

1st July 2013

Four Year Rolling Review: Plant and Food Research 2013

Report from the Review Panel



Four Year Rolling Review: Plant and Food Research 2013

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1. FOREWORD

As Chairman of the Plant and Food Research Rolling Review panel I would like to record my appreciation to the Board, management and all we met with from Plant and Food Research for the assistance they provided during the review process.

The support provided to the panel by MBIE, especially in sourcing additional information at short notice, was also very much appreciated.

As Chair I am particularly grateful to the other panel members for the hours they put in, for bringing their different backgrounds to bear and for working so collegially and productively as a team.

Having rolling four year reviews of the CRIs is a useful initiative in focusing attention on the longer term performance and capacity of these Crown-owned companies. I hope that this report will assist Plant and Food Research to flourish over the next four years, while providing support for the Ministry's and Government's decision making.

A handwritten signature in black ink, appearing to read 'P J Barry', with a large, loopy flourish underneath.

Philip Barry

Chair

1 July 2013

2. EXECUTIVE SUMMARY

Cabinet has agreed [CAB Min(10)43/5C refers] to evaluate the performance of each Crown Research Institute (CRI) against its Statement of Core Purpose. Each CRI will be reviewed every four years. Plant and Food Research is the first CRI to undergo such a review. The review was undertaken by an independent expert panel (refer Annex Two for the composition of the panel).

The Statement of Core Purpose for Plant and Food Research states that “*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.*” The Statement of Core Purpose elaborates this statement in terms of the key outcomes, scope of operation and operating principles for Plant and Food Research and it is against all these that the panel makes its report.

This four year rolling review of Plant and Food Research has identified many positive features within the organisation including its good policies, processes, systems and structures; its good science, with some world-leading; and some evidence of it having positive impacts on sector value and productivity. Plant and Food Research has an extensive portfolio of research and has made impact along the innovation pathway. The organisation also maintains a wide range of strong partnerships with the diverse sectors it delivers to across its Statement of Core Purpose.

Plant and Food Research has refreshed its vision and strategy and it has articulated a well thought-through road ahead for the organisation. The panel endorses the strategy. Good progress has been made in implementing the strategy in some areas such as adjusting internal processes to manage the new accountabilities of core funds, formalising sector advice, analysis and reporting and making some hard choices to reduce fragmentation and invest in key areas for the future. But the panel has concerns about the depth of understanding and ownership of the strategy within the organisation, the speed of implementation of the strategy and the monitoring of progress in its delivery.

Over the period covered by this review Plant and Food Research has repeatedly under-delivered on its medium-term financial targets, with forecasts of increasing revenue and increasing return on equity failing to materialise in successive Statements of Corporate Intent. The poor track record in delivering to its financial forecasts and the high dependence of its latest growth forecasts on commercial revenue means the panel is uncertain about the organisation’s ability to deliver to its latest medium-term financial targets.

There is also scope for Plant Food Research to improve its performance with respect to delivering to Māori as well as its specification of the ‘food’ aspects of the Statement of Core Purpose.

The panel also has broader concerns about the general operating environment for all the CRIs and in particular the degree of monitoring and the lack of financial and other disciplines for an organisation that repeatedly fails to meet its financial targets. The establishment of these four-yearly rolling reviews of the CRIs is a positive step in strengthening the monitoring regime.

This review shows that Plant and Food Research has a solid base to work from. There is the opportunity for Plant and Food Research to deliver on a robust action plan. By responding positively to this review, the panel believes Plant and Food Research can enhance stakeholder confidence, leverage new opportunities such as the National Science Challenges and new Primary Growth Partnership opportunities and better deliver against its Statement of Core Purpose in a sustainable way.

3. BACKGROUND

3.1. Context for the rolling reviews

The 2010 CRI Taskforce reforms are an integrated suite of changes designed to increase the impact and benefit of the Crown Research Institutes (CRIs) to New Zealand. Central to the reforms is the intention to increase the CRIs' focus on collaboration and efficient technology transfer to the sectors and key stakeholders they serve.

Each CRI has adopted a Cabinet-approved Statement of Core Purpose which reflects this focus and clearly articulates the purpose, outcomes and strategic role for the organisation. The Statement of Core Purpose for Plant and Food Research is attached as Annex 1.

To ensure CRIs continue to increase their contribution to New Zealand's economic, social and environmental well-being, the CRI Taskforce also recommended, and Cabinet agreed [CAB Min(10)43/5C refers], that the government evaluates the performance of each CRI against its Statement of Core Purpose through a process of independent rolling reviews.

It has been agreed with the Minister of Science and Innovation that two reviews will be undertaken each year. Given the cycle of reviewing the seven CRIs will be completed every four years, these reviews will be known as the four-year rolling reviews.

These reviews are described as rolling for two reasons: firstly, because they are designed to review each CRI successively, and secondly, because they will draw on an aggregation of performance-related information that is already routinely generated to inform the matrix of monitoring and assessment processes established around the CRIs.

3.2. Purpose of the review and this report

As noted above, Cabinet agreed that shareholding Ministers evaluate the performance of each CRI against its Statement of Core Purpose through a process of independent rolling reviews. The purpose of the four year rolling reviews is to provide shareholding Ministers with an independent assessment of each CRI's current effectiveness and future potential in delivering on the purpose and outcomes set out in its Statement of Core Purpose.

The reviews are intended to provide shareholding Ministers with insights on where the CRI's performance can be improved and assurance on where the CRI is operating effectively in delivering outcomes that contribute to New Zealand's economic, social and environmental well-being. The reviews will include an assessment of governance effectiveness, financial viability and sustainability as well as an identification of opportunities and barriers to success. Findings from the reviews will also support CRI Boards in their governance role.

This report is the outcome of the first such review, that of Plant and Food Research. The review was undertaken between April and June 2013.

3.3. Scope of the review

Each CRI's Statement of Core Purpose provides the scope of enquiry for the four year rolling reviews. The review will evaluate each CRI's performance and progress in delivering to the purpose, outcomes, scope of operation and operating principles in its Statement of Core Purpose. There will also be some consideration of the likely durability of outcomes in the current economic and environmental context.

The reviews will evaluate factors that influence the CRI's overall success in contributing to its Statement of Core Purpose outcomes now and into the future.

Out of scope

Every year each CRI, in collaboration with key stakeholders, measures and evaluates its impact on its respective sectors. The independent panel undertaking the four-year rolling reviews will not duplicate this work. However, based on the measures and assessment generated by the CRI, the panel will evaluate how well the CRI is contributing to the outcomes in its Statement of Core Purpose and will assess the quality of the measures used to inform that assessment.

The following is also out of scope:

- how science reviews are undertaken by the Science, Skills and Innovation Group; rather the reviews themselves may be sourced as an informational input into this project;
- measuring performance of the CRI's delivery against individual contracts; rather the panel will evaluate how the CRI manages contracts overall; and
- measurement of the CRI's science quality; rather the panel will evaluate how well the CRI is monitoring, measuring and improving science quality.

3.4. The review panel and processes

Panel members were appointed to ensure an appropriate mix of experience in governance, corporate finance and economics, senior management of science organisations and organisational review.

Review Panel Membership

CHAIR	Philip Barry	TDB Advisory
PANEL MEMBERS	Ross Butler	Merlot Consulting
	Tricia Harris	Consultant
	Professor David Penman	David Penman Associates

Brief biographies for panel members are attached as Annex 2.

Panel information, approach and work programme

The panel was recruited by the Ministry of Business Innovation and Employment (MBIE) in April 2013 and it convened on April 29th 2013. Prior to the first meeting panel members were provided with a range of background material from both MBIE and Plant and Food Research. The information from Plant and Food Research was based on an information request and further information was provided throughout the period of the review. The full list of information provided to the panel through the review is detailed in Annex 3.

In undertaking the review the panel sought to be:

- a. independent: working closely with Plant and Food Research and MBIE but remaining independent of both to ensure the panel's report reflects an independent assessment;
- b. objective: the review sought to be objective and as far as possible evidence-based. The panel sought to be open minded and "let the facts and the numbers do the talking"; and
- c. interactive: the panel consulted with members of the Plant and Food Research Board and senior management team during the review and Plant and Food Research had the opportunity to see and comment on matters of factual accuracy in the draft report before it was finalised.

The panel met with the Senior Management and Science Leadership of Plant and Food Research for two days at the Mount Albert Research Centre at which time the panel also spoke with the Plant and Food Research Chair. The panel met with the Chair and a Board member of Plant and Food Research and held meetings or teleconferences with a number of external stakeholders. The full list of those the panel met with, or spoke to, is provided as Annex 4.

The Chair and two members of the panel discussed the panel's preliminary findings with the Plant and Food Research Board at its meeting on 23 May. A draft report was provided to both MBIE and Plant and Food Research for comments on matters of accuracy on 5 June, a further draft was provided to both organisations on 24 June and the final report was provided to MBIE and Plant and Food Research on 1 July 2013.

Panel conflicts of interest

The panel reviewed any conflicts of interest that members may have in relation to this process. Relevant issues are tabulated below but none were seen as major.

