

# **VOTE** *Research, Science and Technology*

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## Overview

Appropriations sought for Vote Research, Science and Technology in 2001/02 total \$585.696 million. These appropriations will be applied as follows (see note 1):

- \$122.745 million (25% of Vote) to purchase outputs that support innovative and entrepreneurial people with the ability to create new knowledge needed to respond to New Zealand's changing needs, and support our capacity to innovate.
- \$210.060 million (43% of Vote) to research, science and technology outputs that contribute to increasing the competitiveness of New Zealand enterprises.
- \$85.004 million (18% of Vote) to research, science and technology outputs that increase understanding of our environment.
- \$47.261 million (10% of Vote) to research, science and technology outputs that increase knowledge of the social, biological, cultural, economic and physical factors that improve the social well-being of New Zealanders.
- \$20.034 million (4% of Vote) to purchase advice on research and innovation policies and manage contracts with purchase agents and research providers.
- \$100 million capital contribution in 2001/02 only for the Crown Seed Capital Fund – to co-invest in seed ventures in partnership with the private sector.
- \$592,000 for the payment of the Crown's expenses for governance and management of the Crown Seed Capital Fund and New Zealand's membership of the Convention du Metre.

Details of how the appropriations are to be applied appear in parts B1 and C of this Vote.

## Terms and Definitions Used

<b>CRI</b>	Crown Research Institute
<b>FRST</b>	Foundation for Research, Science and Technology
<b>HRC</b>	Health Research Council of New Zealand
<b>NERF</b>	New Economy Research Fund
<b>NSOF</b>	Non-Specific Output Funding
<b>R&amp;D</b>	Research and development
<b>RSNZ</b>	The Royal Society of New Zealand
<b>RS&amp;T</b>	Research, science and technology
<b>SIAC</b>	Science and Innovation Advisory Council
<b>TBG</b>	Technology for Business Growth

## Footnote

<b>Note 1</b>	Vote percentage calculations exclude the one-off \$100 million capital contributions to the Crown Seed Capital Fund.
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# *Research, Science and Technology*

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VOTE MINISTER: Minister of Research, Science and Technology

ADMINISTERING DEPARTMENT: The Ministry of Research, Science and Technology

The Minister of Research, Science and Technology is the Responsible Minister for the Ministry of Research, Science and Technology

## Part A – Statement of Objectives and Trends

### **Part A1 - Transforming New Zealand to a Knowledge-Based Society**

Knowledge is quickly becoming a major source for increasing economic competitiveness, creating wealth and improving the quality of people's lives and their environments. Research and technological progress are key drivers of long-term economic growth, improving social well-being and ensuring sustainable management of our environment.

One of Government's key goals is to "grow an inclusive, innovative economy for the benefit of all". The Government's investment in Vote Research, Science and Technology contributes to the achievement of this goal by:

- building partnerships between the public and private sectors that increase private sector investment in research and development;
- making New Zealand industries and sectors more competitive by supporting innovative research and global research alliances;
- building firms' awareness of global advances in technology and the opportunities they offer;
- maintaining a knowledge base and training people to meet New Zealand's future research and innovation needs;
- increasing the flows of researchers between the public and private sectors; and
- demonstrating how science and technology are an important part of national life.

### *The Government's Role*

The Government plays an important role in transforming New Zealand towards a knowledge-based future. It's investment in Vote Research, Science and Technology makes a major contribution to transforming New Zealand to a high-skill, high-employment, high-value-added economy.

The Government's investment also shows a wider and long-term concern for the research and innovation needed to ensure the well-being of New Zealanders. Government's investment in Vote Research, Science and Technology is directed at increasing:

- research-skilled people and their ideas;
- the uptake by firms of innovative ideas and technologies; and
- the use of research to meet the needs of industries and sectors relevant to New Zealand now and in the future.

## *The Government's Investment Framework*

The Government wishes to ensure that its investment in Vote Research, Science and Technology gets to the right areas. It develops policy and allocates resources in a framework based around four science goals. Each science goal comprises a group of output classes whose outputs make contributions to the achievement of the goal.

### **Knowledge Goal**

The Knowledge Goal seeks to “accelerate knowledge creation and the development of human capital, social capital, learning systems and networks in order to enhance New Zealand’s capacity to innovate”. Innovative and entrepreneurial people with the ability to create new knowledge are needed to respond to New Zealand’s changing needs, and support our capacity to innovate.

Investment under the Knowledge Goal is expected to:

- expand the knowledge base;
- build research capabilities;
- promote positive attitudes about innovation; and
- recognise and support promising people who sustain our innovation system.

Progress and achievements of investments in meeting these expectations will be measured with indicators including: (i) the amount of globally significant new knowledge created in New Zealand; (ii) the proportion of skilled researchers and technologists in the New Zealand workforce; and (iii) the appeal of science and technology education and careers to young New Zealanders.

The output classes contributing to the Knowledge Goal are:

- *Marsden Fund* for excellent research exploring the frontiers of new knowledge;
- *New Economy Research Fund* for research capability and knowledge development in emerging areas likely to have commercial prospects;
- *Non-Specific Output Funding* for exploratory research that is important to Crown Research Institutes;
- *Supporting Promising Individuals* for awards and fellowships to people who sustain the innovation system; and
- *Promoting an Innovation Culture* for promoting positive attitudes to science and technology and forging international linkages.

### **Economic Goal**

The Economic Goal seeks to “increase the contribution knowledge makes to the creation and value of new and improved products, processes, systems and services in order to enhance the competitiveness of New Zealand enterprises”.

Investment under the Economic Goal is expected to:

- increase the global competitiveness of New Zealand firms;
- raise the level of technology in New Zealand production;
- encourage private sector investment in research and development; and
- underpin production with assured standards.

Progress and achievements of investments in meeting these expectations will be measured with indicators including:

- the technology content of manufactured exports; and
- the level of private sector investment in research and innovation.

Output classes contributing to the Economic Goal are:

- *Research for Industry* for increasing the global competitiveness of our food and fibre, manufacturing and service industries; and in national infrastructure such as energy and our built environment;
- *Technology New Zealand* for increasing both: (i) the flow of technology from researchers to firms; and (ii) the ability of firms to take up new technology;
- *Grants for Private Sector Research and Development* for co-funding small and medium business R&D projects to increase their level of investment in research and development; and
- *National Measurement Standards* for providing a set of internationally accepted standards for New Zealand products, processes and services.

### **Environmental Goal**

The Environmental Goal seeks to “increase knowledge of the environment and of the biological, physical, social, economic and cultural factors that affect it in order to establish and maintain a healthy environment that sustains nature and people”.

Investment under the Environmental Goal is expected to improve the integrity and quality of New Zealand’s environmental systems.

Progress and achievements of investments in meeting this expectation will be measured with indicators including: (i) the proportion of total research and development investment dedicated to building understanding of the environment; and (ii) the focus of the major research projects undertaken each year.

Research purchased through the *Environmental Research* output class contributes to the achievement of the Environmental Goal by building understanding of our:

- ecosystems;
- biophysical environment;
- human environment; and
- sustainable management of the environment by our productive sector.

### **Social Goal**

The Social Goal is to “increase knowledge of the social, biological, environmental, cultural, economic and physical determinants of well-being in order to build a society in which all New Zealanders enjoy health and independence and have a sense of belonging, identity and partnership”. Investment under the Social Goal is expected to improve the social well-being of New Zealanders.

