



Marsden Fund Performance Framework 2018-2020 (working document)

Prepared by the Marsden Fund Council

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1 Introduction

1.1.1 Purpose

This document describes how the Marsden Fund Council (the Council) will measure the performance of the Marsden Fund.

The objectives and strategic direction of the Fund are laid out in the Fund [Terms of Reference](#) and the [Investment Plan](#). Measuring performance is important to demonstrate that public money invested through the Fund is delivering the expected outcomes and benefits described in those documents. It also helps to detect and correct performance issues as they arise and to provide evidence for continuous improvement.

The Performance Framework contributes to:

- **Accountability:** To assess and demonstrate to the Minister of Research, Science and Innovation and the public that the Fund is delivering against its objectives and the Investment Plan
- **Monitoring and control:** To ensure that fund processes are followed and help keep funded research on-track
- **Continuous improvement:** To provide an evidence base for Council decisions about how the Fund is administered and managed

1.2 Why is a Performance Framework needed?

Measuring the performance of science funding is challenging for a number of reasons. The immediate results from research activity are often intangible. It may take years for the implications of research findings to be fully recognised and applied by the broader community.

The pathway from research to eventual impacts for society may be long and convoluted. It is usually unclear to what extent long-term impacts can be attributed to different research funds and to other inputs or changes in society and technology.

Although these challenges cannot be fully overcome, a planned, systematic approach can improve performance measurement. This involves four steps:

1. Defining what the Fund should achieve (*this is set out in the Terms of Reference and Investment Plan*)
2. Describing how we think the Fund achieves its objectives (*see section 2*)
3. Defining an approach to measuring achievement of objectives and set targets where feasible and appropriate
4. Consolidating processes for systematic, robust data collection

In addition, the Council will establish 'one-off' measurement approaches to assess the effect of changes to fund settings. These will normally draw on measures in the main performance framework. The measurement approach for changes announced in the 2017 Investment Plan is described in section 3.

1.3 What this document means

1.3.1 Data collection

Some data will be collected by the Royal Society Te Apārangi through existing mechanisms, i.e., administrative data captured during fund application, assessment and contract management processes; and information and feedback provided by researchers and institutions at annual roadshows.

Information on research activity, its outcomes and potential or actual impacts will be collected from contracted researchers through self-reporting, site visits and surveys of completed contracts. There will be some additional reporting requirements on applicants and contracted researchers or institutions, but the Council and Royal Society Te Apārangi will work to minimise the burden of these.

Some new data collection activities will be introduced:

1. An 'international peer review panel' will review a sample of completed Marsden Fund contracts for excellence and actual or potential scholarly impact every 5 years and report on its findings to the Minister of Research, Science and Innovation and the Marsden Fund Council.
2. The Royal Society Te Apārangi will follow-up on completed contracts two and ten years after their completion. This will help uncover how the Fund is contributing to outcomes and impacts in the long-term.
3. The Royal Society Te Apārangi will periodically prepare case studies of historical Marsden contracts to document and validate self-reports of their outputs, outcomes and impact.
4. A survey of applicants to the Fund to help assess applicant burden
5. Use of a citation-tracking index (such as SCOPUS), the new National Research Information System (NRIS) and the ORCID platform to supplement and connect administrative funding data held by the Royal Society Te Apārangi.

1.3.2 Use of operational/administrative data

Consistent with the purpose of the Performance Framework, data gathered will be used to help assess the **performance of the Fund**, to gather evidence for continuous improvement and to ensure that funded researchers are making their 'best endeavours' towards contract objectives. This is distinct from evaluating the performance of individual researchers or research teams.

Aggregate data and analysis and conclusions about performance of the Fund will be prepared by the Council and reported to MBIE and to the Minister of Research, Science and Innovation. This may be broken down for different parts of the Fund, such as by assessment panel, research field, award type or institution. The sharing of data will follow existing commitments to anonymization and confidentiality as described in research contracts.

