsive to Pacific communities both in New Zealand and across the Pacific.

The provision for the underlying subject-area weighting of evidence portfolios applied to evidence portfolios assessed by the Pacific Research panel would be retained.

## Assisting with a managed transition

### RECOMMENDATION 13

The share of funding allocated through the Quality Evaluation measure to the new national provider of vocational education should be fixed at the proportion allocated through the 2018 Quality Evaluation to Institutes of Technology and Polytechnics until 2030 unless the level of research quality measured through the 2024 Quality Evaluation indicates a higher share is warranted.

The Reform of Vocational Education will result in considerable change to the way a significant part of the tertiary education sector operates. The change offers many opportunities, but the transition will be complex and carries some risks.

A key focus is expected to be the consolidation of the sixteen institutes of technology and polytechnics into a single national entity. The consolidation will bring together 430 (FTE-weighted) researchers, roughly the same size as the University of Waikato, who offer research capabilities of strong relevance to local and regional New Zealand.

The process of bringing the sixteen organisations together is not expected to be completed until the end of 2022, and the consolidation of research cultures, processes and systems may take longer. We anticipate the potential for considerable disruption to the way research is conducted and managed over the next several years.

We think that there is a strong case to ease the pressure on these valuable researchers as they work through this transition. The unified organisation could choose to submit evidence portfolios for the 2024 Quality Evaluation, but the funding share would only change if measured research quality increased.

Ring-fencing the modest (2.4%) share of funding allocated to institutes of technology and polytechnics through the 2018 Quality Evaluation would give some certainty of funding. Surety of funding would help with the retention and support of these staff, without having a meaningful effect on other participating TEOs.

## Reviewing the subject-area weightings

### RECOMMENDATION 14

The subject-area weightings that apply to the fund should be reviewed because they may not accurately reflect either the costs of undertaking certain types of research or the incentives required to give effect to the new more capacious definition of research excellence.

The PBRF uses three classes of subject-area weightings, '1', '2' and '2.5', to modify the amount of funding each TEO receives through the Quality Evaluation and Research Degree Completions measure.

These weightings are intended to account for differences in the cost of undertaking research between subject areas. These weightings were based on the funding rates that applied in 2003 and were not the result of robust analysis (MoE, 2002).

We received some submissions that argued for changes to the subject-area weightings for specific disciplines. We were sympathetic to these arguments but were reluctant to undertake piecemeal changes in the absence of compelling evidence of historic underinvestment (see recommendations 11 and 12). We recognise that the current subject-area weightings might have cumulative effects that give rise to some systematic bias in the way research quality is rewarded.

We have recommended that policy work be done to understand the costs of research by subject area, taking into account the full range of differences in the methodological, engagement and physical requirements of each. The results of that work should then inform changes to the subject-area weightings.

### The benefits we see

We think that taken together, these changes align powerfully with efforts to promote greater diversity in the research, science and innovation workforce and research methods, direct resources to areas where research excellence has been undervalued and contribute to regional development.

# Adopting more inclusive language

We should find a new language to talk about the fund, its principles and objectives and how research excellence is understood. Te reo Māori names will connect with the excellent work underway across the sector to anchor research in the distinctive cultural heritage of Aotearoa New Zealand.

We have made several recommendations that seek to make the fund more inclusive and the assessment of research excellence more equitable. Changes to the definition of research excellence, the design of evidence portfolios and the way funding is allocated should all contribute to these goals.

We should find a new language that reflects these aspirations in how we talk about the fund and its fundamental design elements. The partnership between the Crown and iwi and the distinctive cultural values of tikanga Māori should be at the heart of this new language.

We recognise that creating an inclusive research community and obtaining equitable assessment outcomes is an ongoing journey; one that we should reflect explicitly in the principles that guide the implementation of the fund.

The changes we seek aim to:

- convey a more positive, aspirational view of the assessment of research excellence, and
- put inclusion and equity at the centre of the design and implementation of the fund.

To deliver these shifts, we have made five interrelated recommendations.

## Inclusivity as an objective

### RECOMMENDATION 15

A new objective for the fund should be added; which is 'To ensure a flourishing and inclusive system for developing and sustaining research excellence in New Zealand'.

The panel has recommended several changes intended to result in a more inclusive approach to recognising and rewarding research excellence.

These changes included the more capacious definition of research excellence (recommendation 1), the more porous boundary between research production and research contributions (recommendation 2), applying the concept of ‘merit relative to opportunity’ (recommendation 5), changes to the composition of peer review panels (recommendation 6) and altered funding incentives (recommendations 10, 11 and 12).

In the panel’s view, the objectives of the fund should reference inclusivity more directly to reflect the direction of travel signalled by these changes. Accordingly, a new primary objective for the fund should be introduced that is, ‘To ensure a flourishing and inclusive system for developing and sustaining research excellence in New Zealand’.

## Use of te reo Māori

### RECOMMENDATION 16

The TEC should seek the guidance on appropriate te reo Māori names for the fund as a whole and key elements of the process including evidence portfolios and their components that better reflect the distinctive kaupapa that informs the ethical and professional expectations of researchers in Aotearoa New Zealand.

The adoption and incorporation of te reo and tikanga Māori into how we talk and think about the fund are ways that we can give effect to the partnership between Crown and iwi. It also reflects the distinctive kaupapa that guides researchers in Aotearoa New Zealand and the unique place of Māori in our society and culture.

The ethical and professional expectations of researchers in our TEOs, at their best, embody the concept of partnership. The panel considered that the fund ought to reflect these expectations.

To that end, we think that the TEC should work with iwi to identify suitable names in te reo Māori for the fund and key elements of the process. These names should reflect the kaupapa of the fund as a whole and give us a new language to talk about research excellence generally, evidence portfolios and the components therein and the key elements of the fund.

We have suggested a new English language name for the fund (see recommendation 17) which may inform this process.

## A new name for the fund

### RECOMMENDATION 17

The fund should be renamed as the Tertiary Research Excellence Evaluation or TREE, to better reflect the focus of the fund and the greater emphasis that should be placed on diversity and inclusiveness.

The panel recommended that the fund should be renamed. This new name must capture the distinctive focus of the fund, particularly the kinds of organisations that participate in it and the nature of the assessment. To that end, we recommend the adoption of the English language name Tertiary Research Excellence Evaluation or TREE.

The new name implies a sense of sustainable growth and renewal, an aspiration toward new knowledge and a deep foundation based on a long history of academic endeavour.

It reinforces the positive aspects of the assessment – the opportunity presented for recognition of research excellence in its diverse forms and the scope it provides for researchers to convey the progression and development of their research careers.

In choosing a name, we thought it essential to convey a clear focus on the research of the tertiary education sector making explicit the emphasis on research excellence and providing a link to the new, more capacious definition of research excellence.

The name also conveys a sense that the process is intended to be constructive and formative for those researchers and TEOs participating in it. This change would have the advantage of de-emphasising the funding implications of the Quality Evaluation and thereby alluding to the broader objectives of the fund.

An appropriate name in te reo Māori will also need to be adopted (see recommendation 16).

## Clarifying the principles

### RECOMMENDATION 18

Three new principles for the fund should be added:

- › 'Partnership: The fund should reflect the bicultural nature of New Zealand and the special role and status of the Treaty of Waitangi (Te Tiriti o Waitangi)', to reflect the significance of the partnership that underpins the relationship between Crown and iwi.
- › 'Inclusiveness: The fund should encourage and recognise the full diversity of epistemologies, knowledges and methodologies to reflect New Zealand's people', to reflect diversity in society and our commitment to a capacious definition of research excellence.
- › 'Equity: Different approaches and resources are needed to ensure that the measurement of research excellence leads to equitable outcomes', to underline the vital importance of addressing persistent, embedded and inherited inequities and their negative effects on the capacity of women, Māori and Pacific peoples among other groups to participate in the research, science and innovation system.

### RECOMMENDATION 19

The existing principle of 'Cultural inclusiveness' should be removed as it will be superseded by the changes set out in recommendation 18. The TEC should seek the guidance on appropriate te reo Māori names for the fund as a whole and key elements of the process including evidence portfolios and their components that better reflect the distinctive kaupapa that informs the ethical and professional expectations of researchers in Aotearoa New Zealand.

The panel considered that, in general, the principles of the fund are appropriate, but recommended some refinements.

The existing principle of 'Cultural inclusiveness' combines a recognition of the partnership between the Crown and iwi based on the Treaty of Waitangi and the growing social and ethnic diversity of New Zealand society.

The panel considered that these two concepts ought to be distinct through new principles of:

- 'Partnership' which acknowledges the unique partnership between Crown and iwi and the bicultural foundation of New Zealand society.
- 'Inclusiveness' which acknowledges the very great diversity of epistemologies, knowledges and methodologies and the need to recognise and reward these.

There is also a case for a new principle relating to 'Equity'. This principle links to the changes that the panel recommended that aim to achieve greater inclusivity, recognising that different approaches may be required to ensure more equitable outcomes.

### The benefits we see

We think that taken together, these changes will provide a coherent rationale for the panel's recommendations that promote inclusiveness, help more researchers to see a place for themselves and their research contributions in the fund and offer a tangible signal of the place of Māori in the kaupapa of the fund.

# Building on our successes

The key design elements of the fund and the Quality Evaluation, in particular, are working well. We recommend some changes to focus the fund on recognising and rewarding research excellence and research workforce development, help to manage the transitions underway in the vocational education sector and deepen our collective understanding of the effects of the fund.

The fund has delivered considerable change in the priority given to research in the tertiary education system. We surveyed the overall design of the fund and the key elements of the assessment framework. Key informants and submissions affirmed many aspects of the design of the fund and the assessment framework.

We saw some opportunities to build on the success of the fund and make improvements to the existing settings by:

- resetting the measures of research quality so that they better reflect the objectives and distinctive contribution of the fund,
- retaining those aspects of the design of the Quality Evaluation that are working well and for which there is little appetite for change,
- continuing to develop the capability of wānanga and institutes of technology and polytechnics to realise the potential for research excellence more fully, and
- making best use of the evidence about the results and outcomes of the fund and emerging developments in research management.

To deliver these shifts, we have made twelve recommendations.

## Simplifying the measurement of research excellence

### RECOMMENDATION 20

The Quality Evaluation and Research Degree Completions measures should be retained as they provide a comprehensive measure of the distribution of research excellence and the completion of research degrees.

## RECOMMENDATION 21

The External Research Income measure should be discontinued as it is input-focused, skewed by investment decisions of government and business, is unduly concentrated and duplicates existing incentives. Funding allocated through this measure would be reduced progressively to zero between 2024 and 2029 and the share associated with the Quality Evaluation measure increased commensurately.

The three measures of the fund, the Quality Evaluation, Research Degree Completions and External Research Income, each perform different functions.

The Quality Evaluation provides the most direct and reliable measure of research quality across the tertiary education system but is relatively resource-intensive so is conducted periodically. The panel recommended that this measure is retained because of the incentives for research excellence that it creates.

The Research Degree Completions measure is a proxy measure of research quality. It assumes that learners will tend to search out departments and supervisors with high reputations for quality in research and research training (MoE, 2002). The panel recommended that this measure is retained because of the important function of the fund in resourcing research training.

The External Research Income measure is a proxy measure of research quality. It assumes that external funders will be discerning in where they invest scarce resources and so acts as a proxy for quality and peer or stakeholder esteem (MoE, 2002).

The panel was concerned that the External Research Income measure focuses attention on inputs to research, is skewed by investment decisions of government and business, is unduly concentrated and duplicates existing incentives for researchers and research organisations.

The panel recommended that the External Research Income measure be discontinued. The proportion of funding allocated through this measure should be allocated through the Quality Evaluation measure. The net effect will be to rebalance the weightings of the fund so that 75% is allocated through the Quality Evaluation measure and 25% through the Research Degree Completions measure.

The effects of this change are not uniform across the sector. Progressive implementation of this change will smooth the impacts. To give sufficient time for adjustment, the change should be phased in from 2024 with the proportion of funding reduced to zero over the six years to 2029.

## Retaining external peer review

### RECOMMENDATION 22

Peer assessment should be retained as the primary mechanism whereby research excellence is assessed given the weight of international evidence supporting such models and the contribution that this model makes to the objectives of the fund.

### RECOMMENDATION 23

Peer assessment should be undertaken independently of TEOs, given the potential for self-review to impact negatively on the collegiality that is vital for research.

The panel considered whether external peer assessment remains the most appropriate option for assessing research excellence.

Most submissions advocated for the retention of peer assessment of research excellence. As we noted in our review of the relevant issues (see *Opportunities and challenges*), there is a persuasive case for retaining peer assessment, primarily because of the perceived credibility of such processes and the opportunity they provide to obtain a more complete assessment.

We note that metrics are already a feature of the assessment framework and determine the allocation of a significant proportion of funding through the proxy measures of research excellence.

The panel received some submissions that advocated for the expanded use of metrics. The case for replacing the Quality Evaluation with metrics was not made. Other than a high correlation of funding outcomes at a TEO level, greater reliance on bibliometrics would tend to perpetuate disparities in assessment outcomes and privilege some kinds of research activities unjustifiably.

There was no support expressed by the key informants or in the submissions we received for TEOs to assume a more significant role in the assessment of research excellence through mechanisms such as self-review.

In the panel's view, such a change would tend to increase transaction costs given the need to duplicate assessment and moderation functions across the participating TEOs. Additionally, self-review could impact on collegiality among TEO staff.

Accordingly, the panel recommended that external peer review remains the primary mechanism whereby research excellence is assessed.

## The individual should be retained as the unit of assessment

### RECOMMENDATION 24

The individual should be retained as the unit of assessment in the absence of any compelling evidence that different assessment models would result in any of the claimed benefits or a more accurate measurement of research quality.

The panel was asked to consider whether the unit of assessment for the Quality Evaluation should be changed.

We detected little appetite in our discussions with key informants and in the submissions we received to change the unit of assessment. We think that the cost associated with replacing the unit of assessment are prohibitive and the claimed benefits unconvincing.

Many of the common complaints attributed to the current unit of assessment appeared to have a weak evidence base. Collaboration among New Zealand researchers seems to be high, higher levels of stress is a trend that predates the fund's introduction and, in any case, is not reflected in turnover data, transaction costs are not actually all that excessive and the oft-repeated claim that a group-based model would somehow be 'better' is not supported by evidence from the United Kingdom (see *Thinking about the unit of assessment*).

We did develop a view that some aspects of the design of the PBRF should change. Our recommendations seek to create a more inclusive assessment framework (see recommendations 1, 2 and 6) and address unevenness in the understanding of the assessment framework (see recommendation 7).

Accordingly, we recommended that the individual be retained as the unit of assessment.

## Continue to conduct the Quality Evaluation every six years

### RECOMMENDATION 25

The period of six years between Quality Evaluations should be retained to a) allow for timely adjustments in funding for TEOs based on the measured change in research excellence, and b) give government timely information on the overall change in measured research excellence.

The panel was asked to consider whether the period of time between each Quality Evaluation should be changed.

We received submissions on this issue, including several suggestions for alternative arrangements. These suggestions included staggering the peer review assessments so that a subset of evidence portfolios was assessed each year, and extending the period of time between Quality Evaluations.

The panel was not convinced that these changes would offer sufficient benefits to justify the potential costs and risks. The staggering of assessments would tend to result in the retention of more capability among research managers given the regularity of essential tasks relating to the Quality Evaluation but would increase transaction costs disproportionately.