Progress and achievements of investments in meeting this expectation will be measured with indicators including:

- the proportion of total research and development investment dedicated to building understanding of the determinants of social well-being; and
- the focus of the major research projects undertaken each year.

The output class investments contributing to the Social Goal are:

- *Health Research* for supporting public good research that has the greatest potential to improve the health status of New Zealanders;
- *Māori Knowledge and Development Research* for developing research capability and knowledge for Māori development by encouraging excellence in the delivery of knowledge for Māori, building the Māori research skill base, and consolidating the Māori knowledge base; and
- *Social Research* for supporting public good research that improves social well-being.

### **Shaping the System**

In addition to the four science goals, the Government has a wider goal of influencing the overall shape of New Zealand's innovation system. Because the Government invests about two thirds of New Zealand's reported R&D expenditure, its policies and actions set a strong direction for research and innovation activities elsewhere in the economy and in society.

Output classes used to ensure direction and management for research and innovation in New Zealand are:

- *Research, Science and Technology Policy Advice* that funds the Ministry of Research, Science and Technology to define, design and deliver policy advice to the Government on research and innovation;
- *Research, Science and Technology Contract Management* that funds the Ministry of Research, Science and Technology to negotiate, manage and monitor contracts, and pay expenses on behalf of the Government;
- *Science and Innovation Advisory Council* which consults with interested community groups on science and innovation issues and provides advice on these issues to the Prime Minister; and
- *Research Contract Management* that funds the Foundation for Research, Science and Technology, the Health Research Council of New Zealand and the Royal Society of New Zealand to invest in portfolios of research on behalf of the Government.

The effectiveness of these investments is assessed by a range of measures specified in annual output agreements with the Minister.

### *The Direction for Vote Research, Science and Technology*

Annual appropriations for output classes of Vote Research, Science and Technology will increase by \$11.64 million in 2001/02, in line with the Government's commitment to raise its investment in research, science and technology. The table below outlines the annual funding increases for outputs to Vote Research, Science and Technology since 1997/98.

Annual increases (excluding amounts transferred from other Votes):

<b>Annual Increases</b>	1997/98	1998/99	1999/00	2000/01	2001/02
<b>\$ million</b>	45	10	17	44	12

The 2001/02 increase excludes the one-off \$100 million capital contribution to the Crown Seed Capital Fund.

Priorities for the increased investment are:

- to stimulate private sector involvement in research and development;
- to expand New Zealand's knowledge base;
- to focus strategic research on the Government's policy priorities; and
- to shape the direction for research and innovation.

These priorities link with outputs purchased through Vote Education; Vote Economic Development; Vote Industry and Regional Development; Vote Environment and with other Votes. The Government will manage its investment in Research, Science and Technology together with other Votes. The wider Government investment seeks to:

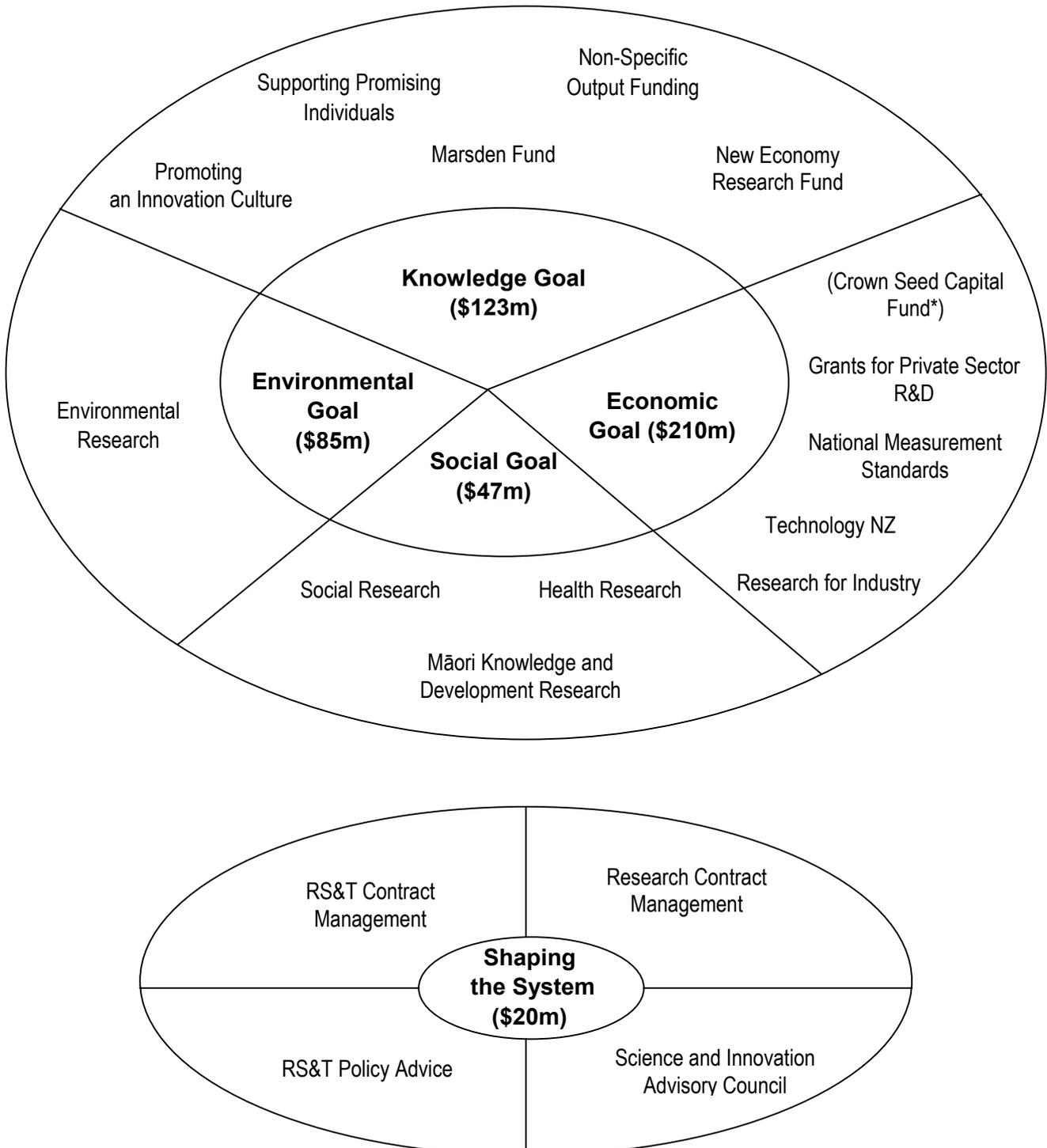
- enhance the role of technology in transforming the New Zealand economy;
- build the capabilities of New Zealanders;
- support public private partnerships; and
- maintain a future focus on environmental issues.

## Part A2 – Trends in Vote Research, Science and Technology

### *Highlights for Vote Research, Science and Technology*

#### Output Classes Connected Across Government

A new output class structure was implemented in 2000/01 to focus Vote Research, Science and Technology investments around the Government’s knowledge, economic, environmental and social science goals. The structure recognises that groups of output classes contribute to each goal, and each output class has a unique purpose. This structure ensures Government makes better investment decisions across all the outputs purchased through Vote Research, Science and Technology.



\* The Crown Seed Capital Fund is a capital appropriation.

A Crown Seed Capital Fund will be established in 2001/02. The Crown will contribute \$100 million of capital for investment in seed capital ventures together with private sector investors. The purpose of the Fund is to:

- increase the number of venture capital firms that are investing in seed stage ventures;
- develop a larger pool of people with investment skills and expertise at the seed end of New Zealand's venture capital market;
- facilitate the commercialisation of innovations from Crown Research Institutes, universities and the private sector; and
- make New Zealand increasingly attractive to international venture capitalists and gain from their expertise, contacts and market knowledge.

