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INNOVATION & EMPLOYMENT**  
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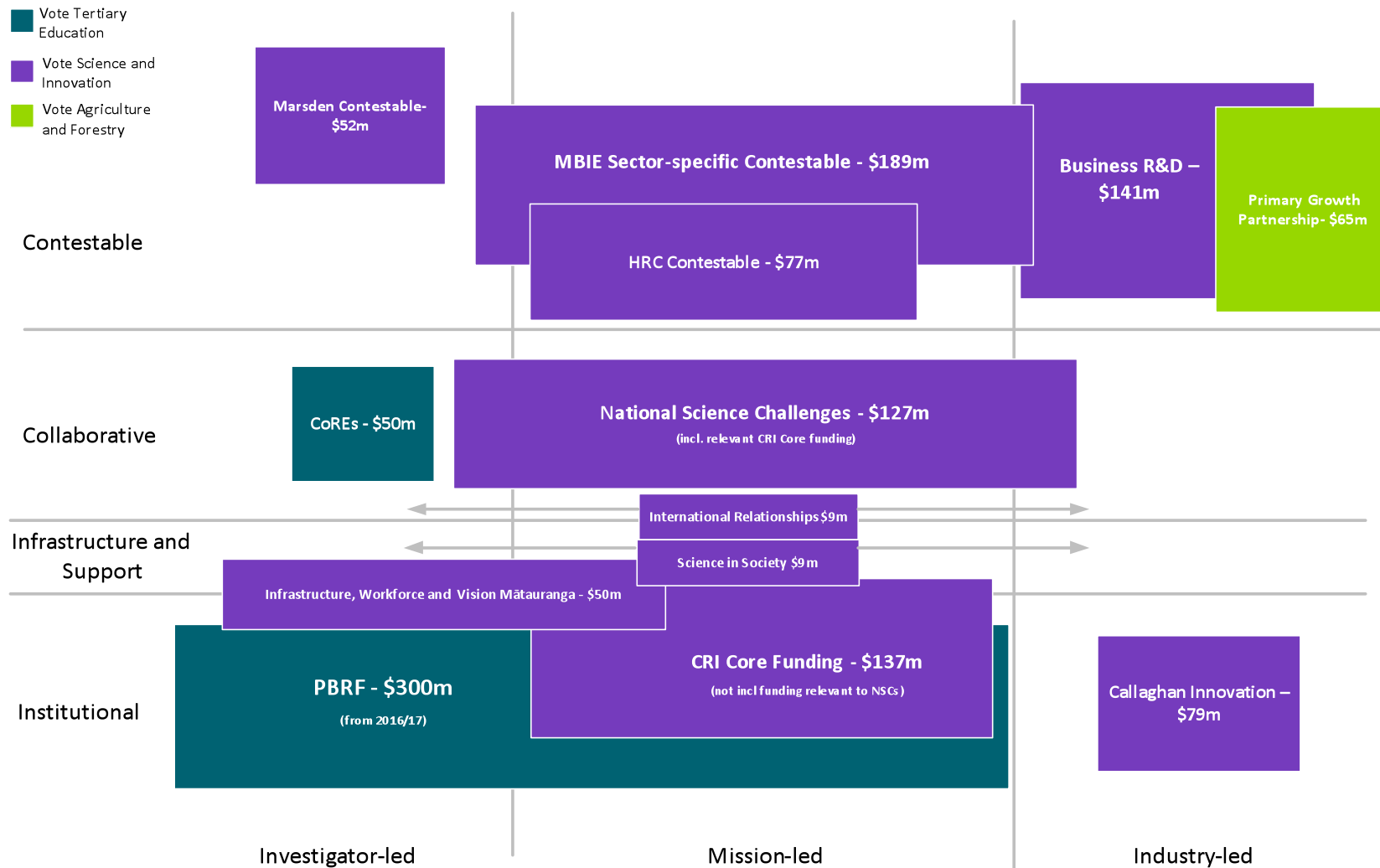
# **What's happening in NZ science?**

**Presentation to Regional Councils Special Interest Group Research  
Priorities Workshop, 5 March 2015**

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# Current Funding Landscape



A satellite image of the New Zealand coastline, showing the rugged terrain and the surrounding ocean. The image is used as a background for the top half of the slide.