Extending the period between Quality Evaluations would reduce some of the burdens on researchers, particularly as evidence portfolios would be collated less often.

Conversely, the period of six years is already reasonably long compared to other similar assessments. The change would also tend to make the fund less responsive to change in measured quality, whether in terms of funding or performance information. It would also make it harder to maintain the capability necessary to administer the Quality Evaluation at TEOs and the TEC.

Accordingly, the panel recommended that the period of six years between Quality Evaluations should be retained.

## Simplifying the eligibility criteria for new and emerging researchers

### RECOMMENDATION 26

The provision for new and emerging researchers should be retained; however the eligibility and assessment criteria should be reviewed and simplified

The distinct assessment pathway for staff at the beginning of their research careers has been a considerable success. Introduced for the 2006 Quality Evaluation, the pathway has provided a way for panels to apply an appropriate assessment standard to almost 3 000 (FTE-weighted) new and emerging researchers.

The criteria for identifying which staff might be eligible to be treated as new and emerging researchers can be problematic to apply and interpret. Misidentification of staff as new and emerging was the second most common staff eligibility error in 2012. Peer review panel members have also expressed concern about instances that did not conform with their intuitive understanding of the status of researchers.

Changes were introduced for the 2018 Quality Evaluation to reduce the misidentification of staff by TEOs. A new principle was developed that required that staff were '...undertaking substantive and independent research for the first time in their career'.

We heard that these changes appear to have had the opposite effect by introducing onerous obligations on TEOs, excluding some staff on arguably counterproductive grounds and may have increased the incidence of misidentification. Possibly as a result, the number of instances of misidentification increased from 57 staff in 2012 to 69 staff in 2018.

TEOs were required to review the entirety of an individual's, often extensive professional, work history to apply this new principle creating a degree of uncertainty and complexity. Research students who engaged in desirable practice, such as producing research outputs or completing their "PhD by publication" before commencing academic employment could find themselves ineligible because these outputs were produced just before the assessment period.

The panel recommended that the criteria be reviewed and simplified, potentially by placing more emphasis on the initiation of a substantive employment relationship with a participating TEO. Less weight would then be placed on incidental research activity undertaken as part of a researcher's prior employment.

## Investment in wānanga

### RECOMMENDATION 27

The panel endorses the investment in the capability of wānanga and ongoing support to engage with the fund.

Wānanga have a distinct and important role in the tertiary education system, and the research these organisations foster reflects this. Wānanga offer a platform to grow research based on Māori concepts and values that offer solutions to many of the long-term challenges that New Zealand faces.

We heard concerns that the fund is not well-configured for the current stage of development of wānanga. The reasons for this mismatch relate to the way the design of the fund does not reflect fully the research foci of wānanga, the relatively short period since these organisations were formally recognised by the Crown and the historic underinvestment in the sector.

The panel was encouraged by the implications of the November 2019 agreement between the Crown and Te Wānanga o Raukawa, building on the modest capability funding provided to the three wānanga to assist them in engaging with the PBRF.

The panel endorsed these approaches and the continued engagement between the Crown and the three wānanga.

## Planning for the new national provider of vocational education and training

### RECOMMENDATION 28

The Reform of Vocational Education and the transitional support for the new national provider of vocational education and training should make appropriate provisions for researcher support and research capability and development.

We understand that there is significant work underway to plan the transition to the new vocational education system as part of the Reform of Vocational Education.

The panel noted that decisions about the way the new national provider will approach its role are still emerging. We saw considerable opportunities to build on the existing research capability in the sector through the transition.

The panel recommended that appropriate attention and focus is given to researcher support and research capability and development as part of the planning for the new national provider to take advantage of these opportunities

## Better information for decision-making

### RECOMMENDATION 29

The TEC should, in conjunction with stakeholders, commission an ongoing programme of research and evaluation to ensure that the moderators for future Quality Evaluations and review processes have access to analysis about systemic biases in assessment outcomes and the results and effects of the fund.

### RECOMMENDATION 30

The TEC should, in conjunction with stakeholders, take steps to improve the quality of publicly-available information about the research workforce.

The panel was grateful for the valuable analysis provided by researchers and staff of government agencies, especially the TEC, who have explored the data generated by the PBRF. We also heard that workforce data collected through the Quality Evaluation is used to inform policy advice and strategy and can help to highlight significant issues (Brower & James, 2020).

As useful as the advice was, it was clear that much of the analysis was opportunistic. We think that there is a strong case to put some strategy and structure around the research and evaluation relating to the fund.

We recommend that the TEC should commission an ongoing programme of research and evaluation to help us understand the operation and effects of the fund. Process evaluations of each Quality Evaluation would systematically collect key learning from the process.

A planned programme of analysis of the assessment results would be valuable. Funding this research could ensure that useful work to identify measured differences in outcomes for particular groups is continued. It may also be possible to integrate this analysis into the moderation processes for each Quality Evaluation, offering opportunities to provide guidance to peer review panels.

The panel found it challenging to draw conclusions about patterns of change in the workforce between Quality Evaluations. There is a case for collecting detailed staffing data on a more regular basis so we can better understand the impacts of the fund.

## Looking for opportunities for systems integration

### RECOMMENDATION 31

The TEC should explore the adoption of the Open Researcher and Contributor ID as the unique identifier for PBRF-eligible staff and opportunities for better integration with the New Zealand Research Information System.

The operation of the Quality Evaluation relies on unique identifiers for researchers, and data collated and submitted by TEOs. We think that there are opportunities to streamline these processes by building on existing and emerging tools such as the Open Researcher and Contributor ID and the NZRIS.

The National Student Index, a database of student identity data administered by the Ministry of Education, is used by TEOs to obtain unique identifiers of staff. These identifiers are used for staffing census returns and the submission of evidence portfolios. The use of this system was an administrative convenience for the first Quality Evaluation designed to avoid the need to establish a new system to validate the identity of researchers.

Since then, the Open Researcher and Contributor ID has gained considerable traction with 6.9 million ids in use internationally. This open-source system provides a unique identifier for researchers that can be used to link to research outputs and activities.

We think that there is a case for using Open Researcher and Contributor ID identifiers for future Quality Evaluations. These identifiers potential benefits including the opportunity to link to research outputs and activities that researchers may have produced before joining the New Zealand tertiary education system and may be more appropriate for an evaluation of research excellence than the NSI.

These identifiers are also intended to integrate with NZRIS, a national, online hub of information about research activity in New Zealand. There may be scope to integrate the information management systems for the Quality Evaluation with NZRIS over time.

## Investing in excellence

### RECOMMENDATION 32

The value of the fund should increase by at least \$100m per annum as an uplift with annual adjustments thereafter to maintain the rates of real funding on a per capita basis through the Quality Evaluation and Research Degree Completions measures.

The panel was concerned about evidence that the financial incentives associated with the fund were diminishing over time. These concerns were shared by several submitters who noted that constrained funding was making it increasingly difficult to continue to invest in the development of staff, potentially putting at risk future improvements in measured research quality.

The recommendations in this report, particularly the more capacious and inclusive approach to assessment, ought to better recognise research excellence. It would be a poor outcome if the beneficiaries of these changes did not see commensurate financial benefits. These concerns extend to the Research Degree Completions measure. It would be counter to the objectives of the fund if diminishing financial incentives encouraged the rationing of research training.

We are also creating new incentives that ought, over time, increase the number of Māori and Pacific researchers in our TEOs. Strong financial incentives will be an important way we drive the much needed investment required to address this critical gap in our research workforce.

Our modelling indicated that the fund would need to increase to \$415m per annum, an increase of \$100m, to return to the rate of real funding achieved earlier in the fund's history. Annual adjustments will also be needed to maintain these rates in real terms.

This increase is substantial, and we acknowledge that any additional investment might need to be phased in over several years. Nonetheless, increased investment is an important part of the implicit trade-off involved in the fund's design and a tangible example of the government's commitment to supporting research excellence.

## Reporting the results

### RECOMMENDATION 33

The TEC should retain the focus on the increase in the total number of funded Quality Categories when reporting the results of the Quality Evaluation, and discontinue the average quality score metrics.

The results of the 2018 Quality Evaluation were reported in an accessible way, including the use of web-based data visualisation apps and infographics. Part of the approach to reporting was to place much less emphasis on measures of the relative intensity of research quality, the average quality scores. The changes to the reporting framework appear to have been welcomed by the sector and the panel considered that they were a positive change.

The reporting of average quality scores does, however, appear to be a point of continued tension. The reasons for these concerns reflect both the design of the measures and results of the calculations themselves

These metrics imply that a higher score is better given the natural tendency for organisations to use them for ranking purposes. High scores might indicate a concentration of, for example, A Quality Categories at a TEO. That result might be a useful reference point for some stakeholders

At the same time, given the correlation between career stage and higher quality categories, a very high result might not be compatible with the need for a more balanced profile that ensures the research workforce is continually replenished. A focus on research intensity among staff might also be misleading given the growing diversity of roles among academics, particularly progress in providing specialist career pathways.

The results of the average quality scores measure calculations are not particularly intuitive. The range for the average quality score that aims to measure research intensity among staff (AQS(S)) was between 29.19 and 0.23. The comparable ratio for the score linked to enrolments was between 2.14 and 0.19.

While the results of the AQS(S) show a marked difference between universities and other TEOs, there is no evident correlation between the two scores and the numbers have no intrinsic meaning either locally or internationally.

We were sympathetic to concerns expressed through submissions that the average quality scores are not particularly meaningful, and what value does accrue from them may well be outweighed by their perceived lack of credibility among some stakeholders.

Accordingly, the panel considered that the average quality score metrics should be discontinued.

## Continuing to collaborate with the sector

### RECOMMENDATION 34

A Sector Reference Group should be established to advise on the implementation of the changes to the fund agreed by government and this group should include significant representation of Māori and Pacific researchers and a broad representation of researchers across career stages and organizational context.

The panel noted that many of its recommendation, if agreed by government, will require further elucidation and have implications for the implementation of the fund.

The panel considered that the past practice of co-designing the fund with the sector, most notably through Sector Reference Groups, was highly desirable, and should be continued.

The panel identified several matters that will require particular attention by the Sector Reference Group (see *Next steps*).

### The benefits we see

We think that taken together, these changes will protect the key strengths of the Quality Evaluation and support existing positive trends, particularly in capability development outside of the university sector.

# Options for change we considered

This table presents the options considered by the panel and brief comments pertaining to each. These options were either raised as part of submissions to the panel (indicated by the source ‘Submissions’) or which arose from discussions involving panel members and, in many cases, input from key informants (all other options).

Option	Source	Comment
<b>Objectives and principles of the fund</b>		
Weight the primary and secondary objectives equally	Submissions	The panel was satisfied that distinguishing between the primary objectives of the fund (noting recommendation 15) and the secondary objectives was warranted.  The panel was satisfied that the three secondary objectives relating to researcher development, the wider benefits or research and technology and knowledge transfer were appropriate as they reflected secondary outcomes of the fund.
The objective relating to the international ranking of TEOs should only be retained if the size of the fund is increased	Submissions	See recommendation 32.
Set a minimum criterion to participate in the fund that recognises the research-intensive nature of the university sector	Submissions	The panel considered that a change of this nature would be counter to the more capacious definition of research excellence that it has proposed and would tend to affect those TEOs that had experienced historic underinvestment in their research capability.  The panel was comfortable with the current minimum requirement that TEOs participate in the Quality Evaluation to be able to access any funding.
Create a new fund to support research in specific discipline areas, for types of TEOs or for groups in the workforce, such as post-doctoral positions	Submissions	The panel noted that its terms of reference did not include consideration of alternative ways of funding research.
Adopt the OECD Frascati Manual definitions of research	Submissions	See recommendation 1.

Option	Source	Comment
<b>Reducing transaction costs</b>		
Simplify the assessment criteria for the 'C' Quality Category so that some staff are not required to submit an evidence portfolio.		The panel was not satisfied that the modest compliance burden for staff whose evidence portfolios were likely to attract a 'C' Quality Category (see <i>Transaction costs for universities matter less than for other TEOs</i> ) would warrant the additional complexity.
Discontinue the peer-review assessment		See recommendation 22.
Extend the period between Quality Evaluation assessments	Submissions	See recommendation 25.
Stagger the Quality Evaluation over the 6-year cycle, such as assessing a subset of subject areas each year		The panel noted that such an approach might aid with continuity of staff capability and expertise, but would likely increase transaction costs given the need to maintain scaled up staffing and investment in systems and make calibration of assessment standards across the whole system more difficult.
Undertake the Quality Evaluation assessment over a longer period, such as up to a year		The panel was not convinced that extending the period over which the Quality Evaluation assessment is conducted would be practical, given the difficulties of retaining peer review panel members over the current five-month period. These difficulties would be exacerbated for international panellists.
Introduce TEO self-assessment		See recommendation 23.
Introduce sample-based assessment		The panel was not satisfied that a sample-based assessment would provide a comprehensive view of the distribution of research excellence. This approach may reduce some central and TEO administration at the margins, but would need to be carefully managed to ensure credibility of the overall assessment, would reduce the opportunity for external validation of staff research development and provide only a partial view of TEO performance.
Undertake a comprehensive individual assessment every ten years and group-based assessment every five years		See recommendation 25. Undertaking assessments based on both individuals and groups would tend to overcomplicate the fund.
Staff whose Evidence Portfolios were assigned an 'A' Quality Categories could 'skip' the next Quality Evaluation	Submissions	The panel was not convinced that the reduced transaction costs would be sufficient to justify such a change.

Option	Source	Comment
<b>Preferencing quality</b>		
Introduce a more capacious definition of research excellence	Submissions	See recommendation 1.
Exclude research outputs of lesser quality from inclusion in evidence portfolios	Submissions	See recommendation 3. Fewer opportunities to present other research outputs should have this effect.
Increase the number of Nominated Research Outputs from four to six, reduce the number of Other Research Outputs and refocus the Research Contributions section of Evidence Portfolios	Submissions	The panel considered that four examples of research excellence was sufficient, but agreed that research contributions ought to be refocused (see recommendation 4).
Change the relative weighting of Research Outputs and Research Contributions in the assessment framework	Submissions	The more porous boundary between research outputs and research contributions (see recommendation 2) ought to address possible concerns about the undue weighting of the research output section.
Allow individuals to choose the relative weighting of research outputs and research contributions	Submissions	The panel considered that the complexity this change would introduce for peer review panels and the implication that the assessment was a mechanistic, rather than holistic, exercise outweighed any possible benefits.
Refocus on research outputs rather than research-related activities to avoid the notion of a one-size-fits-all model of academic career	Submissions	The panel considered that a singular focus on research outputs would undervalue important contributions to the context in which research takes place.
Removing all references to journal rankings from the assessment guidelines, including panel-specific guidelines would address the undervaluing of research published in New Zealand journals	Submissions	The panel considered that the high proportion of nominated research outputs reviewed by panels guarded against undue reliance on journal rankings but anticipated that the more extensive training would guard against the devaluing of New Zealand journals (see recommendation 7 and 8).
Setting a higher standard for the award of a 'C' Quality Category	Submissions	The panel was satisfied that the current assessment criteria for the various Quality Categories were broadly appropriate.
Broadening the new and emerging researcher assessment criteria so that applied research projects may be treated on the same basis as PhD completion	Submission	The panel noted that there is no requirement for a new and emerging researcher to hold a PhD whether for eligibility or for their evidence portfolio to be assigned a 'C(NE)' Quality Category.
Give greater weight to research service	Submissions	See recommendation 2.