In 2001/2002, \$3.075 million of Vote Industry and Regional Development will be managed alongside Vote Research, Science and Technology. Vote Industry and Regional Development funds will be used to increase the numbers of awards and fellowships in programmes currently managed through the Technology New Zealand and Supporting Promising Individuals output classes.

Centres of Research Excellence are being established in 2001/02 through Vote Education to provide incentives for tertiary research to be undertaken that is strategically focused and excellent. Research undertaken in the Centres will contribute to the Government's science goals.

### *Trends for Appropriations within the Science Goals*

Appropriation changes in 2001/2002 and outyears are in three principal areas:

- a capital appropriation for the establishment of the Crown Seed Capital Fund;
- increased appropriations for existing output classes; and
- a reprioritisation between existing output classes.

#### **Capital Appropriation**

A \$100.00 million capital appropriation in 2001/02 only for the establishment of a Crown Seed Capital Fund.

#### **Increased Appropriations for Existing Output Classes**

- \$5.00 million to replace the "entry fee" for Health Research overhead costs;
- \$2.00 million for the New Economy Research Fund;
- \$1.50 million for the Marsden Fund;
- \$1.00 million for Environmental Research;
- \$588,000 for Non-Specific Output Funding;
- \$445,000 for Research Contract Management;
- \$500,000 for the Science and Innovation Advisory Council;

- \$100,000 in 2001/02 and 2002/03 only for Research, Science and Technology Policy Advice; and
- \$506,000 in 2001/02 and 2002/03 only for Other Expenses associated with the governance and operation of the Crown Seed Capital Fund.

### **Reprioritisation Between Existing Output Classes**

The Grants for Private Sector Research and Development output class has been decreased by \$1.8 million in 2001/02 and outyears to provide for increases in other output classes. These increases are:

- \$800,000 for Research Contract Management to fund increased operating costs for monitoring and evaluating the effectiveness of Vote investments;
- \$500,000 for the Marsden Fund to continue the Government's commitment to expand the knowledge base and to build research capabilities; and
- \$500,000 for Māori Knowledge and Development Research to continue the Government's commitment to capacity and capability building for Māori research.

A further adjustment results in a net transfer of \$303,000 from Research for Industry to the New Economy Research Fund.

The Technology New Zealand output class has been decreased in 2001/02 and outyears by \$200,000, and transferred to the National Measurement Standards output class.

### *Trends in Departmental Outputs*

An increase of \$500,000 to the Science and Innovation Advisory Council enables it to develop and promote an innovation strategy.

An increase of \$100,000 to Research, Science and Technology Policy Advice in 2001/02 and 2002/03 only has been provided to purchase advice on the governance and management of the Crown Seed Capital Fund.

## Trends in Vote Research, Science and Technology – Summary of Appropriations and Crown Revenue

Types of Appropriation	1996/97	1997/98	1998/99	1999/2000	2000/01		2001/02 Appropriations to be Used				
	Actual \$000	Actual \$000	Actual \$000	Actual \$000	Budget \$000	Estimated Actual \$000	By the Department Administering the Vote		For Non-Departmental Transactions		Total \$000
							Annual \$000	Other \$000	Annual \$000	Other \$000	
<b>Operating Flows</b>											
Classes of Outputs to be Supplied	327,671	395,530	411,235	430,196	473,974	473,887	7,578	-	477,526	-	485,104
Benefits and Other Unrequited Expenses	-	-	-	-	-	-	N/A	N/A	-	-	-
Borrowing Expenses	-	-	-	-	-	-	N/A	N/A	-	-	-
Other Expenses	71	77	100	86	91	91	-	-	592	-	592
<b>Capital Flows</b>											
Capital Contributions	-	-	-	-	-	-	-	-	100,000	-	100,000
Purchase or Development of Capital Assets	-	-	-	-	-	-	N/A	N/A	-	-	-
Repayment of Debt	-	-	-	-	-	-	N/A	N/A	-	-	-
<b>Total Appropriations</b>	327,742	395,607	411,335	430,282	474,065	473,978	7,578	-	578,118	-	585,696
<b>Total Crown Revenue and Receipts</b>	-	-	-	-	-	-	N/A	N/A	N/A	N/A	-

## Part B - Statement of Appropriations

### Part B1 - Details of 2001/02 Appropriations

	2000/01				2001/02		Description of 2001/02 Appropriations
	Vote		Estimated Actual		Vote		
Appropriations	Annual \$000	Other \$000	Annual \$000	Other \$000	Annual \$000	Other \$000	
<b>Departmental Output Classes (Mode B Gross)</b>							
D1 Research, Science and Technology Policy Advice	5,632	-	5,632	-	<b>5,724</b>	-	- Provides policy advice on research, science and technology. This includes investment strategies, the performance and integration of the innovation system, scientific technical advice and ministerial services.
D2 Research, Science and Technology Contract Management	573	-	573	-	<b>573</b>	-	- Negotiates, manages and monitors the Crown's funding of science and technology purchase agents and negotiates and monitors contracts with specific science and technology service providers.
D3 Science and Innovation Advisory Council	781	-	716	-	<b>1,281</b>	-	- Supports the Science and Innovation Advisory Council, which consults with interested groups in the community on science and innovation issues, and provides advice on policies for science and innovation to the government.
<b>Total Appropriations for Departmental Output Classes (Mode B Gross)</b>	6,986	-	6,921	-	7,578	-	
<b>Non-Departmental Output Classes</b>							
O1 Marsden Fund	25,839	-	25,839	-	<b>27,839</b>	-	- Research outputs which broaden and deepen the research skill base and support excellent research in New Zealand, regardless of whether the research contributes to the Government's socio-economic priorities.
O2 Non-Specific Output Funding	27,438	-	27,438	-	<b>28,026</b>	-	- Funds the Crown Research Institutes as specified in the relevant Ministerial instruction.

**Part B1 - Details of 2001/02 Appropriations (continued)**

Appropriations	2000/01				2001/02		Description of 2001/02 Appropriations
	Vote		Estimated Actual		Vote		
	Annual \$000	Other \$000	Annual \$000	Other \$000	Annual \$000	Other \$000	
<b>Non-Departmental Output Classes – cont'd</b>							
O3 Supporting Promising Individuals	10,736	-	10,734	-	<b>10,736</b>	-	Supports the development of human resources in research, science and technology through awards and fellowships. The recipients include post-doctoral researchers, teachers and Maori researchers and technologists.
O4 Promoting an Innovation Culture	3,155	-	3,135	-	<b>3,060</b>	-	Promotes values and attitudes supportive of an innovation culture in New Zealand. International links will be developed to access the best international research and researchers, and to promote New Zealand research overseas.
O5 Research Contract Management	11,111	-	11,111	-	<b>12,456</b>	-	Supports the capability of the Crown's purchase agents to negotiate, manage and monitor research contracts, and provide advice to the Minister.
O6 New Economy Research Fund	50,781	-	50,781	-	<b>53,084</b>	-	Investigator-initiated research that stimulates the emergence and growth of new knowledge-intensive enterprises.
O7 Research for Industry	171,112	-	171,112	-	<b>170,809</b>	-	Public good science and technology that improves the competitiveness of the industrial sector.
O8 Technology New Zealand	24,694	-	24,694	-	<b>24,494</b>	-	Enhances the technological capability of businesses to grow through the development and adoption of new technologies.
O9 Grants for Private Sector Research and Development	11,800	-	11,800	-	<b>10,000</b>	-	Outputs will be co-funded to stimulate private sector investment in research and development in New Zealand, particularly within small to medium-sized firms.
O10 National Measurement Standards	4,557	-	4,557	-	<b>4,757</b>	-	Provides specified standards to satisfy the needs for traceable physical measurement in New Zealand.
O11 Maori Knowledge and Development Research	3,990	-	3,990	-	<b>4,490</b>	-	Public good science and technology that enhances Maori knowledge and capability and contributes to the positive future development of Maori.
O12 Health Research	33,434	-	33,434	-	<b>38,434</b>	-	Public good science and technology that improves the health status of New Zealanders.