1.3.3 Reporting

Performance and related data will be reported in the following ways:

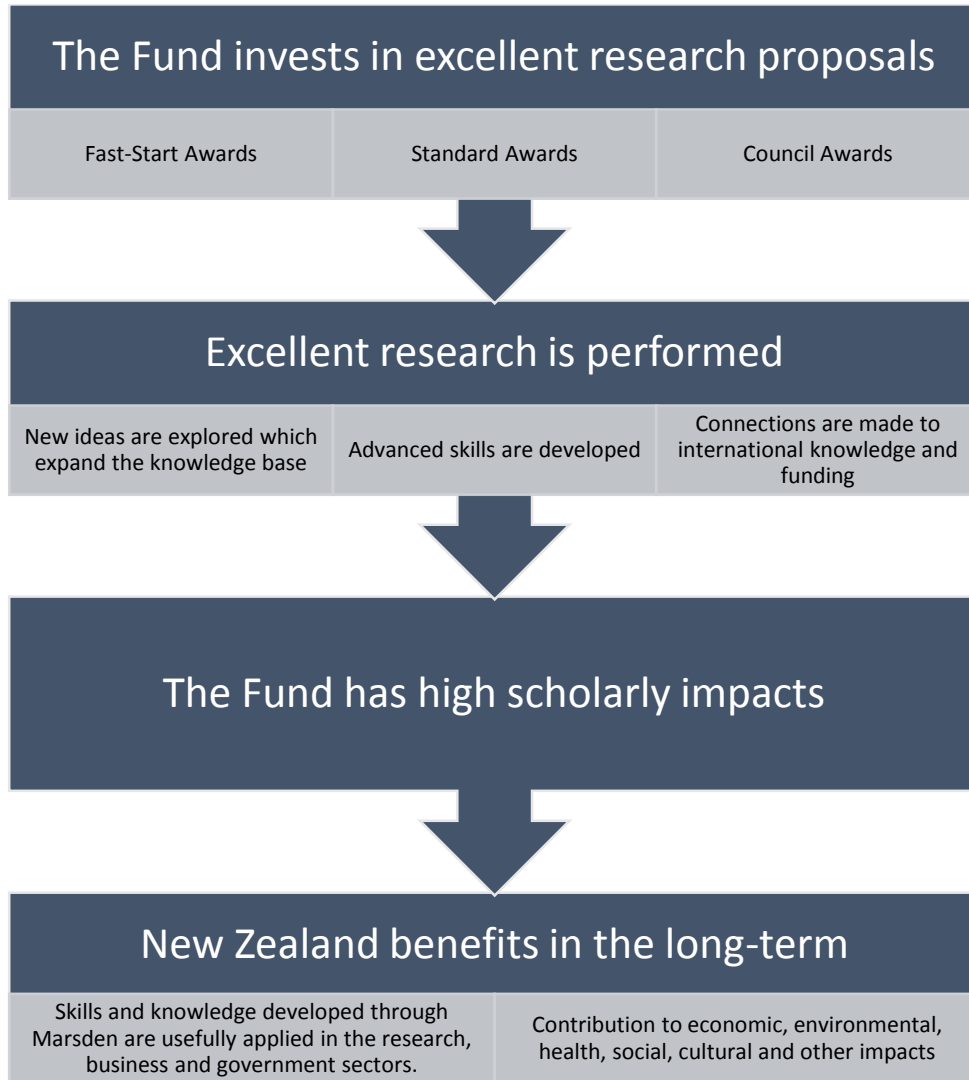
- Report on research quality and potential for scholarly impact by international peer review panel to **Minister of Research, Science and Innovation** (5 yearly)
- Report by the Society's Director — Research Funding on conduct and outcomes of the Marsden Fund Round to **Council, Minister and published** (annually)

- Aggregate report on contract monitoring outcomes and administrative costs **provided to Council and MBIE** (annually)
- Annual post-investment round reporting to **Council and publicly** on what research was funded, e.g. the Marsden Fund Update.
- Annual Investment Plan updates will report on monitoring of outcomes of recent changes to fund settings.
- Public reports on long-term impacts of Marsden research and research careers from time to time.

2 The path from funding to impact

Figure 1 shows how investment in research through the Marsden Fund is expected to lead to outcomes and impacts. The table to the right shows the approach to measurement for each step. Table 1 sets out the measurement approach in more detail.