Option	Source	Comment
Conduct an audit of the decisions of peer review panels to understand which aspects of evidence portfolios they placed the greatest weight on and abridge portfolios accordingly	Submissions	The panel was satisfied that peer review panels have ample opportunity to provide feedback on the assessment framework.
Provide a clearer definition of 'world-leading'	Submissions	The panel noted that 'world-class' research is defined in the guidelines for the 2018 Quality Evaluation and is reasonably explicit, and many panel-specific guidelines expand on that definition.
<b>Unit of assessment</b>		
Group-based assessment should be pursued but with several possible models mooted, such as TEOs, subject areas, methodologies and researcher self-selection	Submissions	See recommendation 24 and 'Thinking about the unit of assessment'.
Assess Institutions against ideal profile targets such as the number of Quality Categories, and gender and ethnicity mix	Submissions	The panel preferred to maintain the individual as the unit of assessment, and was concerned that profile targets might be misunderstood as quotas or maxima.
Assess Institutions against their research plans	Submissions	The panel considered that this approach would be useful in understanding some of the inputs into the production of research and research contributions, but would not recognise and reward research quality.
Introducing a more intensive assessment of the research of individual researchers	Submissions	The panel noted that qualitative and substantive feedback on the work of individual researchers is desirable, but the transaction costs associated with a centrally coordinated system of this nature would be prohibitive and would displace the obligations of TEOs.
Involve all staff who had an evidence portfolio submitted in the relevant subject area participate in the assessment of relevant evidence portfolios	Submissions	The panel considered that the challenges of panel training, moderation, privacy implications and transaction costs would be prohibitive.
Allow staff the option of participating in either a group or individual assessment	Submissions	The panel was concerned that this option would be impractical to administer.
<b>Using metrics</b>		
Incorporate metrics into peer review assessment		The assessment framework incorporates bibliometrics (see <i>How best to assess excellence</i> ).
Allocate funding on the basis of the number of enrolled students or staff teaching at degree-level	Submissions	The panel noted that the fund was introduced in response to concerns that the funding of research and research students was too reliant on enrolment metrics and that the alternatives proposed would not make it possible to recognise or reward research quality.

Option	Source	Comment
Use bibliometrics to assess research quality on an annual basis to reduce compliance costs, while recognising these may not be suitable for all disciplines	Submissions	See recommendation 22.
<b>Changes to the way funding is calculated</b>		
Change the weightings of the Quality Evaluation, Research Degree Completions and External Research Income measures	Submissions	See recommendations 20 and 21.
The fund should preference certain types of research, such as climate change, topics of national need or the circular economy when allocating funding	Submissions	The panel noted that the government has many other mechanisms to signal its priorities for research, and the fund is best placed to recognise and reward research quality wherever it arises.
Fund Research Degree Completions separately and adjust the amount of funding based on the number of completions	Submissions	The panel noted that funding linked to the enrolment of research degree students is volume-based. The fund uses Research Degree Completions as a proxy measure of research excellence and also creates incentives to encourage more timely completions of research degrees.
Add a weighting for post-doctoral researchers to the funding system	Submissions	The panel was satisfied that both the provisions for new and emerging researchers (see recommendation 26) and the new funding weights for such researchers (see recommendation 10) were sufficient to recognise and reward post-doctoral positions.
Discontinue the External Research Income measure	Submissions	See recommendation 21.
Discontinue subject-area weightings for Evidence Portfolios assigned an 'A' Quality Category and allocate a fixed value		The panel saw some advantages in rewarding research excellence in a fixed way, as it was consistent with the commitment to assessing the intrinsic quality of the evidence presented in evidence portfolios. The panel noted however that setting funding levels might prove to be cumbersome, and the potential effects on funding for some TEOs were very significant.
Introduce a fixed amount of funding for all new and emerging researchers		See above
Increase the funding weightings for Māori Knowledge and Development and Pacific subject areas		See recommendation 11 and 12.
Increase the funding weighting for staff who identify as NZ Māori or one or more of the Pacific ethnicities		See recommendation 10.

Option	Source	Comment
Change the subject area weighting of the 'Design' subject area to match that of the 'Architecture, Design, Planning, Surveying' subject area	Submissions	See recommendation 14.
Introduce supplementary funding for Māori and Pacific student and staff	Submissions	See recommendation 11 and 12. The Research Degree Completions measure also provides an additional funding weighting for TEOs based on the number of Māori and Pacific graduates of research degrees.
Change the funding weighting for the quality categories of 'A', 'B' and 'C' from 5/3/1 to 3/2/1	Submissions	The panel was comfortable with the relative weighting of funded quality categories overall given the demanding standards for an 'A' and 'B' Quality Category.
Introduce a targeted weighting to encourage a culture of open research	Submissions	The panel considered that giving preference to types of research outlets was inconsistent with the commitment to assessing the intrinsic quality of the evidence presented in evidence portfolios.
Allocate funding directly to individual researchers	Submissions	The panel was concerned that such an approach would undermine the institutional autonomy of TEOs and impact on their ability to plan strategically.
Account for the level of research support and administration in funding allocations, with funding advantages for smaller TEOs	Submissions	The panel was concerned that such a model would tend to benefit TEOs that elected to invest less in research infrastructure compared to those that invest more.
Include research dissertations associated with taught postgraduate programmes in the Research Degree Completions measure	Submissions	The panel was satisfied that this issue had been exhaustively considered by Sector Reference Groups in the past.
Introduce a higher weighting for the completion of practitioner postgraduate research relating to initial teacher education	Submissions	The panel was not satisfied that there was a clear case to preference initial teacher education in this way.
Introduce supplemental funding for evidence of impact	Submissions	The panel was concerned to avoid the impression that impact was additional to research excellence and preferred a system where impact was one of many ways that excellence might be demonstrated.
<b>Strengthening the panel system</b>		
Improve training of panel members in various areas including impact, mātauranga Māori research and Pacific research. treatment of part-time staff and extraordinary circumstances	Submissions	See recommendation 7.

Option	Source	Comment
Ensure that the membership of peer review panels is more diverse	Submissions	See recommendation 6.
Offer more extensive training including online resources and targeted capability support for researchers, as well as smaller TEOs and research managers		See recommendation 8.
Ensure that peer review panels include people with expertise in foreign languages and multidisciplinary research	Submissions	The panel recommended changes to the composition of peer review panels to ensure members better reflect the current and growing epistemological diversity of the research workforce (recommendation 6).
Reintroduce specialist advisors	Submissions	The panel considered that specialist advisors had only a minor influence on assessment outcomes in past Quality Evaluations and the mechanisms in the assessment framework, including the scope for extensive commentary about the evidence presented in evidence portfolios and the generalist expertise of panel members are sufficient.
Improve access to assessors with mātauranga Māori assessment expertise to staff	Submissions	The panel recommended a more capacious definition of research excellence, changes to the composition of panels and more extensive training which ought to improve the quality of assessment outcomes.
Panels should explicitly allow certain kinds of research to be counted	Submissions	The panel was concerned to receive submissions that suggested that certain kinds of research were disallowed by panel-specific guidelines. Recommendation 8 is intended to provide a mechanism to address persistent myths about the assessment framework such as these.
Cross-referrals of evidence portfolios should be permitted	Submissions	The panel noted that cross-referrals were possible under the guidelines for the 2018 Quality Evaluation, but, with the exception of those to the Māori Knowledge and Development panel and the Pacific Research panel, were initiated by panel chairs only. The panel was satisfied that this mechanism was appropriate.
<b>Technical changes</b>		
Introduce more flexible rules around the date of publication when determining the eligibility of research outputs	Submissions	The panel was sympathetic to concerns that the eligibility criteria for research outputs might require refinement but considered that such matters should be considered by the Sector Reference Group.
Simplify the eligibility criteria for new and emerging researchers to avoid penalties to people who engage in research prior to PhD completion.	Submissions	See recommendation 26.

Option	Source	Comment
Provide for a wider diversity of output types		The panel was confident that the range of research output types was sufficient but that there was a need to make the boundaries between research outputs and research contributions more porous (recommendation 2) and to focus the research contribution types (recommendation 4).
Simplify the date of final publication for eligibility purposes	Submissions	The panel thought that the criteria relating to the eligibility of research outputs should be considered by the Sector Reference Group for the next Quality Evaluation.
Distinguish within the 'B' Quality Category and introduce an 'A+' Quality Category	Submissions	The panel considered that there were already considerable incentives for high-performing researchers external to the fund and further disaggregating the higher Quality Categories would not have a material effect.
Consider academic representation on audit panel	Submissions	The panel was comfortable that trained auditors were best placed to perform the function of the audit panel, particularly given the considerable influence that the sector has over the design and implementation of the fund.
Stage the implementation of any significant changes over two Quality Evaluations	Submissions	The panel proposed incremental changes that ought not to be burdensome for participating TEOs. Having said that, the panel recognised that the results of the changes might take time to arise.
Alternatives to patents as evidence of commercialisation outcomes should be considered	Submissions	The panel noted that further work might be required on the types of evidence of research outputs that are permitted and anticipated that the Sector Reference Group for the next Quality Evaluation will consider these.
Adopt Open Researcher and Contributor ID numbers as unique identifiers of researchers for the Quality Evaluation	Submissions	See recommendation 31.
<b>Measuring impact</b>		
Better reflect the perspectives of industry and the community	Submissions	The new 'Examples of Research Excellence' section should be able to capture evidence of engagement and impact for communities (see recommendation 2).
Introduce variable weightings for types of impact in the assessment framework		The panel was not persuaded that a separate mechanism would be desirable because of the significant transaction costs that would arise but agreed that impact could be integrated into the new 'Examples of Research Excellence' section (see recommendation 2).
Provide for ex-ante impact assessment		The panel noted advice from the Ministry of Business, Innovation and Employment that forecast impacts were not a particularly reliable way of determining the likely impacts of research.

Option	Source	Comment
Use metrics to assess impact	Submissions	The panel was not convinced that impact measurement could be conducted using a set of simple metrics. For a more general discussion of these issues see <i>'How best to assess excellence'</i> .
Provide for impact to be listed in place of one or more nominated research outputs		See recommendation 2.
Require impact to be weaved into nominated research output descriptors wherever possible		See recommendation 2.
Provide for testimonials to be included as evidence of impact		The panel considered that the kinds of evidence required to verify impact should be considered by the Sector Reference Group.
Provide exemplars of evidence of impact and better guidance to staff potentially in panel specific guidelines	Submissions	See recommendation 8
Create a separate mechanism to assess impact, such as assessing impact at the institutional level using case studies with some mechanism to account for the number of full-time equivalent researchers, and provide financial rewards through a separate funding mechanism	Submissions	The panel was not persuaded that a separate mechanism would be desirable because of the significant transaction costs that would arise but agreed that impact could be integrated into the new 'Examples of Research Excellence' section (see recommendation 2).
Refocus the research contribution section of evidence portfolios on research co-design, end-users, knowledge transfer path to impact and research impact	Submissions	See recommendation 4.
Introduce a section of evidence portfolios that allows researchers to describe their contributions outside academia	Submissions	See recommendation 2.
Enable projects that started earlier than the current assessment period to be reported so that impact may be demonstrated	Submissions	<p>The panel was sympathetic to concerns that the six-year assessment period was a limiting factor in terms of some kinds of impact that might take considerable periods to accrue.</p> <p>The panel was concerned however to ensure that any 'Examples of Research Excellence' (see recommendation 2) are anchored in a research output. It would, therefore, be necessary to evidence impact through a relevant output, which may differ from the original scholarship that gave rise to the eventual impact.</p>

Option	Source	Comment
<b>Improving research collaboration and engagement with end-users</b>		
Give more weight to the research contribution type 'Facilitation, networking and collaboration'		See recommendation 4.
Provide for clearer recognition of collaborative research	Submissions	See recommendation 2.
Use a self-reported Likert scale to describe the relative contribution of researchers to collaborative work	Submissions	The panel was satisfied that the option to provide commentary on the contributions of individuals to research provided richer and more useful information to peer review panels.
<b>Recognising individual circumstances</b>		
Reduce the threshold for extraordinary circumstances from three years to two years.	Submissions	The panel recommended a review of the extraordinary circumstances provision (see recommendation 5).
Look at more equitable treatment of part-time staff by reducing the number of other research outputs or including the FTE of small members on evidence portfolios.	Submissions	The panel recommended that the concept of 'merit relative to opportunity' be introduced which includes consideration of part-time employment (recommendation 3) and that the number of 'Other Research outputs' should be reduced from twelve to six (recommendation 3).  It was noted that including the FTE of staff on evidence portfolios might be confusing in cases where the employment arrangements of staff had changed over time.
Devolve assessment of extraordinary circumstances to TEOs to reduce the number of people potentially reviewing personal or sensitive information	Submissions	The panel recommended that steps be taken to limit access to sensitive or confidential information (recommendation 5). The Sector Reference Group should consider how best to implement this recommendation.
Remove exceptional circumstances and introduce the concept of merit relative to opportunity	Submissions	The panel recommended that the concept of 'merit relative to opportunity' be introduced (recommendation 5).
Including part-time status as an extraordinary circumstance	Submissions	The panel recommended that part-time employment be taken into account through the assessment framework more deliberately (recommendation 5).
Introduce a mechanistic process to pro-rata the expected quantity of research output and contributions based on the full-time equivalent status of staff	Submissions	The panel was reluctant to support mechanistic calculations of expected output given the variability in research practice and the mix of research outputs produced by staff but noted that the Sector Reference Group should consider how best to implement recommendation 5.

Option	Source	Comment
<b>Supporting TEOs with developing research cultures</b>		
Offer partnership opportunities for universities to assist non-university TEOs	Submissions	The panel identified the potential for the TEC to facilitate connections between TEOs as part of our commentary on recommendation 8.
Create an alternative assessment pathway for smaller TEOs		See <i>'For smaller TEOs the costs and benefits of participating are complex'</i> and recommendation 27.
Extend the funding weighting for the 'C(NE)' Quality Category for longer than six years for smaller TEOs	Submissions	The panel noted that the higher weighting for the 'C(NE)' Quality Category applies for six years following each Quality Evaluation which was a reasonable period of time.
<b>Better recognising Māori research</b>		
Widen the scope of the Māori Knowledge and Development panel to better reflect the diversity of Māori research		<p>The Sector Reference Group will consider the scope of panels as part of the implementation of any changes agreed by government, and the members of the Māori Knowledge and Development panel will be involved in the detailed elucidation of panel coverage through the panel-specific guidelines.</p> <p>The panel noted that in several cases during the 2018 Quality Evaluation, the Māori Knowledge and Development panel expressed confidence in the capacity of other peer review panels to assess research that employed relevant methodologies.</p>
Place clearer emphasis on research contributions to the Māori research environment and addressing inequities in outcomes	Submissions	See recommendations 1 and 2.
Create alternative pathway or mechanism for wānanga	Submissions	The panel considered that incremental improvements to the fund would better recognise mātauranga Māori and Pacific research without needing a separate fund, but has recommended several changes that ought to better recognise the research excellence of the staff of wānanga (recommendations 1 and 11), deliver increased investment (recommendation 10) and endorses the investment in the research capability of those organisations (recommendation 27).
Create a separate performance-based fund for mātauranga Māori research	Submissions	The panel considered that incremental improvements to the fund would better recognise mātauranga Māori research without needing a separate fund, but has recommended several changes that ought to better recognise the research excellence of associated with mātauranga Māori research (recommendations 1, 10 and 11).
Introduce a section of evidence portfolios that focuses on Vision Mātauranga	Submissions	The panel considered that the changes it proposed to the assessment framework would contribute to the goals of Vision Mātauranga, particularly better recognising the role of Māori as partners in science and innovation and building the capacity of Māori.