O13 Social Research	4,337	-	4,337	-	<b>4,337</b>	-	Public good science and technology that improves societal well being.
O14 Environmental Research	84,004	-	84,004	-	<b>85,004</b>	-	Public good science and technology that enhances the understanding and management of our environment.
<b>Total Appropriations for Non-Departmental Output Classes</b>	466,988	-	466,966	-	477,526	-	
<b>Other Expenses to be Incurred by the Crown</b>							
Convention Du Metre	91	-	91	-	<b>86</b>	-	Payment of New Zealand's assessed subscription to the Convention du Metre in accordance with Cabinet directives.
Crown Seed Capital Fund Governance and Operational Expenses	-	-	-	-	<b>506</b>	-	Governance and operational expenses for the Crown Seed Capital Fund.
<b>Total Appropriations for Other Expenses to be Incurred by the Crown</b>	91	-	91	-	592	-	
<b>Capital Contributions to Other Persons or Organisations</b>							
Crown Seed Capital Fund	-	-	-	-	<b>100,000</b>	-	Fund to accelerate the development of the New Zealand venture capital market. Public funds will be co-invested with the private sector to increase the rate of formation of new businesses based on high added value goods and services.
<b>Total Appropriations for Capital Contributions to Other Persons or Organisations</b>	-	-	-	-	100,000	-	
<b>Total Appropriations</b>	474,065	-	473,978	-	585,696	-	

## Part C – Explanation of Appropriations for Output Classes

### Part C1 – Departmental Output Classes

The full description of the departmental output classes and associated performance measures are contained in the Ministry of Research, Science and Technology's Statement of Intent and Output Agreement with the Minister of Research, Science and Technology.

#### *Output Class D1 – Research, Science and Technology Policy Advice*

##### **Description**

The Research, Science and Technology Policy Advice output class provides policy advice on science and innovation to support New Zealand's capacity to innovate.

Under this output class the Ministry of Research, Science and Technology will:

- Define policy. Advice that identifies policy needs and develops understanding of research science and technology issues, which affect New Zealand's social, environmental and economic well-being.
- Design policy. Identifying, evaluating and recommending solutions involving science and innovation.
- Deliver policy. Implementing and evaluating the impact of those solutions on New Zealanders' lives, environment and enterprises, and enabling and facilitating global, community and governmental partnerships.

Delivery of this output class is negotiated through an Output Agreement and monitored through quarterly Progress Reports.

#### *Output Class D2 – Research, Science & Technology Contract*

##### **Description**

The Research, Science & Technology Contract Management output class administers science and technology contracts aimed at accelerating knowledge creation and development of human capital and learning networks.

Under this output class science and technology outputs in Vote Research, Science and Technology are provided on behalf of the Crown through the negotiation, management and monitoring of contracts.

Agreements are managed with the following agents and providers:

- Foundation for Research, Science and Technology
- Health Research Council of New Zealand
- Royal Society of New Zealand
- Industrial Research Limited

- Carter Observatory Board
- Other providers of science and technology services.

Delivery of this output class is negotiated through an Output Agreement and monitored through quarterly Progress Reports.

### *Output Class D3 – Science and Innovation Advisory Council*

#### **Description**

The Science and Innovation Advisory Council output class supports the Council, which consults with interested groups in the community on high-level science and innovation issues. The Council advises the Prime Minister on key issues for science and innovation in New Zealand.

Under this output class the Ministry of Research, Science and Technology meets the fees of the members of the Science and Innovation Advisory Council, and costs of the secretariat, including technical expertise and administrative services. The chair of the Science and Innovation Advisory Council directs secretariat staff.

Delivery of this output class is negotiated through an agreement between the chair of the Science and Innovation Advisory Council and the Chief Executive of the Ministry of Research, Science and Technology. The Council provides quarterly reports to the Prime Minister.

## **Part C2 – Non-Departmental Output Classes**

### *Output Class O1 – Marsden Fund*

#### **Description**

The Marsden Fund output class supports research that encourages excellence in the advancement of knowledge, expands the knowledge base and supports people with knowledge, skills and ideas. This output class contributes primarily to the Knowledge Goal.

Under this output class, the purchase agent invests in investigator-initiated research aimed at exploring the frontiers of new knowledge. The Marsden Fund research benefits society as a whole by contributing to the development of researchers with knowledge, skills and ideas. The research is not subject to government's socio-economic priorities, and may lead to unexpected or unintended discoveries of international significance.

Criteria for the purchase of outputs will be:

- research excellence; and
- contribution to the development of new knowledge, human skills and expertise.

#### **Purchase Agent**

Royal Society of New Zealand.

## Providers

Open to all research providers.

## Quantity, quality, timeliness and cost

Performance Measures	2001/02 Performance Standards
<p><b><u>Quantity</u></b></p> <p>Number of contracts.</p>	300-350
<p><b><u>Quality</u></b></p> <p>Contracts which contribute to:</p> <ul style="list-style-type: none"> <li>• Addressing insufficiencies in New Zealand's knowledge base, human capacity and capability.</li> <li>• Fostering global linkages.</li> <li>• Fostering cross-discipline approaches and co-operation.</li> <li>• Supporting investigator-initiated research.</li> </ul>	<p>Progress reports provide evidence of the extent to which contracts contribute to objectives.</p> <p>Contribution is measured through a mix of qualitative and quantitative measures and indicators.</p> <p>Feedback from the Minister on the annual progress and achievement report confirms satisfaction.</p>
<p><b><u>Timeliness</u></b></p> <p>Delivery of outputs in accordance with timelines specified in contracts between purchase agents and providers.</p>	95% of contracts.

## Cost

	Output Class Cost	\$000
2001/02	Total output class to be provided within (GST inclusive)	27,839
2000/01	Total output class to be provided within (GST inclusive)	25,839

## *Output Class 02 – Non-Specific Output Funding*

### Description

The Non-Specific Output Funding output class funds Crown Research Institutes for public good science and technology that is independent of government priorities, in order to maintain their viability and capacity. This output class contributes primarily to the Knowledge Goal.

Under this output class the 2001/02 funding is calculated at 10% of the value of contracts awarded to Crown Research Institutes in 2000/01 from the following output classes:

- Environmental Research;
- New Economy Research Fund (NERF);

- Research for Industry;
- Health Research;
- Social Research;
- Maori Knowledge and Development Research; and
- Non-Specific Output Funding.

### Purchase Agent

Foundation for Research, Science and Technology.

### Providers

Crown Research Institutes.