# National **Science** Challenges

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Tackling New Zealand's  
big science-based issues



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# National Science Challenges

- Introduced in 2013
- \$1.6 billion to address 11 mission-led, national-scale issues - selected after a public awareness campaign
- Focus on clear Challenge objectives
- New Zealand's best team – collaboration across organisations, disciplines, and teams
- World-leading, ground-breaking research
- More than just business as usual



# National Science Challenges

| 11 Challenges                           | Objectives   |
|---|--|
| Ageing well                             | Harnessing science to sustain health and wellbeing into the later years of life  |
| A better start                          | Improving the potential of young New Zealanders to have a healthy and successful life  |
| Healthier lives                         | Research to reduce the burden of major New Zealand health problems   |
| High value nutrition                    | Developing high value foods with validated health benefits   |
| New Zealand's biological heritage       | Protecting and managing our biodiversity, improving our biosecurity, and enhancing our resilience to harmful organisms                           |
| Our land and water                      | Research to enhance primary sector production and productivity while maintaining and improving our land and water quality for future generations |
| Sustainable seas                        | Enhance utilisation of our marine resources within environmental and biological constraints.   |
| The deep south                          | Understanding the role of the Antarctic and the Southern Ocean in determining our climate and our future environment                             |
| Resilience to nature's challenges       | Research into enhancing our resilience to natural disasters  |
| Science for technological innovation    | Enhancing the capacity of New Zealand to use physical and engineering sciences for economic growth   |
| Building Better Homes, Towns and Cities | Research into new technology and long-term solutions for our building environment  |



# National Science Challenges

Directly relevant to regional councils:

- New Zealand's Biological Heritage
- Building Better Homes, Towns, and Cities
- Resilience to Nature's Challenges
- Sustainable Seas
- Our Land and Water
- Deep South



# New Zealand's Biological Heritage

National  
**Science**  
Challenges

NEW ZEALAND'S  
BIOLOGICAL  
HERITAGE

Ngā Kōhira  
Tuku Iho

Objective: Protect and manage our biodiversity, improve our biosecurity, and enhance our resilience to harmful organisms

- Hosted by Landcare Research
- Up to \$63.7 million over ten years
- Resilience and management of ecosystems
- Management of biodiversity trends and biosecurity risks
- Protection of native biodiversity, livestock production, public health
- Control of unwanted pests and organisms
- Avoid ecosystem 'tipping points'



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# Building Better Homes, Towns, and Cities



Objective: To improve the quality and supply of housing and to create smart and attractive urban environments

- RfP issued - proposal(s) expected at end of March
- Up to \$47.9 million over ten years
- Themes:
  - Better systems for land-use decisions
  - Better-quality, cost-effective housing
  - New affordable housing to meet demand
  - Better urban environments
  - Innovation and techniques to improve building sector productivity





# Resilience to Nature's Challenges

Objective: To enhance New Zealand's resilience to natural disasters

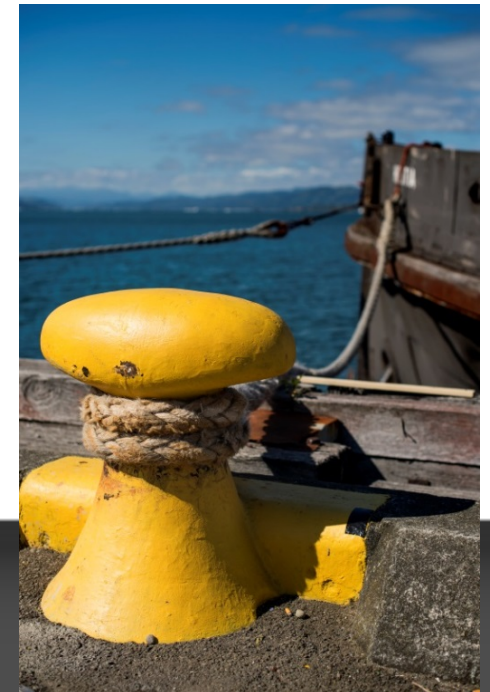
- Hosted by GNS Science
- Up to \$59.4 million over ten years
- Hazard resilience solutions in design of the built environment
- Develop and improve warning and resilience systems
- Materials, processes, and systems to absorb shock
- Make cities resilient – improve resilience thinking and local and regional decision-making