Option	Source	Comment
<b>Better recognising Pacific research</b>		
Create a separate performance-based fund for Pacific research	Submissions	The panel considered that incremental improvements to the fund would better recognise Pacific research without needing a separate fund, but has recommended several changes that ought to better recognise the research excellence associated with Pacific research (recommendations 1, 10 and 12).
Introduce equity or supplementary funding to support Pacific researchers	Submissions	See recommendations 10 and 12.
<b>Workforce</b>		
Allow recognition of more discrete pathways for advancement relating to teaching, research and impact-related research		The panel recommended the introduction of a new section of Evidence Portfolios, 'Examples of Research Excellence', that will allow for better recognition of research excellence broadly conceived (recommendation 2). The panel considered that TEOs were best placed to develop career pathways for staff pursuing careers that emphasised teaching.
Provide component scores to aid researcher development to TEOs	Submissions	The panel was unconvinced that component scores are useful for TEOs or researchers given the emphasis in the assessment system on the final Quality Category. TEOs will have a much richer understanding of the career development status, and future development opportunities of staff than a periodic evaluation of research quality may offer.
Do not provide Quality Categories for individual evidence portfolios to TEOs	Submissions	The panel noted that this change would require legislative change and, in any case, would be contrary to the general principles of transparency of funding decisions.
Place more emphasis on fostering a research environment that attracts, encourages and supports the careers of new and emerging researchers	Submissions	See recommendation 15.
<b>Reporting framework</b>		
Remove the Average Quality Score because it is not meaningful and encourages gaming	Submissions	See recommendation 32.
Revert to an Average Quality Score based on a denominator of the number of evidence portfolios submitted	Submissions	See recommendation 32.
Exclude research only staff from the denominator to encourage a focus on the nexus between teaching and research	Submissions	See recommendation 32.

Option	Source	Comment
Other changes		
Increasing funding allocated through the fund	Submissions	See recommendation 32.
Strengthen the monitoring and evaluation of the PBRF	Submissions	See recommendation 29.
The Education Panel should be reconstituted into two separate panels covering Education and Initial Teacher Education	Submissions	The panel noted that the Sector Reference Group for the next Quality Evaluation would likely consider the number and composition of the peer review panels.
TEOs should be required to report on the uses to which they put any funding received	Submissions	The panel was satisfied that the bulk funding model with institutional accountability managed through other mechanisms such as investment plans was appropriate.

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# Next steps

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The panel recognised that its recommendations form advice to government and a process of consultation on options for change to the fund will follow.

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To the extent that the panel's recommendations are taken forward, we considered that engagement and consultation with the sector on the detailed implementation of any changes will be important. The panel has provided a direction of travel for changes to the fund, but more detailed work is required to tease out their practical implications.

The role that the sector plays in co-designing and co-developing the approach for research assessment is a key strength of the model we employ in New Zealand. These processes should mirror those employed by the Sector Reference Group appointed as part of the preparations for the 2006, 2012 and 2018 Quality Evaluations.

The panel noted that some recommendations will require particular attention. These include the:

- detail of the more capacious definition of research excellence
- design of the new 'Examples of Research Excellence' section of evidence portfolios, and the supporting guidelines,
- categories and examples of the refocused 'Research Contribution' section,
- design and implementation guidance for the new 'merit relative to opportunity' approach,
- review and simplification of the criteria for new and emerging researchers,
- priorities for the ongoing programme of research and evaluation, and
- exploiting of opportunities for integration with Open Researcher and Contributor ID and NZRIS.

There will be other matters that require further exploration, but decisions about these will be for the Sector Reference Group to determine in consultation with government agencies and the sector.

# Appendix A: PBRF Review Panel Terms of Reference

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# Terms of Reference

## Review of the Performance-based Research Fund (PBRF) 2019

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The purpose of the Performance-Based Research Fund (PBRF) is to ensure that excellent research in the tertiary education sector is encouraged and rewarded.

The PBRF is regularly reviewed and the aim of the 2019 review is to examine ways government can continue to support research excellence by improving the effectiveness and efficiency of the PBRF settings and to ensure the benefits of this research are shared across New Zealand. Any changes to PBRF would be take into account the nature of the existing research culture within the tertiary education setting, and the government's priorities for New Zealand's research and innovation system and tertiary education system.

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### Context

The PBRF was established in 2002 and supports excellence in investigator-led research within the tertiary education sector, and in turn, supports quality research-led teaching. The PBRF has supported the development of a stronger research culture across tertiary education organisations over the last 16 years. Given the growing maturity of the research functions across many parts of the tertiary education sector, a focus of this periodic review will be the way that research excellence is evaluated and measured via the PBRF.

The PBRF will allocate \$316 million in government funding to tertiary education organisations in 2018/19, based on the level and quality of their research activities. The PBRF is accessed primarily by universities, although institutes of technology and polytechnics (ITPs), wānanga and private training establishments (PTEs) also participate.

Allocation of research funding across organisations is determined from a mix of measures that evaluate the quality of research, including a six-yearly peer assessment process that evaluates each researcher's past performance, the number of postgraduate degrees completed and the level of external research income organisations earn.

### Previous Reviews of PBRF

The PBRF has been reviewed periodically every 4-5 years since it was established in 2002 (with three previous reviews — 2004, 2008 and 2012/13). The last review found the PBRF had supported a significant increase in the research performance and productivity of tertiary education organisations. Fundamental changes to PBRF were not warranted, but some refinements were made to reduce compliance costs, better support new and emerging researchers, increase collaboration with end-users, improve reporting information and clarify the overarching objectives. The overall impact of those changes of PBRF on the quality of researchers will be known by mid-2019, when this review will begin.

## Revisiting the objectives of the PBRF

The objectives of the PBRF were originally agreed in 2002 and the primary purpose of the PBRF has remained unchanged – namely, rewarding and encouraging high-quality tertiary education research and research-led teaching and learning (at degree level and above).

The PBRF objectives were modified in 2014 after the last PBRF review in 2012/13, to reflect the role of PBRF in supporting government's wider priorities in science, research and innovation.

The primary objectives of the PBRF are to:

- increase the quality of basic and applied research at New Zealand's degree-granting tertiary education organisations (TEOs)
- support world-leading teaching and learning at degree and postgraduate levels
- assist New Zealand's TEOs to maintain and lift their competitive rankings relative to their international peers
- provide robust public information to stakeholders about research performance within and across TEOs.

In doing so, the PBRF will also:

- support the development of postgraduate student researchers and new and emerging researchers
- support research activities that provide economic, social, cultural, and environmental benefits to New Zealand, including the advancement of Mātauranga Māori
- support technology and knowledge transfer to New Zealand businesses, iwi and communities.

This review provides another opportunity to consider the current objectives and the primary purpose of PBRF. It provides an opportunity to ensure that the PBRF objectives align with any changes in direction or priorities within the wider science and research system or the tertiary education system. For example, the update of the *Tertiary Education Strategy* or the development of principles to underpin New Zealand's research practice with a *National Research Charter for Aotearoa New Zealand*.

The Review will consider whether the current objectives need to be further modified to ensure the PBRF meets current and future challenges and priorities in the research system and in the research-led teaching environment.

## Improving research collaboration and engagement with end-users

The individual researcher has been the 'unit of assessment' for measuring the quality of research excellence within the PBRF since it began. This year 8,281 researchers have submitted an evidence portfolio for peer review assessment, as part of the 2018 Quality Evaluation process.

While the amount of information that has to be submitted within a portfolio had been reduced for 2018 to lessen compliance costs, the process of individual evaluation can still be burdensome, imposing costs on the individual researcher, their organisation and the government.

Collaboration is a fundamental component of high-quality science, research and innovation, and collaboration is explicitly supported and encouraged by other government funding of research activity (for example, the National Science Challenges and the Centres of Research Excellence [CoRES]).

Many in the sector see the individual researcher as the best way of establishing the quality of research across organisations. However, focussing on a group unit of assessment may be a way of encouraging effective collaboration amongst researchers and with end-users. A group approach to research assessment could also support greater mentoring of new and emerging researchers and ensure that New Zealand sustains and grows its research workforce (particularly given the highly skilled but aging research workforce).

Collaboration, particularly with end-users of research, could also be enhanced the ability of organisations or 'groups' to provide improved information on the pathway to impact of their research activity. The group or organisational lens could be a more appropriate unit for PBRF to assess impact, rather than an individual researcher. The individual researcher has limited capacity to directly link his/her research work to impacts on economic, social and environmental outcomes, whereas a group or organisation can be more easily measured in how they have supported their researchers' efforts in collaboration, outreach activities, dissemination and engagement (which ultimately create an impact for the research).

Group-based assessment could also prove to be more complicated for tertiary education organisations and government in terms of determining the membership, measurement and definitions for a group (for example, grouped by department, around research themes, by disciplines or interdisciplinary groups).

The Review will examine the merits of moving from individual-based assessment to a group-based assessment, in terms of boosting collaboration, supporting workforce development and sustainability, reducing compliance costs and measuring impact of research.

If individual is to be retained as the unit of assessment, the Review will identify options within the PBRF settings to improve collaboration and impact assessment via other PBRF settings.

## Boosting the impact of tertiary education research

Across the world, governments are working to ensure public investment in research demonstrates an 'impact' in terms of improvements in societal wellbeing, economic development and environmental outcomes. New Zealand's *National Statement of Science Investment 2015-2025* has impact as one of two pillars of the science system.

Tertiary education organisations also have an explicit legislative role as critic and conscience of society (s.162 (4)(a)(v) Education Act 1989), which also underpins the organisations and research staff engaging in impactful conversations with New Zealand communities, based on their research knowledge and expertise.

It is important that the benefits of research undertaken in the tertiary sector are shared across New Zealand society. There are concerns that the current Research Contribution measure in the Quality Evaluation may not adequately capture the value of applied research, patents, mātauranga Māori research and other research which benefits local community, industry or environment.

Measuring impact from research activity is not without complexity, but many other government research investments already target impact specifically. Any change to PBRF to better assess impact will need to strike a balance in terms of compliance costs and rewarding impactful research activity. The review will draw on the changes to assessing impact internationally through metrics, case studies and impact statements, including in the United Kingdom, Canada and Australia.

The Review will examine options for improving the assessment and rewards for research that has a tangible impact for communities, the environment, businesses or government sectors. The Review will provide advice on the costs and benefits of introducing further measures to assess impact into the PBRF.

## Assessing excellent research with lower transaction costs

Currently the excellence in research undertaken by tertiary education organisations determined by three components – primarily the quality evaluation assessment process every six years, the yearly postgraduate research degree completions and the amount of external research income generated annually.

The PBRF quality evaluation assessment process is thorough and robust in measuring each researcher's performance in terms of research outputs (journal articles, conference presentations, creative work exhibition or performance, etc) and research contribution (eg supervision of research student and factors that reflect a researcher's contribution to student-related activity, impact of research for a community or business, networking and collaboration, peer or industry recognition or prizes, etc)

The review provides an opportunity to consider how the PBRF settings could be adjusted to measure excellent research at a lower transaction cost (either for staff, management or government). This will include consideration of:

- Reducing the frequency of the quality evaluation by moving from six-yearly cycle to eight or ten-yearly assessment cycle, and whether variable assessment cycles should be introduced depending on the seniority of researchers
- Introducing simpler metrics to assess research quality. For example, using new information research reporting data such as the *National Research Information System* (an information hub about New Zealand's research activities), which has the potential to reduce compliance costs via streamlined research reporting. Other options that could be considered are use of new data systems that monitor dissemination activities, use of H-indices or bibliometrics to provide more frequent excellence measures for particular research disciplines.
- Introducing self-assessment processes for some research areas or some tertiary education organisations that have a strong research culture embedded.

The Review will identify options for modifying current PBRF settings to reduce transaction costs for research staff, tertiary organisations and government, including changes to the unit of assessment, changes in the time period(s) for quality evaluation, use of new metrics to assess research quality, use of self-assessment and the funding proportions allocated across the current three measures (quality evaluation, research degree completions and external research income).

### **Recognising and rewarding all types of research activity**

There is ongoing concern that the PBRF is not adequately recognising and rewarding the full spectrum of research activity undertaken with tertiary education organisations, from basic through to professional and applied research, mātauranga Māori research and new fields of research drawing on Pacific and other cultural perspectives.

PBRF assessment processes (including the appointment and training of panel members for the six-yearly quality evaluation) and guidelines have been continually improved to ensure equitable assessment of all types of research. However, concerns continue to be voiced within the sector that PBRF discriminates against applied research in favour of fundamental research. There is limited evidence that such discrimination occurs and analysis of some quality scores from the last quality evaluation do not point to any explicit bias.

The nature of the PBRF settings may not adequately recognise the excellence of some specific types of research undertaken across the tertiary education sector. Alternatively, PBRF settings may recognise excellent research across a wide range of activity, but this excellence is not rewarded because the tertiary organisations undertaking the research do not have the capability or capacity to effectively engage in the PBRF process (for example,

where insufficient organisational resources or knowledge are available to support the submission of high-quality evidence portfolios).

Wānanga have previously raised concerns about funding for mātauranga Māori research by PBRF, which resulted in the establishment of a separate *Wānanga Research Aspirations* project. This project will consider a bespoke approach to support for mātauranga Māori research. However, for wānanga that continue to participate in PBRF, the review will consider what further support could be provided to them, and for Māori research undertaken in other tertiary organisations.

The Review will consider how the PBRF can better support the research activity of all types of research, including basic, applied, creative, mātauranga Māori research, and Pacific or other cultural research perspectives. This will include consideration of whether any specific support is required to enable some organisations to effectively participate in the PBRF, or whether a separate funding mechanism may be required to support particular types of research activity or help organisations build their research capacity and capability.

### **Sustainable and diverse workforce with investigator-led research capability**

The tertiary education sector plays a key role in developing New Zealand's research workforce, and this is reflected in the specific funding within the PBRF for annual research degree completions. The way people engage in work will continue to evolve and the PBRF will need to ensure that it does not disadvantage any researchers (for example, the changing nature of work may increase numbers of staff working part-time, flexible working arrangements, working across multiple workplaces or contracting arrangements).

There are concerns that the nature of the PBRF quality evaluation process may disadvantage those working less than fulltime due to family and parental responsibilities, who cannot provide as wide a research contribution or research outputs. The review will consider whether further consideration needs to be given to provide better recognition for staff working less than fulltime (for example, the instances in which tertiary education organisations are determining and verifying parttime employment due to childcare as an extraordinary circumstance).

There has been concern that tertiary organisations' response to the PBRF settings have led to a less diverse and sustainable workforce. Changes were made following the 2012/13 review to better support the sustainability of the workforce with the introduction of a financial weighting for evidence portfolios submitted by new and emerging researchers. There is also extra weighing provided by PBRF for research degree completions by Māori and Pacific students or for a thesis submitted in te reo Māori.