### Quantity, quality, timeliness and cost

#### Quantity

Outputs will be provided by the nine Crown Research Institutes, at the following estimated cost per institute:

<b>Crown Research Institute</b>	<b>2001/02 \$000</b>	<b>2000/01 \$000</b>
Industrial Research Ltd	3,173	3,034
Institute of Environmental Science and Research Ltd	302	254
Institute of Geological and Nuclear Science Ltd	2,304	2,250
Landcare Research New Zealand Ltd	2,851	2,785
National Institute of Water and Atmospheric Research Ltd	4,193	4,131
New Zealand Forest Research Institute Ltd	2,648	2,634
New Zealand Institute for Crop and Food Research Ltd	2,346	2,321
New Zealand Pastoral Agriculture Research Institute Ltd	6,422	6,285
The Horticulture and Food Research Institute of New Zealand Ltd	3,787	3,744
<b>Total</b>	<b>28,026</b>	<b>27,438</b>

Criteria for the purchase of outputs will be the contribution to:

- increased knowledge or understanding of the physical, biological or social environment; and
- the development, maintenance or increase in scientific or technological expertise that is of particular importance to New Zealand; and
- research of benefit to New Zealand but unlikely to be funded or adequately funded from non-government sources.

Performance Measures	2001/02 Performance Standards
<p><b>Quality</b></p> <p>Performance standards will be specified in a Ministerial instruction to FRST and in contracts between FRST and Crown Research Institutes.</p>	All contracts between FRST and the Crown Research Institutes are in accordance with the Ministerial instruction.
<p><b>Timeliness</b></p> <p>Delivery of outputs in accordance with timelines specified in contracts between FRST and Crown Research Institutes.</p>	95% of contracts.

### Cost

	Output Class Cost	\$000
2001/02	Total output class to be provided within (GST inclusive)	28,026
2000/01	Total output class to be provided within (GST inclusive)	27,438

## *Output Class O3 – Supporting Promising Individuals*

### **Description**

The Supporting Promising Individuals output class supports human resources in research, science, and technology and contributes to the development of people with knowledge, skills and ideas. This output class contributes primarily to the Knowledge Goal.

Under this output class, purchase agents will invest in awards and fellowships which support the development of human capital in research, science and technology:

- New Zealand Science and Technology Post-Doctoral Fellowships Scheme. Fellowships develop and enhance science, technology and engineering skills and knowledge in researchers who are of outstanding talent, and who apply the benefits to New Zealand (\$4.235 million).
- Health Research Council of New Zealand Career Development Awards. Awards support the recruitment, education, training and retention of health researchers (\$3.000 million).
- Science, Mathematics and Technology Teacher Fellowships. Provides excellent science and technology teachers an opportunity to broaden their experience by placing them in organisations where science and research are valued (\$2.351 million).
- Captain James Cook Fellowships. Fellowships are awarded to researchers who are recognised leaders in their respective fields, one of which shall be in social sciences (\$720,000).
- Tūāpapa Pūtaiao Māori Fellowships. Fellowships develop positive role models in order to promote the participation and achievement of Māori in science, technology and engineering (\$400,000).
- Future Directors' Award. Awards are presented to leading scientific professionals to strengthen their corporate governance skills (\$30,000).

Criteria for the purchase of outputs will be:

- excellence and/or potential of the recipients; and
- potential contributions their acquired skills and expertise will make to the human resources of New Zealand's innovation system.

### Purchase Agents

Foundation for Research, Science and Technology, Health Research Council of New Zealand, Ministry of Research, Science and Technology, Royal Society of New Zealand.

### Quantity, quality, timeliness and cost

Performance Measures	2001/02 Performance Standards
<p><b>Quantity</b></p> <ul style="list-style-type: none"> <li>• Health Research Council awards.</li> <li>• Captain James Cook Fellowships.</li> <li>• Tūāpapa Pūtaiao Māori Fellowships.</li> <li>• Science and Technology Post-Doctoral Fellowships</li> <li>• Science, Mathematics and Technology Teacher Fellowships</li> <li>• Future Directors' Award.</li> </ul>	<p>80-100 active</p> <p>6-12 active</p> <p>12-20 active</p> <p>50-60 active</p> <p>35-45 active</p> <p>4-7 active</p>
<p><b>Quality</b></p> <p>Extent to which objectives as outlined in the appropriate ministerial instruction or terms of reference are met.</p>	<p>Progress reports provide evidence of the extent to which contracts contribute to ministerial instruction or terms of reference objectives.</p> <p>Contribution is measured through a mix of qualitative and quantitative measures and indicators.</p> <p>Feedback from Minister confirms satisfaction.</p>
<p><b>Timeliness</b></p> <p>Delivery of outputs in accordance with timelines specified in contracts between purchase agents and providers.</p>	<p>95% of contracts.</p>

### Cost

	Output Class Cost	\$000
2001/02	Total output class to be provided within (GST inclusive)	10,736
2000/01	Total output class to be provided within (GST inclusive)	10,736

## *Output Class O4 – Promoting an Innovation Culture*

### **Description**

The Promoting an Innovation Culture output class develops networks that strengthen and encourage a culture of innovation in New Zealand. This output class contributes primarily to the Knowledge Goal.

Under this output class, purchase agents will invest in programmes that promote science and technology by:

- Accessing and utilising the best global ideas. Encourages New Zealanders to use international science and technology linkages to enhance our knowledge base and innovative capacity.
- Promoting awareness of science and technology. Supports activities that promote the value of science and technology to New Zealanders.
- Publishing the best New Zealand science. Provides for the publication of New Zealand-based international science journals.

Criteria for the purchase of outputs will be:

- contribution to the development of international opportunities and utilisation of overseas advances in science and technology;
- contributions to promotion of the value of science and technology to target audiences; and
- dissemination of science and technology knowledge as a contribution to global knowledge.

### **Purchase Agents**

Carter Observatory, Ministry of Research, Science and Technology, Royal Society of New Zealand.

### **Providers**

Open to all providers of science and technology services.

### **Quantity, quality, timeliness and cost**

<b>Performance Measures</b>	<b>2001/02 Performance Standards</b>
<p><b><u>Quantity</u></b></p> <p>Estimated number of contracts:</p> <p><b>International Linkages:</b></p> <ul style="list-style-type: none"> <li>• Bilateral Cooperation Programme</li> <li>• International scientific academy organisations.</li> <li>• Strategic international activities.</li> </ul> <p><b>Science Publications:</b></p> <p>Publishing of the Journal of The Royal Society of New Zealand and six other journals.</p>	<p>70 - 120 contracts.</p> <p>Active membership of at least 17 international science societies.</p> <p>30 - 50 contracts.</p> <p>Four issues of each of the seven journals.</p>

Performance Measures – cont'd	2001/02 Performance Standards
<ul style="list-style-type: none"> <li>Publishing a newsletter and preparation of media articles about astronomical events and related information.</li> </ul> <p><b>Science Promotion:</b></p> <ul style="list-style-type: none"> <li>Increase awareness about science and technology, particularly among students making career choices, parents, teachers, Māori and enterprise managers.</li> <li>Promoting astronomy through public lectures and programmes.</li> </ul>	<p>Twelve Carter Observatory newsletters. At least 12 media articles.</p> <p>As specified in the output agreement.</p> <p>One new planetarium programme developed. At least 10 public lectures delivered.</p>
<p><b>Quality</b></p> <p>Extent to which contracts contribute to objectives as outlined in the output agreement with the Minister of Research, Science and Technology.</p>	<p>Progress reports provide evidence of the extent to which contracts contribute to Output Class objectives.</p> <p>Contribution is measured through a mix of qualitative and quantitative measures and indicators.</p> <p>Feedback from Minister confirms satisfaction.</p>
<p><b>Timeliness</b></p> <p>Delivery of outputs in accordance with timelines specified in contracts between the Minister and providers.</p>	<p>95% of contracts.</p>

### Cost

	Output Class Cost	\$000
2001/02	Total output class to be provided within (GST inclusive)	3,060
2000/01	Total output class to be provided within (GST inclusive)	3,155

## *Output Class O5 – Research Contract Management*

### **Description**

The Research Contract Management output class funds purchase agents to manage contracts with a range of science and research providers. Purchase agents monitor the delivery of these contracts to ensure the effective operation of the research, science and technology system. Purchase agents also evaluate the effectiveness of their purchase decisions through an annual report of progress and achievements.