Figure 1 How excellent research leads to impact



Approach to measurement

- Monitor whether procedures for assessing research proposals are followed

- Monitor if researchers are making 'best endeavours' towards project goals
- Periodic international peer review of sample of contracts
- Regular reporting of qualifications gained
- Periodic analysis of career-trajectories
- Monitor international funding, resources, collaboration and knowledge coming to New Zealand

- Bibliometric of research outputs

- Self-reporting of impacts

Impact case studies

track results-chain from research activity and skills development to scholarly impact and longer-term outcomes and impacts

3 How performance will be measured

Table 1 Key activities and outcomes to measure and report.

This list is intended to provide a manageable number of measures which are strong tests of performance (either alone or taken together).

Key outcomes (accountability)	Measurement approach	Specific targets	Outputs	Frequency
<p>1. The research performed is excellent</p> <p>2. The Fund has high scholarly impact</p>	<ul style="list-style-type: none"> Periodic review by ‘international peer review panel’ of sample of completed Marsden Fund contracts for excellence and actual or potential scholarly impact Assess bibliometric impact of research outputs identified through self-reporting; follow-up meetings¹ to two-years after completion; annual survey of contracts ten-years after completion; and NRIS² 	<ul style="list-style-type: none"> A high proportion of Marsden funded publications appear in top-10% of cited publications for their discipline 	<ul style="list-style-type: none"> Report by international peer review panel to Minister of Research, Science and Innovation Report on research outputs to MBIE, including or allowing calculation of agreed bibliometric measures Include research output details in data report to MBIE 	<ul style="list-style-type: none"> International peer review 5-yearly Annual report
<p>3. Marsden Fund awards contribute to the development of advanced skills, including those of post-doctoral and early career researchers</p> <p>4. The skills and knowledge of Marsden researchers³ are usefully applied in the research, business and government sectors</p>	<ul style="list-style-type: none"> Number of Doctorate and Masters qualifications supported on Marsden Fund awards Number of post-doctoral and early career researchers supported [Periodic] Measurement of fraction of Marsden researchers who have subsequently moved into ‘research-leader’ roles [Periodic] Measurement of career trajectory of Marsden researchers and their involvement in more applied research 	<ul style="list-style-type: none"> Majority of contracted projects report involvement of an early-career researcher or post-graduate student 	<ul style="list-style-type: none"> Report to Council and MBIE includes synthesis of information 	<ul style="list-style-type: none"> Annually for qualifications Periodic in-depth studies
<p>5. The NZ research community strengthens its international connections</p>	<ul style="list-style-type: none"> Researcher reports of international funding, resources, collaboration and knowledge come to New Zealand as a result of Marsden funding Reports by contracted researchers; follow-up meetings two-years after completion; regular survey of contracts ten-years after completion 	<ul style="list-style-type: none"> Majority of contracted projects report new international collaboration by completion 	<ul style="list-style-type: none"> Report to Council and MBIE includes synthesis of information Data report to MBIE includes detailed information 	<ul style="list-style-type: none"> Biennial
<p>6. Marsden research and researchers go on to contribute to economic, environmental, health, social, cultural and other impacts in the long-term</p>	<ul style="list-style-type: none"> Impacts identified by self-reporting, follow-up meetings two-years after completion, and regular survey of contracts ten years after completion Preparation of in-depth case studies of impact and ‘results chain’ (including research activity, outputs, scholarly impact, and application beyond research) to follow-up and validate self-reports 	<ul style="list-style-type: none"> 100% of completed contracts have reported on their contribution to impact 	<ul style="list-style-type: none"> Report to Council and MBIE includes synthesis of impact information Data report to MBIE includes self-reported impacts detail Periodic publishing of case studies 	<ul style="list-style-type: none"> Biennial Periodic case studies
<p>7. Marsden research and researchers go on to contribute to delivery of the Vision Mātauranga policy to unlock the science and innovation potential of Māori knowledge, resources and people</p>	<ul style="list-style-type: none"> Researcher reports acknowledging effect of engagement/alignment/participation with the Vision 	<ul style="list-style-type: none"> 100% of those indicating alignment in the proposal report outcome 	<ul style="list-style-type: none"> Compliance and outcomes reported to Council 	<ul style="list-style-type: none"> Annual

¹ Meetings are identified as communication between the Society staff and the Marsden researcher through face-to-face visits (both onsite and offsite), videoconferencing or telephone communication.