Senior researchers have a key role in supporting the development of new and emerging researchers, and concerns have been raised that the nature of PBRF rankings can have a deleterious impact on organisations' approaches to mentoring and developing the next generation of researchers. For example, moving to a group as unit of assessment for quality evaluation may enable greater mentoring and collaboration within a discipline or department.

The Review will examine the effectiveness of the PBRF on the development of highly-skilled and diverse research workforce for New Zealand in the context of the changing nature of work and workplaces. This will include consideration of whether any adjustments to PBRF settings are required to support a sustainable mix of gender, ethnicity and ages across the tertiary research workforce.

The Review will also consider whether the PBRF creates any incentives or disincentives within tertiary education organisations given the changing nature of work and the continued evolution of new types of working arrangements, ways of working and workforce development.

# Appendix B: Principles and objectives

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The following presents the objectives and principles of the fund. The new wording is underlined. Deleted wording is indicated by text that has been struck through.

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## ■ The objectives of the PBRF

The PBRF is a performance-based funding system to encourage and reward excellent research in New Zealand's degree-granting organisations. It does not fund research directly but supports research, including post-graduate level teaching support.

The primary objectives of the PBRF are to:

- Increase the quality of basic and applied research at New Zealand's degree-granting tertiary education organisations (TEOs)
- Support world-leading teaching and learning at degree and postgraduate levels
- To ensure a flourishing and inclusive system for developing and sustaining research excellence in New Zealand
- Assist New Zealand's TEOs to maintain and lift their competitive rankings relative to their international peers
- Provide robust public information to stakeholders about research performance within and across TEOs.

In doing so, the PBRF will also:

- Support the development of postgraduate student researchers and new and emerging researchers
- Support research activities that provide economic, social, cultural, and environmental benefits to New Zealand, including the advancement of Mātauranga Māori
- Support technology and knowledge transfer to New Zealand businesses, iwi and communities.

To meet these objectives, the main focus of the PBRF is on rewarding and encouraging excellence. Excellence is not just about the production of high-quality research articles, books, exhibitions and other forms of research output. It includes all of the following:

- the production and creation of leading-edge knowledge
- the application of that knowledge
- the dissemination of that knowledge to students and the wider community, and
- supporting current and potential researchers (e.g. postgraduate students) in the creation, application and dissemination of knowledge.

## ■ PBRF governing principles

The PBRF is governed by the following principles:

- **Comprehensiveness:** the PBRF should appropriately measure the quality of the full range of original investigative activity that occurs within the sector, regardless of its type, form, or place of output.
- **Respect for academic traditions:** the PBRF should operate in a manner that is consistent with academic freedom and institutional autonomy.
- **Consistency:** evaluations of quality made through the PBRF should be consistent across the different subject areas and in the calibration of quality ratings against international standards of excellence.
- **Continuity:** changes to the PBRF process should only be made where they can bring demonstrable improvements that outweigh the cost of implementing them.
- **Differentiation:** the PBRF should allow stakeholders and the government to differentiate between providers and their units on the basis of their relative quality.
- **Credibility:** the methodology, format and processes employed in the PBRF must be credible to those being assessed.
- **Efficiency:** administrative and compliance costs should be kept to the minimum consistent with a robust and credible process.
- **Transparency:** decisions and decision-making processes must be explained openly, except where there is a need to preserve confidentiality and privacy.
- **Complementarity:** the PBRF should be integrated with new and existing policies and quality assurance systems for degrees and degree providers.
- **Cultural inclusiveness:** the PBRF should reflect the cultural nature of New Zealand and the special role and status of the Treaty of Waitangi (te Tiriti o Waitangi), and should appropriately reflect and include the full diversity of New Zealand's population.
- **Partnership:** The fund should reflect the bicultural nature of New Zealand and the special role and status of the Treaty of Waitangi (Te Tiriti o Waitangi).
- **Inclusiveness:** The fund should encourage and recognise the full diversity of research methodologies, knowledges, epistemologies and methods to reflect the full diversity of New Zealand's people.
- **Equity:** Different approaches and resources are needed to ensure that the measurement of research excellence leads to equitable outcomes.

# Appendix C: Informants and submissions

This appendix provides more detail on the key informants that we met with, the organisations that made submissions to the panel and the presentations and reports we received.

## ■ Key informants

The panel interviewed 60 key informants generally organised into groups based on common characteristics and engaged with representatives of the major tertiary education sub-sectors (see Table 7).

TABLE 7: KEY INFORMANTS

Key Informant	Institutional affiliation
Pauline Adams	Te Wānanga o Aotearoa
Dr M Daud Ahmed	Manukau Institute of Technology
Megan Allardice	Waikato Institute of Technology
Jenny Aimers	Otago Polytechnic
Dr Shirley Barnett	Massey University
Lindsay Baxter	Te Wānanga o Aotearoa
Professor Richard Blaikie	University of Otago
Dr Ann Brower	University of Canterbury
Professor Giselle Byrnes	Massey University
Manu Caddie	Hikurangi Enterprises
Professor Martin Carroll	Manukau Institute of Technology
Lee Cooper	Tertiary Education Union
Professor Sally Davenport	Victoria University of Wellington
Professor Trevor Drage	University of Waikato
Professor Grant Edwards	Lincoln University
Dr Shane Edwards	Independent researcher
Dr Steven Elers	Massey University
Professor Juliet Gerrard	Prime Minister's Chief Science Advisor
Michael Gilchrist	Tertiary Education Union
Professor Sir Peter Gluckman	University of Auckland
Professor Robert Greenberg	University of Auckland
Professor Grant Guilford	Victoria University of Wellington
Dr Myk Habets	Laidlaw College

Key Informant	Institutional affiliation
Dr Jeremy Hapeta	Massey University
Professor Harlene Hayne	University of Otago
Professor Nigel Hemmington	Auckland University of Technology
Dr Kelly Holt	New Zealand College of Chiropractic
Professor Margaret Hyland	Victoria University of Wellington
Professor Bob Jahnke	Massey University
Assoc. Professor Alex James	University of Canterbury
Dr Bronwen Kelly	Universities New Zealand
Professor Lynda Johnston	University of Waikato
Professor Robyn Longhurst	University of Waikato
Dr Shireen Maged	Te Wānanga o Aotearoa
Professor Jim Mann	University of Otago
Professor Derek McCormack	Auckland University of Technology
Professor Stuart McCutcheon	University of Auckland
Professor Bruce McKenzie	Lincoln University
Dr Tara McLaughlin	Massey University
Professor Jim Metson	University of Auckland
Dr Karamia Muller	University of Auckland
Ben Ngaia	Te Wānanga o Aotearoa
Professor Anne Noble	Massey University
Dr Ashok Parbhu	Weltec Institute of Technology
Professor Neil Quigley	University of Waikato
Professor Steven Ratuva	University of Canterbury
Dr John Reid	University of Canterbury
Priyanka Roy	Victoria University of Wellington
Anthony Scott	Science New Zealand
Dr Michael Shone	Ara Institute of Canterbury
Assoc. Professor Jonathan Sibley	Eastern Institute of Technology
Dr Naomi Simmonds	Te Whare Wānanga o Awanuiārangi
Professor Hamish Spencer	University of Otago/Ministry of Business, Innovation and Employment
Professor Jan Thomas	Massey University
Seuta'afili Dr Patrick Thomsen	University of Auckland
Chris Whelan	Universities New Zealand
Shar Williams	Te Wānanga o Aotearoa
Dr Scott Wilson	Unitec Institute of Technology
Tumuarāmātauranga Nepia Winiata	Te Wānanga o Aotearoa
Professor Ian Wright	University of Canterbury

## ■ Submissions

The panel received 50 submissions from organisations and individual researchers or groups of researchers. The distribution of submissions by type is presented in Table 8.

**TABLE 8: COUNT OF SUBMISSIONS BY SUBMITTER TYPE**

Type	Submissions (no.)
Individuals or groups of researchers	19
Universities (including units/departments thereof)	14
Institutes of Technology and Polytechnics	6
CRIs	1
Other Crown entities	1
Peak bodies (including committees thereof)	3
Other organisations	6
Total	50

The organisations from which submissions were received as set out in Table 9. Nineteen submissions were received from individual researchers who we have not identified.

**TABLE 9: LIST OF SUBMITTING ORGANISATIONS**

<b>Institute of Technology and Polytechnics</b>
Ara Institute of Canterbury
Eastern Institute of Technology   Te Aho a Māui
Otago Polytechnic   Te Kura Matatini ki Otago
Toi-Ohomai Institute of Technology
Universal College of Learning   Te Pāe Mātauranga Ki Te Ao
Waikato Institute of Technology   Te Kuratini o Waikato
<b>Universities</b>
Auckland University of Technology   Te Wānanga Aronui o Tāmaki Makau Rau
Lincoln University   Te Whare Wānaka o Aoraki
Massey University   Te Kunenga Ki Pūrehuroa
– College of Creative Arts Toi Rauwharangi
The University of Auckland   Te Whare Wānanga o Tāmaki Makaurau
– Planning and Information Office
– Faculty of Arts
The University of Canterbury   Te Whare Wānanga o Waitaha
– Library
The University of Otago   Te Whare Wānanga o Otago
– Department of Public Health (Wellington)
– Division of Health Sciences

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The University of Waikato | Te Whare Wānanga o Waikato

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Victoria University of Wellington | Te Herenga Waka

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**Crown Research Institute**

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Callaghan Innovation

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**Other Crown entity**

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Environmental Protection Authority | Te Mana Rauhi Taiao

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**Peak bodies**

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Universities New Zealand | Te Pōkai Tara

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– Komiti Pasifika

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Science New Zealand

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**Other organisations**

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Higher Education Research and Development Society of Australasia

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Kiwinet

---

Otago University Students' Association

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The Royal Society of New Zealand Te Apārangi

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Tertiary Education Union | Te Hautū Kahurangi

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The Mind Lab

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## ■ Supporting presentations

The panel received the presentations and reports set out in Table 10.

**TABLE 10: SUPPORTING REPORTS AND PRESENTATIONS**

Topic	Type	Source
Research, Science and Innovation Strategy	Presentation	Ministry of Business, Innovation and Employment
New Zealand Research Information System	Presentation	Ministry of Business, Innovation and Employment
Tertiary Education Strategy	Report	Ministry of Education
PBRF Review Submissions Analysis	Report	Ministry of Education
PBRF Review Submissions Analysis	Report	Ministry of Education
PBRF demographic data	Presentation	TEC
Quality Evaluation results	Presentation	TEC
Terms of Reference Issue Paper One, Revisiting the Objectives of the PBRF	Issues paper	Ministry of Education
Terms of Reference Issue Paper Two, Minimising Transaction Costs of the PBRF	Issues paper	Ministry of Education
Terms of Reference Issue Paper Three, Recognising and rewarding all types of research activity	Issues paper	Ministry of Education
Terms of Reference Issue Paper Four, Sustainable and diverse workforce with investigator-led research capability	Issues paper	Ministry of Education
Terms of Reference Issue Paper Five, Boosting Impact of Research	Issues paper	Ministry of Education
Terms of Reference Issue Paper Six, Improving Research Collaboration	Issues paper	Ministry of Education
Modelling of funding weighting options	Report	Independent support person
Demographic analysis	Report	Independent support person
Funding analysis	Report	Ministry of Education

## ■ Other literature

A list of the literature considered by the panel is set out in the *Bibliography* section of this report.

# Appendix D: Contribution to the Research Environment

Contribution types to be retained and amended through consultation with the sector

Category	Examples
Research Discipline and Environment	Leadership roles or contributions within the discipline and/or institution
Facilitation, Networking and Collaboration	Major roles in conferences Leadership or contributions to research networks Hosting international visitors Major roles in Professional or Industry groups/Consortia
Outreach and Engagement	Leadership or contributions to outreach and engagement activities Development and maintenance of deep, sustained and enduring partnerships outside of institutions, particularly with the community, iwi and industry Prominent role in critic and conscience activities
Research and Funding Support	Track record of securing contestable grants
Prizes, Fellowships and Awards	Significant, externally validated, awards relative to the career stage of staff
Researcher Development	Track record of successful mentoring of junior colleagues, particularly in relation to historically underrepresented groups Successful initiatives to support new and emerging/early career researchers
Reviewing and Refereeing	Major roles in funding, advisory, promotions, tenure committees Specialist advisory roles to institutions, governments, international bodies
Student Factors	Track record of student success, particularly in relation to historically underrepresented groups
Uptake and Impact	Leadership roles or contributions to research dissemination outside academia Leadership roles or contributions to developing institutional capacity to support uptake and impact Entrepreneurial success
Māori Research Contributions	Leadership in or contributions to undertaking and supporting research with Māori communities Institutional leadership in or contributions to developing relative cultural capacity relating to research
Pacific Research Contributions	Leadership in or contributions to undertaking and supporting research with Pacific communities Institutional leadership in or contributions to developing relative cultural capacity relating to research

Note: It is recognised that contributions will be commensurate with the expectations of the staff member's role and career stage.

The following contribution types should be discontinued: Invitations to Present (removed as all are examples of peer esteem and can be added to Examples of Research Excellence); Other Evidence (Removed as all are examples of peer esteem); and Recognition of Research Outputs (removed as all are examples of peer esteem).

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# Glossary

## ■ Acronyms

Acronym/term	Description
FTE	Full-time equivalent
MBIE	Ministry of Business, Innovation and Employment
MOE	Ministry of Education
NZ RIS	New Zealand Research Information System
PBRF	Performance-based Research Fund
TEC	Tertiary Education Commission
TEO	Tertiary Education Organisation

## ■ Selected terms and their meaning

Acronym/term	Description
Evidence Portfolios	Evidence Portfolios are summations of the research outputs and contributions of staff
Nominated Research Output	Nominated Research Outputs are the up to four highest quality outputs (such as journal articles, performances or patents) that a researcher has produced over the preceding six years
Quality Category	Quality Categories are assigned to evidence portfolios by peer review panels. Each quality category denotes different degrees of research excellence.

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# Proposed Changes and Options for Strengthening the Performance- Based Research Fund (PBRF)

Draft Discussion Document

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# Foreword

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# Introduction

## Background

The Performance-Based Research Fund (PBRF) is designed to encourage and reward high-quality tertiary education research and research-led teaching, across all subject areas and types of research, in New Zealand's degree-granting tertiary education organisations (TEOs). The PBRF does not fund research directly but supports research, including post-graduate level teaching support.

The PBRF, established in 2002, is the main mechanism of Government funding for tertiary education research capability. The fund is a capped pool of \$315 million per year that can only be increased through Budget decisions.

The PBRF is accessed by universities, wānanga, institutes of technology and polytechnics (ITPs) and private training establishments (PTEs). PBRF funding works alongside tuition subsidy funding to enable New Zealand students and international students studying in New Zealand to receive world-class degree and postgraduate qualifications.

PBRF funding is used throughout our tertiary education system to support a wide range of different research that provides economic, social, cultural and environmental benefits to New Zealand. The PBRF is a key aspect of our tertiary research system and contributes to New Zealand's broader research, science and innovation system.

In its operation, the PBRF employs peer-review processes and performance measures. The three components of the fund are the:

- Quality Evaluation (55% of funding),
- Research Degree Completions (25% of funding) and
- External Research Income (20% of funding)<sup>1</sup>.

## Review of the PBRF

The PBRF has been reviewed after every Quality Evaluation, the last review was held in 2012/13. With this in mind, Government commissioned a review of the PBRF (the Review) that commenced on 29 July 2019.

