



Minister for Research, Science and Innovation

Research, Science and Innovation Portfolio

Vote Business, Science and Innovation

Report in relation to selected non-departmental appropriations for the year ended 30 June 2019

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Foreword

Ministers are responsible for reporting the financial and non-financial performance of non-departmental appropriations to Parliament. This report provides information on the year-end performance results of non-departmental appropriations that have not been included in any other reports to Parliament.

This report provides the 1 July 2018-30 June 2019 results of relevant non-departmental appropriations for the Research, Science and Innovation portfolio within Vote Business, Science and Innovation. The relevant appropriations are:

Non-departmental output expenses:

- National Science Challenges
- Endeavour Fund
- Marsden Fund
- Partnered Research Fund.

Non-departmental other expenses:

- Catalyst Fund
- Regional Research Institutes.



Hon Dr Megan Woods

Minister of Research, Science and Innovation

Statements of Performance

Non-Departmental Output Expenses

National Science Challenges

Scope of Appropriation

This appropriation is limited to research and research applications to find innovative solutions to fundamental issues New Zealand faces in its future development.

Intention Statement

This appropriation is intended to achieve improvement in innovative solutions to fundamental issues New Zealand faces by drawing scientists together to achieve a common goal through collaboration.

Assessment of Performance

Non-Financial

Performance Measures	2017/18 Actual Standard	2018/19 Budgeted Standard	2018/19 Actual Standard
Percentage of contracts that have been monitored and performance assessed within agreed timeframes	100%	100%	100%

Comment

The general policy objective of the National Science Challenges (NSC) is to fund research, science or technology, or related activities that have the potential to:

- respond to the most important, national-scale issues and opportunities identified by science stakeholders and the New Zealand public
- produce major and enduring benefits for New Zealand
- promote collaboration across a number of research providers and involve a broad portfolio of multi-disciplinary research activity
- enable Government to take a more long-term strategic approach to managing and coordinating mission-led science investments
- complement other science priorities
- give effect to the Vision Mātauranga policy.

In 2018/19 the Ministry of Business, Innovation and Employment (the Ministry) monitored and assessed the 11 contracts (one for each Challenge) within the required timeframes. The Ministry also completed a mid-way review of each NSC, convening 11 panels of independent experts. Following the review, the Science Board agreed to fund each Challenge for the period 1 July 2019–30 June 2024.

Financial

Expenses (\$000)	2017/18 Actual	2018/19 Estimates	2018/19 Supp Estimates	2018/19 Actual
Total Appropriation	73,367	73,466	66,246	66,246

Comment

Due to phasing differences between the start of the NSCs appropriation and the NSCs contracts, there was a \$7.41 million difference between the contract value for 2018/19 and the appropriation.

A \$7.41 million transfer was made out of the annualised appropriation into the new multi-year appropriation in 2019/20 to enable additional funds to be allocated to NSCs in Phase two.

Endeavour Fund

Scope of Appropriation

This appropriation is limited to research, science or technology, and related activities that have the potential for excellence and long-term impact for New Zealand's economy, society or environment.

Intention Statement

This appropriation is intended to achieve investment in the highest quality, investigator-led research proposals to impact in areas of future value, growth and critical need for New Zealand.

Assessment of Performance

Non-Financial

Performance Measures	2017/18 Actual Standard	2018/19 Budgeted Standard	2018/19 Actual Standard
Percentage of contracts that have been monitored and performance assessed within agreed timeframes	-	100% <i>New measure</i>	100%

Comment

The Endeavour Fund invests in proposals for excellent research that can demonstrate significant impact for New Zealand. The Ministry administers the Fund via two investment mechanisms:

- Smart Ideas – This investment mechanism is intended to catalyse and rapidly test promising, innovative research ideas with high potential for benefit to New Zealand, to enable refresh and diversity in the science portfolio.
- Research Programmes – This investment mechanism is intended to support ambitious, excellent, and well-defined research ideas which collectively have credible and high potential to positively transform New Zealand's future in areas of future value, growth or critical need.

For the 2019 Endeavour Round, the Ministry invested in 71 new contracts with an annual value of \$56.3 million and a total contract value in excess of \$240 million.

The Ministry monitored 232 Endeavour (including its predecessor funds) contracts in the 2018/19 period.

Financial

Expenses (\$000)	2017/18 Actual	2018/19 Estimates	2018/19 Supp Estimates	2018/19 Actual
Total Appropriation	195,674	216,363	216,654	216,576

Marsden Fund

Scope of Appropriation

This appropriation is limited to excellent investigator-led research.

