



Apple & Pear Australia Ltd

Submission to the Productivity Commission Inquiry into Rural Research and Development Corporations

June 2010

EXECUTIVE SUMMARY

This submission by Apple & Pear Australia Limited (APAL) responds to the Productivity Commission (PC) inquiry into rural Research and Development Corporations (RDCs). The submission addresses a number of matters raised within the terms of reference and by the Productivity Commission in its Issues Paper released in March 2010.

The research and development corporation model which governs the horticultural industry, including apples and pears, was established to facilitate RD&E to the benefit of both the industry and the Australian community.

APAL fundamentally believes the RDC model is robust and sound, it delivers on the goals to benefit growers and the community and while some fine tuning is identified, that the existing arrangement should be maintained.

The RDC model embodied in Horticulture Australia Limited (HAL) is characterised by five fundamental elements: compulsory grower levies, a matched contribution to the research levy by government, flexibility to incorporate and match voluntary contributions made by industry, grower representation in decision-making, and the semi-silo of monies from each horticulture industry.

Compulsory Levy

Apple & Pear Australia Limited (APAL) considers that each of these elements is critical to the on-going success of HAL in delivering quality RD&E projects that meet the original objectives: grower and community benefit. For example, compulsory levies mean all growers contribute to funding and prevent a 'free-rider' situation and the possible under-investment that would arise. This is particularly pertinent in the apple and pear industry where much research applies across the board and is non-excludable. The potential for some to free ride on the efforts of others is a significant issue.

Compulsory levies are also required to address the issue of scale. The apple and pear industry is characterised by a large number of geographically dispersed growers each accounting for only a small share of industry output. The small size of individual operations means that the vast majority of apple and pear growers would simply not be in a position to fund research or development of the scale required to generate useful outcomes.

Matched Research Funding

There are perceptions within elements of government that matched funding of rural research cannot be justified because not all research has a tangible or immediate community benefit. However studies clearly indicate that rural research does generate community benefits in areas such as the environment (more efficient water utilisation,

improved soil conditioning, lower carbon footprints) and human health (more nutritious and higher quality food, lower chemical residues). The 50:50 funding split between industry and government appears reasonable in light of some of those studies which suggest that the public benefits of rural research outweigh private benefits by five to one.

But matched government funding is also required for other reasons as well. First, it provides the scale sufficient to undertake research projects which would otherwise not be possible, particularly for those businesses which supply voluntary contributions. Second, it replaces the incentives that are available to non-rural businesses under the R&D tax concession system. This is because the eligibility criteria of the tax concession system would simply preclude most apple and pear businesses.

The importance of Government continuing to match (at a minimum) industry R&D funds is illustrated by the counterfactual. For the apple and pear industry the following scenario is easily envisaged in the event that matched government funds were withdrawn or reallocated elsewhere.

First, most projects which have not yet been committed would immediately be put on hold, allowing sufficient monies to be “banked” to ensure that contractually committed projects could continue. Second, future projects would almost entirely focus on “within farm” productivity improvements and areas where growers will realise the most immediate and the highest benefit. As a consequence, particular areas of research are unlikely to be funded, especially those where the benefits of research predominantly accrue to the wider community (some aspects of environmental management) or have long term outcomes (such as climate change) or have a basic rather than an adaptive focus. Collaborative efforts across horticulture and agriculture more generally would also fall away, simply because a lack of funds. Third, research management would return to the inefficient practices of the past where many ad hoc projects rather than a few strategically aligned programs are deployed. The contraction in the pool of funds would prevent the apple and pear industry from achieving the scale required for integrated research programs such as the highly regarded PIPS¹ research program. Finally, voluntary contributions from donor companies and grower organisations would shrink, if not cease.