The Review examined the ways that the Government can continue to support research excellence by improving the effectiveness and efficiency of PBRF settings and ensuring that it delivers outcomes for learners, businesses, communities and New Zealand as a whole.

## Terms of Reference for the PBRF Review

The [Terms of Reference](#) for the PBRF Review highlighted six areas for consideration:

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<sup>1</sup> See Annex 1 for further information as to how the components operate

- *Revisiting the PBRF objectives:* the Review considered whether the PBRF objectives meet current and future challenges and priorities.
- *Improving research collaboration and engagement with end users:* the Review considered the merits of moving from individual-based assessment to a group-based assessment, in terms of collaboration, supporting workforce development, reducing compliance costs and measuring impact of research.
- *Boosting the impact of tertiary education research:* the Review examined the PBRF assessment of impact on communities, the environment, businesses and Government.
- *Assessing excellent research with lower transaction costs:* the Review examined options for modifying current PBRF settings to reduce transaction costs for research staff, TEOs and Government.
- *Recognising and rewarding all types of research activity:* the Review considered how the PBRF can better support the activities of all types of research.
- *Sustainable and diverse workforce with investigator-led research capability:* the Review examined the effectiveness of the PBRF on the development of a highly-skilled and diverse research workforce.

### The PBRF Review Panel

An independent panel was appointed by Associate Minister of Education Jenny Salesa and Minister of Education Chris Hipkins in July 2019 to carry out the Review of the PBRF. The panel members were:

- Professor Linda Tuhiwai Smith - Chair (*University of Waikato*)
- Professor Wendy Lerner (*Victoria University of Wellington*)
- Dr David Phipps (*York University Canada*)
- Dr Ian Town (*Ministry of Health*)
- Associate Professor Yvonne Underhill-Sem (*University of Auckland*)
- Associate Professor Marcus Williams (*Unitec Institute of Technology*)

The panel engaged with the tertiary education research sector during the Review, meeting with a range of key informants and stakeholders. The panel also invited written submissions to inform their review.

Throughout the Review, the panel was supported by the Ministry of Education, the Tertiary Education Commission (TEC) and the Ministry of Business, Innovation and Employment (MBIE).

The panel provided Minister Salesa with a final report on 31 January 2020 [LINK TBC]. The changes and options proposed in this discussion document are significantly informed by the recommendations made by the panel in its report.

### The Panel's Findings

Throughout the Review, the panel heard that the PBRF has contributed to an improvement in measured tertiary research quality; that previously unrecognised strengths in our tertiary system are increasingly recognised and rewarded; and that the fundamentals of the fund largely work well.

The panel heard that the following aspects of the PBRF should be retained:

- the Quality Evaluation (QE) and Research Degree Completion (RDC) components;
- research excellence evaluated by peer-review assessment;
- the individual as the unit of assessment;
- a six year period between QEs.

To strengthen the PBRF, the panel heard that the PBRF definition of research needs to be broadened; diversity and inclusion must be well integrated into our tertiary education research system; and improvements must be made to Government support for tertiary education research.

### **This Discussion Document**

The twenty-six proposed changes and options for the PBRF that we are consulting on are grouped under three key objectives:

1. [Broadening the PBRF conception of research excellence;](#)
2. [Enabling a more sustainable and diverse research workforce;](#)
3. [Improving how Government supports research across the tertiary education sector.](#)

We are also consulting on some operational changes to the PBRF that are designed to support these three key objectives. The full suite of proposed changes are summarised as [Annex Two](#).

We have structured this discussion document around these objectives. Each section details the changes and options we are proposing in order to achieve that objective, the reasons for doing so and also some key questions we are seeking your feedback on.

An indicative timeline for proposed changes and options is summarised as [Annex Three](#).

### **Delaying the Next Quality Evaluation Until 2025**

The next Quality Evaluation was scheduled to take place in 2024. However, this has now been delayed by 12 months, until 2025. This is due to the delays to the Review caused by COVID-19. Delaying until 2025 will allow the TEC and the Sector Reference Group to conduct a robust process of engagement on any operational changes before guidance is issued. We are also conscious that the full impacts of COVID-19 on research programmes and researchers may not yet be known, and that a 2024 Quality Evaluation may have risked a lack of engagement as the focus remained on the COVID-19 response.

# Overview of public consultation

## Our approach

We recognise the significance of the PBRF as the main mechanism of Government funding for research capability that supports research, knowledge generation as well as teaching and learning throughout our TEOs. We also recognise the broader impacts of tertiary education research on the economic, social, cultural and environmental aspirations of New Zealand.

Given the broad reach of the benefits and impacts of the PBRF, we want to hear your views on the proposed changes and options for the fund. We have indicated throughout this discussion document where we are particularly interested in hearing from individual researchers (marked in green) or a departmental/organisational perspective (marked in blue).

## Public consultation timeframes

Consultation on the proposed changes and options for the PBRF will occur from early August 2020. We are asking for feedback on the proposed changes and options via an online survey and targeted meetings.

A link to the online survey can be found on the Education Conversation | Kōrero Mātauranga website: [LINK TBC]

We also welcome any written submissions on the proposals in this discussion document. Written submissions should be sent to [PBRF.Consultation@education.govt.nz](mailto:PBRF.Consultation@education.govt.nz)

## What will happen following public consultation

Feedback we receive as part of this public consultation will inform any final changes to the PBRF that are made. We expect to confirm any changes by the end of 2020.

# Proposed Changes and Options for the PBRF

## Broadening the PBRF conception of research excellence

Throughout the Review, the panel heard that the PBRF conception of research needs to encompass the full range of research activity and cultures in our tertiary education system, all of which lend to research excellence. The panel heard that the richest examples of research excellence must be drawn out with a focus on the highest quality research outputs and the most important contributions to the research environment. To support this, we propose:

### 1. Modifying the current objectives of the PBRF

To reflect the changing research environment in New Zealand and Government's long-term strategic direction and priorities for the tertiary education system, the objectives of the PBRF would be modified by:

- a. Adding a new objective, that "*the PBRF ensure a flourishing and inclusive system for developing and sustaining research excellence in New Zealand*" (see [Annex Four](#) for current PBRF objectives).

Q. Do you support the addition of this objective?

Q. Could this objective be improved?

### 2. Refreshing the PBRF's definition of research excellence

The QE peer-review panels put into action the PBRF definition of research excellence within their disciplines. To support this work, and to recognise a wider range of world-class research excellence, we propose four options for refreshing how the PBRF defines and assesses research excellence:

- b. Rewording the PBRF definition of research to: emphasise excellence; encompass the production of research, engagement and impact relating to that research; and support for vibrant, diverse research cultures (see [Annex Five](#));
- c. Replacing the Nominated Research Outputs (NRO) component with *Examples of Research Excellence (ERE)*;
  - A shift to EREs would allow researchers to present up to four examples of research excellence across research production, engagement, impact and support for research cultures. These would still be anchored by research outputs.
- d. Replacing the Other Nominated Research Outputs (ONRO) component with *Other Examples of Research Excellence (OERE)* and reducing the maximum number from twelve to six;
- e. Refocusing the Research Contributions section on the best examples of activities that contribute to the sustainability and viability of the research system (see [Annex Six](#)).

Q. Do you support a refresh of the PBRF's definition of research?

Q. Are there other elements that need to be encompassed in this definition?

Q. What impacts do you anticipate a shift to ERE and OERE components would have?

Q. Aside from EREs, where else in the PBRF could research impact be considered?

Q. How would these shifts change your approach to your EP?

Q. How would you expect this shift to change the behaviours of your researchers?

Q. What benefits and impacts will streamlining Research Contributions have?

### 3. Reviewing subject areas

The PBRF applies subject area weightings to funding, these range from 1 to 2.5. These weightings are linked to Student Achievement Component funding and are intended to reflect the relative costs of research in different subject areas.

As these weightings are used in both the QE and RDC components, we propose:

- f. Reviewing subject area weightings to ensure they accurately reflect the costs to TEOs in undertaking a full range of research.

Q. Do you support a review of the current subject area weightings? Why?

Q. Do you believe the current subject area weightings accurately reflect the costs of research?

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## Enabling a more sustainable and diverse research workforce

*During the Review, the panel heard that more work needs to be done to support equity, diversity and inclusion in our tertiary education research system for both our researchers and their work. The panel heard that building a representative and diverse workforce is an important aspect of this, and that action must be taken to direct resources to areas where research excellence has been undervalued. To enable a sustainably diverse workforce and system, we propose:*

### 4. Improving support for mātauranga Māori and Pacific research, and Māori and Pacific researchers

There are longstanding concerns that the PBRF does not sufficiently value mātauranga Māori and Pacific research, and that Māori and Pacific researchers are underrepresented in the research workforce.

We propose three options for changing the PBRF to better support and build a diverse research system:

- g. Increasing the subject area weighting for EPs assessed by the Māori Knowledge and Development (MKD) and Pacific Research (PR) panels from 1 to 2.5;
  - This is intended to improve funding for these research areas and to support further capability and capacity development throughout tertiary education.
- h. Assigning an additional funding weighting of 2 for EPs submitted by staff who identify as Māori or Pacific;
  - This is intended to improve funding support for building a sustainable and diverse workforce.
- i. Adopting both of the above options.

### 5. Reviewing qualifying criteria

The panel heard that the current extraordinary circumstances qualifying criteria do not allow peer-review panels to take full account of circumstances that impact researchers; and the new and emerging researchers qualifying criteria are too complex. To ensure PBRF settings support researchers, we propose:

- j. Reviewing the extraordinary circumstances qualifying criteria, to introduce a 'merit relative to opportunity' concept<sup>2</sup> to be exercised by peer-review panels (see [Annex Seven](#) for current criteria);
- k. Reviewing the new and emerging qualifying criteria, with a view to simplification (see [Annex Eight](#) for the current criteria).

<sup>2</sup> How this would work in practice would need to be determined following this consultation and in collaboration with the sector. It would likely include ensuring a researcher's work is assessed relative to their experience, career stage and opportunities available to them.

Q. Do you support increasing the subject area weighting for EPs assessed by the MKD and PR panels?

Q. Do you support an additional funding weighting for EPs submitted by staff who identify as Māori or Pacific?

Q. How would your department/TEO likely respond to these changes?

Q. Are there alternative measures to better recognise and reward mātauranga Māori and Pacific research and to support Māori and Pacific researchers?

Q. Do you support a refresh of extraordinary circumstances criteria?

Q. Do you support a review of new and emerging criteria?

Q. What key criteria should be modified, added or removed?

Q. How would you like to see 'merit relative to opportunity' concepts being applied by peer-review panels?

Q. How does your department/TEO assess the circumstances of researchers?

## Improving how Government supports tertiary sector research

The Review highlighted work already underway that can contribute to improving how Government supports tertiary sector research. Opportunities for changes to the PBRF settings to further improve support for tertiary research was also highlighted. In response, we propose:

### 6. Progressing work that builds tertiary sector research capability and capacity

A wider tertiary education work programme will be progressed to support tertiary research capability and capacity. Currently this includes the establishment of the New Zealand Institute of Skills & Technology (NZIST) and the Wānanga Research Aspirations (WRA) project. We propose:

- l. Supporting the NZIST to focus on researcher support and research capability and development, during its transition period;
- m. Co-designing with wānanga an appropriate and sustainable funding solution to meet their research aspirations, including through the WRA project;
- n. Working across Government to support a sustainable Māori and Pacific research workforce and a diverse research system. This includes linking in with MBIE's Equity, Diversity and Inclusion work programme.

Q. Are there additional considerations for improving how Government supports research across the tertiary education sector?

### 7. Funding backstop for the NZIST in the next Quality Evaluation;

The next QE will be the first that the NZIST will be able to participate in, as a new entity. The consolidation of research cultures, processes and systems from across the ITP sector will take time, to support this we propose:

- o. Fixing the minimum proportion of funding to be allocated to the NZIST in the next QE as the proportion allocated through the 2018 QE to ITPs, contingent on the NZIST participating in the QE.
  - This backstop funding is intended to assist the NZIST in retaining its research capability during its transition period.

Q. Do you support fixing the minimum proportion of funding for the NZIST in the next QE?

Q. Are there other considerations that need to be made in supporting the NZIST in the next QE?

### 8. Reflecting the strengthened PBRF

The name of the PBRF has not been altered since its establishment in 2002. We propose to better reflect the strengthened PBRF by:

- p. Renaming the PBRF in English and/or te reo Māori;
- q. Modifying the guiding principles to better reflect *partnership, inclusiveness, and equity* (see [Annex Nine](#)).

Q. Do you support renaming the PBRF?

Q. Do you have recommendations for a new name?

Q. Do you support modifying the guiding principles as proposed?

## 9. Rebalancing the components of the PBRF

There are three components of the PBRF, each of which must contribute to the purpose of the PBRF, to encourage and reward excellent research in New Zealand's degree-granting organisations. In doing so, the PBRF does not fund research directly but supports research, including post-graduate level teaching support.

External Research Income (ERI) funding is allocated based on the amount and type of income received by TEOs from external sources for research purposes. Currently, 20% of the PBRF is allocated through the ERI component.

The ERI incentivises TEOs to seek external funding. The panel heard from the sector that this worked well to establish this practice throughout TEOs. The panel also heard that while the ERI component was successful, it now largely duplicates existing incentives, privileges particular disciplines and is intrinsically tied to the investment decisions of business and Government.

This is an opportunity to refocus the PBRF on assessing and supporting research quality, and to support the other proposed changes in this discussion document, by rebalancing the components of the PBRF. We therefore propose:

- r. Discontinuing the ERI component via:
  - a full discontinuation starting after the next QE, or
  - a phased discontinuation starting after the next QE over four years.
- s. Subject to the above, redistribution of ERI funding into:
  - the QE component, or
  - a new component to replace the ERI, or
  - a mixture of the QE component and a new component.

## 10. Seeking new PBRF metrics

The PBRF currently uses Average Quality Score (AQS) metrics as part of the QE, which show the intensity of research at each TEO relative to their staffing numbers and equivalent full-time students. However, they have been criticised as an ineffective measure of quality, being used by TEOs for largely, ranking purposes and marketing.

To address this, we propose:

- t. Replacing the AQS metrics with a more appropriate measure of quality.

Q. Do you support the proposed discontinuation of the ERI? And why?

If ERI is discontinued:

Q. Do you support a full or phased discontinuation after the next QE?

Q. Do you support redistribution of ERI funding into the QE?

Q. If not, do you instead support a redistribution of ERI funding into a new component?

Q. Do you have recommendations for a new component to replace ERI?

Q. Has the incentive of ERI promoted your department/TEO to seek out external funding?

Q. Do you support replacing AQS metrics?

Q. Do you have recommendations for how to represent the intensity and quality of research at different TEOs?

Q. What QE performance information would you find useful to have publically available?

## 11. Researching and assessing the PBRF

The QE component of the PBRF produces a significant amount of data about research carried out in our TEOs and the tertiary research workforce, in general. While there has been some analysis of the data generated, this has not been commissioned by government. To better understand our system, we propose:

- u. Establishing an ongoing programme of research into, and evaluation of, PBRF processes and impact on the sector and research workforce.

Q. Do you support the establishment of an ongoing programme of research into the PBRF and its impact on the tertiary sector and workforce?

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## Operational changes to the PBRF

The following changes are intended to further support the proposed changes and options for strengthening the PBRF.

