

# Statement of Corporate Intent

---

2011/12-2015/16

# CONTENTS

Introduction.....	3
Role and Purpose.....	4
Purpose .....	4
Outcomes .....	4
Scope of Operation.....	4
Operating Environment.....	5
Our Research Strategy – Investing for Impact .....	6
Investment and Portfolio Management .....	6
Allocation of core funding .....	9
Our Science Strategy.....	10
Impact and Measurement of Plant & Food Research Performance .....	11
Engagement with our sectors and key customers .....	12
Our approach to impact evaluation.....	12
Detailed Science Plans .....	13
End-User Engagement and Technology Transfer .....	18
Te Rārangā Ahumāra .....	19
The International Dimension of Plant & Food Research .....	20
Australia .....	21
North America.....	21
Europe .....	21
Asia .....	21
Research Collaboration .....	21
Science Quality.....	22
Capability Management.....	22
Research Capabilities .....	22
Leadership .....	23
Quality Management Systems .....	23
Infrastructure: land, buildings and research facilities.....	24
Infrastructure: information resources, databases and collections .....	24
Governance and Accountability .....	25
Financial Performance .....	26
Appendix 1: Plant and Food Research Statement of Core Purpose .....	27
Appendix 2: Policy and Procedure Statements .....	29
Appendix 3: Matters Required by the Crown Research Institutes Act 1992 .....	31
Appendix 4: Accounting Policies.....	32
Appendix 5: Non-Financial and Financial Monitoring Indicators .....	44

## INTRODUCTION

Plant & Food Research has a clear and public commitment to drive sustainable growth in New Zealand's plant- and marine-based food industries. We work alongside our industry and public sector partners as a trusted source of scientific discovery and innovation dedicated to delivering prosperity, health and sustainability from this nation's unique productive environments.

There is a real opportunity emerging across New Zealand's horticulture, arable, seafood and processed food industries with our recognised strengths in sustainably produced, high value food products aligning with global food supply and environmental concerns.

New Zealand's food production and supply is central to our economic wellbeing. It is our growers, farmers, fishermen and food producers, processors and marketers who will generate much of our future wealth by sustainably producing and marketing fresh and processed foods based on flora and fauna unique to or owned by New Zealand.

Key horticulture and food organisations have set ambitious goals for growth and have highlighted the need for knowledge, innovation and foresight to drive ongoing competitive advantage. Similarly it is imperative to overcome potentially devastating plant pest and disease incursions. Plant & Food Research exists to ensure the critical mass of research energy required to achieve those goals.

In meeting that core purpose our Institute emphasises research that aligns with identified opportunities for growth, profitability and sustainability. We then work closely with industry to ensure research is transferred successfully as new industry practices and protocols, tools, technologies or products, so that opportunities can be swiftly pursued and captured.

To ensure consistency of impact across all key sectors, our research direction is driven by awareness of issues that relate to the broader food sector as a whole including market access, product innovation, biosecurity and environmental impact. In all cases we integrate science across production, manufacturing, distribution and marketing platforms, combining market insight with a deep and fundamental understanding of the biological potential of New Zealand's food resource base and the systems that ensure its value is captured.

Plant & Food Research approaches the coming year with a clear sense of the opportunities for our research to benefit food producers and consumers in New Zealand and abroad. This Statement of Corporate Intent expresses our commitment to make that happen.

# ROLE AND PURPOSE

*The following excerpt from Plant & Food Research's Statement of Core Purpose defines our role, purpose and scope. A copy of the full Statement of Core Purpose is contained in Appendix 1.*

## PURPOSE

---

Plant & Food Research's purpose is to enhance the value and productivity of New Zealand's horticultural, arable, seafood and food and beverage industries to contribute to economic growth and the environmental and social prosperity of New Zealand.

## OUTCOMES

---

Plant & Food Research will fulfil its purpose through the provision of research and transfer of technology and knowledge in partnership with key stakeholders including industry, government and Māori to:

- increase the value of these industry sectors to the New Zealand economy through the development of high-value products and processes that meet current and future global market needs
- protect and enhance market access in New Zealand's horticultural and arable sectors
- sustain growth in these industry sectors driving ongoing efficiency gains with the development of environmentally resilient production systems.

## SCOPE OF OPERATION

---

To achieve these outcomes, Plant & Food Research is the lead CRI in the following areas:

- novel fruit, vegetable and crop cultivars for the horticultural and arable industries
- sustainable production and processing systems for the horticultural and arable industries
- plant and seafood based foods, ingredients and biomaterials.

Plant & Food Research will work with other research providers and end-users to contribute to the development of the following areas:

- biosecurity, land, soil and freshwater management
- climate change adaptation
- seafood and food and beverage sectors (including foods for human nutrition and health, and food technologies)
- pastoral forage varieties.

# OPERATING ENVIRONMENT

*This section highlights some of the key factors that will affect our operations over the five-year period.*

We expect the current business environment to continue for at least the first part of the five-year period, characterised by a slow recovery in the economy and ongoing fiscal restraint. Inflation will increase the impact on Plant & Food Research of low or no growth in Government investment in scientific research.

The export-oriented industries and sectors we work with will see continued growth in Asian markets and some recovery in Europe and North America. Competitive pressure from South American exporters will continue. The strength of the New Zealand dollar will also have a major influence on grower and exporter profitability and therefore on the ability of these industries to invest in research and development. Countering this will be increased recognition of the benefits of proprietary new cultivars and of research that enables increased export market access.

Sectors and industries where the domestic market is more important, such as the arable industry, will continue to benefit from new cultivars and will continue to gain market share based on quality and fitness for purpose.

A major pest or disease incursion is one of the key risks facing New Zealand's horticulture and cropping industries. The coming five-year period will be a very challenging one for the Kiwifruit industry due to the significant impact of the incursion of the bacterium *Pseudomonas syringae pv actinidiae*. Similarly, growers of potatoes, tamarillos and related crops will continue to be adversely affected by the Tomato/Potato psyllid and associated *Liberibacter virus*. The New Zealand apiculture industry is facing the on-going challenge of the varroa mite and other threats which can impact honey production and arable and horticultural production that relies on pollination by bees. Plant & Food Research will be heavily involved in the research effort to counter these threats.

The New Zealand seafood industry is well positioned to take advantage of strong demand for its products in local and export markets. There will continue to be a focus on sustainability with a "double bottom line" benefit on both profitability and the environment. Plant & Food Research's work on seafood, including its "Precision Seafood Harvesting" innovations, has significant potential to improve industry value growth, profitability and sustainability.

Internally, Plant & Food Research will continue to implement its programme of organisational development initiatives under the themes of:

- Partnering
- Portfolio Management
- Productivity
- People.

These initiatives are aimed at strengthening the way we work with our clients, the targeting, delivery and impact of our research, and our ability to withstand adverse impacts on revenue and costs.

We start this challenging period with a recovery phase after a decrease in research income over the past two years. However we face this with a high level of confidence based on the progress achieved to date on our key initiatives, our strong science capabilities, a healthy research pipeline, and a sound balance sheet.

# OUR RESEARCH STRATEGY – INVESTING FOR IMPACT

## INVESTMENT AND PORTFOLIO MANAGEMENT

---

The Government is providing greater certainty over funding by devolving “Core Funding” to CRIs. This is accompanied by a commensurate shift of responsibility to Plant & Food Research, to be held more clearly accountable for the research investment decisions it makes and the downstream impacts for New Zealand.

In response to this, in 2011/12 we will complete the full implementation of a comprehensive framework for research portfolio management across Plant & Food Research. The goal of this framework is to optimise the allocation of our resources to maximise the impact of our research for the benefit of New Zealand. As all of our activities are part of delivering on our Core Purpose, we will use this framework for our research from all funding sources, not just the core funded portion. It will therefore govern all our investment decisions for the allocation of resources to achieve an optimised portfolio of research and technology transfer activities.

In developing this system over the past year we have been guided by established principles and practice for research portfolio management. Plant and Food Research’s research portfolio management approach follows six key principles:

- Impact/Outcome Orientation – investment decisions will be aligned and sized to strategic targets and be driven by the impact they have on agreed horticulture, arable and seafood industry outcomes.
- Transparent – research areas will be evaluated on a set of criteria that will be effectively communicated to the relevant stakeholders.
- Flexible – able to adapt and respond to changing conditions and priorities
- Transactional efficiency
- Encouraging collaboration – between research and industry and between researchers
- Monitoring – via metrics for outcomes, impacts, PFR and industry strategy, science quality, capability and innovation objectives.

Figure 1 below illustrates the structure of our research portfolio into three separate investment categories:

- Co-investment Driven: this is the largest category and is based on joint investment and dialogue with the sectors and key stakeholders defined in our Statement of Core Purpose, for agreed outcomes and impacts. Over 80% of our research, from all sources of funding, is in this category. This principle axes of this category are the four key outcome areas of our strategy and the industry or sector view across these outcome areas
- Science-Led Innovation: this is a smaller category which is directed at higher risk-higher reward initiatives in new science, long term fundamental research, over-the-horizon future oriented initiatives, and the development and future proofing of capability
- Capital Expenditure: this ensures capital expenditure is well aligned with our strategy and with the prioritised research activities in the other investment categories.

The balance of our current research portfolio across the principal dimensions – our four outcome-defined areas of the food value chain, by primary and secondary food industry sectors – is contained in the table below:

---

Better Cultivars Faster	30%
Residue Free Pest & Disease Control	22%
Sustainable Production Systems	25%
Proprietary Foods with Price Premiums	23%

---

The mapping is approximate because targets overlap these areas. For example, new cultivars are bred for better pest and disease resistance, better production performance and for better consumer appeal.

We do not anticipate any immediate significant shifts in this allocation of resources, but changes may occur during the year as we implement this system of research portfolio management in conjunction with stakeholders. This is discussed further in the sections on “Impact Measurement” and “End-User Engagement” overleaf.