Grower Representation

Grower representation in decision-making is another fundamental platform in the RDC model which governs research in the apple and pear industry. The Industry Advisory Committee (IAC) provides the key link between HAL as the RD&E investment manager

¹ PIPS stands for Productivity Irrigation Pests and Soils and is a collaborative research program between the Victorian Department of Primary Industries, Tasmanian Institute of Agricultural Research, Institute of Plant and Food Research (NZ) and Queensland’s Department of Employment, Economic Development & Innovation (DEEDI) worth \$12 million over five years.

and APAL, which provides the representative voice of growers. The joint strategic planning process identifies the strategic needs of the industry and aligns RD&E activities to the national research priorities and rural research priorities of government.

Divorcing APAL from decision-making could lead to a number of problems including the potential to create two “views” of the world, creating confusion amongst growers and research providers; it could also increase the costs of consultation because HAL has neither on-ground connections nor well established communication paths with apple and pear growers.

Identity amongst diversity

The “semi-silo” principle that applies to the levy monies (and any matched government funding) raised from individual industries is also critical to the RDC model that successfully governs research in the horticulture sector. The system of semi-silos is essential to achieve a degree of harmonisation and self-determination amongst the large number of very diverse industries that make up HAL. By semi isolating funds on a commodity basis each industry is able to work harmoniously within the RDC framework, with HAL managing funds *from* the industry *with* the industry IAC *for* the benefit of the industry and the community.

The semi-silo system does not, however, preclude co-operation and collaboration between member industries or with other sectors across agriculture. There are numerous examples of such collaboration on issues that cross biosecurity, market access, pollination, climate change and the environment. The foundations for ensuring that common issues are addressed and collaboration is achieved were laid by HAL with the establishment of the Across Industry Program.

APAL fully supports the Across Industry Program because many of the projects that receive funding would be unlikely to proceed on an individual industry basis. This is because the cost would be too high for any one particular industry especially given the size of most industries within horticulture. Additionally, crossover issues are generally associated with ‘free-rider’ problems and these would lead to under an investment in research activity in the relevant areas.

Collaboration, Coordination and Leverage

Collaboration with research providers is another key strength of the RDC model as it applies to apples and pears. Although the National RD&E Framework for Horticulture is yet to be endorsed by PISC, the apple and pear industry has already seized the opportunity presented by the framework to strengthen coordination and prioritisation of the research task. For example, the lead agency representative for apple and pears has been extensively consulted in the drafting of a five year RD&E investment plan which proposes a new approach to managing the portfolio and prioritising research to achieve better alignment with the industry strategic plan.

Additionally, the apple and pear industry is well advanced in terms of both harnessing international expertise and in leveraging international funding. APAL clearly sees the international R&D community as an opportunity rather than a threat, and one that contains both knowledge and know-how that must be exploited to the advantage of the Australian industry.

The Future

This submission supports APAL's view that, for the reasons outlined above, the existing RDC model is fundamentally sound. HAL provides an effective partnership with horticultural industries to invest in research programs that provide benefits to member industries as well as the general community. Compulsory levies and matched government contributions overcome problems associated with market failure. Collaboration with other industries and with the research community does occur, reducing administrative costs and removing areas of duplication.

Of course there are areas in which significant improvements can be made. This includes the potential to amalgamate "back office" services (legal, accounting, information technology, intellectual property management, human resources and general administration) of the RDCs. Streamlining research portfolio management practises might also achieve on-going administrative savings and greater alignment of research activities with industry strategic needs. For example a greater emphasis could be placed on commissioning research programs rather than purchasing research projects from general calls. Improving the speed of converting proposals into endorsed projects, undertaking ex-post evaluation of investments and increasing the capacity to cross-fertilise the outcomes of research in one industry to benefit other industries are other examples.

Although areas for improvement have been identified, these issues can be readily addressed by HAL members and the RDC community. Put simply, APAL believes that the horticulture RDC system is not "broken" and does not require restructuring. The Productivity Commission has proposed a number of alternative structures that relate to the possibility of amalgamating some of the RDCs and/or to the possibility of reallocating government funds to a special purpose body.

Amalgamating HAL with any other RDC would be inappropriate. APAL believes that HAL has reached its maximum portfolio size. Any incorporation of other commodities would necessitate bigger bureaucracies to manage the significant workloads and competing priorities. These bureaucracies would add to the administrative burden and diminish the capacity for individual horticultural industries to "be heard". Adding in more industries would create another level of complexity and multiply the lines of accountability. This would diminish HALs ability to understand its core business.