### 12. Building on the successes of the PBRF

Throughout the Review, recommendations were made for Government to consider in the next QE. The TEC are responsible for the operation of the PBRF and are best placed for this. We propose the TEC consider:

- v. Ensuring the peer-review panels reflect the epistemological and demographic diversity of the research workforce, including ensuring gender parity, significant representation of Māori and Pacific researchers and a broad representation of researchers and other experts across career stages, TEOs and other research institutions.
- w. Ensuring the peer-review panels are well supported with a programme of training to strengthen their capacity to take into account the diversity of research excellence and apply 'merit relative to opportunity' approaches.
- x. Improving understanding of the PBRF and addressing myths about the QE in all communications.
- y. Adopting the Open Researcher and Contributor ID (ORCID) as the unique identifier for PBRF-eligible staff.
- z. Consulting the Sector Reference Group for the next QE on the implementation of all proposals for changes that are approved.
  - Where possible the TEC should ensure significant representation of Māori and Pacific researchers and a broad representation of researchers across career stages and TEOs.

Q. Do you support building on the success of the peer-review panels by ensuring diversity of researchers and improving peer-review panel training?

Q. Are there other considerations you feel should be included?

Q. Do you support examining the potential in adopting the ORCID in the PBRF?

# Glossary

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# Annex One: Additional background information

## Quality Evaluation

The Quality Evaluation (QE) component of the PBRF is based on an assessment of the research performance of staff at eligible TEOs<sup>3</sup>. TEOs present their staff members' research in Evidence Portfolios (EPs) that are assessed by expert peer-review panels.

The QE is held periodically (currently every six years). For information on the most recent round, see the [2018 Quality Evaluation](#)<sup>4</sup>. Participation in the QE component is mandatory for TEOs seeking funding through the PBRF.

Funding for this component is based on:

- the Quality Categories assigned to EPs (a higher weighting is given to higher quality categories, and new and emerging researchers);
- the subject area to which EPs have been assigned (a higher weighting is given to some subject areas where there is a higher cost to research);
- the full-time-equivalent (FTE) status of the TEO's PBRF-eligible staff.

## Research Degree Completions

The Research Degree Completions component of the PBRF is an annual measurement of the number of PBRF-eligible postgraduate research-based degrees completed at participating TEOs. This helps to capture the connection between research staff and research training.

## External Research Income

The External Research Income component of the PBRF is an annual measurement of the amount and type of income received by participating TEOs from external sources for research purposes.

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<sup>3</sup> A TEO that receives PBRF funding is required to: comply with the requirements of the [Education Act 1989](#), and comply with the [conditions](#) specified in its funding approval documents.

<sup>4</sup> There have been three previous Quality Evaluation rounds in 2003, 2006 and 2012. For more information about these earlier rounds see [Previous Quality Evaluation rounds](#).

## Annex Two: Summary of Proposed Changes and Options for Strengthening the PBRF

Broadening the PBRF conception of research excellence	<ol style="list-style-type: none"> <li>1. Modifying the current objectives of the PBRF             <ol style="list-style-type: none"> <li>a. Adding a new objective</li> </ol> </li> <li>2. Refreshing the PBRF definition of research excellence;             <ol style="list-style-type: none"> <li>b. Rewording the PBRF definition of research to emphasise excellence</li> <li>c. Replacing the NRO component with <i>Examples of Research Excellence</i></li> <li>d. Replacing the ORO component with <i>Other Examples of Research Excellence</i>, and reducing the maximum number</li> <li>e. Refocusing Research Contributions</li> </ol> </li> <li>3. Reviewing subject areas             <ol style="list-style-type: none"> <li>f. Reviewing subject area weightings for accuracy</li> </ol> </li> </ol>
Enabling a more sustainable and diverse research workforce	<ol style="list-style-type: none"> <li>4. Improving support for mātauranga Māori and Pacific research, and Māori and Pacific researchers             <ol style="list-style-type: none"> <li>g. Increasing the subject area weighting for EPs assessed by the MKD and PR panels</li> <li>h. Additional funding weighting of 2 for EPs submitted by staff who identify as Māori or Pacific</li> <li>i. Adopting both of the above options</li> </ol> </li> <li>5. Reviewing qualifying criteria             <ol style="list-style-type: none"> <li>j. Refreshing the extraordinary circumstances qualifying criteria</li> <li>k. Reviewing the new and emerging qualifying criteria</li> </ol> </li> </ol>
Improving how Government supports research across the tertiary sector	<ol style="list-style-type: none"> <li>6. Progressing work that builds tertiary sector research capability and capacity             <ol style="list-style-type: none"> <li>l. Supporting the NZIST</li> <li>m. Co-designing with wānanga</li> <li>n. Working across Government to support a sustainable Māori and Pacific research workforce and a diverse system</li> </ol> </li> <li>7. Funding backstop for the NZIST in the next Quality Evaluation;             <ol style="list-style-type: none"> <li>o. Fixing a minimum allocation for the NZIST based on the proportion allocated through the 2018 QE to the ITPs</li> </ol> </li> <li>8. Reflecting the strengthened PBRF;             <ol style="list-style-type: none"> <li>p. Renaming the PBRF in English and/or te reo Māori</li> <li>q. Modifying the guiding principles</li> </ol> </li> <li>9. Rebalancing the components of the PBRF;             <ol style="list-style-type: none"> <li>r. Potentially discontinuing ERI</li> <li>s. Redistributing ERI funding into QE, or a new component</li> </ol> </li> <li>10. Seeking new PBRF metrics;             <ol style="list-style-type: none"> <li>t. Replacing AQS metrics</li> </ol> </li> <li>11. Researching and assessing the PBRF;             <ol style="list-style-type: none"> <li>u. Establishing a programme of research into PBRF processes and impacts</li> </ol> </li> </ol>
Operational changes to the PBRF	<ol style="list-style-type: none"> <li>12. Building on the successes of the PBRF;             <ol style="list-style-type: none"> <li>v. Ensuring peer-review panels are diverse</li> <li>w. Ensuring peer-review panels are well supported</li> <li>x. Improving understanding of the PBRF</li> <li>y. Adopting ORCID</li> <li>z. Consulting SRG on change implementation following this Review</li> </ol> </li> </ol>

## Annex Three: Indicative Timeline for Proposed Changes and Options for the PBRF

Indicative Timeframe for Implementation of Proposed Changes and Options				
	2021 - 2024	2025	Post 2025 Quality Evaluation	
Modifying Objectives	Finalised by Cabinet			
Refreshing Excellence Definition	< ----- Sector Reference Group carries out consultation at a to-be-determined point in this period ----- >	Implemented		
Reviewing Subject Area Weightings			Review takes place	
Māori + Pacific Weightings	< ----- Sector Reference Group carries out consultation at a to-be-determined point in this period ----- >	Implemented		
Exceptional Circumstances/N+E	< ----- Sector Reference Group carries out consultation at a to-be-determined point in this period ----- >	Implemented		
Wider Work Programme	< ----- Ongoing ----- >			
NZIST Backstop		Implemented		
Renaming PBRF + Modifying Principles	Finalised by Cabinet			
Discontinuing ERI	< ----- Sector Reference Group carries out consultation at a to-be-determined point in this period ----- >		Full or phased removal of ERI from 2027 – funding shifted to the QE or the QE + a new component	
Replacing AQS Metrics	< ----- Sector Reference Group carries out consultation at a to-be-determined point in this period ----- >	Implemented		
Research Programme	Contingent on future Budget decisions			
Retaining Current Elements	Confirmed by Cabinet			
Delaying QE	Confirmed by Cabinet			
TEC Matters to Consider	< ----- Ongoing ----- >			
Key Events	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">Cabinet makes final decisions on changes</div> <div style="border: 1px solid black; padding: 2px;">Sector Reference Group convened</div> </div>	<div style="border: 1px solid black; padding: 2px; text-align: center;">Standard Sector Reference Group consultation on the Quality Evaluation takes place</div>	<div style="border: 1px solid black; padding: 2px; text-align: center;">TEC Guidance for the 2025 Quality Evaluation published</div>	<div style="border: 1px solid black; padding: 2px; text-align: center;">Quality Evaluation 2025 takes place</div>

## Annex Four: Current PBRF Objectives<sup>5</sup>

The primary objectives of the PBRF are to:

- increase the quality of basic and applied research at New Zealand's degree-granting TEOs
- support world-leading teaching and learning at degree and postgraduate levels
- assist New Zealand's TEOs to maintain and lift their competitive rankings relative to their international peers, and
- provide robust public information to stakeholders about research performance within and across TEOs.

In doing so, the PBRF will also:

- support the development of postgraduate student researchers and new and emerging researchers
- support research activities that provide economic, social, cultural, and environmental benefits to New Zealand, including the advancement of mātauranga Māori, and
- support technology and knowledge transfer to New Zealand businesses, iwi and communities.

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<sup>5</sup> <https://www.tec.govt.nz/funding/funding-and-performance/funding/fund-finder/performance-based-research-fund/>

## Annex Five: Current PBRF Definition of Research<sup>6</sup>

For the purposes of the PBRF, research is original, independent investigation undertaken to contribute to knowledge and understanding and, in the case of some disciplines, cultural innovation or aesthetic refinement.<sup>7</sup>

Research typically involves inquiry of an experimental or critical nature, driven by hypotheses or intellectual positions, capable of rigorous assessment by experts in a given discipline.

Research includes work of direct relevance to the specific needs of iwi, communities, government, industry and commerce. In some disciplines, research may be embodied in the form of artistic works, performances or designs that lead to new or substantially improved insights. Research may include:

- contributions to the intellectual underpinning of subjects and disciplines (for example, dictionaries and scholarly editions)<sup>8</sup>,
- the use of existing knowledge in experimental development to produce new or substantially improved, materials, devices, products, communications or processes
- the synthesis and analysis of previous research to the extent that it is new and creative.

Research findings must be open to scrutiny or formal evaluation by experts within the field. This may be achieved through various forms of dissemination including but not limited to, publication, manufacture, construction, public presentation, or provision of confidential reports.

Activities that are part of routine standard practice and do not embody original research are excluded, such as:

- routine testing,
- data collection,
- preparation for teaching,
- the legal and administrative aspects of intellectual property protection and commercialisation activities.

<sup>6</sup> From the PBRF [Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation](#).

<sup>7</sup> The term 'independent' does not exclude collaborative work.

<sup>8</sup> The term 'scholarly' is defined as the creation, development and maintenance of the intellectual infrastructure of subjects and disciplines, in forms such as dictionaries, scholarly editions, catalogues and contributions to major research databases.

## Annex Six: Proposed Refocused Research Contribution Categories

Research Contribution Category	Examples
Research Discipline and Environment	<ul style="list-style-type: none"> <li>- Leadership roles or contributions within the discipline and/or institution</li> </ul>
Facilitation, Networking and Collaboration	<ul style="list-style-type: none"> <li>- Major roles in conferences</li> <li>- Leadership or contributions to research networks</li> <li>- Hosting international visitors</li> <li>- Major roles in Professional or Industry groups/Consortia</li> </ul>
Outreach and Engagement	<ul style="list-style-type: none"> <li>- Leadership or contributions to outreach and engagement activities</li> <li>- Development and maintenance of deep sustained and enduring partnerships outside of institutions particularly with the community, iwi and industry</li> <li>- Prominent role in critic and conscience activities</li> </ul>
Research and Funding Support	<ul style="list-style-type: none"> <li>- Track record of securing contestable grants</li> </ul>
Prizes, Fellowships and Awards	<ul style="list-style-type: none"> <li>- Significant, externally validated, awards relative to the career stage of staff</li> </ul>
Researcher Development	<ul style="list-style-type: none"> <li>- Track record of successful mentoring of junior colleagues, particularly in relation to historically underrepresented groups</li> <li>- Successful initiatives to support new and emerging/early career researchers</li> </ul>
Reviewing and Refereeing	<ul style="list-style-type: none"> <li>- Major roles in funding, advisory, promotions, tenure committees</li> <li>- Specialist advisory roles to institutions, governments, international bodies</li> </ul>
Student Factors	Track record of student success, particularly in relation to historically underrepresented groups
Uptake and Impact	<ul style="list-style-type: none"> <li>- Leadership roles or contributions to research dissemination outside academia</li> <li>- Leadership roles or contributions to developing institutional capacity to support uptake and impact</li> <li>- Entrepreneurial success</li> </ul>
Māori Research Contributions	<ul style="list-style-type: none"> <li>- Leadership in, or contributions to, undertaking and supporting research with Māori communities</li> <li>- Institutional leadership in, or contributions to, developing relative cultural capacity relating to research</li> </ul>
Pacific Research Contributions	<ul style="list-style-type: none"> <li>- Leadership in, or contributions to, undertaking and supporting research with Pacific communities</li> <li>- Institutional leadership in, or contributions to, developing relative cultural capacity relating to research</li> </ul>

## Annex Seven: Current Extraordinary Circumstances Criteria<sup>9</sup>

The two extraordinary circumstances provisions for the 2018 Quality Evaluation (general and Canterbury) aim to ensure staff members who have experienced circumstances that have seriously affected the quantity of research and research-related activities during the assessment period are treated equitably.

- Extraordinary circumstances will be considered by the peer-review panel only in relation to the quantity of research outputs and other aspects of research activity produced during the assessment period.
- Extraordinary circumstances are not relevant to the assessment of the quality of research outputs and activities.
- Staff members may claim one or both extraordinary circumstances provisions if they are eligible.
- The extraordinary circumstances provisions will be assessed at the Holistic assessment stage of the 2018 Quality Evaluation assessment process.

### Eligibility of extraordinary circumstances

TEOs must only submit extraordinary circumstances in EPs where they have determined and verified:

- that the staff member's circumstances are legitimate and the staff member has experienced a reduction in the quantity of research outputs or research related activity, or both, during the assessment period
- the staff member's circumstances have occurred over a minimum period of three years (that do not have to be continuous) during the assessment period.

### General extraordinary circumstances

One or more of the following three extraordinary circumstances types can be claimed under this provision:

- Long-term illness or disability that would reduce the quantity of research outputs or activities during the assessment period. This could include ill health or injury, mental health conditions, sensory or developmental conditions, or other health conditions or diseases that may be progressive or have fluctuating or recurring effects.
- Extended personal leave that prevents research activity from occurring during the assessment period. This could include shorter-term leave due to ill health, mental health conditions or injury, and parental leave relating to pregnancy, maternity, paternity, adoption or childcare. Sabbatical leave is not considered in this circumstance.
- Significant family or community responsibilities that prevent research activity from occurring during the assessment period. This includes responsibility for dependents, including caring for elderly or ill, injured or disabled family members, or to specific communities, such as iwi or Pacific communities, to a level that reduces the opportunities to undertake research.

<sup>9</sup> From the PBRF [Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation](#).

One or more types can be claimed.