Under this output class the Minister has agreements with providers to invest in research on behalf of the Crown.

### **Providers**

Health Research Council of New Zealand, Foundation for Research, Science and Technology, Royal Society of New Zealand.

**Quantity, quality, timeliness and cost**

<b>Performance Measures</b>	<b>2001/02 Performance Standards</b>
<p><b><u>Quantity</u></b></p> <p>Number of contracts as specified in the relevant Ministerial instruction, Government's Statement of Priorities or terms of reference or output agreement.</p>	As specified for each output class.
<p><b><u>Quality</u></b></p> <p>Contracts meet the criteria set out in the relevant Ministerial instruction, terms of reference, output agreement and in accordance with the Government's Statement of Priorities.</p> <p>The contracts are based on a contestable selection process and/or negotiation with providers and users that focus outputs on government's goals.</p> <p>Provision of progress and achievements reports to the Minister summarising delivery against agreed specification, identifying any significant variations, any corrective actions required or taken, and any potential risks to delivery according to the agreed quantity, quality and cost.</p> <p>Contract payments are made at the agreed sum to the correct providers and no payments are made in excess to the agreed sums</p> <p>Where appropriate, contracts require research providers to obtain ethical approvals, and satisfy government regulatory requirements before the research can be undertaken.</p>	<p>All contracts.</p> <p>The process used to select contracts is widely available.</p> <p>Feedback from the Minister confirms satisfaction.</p> <p>All contracts.</p> <p>All applicable contracts.</p>
<p><b><u>Timeliness</u></b></p> <p>Delivery of outputs in accordance with timelines specified in contracts between purchase agents and the Minister.</p>	95% of contracts.

**Cost**

	<b>Output Class Cost</b>	<b>\$000</b>
2001/02	Total output class to be provided within (GST inclusive)	12,456
2000/01	Total output class to be provided within (GST inclusive)	11,111

***Output Class O6 – New Economy Research Fund*****Description**

The New Economy Research Fund output class develops research capability and knowledge in areas of science and technology that are likely to support emergence of new industries and enterprises. This output class contributes primarily to the Knowledge Goal.

Under this output class the purchase agent will invest in investigator-initiated basic research aimed at stimulating the emergence and growth of new knowledge-intensive enterprises and sectors in New Zealand.

Research outputs will support new knowledge for:

- new wealth creating enterprises; and
- advanced biological enterprises; and
- medical and health industries; and
- information and communication industries; and
- new manufacturing systems, enterprises and capabilities.

Criteria for the purchase of outputs will be:

- research quality; and
- potential for new knowledge to underpin new or emerging science and technology-intensive industries and enterprises; and
- potential to build human capital in advanced areas of science and technology.

### **Purchase Agent**

Foundation for Research, Science and Technology.

### **Providers**

Open to all science and technology providers.

### **Quantity, quality, timeliness and cost**

<b>Performance Measures</b>	<b>2001/02 Performance Standards</b>
<p><b><u>Quantity</u></b></p> <p>Contracts for investigator-initiated research</p>	70-100 contracts
<p><b><u>Quality</u></b></p> <p>The extent to which contracts contribute to:</p> <ul style="list-style-type: none"> <li>• Supporting fundamental research that has the potential to underpin new and emerging industries;</li> <li>• Building a critical mass of research capability and new knowledge in emerging science and technology areas;</li> <li>• Developing advanced human capital and skills that draw from rapidly advancing international science and technology;</li> <li>• Developing new areas of knowledge to a point where they may be further developed through other public or private instruments.</li> </ul>	<p>Progress reports provide evidence of the extent to which contracts contribute to objectives.</p> <p>Contribution is measured through a mix of qualitative and quantitative measures and indicators.</p> <p>Feedback from Minister on the annual progress and achievement report confirms satisfaction.</p>

Performance Measures – cont'd	2001/02 Performance Standards
<p><b><u>Timeliness</u></b></p> <p>Delivery of outputs in accordance with timelines specified in contracts between purchase agents and providers.</p>	95% of contracts.

### Cost

	Output Class Cost	\$000
2001/02	Total output class to be provided within (GST inclusive)	53,084
2000/01	Total output class to be provided within (GST inclusive)	50,781

## *Output Class O7 – Research for Industry*

### **Description**

The Research for Industry output class supports strategic research that increases the competitiveness of New Zealand industries and sectors. This output class contributes primarily to the Economic Goal.

Under this output class, the purchase agent will invest in portfolios of research that underpin development of new products, processes and services of use to New Zealand industries and sectors.

This output class has three outputs:

- Research for innovative food and fibre industries. Enables the development of innovative food and fibre industries in New Zealand. Research portfolios will lead to new products, processes and services that enhance the competitiveness of these industries.
- Research for innovative manufacturing and services enterprises. Assists manufacturing and services enterprises to innovate, and includes research on the broad factors affecting business and economic life.
- Research for development of innovative infrastructure. Assists infrastructure services, such as communications, energy, water and waste, to innovate cost effectively. It also includes New Zealand's mineral wealth and understanding of, and responses to risks faced from New Zealand's physical hazards.

Criteria for the purchase of outputs will be:

- scientific and technological quality; and
- contribution to boosting competitiveness of New Zealand industries and sectors; and
- contribution to developing a robust infrastructure to underpin economic development.

### **Purchase Agent**

Foundation for Research, Science and Technology.

## Providers

Open to all science and technology providers.

## Quantity, quality, timeliness and cost

Performance Measures	2001/02 Performance Standards
<p><b><u>Quantity</u></b></p> <p>Number of contracts</p>	200-220 contracts
<p><b><u>Quality</u></b></p> <p>Contracts which contribute to:</p> <ul style="list-style-type: none"> <li>• supporting the development of innovative food, fibre, manufacturing and services industries;</li> <li>• supporting research science and technology which “value-adds” in these industries and is likely to produce the greatest public good as defined in the Foundation for Research Science and Technology Act 1990;</li> <li>• supporting the development of a robust infrastructure to underpin economic development.</li> </ul>	<p>Progress reports provide evidence of the extent to which contracts contribute to objectives.</p> <p>Contribution is measured through a mix of qualitative and quantitative measures and indicators.</p> <p>Feedback from the Minister on the annual progress and achievement report confirms satisfaction.</p>
<p><b><u>Timeliness</u></b></p> <p>Delivery of outputs in accordance with timelines specified in contracts between purchase agents and providers.</p>	95% of contracts.

## Cost

	Output Class Cost	\$000
2001/02	Total output class to be provided within (GST inclusive)	170,809
2000/01	Total output class to be provided within (GST inclusive)	171,112

## *Output Class O8 – Technology New Zealand*

### Description

The Technology New Zealand output class increases the ability of enterprises to adopt new technology and apply technological learning and technological innovation for business growth. This output class contributes primarily to the Economic Goal.