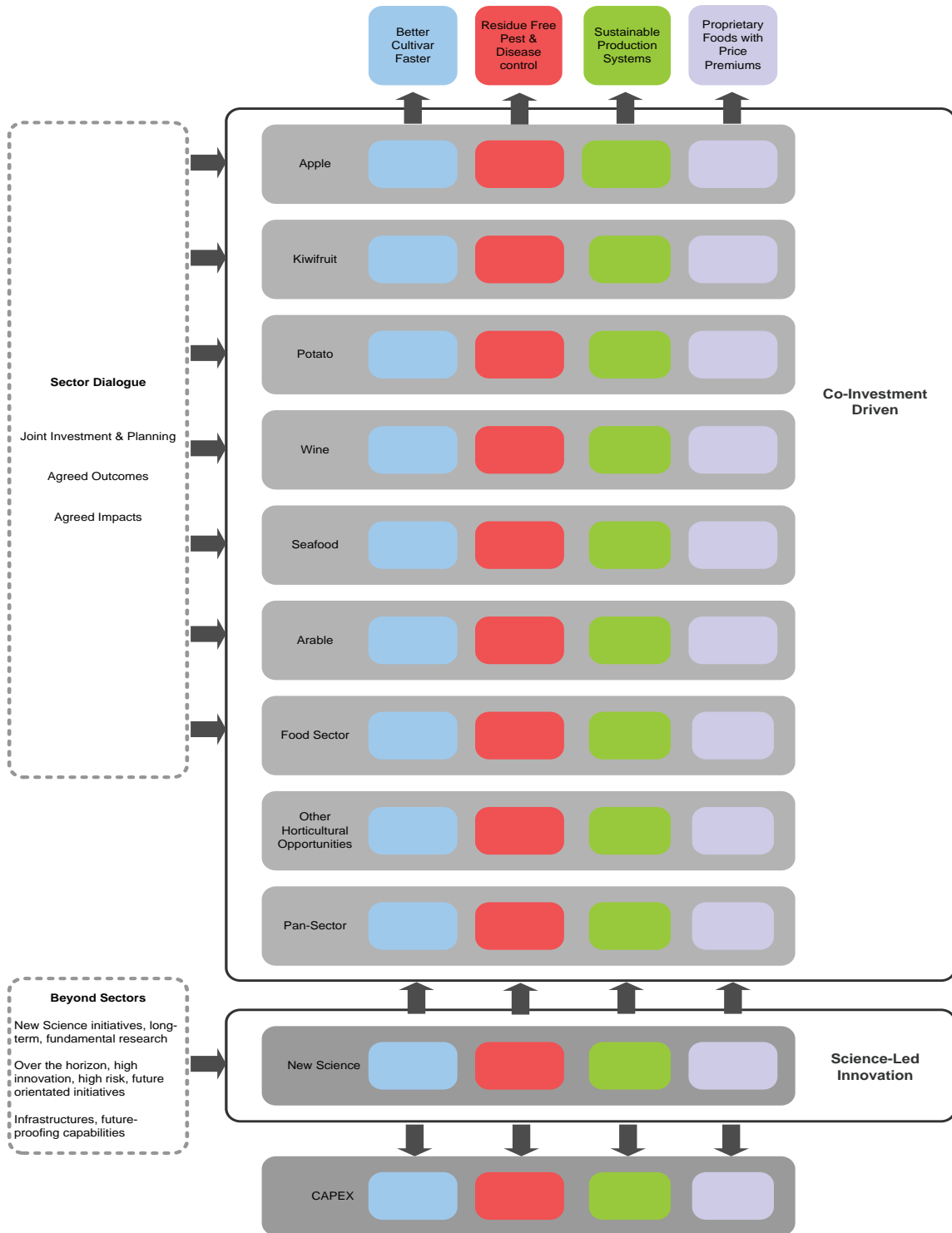


Figure 1. PFR Investment Portfolio Matrix

## ALLOCATION OF CORE FUNDING

---

Details of Core Funding are still being finalised at the time of writing. We expect that at the commencement of this planning period the core funding allocated to Plant & Food Research will correspond to the following Government Budget output expense categories:

PFR Core Funding By Output Expense Category	\$ Excl GST
Biological Industries	
Primary industry productivity and sustainability	26,120,293
High value food and biological products and processes	2,844,444
Environmental Research	
Terrestrial ecosystems	1,504,889
Land and freshwater resources	2,222,222
Backbone	378,008
Capability Maintenance and Development	10,033,122
Total (excl GST)	43,102,978

During the course of the year any reallocation of Core Funding will be undertaken via the investment and portfolio management framework outlined above and material movements will be reported to the shareholder.

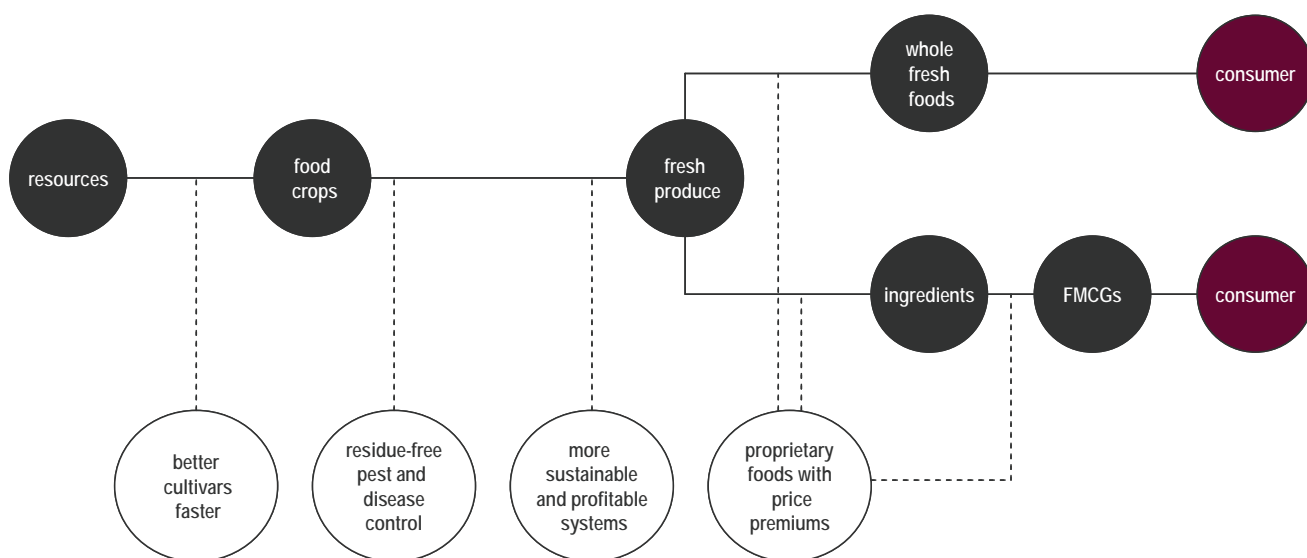
## OUR SCIENCE STRATEGY

Our research on New Zealand’s plant-and seafood-based food resources will be targeted at four main types of outcome for industry:

1. Better Cultivars Faster. Accelerated breeding of new and improved food plants that possess attributes which attract price premiums and deliver competitive advantage
2. Residue-Free Pest and Disease Control. Control of plant pests and diseases, increasingly using biological and environmentally-based control methods
3. More Sustainable and Profitable Systems. Increasing yield and efficiency in plant and seafood production, harvesting, processing and supply chains with an emphasis on economic and environment sustainability
4. Proprietary Foods with Price Premiums. IP-protected innovative plant- and seafood-based foods that address consumer demands and achieve price premiums

These four outcome areas represent the principle levers for value enhancement. Our capability across the full food value chain is a point of difference for Plant & Food Research compared to peer research organisations overseas which typically focus on only part of the value chain. This is an advantage because all four areas are interrelated. For example, a new cultivar may deliver a consumer benefit or pest resistance, but production techniques may need to be modified to achieve commercially viable productivity.

The following diagram illustrates how these four outcome areas represent the application of our scientific research along the food value chain.



## IMPACT AND MEASUREMENT OF PLANT & FOOD RESEARCH PERFORMANCE

Our strategy is to deliver science across these four Outcome Areas that can be evaluated using the following adoption and impact indicators.

Outcome Areas			
1. Better cultivars faster	2. Residue-free pest and disease control	3. More sustainable and profitable systems	4. Proprietary foods with premium prices
<b>Adoption Indicators</b>			
PFR-bred cultivars grown in NZ and offshore	NZ industry and Central Government uses knowledge and tools from PFR science to inform a biosecurity system that minimises the frequency and impact of pest and disease incursions.  Industries adopt a range of biological and ecologically based methods that provide highly effective pest and disease management solutions that balance phytosanitary and agrichemical residue requirements of markets.	NZ agricultural, horticultural and seafood industries adopt PFR-developed production, harvesting, postharvest, packaging, handling and storage systems  Central and local government agencies use knowledge and tools from PFR science to inform policy development and systems design	Food industries in NZ and offshore use proprietary PFR cultivars and processes to generate processed foods and ingredients  Food companies and brands use PFR science to provide wellness-based claims and food solutions
<b>Impact Indicators</b>			
<ol style="list-style-type: none"> <li>Economic growth to NZ from the production of PFR-bred cultivars</li> <li>Category growth and market access maintained or increased in key markets through novel cultivar development</li> </ol>	<ol style="list-style-type: none"> <li>Enhanced international competitiveness of export sectors through pest and disease management solutions to maintain and/or increase market access</li> <li>NZ's environmental quality enhanced by minimising pest and disease incursions, managing pests and diseases and reducing risks associated with pest management technologies</li> </ol>	<ol style="list-style-type: none"> <li>Maintained and/or increased crop and seafood volumes, value and profitability</li> <li>New Zealand's productive environments sustained or enhanced, generating products with verifiable reduced footprints to maintain and/or increase market access</li> </ol>	<ol style="list-style-type: none"> <li>Growth in export value of whole foods and ingredients based on fruit, vegetables, grains and seafood</li> <li>Increased market share of high margin export food products and ingredients based on PFR cultivars, processes and knowledge that capture wellness benefits</li> </ol>

## ENGAGEMENT WITH OUR SECTORS AND KEY CUSTOMERS

---

These adoption and impact indicators have been developed in consultation with our sectors and key customers over the past 18 months. During late 2009 we consulted with our customers over the scientific and technical challenges facing their businesses and the ways in which Plant & Food Research could address those challenges. A set of 27 science targets was generated, which provided a framework for the development of our Science Group plans. These targets have informed the development of our adoption and impact indicators.

In addition, during mid 2010 we launched an initiative to formalise Partner Plans in which the mutual vision for the partnership is defined along with goals and strategies and their implications for Plant & Food Research. The impact and potential value of Plant & Food Research's work for our key partners were the focus of these discussions.

In the first few months of 2011 Plant & Food Research engaged with all of its key customers over the new funding framework and our strategy for managing core purpose funding. Central to these discussions has been industry needs and how our research can best be aligned to deliver on those needs and provide impact.

Currently we are working with a number of our stakeholders to identify potential case studies for impact evaluation during 2011/12. These will involve sharing data, building capability in impact evaluation, identifying value and perceived impact, testing assumptions using econometrics and tracing concepts of learning, adoption and innovation. Benefits will include generating insight into where investments and research have added value and ways to enhance impact in the future, potentially by pursuing new research directions and partnerships or realigning investment in technology transfer.

## OUR APPROACH TO IMPACT EVALUATION

---

We will work closely with our clients, end-users and Government stakeholders to identify and analyse qualitative and quantitative data that can be used to determine where and how Plant & Food Research's science is delivering knowledge, products and services to industry that support the outcomes specified in our Statement of Core Purpose.

In determining our approach to measuring the impact of our research and other activities we have drawn on an established body of work on the evaluation of scientific research. Key features include:

- The use of economic measures such as Return on Investment and Cost Benefit Analysis to compare the relative impacts of a range of research, science and technology investments
- Narrative will enable impacts to be evaluated to encompass the different players in the innovation system, acknowledging the 'soft side' of innovation and innovation diffusion theories.<sup>1</sup>
- Evaluation methods that support strategic learning about how innovation works, so that impact can be increased in future.<sup>2</sup>
- A template for information collection, analysis and reporting on performance.<sup>3</sup>

1 McLaughlin JA, Jordan GB 1999. Logic models: a tool for telling your program's performance story. *Evaluation and Program Planning* 22(1): 65-72.

2 Montague S, Valentim R 2010. Evaluation of RT&D: from 'prescriptions for justifying' to user-oriented guidance for learning. *Research Evaluation* 19(4): 251-261.