### **Canterbury extraordinary circumstances**

One or more of the following five impact types can be claimed under the Canterbury extraordinary circumstances provision:

- Ongoing trauma, stress and fatigue, which could include the ongoing impacts of death or injury to a family member, friend or close colleague; an injury to self; a personal psychological impact; and ongoing fatigue or stress.
- Loss or damage to house and/or contents, which could include loss of home or displacement from home; substandard housing or alternative housing; ongoing or protracted issues dealing with the Earthquake Commission, insurers, builders; and care and advocacy for extended family who have been displaced or need support.
- Disruption related to facilities or resources, which could include the ongoing inability to access facilities or equipment or resources or venues; disruption caused by temporary office or laboratory spaces, decanting and/or deconstruction or construction nearby; lost samples or data, or resources or consumables; and damaged equipment.
- Significant additional responsibilities, which could include increased teaching loads; additional administration related to building activity, for example, construction and decanting; increased financial administration; additional or increased personal or community responsibilities, such as caring for family members or board of trustee duties; and increased head of department responsibilities associated with the earthquakes.
- Reduced research opportunities, which could include disruption to the research pipeline affecting research outputs years later; disruption to postgraduates – reduced recruitment, lost students, PhDs downgraded to Master's, loss of preferred candidates, increased pastoral care; reduced research support or lost opportunities due to reduction in travel funding and research funding; lost networking opportunities due to travel restrictions; lost funding opportunities (unable to submit applications, unable to commit to new research contracts), with subsequent impact on the research pipeline and publications; and reduced research time due to increased student recruitment activity and teaching loads.

## Annex Eight: Current New and Emerging Researcher Eligibility Criteria<sup>10</sup>

Once a TEO has determined which of its staff are eligible to participate in the 2018 Quality Evaluation, they need to determine if any eligible staff can be categorised as new and emerging researchers.

The new and emerging researcher status is specifically for staff members who have started their research career in the 2018 Quality Evaluation assessment period (1 January 2012 – 31 December 2017). The purpose is to allow these staff members, who are starting to build a platform of research outputs but have had limited opportunities to engage in research contribution activities, to be recognised and funded under the PBRF. This category also supports the Government's goal of building a sustainable tertiary workforce.

The new eligibility criteria and guidance are designed to support TEOs to correctly and consistently identify new and emerging researchers. In the 2012 Quality Evaluation, the misidentification of staff as new and emerging researchers was the second most common staff-eligibility error found by the TEC, particularly in the creative and performing arts. The TEC has developed new eligibility criteria and guidance to support TEOs to identify which staff can be classified as new and emerging researchers. New and emerging researcher eligibility criteria

The key principle that TEOs must apply is that the staff member is undertaking substantive and independent research for the first time in their career. Staff who have produced outputs that meet the PBRF Definition of Research before 1 January 2012, except when in a supervised or support role, cannot be considered as new and emerging.

The substantiveness test for research means staff members have to undertake one or more of the following: the design of research activity; the preparation of research outputs (for example, as a co-author or co-producer) that is likely to result in being named as an author (or co-author or co-producer) on one or more research outputs; the academic supervision of graduate research students.

To be considered new and emerging researchers, staff members must meet all of the new and emerging researcher eligibility criteria. They must:

1. meet the requirements of the PBRF staff-eligibility criteria
2. meet the substantiveness test for research for the first time on or after 1 January 2012
3. not have been PBRF-eligible in a previous Quality Evaluation.

### **Guidance on applying the new and emerging researcher criteria**

TEOs need to assess any potential new and emerging researchers against both the key principle and the criteria. TEOs should take the following guidance into consideration when reviewing the specific circumstances of their staff for potential new and emerging researcher status.

- The PBRF Definition of Research does not distinguish between research undertaken within or outside of academia. TEOs should not make this distinction either. If an output meets the PBRF Definition of Research, the staff member's role or location or employer is not a deciding factor in regard to whether it is research.
- Staff members are normally considered to undertake substantive and independent research if they meet the requirements of the substantiveness test for research.

<sup>10</sup> From the PBRF [Guidelines for tertiary education organisations participating in the 2018 Quality Evaluation](#).

- Staff members are not normally considered to undertake substantive research if they undertake activities that are excluded from the PBRF Definition of Research, for example, part of routine standard practice, or are providing a technical function only or produce outputs that do not embody original research.
- Staff members who are named as an author on a research output while in a supervised or support role are considered to be working under the close guidance of a lead researcher. This would not normally be seen as undertaking independent research.

A supervised or support role in a research project may be part of a research Master's or PhD, or a technical, clinical support or minor advisory role. Undertaking post-graduate study does not automatically mean that all research outputs produced by that staff member are 'supervised'. All research outputs and the staff member's role in them need to be considered against the relevant eligibility criteria.

It is important for TEOs to document their rationale for their decisions for audit purposes. As a minimum, you must obtain the staff member's CV. All staff identified as new and emerging researchers will be reviewed as part of the TEC's Data Evaluation audit. TEOs will be able to discuss the eligibility criteria and evidence requirements with auditors during the Process Assurance audit before EPs are submitted in June 2018.

TEOs should be aware that the EPs of staff incorrectly assigned new and emerging status will continue to be assessed as part of the 2018 Quality Evaluation but will not be considered for the C(NE) or R(NE) Quality Categories.

# Annex Nine: Proposed Modifications to the PBRF Guiding Principles

Guiding principles to be added
<p><i>Partnership: The fund should reflect the bicultural nature of New Zealand and the special role and status of the Treaty of Waitangi (Te Tiriti o Waitangi).</i></p> <p>This is intended to reflect the significance of the partnership that underpins the relationship between Crown and Māori.</p>
<p><i>Inclusiveness: The fund should encourage and recognise the full diversity of epistemologies, knowledges and methodologies to reflect New Zealand's people.</i></p> <p>This is intended to reflect diversity in society and our commitment to a capacious definition of research excellence.</p>
<p><i>Equity: Different approaches and resources are needed to ensure that the measurement of research excellence leads to equitable outcomes.</i></p> <p>This is intended to underline the vital importance of addressing persistent, embedded and inherited inequities and their negative effects on the capacity of women, Māori and Pacific peoples, among other groups, to participate in the research, science and innovation system.</p>
Guiding principle to be removed
<p>Cultural inclusiveness: The PBRF should reflect the cultural nature of New Zealand and the special role and status of the Treaty of Waitangi (te Tiriti o Waitangi), and should appropriately reflect and include the full diversity of New Zealand's population.</p>



We **shape** an **education** system that delivers  
**equitable** and **excellent outcomes**

He mea **tārai** e mātou te **mātauranga**  
kia **rangatira** ai, kia **mana taurite** ai ōna **huanga**



# Cabinet Social Wellbeing Committee

## Minute of Decision

*This document contains information for the New Zealand Cabinet. It must be treated in confidence and handled in accordance with any security classification, or other endorsement. The information can only be released, including under the Official Information Act 1982, by persons with the appropriate authority.*

### Performance-Based Research Fund Review: Report Back

**Portfolio** Associate Education (Hon Jenny Salesa)

On 22 July 2020, the Cabinet Social Wellbeing Committee:

- 1 **noted** that the Performance-Based Research Fund (PBRF) allocates \$315 million per annum to New Zealand's tertiary education organisations to reward and encourage high quality tertiary education research and research-led teaching;
- 2 **noted** that the PBRF was reviewed by an independent panel, who were guided by the Terms of Reference approved by Cabinet [SWC-18-MIN 0121] and engaged extensively with the sector;
- 3 **noted** that the Associate Minister of Education (Hon Jenny Salesa) agrees with the panel that the fundamentals of the PBRF are working well, with a measured improvement in research quality in the tertiary research sector;
- 4 **noted** that the need to support an inclusive tertiary research sector has only been enhanced by the impacts of COVID-19;
- 5 **agreed** that the Ministry of Education will conduct targeted consultation on a discussion document with changes and options for strengthening the PBRF;
- 6 **authorised** the Ministry of Education to make minor or technical amendments to the discussion document prior to targeted consultation, including to respond to COVID-19;
- 7 **agreed** that the discussion document will outline the following changes and options for targeted consultation, grouped under three key objectives:
  - 7.1 broadening the PBRF conception of research excellence:
    - 7.1.1 modifying the current objectives of the PBRF to better reflect government's priorities;
    - 7.1.2 refreshing the PBRF definition of research excellence;
    - 7.1.3 reviewing the subject area weightings;
  - 7.2 enabling a more sustainable and diverse research workforce:
    - 7.2.1 improving support for mātauranga Māori and Pacific research, and Māori and Pacific researchers;

- 7.2.2 reviewing qualifying criteria of the extraordinary circumstances provision and for new and emerging researchers;
- 7.3 improving how government supports research across the tertiary sector:
  - 7.3.1 progressing a wider work programme, including through the New Zealand Institute of Skills and Technology and the Wānanga Research Aspirations Project;’
  - 7.3.2 reflecting the strengthened PBRF by renaming the PBRF and modifying the principles;
  - 7.3.3 rebalancing the components of the PBRF by potentially discontinuing External Research Income;
  - 7.3.4 seeking new PBRF metrics;
  - 7.3.5 researching and assessing the PBRF;
  - 7.3.6 retaining current elements of the PBRF;
  - 7.3.7 building on the success of the PBRF;
- 8 **noted** that the Associate Minister of Education (Hon Jenny Salesa) proposes to bring a final package of change to strengthen the PBRF to Cabinet for approval following public consultation.

Charlotte Doyle  
Committee Secretary

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**Present:**

Rt Hon Winston Peters  
Hon Kelvin Davis  
Hon Grant Robertson  
Hon Dr Megan Woods  
Hon Carmel Sepuloni (Chair)  
Hon Nanaia Mahuta  
Hon Stuart Nash  
Hon Jenny Salesa  
Hon Damien O’Connor  
Hon Tracey Martin  
Hon Willie Jackson  
Hon Aupito William Sio  
Jan Logie, MP

**Officials present from:**

Office of the Prime Minister  
Officials Committee for SWC  
Office of the SWC Chair



# Cabinet

## Minute of Decision

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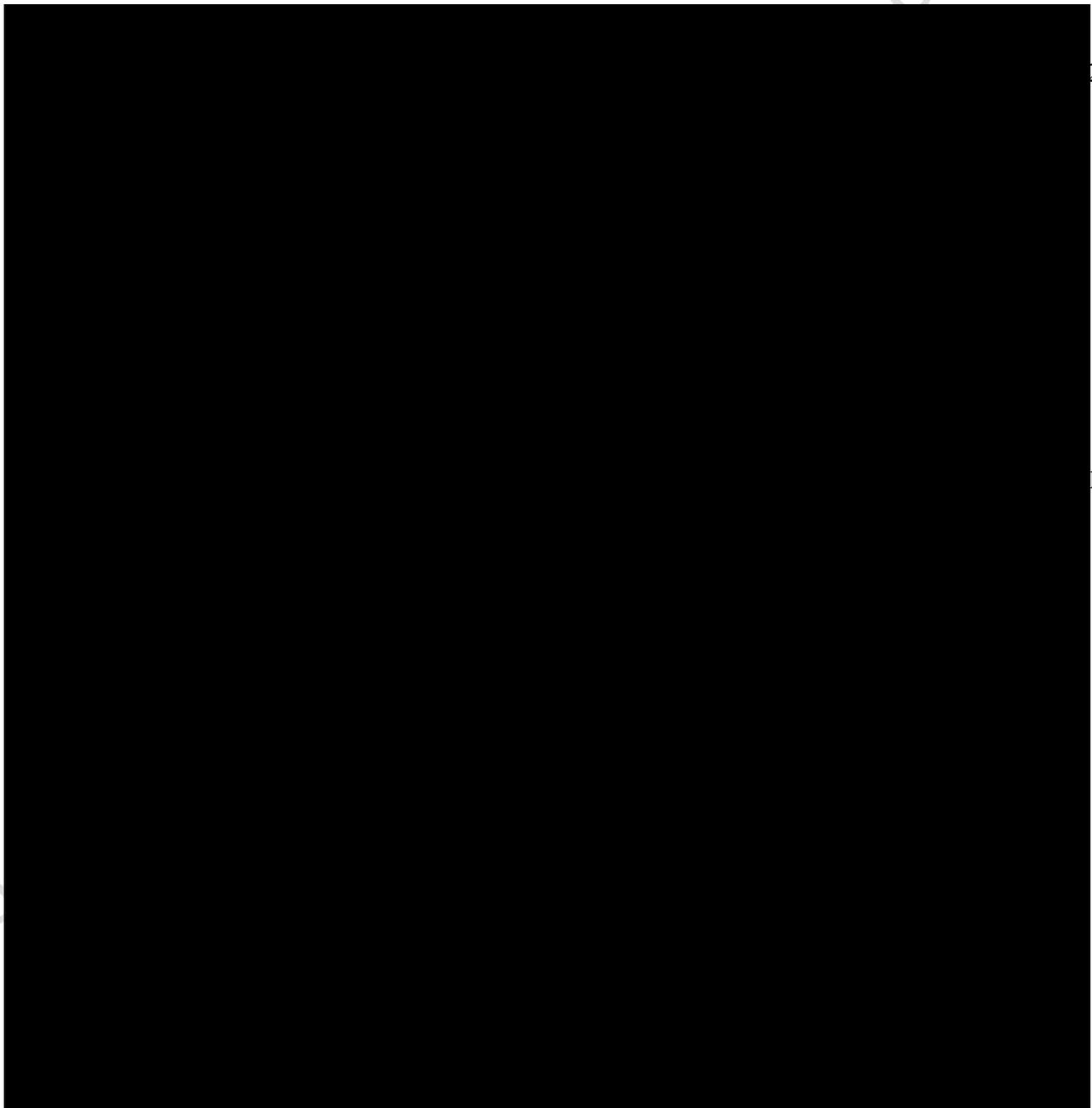
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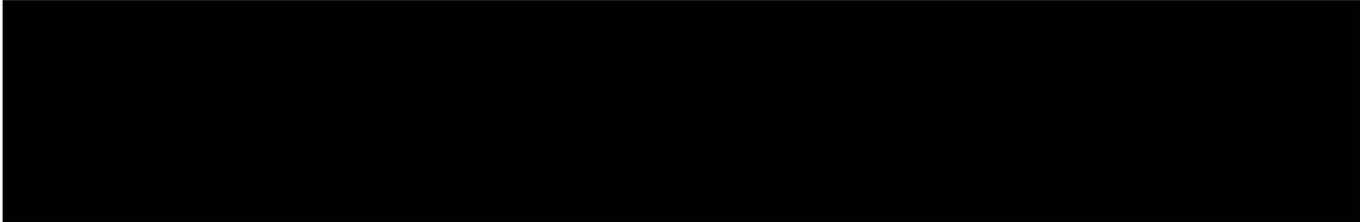
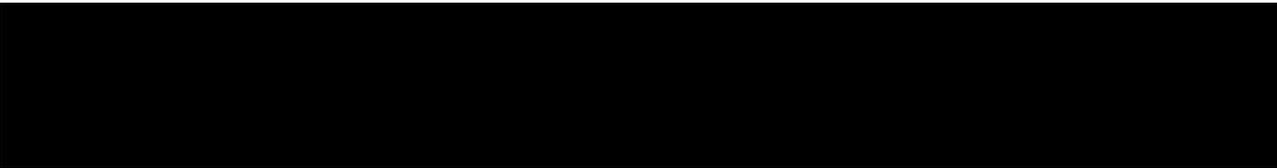
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**Redactions made as content out of scope of Minister's portfolio responsibilities**

### **Report of the Cabinet Social Wellbeing Committee: Period Ended 24 July 2020**

On 27 July 2020, Cabinet made the following decisions on the work of the Cabinet Social Wellbeing Committee for the period ended 24 July 2020:





SWC-20-MIN-0102 **Performance-Based Research Fund Review:  
Report Back** CONFIRMED  
Portfolio: Associate Education



Michael Webster  
Secretary of the Cabinet