Philip Barry	None.
Ross Butler	Chairman of Council of Nelson/Marlborough Institute of Technology – collaborative teaching with Cawthron and Plant and Food Research in Nelson seafood.
Tricia Harris	Partner was a senior manager with Crop and Food Research until the merger, then a senior manager in Plant and Food Research until December 2009.
David Penman	Ex -graduate students have senior research positions in Plant and Food Research.

4. HOW WELL IS PLANT AND FOOD RESEARCH DELIVERING NOW AGAINST ITS STATEMENT OF CORE PURPOSE?

4.1. Context for assessment

A CRI's performance is measured against two key deliverables:

1. the impact of its research in relation to economic, social or environmental benefits for New Zealand; and
2. the financial performance of the CRI.

The panel provides below its assessment of the current performance of Plant and Food Research in delivering against its Statement of Core Purpose within the context of the current operating environment for CRIs.

4.2. Purpose

All CRIs are required to undertake research to contribute to New Zealand's economic growth and environmental and social prosperity. In particular, Plant and Food Research's purpose as outlined in its Statement of Core Purpose is to 'enhance the value and productivity of New Zealand's horticulture, arable, seafood and food and beverage industries'.

Plant and Food Research was established in late 2008 through a merger of Crop and Food Research and HortResearch and the new organisation's Statement of Core Purpose was developed in 2010. This review encompasses the period since the merger and the subsequent realignment of science and business development to deliver to the Statement of Core Purpose. A key requirement has been to move from a delivery model that focused primarily on accountability for contracted outputs to investing in delivering impacts and outcomes for targeted sectors.

The purpose of Plant and Food Research embraces some significant sectors of New Zealand's biological economy such as kiwifruit, wine grapes, pipfruit and seafood. It also encompasses a large number of smaller sectors, each with their own research needs and with widely differing potential for growth. The panel noted that Plant and Food Research has committed substantial staff resources to business development and sector/portfolio management and an integrated approach is emerging to addressing key issues for individual plant-based and seafood sectors. It was less clear to the panel that Plant and Food Research has focused on its accountabilities in relation to New Zealand's food and beverage industries, as is discussed in Section 5 of this report.

The panel suggests that if there were to be any change to Plant and Food Research's Statement of Core Purpose, consideration should be given to removing biomaterials as an area of Plant and Food Research's scope of operation. Other than this, the current Statement of Core Purpose is considered appropriate.

4.3. Outcomes

The key outcomes sought by Plant & Food Research in order to fulfill its core purpose are to:

1. increase the value of the Plant & Food Research industry sectors to the New Zealand economy through the development of high-value products and processes that meet current and future global market needs;
2. protect and enhance market access in New Zealand's horticultural and arable sectors; and

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3. sustain growth in these industry sectors, driving ongoing efficiency gains with the development of environmentally resilient production systems.

The panel notes that Plant and Food Research has an extensive portfolio of research at various points along the innovation pathway. This portfolio is based on the extensive sector-relevant research inherited from its legacy organisations and, since the merger, there has been considerable realignment of research to sectors. Plant and Food Research has identified a matrix (Board Strategy Workshop – March 2013) that targets six outcome benefits as applied in varying degrees to six key production systems, an amalgamation of several minor crops, and to pan-sector benefits. In addition Plant and Food Research identifies ‘Science Led’ or ‘Future Science’ initiatives that may have future applicability across the institution or beyond.

Evaluation in 2011/12 by Plant and Food Research of the impacts and delivered outcomes from this matrix of activity comprised a quantitative impact evaluation of the value of Apple Futures research, together with a series of smaller case studies. These studies often found good outcomes. For 2012/13 Plant and Food Research has commissioned a further five economic impact case studies together with a further thirteen case studies providing a mix of quantitative and qualitative reports of impact across its outcome areas. The quantification of Plant and Food Research’s impacts so far only covers a small proportion (around 10%) of its research activity and, unsurprisingly, focus on areas of success.

The panel is cognisant of the difficulty of measurement of impacts and outcomes for a research organisation. In particular, Plant and Food Research is not able to control directly the targeted outcomes as they are generally delivered by third parties (usually sector organisations) to the final users of the research such as orchardists. This means that there could be poor outcomes despite a sterling performance of Plant and Food Research or conversely there could be good outcomes despite poor performance by Plant and Food Research. Plans to generate a set of sector-specific impact targets to guide future monitoring and evaluation of impacts are currently in development (Report to the Board 28th February 2013). These will comprise a series of up to ten sector ‘impact roadmaps’.

The panel recognises that this is aspirational work-in-progress but its successful delivery will be a key part of Plant and Food Research demonstrating delivery to the outcomes in its Statement of Core Purpose. At this stage there is a lack of clearly linked evidence that Plant and Food Research overall is contributing effectively to delivering those outcomes.

4.4. Scope

The outcomes discussed in Section 4.3 should be achieved by effective utilisation of the capability and science assets held within Plant and Food Research or by partnering with others. Key responsibility has been given to Plant and Food Research in three areas:

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

The panel is comfortable that Plant and Food Research focuses its capability and science assets effectively in areas 1 and 2 above but is less convinced by some aspects of area 3. The panel’s concerns are outlined further in Section 5 below.

Plant and Food Research is also required to work with other research providers and end-users to build and maintain capability in other areas:

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1. biosecurity, land, soil and freshwater management;
 2. climate change adaptation;
 3. seafood and other food and beverage sectors; and
 4. pastoral forage varieties.

In general the panel was of the view that Plant and Food Research was partnering effectively in these areas of joint activity.

4.5. Operating principles

An overview of the panel's position on each of the operating principles within the Statement of Core Purpose is provided below. Where the panel has significant concerns these are elaborated in Section 5.

Statement of Corporate Intent and Business Plan

Plant and Food Research has delivered annually a Statement of Corporate Intent and Business Plan but the documents have been lacking in detail as to what return the shareholders will receive for their investment. Importantly, examination of sequential Statements of Corporate Intent (refer section 5.2) demonstrates a failure to deliver against forecasts of revenue, net profit and return on equity in the years beyond year one, raising questions about the credibility of the current Statement of Corporate Intent predictions.

Obligations as a Crown company

Plant and Food Research generally satisfies its reporting and compliance obligations as a Crown entity. However, as is discussed in section 5.2 below, the organisation has not delivered an appropriate rate of return on equity and has not demonstrated a commitment to the discipline of a payment of a dividend. As indicated in the Balance Sheet review, Plant and Food would not be commercially viable as an organisation if current financial results continue.¹ There is the need for the monitoring agencies to assess the sustainability of Plant and Food Research in light of its impacts on industry and the sectors it relates to.

Partnerships

Plant and Food Research has developed some beneficial long-term partnerships with several key sector organisations which have enabled clarity of research priorities and joint oversight of relevant research delivery. Such partnerships can be exemplars for others in the research sector. It has also developed some relationships with some research entities and with other agencies. However, as discussed in section 5.3.6, its engagement with Māori needs improvement.

Balance of research

Based on its 'Future Science' initiative and using an internally contestable approach, Plant and Food Research has made deliberate and positive internal investments to maintain a significant amount of activity in the future science which its sectors will need. It has started to redirect its Core funds to match future sector priorities. Plant and Food Research has also accepted that skills need to be retained to act in emergencies such as biosecurity issues. Plant and Food Research has demonstrated amply the benefit of such investments in its response to Psa in kiwifruit.

¹ The 2012 Balance Sheet estimated a minimum sustainable return on equity for Plant and Food Research of 5.7% p.a.

Knowledge and technology transfer

The MBIE-commissioned Colmar Brunton Stakeholder survey indicated that 90% of Plant and Food Research's stakeholders expressed satisfaction with their experience of accessing knowledge and technologies and 93% had adopted knowledge and/or technologies in the last 3 years. Specific case studies of knowledge and technology transfer with industry, and the developing links with The Ministry of Primary Industries (MPI) through new Primary Growth Partnership investments, are encouraging.

Collaborative relationships with other research institutions

The list of Plant and Food Research's collaborative relationships is extensive, both nationally and internationally but the depth and value of the relationships are very difficult to assess. The panel's view is that KPIs for research collaboration should move beyond the reporting of jointly authored papers and that impact assessments should incorporate measures for the benefits gained from collaboration, both internationally and within New Zealand.

Advice to the Crown

MPI advised the panel that Plant and Food Research provides input into MPI's Technical Advisory Groups for specific issues (incursion responses). Plant and Food Research is also periodically contracted to undertake specific research projects to help with policy decisions and operations. The organisation currently receives a relatively small proportion of MPI's science funds. There is potential for this to increase with diversification and intensification of land use through horticulture and arable farming, particularly as increased focus is placed on maximising returns from water-use in relation to new irrigation projects.

MFAT (New Zealand AID) has contracted Plant and Food Research for a number of development projects aimed at developing biosecurity and post-harvest systems for SE Asia and the Pacific. This provides benefits to New Zealand in facilitating its goals of trade and poverty alleviation.