# Sustainable Seas

Objective: Enhance utilisation of our marine resources within environmental and biological constraints

- Hosted by NIWA
- Up to \$71.1 million over ten years
- Ecosystem-based management approach to decision-making for marine resources in coastal areas and EEZ
- Technologies/activities to overcome impediments to development of the marine economy
- Explore physical impacts of natural and human stresses on marine ecosystems
- Correct environmental degradation through rehabilitation, restoration, mitigation, or trade-offs



# Our Land and Water

National  
**SCIENCE**  
Challenges

OUR LAND  
AND WATER

Toitū te Whenua,  
Toiora te Wai

Objective: Enhance primary sector production and productivity while maintaining and improving land and water quality for future generations

- Hosted by AgResearch
- Up to \$96.9 million over ten years
- Land and water use management through a systems integration approach
- Optimise land and water resource use and allocation at catchment and farm scales
- Real-time feedback and decision-making processes for on-farm land and water use
- Determine how best to use natural resources to underpin resource-based economy



# Deep South

Objective: To understand the role of the Antarctic and southern ocean in determining our climate and our future environment

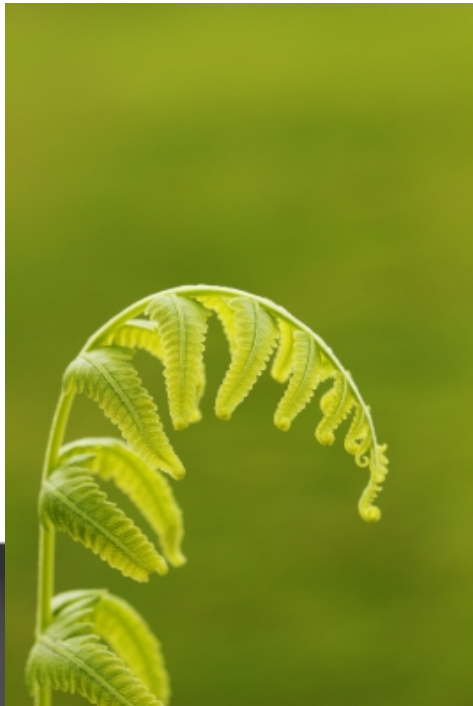
- Hosted by NIWA
- Up to \$51.1 million over ten years
- Improve predictions of future climate
- Identify impacts of changing climate on climate-sensitive economic sectors, infrastructure, natural resources
- Enable long-term resilience and adaptation in climate-sensitive areas





# What role for the regional councils?

- We expect the Challenge consortia to consult with you as potential research users, co-developers, partners
- Challenge research strategies should align where possible with central and local government strategies
- You can provide input to help steer research priorities and directions
- You can offer co-funding, information/data, and other support
- You can help communicate results and generate impact in your areas





# 2015 Science Investment Round and Vision Maturanga Capability Fund

Science, Skills and Innovation Group  
Ministry of Business, Innovation and Employment

2-5 December 2014

# Research Funds and Investment Mechanisms

| Investment mechanism | Research Fund         |      |                   |                  |             |                          |
|----------------------|-----------------------|------|-------------------|------------------|-------------|--------------------------|
|                      | Biological Industries | HVMS | Energy & Minerals | Health & Society | Environment | Hazards & Infrastructure |
| Smart Ideas Phase 1  | ✓                     | ✓    | ✓                 | ✓                | ✓           | ✓                        |
| Smart Ideas Phase 2  | ✓                     | ✓    |                   |                  |             |                          |
| Targeted Research    | ✓                     | ✓    | ✓                 | ✓                | ✓           | ✓                        |

# Targeted Research

- Outcome-driven research aligned with investment priorities
- Address specific needs and opportunities
- End users must be identified and pathway for uptake described
- 2015 round underway - applications close 28-30 April 2015