APAL also believes that proposals to redirect the matched government contribution to a new body would be highly detrimental to the research effort in the apple and pear industry. The most immediate impact and the one of greatest concern is that the existing matched levy-payer funding pool would be halved. This would mean that a large proportion of the proposed research effort would be shelved, simply because of a lack of funds. Continued funding of major programs such as PIPS and Future Orchards is of particular concern as these require scale in order to provide meaningful outcomes. Additionally, projects which have leveraged funding from other sources, particularly international sources, such as Prevar™ and PIPS, would become vulnerable and their viability challenged.

Finally, it is not at all clear that the proposed models would achieve the government's objectives - reducing duplication, improving collaboration and obtaining greater focus on meeting government research priorities – more effectively or efficiently than the current RDC system. There are a number of complex issues that would need to be addressed. This includes issues of increased competitiveness (not co-operation) amongst RDCs to fill the gap that a reduced funding base would create; establishing a new organisation without duplicating the administrative services that already exist within the RDCs; and, establishing criteria to allocate the redirected matched government contributions. The latter is particularly important as judgements must be made on the merits of one project over another, irrespective of whether a new organisation purchased research directly from research providers or on a contestable basis from the RDCs. It is unlikely that the strategic research needs of agriculture would be achieved if projects were chosen simply on the basis of the “best” fit with government research priorities or the highest degree of co-operative effort. New organisation would be compelled to judge the merits of research which it has no capacity to understand. Any new organisation would not have the exposure to individual industries necessary to understanding the productivity, environmental and supply chain imperatives that each industry must meet in order to remain competitive in a globalised world.

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1. INTRODUCTION

1.1 APAL

Apple & Pear Australia Limited (APAL) is the peak industry body representing the interests of commercial apple and pear growers in Australia in matters of national importance including regulation and legislation, marketing, research and development. APAL also represents the industry on agri-political issues, and manages a number of trademarks internationally on a commercial basis - most notably the Pink Lady™ and Sundowner™ trademarks.

APAL works in partnership with Horticulture Australia Limited (HAL) to invest in research, development and marketing programs that provide benefit to apple and pear industry and the wider community. Recommendations in regard to the investment of levies, industry contributions and matched government funds are formulated by the Industry Advisory Committee (IAC) which comprises members of the Board of APAL and an independent Chair.

APAL is an A Class member of HAL and is the second largest industry (after vegetables) within the research and development corporation (Table 1). The General Manager of APAL is a member of HAL's Across Industry Committee that seeks to invest research monies collected across the members for the benefit of all horticulture. The Chairman of APAL is on the Director Selection Committee which recommends candidates for appointment to the HAL Board.

Table 1: RD&E Expenditure by Industry 2008/2009

	RD&E	%
Apple & Pear	4,547,127	6.1
Avocado	2,811,657	3.8
Citrus	3,603,430	4.8
Mushroom	2,253,774	3.0
Nursery	3,709,670	5.0
Potato	2,830,914	3.8
Strawberry	2,533,114	3.4
Vegetables	19,929,082	26.8
Total Above	42,218,768	56.7
Other Horticulture	32,217,196	43.3
Total Horticulture	74,435,964	100.0

Source: HAL Annual Report 2008/2009

1.2 Industry Background

Apples and pears are grown in all six Australian states. The major apple and pear producing areas are Stanthorpe in Southern Queensland, Orange and Batlow in New South Wales, the Goulburn Valley and Southern Victoria, Huon and Tamar Valleys in Tasmania, Adelaide Hills in South Australia and the Perth Hills, Donnybrook and Manjimup regions in Western Australia.

Victoria is Australia's largest producer of apples and pears, generally producing 40 per cent of the nation's apples and close to 90 per cent of the nation's pears - mostly from the Goulburn Valley area around Shepparton. New South Wales and Western Australia are the next largest apple producing states².