Representation for New Zealand

MPI advised the panel that Plant and Food Research does not usually directly represent New Zealand on MPI-specific market access business, although its input has been sought on specific issues, such as apples to Australia. Plant and Food Research's market access research has underpinned market access discussions. Its scientists provide input into overseas programmes and MPI does not have direct oversight of these. For example, a Plant and Food Research entomologist provided input into a USDA programme to attempt eradication of an incursion of Light Brown Apple Moth, a significant pest in Australia and New Zealand.

Advisory panels

Plant and Food Research has established a Science Advisory Panel which has met twice and reported to the Board once, with the next report due in August 2013. This initiative appears to have been slow to take off but is now starting to gain momentum.

Plant and Food Research has no overarching Strategic User Advisor Panel with Plant and Food Research having decided that, given its disparate sectors, more focused user advice is likely to be more effective and appropriate. The panel agrees that, as long as this advice is well integrated and connected, this approach is likely to be effective.

Talent recruitment and retention

Plant and Food Research appears to be actively trying to manage the difficult area of talent recruitment and retention with initiatives such as the internship scheme, internal leadership development programme, deliberate improvement in the technician to scientist ratio and a slow increase in staff turnover from very low levels. The Science Advisory Panel has noted the need for a more active post-doctoral recruitment programme. The organisation could benefit from more mobility at all levels.

Māori

As is discussed in detail in section 5.3.6, the panel considers that Plant and Food Research needs to improve its engagement with Māori. Key corporate reporting and planning documents need to show more specifically the impact being delivered for Māori and the enablement of the innovation potential of Māori knowledge, resources and people.

The panel is pleased to note the aspirational Te Raranga Ahumara strategy drafted recently and incorporated in the recently submitted SCI – the Panel encourages Plant and Food Research to support and resource this specialist Māori business team, and to ensure that relevant KPIs are monitored at the Board and Senior Executive levels.

Databases, collections and infrastructure

Plant and Food Research has not responded actively to the international and the New Zealand government's moves to more open research, intellectual property and data policies. Plant and Food research has no up-to-date and comprehensive data access and use policy to reflect the organisation's responsibilities, especially under the expectations for nationally significant databases and collections.

Shareholder consents

The panel has not identified any significant activity being undertaken by Plant and Food Research outside its scope of operation. However, the panel notes that the Outlook Letter for 2013/14 from the Minister of Science and Innovation specifically requests interim and then final business plans for its long-term campus plans in light of the Lincoln and Massey hub initiatives and that this include plans for development of the Mount Albert Research Centre.

5. KEY ISSUES THAT INFLUENCE THE ABILITY OF PLANT AND FOOD RESEARCH TO DELIVER TO THE STATEMENT OF CORE PURPOSE IN FUTURE

5.1. Governance

Although the current Board is slightly depleted in membership, with two positions currently undergoing an appointment process, it is expected that with the two new appointments the Board composition will then reflect an appropriate balance between science, technology transfer, finance, management, and governance experience. The Board will also have a gender and regional balance, and reflect Māori participation and engagement.

Plant and Food Research regularly assesses its Board performance. Recent annual reviews have used a customised Institute of Directors template, but have effectively been self-assessments. A recent Plant and Food Research Board review focused on the diagnostics of Board and Board/CEO communication. However, there is no evidence that the Board has reviewed and evaluated its governance performance in delivering on the organisation's core purpose.

The Chairman regularly reviews, formally and informally, the performance of the Chief Executive. The Remuneration Committee has ensured that KPIs are aligned with Statement of Core Purpose/Statement of Corporate Intent outcomes.

In Section 4 of this Report, the panel outlined its findings in terms of the delivery of Statement of Core Purpose/Statement of Corporate Intent outcomes. Our concerns expressed there are heightened because the current draft Statement of Corporate Intent document is based on some very aspirational revenue forecasts (as is discussed in the following sub-section). These revenue growth projections are themselves based to a large extent on forecast growth in commercial revenue. The panel is concerned that these targets are not realistic. We appreciate that the Chairman shares our concerns at successive slippage of Statement of Corporate Intent medium-term forecasts.

The panel also reviewed the adoption and impact indicators and the science key performance indicators outlined in the Statement of Corporate Intent and as monitored by the Board. The adoption indicators are appropriate while many of the impact indicators are, inevitably, largely outside of the direct control of Plant and Food Research. In the case of the science key performance indicators, although the panel understands that there is regular monitoring of progress, the scale of the milestones is highly variable, ranging from the significant (eg, delivery of multiple new cultivars for commercialisation) to relatively easily achievable (eg, discussions with a third party or identification of target species with scoping of commercialisation pathways).

The panel recognises the aspirational vision and commitment of the Plant and Food Research Board embodied in its 2011 strategic refresh. We consider the transformation of Plant and Food Research as proposed has the potential to provide Plant and Food Research with a quantum jump opportunity to better align the organisation with its Statement of Core Purpose, and to better enable it to deliver on its Statement of Corporate Intent undertakings. The panel has, however, concerns with the speed of implementation of these changes, the depth of understanding and commitment within the organization to the strategy, and the apparent lack of any urgency in implementing action.

The Plant and Food Research Board is in the early stages of considering how it might access opportunities provided by the recently announced National Science Challenges. The panel recognises that Plant and Food Research has many competencies that will be of great value to the National Science Challenges and therefore encourages it to play a leadership role and act with urgency in the relevant National Science Challenge areas.

The Board has established a Science Advisory Panel (SAP), as recommended by the CRI Taskforce. The Board sees the role of this SAP as prompting Plant and Food Research to consider focusing on specific or new areas of science and as a link to international developments in relevant areas of science. This panel considers that engagement between the Plant and Food Research Board and the SAP is low level and infrequent.

As noted and endorsed by the review panel above, rather than establish a single User Advisory Panel as recommended by the CRI Taskforce, the Board of Plant and Food Research has decided to engage with a series of user panels targeted at specific sector engagement, reflecting the diversity of end-user entities and organisations.

The panel sought to gain insights into how Plant and Food Research's Board approached the value of its real assets such as property and land and its intellectual property. We understand that the Board is currently seeking input on the asset structure of Plant and Food Research. We note with concern that Plant and Food Research has not been complying with section 16 (c) of the CRI Act requirement that each CRI include in its Statement of Corporate Intent the board's estimate of the current commercial value of the Crown's investment in the group and a statement of the manner in which that value was reassessed. The latest draft of the Statement of Corporate Intent does include some comments around this position. Material provided by Plant and Food Research to the panel indicates that the market value of Plant and Food Research's assets significantly exceeds the value reported in its financial statements. A number of CRIs use a historical-cost base approach to reporting the value of their assets. The Office of the Auditor General (OAG) advised the panel that financial reporting standards give directors a choice about whether or not to revalue any plant property and equipment. Nevertheless, the OAG stated that the revaluation of assets such as land and buildings and infrastructure assets generally provides more relevant information than cost-based information for those assets.

The panel notes a suggestion from the Plant and Food Research Chairman that director terms of appointment should be for four years, with a maximum of two terms and sees some merit in the suggestion.

5.2. Financial viability and sustainability

Plant and Food Research's financial performance has been poor since the organisation's formation in late 2008. The company's reported return on equity (RoE) over the three full financial years since the merger has averaged 1.3% (versus a cost of capital of 7.5%).² s9(2)(b)(ii)

s9(2)(b)(ii)

² The panel notes that even this low RoE is overstated as Plant and Food Research's assets (and therefore its net worth/equity) are significantly understated in its balance sheet. For example, its 6.8 hectares of land in Mt Albert is valued on its books at the 1992 historical cost of \$2.8m, whereas the current market value of the land is around \$7.6m. s9(2)(b)(ii)

s9(2)(b)(ii)

s9(2)(b)(ii)

Plant and Food Research paid a dividend of \$1.8m in 2008/09 but has paid no dividends to its shareholders in the subsequent four years. While the Statement of Core Purpose makes no specific reference to dividend policy, the regular payment of a dividend is a signal of an organisation's financial viability. The draft 2013/14 to 2017/18 Business Plan Financials do not forecast a payment of dividends until Q1 of 2016/17.

In recent years Plant and Food Research has grown its commercial revenues in some areas but domestic commercial revenue overall is around the same level as when the company was formed. While royalty income has grown strongly, other international commercial revenue has declined steadily over the same period (refer Figure 1 below).

³ s9(2)(b)(ii)

s9(2)(b)(ii)

s9(2)(b)(ii)

s9(2)(b)(ii)

Plant and Food has also failed to deliver on the medium-term projections for revenue, net profit and RoE contained in its Statements of Corporate Intent in each of the last four years (refer Figures 2 and 3 below). For example, in 2010 Plant and Food was projecting revenue of \$132m and a RoE of 9% in 2012/13. The actual results are now expected to be revenue of around \$116m and a RoE of 1.5%. The panel acknowledges the minor impact of Psa on royalty and other commercial revenues during this period, but also notes that research revenue increased over this period with additional investment from government and industry for research to manage Psa. Our evaluation of the Statement of Corporate Intents indicates that Plant and Food Research has not delivered on its financial KPIs, although more recently it has aligned short-term revenue projections with outturns and we understand it is on track to achieve its 2013 budget.