# Biological Industries



# Investment Priorities

| Investment Priority   | Indicative Funding<br>(\$million per annum, excl GST) | Other Requirements                 |
|---|---|------------------------------------|
| <b>Primary Sector productivity and sustainability:</b><br>Increased sustainable export revenue growth from enhanced primary sector productivity and sustainability.   | 1.25  | Proposals must be 3 years duration |
| <b>High-value food and industrial biological products, processes and technologies</b><br>Increased sustainable export revenue growth from developing high-value good and industrial biological products, processes and technologies | 1.25  | Proposals must 3 years duration    |

It is anticipated that one proposal will be funded per priority

# Energy and Minerals



# Investment Priorities

| Investment Priority  | Indicative Funding<br>(\$million per annum,<br>excl GST) | Other Requirements  |
|--|--|---|
| <b>Petroleum exploration</b><br>Improve quantity and quality of data in the pre-commercial phase of the exploration and/or deep water development of New Zealand's petroleum resources or improve decision-making. | 2.4  | Proposals must be 4 years' duration <ul style="list-style-type: none"> <li>- Proposal must address how end users will be able to access raw data, and how data will be made available in file formats and structures usable by end users</li> <li>- Readily available research plans and research outputs</li> <li>- Must address how outcomes sought will cover exploration and/or deep water development at a national scale</li> <li>- Must integrate existing data and knowledge from a wide range of resources, e.g academic and industry</li> </ul> |
| <b>Transport-light vehicle fleet fuel efficiency</b><br>Reduce fossil fuel consumption and carbon footprints in the operation of the light vehicle fleet In New Zealand.   | 0.6  | Proposals must be 4 years' duration   |