3 Teather GG, Montague S 1997. Performance measurement, management and reporting for S&T organizations – an overview. *Journal of Technology Transfer* 22(2): 5-12.

To assess the impact of Plant & Food Research's research, science and technology we will need to work with economists and research evaluation specialists to build capability in economic and social science analyses and methodologies. Plant & Food Research will also use its impact analyses to inform its role in technology transfer since delivering impact depends on uptake and investment by end-users.

The new aspects of impact evaluation will be supplemented by continuation of our existing review and assessment activities, including internal and external science reviews, programme reviews by MSI and other funders, industry groups, the proposed Science and User panels, and the proposed 5-yearly rolling reviews of CRIs.

## DETAILED SCIENCE PLANS

In this section we describe in more detail the rationale for investing into each of the four outcome areas of our strategy, and the impact our research will have on achievement of the end result or outcome we are targeting for New Zealand's economy, environment and/or society.

### OUTCOME 1: BETTER CULTIVARS FASTER

---

#### RATIONALE FOR ACTIVITIES

---

A number of key industry strategies for the horticulture and arable sectors identify new proprietary cultivars as key to successful future growth by allowing value creation and price premiums, commercial growth and control of intellectual property. NZIER has modelled the benefit to the industry<sup>4</sup> and identified that the investment to develop new cultivars will be the dominant driver of growth in the horticulture sector to achieve the target industry turnover of over \$10 billion by 2020.

Plant & Food Research therefore plans to invest capital and capability over the next five years in research to develop better proprietary cultivars over shortened time frames, as part of a supply chain of food products for which consumers will pay a premium.

We will use conventional breeding techniques to create new cultivars, using our knowledge of the genetics of key traits to inform the breeding process. This will create new fruits, vegetables, arable and ornamental crops with novel characteristics that appeal to the consumer, grow market share and attract a price premium, and provide advantages to the grower such as higher yield, pest and disease resistance, seasonality and storage potential. Our extensive germplasm collection provides us with a wide range of genetic diversity that will be included in our breeding programmes. Our genomics research will identify and isolate new genes, allowing our breeding team to screen for these genes faster and to narrow the search for parents with the ideal genetic traits. We will also screen offspring and isolate those plants with the most promising genetic potential for further breeding or commercial success, reducing the number and increasing the quality of selections entering assessment trials.

---

<sup>4</sup> Horticulture New Zealand (2009) Growing a New Future - Horticulture Industry Strategy 2009-2020

---

## IMMEDIATE AND NEAR-FUTURE TARGETS (1 – 10 YEARS)

---

- A platform with new genomic and breeding tools delivering cultivars, against jointly agreed development targets, in half the time currently required for this activity
- Tailored cultivars for specific production systems, environmental variability and change
- Complete genomic sequencing and deep sequencing of germplasm characterising allelic differences to provide numerous ecotypes for both NZ and global environments

---

## ANTICIPATED AND OVER THE HORIZON TARGETS (>10 YEARS)

---

- Enriched germplasm for next generation cultivars with stacked premium traits for whole fresh foods and ingredients
- All NZ crops supplied from cultivars that enable sustainable production in climates and environments that will be encountered in 2050.

---

## ADOPTION INDICATOR

---

- PFR-bred cultivars grown in NZ and offshore.

---

## IMPACT INDICATORS

---

1. Economic growth to NZ from the production of PFR-bred cultivars
2. Category growth and market access maintained or increased in key markets through novel cultivar development

---

## OUTCOME 2: RESIDUE-FREE PEST AND DISEASE CONTROL

---

---

### RATIONALE FOR ACTIVITIES

---

To maintain access to international markets, invasive pests and diseases must be prevented from crossing borders, and existing pests and diseases must be controlled without leaving problematic chemical residues on produce for export. It has been estimated that an economic benefit of at least \$236M p.a. by 2022<sup>5</sup> could be achieved by research to address current export market access issues associated with phytosanitary pests and diseases affecting New Zealand's apple and kiwifruit sectors. More significantly, it is critical that research is conducted to reduce the risk of pests and diseases closing existing export markets for fresh produce worth \$1.8B in 2010. Airborne fungal and bacterial diseases are estimated to cause New Zealand direct economic losses and market uncertainties worth \$250-500M p.a.

Key industries will move increasingly from chemical- to biological- and ecologically- based methods for pest and disease control while still meeting profitability and market access expectations. Threat of major incursions or market access failures will be reduced because of strengthened border and pre-border protection.

Plant & Food Research therefore plans to invest capital and capability in research to develop new technologies, tools and protocols that sustainably protect the horticultural and arable industries from pests and diseases while maintaining quality and productivity.

---

<sup>5</sup> Analysis conducted for FRST contract C06X0709 'Enhancing the economic performance of New Zealand's fruit sectors by overcoming technical challenges to market access'.

We will apply an ecosystem approach in dealing with plant pests and pathogens, while minimising residues from traditional chemical controls to maintain market access. Our researchers will develop integrated pest and disease management systems that incorporate a range of methods applied throughout the pre- and postharvest system. We will work with industry to enable a shift from traditional chemical-based programmes to those based on biological and ecological knowledge. We will also work across country borders to minimise incursions of new pests and pathogens and with industry in developing new control methods and protocols when challenged with new incursions.

---

## IMMEDIATE AND NEAR-FUTURE TARGETS (1 – 10 YEARS)

---

- New tools and systems for biologically- based pest and disease control
- New cultivars stacked with targeted pest and disease resistance
- New 'safe' disinfestation technologies
- Improved biosecurity risk assessments, detection technologies, optimised surveillance approaches and new tools for response and eradication.

---

## ANTICIPATED AND OVER THE HORIZON TARGETS (>10 YEARS)

---

- A whole systems approach at a range of scales (from molecular to regional) to deliver new integrated pest and disease management systems.

---

## ADOPTION INDICATORS

---

1. NZ industry and Central Government uses knowledge and tools from PFR science to inform a biosecurity system that minimises the frequency and impact of pest and disease incursions.
2. Industries adopt a range of biological and ecologically based methods that provide highly effective pest and disease management solutions that balance phytosanitary and agrichemical residue requirements of markets.

---

## IMPACT INDICATORS

---

1. Enhanced international competitiveness of export sectors through pest and disease management solutions to maintain and/or increase market access
2. NZ's environmental quality enhanced by minimising pest and disease incursions, managing pests and diseases and reducing risks associated with pest management technologies.

## OUTCOME 3: MORE SUSTAINABLE AND PROFITABLE SYSTEMS

---

### RATIONALE FOR ACTIVITIES

---

New Zealand is a niche exporter of high value foods to markets that rank among the world's most discerning in their sensitivity to issues of quality and sustainability.

Plant & Food Research therefore plans to invest capital and capability over the next 5 years in research to develop tools and methods that allow growers to meet or exceed the world's most stringent sustainability requirements and at the same time to increase profitability for growers.

We will employ science across a number of complementary disciplines including tree, vine and crop science, systems modelling, biometrics, bioengineering and soil, water, environmental and marine sciences to fully integrate systems that reduce inputs and maximise productivity throughout the supply chain. Our decision support tools and system models will optimise water and nitrogen requirements in addition to minimising chemical inputs, dramatically reducing both the financial costs and the environmental footprint of production.

New Zealand's seafood industries are targeting to grow to \$1 billion p.a. from aquaculture by 2025 and to \$2 billion p.a. from wild catch fisheries by 2025. Plant & Food Research therefore plans to also invest in research to enhance and protect the profitability and sustainability of fishery resources by developing new harvest technologies and improved selection methods.

### IMMEDIATE AND NEAR-FUTURE TARGETS (1 – 10 YEARS)

---

- New pre- and postharvest seafood technologies developed; new seafood production systems and finfish species for aquaculture
- A seafood research platform spanning all the key research providers with funding mechanisms to the value of \$40M
- Whole systems modelling and prediction platform
- Tools developed for eco-verification, footprinting and traceability (water, carbon, greenhouse gases, soil, biodiversity, pesticides, social equity)
- Improved production technologies and cultivars based on scaled up knowledge from molecular, physiological, soil, water and environmental science, integrated with system science.

### ANTICIPATED AND OVER THE HORIZON TARGETS (>10 YEARS)

---

- Plant & Food Research creates key technologies and links with domestic and international partners to enable a cluster of new businesses to be created in Smart Management Technologies
- Characterisation and prediction of environmental changes and new conditions likely to be encountered using systems modelling to match crop genetics to environment
- Handling, transport and logistics systems for export crops which meet future sustainability demands with respect to energy, carbon cost, water, social and ethical issues
- Systems analysis and economic, logistics and social modelling
- New harvesting, packaging and handling systems.

---

## ADOPTION INDICATORS

---

1. NZ agricultural, horticultural and seafood industries adopt PFR-developed production, harvesting, postharvest, packaging, handling and storage systems
2. Central and local government agencies use knowledge and tools from PFR science to inform policy development and systems design.

---

## OUTCOME 4: PROPRIETARY FOODS WITH PRICE PREMIUMS

---

---

### RATIONALE FOR ACTIVITIES

---

The food sector contributes to around 10% of GDP and accounts for over half of the country's export earnings (>\$23B in 2008, nearly trebling since 1990). The industry needs to reduce its vulnerability arising from a reliance on price-sensitive commodity exports that, over time, are falling in real value.

Plant & Food Research therefore plans to invest capital and capability over the next 5 years in research to develop high value plant and seafood products with a specific focus on verifiable wellness and quality attributes for food and beverage markets where consumers will pay a premium.

Our fruit, vegetable, arable and marine-sourced food products will deliver high impact consumer experiences that are reflected in the premium prices they achieve in world markets. We will combine our research ability with our understanding of business needs, our recognition of the need to be efficient and cost effective, and an awareness of food market trends such as human health, personalised nutrition and wellbeing, food safety, convenience, novelty and environmental responsibility.

We will identify the wellness and health-promoting compounds within foods and define their delivery mechanisms. Then we will enhance, extract and make these compounds available in whole foods, through conventional breeding of elite plant cultivars, and the development of ingredients and new, safe and convenient foods and beverages. We will provide evidence to confirm the benefits of these natural compounds and our consumer and sensory science will help to ensure that whole and processed foods reaching the market meet the demands of the discerning consumer.

Our research will inform our breeding programmes, developing elite new cultivars with identified health and processing attributes. It will also inspire the development of new production systems tailored to produce precise levels of key compounds in fresh produce.

---

### IMMEDIATE AND NEAR-FUTURE TARGETS (1 – 10 YEARS)

---

- Premium whole fresh foods for wellness with functional bioavailability from exclusive proprietary cultivars developed with local and multinational companies
- New food and beverage ingredients from exclusive proprietary cultivars, based on knowledge of wellness and consumers, developed with local and multinational companies
- New food and beverage concepts based on ingredients from exclusive proprietary cultivars.

---

## ANTICIPATED AND OVER THE HORIZON TARGETS (>10 YEARS)

---

- NZ is an innovation base for wellness based multinational foods companies
- Food concepts based on human gene variability and responses
- Fully utilising all NZ derived crops as food bio-resources (food, ingredients, compounds, packaging) with maximum value capture and minimised wastage to produce novel materials
- One or more food formats delivering nutritional needs for both deprived and affluent sectors.

---

## ADOPTION INDICATORS

---

1. Food industries in NZ and offshore use proprietary PFR cultivars and processes to generate processed foods and ingredients
2. Food companies and brands use PFR science to provide wellness-based claims and food solutions.