² NRIS is the new National Research Information System which will gather and report data on research contract funding across government, and link to the ORCID system of unique researcher identifiers.

³ “Marsden researcher” means someone who has ever been, or is currently, part of a Marsden award

Table 2 Key activities relating to monitoring and control.

This list shows the intended data for collection to ensure that fund processes are followed and help keep funded research on-track.

Key activities (monitoring and control)	Measurement approach		Outputs	Frequency
8. Procedures for assessment of research applications are followed as set out in the Investment Plan and other relevant documents	<ul style="list-style-type: none"> Conduct and outcomes of assessment processes are monitored and recorded by Society staff Conduct of panel meetings, including conflicts of interest management, is monitored by Society staff and an additional Marsden Fund Council observer 	<ul style="list-style-type: none"> All procedures are followed and reported 	<ul style="list-style-type: none"> Deviations from standard procedures are corrected or noted Report on conduct and outcomes of the Marsden Fund Round signed and provided to Council, Minister and published by the Society's Director — Research Funding 	<ul style="list-style-type: none"> Annual
9. Researchers are making their 'best endeavours' towards contract deliverables	<ul style="list-style-type: none"> Reports by contracted researchers Follow-up meetings to contracted researchers by Society staff (one visit per contract) 	<ul style="list-style-type: none"> 100% of completed contracts assessed with at least 90% of these assessed as meeting 'best endeavours' 	<ul style="list-style-type: none"> Risks and issues with meeting contract deliverables are identified and mitigated if possible through advice and variation to contracts Aggregate information provided to Council and MBIE on contract monitoring outcomes (i.e., project management risks and issues identified and mitigated; fraction of contracts where concerns remain) 	<ul style="list-style-type: none"> Annual

Table 3 Key data elements to measure and report.

This list shows the intended data for collection to support analysis for continuous improvement.

Key data elements (continuous improvement)	Measurement approach	Outputs	Frequency
10. Portfolio mix by: panel, discipline, award type, professional age, follow-on vs new, size of awards; purpose and type of research	<ul style="list-style-type: none"> Society application and grant management systems 	<ul style="list-style-type: none"> Post-round and on-demand reporting to Council Report to MBIE 	<ul style="list-style-type: none"> Annual/on-demand to Council
11. Administrative costs for government, researchers and research institutions	<ul style="list-style-type: none"> Society reporting on operational costs Applicant survey at end of application process Rate of referee acceptance 	<ul style="list-style-type: none"> Included in yearly reporting to MBIE 	<ul style="list-style-type: none"> Annual
12. Stakeholder perceptions	<ul style="list-style-type: none"> Applicant survey at end of application process Panel member reviews of research domains and processes Feedback gathered at annual institution roadshows Follow-up meetings two years after contract completion 	<ul style="list-style-type: none"> Society to report stakeholder perception themes to Council 	<ul style="list-style-type: none"> Annual
13. Effects of changes to fund	<ul style="list-style-type: none"> Broader panels; Feedback; Follow-on awards, Marsden Fund Council Awards 	<ul style="list-style-type: none"> Annual Investment Plan update will report on monitoring of outcomes of recent changes to fund settings 	<ul style="list-style-type: none"> Annual

4 Measuring the effect of changes to fund settings

The 2017 Investment Plan introduced some changes to fund settings.

The Council's approach to monitoring the effect of these is described below. The outcomes of this monitoring and any subsequent Council decisions will be reported in future Investment Plan updates.

4.1 The Marsden Fund Council Award

The Council introduced the Marsden Fund Council Award which supports large, interdisciplinary research, from the 2018 Round to complement Fast-Start and Standard grants. These larger awards are worth up to \$1 million per year.

4.1.1 Rationale for change

As a result of this new award category, the Council expects to see an increase in the proportion of highly-interdisciplinary research and in domestic and international connectivity.

4.1.2 Measurement and reporting

The Council will monitor the following variables and report on them.