# Environment



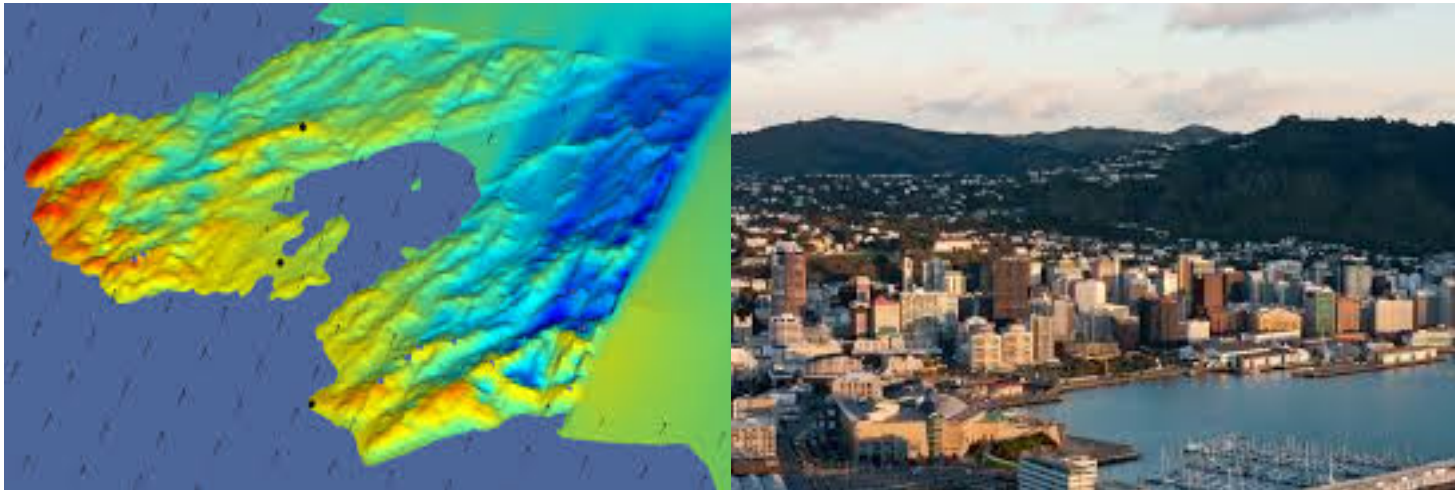
# Investment Priorities

| Investment Priority   | Indicative Funding<br>(\$million per annum, excl GST) | Other Requirements                     |
|---|---|--|
| <b>Ross sea ecosystem</b><br>The Ross Sea is a healthy, resilient ecosystem, used sustainably, through improved knowledge of the nature of, and risks to, its special characteristics.  | 0.8   | Proposals must be 3 years duration     |
| <b>Ocean acidification</b><br>Impacts of ocean acidification on New Zealand's coastal marine ecosystems and the industries they support are better understood and/or mitigated.   | 1.2   | Proposals must 4 years duration        |
| <b>Marine biosecurity and biodiversity risks and impacts</b><br>Marine biosecurity risks are mitigated and biodiversity, including threatened marine species, protected through an improved understanding of marine ecosystems and their responses to a changing ocean. | 1.4   | Proposals must be for 4 years duration |

# Investment Priorities continued

| Investment Priority   | Indicative Funding<br>(\$million per annum,<br>excl GST) | Other Requirements                     |
|---|--|--|
| <b>Aquifer management</b><br>Groundwater quality and aquifer function are maintained or enhanced through effective, integrated management methods.  | 1.0  | Proposals must be for 3 years duration |
| <b>Quality and resilience of New Zealand estuaries and lakes</b><br>Estuaries and lakes are sustained or restored through enhanced knowledge and actions that improve the quality and resilience of these ecosystems.   | 2.0  | Proposals must be for 4 years duration |
| <b>Enhanced environmental decision-making and behaviour change</b><br>Environmental decisions are enhanced and implemented more effectively by: understanding system complexity and interconnectedness; motivators of behaviour change; and implementation of methods to scale-up or accelerate successful initiatives. | 0.8  | Proposals must be for 3 years duration |

# Hazards and Infrastructure



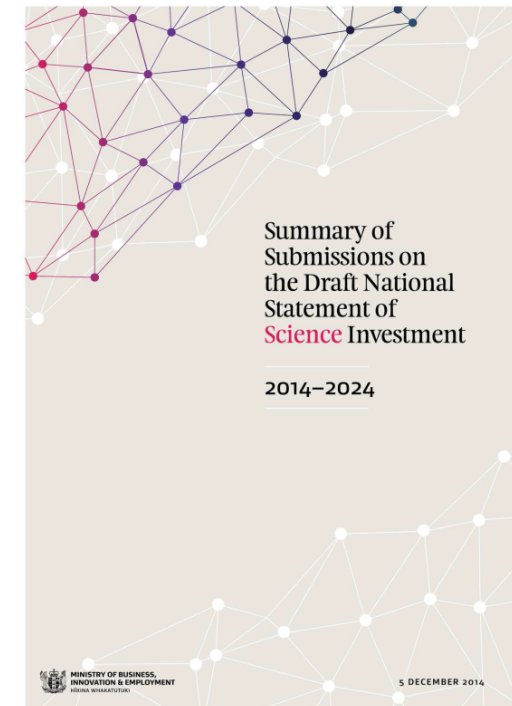


# Investment Priorities

| Investment Priority  | Indicative Funding<br>(\$million per annum, excl GST) | Other Requirements                     |
|--|---|--|
| <b>Benefits and improved methods of infrastructure provision</b><br>Infrastructure networks are optimised and modernised, as the full range of benefits of infrastructure are understood and improved methods of infrastructure provisions are identified. | 1.2   | Proposals must be 4 years duration     |
| <b>Future mobility solutions</b><br>Transport systems and infrastructure are future-proofed and optimised.   | 1.0   | Proposals must 4 years duration        |
| <b>Emerging hazards and infrastructure risks</b><br>National-scale emerging risks are mitigated due to enhanced understanding of new hazards and triggers or increasing exposure to risk including cascade risk  | 0.5   | Proposals must be for 3 years duration |

# Future Research Priorities

- Developing a National Statement of Science Investments
- Feedback on draft document released in December
- Will shape how MBIE sets future priorities



# Other Opportunities



<http://www.envirolink.govt.nz/>

# Any Questions?



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