---

## IMPACT INDICATORS

---

1. Growth in export value of whole foods and ingredients based on fruit, vegetables, grains and seafood
2. Increased market share of high margin export food products and ingredients based on PFR cultivars, processes and knowledge that capture wellness benefits.

# END-USER ENGAGEMENT AND TECHNOLOGY TRANSFER

To ensure that research outcomes are converted effectively into the desired impacts, Plant & Food Research will maintain its strong partnerships with national and international clients and stakeholders. Our aim is to have close relationships with our partners so that:

- We jointly create longer term plans for both of our organisations based a shared view of what the market place needs and what science can provide
- We work collaboratively to convert those long term plans into tangible actions effectively using the capabilities of both organisations
- We jointly review and monitor progress ensuring that research outputs are taken up, commercial outcomes achieved and long term impacts secured.

We will continue to transfer technology to our partners and other end-users via a range of mechanisms including reports, demonstrations and field days, training, and licensing.

While in most cases the technology transfer mechanism will be agreed with our industry partners as part of our partner planning process, there will be some instances where scientific discoveries don't fit with any current stakeholders or alternatively our plans are not sufficiently advanced to cover all eventualities. In these cases we will seek to commercialise the intellectual property in ways that both maximise the positive impact for New Zealand and the value for Plant & Food Research without exposing us to inappropriate levels of risk.

In order to achieve this level of collaboration we will:

- Focus on high potential and high impact industry sectors and customers
- Develop partner plans which articulate the link between science outputs and the partner's targeted commercial outcomes
- Use these partner plans to inform and challenge both our long term science plans and also our resource allocation and portfolio management processes
- Seek feedback on customer satisfaction and work to optimise our business processes to maximise impact
- Secure and manage intellectual property in order to maximise the benefit for New Zealand while fairly rewarding Plant & Food Research and its partners for their role in intellectual property creation.

Appendix 5 identifies non-financial monitoring indicators that we will apply use to measure our progress towards developing strong, long-term partnerships with industry, government and Māori; setting research priorities that are well linked to the needs and potential of our end-users; and transferring technology and knowledge from domestic and international sources to New Zealand industry, government and Māori.

## TE RĀRANGA AHUMĀRA

The opportunities for growth in the “Māori economy” are significant in their own right and for New Zealand. Te Puni Kōkiri and BERL<sup>6</sup> recently estimated that Māori ownership of assets reached a value of \$36.9 billion in 2010 and that economic activity in Māori enterprises accounted for over 5% of New Zealand's total Gross Domestic Product.

Te Rārangā Ahumāra, a specialist Māori business unit, has been established within Plant & Food Research to advance effective business and engagement opportunities with Māori. Its primary focus is to lead the implementation of Māori research and innovation objectives set out in Plant & Food Research's Māori Strategy. The key motivation behind the establishment of Te Rārangā Ahumāra is to raise the internal and external profile of our Māori-relevant research work within Plant & Food Research and to develop mutually beneficial relationships with Māori as clients for our research and other services. It is intended to firmly embed Māori-relevant research in our priority science targets within the wider Plant & Food Research strategy.

Te Rārangā Ahumāra will drive business opportunities with Māori and with iwi and pan-tribal organisations. It will also advance the profile and visibility of science with Māori and link new science with traditional knowledge through activities such as Te Kete Ahumāra.

Māori business opportunities exist across the entire organisation. The engagement approach with Māori will be proactive and will involve the development of partner plans with key Māori clients. We expect the following areas to be important focal points for our business development:

---

<sup>6</sup> “The Asset Base, Income, Expenditure and GDP of the 2010 Māori Economy”, Te Puni Kōkiri / BERL Economics, 2011

- Seafood
- Indigenous flavours
- Indigenous foods
- New horticultural crops and business expansion
- Environment
- Sustainable production systems

Te Aka Matua, our internal advisory team for Māori Research and Innovation, has been established to carry-out the following;

1. Set the high level objectives for Plant & Food Research's Māori business (internal and external focus) over the next 5-10 years; and
2. Identify and develop a menu of strategic business opportunities and relationships for Māori.

Te Aka Matua members have a strategic mix of skills, expertise and work focus pertinent to Māori business development, and a passion and empathy for supporting Māori economic development through RS&T and capability building.

## THE INTERNATIONAL DIMENSION OF PLANT & FOOD RESEARCH

While Plant & Food Research's focus is on the New Zealand sectors that it supports, science is a global endeavour and in order to be world class at what we do, we need to operate internationally as well as domestically.

Our international activities are focused around three key objectives:

1. Providing in-market or behind-borders support for New Zealand companies, industries and licensees
2. Providing access to world leading science capabilities (see the next section on Research Collaboration)
3. Commercialising intellectual property to realise value - where the NZ industry does not have capacity to do so.

Although these objectives are presented separately above, in practice they are often linked. For example, in order to provide behind-borders support to a New Zealand company we will often need to work with a research organisation in that geography. By doing so, we will at times initiate broader collaborations, which in turn could lead to in-licensing of technologies for the benefit of New Zealand sectors, or alternatively licensing out of some of Plant & Food Research's proprietary technologies.

These objectives will shape the level of activity we have in any given international territory. Our priority territories are:

## AUSTRALIA

---

Australia is an important territory for many of our New Zealand clients, has close business, economic and governmental ties with New Zealand and is the home of a number of high quality research organisations in areas relevant to New Zealand. In addition, the Australian and New Zealand horticultural industries have a growing track record of collaboration on common research interests as wide ranging as crop productivity, pests, fruit breeding and irrigation (a number of which were initiated by Plant & Food Research). We will continue to work with industries, research organisations and funders in both countries to build this mutually beneficial collaboration and diversify the sources of funding for research that benefits our New Zealand stakeholders.

## NORTH AMERICA

---

North America offers a broad range of opportunities that strongly support our core purpose, including behind-borders support for New Zealand companies, international science collaboration, and technology licensing opportunities.

## EUROPE

---

Like North America, Europe offers a broad range of opportunities aligned with our core purpose and New Zealand's needs. A particular strength of our European activity is our collaborations with leading research institutes and collaboration networks. Our focus will be on expanding and deepening these collaborations.

## ASIA

---

With its proximity, strong growth (economically and in science capabilities) and its importance for New Zealand exporters, Asia is also a priority region for Plant & Food Research's international business. We focus our efforts on selected countries and territories, with the mix between behind-borders support for New Zealand companies, international science collaboration, and technology licensing varying between the countries we focus on.

# RESEARCH COLLABORATION

We recognise that to deliver on our core purpose, we need top quality research teams and major international linkages. Plant & Food Research will not have all the capability it needs in-house and will access additional capability as required from other research organisations through genuine collaboration. Plant & Food Research also has a responsibility to access leading international science and resources, and to be a vehicle for introducing new technologies and concepts to New Zealand. This will be achieved through participation and partnerships with global programmes, international consortia etc in areas key for our business. Collaboration is a measure of Plant & Food Research's national and international standing, and therefore our science quality.

Non-financial monitoring indicators that we will apply to measure our progress towards developing collaborative relationships with other CRIs, universities and other research institutions within New Zealand and internationally to form the best teams to deliver Plant & Food Research's core purpose are identified in Appendix 5.

# SCIENCE QUALITY

Plant & Food Research aspires to world leadership research and development of new products, processes and technologies that will have significant impact on global economies. Benchmarking our science against that of our peers in areas of expertise relative to our business is fundamental to confirming the quality of our activities. These indicators seek to monitor and measure how highly our scientists and their research are regarded by our colleagues internationally as well as by our customers. The metrics will provide a basis for continuous improvement in the science that underpins the outcomes Plant & Food Research is targeting and the impacts we will deliver.

Non-financial monitoring indicators that we will apply to measure our progress towards pursuing excellence in all of our science activities are identified in Appendix 5.

# CAPABILITY MANAGEMENT

## RESEARCH CAPABILITIES

---

To deliver on our strategy and the resulting science outputs will require us to develop new capabilities in a range of areas, most notably in human genetics, microbiology, bioprotection, life cycle assessment, quantitative genetics, bioinformatics and systems biology and modelling.

With revenue from the Crown expected to remain more or less constant over the next five years, the development of new areas will be achieved through a combination of redirecting of existing activity and growth through targeted recruitment supported by additional commercial revenue and internal investments as royalty income grows. We also expect to access some of our new capability needs through collaboration with national and international partners, particularly where they have established strengths in areas of common interest.

Addressing targets in systems modelling will require access to economics capability, with the preferred option being to acquire these skills 'in-house'. More broadly, this capability will also support the assessment of the socioeconomic outcomes of the Institute's research and, in doing so, contribute to quantifying research impact.

Recent success in the Primary Growth Partnership initiative 'Precision Seafood Harvesting' is intended to support new or expanded capabilities across a range of areas including pre and post harvest physiology, production systems, evaluation and assessment and prototype and facilities design. This will be achieved through the development of existing capability combined with recruitment and external collaborations with seafood companies and other research institutes.

In parallel with this, we expect to continue and in some areas, accelerate and expand current initiatives to replace capability that we expect will be lost to us through retirements over the next decade. With over 20 percent of our scientists now aged 55 and over, our succession planning process forms the basis for decision-making on the development and advancement of our next generation of lead scientists. While this applies across all areas of our research, it is particularly important in core areas such as plant breeding, where the focus will be on recruitment of "new age breeders" who have both phenotyping and molecular skills.

As we continue with what will be an extended period of renewal, our ability to recruit and retain world-class scientists and technologists with the capacity and drive to develop and advance significant areas of science is critical. While we will continue to focus on building a work environment that, in all its dimensions, is valued by our people, the ability to offer competitive remuneration is an essential element in this mix. This will require us to provide for substantial increases in the salaries of our high-performing, high potential staff in the years ahead.

More generally, we are strongly committed to growing a vibrant world-class science and technology-literate workforce at Plant & Food Research, with people who create new ideas and develop technology and opportunities from science in our areas of focus for the benefit of New Zealand.

To do this we will place a strong emphasis on achievement and on science and commercial outputs (papers, people, patents and products). We are setting high standards for achievement by our staff and will reward drive and energy with improved remuneration, state-of-the-art facilities and well resourced technical teams. Lifting the ratio of technicians and technologists to scientists will ensure teams are well-placed to perform at an optimal level. This goal will be supported by a trainee technician programme targeted at promising science students.

The growing importance of ever-more complex technologies (especially information technologies) in science is increasing both the demand for (and the value of) the technologists who understand, develop and apply them. Bioinformatics is but one example here. In acknowledgement of this we have embarked on an initiative which is intended to provide a more appropriate career and associated remuneration structure for our technologists, as an attractive alternative career pathway to that of a PhD qualified scientist or science manager. This initiative will also support an increased emphasis on technology transfer in line with the expectation of the CRI Taskforce Review, and will provide greater opportunity to recognise the value of individuals with specialist abilities in this aspect of research and development.

## LEADERSHIP

---

In recognition of the key importance of leadership in achieving our organisational objectives we will continue to invest in the formalised development of this critical capability through our well-established Leadership Programme. The Programme is based around a leadership framework which defines the leadership attributes that are important at Plant & Food Research and a coaching process that supports participants in identifying and developing their own leadership strengths.