The output class comprises three programmes:

- TechLink. Stimulates awareness of new technology in enterprises by providing a range of promotion and technology guidance services.
- Technology for Business Growth. Fosters research and development, technological learning and technological innovation by part funding projects that motivate and enable enterprises to undertake a technology-based project.

- Technology Industry Fellowships. Supports the placement of researchers or technologists in enterprises or research organisations to build linkages and enhance understanding of technological innovation.

Specific objectives for each of the programmes:

- TechLink: to create increased awareness of, and facilitate access to, technology and technological capabilities that are available to a business.
- Technology for Business Growth: to foster greater investment by technologically capable firms in R&D, technological learning, knowledge application and the development of technology-based human capital.
- Technology Industry Fellowship: to develop individuals' skills and knowledge in commercial R&D environments and to enhance levels of scientific and technology-based human capital in participating firms.

The overall objective for the purchase of outputs will be the ability to develop technological understanding and capability within enterprises.

### Purchase Agent

Foundation for Research, Science and Technology.

### Providers

Open to New Zealand firms, business service organisations, and researchers and technologists.

### Quantity, quality, timeliness and cost

Performance Measures	2001/02 Performance Standards
<b>Quantity</b>	
Estimated number of contracts:	
Techlink contracts	250-350
Technology for Business Growth contracts	150-200
Technology Industry Fellowship contracts	150-250
<b>Quality</b>	
Extent to which the objectives as outlined in the appropriate ministerial instruction are met.	<p>Progress reports provide evidence of the extent to which contracts contribute to Scheme objectives.</p> <p>Contribution is measured through a mix of qualitative and quantitative measures and indicators.</p> <p>Feedback from the Minister on the annual progress and achievement report confirms satisfaction.</p>

Performance Measures	2001/02 Performance Standards
<p><b><u>Timeliness</u></b></p> <p>Delivery of outputs in accordance with timelines specified in contracts between the purchase agent and providers.</p>	95% of contracts.

### Cost

	Output Class Cost	\$000
2000/01	Total output class to be provided within (GST inclusive)	24,494
1999/00	Total output class to be provided within (GST inclusive)	24,694

## *Output Class O9 – Grants for Private Sector Research and Development*

### **Description**

The Grants for Private Sector Research and Development output class aims to increase the level of private sector investment in research and development in New Zealand. This output class contributes primarily to the Economic Goal.

Under this output class the purchase agent will provide grant assistance to small and medium-sized firms for new R&D, with an emphasis on, and with the intent of achieving an enduring increase in their R&D investment.

### **Purchase agent**

Foundation for Research, Science and Technology

### **Providers**

Open to all firms in New Zealand undertaking new research and development that have the capability to effectively apply the results of the research.

### **Quantity, quality, timeliness and cost**

Performance Measures	2001/02 Performance Standards
<p><b><u>Quantity</u></b></p> <p>Number of contracts</p>	120-500
<p><b><u>Quality</u></b></p> <p>Contracts which contribute to:</p> <ul style="list-style-type: none"> <li>Increased levels of new private sector R&amp;D investment.</li> <li>Higher levels of enduring R&amp;D investment by participants.</li> <li>Encouraging R&amp;D in technologically aware firms with an emphasis on small and medium-sized firms.</li> </ul>	<p>Progress reports provide evidence of the extent to which contracts contribute to objectives.</p> <p>Measured through a mix of qualitative and quantitative measures and indicators.</p> <p>Feedback from the Minister confirms satisfaction.</p>

<b><u>Timeliness</u></b> Delivery of outputs in accordance with timelines specified in contracts between purchase agents and providers.	80% of contracts.
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**Cost**

	<b>Output Class Cost</b>	\$000
2001/02	Total output class to be provided within (GST inclusive)	10,000
2000/01	Total output class to be provided within (GST inclusive)	11,800

***Output Class O10 – National Measurement Standards*****Description**

The National Measurement Standards output class provides specified national measurement standards and related services to satisfy the need for accurate measurement and the Minister's obligations under the Measurement Standards Act 1992. This output class contributes primarily to the Economic Goal.

**Provider**

The Measurement Standards Laboratory, a part of Industrial Research Ltd.

**Quantity, quality, timeliness and cost**

<b>Performance Measures</b>	<b>2001/02 Performance Standards</b>
<b><u>Quantity</u></b> Provision of national measurement standards and related services.	In accordance with the requirements specified in the output agreement with the Minister, or with agreed variations.
<b><u>Quality</u></b> The measurement standards will be maintained in accordance with the resolutions and recommendations of the Metric Treaty Organisation.	All technical procedures related to the measurement standards will be validated.
<b><u>Timeliness</u></b> Delivery of outputs in accordance with timelines specified in the output agreement between the Minister and provider.	97% of activities.

**Cost**

	<b>Output Class Cost</b>	\$000
2001/02	Total output class to be provided within (GST inclusive)	4,757
2000/01	Total output class to be provided within (GST inclusive)	4,557

## *Output Class O11 – Māori Knowledge and Development Research*

### **Description**

The Māori Knowledge and Development Research output class provides funding to develop research capability and knowledge for Māori development. This output class primarily contributes to the Social Goal and also contributes to the Economic, Environmental and Knowledge Goals.

Under this output class purchase agents will invest in research, science and technology programmes that encourage excellence in the delivery of knowledge for Māori, consolidate the Māori knowledge base, and broaden and deepen the Māori research skill base.

Criteria for the purchase of outputs will be:

- scientific and technological quality; and
- contribution to the development of Māori research capability, and relevance and contribution to improving outcomes for Māori.

### **Purchase Agents**

Health Research Council of New Zealand, Foundation for Research, Science and Technology.

### **Providers**

Open to all research providers.

### **Quantity, quality, timeliness and cost**

<b>Performance Measures</b>	<b>2001/02 Performance Standards</b>
<p><b><u>Quantity</u></b></p> <p>Number of contracts</p>	40-55
<p><b><u>Quality</u></b></p> <p>Contracts which contribute to:</p> <ul style="list-style-type: none"> <li>• building the Māori knowledge base and Māori research human capital</li> <li>• fostering collaboration among indigenous researchers</li> <li>• fostering cross-discipline approaches and co-operation</li> </ul>	<p>Progress reports provide evidence of the extent to which contracts contribute to objectives.</p> <p>Contribution is measured through a mix of qualitative and quantitative measures and indicators.</p> <p>Feedback from the Minister on the annual progress and achievement report confirms satisfaction.</p>
<p><b><u>Timeliness</u></b></p> <p>Delivery of outputs in accordance with timelines specified in contracts between purchase agents and providers.</p>	95% of contracts.

**Cost**

	<b>Output Class Cost</b>	<b>\$000</b>
2001/02	Total output class to be provided within (GST inclusive)	4,490
2000/01	Total output class to be provided within (GST inclusive)	3,990

***Output Class 012 – Health Research*****Description**

The Health Research output class supports public good research, science and technology that improve the health status of New Zealanders. This output class primarily contributes to the Social Goal.

Under this output class purchase agents will invest in research portfolios that have the greatest potential to improve the health and quality of life of New Zealanders.

This output class has two outputs:

- knowledge and understanding of the factors influencing health status, including health disparities between New Zealanders; and
- technology, products and services for improving health status and reducing health inequalities.

Criteria for the purchase of outputs will be:

- scientific and technological quality; and
- contribution to improving health and social well being.

**Purchase Agent**

Health Research Council of New Zealand, Foundation for Research, Science and Technology.

**Providers**

Open to all science and technology providers.