Intention Statement

This appropriation is intended to achieve an improvement in investigator-led research in areas of science, engineering, mathematics, social sciences and the humanities.

Assessment of Performance

Non-Financial

Performance Measures	2017/18 Actual Standard	2018/19 Budgeted Standard	2018/19 Actual Standard
The proportion of New Zealand's publications that are in the top 1% of global publications, ranked by citations	1.7%	1%	2%

Comment

The Marsden Fund is a contestable fund administered by the Royal Society of New Zealand on behalf of government. Its primary objectives are to:

- enhance the quality of research in New Zealand by creating increased opportunities to undertake excellent investigator-initiated research
- support the advancement of knowledge in New Zealand, and contribute to the global knowledge base.

A secondary objective of the Marsden Fund is to contribute to the development of advanced research skills in New Zealand, including support for post-doctoral and early career researchers.

In 2018/19, the Royal Society ran an annual contestable funding process for this Fund and managed \$70.5 million. Interest in the Marsden Fund remains very high with 1,103 expressions of interest received and a total of 305 full proposals proceeded to the second stage.

As a result, a total of 136 new research project applications, with a combined value of \$85.6 million over three years were approved. Of these, 53 were Fast-Start grants and 83 were standard grants.

Financial

Expenses (\$000)	2017/18 Actual	2018/19 Estimates	2018/19 Supp Estimates	2018/19 Actual
Total Appropriation	63,405	70,545	70,545	70,545

Partnered Research Fund

Scope of Appropriation

This appropriation is limited to the co-funding of research commissioned by end-users, and the application of research by end-users.

Intention Statement

This appropriation is intended to achieve greater connections between researchers and end-users.

Assessment of Performance

Non-Financial

Performance Measures	2017/18 Actual Standard	2018/19 Budgeted Standard	2018/19 Actual Standard
Percentage of contracts that have been monitored and performance assessed within agreed timeframes	-	100% <i>New measure</i>	99%

Comment

In 2018/19, the Ministry provided investment to enable a greater connection between researchers and end-users. Examples of initiatives funded are provided below.

Food Safety Science and Research Centre

The New Zealand Food Safety Science and Research Centre (the Centre) was launched in May 2016 as a partnership between government, industry organisations and research institutions. In 2018/19 the Ministry reviewed the Centre, which has resulted in some changes to the funding model to support increased co-investment from the food sector.

Partnerships

The Partnerships fund strengthens ties between research organisations and research users, particularly industry, by supporting sectors to establish long-term research programmes. Partnerships contracts may be for up to seven years, and industry partners must contribute at least 60 per cent of the funding. It stimulates sector-led investment and collaborative effort, with each Partnership including at least two sector partners (or one sector representative body), and one research organisation.

In May 2019, Government invested in four new Partnerships with a total contract value of \$14.4 million.

Fifteen Partnerships contracts were monitored by the Ministry (submitted and assessed within agreed timeframes) in the 2018/19 period.

PreSeed Accelerator Fund and Commercialisation Partner Network (CPN)

Six PreSeed contracts were monitored by the Ministry (submitted and assessed) in the 2018/19 time period. The three CPN contracts date back to 2011 and were monitored through on-going relationships. New contracts begin 1 July 2019. Those bring the CPN contracts into the annual reporting process and include Key Performance Indicators.

The variance in the result of 99 per cent is due to 101 contracts monitored, where 102 were expected to report in 2018/19.

Financial

Expenses (\$000)	2017/18 Actual	2018/19 Estimates	2018/19 Supp Estimates	2018/19 Actual
Total Appropriation	33,427	37,771	33,846	31,793

Comment

An in-principle expense transfer of up to \$3.0 million was submitted from 2018/19 to 2019/20 due to New Zealand Food Safety Science and Research Centre contract payments, which were put on hold in the 2017/18 and 2018/19 financial years. The final figure available to transfer was \$2.1 million.

The contract payments were put on hold as industry co-funding targets were not achieved. Following a review of the Centre, the Ministry has changed the funding model and expect industry funding to increase as a result. Payment will resume in outyears once more projects are underway.

Non-Departmental Other Expenses

Catalyst Fund

Scope of Appropriation

This appropriation is limited to grants to support international science partnerships.

Intention Statement

This appropriation is intended to achieve improved international flows of people, ideas and investment through support of activities that initiate, develop and foster collaborations leveraging international science and innovation for New Zealand's benefit.