Research has shown that the top ten percent of leaders produce significantly higher performance outcomes in comparison to other leaders in any given population. Our aim is therefore to grow the number of great leaders throughout the organisation, and in doing so, realise this performance benefit.

In line with the philosophy that great leadership can be exercised at all levels in an organisation, the programme operates right across the Institute, with specially tailored modules for our various levels of leadership, including developing leaders in the early stages of their careers.

## QUALITY MANAGEMENT SYSTEMS

---

In other initiatives targeted at building organisational capability, we are implementing improved Quality Management Systems with the objective of achieving excellence in all aspects of our performance in the areas of environmental compliance, health and safety, risk management, and more generally, research practice. This is being supported by a significant investment in people, systems and facilities.

We are also focusing on simplifying internal business, contracting and legal processes with the objective of reducing internal transaction and overhead costs. This is underpinned by a strong emphasis on the value of customer service and effective internal communication. Overall, the intention is to manage our internal systems in ways that maximise the resource that can be directed to science while we continue to meet our obligations to operate in a responsible manner.

## INFRASTRUCTURE: LAND, BUILDINGS AND RESEARCH FACILITIES

---

Plant & Food Research operates from three large research centres at Auckland, Palmerston North and Lincoln and a network of nine smaller facilities across New Zealand. The smaller facilities are closely associated with local horticultural industries or in the case of the Nelson site, the seafood industry. Most of these facilities are owned by the Institute and comprise a diverse mix of largely specialist buildings and land used for experimental purposes. Within this portfolio, there is considerable variation in their age, condition and overall suitability for our current and future needs. Consequently, the review and where appropriate, redevelopment of buildings and associated research facilities, particularly at the three large centres, will be a priority over the next five years.

At largest site (and headquarters) at Mt Albert, Auckland a master plan outlines the site's long term development and progressive renewal in the years ahead. Given the outdated and inadequate nature of some of the site's research facilities and urgent maintenance requirements, the renewal programme represents a major, high priority investment for the Institute.

In parallel with this, we will continue to assess and review our property holdings and ownership arrangements in light of our evolving research requirements.

## INFRASTRUCTURE: INFORMATION RESOURCES, DATABASES AND COLLECTIONS

---

Advances in information technology provide both the opportunity and a responsibility to better structure the way the Institute collects and manages data and knowledge. While peer-reviewed publications represent a readily accessible record of the research undertaken on any topic there is typically a far larger body of data and other information which, for one reason or another, is not published and which, as a consequence, is far less readily accessible.

Information management technologies provide a mechanism for collecting, storing and organising data and other knowledge so that it can be appropriately accessed and utilised at any future point. Properly designed and implemented, these technologies can facilitate improvements in the sharing of information for collaboration purposes, effective succession management and the creation and protection of valuable intellectual property.

As a government-owned research institute we have a particular responsibility to ensure that the data and knowledge we generate is readily available to future generations of researchers. Our significant investment in the development of new and improved systems for information management acknowledges this responsibility. This investment is also enabling us to meet our obligations under the Public Records Act.

Databases held by Plant & Food Research include general scientific and commercial information, together with highly specialised data relating to core business activities and specific research projects. These include fruit gene databases and germplasm collections. The Institute holds two collections that are designated as "nationally significant":

1. The national collections of fruit crop germplasm including plantings of kiwifruit, pipfruit, summerfruit, berryfruit and other fruit crops, at various Plant & Food research sites and;
2. The arable crops gene bank comprising a comprehensive collection of crop species of both agricultural importance and research interest, most significantly "landrace" varieties of small grain crops.

Policies for the databases and reference collections in which Plant & Food Research has an interest are recorded in Appendix 2.

# GOVERNANCE AND ACCOUNTABILITY

This year a number of recent policy measures, including those following the recommendations of the CRI Taskforce, will come fully into force.

Plant & Food Research is implementing several new measures to respond to the increased accountability that comes with the devolution of core funding. These include the frameworks for research investment and portfolio management and impact evaluation respectively which have been outlined in previous sections of this document.

During the coming year we will establish two standing advisory panels reporting to the Plant & Food Research Board of Directors. In accordance with the guidance on advisory panels contained in the “Crown Research Institute Governance and Ownership” document, the following two panels will be established to provide the Board with high-level advice:

**Strategic Scientific Advisory Panel:** the primary role of this Panel will be to provide foresight and strategic advice about emerging key issues and trends in research, science and technology and food production, supply and consumption, and their implications for Plant & Food Research. We expect this panel will be composed of 3-4 members with strong reputations and/or influence in science internationally.

**Strategic User Advisory Panel:** the primary role of this Panel will be to advise on effective technology transfer and engagement with industry across the areas that Plant & Food Research leads and/or contributes to, so that strong engagement and future focused partnerships deliver the needs of its end-users and economic benefit for New Zealand.

# FINANCIAL PERFORMANCE

Core financial indicators that we will apply to maintain a strong focus on our financial viability are identified in Appendix 5.

# APPENDIX 1:

## PLANT AND FOOD RESEARCH STATEMENT OF CORE PURPOSE

---

### PURPOSE

---

Plant and Food Research's purpose is to enhance the value and productivity of New Zealand's horticultural, arable, seafood and food and beverage industries to contribute to economic growth and the environmental and social prosperity of New Zealand.

---

### OUTCOMES

---

Plant and Food Research will fulfil its purpose through the provision of research and transfer of technology and knowledge in partnership with key stakeholders including industry, government and Māori to:

- increase the value of these industry sectors to the New Zealand economy through the development of high-value products and processes that meet current and future global market needs
- protect and enhance market access in New Zealand's horticultural and arable sectors
- sustain growth in these industry sectors driving ongoing efficiency gains with the development of environmentally resilient production systems.

---

### SCOPE OF OPERATION

---

To achieve these outcomes, Plant and Food Research is the lead CRI in the following areas:

- novel fruit, vegetable and crop cultivars for the horticultural and arable industries
- sustainable production and processing systems for the horticultural and arable industries
- plant and seafood based foods, ingredients and biomaterials.

Plant and Food Research will work with other research providers and end-users to contribute to the development of the following areas:

- biosecurity, land, soil and freshwater management
- climate change adaptation
- seafood and food and beverage sectors (including foods for human nutrition and health and food technologies)
- pastoral forage varieties.

---

## OPERATING PRINCIPLES

---

Plant and Food Research will:

- operate in accordance with a statement of corporate intent and business plan that describes how Plant and Food Research will deliver against this Statement of Core Purpose, and describes what the shareholders will receive for their investment
- meet its obligations as a Crown Company and remain financially viable, delivering an appropriate rate of return on equity
- develop strong, long-term partnerships with key stakeholders including, industry, government and Māori and work with them to set research priorities that are well linked to the needs and potential of its end-users
- maintain a balance of research that provides for both the near-term requirements of its sectors and demonstrates vision for their longer-term benefit
- transfer technology and knowledge from domestic and international sources to key New Zealand stakeholders including, industry, government and Māori
- develop collaborative relationships with other CRIs, universities and other research institutions (within New Zealand and internationally) to form the best teams to deliver its core purpose
- provide advice on matters of its expertise to the Crown
- represent New Zealand's interests on behalf of the Crown through contribution to science diplomacy, international scientific issues and/or bodies as required
- seek advice from scientific and user advisory panels to help ensure the quality and relevance of its research
- establish policies, practices and culture that optimise talent recruitment and retention
- enable the innovation potential of Māori knowledge, resources and people
- maintain its databases, collections and infrastructure and manage the scientific and research data it generates in a sustainable manner, providing appropriate access and maximising the reusability of data sets
- seek shareholder consent for significant activity beyond its scope of operation.

This statement provides key guidance to the Plant and Food Research Board for developing its Statement of Corporate Intent, which sets out Plant and Food Research's strategy for delivering against its core purpose. Plant and Food Research's performance will be monitored against the outcomes and operating principles in this statement.

## APPENDIX 2:

# POLICY AND PROCEDURE STATEMENTS

---

### GOOD EMPLOYER POLICIES

---

Plant & Food Research recognizes that its reputation as a good employer is fundamental to its ability to attract, motivate and retain the people required for the achievement of its business objectives.

There is a strong commitment to fostering a work environment in which staff can reach their maximum potential. This will be fulfilled by:

- continuing investment in the development of the knowledge, skills and abilities of staff at all levels.
- involving staff in the development and implementation of the organisation's strategies, policies and procedures.
- reinforcing the role and responsibilities of the organisation's leaders in promoting a workplace culture in which all staff are treated with fairness and respect.
- the development and implementation of innovative and flexible employment practices that recognise the diverse and evolving composition and aspirations of our workforce.
- Ensuring the health and safety and wellbeing of our people at work

Plant & Food Research's Equal Employment Opportunities (EEO) programme aims to create an innovative and successful organisation by attracting and retaining high caliber staff from all possible sections of society. This will enhance our ability to develop successful relationships with a wider range of clients and ensure we fulfill a key aspect of our responsibilities as a good employer. This is critical, given the increasingly diverse nature of the organisation's workforce and the society and markets within which it operates.

The focus is on the removal of barriers to EEO for both existing and potential employees, and the development of a culture where EEO principles are an integral part of the decision-making process. There is an increasing proportion of both women and minority ethnic groups within the organisation. Further progress will be achieved by ensuring that policies, procedures and actions reflect the key EEO principles of:

- tolerance and respect for others
- merit-based assessment of potential and existing staff
- providing appropriately targeted development opportunities to support staff in achieving their full potential.

The organisation has an active programme for ensuring the health and safety of employees in the workplace. There is a strong focus on employee involvement through the National Health and Safety committee and local committees of each of our ten sites.

---

### ACCOUNTING POLICIES

---

Plant & Food Research Plant & Food Research operates to generally accepted accounting principles endorsed by the New Zealand Society of Accountants. A statement of accounting policies is contained in Appendix 4.

---

## DIVIDEND POLICY

---

The Board will notify the shareholding Ministers, within three months of the end of each financial year:

- the amount of dividend (if any) recommended to be distributed to the shareholders,
- the percentage of tax-paid profits that the dividend represents, and
- the rationale and analysis used to determine the amount of dividend.

In determining surplus funds for distribution, the Board each year will give consideration to:

- The organisation's medium and long term capital investment requirements,
- The organizations projected profitability and cashflows,
- The ongoing financial viability of the company, including its ability to repay debt,
- The ability of the organization to react to revenue shocks outside of its control, and still maintain and enhance the capability of its people and facilities.
- The obligations of the Directors under the Companies Act 1993 and other statutory requirements

We are projecting over the SCI period we will undertake significant property redevelopment of our major campus sites, and this development will require significant internal financing. Therefore we are not forecasting a dividend distribution over this period.

---

## SIGNIFICANT TRANSACTIONS POLICY

---

The Board will obtain prior written consent of shareholding ministers for any transaction or series of transactions involving full or partial acquisition, disposal or modification of property (buildings, land and capital equipment) and other assets with a value equivalent to or greater than \$10 million or 20% of the company's total assets (prior to the transaction), whichever is the lesser.