Figure 2: Successive SCI projections of revenue and actual results to date

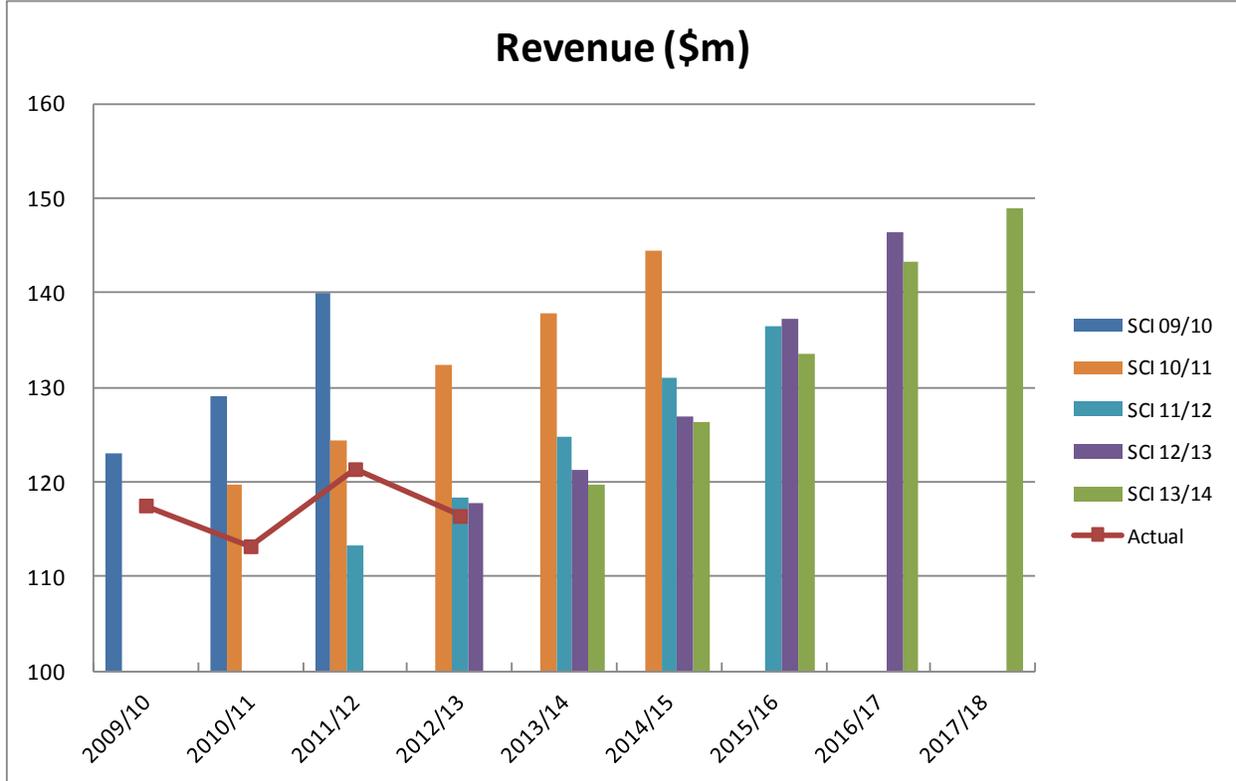
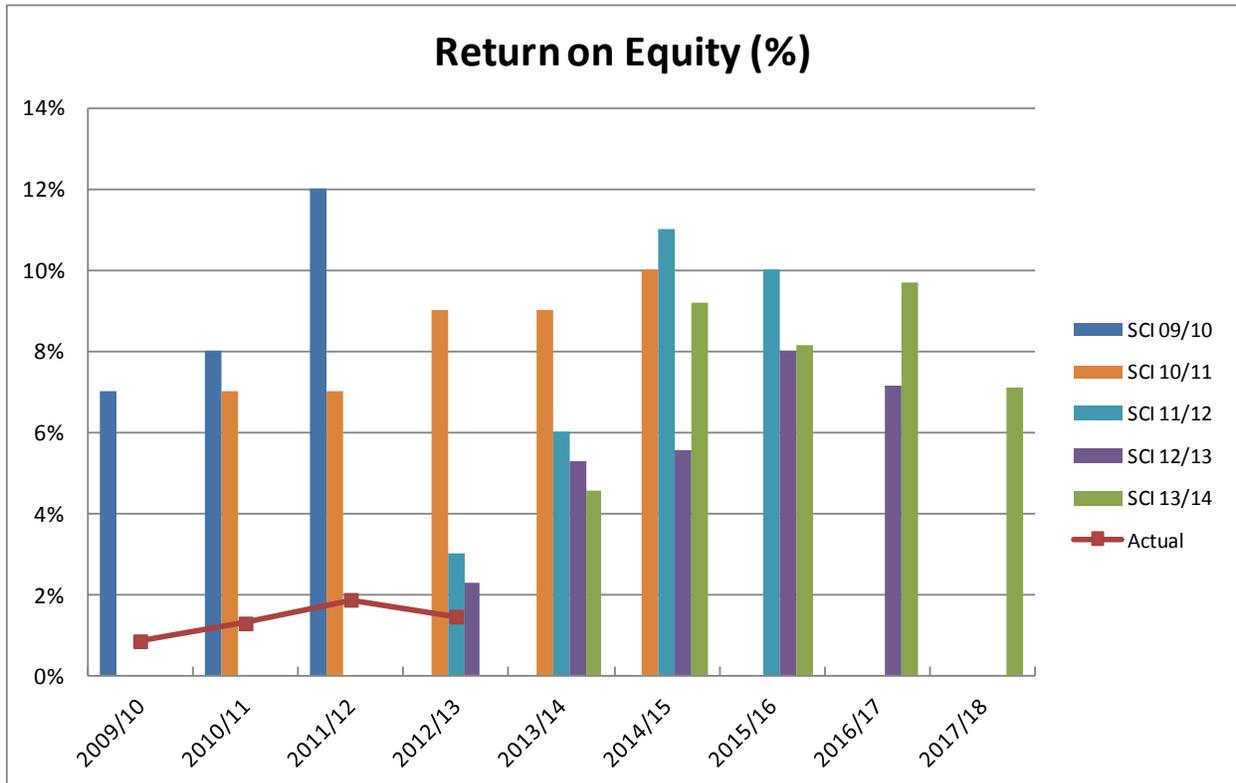


Figure 3: Successive SCI projections of return on equity and actual results to date

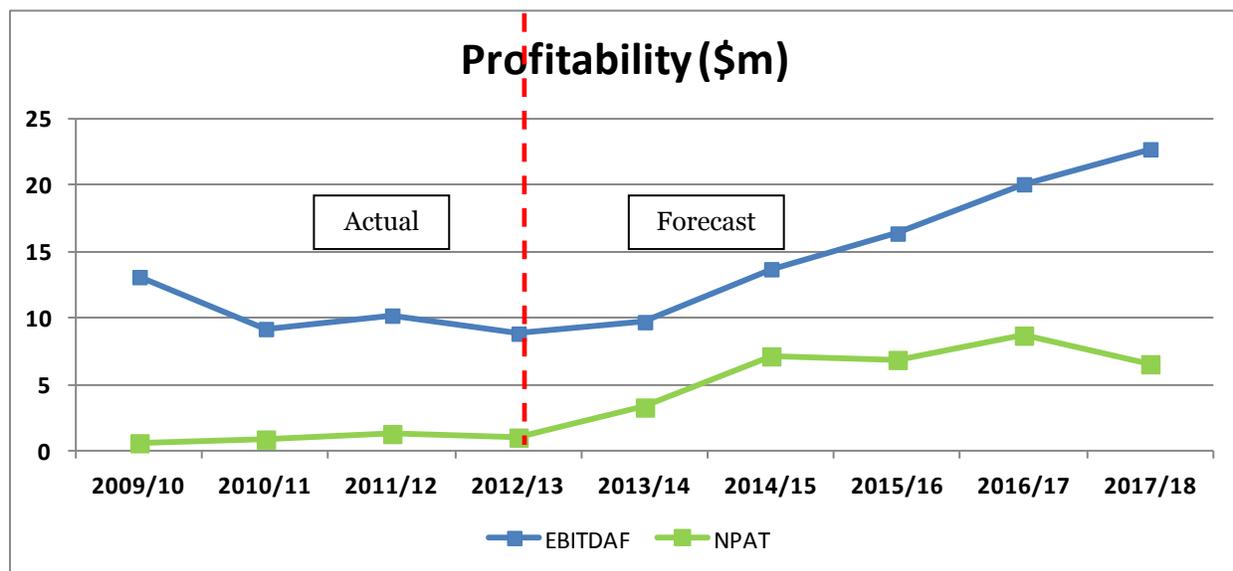


Our analysis of the Statement of Corporate Intent projections over the last four years (as presented in Figures 2 and 3 above) shows revenue and RoE being forecast to rise significantly in the future in each successive Statement of Corporate Intent, but the forecast pickup repeatedly failing to materialize. The forecast upturn has been shifted out by a year in each successive Statement of Corporate Intent.