Assessment of Performance

Non-Financial

Performance Measures	2017/18 Actual Standard	2018/19 Budgeted Standard	2018/19 Actual Standard
Percentage of contracts that have been monitored and performance assessed within agreed timeframes	-	100% <i>New measure</i>	100%

Comment

The Catalyst Fund is a key tool to support the Ministry's bilateral and multilateral science partnerships. Funding is delivered through four instruments:

- *Catalyst: Strategic* funds strategic research partnerships and large-scale international collaborations
- *Catalyst: Seeding* supports small and medium-sized new international partnerships
- *Catalyst: Leaders* supports targeted international fellowships for exceptional individuals
- *Catalyst: Influence* supports New Zealand's involvement in and influence of key international fora.

In 2018/19 the Ministry ran a contestable investment process through the *Catalyst: Strategic* fund to invest in collaborative projects with China. Three successful research collaboration projects were approved, which will receive a combined total investment of \$1.0 million over three years.

The Royal Society of New Zealand administers the *Catalyst: Seeding* and *Catalyst: Leaders* funds on behalf of the Ministry. In 2018/19 the Society ran three contestable rounds for each supporting 53 new projects and individual fellowship awards involving collaboration with a wide range of countries, with investment totalling \$3.4 million in 2018/19.

The *Catalyst: Influence* investment in 2018/19 supported scientific memberships for New Zealand including, for example, the Human Frontiers Science Programme, Global Alliance for Chronic Diseases and the Global Biodiversity Information Facility.

The Ministry monitored and assessed 41 contracts within agreed timeframes in 2018/19.

Financial

Expenses (\$000)	2017/18 Actual	2018/19 Estimates	2018/19 Supp Estimates	2018/19 Actual
Total Appropriation	8,425	8,251	10,751	7,204

Comment

This appropriation increased by \$2.5 million to \$10.8 million for 2018/19 due to adjustments made in 2018 October Baseline update to reverse transfers of \$6.2 million that approved in Budget Technical 2018. This was offset by \$3.7 million transferred to outyears to manage the overall appropriation profile to match investment plans with partner countries.

An in-principle expense transfer of \$3.2 million was submitted from 2018/19 to 2019/20 due to the need to engage further between the New Zealand and international partner research communities regarding the framing and detail of the research programme and its governance/administration arrangements.

Regional Research Institutes

Scope of Appropriation

This appropriation is limited to expenses incurred in establishing and contributing to the operation of Regional Research Institutes.

Intention Statement

This appropriation is intended to achieve research institutes that maximise the unique business, technology and economic growth opportunities in their respective regions.

Non-Financial

Performance Measures	2017/18 Actual Standard	2018/19 Budgeted Standard	2018/19 Actual Standard
Percentage of contracts that have been monitored and assessed within agreed timelines	100%	100%	100%

Comment

Government has invested in four Regional Research Institutes (RRI) to help build research and development intensity and lift innovation in key regional industries.

- Xerra (formerly known as The Centre for Space Science Technology) based in Alexandra, Central Otago, will help drive regional economic growth by enabling access to existing and new satellite and other Earth observation data. Xerra is developing products and solutions that incorporate Earth observation data tailored to meet the needs of New Zealand's regional industries.
- The Bragato Institute (formerly known as New Zealand Winegrowers Research Centre) aims to provide world-leading research for commercial grape and wine production and is based in Marlborough.
- The New Zealand Institute for Minerals to Materials Research will explore innovative research and manufacturing techniques to convert minerals into higher-value products and is based in Greymouth.
- PlantTech Research Institute, based in Tauranga, is focussed on technology and innovation in premium, plant-based value chains for the horticulture sector with the aim of becoming a leader in enabling customised, precise and automated production systems for premium, natural plant production, management and distribution.

We have continued to support these in 2018/19. All four RRI contracts were monitored within agreed timeframes.

Financial

Expenses (\$000)	2017/18 Actual	2018/19 Estimates	2018/19 Supp Estimates	2018/19 Actual
Total Appropriation	9,449	20,000	9,023	9,023

Comment

This appropriation decreased by \$11 million to \$9.1 million for 2018/19 mainly due to a transfer that was made from 2018/19 to 2020/21.

The change reflects delays of each RRI in key appointments and the on-boarding of new research scientists which pushed substantial payroll and overhead costs into out years, in particular \$2.0 million for The Bragato Research Centre. New payment timelines for the other RRIs are reflected in the movements.