The Board will also obtain prior written consent of shareholding Ministers for any transaction or series of transactions with a value equivalent to or greater than \$5 million or 30% of a company's total assets (prior to the transaction) involving:

- acquisition, disposal or modification of an interest in a joint venture or partnership, or similar association
- acquisition or disposal, in full or in part, of shares or interests in a subsidiary, external company or business unit
- transactions that affect a company's ownership of a subsidiary or a subsidiary's ownership of another entity
- other transactions that fall outside the scope of the definition of the company's core business or that may have a material effect on the company's science capabilities.'

---

## NATIONAL DATABASE AND COLLECTIONS ACCESS POLICY

---

Shareholding ministers will be advised of any disputes over access or use of any reference collection held by plant & food research and ministers may appoint a person with relevant expertise to decide the matter. Any such decision will be binding on plant & food research.

## APPENDIX 3:

# MATTERS REQUIRED BY THE CROWN RESEARCH INSTITUTES ACT 1992

---

### RATIO OF SHAREHOLDERS FUNDS TO TOTAL ASSETS

---

Plant & Food Research's target ratio of shareholders fund to total assets is as follows:

Year ended 30 June	2012	2013	2014
Equity ratio	0.71:1	0.71:1	0.72:1

Equity Ratio equals Average Shareholders' Funds over two years divided by Average Total Assets over two years.

---

### ACTIVITIES WHERE SHAREHOLDER COMPENSATION IS WILL BE REQUIRED

---

Where the Government wishes Plant & Food Research to undertake activities or assume obligations that will result in a reduction of the organisation's profit, or net worth in terms of investment in research, the Board will seek compensation sufficient to allow the organisation's position to be restored.

No requests for compensation are currently under consideration.

---

### OTHER MATTERS SPECIFICALLY REQUESTED BY THE SHAREHOLDER

---

There are no other matters specifically requested by the shareholder.

# APPENDIX 4:

## ACCOUNTING POLICIES

---

### 1. REPORTING ENTITIES

---

The New Zealand Institute for Plant & Food Research Limited (the “Company” or “Plant & Food Research”) and its subsidiaries (the “Group”) is a Crown Research Institute governed by the Crown Research Institute Act 1992 and is a limited liability company incorporated and domiciled in New Zealand. The whole of the share capital is held by Ministers of the Crown on behalf of the New Zealand Government. The Company’s registered office is 120 Mt Albert Road, Mt Albert, Auckland 1025.

The Group is primarily involved in research services on a fee-for-service basis.

The parent Company and the Group are designated as profit-oriented entities for financial reporting purposes.

---

### 2. BASIS OF PREPARATION

---

The financial statements are presented in New Zealand dollars (NZD), which is the Company’s functional and presentation currency. All financial information presented in New Zealand dollars has been rounded to the nearest thousand dollars (\$000).

---

### 3. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

---

The accounting policies set out below have been applied consistently to all periods presented in these financial statements.

---

#### (A) BASIS OF CONSOLIDATION

---

##### (I) SUBSIDIARIES

The consolidated financial statements of the Group include the parent entity, Plant & Food Research, and its controlled entities. Controlled entities include entities over which the Group has the power to govern financial and operating policies so as to obtain benefits from the activities of the entity. This power exists where the Group controls the majority voting power on the governing body or where such policies have been irreversibly predetermined by the Group or where the determination of such policies is unable to materially impact upon the level of potential ownership benefits that arise from the activities of the subsidiary. The financial statements of subsidiaries are included in the consolidated financial statements from the date which the Group obtains control and until such time as the Group ceases to control the entity. Any changes in the Parent ownership interest that do not result in the loss of control are accounted for as equity transactions.

The Group measures the cost of a business combination as the aggregate of fair values, at the date of exchange, of assets given, liabilities incurred or assumed, in exchange for control of the subsidiary plus any costs directly attributable to the business combination. Any excess of the cost of the business combination over the Group’s interest in the net fair value of the identifiable assets, liabilities and contingent liabilities is recognised as goodwill. If the Group’s interest in the net fair value of the identifiable assets, liabilities and contingent liabilities recognised exceeds the cost of the business combination, the difference will be recognised immediately in the Statement of Comprehensive Income. The purchase method of accounting is used to prepare the consolidated financial statements of the Group. In preparing the consolidated financial statements, the effects of all transactions, balances and unrealised gains and losses on transactions between entities in the Group have been eliminated. The Group’s investments in its subsidiaries are initially carried at cost in the Parent’s financial statements subject to any write down arising from an annual impairment review.

The financial statements of controlled entities have been prepared for the same reporting period as the parent entity, using consistent accounting policies.

---

## (II) ASSOCIATES

Associates are those entities over which the Group has significant influence, but not control, of the financial and operating policies. Investments in associate companies have been accounted for using the equity method of accounting and are initially recognised at cost and the carrying amount is increased or decreased to recognise the Group's share of the surplus or deficit of the associate after the date of acquisition. The Group's share of the surplus or deficit of the associate is recognised in the Group's Statement of Comprehensive Income. Distributions received from an associate reduce the carrying amount of the investment.

If the Group's share of deficits of an associate equals or exceeds its interest in the associate, the Group discontinues recognising its share of further deficits. After the Group's interest is reduced to zero, additional deficits are provided for, and a liability is recognised, only to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associate. If the associate subsequently reports surpluses, the Group will resume recognising its share of those surpluses only after its share of the surpluses equals the share of the deficits not recognised. The Group's share in the associate's surplus or deficits resulting from unrealised gains on transactions between the Group and its associates is eliminated. The Group's investments in associates are carried at cost in the Parent's financial statements.

---

## (III) JOINT VENTURES

A joint venture is a contractual arrangement whereby two or more parties undertake an economic activity that is subject to joint control. The Group recognises its interest in jointly controlled entities using the equity method. The investment in a jointly controlled entity is initially recognised at cost and the carrying amount is increased or decreased to recognise the Group's share of the surplus or deficit of the jointly controlled entity after the date of acquisition. The Group's share of the profit or loss of the jointly controlled entity is recognised in the Group's Statement of Comprehensive Income. The Group's investment in a jointly controlled entity is carried at cost in the Parent's financial statements.

---

## (B) REVENUE

Revenue is recognised at the fair value of consideration received or receivable to the extent that it is probable, that economic benefits will flow to the Group. Revenue is shown net of GST, returns and discounts and after eliminating sales within the Group. The following specific recognition criteria must be met before revenue is recognised:

---

### (I) CROWN-FUNDED RESEARCH CONTRACTS

Revenue from the Crown is recognised in the Statement of Comprehensive Income when the requirements under the funding agreement have been met.

---

### (II) COMMERCIAL SCIENCE RESEARCH CONTRACTS

---

## SALE OF GOODS

Revenue from the sale of goods is recognised when the significant risks and rewards of ownership of the goods have passed to the buyer and the amount of revenue can be reliably measured. Risks and rewards are considered passed to the buyer at the time of delivery of the goods to the customer.

## SALE OF GOODS - MANUFACTURED

---

The Group manufactures product for the food industry. Sales of goods are recognised when a Group entity has delivered product to a manufacturer. At this point there is no unfulfilled obligation that could affect a manufacturer's acceptance of the product. Delivery does not occur until the product has been shipped to the specified location.

## SALE OF GOODS-OTHER THAN MANUFACTURED GOODS

---

Sales of goods are recognised when a product is sold to the customer. Sales are usually on account. The recorded revenue is the gross amount of the sale, net of returns.

## SALE OF SERVICES

---

Research services are provided on a fixed-price contract, with contract terms generally ranging from less than a year to five years. Revenue from a contract to provide services is recognised by reference to the stage of completion of the transaction, assessed on the basis of the actual service provided as a proportion of the total services to be provided. If circumstances arise that may change the extent of the progress toward completion, the estimates are revised. These revisions may result in increases or decreases in estimated revenues or costs and are reflected in income in the period in which the circumstances that give rise to the revision become known by management.

## ROYALTIES

---

Royalty revenue is recognised on an accrual basis in accordance with the substance of the relevant agreement.

---

## (III) OTHER INCOME

### RENTAL INCOME

---

Lease receipts under an operating lease are recognised as revenue on a straight-line basis over the lease term.

### (IV) DIVIDEND AND INTEREST REVENUE

---

Dividend revenue from investments is recognised when the shareholders' rights to receive payment have been established. Interest revenue is recognised on a time-proportion basis using the effective interest method.

---

## (C) FOREIGN CURRENCY TRANSLATION

Foreign currency transactions are translated into New Zealand dollars using the exchange rates prevailing at the dates of the transactions, except when forward currency contracts have been taken out to cover short-term forward currency commitments. Where short-term forward currency contracts have been taken out, the transaction is translated at the rate contained in the contract. Foreign currency denominated monetary assets and liabilities are translated at the exchange rate prevailing at the period end. Foreign exchange gains or losses resulting from the settlement of such transactions and from the translation at balance date of foreign denominated monetary assets and liabilities are recognised in the Statement of Comprehensive Income, except when deferred in equity as qualifying cash flow hedges. The results and balance sheets of all foreign operations that have a functional currency different from New Zealand dollars are translated into the presentation currency as follows:

The assets and liabilities of foreign controlled entities are translated by applying the rate ruling at balance date and revenue and expense items are translated at the average rate calculated for the period. The exchange differences arising on the re translation are taken directly to equity in the foreign currency translation reserve.

On consolidation, exchange differences arising from the translation of the net investment in foreign operations, and of borrowing and other currency instruments designated as hedges of such investments, are taken to shareholder's equity.

---

## (D) BORROWING COSTS

Borrowing costs are recognised as an expense in the period in which they are incurred.

---

## (E) CASH AND CASH EQUIVALENTS

Cash and cash equivalents includes cash in hand, deposits held at call with banks, other short-term highly liquid investments with maturities of three months or less after balance date, that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value and bank overdrafts. Bank overdrafts are shown within borrowings in current liabilities in the Balance Sheet.

---

## (F) TRADE AND OTHER RECEIVABLES

Trade receivables are recognised initially at fair value and subsequently measured at amortised cost using the effective interest method, less any provision for doubtful receivables. Collectability of trade receivables is reviewed on an ongoing basis. Debts which are known to be uncollectible are written off when identified. A provision for doubtful receivables is established when there is objective evidence that the Group will not be able to collect all amounts due according to the original terms of receivables. The amount of the provision is the difference between the asset's carrying amount and the present value of the estimated future cash flows, discounted at the effective interest rate, if applicable. The amount of the provision is recognised in the Statement of Comprehensive Income. When a trade receivable is uncollectible, it is written off against the provision if it has been provided for or immediately recognised in the Statement of Comprehensive Income if not. Any recoveries of trade receivables written off are credited against bad debts in the Statement of Comprehensive Income.

---

## (G) INVENTORIES

Inventories held for distribution or consumption in the provision of services that are not supplied on a commercial basis are measured at the lower of cost and current replacement cost. Inventories held for use in the production of goods and services on a commercial basis are stated at the lower of cost and net realisable value. Cost is determined using the first-in, first-out method and for both work in progress and finished goods includes expenditure incurred in acquiring the inventories and bringing them to their existing location and condition. Net realisable value is the estimated selling price in the ordinary course of business, less applicable variable selling expenses. Agricultural produce is valued at fair value less estimated selling costs. The write down from cost to current replacement cost or net realisable value is recognised in the Statement of Comprehensive Income. The profit contained in the intra -company sales of inventory has been eliminated on consolidation.