The forecasts in the latest draft Statement of Corporate Intent (refer to Figures 4 and 5 below) show a similar pattern to that seen in previous SCIs. Both revenue and profitability are projected to increase markedly in the future, despite having been largely static since the formation of the company.

s9(2)(b)(ii)

Figure 5: Historic and forecast profitability



The latest Statement of Corporate Intent projections show total revenue increasing by 28% over the next five years. s9(2)(b)(ii)

Table 3: A comparison of actual and projected commercial revenue growth

Commercial revenue growth: historic vs latest SCI projections		
Compound annual growth rate	Actual 2010-13	Forecast 2013-2018
NZ commercial	s9(2)(b)(ii)	
International commercial		
Royalties		
Total Commercial	3%	12%

The ambitious nature of these projections, combined with the track record of repeatedly failing to deliver on medium-term financial projections in the past, raises doubts in the panel’s minds about the credibility of the current financial projections.

Further, the panel notes with concern the lack of baseline information on key performance indicators (KPIs) in the SCIs. While the SCIs state that Plant and Food Research expects to report certain core financial and non-financial performance indicators on a quarterly or annual basis there is nothing in the SCIs that states what level is targeted for the ratios and therefore there is no measure provided for an outside observer to assess Plant and Food Research's performance. The panel notes that this reporting deficiency appears to be common across all CRIs. The panel considers this a serious omission.

From a balance sheet perspective Plant and Food Research has relatively strong financial capacity, with no term debt (ie, no debt with a maturity longer than one year), an unused line of credit facility of \$2m and a cash balance of around \$16m. Plant and Food Research also has IP income delivering a strong income stream. However, Plant & Food Research has to date been a very low margin business. Looking forward, Plant and Food projects its business margin to improve but as noted above there is high risk around the targets being achieved and in any case the forecast EBIT margins are still relatively low. This translates into an entity with relatively limited gearing capacity.

Despite its poor financial performance to date, Plant & Food Research is preparing a business plan for a large capital expenditure programme to refurbish and upgrade its existing facilities and build new plant and equipment. Forecast capital expenditure over the period 2013 to 2017 is ^{s9(2)(b)}_(ii) million, representing almost ^{s9(2)(b)}_(ii) of the 2012 asset cost reported in the balance sheet and ^{s9(2)(b)}_(ii) million in excess of projected depreciation over the five year timeframe.

Overall, the panel is concerned about the quality of Plant and Food Research's business planning and forecasting. The panel is also concerned about the level of commitment to and ownership of the medium-term business forecasts amongst the Board and senior management in the past. The panel acknowledges that Plant and Food Research has had to deal with the global financial crisis and a weak domestic economy, but so have the other CRIs and, as Table 1 above indicates, Plant and Food's financial performance has been comparatively weak. In the panel's view, Plant and Food needs to show clearly in its action plan that follows this report how it plans to achieve its financial forecasts for the next five years.

5.3. Other issues

5.3.1 Policies, processes and practices

The panel reviewed at a high level a range of policies and processes across information technology, intellectual property, customer and human resource management. In addition, revenue tracking tools were made available to the panel. The panel was of the view that, with the exception of data access as discussed below, the policies, processes and practices supporting the day-to-day running of Plant and Food Research appear to be current and effective. This view is supported by reports from the OAG and external auditor documentation.

The Open Government initiative is driving organisations to review their policies and practices on data management, access and attribution. Funding agencies in many countries are requiring data and research findings funded by public monies to be made freely and publicly available unless there are good reasons to withhold such information. New Zealand has not yet reached that level of openness but we should expect increasing pressure, especially where more collaborative programmes such as embodied in the National Science Challenges become a more dominant feature of our research.

Plant and Food Research has clear and comprehensive policies and procedures for internal data and IT use. The panel was, however, unable to find any publically available document outlining Plant and Food Research's approach to data sharing and research access beyond its internal firewalls. This exposes Plant and Food Research to some risk of being unable to participate in the developing more open approach to science and technology. Plant and Food Research may wish to review how it might approach this issue, especially given its close sector alignments. This would include a review of its IP management systems to maximise benefits for New Zealand.

5.3.2 Advisory panels

Plant and Food Research established a four member Science Advisory Panel in 2011. The work of that panel is still developing. The panel's first overall evaluation noted the sound basis of much of Plant and Food Research's portfolio and in its presentation to the Board considered that Plant and Food Research's strategy makes a substantial contribution to the science underpinning the outcomes expected from the Statement of Core Purpose. Improvements could be achieved by:

- building further current relevant strengths;
- reducing some less relevant areas of science; and
- introducing game-changing new capability.

The Science Advisory Panel's subsequent visit (March 2013) has confirmed the need to grow depth and renewal through a more active post-doctoral scheme and the weakness in the food research area. The Science Advisory Panel will further report to the Board in August 2013 as well as participating in Board strategic planning sessions later in the year. This review panel was not convinced that the speed of assessment across all aspects of Plant and Food Research was sufficient and, although recognising the costs involved, considers that more frequent interactions and reports would be desirable for the short to medium term.

In the 2011-2015/16 Statement of Corporate Intent it was noted that a Strategic User Advisory Panel was to be established to advise on effective technology transfer and engagement with industry across the areas of research that Plant and Food Research leads and contributes to. It appears that such a panel was not established and that Plant and Food Research has an approach to such advice focused on sector panels with expectations that two sector reports supported by formal sector engagement are provided to the Board twice a year. The panel recognises that some excellent user engagement is taking place in some sectors e.g. with the potato industry, but has concerns that the overall approach to engagement with end users is fragmented, in part because of the wide range of sectors that Plant and Food Research supports and the difficulty in integration of engagement across sectors without an overarching panel. There is no formal user panel for Māori or Māori business.

5.3.3 Science quality and capacity

Plant and Food Research has maintained an adequate rate of publication in peer-reviewed journals and is beginning to report on citation rates and the percentage of papers published in the top 25% of internationally relevant journals. Targets are nascent so it will be some time for benchmark norms to be developed. However, benchmarking against other New Zealand research institutions (using Scopus) shows that Plant and Food Research has a track record of at least as good or better impact in international science publications in key areas of science to Plant and Food Research. The Statement of Corporate Intent targets increasing the rate of publication in international journals however such targets should be balanced against the need to benefit New Zealand industry by publishing in more locally focused journals.

Independently chaired reviews of science areas relevant to sectors are undertaken (on an apparently *ad hoc* rather than systematic basis) about every one to two years. Those reviews that the panel has seen (i.e. arable and potato) have highlighted a variation in science quality and delivery across teams and also evidence of silos between teams working along a common value chain.

Having done a number of individual sector reviews it is timely for Plant and Food Research to begin a systematic series of independent and more disciplinary-based science quality reviews to assist in future workforce development, identification of potential relationships, and provide some benchmarks for the future.

External people whom the panel interviewed noted that Plant and Food Research has excellent capability in:

- breeding and genomics (including germplasm collections);
- pest and disease management (including zero residue production systems); and
- biosecurity (including the ability to respond to incursions such as PSA).

There were some concerns expressed by stakeholders about the national capability in soil science and, within Plant and Food Research, a dearth of plant physiology skills (including flowering), a decline in post-harvest biology and treatments, and weakness in capability to address health and nutrition issues.

5.3.4 Capability management

The panel was impressed by Plant and Food Research's performance management processes for staff which enable the organisation to objectively and evenly reward high performers and to identify and manage low performance. We are also supportive of the way Plant and Food Research deliberately manages the age distribution profile of the science teams as well as its efforts to enhance the technician:scientist ratio. Although understandably slow, there are positive trends in these metrics this year after the recent redundancy round.

The panel notes and supports Plant and Food Research's involvement in the pan-CRI workforce initiative. In the past year, Plant and Food Research has completed seven projects in workforce and succession planning and in leadership pathways and planning. However, these projects have identified major potential risks associated with:

- securing quality external candidates and highly effective leaders;
- succession planning generally;
- recruiting and developing younger and women scientists;
- low staff turnover rates; and
- remuneration.

The panel encourages further focused and urgent effort in these areas.

Given the difficult environment for science recruitment and the relatively low salaries offered, compared to other CRIs, Plant and Food Research has shown vision pursuing an intern programme with university undergraduates and the programme is showing dividends after five years of activity. However, only three of the five portfolios (Breeding and Genomics [1], Bioprotection [4] and Food Innovation [10]) report post-doctoral appointments.

5.3.5 Organisational culture

The Plant and Food Research Mission Scorecard emphasises that Plant and Food Research’s values must reflect:

- *achievement through leadership;*
- *discovery and the creative application of our knowledge; and*
- *relationships based on honesty, mutual respect and trust.*

The Plant and Food Research Board has a vision that Plant and Food Research’s values and culture centre around honesty, integrity, authenticity, appetite for risk, transparency, and the four Ps of people, portfolios, productivity and partnerships.

Successive culture surveys with staff indicate an improving pattern of Plant and Food Research culture and values and the panel particularly notes that the merged organisation has transformed staff thinking into a more cohesive team.