Apple and pear orchards in Australia are dominated by family run businesses, with 725 farms engaged in commercial apple and pear production. It is believed that a significant proportion of apple growers also produce either stone fruit (especially in the Goulburn Valley) or cherries. Around 79% of apple and pear businesses are less than 100 hectares

² ABS Agricultural Survey: Apples and Pears 2008/2009 Cat No. 7121.0.5.002

and less than 2% are over 500 hectares.³ Approximately 20% of apple and pear businesses produce an output valued at less than \$100,000 (from which labour, fuel, chemicals, and borrowings must be paid) and only 38% of businesses produce output valued at more than \$500,000 per annum⁴.

Cooperative packing and marketing businesses exist in two important growing regions – Batlow in NSW and Lenswood in the Adelaide Hills. Other areas rely on large commercial packing/marketing businesses and individual packing operations on orchards. Some of the larger enterprises are quite vertically integrated, some involved at the input level in producing nursery trees while others extend into commercial packing and marketing and supermarket category management operations.

2. RATIONALES FOR GOVERNMENT FUNDING SUPPORT

The rationale for government funding support in rural research and development is presented within the Across Agriculture Submission prepared on behalf of a number of peak industry bodies, including APAL. They include:

- The benefits of research and development are non-excludable. Because individual rural businesses are unable to capture most of the benefits associated with successful rural RD&E investment, there is little incentive for them to invest. As a result, aggregate sector investment in R&D will be low, reducing regional and national economic wealth unless strong incentives are provided or government investment occurs.
- There are multiple positive public good spillovers arising from successful agricultural research and development, which cannot be captured by individuals or the sector, and which provide social and environmental benefits both within Australia and internationally.
- Risks and time-lags associated with R&D investment make such investment unviable for many businesses.
- Rural R&D investment is often associated with the resolution of large-scale natural resource challenges, which would not be resolved without such investment, but which produce limited direct rural industry benefit.
- Australia's engagement in global markets necessitates considerable 'compliance' R&D investment to ensure Australian produce retains international market access.

³ Australian Bureau of Statistics: 7121.0 - Agricultural Commodities, Australia, 2008-09

⁴ Australian Bureau of Statistics: 7121.0 - Agricultural Commodities, Australia, 2008-09

- The maintenance of core R&D infrastructure and personnel provides a ‘fire brigade’ which can be activated in the event of biosecurity and other disease challenges, and also provides the basis of a rural services export industry.

As argued in the Across Industry Submission, these issues provide a very strong justification for public investment in rural R&D.

3. IS THE RDC MODEL FUNDAMENTALLY SOUND?

3.1 Is the role of RDCs appropriate and clearly defined?

APAL believes that HAL is a successful organisation: it is stable, transparent, and manages an effective partnership with horticultural industries to invest in research programs that provide benefit to member industries and the general community.

From an apple and pear perspective, the core business of HAL is to:

- Manage the expenditure of funds collected on behalf of the Australian apple and pear industry. This includes:
 - Monies collected from growers for investment in research, development and extension (including those raised by statutory levies and voluntary industry contributions) and from matched government contributions;
 - Monies collected from growers for marketing and promotional programs;
 - Maintaining separate funding pools for R&D and marketing;
 - Maintaining a “semi-silo” around the funds associated with the apple and pear industry from those of other horticultural commodities.
- Ensure that the investment of more than \$5 million per annum in apple and pear RD&E programs is aligned with the strategic investment priorities of Australia’s apple and pear industry and is cognisant of the Australian Government’s Rural Research and Development priorities and the national research priorities.
- Receive recommendations on apple and pear investments from the Industry Advisory Committee (IAC), which provides specific apple and pear industry experience and expertise.

- Foster across-industry and multi-industry research efforts to address issues affecting all or subsets of horticulture and invest in across agriculture programs that will benefit horticulture including the apple and pear industry.
- Provide Apple and Pear Australia Limited, the peak industry body, with consultation funding to hold an Annual Levy Payers meeting and to consult with the industry and service providers regarding industry RD&E and marketing programs at HAL's request.