---

## (H) PROPERTY, PLANT AND EQUIPMENT

The Group has four classes of property, plant and equipment:

- Land
- Buildings
- Plant and equipment
- Motor vehicles

Land is recorded at cost. All other property, plant and equipment is shown at cost or valuation, less accumulated depreciation and any accumulated impairment losses, except for assets transferred from the Crown. Property, plant and equipment transferred from the Crown has been included in the accounts at values established by independent valuers. All subsequent expenditure has been initially recorded at cost.

Cost includes expenditures that is directly attributable to the acquisition of the asset. Subsequent costs are included in the asset's carrying amount only when it is probable that future economic benefits or service potential associated with the asset will flow to the Group and the cost of the item can be measured reliably. All other costs are recognised in the Statement of Comprehensive Income when the expense is incurred. Where an asset is acquired at no cost, or for a nominal cost, it is recognised at fair value as at the date of acquisition. The Group constructs some items of plant for use in research. These have been brought into the accounts at the cost of direct labour and materials plus an appropriate proportion of direct overheads.

Land transferred to the Group cannot be freely traded. Section 30 of the Crown Research Institutes Act 1992 requires that prior to sale sections 40-42 of the Public Works Act 1981 be complied with. These sections require that land offered for sale must be offered to the original owner of that land or their successors. An arbitration clause is included to establish fair values for such offers. Gains and losses on disposals are determined by comparing the proceeds with the carrying amount of the asset. Gains and losses on disposal are included in the Statement of Comprehensive Income.

---

## (I) DEPRECIATION

Depreciation on assets, except land, is calculated using the straight-line method, at rates calculated to allocate the asset's cost, less estimated residual value, over its estimated useful life. Leasehold improvements are depreciated over the shorter of the unexpired period of the lease and the estimated useful life of improvements.

The useful lives of major asset classes of property, plant and equipment have been estimated as follows:

- Land 10 - 40 years
- Buildings 10 - 100 years
- Plant and equipment 3 - 10 years
- Motor vehicles 3 - 10 years

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at each financial year-end. The assets' carrying value is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount.

---

## (J) INTANGIBLE ASSETS

---

### (I) GOODWILL

Goodwill is initially measured at its cost, being the excess of acquisition cost over the Group's interest in the net fair value of the identifiable assets, liabilities and contingent liabilities. Goodwill on acquisition of subsidiaries is included in intangible assets by applying the purchase method. Goodwill on acquisition of associates is included in investments in associates by applying the equity method. Goodwill arising in business combinations is not amortised. Instead, goodwill is tested for impairment annually. After initial recognition, the Group measures goodwill at cost less any accumulated impairment losses. An impairment loss recognised for goodwill will not be reversed in any subsequent period. Goodwill is allocated to cash generating units for the purpose of impairment testing.

---

### (II) SOFTWARE

The cost of software, databases and related items, either acquired or internally generated, is recognised as an expense when incurred, except for: The cost of software, databases and related items, either acquired or internally generated, which are unique and controlled by the Group, and that will probably generate measurable economic benefits exceeding costs beyond one year is capitalised as intangible assets.

The cost of software, databases and related items, either acquired or internally generated, for business management systems is capitalised as intangible assets. Costs associated with maintaining computer software are recognised as an expense when incurred. The carrying value of software is amortised on a straight-line basis over its useful life. Amortisation begins when the asset is available for use and ceases at the date that the asset is derecognised. The amortisation charge for each period is recognised in the Statement of comprehensive Income. The useful lives and associated amortisation rates of major classes of intangible assets have been estimated as follows:

→ Software 3 - 5 years

---

### (III) TRADEMARKS AND LICENSES

The cost of acquired trademarks and licenses are capitalised as intangible assets where they will probably generate measurable economic benefits exceeding costs beyond one year. Trademarks and licenses have a finite useful life and are carried at cost less accumulated amortisation. Amortisation is calculated using the straight-line method to allocate the cost over their estimated useful lives, which is between 10 and 15 years.

---

### (IV) RESEARCH AND DEVELOPMENT

Research and development is the business of the Company. Most work is performed under contract for others, and in most cases intellectual property rights are retained. All research and development costs are expensed in the period they are incurred. When a project reaches the stage where it will probably generate future measurable economic benefits exceeding development cost, development cost is recognised as an intangible asset. The asset is amortised from the commencement of commercial production of the product to which it relates, on a straight-line basis, over the period of expected benefit.

---

## (K) INVESTMENTS AND OTHER FINANCIAL ASSETS

Financial assets include investments in companies other than subsidiaries and associates. Financial assets are measured at fair value. The Group classifies its investments by the following categories: financial assets at fair value through profit or loss, held-to-maturity investments, loans and receivables and available-for-sale financial assets. The classification depends on the purpose for which the investments were acquired. Management determines the classification of its investments at initial recognition and re-evaluates this designation at each reporting date. Financial assets and liabilities are initially measured at fair value plus transaction costs unless

they are carried at fair value through profit or loss, in which case the transaction costs are recognised in the Statement of Comprehensive Income. Purchases and sales of investments are recognised on trade-date, the date on which the Group commits to purchase or sell the asset. Financial assets are derecognised when the rights to receive cash flows from the financial assets have expired or have been transferred and the Group has transferred substantially all the risks and rewards of ownership.

The fair value of financial instruments traded in active markets is based on quoted market prices at the balance sheet date. The quoted market price used is the current bid price. The fair value of financial instruments that are not traded in an active market is determined using valuation techniques.

The Group uses a variety of methods and makes assumptions that are based on market conditions existing at each balance date. Quoted market prices or dealer quotes for similar instruments are used for long-term debt instruments held. Other techniques, such as estimated discounted cash flows, are used to determine fair value for the remaining financial instruments.

---

## (I) FINANCIAL ASSETS AT FAIR VALUE THROUGH PROFIT OR LOSS

This category has two sub-categories: financial assets held for trading, and those designated at fair value through profit or loss at inception. A financial asset is classified in this category if acquired principally for the purpose of selling in the short term or if so designated by management. Derivatives are also categorised as held for trading unless they are designated as hedges. Assets in this category are classified as current assets if they are either held for trading or are expected to be realised within 12 months of the balance sheet date. After initial recognition they are measured at their fair values. Gains or losses on remeasurement are recognised in the Statement of Comprehensive Income. Financial assets in this category include derivatives.

---

## (II) FINANCIAL ASSETS AT FAIR VALUE THROUGH EQUITY (AVAILABLE FOR SALE)

Financial assets at fair value through equity are those that are designated as fair value through equity or are not classified in any of the other categories. This category encompasses:

- Investments that Plant & Food Research intends to hold long-term but which may be realised before maturity; and
- Shareholdings that Plant & Food Research holds for strategic purposes.

Plant & Food Research's investments in its subsidiary and associate companies are not included in this category as they are held at cost (as allowed by NZ IAS 27 Consolidated and Separate Financial Statements and NZ IAS 28 Investments in Associates) whereas this category is to be measured at fair value. After initial recognition these investments are measured at their fair value plus transaction costs. Gains and losses are recognised directly in equity except for impairment losses, which are recognised in the Statement of Comprehensive Income. In the event of impairment, any cumulative losses previously recognised in equity will be removed from equity and recognised in the Statement of Comprehensive Income even though the asset has not been derecognised. On de-recognition the cumulative gain or loss previously recognised in equity is recognised in the Statement of Comprehensive Income.

---

## (III) LOANS AND RECEIVABLES

These are non derivative financial assets with fixed or determinable payments that are not quoted in an active market. After initial recognition they are measured at amortised cost using the effective interest method. Gains and losses when the asset is impaired or derecognised are recognised in the Statement of Comprehensive Income. Loans and receivables are classified as "trade and other receivables" and "cash and short term deposits" in the Balance Sheet.

---

## (L) IMPAIRMENT OF FINANCIAL ASSETS

At each balance sheet date the Group assesses whether there is any objective evidence that a financial asset or group of financial assets is impaired. Any impairment losses are recognised in the Statement of Comprehensive Income.

---

## (M) IMPAIRMENT OF NON - FINANCIAL ASSETS

The carrying amounts of the Group's non-financial assets, other than inventories and deferred tax assets, are reviewed at each reporting date to determine whether there is an indication that an asset may be impaired. Where an indicator of impairment exists, or where annual impairment testing for an asset is required, the Group makes a formal estimate of the recoverable amount. Assets that have a finite useful life are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. Value in use is depreciated replacement cost for an asset where the future economic benefits or service potential of the asset are not primarily dependent on the asset's ability to generate net cash flows and where the entity would, if deprived of the asset, replace its remaining future economic benefits or service potential.

For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash-generating units). The value in use for cash-generating assets is the present value of expected future cash flows. An impairment loss is recognised in the Statement of Comprehensive Income. Non-financial assets that suffered impairment are reviewed for possible reversal of the impairment at each reporting date, this is recognised in the Statement of Comprehensive Income.

---

## (N) TRADE PAYABLES

Trade payables are initially measured at fair value and subsequently measured at amortized cost using the effective interest method.

---

## (O) PROVISIONS

Provisions are recognised when the Company has a present obligation (either legal or constructive), as a result of a past event, it is probable that an outflow of economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. Provisions are not recognised for future operating losses. Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the balance sheet date, the discount rate used to determine the present value reflects current market assessments of the time value of money and the risks specific to the liability. The increase in the provision due to the passage of time is recognised as an interest expense.

---

## (P) EMPLOYEE BENEFITS

---

### (I) WAGES AND SALARIES, ANNUAL LEAVE, SICK LEAVE AND OTHER BENEFITS

Provision is made for employee benefits accumulated as a result of employees rendering services up to balance date including related on-costs. The benefits include wages and salaries, annual leave, sick leave, incentives and other benefits. The provision for employee benefits is measured at the remuneration rates expected to be paid when the liability is settled. The Group recognises a liability for sick leave to the extent that absences in the coming year are expected to be greater than the sick leave entitlements earned in the coming year. The amount is calculated based on the unused sick leave entitlement that can be carried forward at balance date, to the extent that the Group anticipates it will be used by staff to cover those future absences.

The Group recognises a liability and an expense for bonuses where contractually obliged or where there is a past practice that has created a constructive obligation.

---

## (II) LONG SERVICE LEAVE AND RETIREMENT LEAVE

Service leave and retirement leave entitlements are calculated based on the employee's entitlement and their current pay rate. The liability for long service leave is recognised in the provision for employee benefits and measured as the present value of expected future payments to be made in respect of services provided by employees up to the reporting date. Consideration is given to expected future wage and salary levels, experience of employee departures and periods of service. Long term benefits expected to be settled within 12 months are classified as employee entitlements under current liabilities.

---

## (III) PENSION AND POST RETIREMENT BENEFITS

The Group operates a defined contribution superannuation plan. A defined contribution plan is a pension plan under which the Group pays fixed contributions to a separate entity. The Group has no legal or constructive obligations to pay further contributions if the fund does not hold sufficient assets to pay all employees the benefits relating to employee service in the current and prior periods. The Group's contributions made to defined contribution superannuation plans are recognised as an expense in the Statement of Comprehensive Income when they are due.

---

## (IV) RESTRUCTURING

A provision for restructuring is recognised when the Company has approved a detailed and formal restructuring plan, and the restructuring either has commenced or has been announced publicly.