However, the panel was not provided with any evidence of a shared and personal sense of ownership and responsibility, commitment to delivery of agreed outcomes or organisational pride and passion for success across the governance and leadership generally. This was demonstrated in regular slippage of financial forecasts and non-delivery of key financial results, with little or no recognition and responsibility for non-performance and remedial planning and action.

In addition, the panel could not identify any key guiding documents that evidenced “the way science and business is done around here”. We see this lack of shared values and culture as a barrier to achieving Statement of Core Purpose outcomes.

There is some evidence that Plant and Food Research has a risk-averse culture,⁴ a style that perhaps is inevitable given its Crown ownership, but one that does not fit well with an organisation that is charged with being innovative and at the leading edge of science.

5.3.6 Māori

The Statement of Core Purpose includes specific references to Māori both in the Outcomes and in the Operating Principles. In addition, Plant and Food Research’s Strategic Issues letter from the Minister of Science and Innovation of 28 February 2013 details “*Sector specific issues priorities include....the opportunity for growth by Māori organisations....*”.

However, key company documents over the past five years do not emphasise enough the enablement of Māori knowledge, resources and people:

- Māori is not seen as a “key strength”, and does not emerge as a key theme in any of the future critical success factors;
- until recently, there have been no Statement of Corporate Intent monitoring indicators that relate to Māori and there are no specific targets relating to Māori. The Panel is pleased to note the revised draft Māori strategy submitted just prior to the release of this report includes three specific KPIs through relationship building or delivery of RS & T projects;

⁴ Based on the results of an internal survey.

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- Māori do not make up the partners and relationships of the Mission of Plant and Food Research. While one of the key corporate communication tools, the “Growing Futures” website launched in August 2012 has no specific Māori reference, the recently developed Te Kete Ahumara site provides good coverage and connection;
 - none of the 15 Highlights referred to in the 2012 Annual Report have a specific Māori reference, but one of the impact assessments has a Māori fisheries company as a prime beneficiary;
 - there is no reference in the Statement of Corporate Intent to any Māori User Panel and there is no reference to Māori in the “Core Measures of Our Success”. However, the Panel received encouraging feedback from some Māori businesses that the organisation is genuine about its responsibilities to Māori business leaders. *“They get it” was a positive term used to describe the perception that Māori business leaders have of the Plant and Food Research Chair, CEO, COO, and Relationship Manager;*
 - the draft Māori Sector Overview provided to the panel reveals a drop in sector investment over the 14 projects identified with Māori engagement. The level of overall investment has dropped from s9(2)(b)(ii) to s9(2)(b)(ii) over three years, nine of the projects had no further investment associated with them, and there are only 6 projects with 2012/13 investments. The Panel was informed that the numbers were an underestimate of the total activity in Māori as the work is imbedded in other programmes, and that there has been an overall increase in investments into projects of relevance to Māori; and
 - the Good Employer section of the 2012 Annual Report refers to the *“re-establishment and widening of the Plant and Food Research Māori staff network Nga Toa Ngaki Kai,”* within the Promoting Equal Employment Opportunities subsection. There are no other references to Māori engagement in the Annual Report. The Panel is pleased to note the intention in the draft Te Raranga Ahumara strategy to strengthen Nga Toa Ngaki Kai by broadening it to include rangatahi and kaumatua, and to develop a web based platform for engaging with emerging Māori scientists.

Vision Mātauranga is a policy framework whose mission provides strategic direction for Vote Research Science and Technology. Other CRIs have built the Vision Mātauranga policy framework into various corporate guiding documents, and have appointed senior staff as Māori Strategy or Māori Business Managers as part of their Executive Teams, with the role of building strong relationships with Iwi, to develop Māori research and innovation. Plant and Food Research has a Māori Relationship Manager.

Te Rārangā Ahumāra, a specialist Māori business unit, was established to advance effective business and engagement opportunities with Māori. The unit was established in 2009, and the Panel is pleased to see reference to and emphasis on this unit in the SCI submitted during our review.

The Panel appreciates that the development and implementation of the organisation’s Māori engagement strategy will take time, and be subject to barriers and challenges. Further, the Panel notes the current resolve of the Board and Senior Management to collaboratively engage with Māori, and the development of promising relationships in several key sectors.

5.3.7 Research collaborations

The 2012 Colmar Brunton Stakeholder Survey indicates that 90% of other research institutions are confident that Plant and Food Research has the ability to put together the most appropriate research

teams, although the panel notes the somewhat ambiguous wording does not specifically examine whether those teams are internally derived or partnered.

Plant and Food Research reports extensive collaborations with a large number of international research institutions but the panel saw little evidence of methodical analysis of the depth of such relationships and the full benefits gained. Most such relationships appear to be developed from contacts between individual scientists. There is little evidence of a long-term strategy to build relationships with key institutions in areas relevant to Plant and Food Research's science business. For example, while Plant and Food Research is a key player in cross-CRI initiatives in soils, land use, nutrigenomics and biosecurity research these are long-standing relationships which have mostly resulted from funding agency imperatives at the time of contract establishment. Nevertheless, numbers of co-supervised post-graduates have been growing, indicating improving relationships with the tertiary sector. For example, Plant and Food Research has developed a relationship with Auckland University in the development of graduate student training. This permits students to work with some key Plant and Food Research staff and is advantageous to the University in terms of PBRF ratings.

The National Science Challenges provide Plant and Food Research with the opportunity to operate in a more collaborative environment. As noted above, the panel believes that Plant and Food Research will need to urgently develop a strategy on how it might engage with these initiatives. It will need to identify its core strengths and where additional benefits will accrue through wider collaboration. There will be significant opportunities for leadership in some areas.

5.3.8 Industry partnering

Plant and Food Research has a robust approach to industry partnering focused across the wide range of sector organisations it must service. It appears to have appropriate customer management and revenue tracking tools in place. There is a significant national business development resource with business managers aligned with each science platform. Panel discussions with a sample of sector organisations suggested that the chief executive and senior management are also very active in maintaining key relationships, with regular meetings throughout the year.

The crucial relationship with Zespri and the associated agreements and royalty arrangements are held up by other CRIs as an exemplar for what is possible with effective sector relationships. The new approach taken with the Foundation for Arable Research follows a similar model although discussions with the CEO of the Foundation for Arable Research suggests there is still some way to go in formalising the agreement and governance group.

Although the relationships with the plant industry sector groups are generally strong these relationships are focused pre-farm gate. The panel was concerned that two of the three sector organisations we were able to speak to during the review said that Plant and Food Research was not their provider of choice in health-related aspects of processed and functional food research (the third made no comment).

The generally positive partnering is supported by the results of the Colmar Brunton Stakeholder survey where Plant and Food Research responses were as strong, or better, than the other CRIs. The only notable commentary specific to Plant and Food Research was around the time taken and degree of compliance in contracting with them. Although it was suggested by a senior manager that this concern was expressed by only a subset of respondents (other research organisations), an examination of the source of the comments showed that it came from end-users of research as much as from other research

organisations. The panel believes that such commentary deserves attention, particularly given the significant size of the legal team retained by Plant and Food Research.

International industry partnering is discussed in the next section.

5.3.9 International business development

Plant and Food Research is promoting the need for ‘growing our international presence’ and ‘adopting a more international perspective’, and it has an ambitious growth strategy with a ‘large international component to growth’ (CEO report to Board Feb 2013). There is little evidence of such a strategy being successful in recent years, s9(2)(b)(ii)

s9(2)(b)(ii)

The international revenue growth strategy for Plant and Food Research is largely focused on ‘fee for service’ research and technology transfer. A notable initiative is the partnership with the Australian Cooperative Research Centre in Plant Biosecurity which offers prospects of revenue flows back to New Zealand for research of local benefit. s9(2)(b)(ii)

Given the growing significance of Asia to the sectors served by Plant and Food Research, there could be greater emphasis on using business links with key exporters to develop technology and market scans.

5.3.10 Impact assessment

The demand for the CRIs to evaluate and report on the impacts of their research outputs has grown with the institution of the CRI reforms and the implementation of Core funding. Most CRIs are attempting to provide examples of impacts through case studies involving qualitative and quantitative assessments. Plant and Food Research has taken a leading role in developing impact assessment tools. The panel is cognisant of the difficulty of measuring impacts and outcomes for a research organisation. In particular the panel notes the difficulties associated with not actually being able to directly control those outcomes as they are generally delivered by third parties (usually sector organisations) to the final user of the research such as orchardists. This means that there could be limited adoption even though Plant and Food Research has provided correct and adequate science or conversely there could be good sectoral outcomes with little or no benefit from research by Plant and Food Research.

The full implementation of impact assessment as part of investment decisions can only be described as aspirational. Once more case studies are completed there may be some more universal measures that could be applied. However, caution is needed. The panel supports plans to generate a set of sector-specific impact targets to guide future monitoring and evaluation of impacts (Report to the Board 28th February 2013). These will comprise a series of up to ten sector ‘impact roadmaps’.