**Quantity, quality, timeliness and cost**

<b>Performance Measures</b>	<b>2001/02 Performance Standards</b>
<b><u>Quantity</u></b>	
Health Research Council of New Zealand contracts.	200-250
Foundation for Research, Science and Technology contracts.	5-10

Performance Measures	2001/02 Performance Standards
<p><b>Quality</b></p> <p>Contracts which contribute to:</p> <ul style="list-style-type: none"> <li>• Developing novel treatment strategies.</li> <li>• Benefiting Māori as part of the Māori advancement goal.</li> <li>• Informing health care delivery and/or policy.</li> <li>• Promoting new alliances and partnerships across the health sector.</li> <li>• Developing new skills and techniques.</li> <li>• An understanding of diseases of particular importance to the New Zealand population.</li> <li>• Generating a variety of peer-reviewed outputs.</li> <li>• Developing new technologies, information and products.</li> <li>• Public health and health prevention strategies.</li> <li>• New Zealand scientific representation at international fora.</li> </ul>	<p>Progress reports provide evidence of the extent to which contracts contribute to objectives.</p> <p>Contribution is measured through a mix of qualitative and quantitative measures and indicators.</p> <p>Feedback from the Minister on the annual progress and achievement report confirms satisfaction.</p>
<p><b>Timeliness</b></p> <p>Delivery of outputs in accordance with timelines specified in contracts between purchase agents and providers.</p>	<p>95% of contracts.</p>

### Cost

	Output Class Cost	\$000
2001/02	Total output class to be provided within (GST inclusive)	38,434
2000/01	Total output class to be provided within (GST inclusive)	33,434

### *Output Class 013 – Social Research*

#### **Description**

The Social Research output class supports public good research, science and technology that improve societal well being. This output class contributes primarily to the Social Goal.

Under this output class the purchase agent will invest in science and research programmes that have the greatest potential to have a positive impact on families, communities, culture and identity.

This output class has three outputs:

- research on the structures, characteristics and dynamics of population change and identity; and
- research on families and households in New Zealand; and
- research focusing on public life.

Criteria for the purchase of outputs will be:

- scientific and technological quality; and
- contribution to improving social well being.

### Purchase Agent

Foundation for Research, Science and Technology.

### Providers

Open to all providers of science and technology.

### Quantity, quality, timeliness and cost

Performance Measures	2001/02 Performance Standards
<p><b><u>Quantity</u></b></p> <p>Number of contracts</p>	20-30
<p><b><u>Quality</u></b></p> <ul style="list-style-type: none"> <li>• Contracts which contribute to:</li> <li>• Benefits for Māori as part of the Māori advancement goal.</li> <li>• Informing public policy.</li> <li>• Promoting new alliances and partnerships between researchers and the diverse users of social research.</li> <li>• Developing new skills and techniques with an emphasis on moving beyond describing and collecting information to a consideration to how this knowledge can contribute to enhancing the lives of New Zealanders.</li> <li>• New Zealand's scientific representation at international fora.</li> </ul>	<p>Progress reports provide evidence of the extent to which contracts contribute to objectives.</p> <p>Contribution is measured through a mix of qualitative and quantitative measures and indicators.</p> <p>Feedback from the Minister on the annual progress and achievement report confirms satisfaction.</p>
<p><b><u>Timeliness</u></b></p> <p>Delivery of outputs in accordance with timelines specified in contracts between purchase agents and providers.</p>	95% of contracts.

### Cost

	Output Class Cost	\$000
2001/02	Total output class to be provided within (GST inclusive)	4,337
2000/01	Total output class to be provided within (GST inclusive)	4,337

## *Output Class O14 – Environmental Research*

### **Description**

The Environmental Research output class supports public good research, science and technology that enhance the understanding and management of our environment. This output class contributes primarily to the Environmental Goal.

Under this output class, the purchase agent will invest in portfolios of research, science and technology that contribute to the understanding of ecosystems, species, habitats and the systems that contribute to them, and the human, pest and other influences to which they are exposed.

Research outputs provide the knowledge that underpins the management, protection and enhancement of natural ecosystems. Research on sustainable use of ecosystems and the productive sector's environment is also included. These outputs contribute to an understanding of the global biophysical environment and the impact of atmospheric, climatic and other global changes on natural, agricultural and other human ecosystems.

This output class has four outputs:

- increasing knowledge and awareness of the state of New Zealand's ecosystems and improving their health, diversity and resilience;
- increasing understanding of the global biophysical environment;
- improving the quality of human environments and enhancing the capacity to use and manage ecosystems efficiently and sustainably; and
- sustainable management of the productive sector's environment.

Criteria for the purchase of outputs will be:

- scientific and technological quality; and
- contributions made to the understanding and management of natural and human induced environmental systems.

### **Purchase Agent**

Foundation for Research, Science and Technology.

### **Providers**

Open to all science and technology providers.

**Quantity, quality, timeliness and cost**

Performance Measures	2001/02 Performance Standards
<p><b><u>Quantity</u></b></p> <ul style="list-style-type: none"> <li>Number of contracts</li> </ul>	115-135
<p><b><u>Quality</u></b></p> <p>Contracts which contribute to:</p> <ul style="list-style-type: none"> <li>Expanding the understanding and awareness of the composition, processes, and influences on New Zealand's natural ecosystems.</li> <li>Expanding the understanding of the global biophysical environment and its impact on New Zealand natural, production and human environments.</li> <li>Identifying ways to mitigate adverse impacts on the environment, to rehabilitate damaged ecosystems and to sustainably manage the productive sector's environment.</li> <li>Addressing gaps in the New Zealand knowledge base.</li> </ul> <p>New Zealand's scientific representation at international fora.</p>	<p>Progress reports provide evidence of the extent to which contracts contribute to objectives.</p> <p>Contribution is measured through a mix of qualitative and quantitative measures and indicators.</p> <p>Feedback from the Minister on the annual progress and achievement report confirms satisfaction.</p>
<p><b><u>Timeliness</u></b></p> <p>Delivery of outputs in accordance with timelines specified in contracts between purchase agents and providers.</p>	95% of contracts.

**Cost**

	Output Class Cost	\$000
2001/02	Total output class to be provided within (GST inclusive)	85,004
2000/01	Total output class to be provided within (GST inclusive)	84,004

## Part E – Explanation of Appropriations for Capital Flows

### Part E1 – Capital Contributions

There is no appropriation for Part E1.

### *Net Worth of Entities Owned*

#### Statement of Estimated and Forecast Net Worth

	Balance Date	Estimated Net Worth 2001 \$ million	Forecast Net Worth 2002 \$ million
Ministry of Research, Science and Technology	30 June	0.6	0.6
Crown Entities:			
Foundation for Research, Science and Technology	30 June	1.410	1.010

### Part E2 – Capital Contributions to Other Persons or Organisations

A Crown Seed Capital Fund will be established. The Crown and private sector investors will co-invest in early-stage ventures that show potential to create high added-value goods and services. The purpose of the Crown Seed Capital Fund is to:

- increase the number of venture capital firms that are investing in seed stage ventures;
- develop a larger pool of people with investment skills and expertise at the seed end of New Zealand's venture capital market;
- facilitate the commercialisation of innovations from Crown Research Institutes, universities and the private sector; and
- make New Zealand increasingly attractive to international venture capitalists and gain from their expertise, contacts and market knowledge.

The Crown's contribution to the Fund is \$100 million. An equal or greater contribution will be made by private sector partners.

Summary information regarding this appropriation is provided in Part B1.