---

## (Q) LEASES

The Company leases certain plant and equipment, land and buildings. Finance leases, where the lessee is transferred substantially all the risks and benefits incidental to ownership of an asset, whether or not title is eventually transferred. At the commencement of the lease term, the Group recognises finance leases as assets and liabilities in the Balance Sheet at the lower of the fair value of the leased item or the present value of the minimum lease payments. The amount recognised as an asset is depreciated over its useful life. If there is uncertainty as to whether the Group will obtain ownership at the end of the lease term, the asset is fully depreciated over the shorter of the lease term and its useful life. Operating lease payments, where the lessors effectively retains substantially all the risks and benefits incidental to ownership of the leased item, are recognised as an expense in the Statement of Comprehensive Income on a straight line basis over the lease term.

---

## (R) INCOME TAX

---

### (I) CURRENT TAX

Income tax expense comprises both current tax and deferred tax, and is calculated using tax rates that have been enacted or substantially enacted by balance date. Current tax and deferred tax are charged or credited to the Statement of Comprehensive Income, except when they relate to items charged or credited directly to equity, in which case the tax is dealt with in equity. Current tax is the amount of income tax payable based on the taxable profit for the current year, plus any adjustments to income tax payable in respect of prior years.

---

### (II) DEFERRED TAX

Deferred tax is the amount of income tax payable or recoverable in future periods in respect of temporary differences calculated using the liability method and unused tax losses. Deferred tax is not accounted for if it arises from initial recognition of goodwill or from initial recognition of an asset or liability in a transaction, other than a business combination, that at the time of the transaction affects neither accounting nor taxable profit or loss. Deferred tax is recognised if it arises from investments in subsidiaries and associates, and interests in joint

ventures, except where the company can control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax is measured using the tax rates (and laws) that have been enacted or substantively enacted by the balance sheet date and are expected to apply when the related deferred income tax asset is realised or the deferred income tax liability is settled. A deferred tax asset is recognised to the extent that it is probable that future taxable profits will be available against which the temporary differences can be utilised. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realised.

---

## (S) GOODS & SERVICES TAX (GST)

The Statement of Comprehensive Income has been prepared so that all components are stated exclusive of GST. All items in the Balance Sheet are stated net of GST, with the exception of receivables and payables which include GST invoiced. Where GST is not recoverable as input tax then it is recognised as part of the related asset or expense. The net amount of GST recoverable from, or payable to, the Inland Revenue Department is included as part of receivables or payables in the Balance Sheet. The net GST paid to, or received from the IRD, including the GST relating to investing and financing activities, is classified as an operating cash flow in the Cash Flow Statement. Commitments and contingencies are disclosed exclusive of GST.

---

## (T) DERIVATIVE FINANCIAL INSTRUMENTS

The Group enters into derivative transactions, principally interest rate swaps and forward currency contracts. The purpose of these transactions is to manage the interest rate and currency risk arising from the Group's operations. All derivative financial instruments are recognised in the Balance Sheet at their fair value. Changes in the fair value of derivative financial instruments are recognised either in the Statement of Comprehensive Income in equity depending on whether the derivative financial instrument qualifies for hedge accounting, and if so, whether it qualifies as a fair value hedge or cash flow hedge. In accordance with its treasury policy, the Group does not hold or issue derivative financial instruments for trading purposes. Interest rate swaps are accounted for at fair value through the Statement of Comprehensive Income. At each balance date interest rate swap derivative financial instruments are re-measured at their fair value with any changes in the fair value recognised immediately through the Statement of Comprehensive Income. Changes in the fair values of forward currency contracts that are designated and qualify as cash flow hedges, to the extent that they are effective hedges, are recorded in equity. The gains and losses that are recognised in equity are transferred to the Statement of Comprehensive Income in the same period in which the hedged item affects earnings. On sale, expiry, or designation of a forward currency contract, the cumulative gains or losses are maintained in equity until such time as the forecast transaction impacts earnings. If the forecast transaction is no longer expected to occur the cumulative gain or loss is transferred to the Statement of Comprehensive Income. The Group documents at inception of the transaction the relationship between hedging instruments and hedging items, as well as its risk management objective and strategy for undertaking various hedge transactions. The process includes linking all forward currency contract derivative financial instruments to specific firm commitments or forecast transactions. The Group also documents its assessment, both at the hedge inception and on an ongoing basis, of whether the forward currency derivative financial instruments used are highly effective.

---

## (U) BORROWINGS

Borrowings are initially recognised at their fair value plus transition costs. After initial recognition all borrowings are measured at amortised cost using the effective interest method.

---

## (V) EQUITY

Ordinary shares are classified as equity. Incremental costs directly attributable to the issue of new shares are shown in equity as a deduction, net of tax, from the proceeds.

---

## (W) BUDGET FIGURES

The budget figures are derived from the Statement of Corporate Intent as approved by the Board, and the Shareholder, at the beginning of the financial year. The budget figures have been prepared in accordance with NZ IFRS, using accounting policies that are consistent with those adopted by the Group for the preparation of these financial statements. The budget figures are unaudited.

---

## (X) CRITICAL ACCOUNTING ESTIMATES AND ASSUMPTIONS

In preparing these financial statements the Group has made estimates and assumptions concerning the future. These estimates and assumptions may differ from the subsequent actual results. Estimates and assumptions are continually evaluated and are based on historical experience and other factors, including expectation of future events that are believed to be reasonable under the circumstances. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below:

---

### (I) PROPERTY, PLANT AND EQUIPMENT USEFUL LIVES AND RESIDUAL VALUE

At each balance date the Group reviews the useful lives and residual values of its property, plant and equipment. Assessing the appropriateness of useful life and residual value estimates of property, plant and equipment requires the Group to consider a number of factors such as the physical condition of the asset, expected period of use of the asset by the Group, and expected disposal proceeds from the future sale of the asset.

---

### (I) PROPERTY, PLANT AND EQUIPMENT USEFUL LIVES AND RESIDUAL VALUE (CONTINUED)

An incorrect estimate of the useful life or the residual value will impact the depreciation expense recognised in the Statement of Comprehensive Income, and carrying amount of the asset in the Balance Sheet. The Group minimises the risk of this estimation uncertainty by physical inspection of assets, an asset replacement program, review of second hand market prices for similar assets and an analysis of prior asset sales. The Group has not made significant changes to past assumptions concerning useful lives and residual values. The carrying amount of property, plant and equipment is disclosed in note 16.

---

### (II) INVESTMENT IMPAIRMENT

The Parent annually performs an impairment review of its significant subsidiaries and associates. None of the subsidiaries or associates are actively traded in any market. The carrying amount of investments is disclosed in notes 18 to 20.

---

### (III) RETIREMENT AND LONG SERVICE LEAVE

The present value of the retirement and long service leave obligations depend on a number of factors that are determined on an actuarial basis using a number of assumptions. Two key assumptions used in calculating this liability include the discount rate and the salary inflation factor. Any changes in these assumptions will impact on the carrying amount of the liability. In determining the appropriate discount rate the Company considered the interest rates on NZ government bonds which have terms to maturity that match, as closely as possible, the estimated future cash outflows. The salary inflation factor has been determined after considering historical salary inflation patterns. A weighted average discount rate of 4.7% and a salary inflation factor of 4.3% were used. If the discount rate were to differ by 1% from the Company's estimates, with all other factors held constant, the carrying amount of the liability would be an estimated \$25,000 higher / lower.

If the salary inflation factor were to differ by 1% from the Company's estimates, with all other factors held constant, the carrying amount of the liability would be an estimated \$7,000 higher / lower. The carrying amount of employee entitlements are disclosed in the Balance Sheet.

---

## (Y) CRITICAL JUDGEMENTS IN APPLYING THE COMPANY'S ACCOUNTING POLICIES

Management has exercised the following critical judgement in applying the Company's accounting policies for the period ended 30 June 2010:

---

### (I) LEASE CLASSIFICATION

Determining whether a lease agreement is a finance or an operating lease requires judgement as to whether the agreement transfers substantially all the risks and rewards of ownership to the Group. Judgement is required on various aspects that include, but are not limited to, the fair value of the leased asset, the economic life of the leased asset, whether or not to include renewal options in the lease term and determining an appropriate discount rate to calculate the present value of the minimum lease payments. Classification as a finance lease means the asset is recognised in the Balance Sheet as property, plant and equipment, whereas for an operating lease no such asset is recognised. The Group has exercised its judgement on the appropriate classification of building and equipment leases and has determined all leases are operating leases.

---

### (Z) DIVIDEND DISTRIBUTION

Dividend distribution to the company's shareholders is recognised as a liability in the Group's financial statements in the period in which the dividends are approved by the company's shareholders.

## APPENDIX 5:

# NON-FINANCIAL AND FINANCIAL MONITORING INDICATORS

**END-USER COLLABORATION:** CRIs are expected to develop strong, long-term partnerships with industry, government and Māori, and to work with them to set research priorities that are well linked to the needs and potential of their end-users (generic operating principle in SCP).

Percentage and number of relevant funding partners and other end-users that have a high level of confidence in the CRI's ability to set research priorities, and the effectiveness of the collaboration or partnership (survey data). **Annually**

Total dollar value of revenue (in cash and in-kind), and dollar value subcontracted out to other organisations from each 'source category' per annum from rolling five years (administrative data). **Quarterly**

**RESEARCH COLLABORATION:** CRIs are expected to develop collaborative relationships with other CRIs, universities and other research institutions within New Zealand and internationally to form the best teams to deliver the CRI's core purpose (generic operating principle in SCP).

Percentage of relevant national and international research providers that have a high level of confidence in the CRI's ability to form the best teams to deliver on the CRI's outcomes (survey data). **Annually**

Number and percentage of joint scientific peer-reviewed publications and IP outputs with other New Zealand or international research institutions per annum (administrative data). **Quarterly**

**TECHNOLOGY & KNOWLEDGE TRANSFER (SCIENCE RELEVANCE):** CRIs are expected to transfer technology and knowledge from domestic and international sources to New Zealand industry, government and Māori (generic operating principle in SCP).

Total number and percentage of licensing deals of CRI-derived IP (including technologies, products and services) with New Zealand and international partners per annum (administrative data). **Quarterly**

Percentage of relevant end-users who have adopted knowledge and/or technology from CRIs (survey data). **Annually**

Percentage change in the number of requests and enquiries for the CRI's publicly available collections (administrative data). **Quarterly**

**SCIENCE QUALITY:** CRIs are expected to pursue excellence in all their activities (CRI Act).

Total number of international awards, invitations to participate on international committees, and editorial boards for the CRI's published papers, per annum. **Annually**

Average number of citations per CRI published paper. **Quarterly**

Proportion of published papers in the top 25 international journals relevant to the scope of the CRI (as outlined in the SCP) per annum. **Annually**

**CORE FINANCIAL INDICATORS:** CRIs are expected to focus on financial viability

Projected cashflow – the measure of forward looking. **Quarterly**

Operating margin – the profitability of the company per dollar of revenue. **Quarterly**

Profit per FTE – the ability of the company to generate a return from its staff. **Quarterly**

Revenue growth – the measure of whether the company is growing revenue. **Quarterly**









*Media contains pulp from tree farms and is chain of custody certified. It is manufactured in an elemental chlorine free process under environmental management system that encompasses ISO 14001 and Eco-Management and Audit Scheme (EMAS).*