- Interdisciplinarity of research funded through MFC Awards vs other mechanisms, as measured by Inter-Disciplinary Distance scores (and other measures if appropriate)
- Number of domestic and international institutions or individuals represented in MFC awards vs other awards
- Total citations received (normalized for field and time since publication) by all publications attributed to a Marsden contract, per dollar of funding awarded to those contracts (for MFC awards vs other awards) [*Note: this measure will not be assessed until at least three years after a research publication*]

4.2 Follow-on grants: allowing researchers to sustain research momentum

From 2018, there is no restriction on applying for a second grant on the same research project on completion of a successful Marsden grant.

4.2.1 Rationale for change

The Council wants to re-invest in successful research ideas and researchers while maintaining significant support for a pipeline of new and emerging ideas.

4.2.2 Measurement and reporting

The Council will therefore monitor and report on the total number of awards to existing grant holders and will adjust the settings for the fund if the number of follow-on awards made becomes a major hindrance to new research being funded.

Currently approximately 45% of Principal Investigators (PIs) on Standard contracts are new to the Fund as PIs each year.

The Council will monitor this through annual post-investment round reporting. It will formally review this issue if there is more than a 10 percentage point reduction in this figure.

4.3 Feedback: providing more feedback to institutions and unsuccessful applicants

From the 2018 Round, the Council will provide quintile feedback to unsuccessful applicants and institutions about relative performance of their proposals at the Expression of Interest stage.

In a pilot process for the 2018 Round, the Council will also be testing ways of providing more detailed feedback, from one or more panels, to Fast-Start applicants who were unsuccessful but close to the cut-off for proceeding to the Full proposal stage.

4.3.1 Rationale for change

These changes ensure a more transparent process and provide incentives for institutions to develop and submit their highest-quality proposals.

4.3.2 Measurement and reporting

The Council and Royal Society Te Apārangi will engage with unsuccessful applicants and institutions to understand whether these changes to feedback:

- 1) Change perceptions of transparency, and
- 2) Inform decisions about revising and resubmitting proposals

4.4 Combined panel trial:

In the 2018 Round the Council is trialling a broader assessment panel, Humanities, Behavioural and Social sciences' (HBS) which combines the SOC, HUM and EHB panels.

4.4.1 Rationale for change

The combined panel (and additional moderation step by the Council) is intended to allow greater moderation when assessing proposals from different disciplines, avoid perceptions and risk of disciplinary bias, increase expert availability, and allow better consideration of inter-disciplinary proposals while managing the burden on assessors.

4.4.2 Measurement and reporting

The variables and approach in will be used to measure performance of the combined panel trial. The Council will make a summary judgement of performance across these variables. The Council will report on this in the update to the Marsden Fund Investment Plan in 2018.

Table 4

Variable	Measurement approach
Accuracy of scoring of proposals	Level of congruence of application FOR codes with those of assigned assessors
Rigour and ease of decision-making	Panel convenor judgement of how well the process works and how robust decisions are vs current panel model
Risk of disciplinary bias	1. Change in mix of disciplines funded and their success rates vs prior years in component panels 2. Representation of disciplines in panellists
Expert availability	Assessor rating as to how each application aligns to their own field
Support for research in interdisciplinary and emerging research fields	Interdisciplinary span of field-of-research combinations in successful proposals vs prior years
Burden on assessors	1. Number of applications which each assessor scores compared with panellists 2. Self-report measure of time spent by assessors overall compared with the panels
Perceptions of process in sector	Engagement with successful and unsuccessful applicants during feedback process. Feedback from within research institutions
Administration costs	Estimated cost per proposal vs other panels, including: <ul style="list-style-type: none"> - Royal Society Te Apārangi FTE-hours for support of process - Meeting costs, including travel and facilities - Assessor burden estimate – including time spent assessing proposals and in meetings <p>NB. A one-off spike in resource is expected due to the new processes. A judgement will be needed on likely costs in longer-term for this model.</p>

4.5 Additional moderation step by Council

From the 2018 Round, in an additional moderation step, the Council will use scores from international referees to guide moderation across all panels. The cost of proposals will also be included in the overall assessment of the highest contribution to the Fund's objectives within the funding available. Based on this moderation step, the Council may reallocate funding between panels to increase the overall quality and scholarly impact potential of research funded.

4.5.1 Measurement and reporting

The Society's Director of Research Funding will include a summary of the outcomes of the additional moderation step in the annual Report on Conduct and Outcomes of the Marsden Fund Round to the Council, Minister of Research Science and Innovation and published.