5.3.11 Food positioning

The Plant and Food Research Statement of Core Purpose includes the goal of “enhancing the value and productivity of New Zealand’s horticulture, arable, seafood and *food and beverage industries*”. The vision for the future developed by the Board and management encompasses a migration:

- from a focus on ‘productivity gains and new cultivars’ to ‘provenance and health benefits from food’; and

-
- from a ‘production-led partner’ to a ‘food company partner’.

However, there does not yet seem to be a developed pathway to manage, measure and assess this migration. The panel noted that in discussions with management there was no common perspective on what ‘food’ meant to the organisation although the food strategy outlines a focus on raw and processed foods derived from Plant and Food Research’s proprietary cultivars.

Because of the very strong focus on individual sectors (both plant and seafood) in the management of organisational outcomes and associated investment analysis there is a tendency for ‘food’ to be sidelined in planning processes. The analysis of recent and projected investment developed in the investment rationale (October 2012), updated in a Board paper (Investment Portfolio update 21 March 2013) and presented in the 2013/14-2017/18 Statement of Corporate Intent, provides no analysis or industry profile for Domestic and Export Food in relation to ‘adding value to whole and processed foods (health and wellness)’. Consequently there is no redirection of core investment towards this sector. There is a sector strategy for food but it is unclear if the proposed food company initiatives have been successful.

While the panel appreciates that Plant and Food Research effectively regard all of its research activity as focused on the delivery of foods, the targeted activity of the Food Innovation science portfolio appears to be under pressure. [s9\(2\)\(b\)\(ii\)](#)

As noted above, it is of concern that two key sector organisations do not see Plant and Food Research as their provider of choice for health-related aspects of processed or functional foods. This is of particular concern given the “foods for health” focus of the National Science Challenges.

It is significant that the first report of the Science Advisory Panel to the Plant and Food Research board specifically commented on the lack of redirection of core support for “food and health” and proposed an emphasis on foods to prevent chronic disease together with enhanced post-harvest activity. The Plant and Food Research response (Dec 2012) was to consider revising its strategy ‘if there is a major new opportunity in one or both areas’. This response seems to this panel to be lacking in strategic positioning and at odds with the vision developed in 2011 to work along the value chain with a focus on provenance and health benefits in foods.

Plant and Food Research maintains some unique and important capability in ‘functional foods’, including the national Food Composition Database, and *in vitro* and small animal product testing facilities. Although Plant and Food Research positions itself as working along the whole value chain it has taken the deliberate decision that it will not retain food processing capability and infrastructure. Rather it has donated what kit it had to the Auckland Foodbowl initiative and the key staff member with food processing skills now spends the majority of his time with Auckland University and the Foodbowl. The panel endorses this approach to partnering, rather than duplicating both expertise and expensive facilities. However, the communications around it will need careful management if industry partners are not to see it as a further reason not to engage with Plant and Food Research in innovative health-related processed and functional food research.

5.3.12 Monitoring regime

The panel is concerned that the pattern noted in section 5.2 above of repeated under-performance and slippage in medium-term financial outcomes in the Statement of Corporate Intent forecasts has not been focused on by the multiple institutions responsible for monitoring Plant and Food Research's performance.

The institutions responsible for monitoring performance include the Board, successive Ministries with ownership accountabilities (the Ministry of Science and Innovation and now the Ministry of Business, Innovation and Employment), the Crown Ownership Monitoring Unit, the OAG and the external auditor.

This four year review is a useful initiative in focusing attention on the longer-term strategic performance of the CRIs.

6. OPPORTUNITIES AND BARRIERS

Looking ahead, Plant and Food Research has numerous opportunities that will enable it to enhance its delivery to its Statement of Core Purpose. Many of these opportunities can also be regarded as barriers but the panel has sought to classify opportunities as those factors directly within the control of the organisation while barriers are more external to its control.

Such opportunities include:

- committing to and delivering on the outcomes of strategy refresh;
- building a shared Board and senior management culture of ownership and delivery against its medium-term financial targets;
- developing realistic commercial revenue targets and becoming financially viable so the organisation can reinvest in leading-edge science and infrastructure and pay a dividend to its shareholders;
- demonstrating a commitment to commercial opportunities in Asia similar to that already made in Australia;
- achieving its aspiration of being the ‘world’s best plant research centre’ through substantial investments in the future science which its sectors will need;
- speeding up capability refreshment;
- strengthening its capability in the assessment of the impacts of research across the range of activities in the organisation to improve the investment cases and decision making;
- keeping a focus on high-quality science as well as delivery of outcomes for its sectors by undertaking regular discipline-based science reviews and focusing its research capability accordingly;
- leveraging off the National Science Challenges to build its profile in key areas e.g. ‘high-value nutrition’;
- extending existing successful partnership models with users and other research organisations into other sectors;
- fostering Māori partnerships, business and science as an increasingly important part of the New Zealand economy; and
- rebuilding Mount Albert Research Centre, an investment that has the potential to significantly enhance the productivity and reputation of Plant and Food Research even though it will also cause temporary distraction and disruption to many parts of the business.

At the same time there are some important barriers which will impede, but not prevent, Plant and Food Research’s ability to deliver on its Statement of Core Purpose. The key barriers the panel identified are:

- regulatory barriers, in particular the HSNO and Biosecurity Acts, which slow down, and can prevent, Plant and Food Research and other industry participants from acquiring the novel germplasm needed to accelerate plant breeding; and
- the risk-averse culture that is inherent to many government-owned enterprises and which creates a difficult environment for an organisation that seeks to be innovative, nimble and flexible.

7. CONCLUSIONS

This four year rolling review of Plant and Food Research has identified many positive features within the organisation including its good policies, processes, systems and structures; its good science, with some world-leading; and some evidence of it having positive impacts on sector value and productivity.

The organisation also maintains a wide range of strong partnerships with the diverse sectors it delivers to across its Statement of Core Purpose. However, its delivery to its responsibilities with respect to Māori needs to be strengthened. The articulation and commitment to the ‘food’ aspects of the Statement of Core Purpose is also an area in need of improvement as it is not underpinned by a clear strategy or analysis.

Over the period covered by this review Plant and Food has repeatedly under-delivered on its financial targets, with forecasts of increasing revenue and an increasing RoE failing to materialise in successive SCIs. The poor track record in delivering to its financial forecasts and the high dependence of future growth forecasts on commercial revenue sources means the panel is uncertain about the organisation’s ability to deliver to its future financial targets.

Plant and Food Research has refreshed its vision and strategy and it has a well thought-through road ahead for the organisation. But the panel has concerns about:

- the depth of understanding and ownership of the strategy within the organisation; and
- the speed of implementation of the strategy.

The panel also has concerns about the general operating environment for the CRIs and in particular the lack of financial and other disciplines for organisations that consistently failing to meet their medium-term financial targets.

This review process provides the opportunity for Plant and Food Research to deliver on a robust action plan to address the issues identified in the review. By responding positively to this review, the panel believes that Plant and Food Research can enhance its stakeholders’ confidence, leverage new opportunities such as the National Science Challenges and new Primary Growth Partnership opportunities and better deliver against its Statement of Core Purpose in a sustainable way.

ANNEXES

Annex 1: Statement of Core Purpose for Plant and Food Research

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 principles

Plant & Food Research will:

- operate in accordance with a statement of corporate intent and business plan that describes how Plant & 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 both provides for 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 & Food Research board for developing its statement of corporate intent, which sets out Plant & Food Research's strategy for delivering against its core purpose. Plant & Food Research's performance will be monitored against the outcomes and operating principles in this statement.

Annex 2: Brief biographies of the members of the review panel

Philip Barry (Panel Chair)

Philip Barry is a founding Director of TDB Advisory Ltd, a boutique corporate advisory company. Phil has widespread and in-depth expertise in corporate finance, economics, public policy analysis and regulatory reform.

Phil has chaired a number of taskforces and reviews in recent years, including the Parliamentary Appropriations Review Committee; the government's Technical Advisory Group on Air Quality Standards and an independent business stock-take of IRL. He also acted as lead consultant for MBIE on the recent CRI Balance Sheet Review. As a former Director at the Treasury and Advisor at the Department of the Prime Minister and Cabinet, Phil provided strategic advice and led the implementation of structural change and regulatory reform in several parts of the New Zealand economy. During the mid-1990s, Phil served as Counsellor Economic in New Zealand's Permanent Delegation to the OECD in Paris.

Phil has an MBA in Finance and Accounting from the University of Rochester, New York and a BA Hons (1st class) in Economics from Victoria University, Wellington.

Ross Butler

Ross Butler is Chairman of Merlot Limited, a governance support group operating in Australia and NZ. His current governance roles include: Chairman of the Southern Response Earthquake Services, the Council of Nelson Marlborough Institute of Technology, and Mercer NZ Limited; Director of Marlborough Lines Limited, Southern Lines Limited; and as a Member of the Code Committee, Financial Advisors Act (Regulatory Crown Entity).

His previous governance roles include Deputy Chairman of GNS Science Limited and Chairman of GNS Audit and Risk (2008-2012); Executive Chairman of GIO Australia Financial Services, and as a member of the International Advisory Board for the Securities Institute of Australia.

Ross has a BA (Economics) from the University of Canterbury, is a Fellow of the Insurance Institute NZ, and has a Diploma in Applied Finance and Investments from the Securities Institute of Australia.

Tricia Harris

Tricia Harris was the Chief Science Advisor at the Foundation for Research Science and Technology (2004 – 2008). Since then she has worked as a consultant in a range of consultancy roles, including work on the IRL stock-take, the CRI Balance Sheet Review, and as Chair of Partnership Proposal review Panels for MBIE.

Tricia completed her PhD in Animal Nutrition at Cambridge University and returned to New Zealand at DSIR (later AgResearch) and for 20 years was a research scientist, then research group leader. In 1997

she was appointed Group Manager, Science at AgResearch where she had responsibility for strategic planning, together with implementation and review of company innovation policy.

In 2005 Tricia was awarded the ONZM (Officer of the New Zealand Order of Merit) for Services to Science.

David Penman

David Penman is an entomologist and agricultural scientist who earned his PhD from Washington State University. He has held a number of positions at Lincoln University in New Zealand, including Pro Vice Chancellor for research direction. His research career has focused on developing the basis for using "integrated pest management" in New Zealand.

David joined Landcare Research in 1994, managing biodiversity and ecosystem-related research, and in 1999 became Landcare's overall Research Manager. In 2006 he joined the University of Canterbury in a senior research management role. He has subsequently established a company specialising in governance and strategic development of environmental research. He has undertaken a number of reviews of biosecurity and biosystematics research for NZ Government agencies; is a member of the National Science Challenges Panel; and is currently the Executive Secretary for the NZ Organisms Register.

David has held a Fulbright Fellowship and a Senior Canadian Commonwealth Fellowship.

Annex 3: List of information provided to the Panel

DOCUMENT / INFORMATION
A. Understanding the business
1. Statement of Core Purpose
2. Statement of Corporate Intent
3. Copies of the detailed workings for the 5 year Statement of Corporate Intent Budget
4. Annual Reports
5. Quarterly and six-monthly reports
6. YE management accounts for the past 3 years and any reconciliation to the year-end financial statements.
7. Plant and Food Research Balance Sheet Review
8. Plant and Food Research Stakeholder Survey
9. Key Stakeholders
10. Plant and Food Research Organisation Charts
B. Business structure overview
1. A brief memo providing an overview of each of Plant and Food Research's business units, the activities undertaken, their capabilities (including technological platforms and r&d specialisations) and the market(s) that they serve.
2. A brief memo providing an overview of each of Plant and Food Research's subsidiaries, associates and JVs with a brief description of the activities undertaken, Plant and Food Research's equity stake (%), revenue (\$) and assets (\$) and governance.
3. For each business unit, subsidiary, associate and JV a brief memo on:
a. what resources are engaged in core science?
b. what resources are engaged in applied research? and
c. an estimate of the % of the entity's resources devoted to each of the above two categories.
C. Management accounting process
1. A copy of the last review of the company's financial systems
2. A copy of the latest review of the company's computer systems.
D. Historic management accounts
1. A breakdown of Plant and Food Research's revenue for the last 5 years by business unit and location including the following revenue categories.
i. from non-MSI Central Govt
ii. from other CRI / Universities / Local govt

DOCUMENT / INFORMATION
iii. commercial (NZ) [please provide a breakdown by customer and location]
iv. commercial (int'l) [please provide a breakdown by customer and location]
v. IP income [with additional notes breaking this down as appropriate]
vi. other [with additional notes breaking this down as appropriate]
2. A contracted revenue maturity profile breakdown.
3. Expenditure trends for the last 5 years by major categories of expenditure.
4. Detail of capital injections from and distributions to the Crown have been made over Plant and Food Research's life (dates and \$ amounts).
5. Details on the realignment of Plant and Food Research core funding.
E. Forecasts
1. Latest forecasts of revenue for the next 5 years broken down into the categories in D1 above.
2. What are the key assumptions underlying the above forecasts?
F. Investments
1. A list of planned Capex and other investments (type and \$ amount) for each of the next five years.
G. Key governance documents
1. A copy of any strategic reviews undertaken of Plant and Food Research in the last five years.
2. A copy of the risk register.
3. A copy of the legal register.
4. Details of the Board self-assessment process.
5. Details of strategic planning days.
H. Personnel
1. A headcount breakdown by location and type (management, basic science, engineering, support staff).
2. Detail of areas of science and engineering specialisation and excellence.
3. The annual turnover rate of professional staff for the last 5 years by group.
4. A bell curve of the years since graduation for all professional staff.
5. A breakdown of the term (years) to retirement of professional staff.
6. Information on current industrial disputes if any.
7. Information on redundancy agreements.
8. Succession planning documents.
9. Details of the processes in place within universities in regards to recruiting PhDs and how these are managed.

DOCUMENT / INFORMATION
10. Staff satisfaction survey results.
11. Benchmarks of Plant and Food Research salaries against comparable institutions.
12. Staff management strategies around managing changing priorities and staff development.
I. Outcomes
1. Paper stating the key desired outcomes of the government that Plant and Food Research is contributing to and the evidence available that Plant and Food Research's outputs are having a significant effect on the desired outcomes.
2. Documents reporting on the assessment of outcomes; reviews or evaluations of outcomes.
3. Reviews evaluating how contracts are managed overall both internally and externally.
4. Senior management response to reviews undertaking – including details of what management has learnt from these reviews and taken forward.
5. Measurements of how well Plant and Food Research is monitoring, measuring and improving its science quality.
6. Case studies of Plant and Food Research projects.
7. End of programme reviews (and mid-programme reviews).
J. KPIs
1. Internal KPIs that are not published but provided internally to the Board and senior management.
2. Studies around Plant and Food Research's contribution to economic growth.
K. MBIE documents
1. Report of the CRI Taskforce
2. MBIE Vision Matauranga
3. Plant and Food Research bidding history
L. Additional documents requested by the panel
1. Comparison across CRIs of funding – From balance sheet review
2. Information on Plant and Food forecasts at the time that the merger occurred
3. Time series of KPI's
4. Template for investment decisions (business cases for both science and capital investment and the process that is used to evaluate them)
5. Copy of Peter Landon-Lane's slides from introductory session
6. Process for making capability decisions
7. Criteria for Future Science proposals
8. IP Register & valuations

DOCUMENT / INFORMATION
9. Lincoln Hub Announcement
10. Board decision making around strategic investment portfolio (Oct Board meetings)
11. Summary of the 12 case study evaluations that have been done and an estimation of the % of the area of science covered.
12. Examples of Sector investment plans – Seafood and Potatoes
13. Summary of international sector partnerships
14. 2013 Letter of expectations from Minister
15. Panel Reports on Science Reviews for <ul style="list-style-type: none"> • Potatoes • Pipfruit • Ornamentals
16. Report from Science Panel to Board post their March visit
17. Feb 2013 Board Paper on investment tool and investment decisions
18. Executive Summaries of the 2013 MBIE bids
19. Copies of papers that Bruce Campbell discussed
20. Utilisation Rates of staff across the organisation
21. Stakeholder survey ratings and comments split by business vs other
22. Privacy of data response to SSC in April 2013
23. Data use and access policy
24. Māori Strategy – Statement of Corporate Intent P 31
25. Actuals for the last 5 years: merger projections
26. Draft Statement of Corporate Intent 2013/14 2017/18, including Financials
27. March 2013 Quarterly Report
28. List of end-user panels
29. Current market value of assets

Annex 4: Stakeholders whom the panel met with or spoke to

Meeting	Position
29 and 30 April 2013, at Mt Albert Research Centre, Auckland Plant and Food Research management and Staff	
	CEO
	COO
	GM HR
	Group GK Commercial
	Chief Science Advisor
	Group Financial Controller
	GM Bioprotection
	GM Food Innovation
	GM Seafood Technologies
	GM Sustainable Production
	Portfolio Manager, Breeding and Genomics
	SGL – Discovery for Impact
	SGL - Systems Monitoring
	SGL - Human Responses
	SGL – Food Innovation
	Team Leader - Bioprotection
	SGL Annual Crops
	Impacts Evaluation Manager
	GM Business Development
Corporate Communications Manager	
CFO (29 May)	
14 and 15 May, at MBIE Wellington (Meeting or telephone conversation)	
	Chair, Plant and Food Research
	Director, Plant and Food Research
	CEO, Horticulture NZ
	Plant and Food Research Science Advisory Panel
	Head of Innovation, Zespri
	Policy Director, MPI
	MPI
	CE, Foundation for Arable Research
	Cawthron Institute

Meeting	Position
s9(2)(a)	Cawthron Institute
	Sector Manager, OAG
	PWC
23 May Meeting with the Board and Senior Management Plant and Food Research, Hawkes Bay	
s9(2)(a)	Chair
	Director
	Director
	Director
	Director
	CEO
	COO
	CFO
4-5 June, Conference call Māori Stakeholders	
s9(2)(a)	Te Awanui Hukapak