It is equally clear that it is not HAL's role to:

- Undertake research or extension except where they relate to
 - Internally focussed projects aimed at delivering more efficient program management and processes. This might include, for example, project evaluation and the development of tools and guidelines;
 - Determining strategic requirements and investment priorities on an across-industry and multi-industry levels and on an across RDC basis;
 - Providing avenues for the cross fertilisation of research outcomes. This might include assessments of the relevancy, for other horticultural industries, of research outcomes and lessons learned from commodity specific projects funded by HAL.
- Represent the views of the Australian apple and pear industry on matters of industry specific policy and regulatory matters and agri-politics.
- Engage in processes relating to consultation, voting and preparation of any submissions on the amendment of the levies applied to the apple and pear industry.

In practice, of course, there are always shades of grey in determining roles and responsibilities of HAL and the peak industry bodies which are shareholder members. The existence from time to time of such "shades of grey" issues does not infer, however, that the corporate structure and the RDC system in which it operates, is in need of restructure. For the most part, the Board is tasked with the responsibility of ensuring that HAL restricts its activities to "core business" - and invests according to its strategic plan. Where issues do arise, shareholders have the responsibility of working with other members and the Board to achieve resolution.

For example, in recent years a number of members felt that HAL had lost direction and strayed from core business with a top down approach driving investment decisions. A new CEO has since clarified HAL's roles and responsibilities and is providing strategic leadership that seeks to address industry concerns.

HAL is an exceptionally complex RDC, with 37 members covering 46 disparate horticultural commodities. HAL is reasonably well regarded by its constituent members as an effective portfolio and investment manager which successfully delivers value to growers and the community. The governance structures around HAL play a large contributing factor. However, the most important reason underpinning its success is the “semi-silo” principle that applies to the levy monies (and any matched government funding) raised from individual industries. That is, by semi isolating funds on a commodity basis each industry is able to work harmoniously within the RDC framework, with HAL managing funds *from* the industry *with* the industry IAC *for* the benefit of the industry and the community. The challenges posed by those funds which are “pooled” for across industry and across agriculture projects are detailed in Section 6.5 below.

As an RDC, the HAL model is, from the perspective of apple and pear growers fundamentally sound. Nevertheless, there are some areas in which improvements can be made. These relate to both HAL and the associated RDC community, but also to the research and development environment in which they operate. These include improvements to strategic oversight, administrative efficiency, collaboration, levy arrangements, and, governance. Each of these is discussed in more detail in the following sections.

3.2 Importance of the IAC

The importance and effectiveness of the Industry Advisory Committees cannot be overstated. With responsibility for more than 46 separate industries (not including the diversity that encompasses vegetables) it would be logistically impossible for the HAL Board to make considered determinations in relation to the investment of RD&E monies and marketing funds on a commodity by commodity basis. Instead an Industry Advisory Committee is used guide research investment and to provide the avenue for HAL and the grower representative body to jointly develop the industry strategic plan.

The Industry Advisory Committee for apple and pears is supported by an RD&E subcommittee (and similar committees for domestic and export marketing). The composition of the RD&E subcommittee is currently being reviewed to ensure that it incorporates an appropriate skill base. The aim is to add expertise from the pear industry (a position that has been difficult to fill), from extension services and from amongst research providers to enhance capability. This should improve the subcommittee’s performance with regard to its responsibilities, which include:

- Assess the composition of the portfolio and how it relates to industry strategic needs and government research priorities;
- Review the progress of existing programs and projects;
- Design programs for which research will be commissioned;
- Evaluate research proposals submitted in response to general or specific calls;
- Provide recommendations to the IAC in relation to each of the foregoing.

4. FUNDING ISSUES

4.1 Importance of Matched Government Contributions

It appears that there is a perception within elements of government that matched funding of rural research cannot be justified because not all research has a tangible or immediate community benefit. However, as noted in the Across Agriculture Submission, studies on this issue are mixed in their conclusions: while some suggest that more than half the benefits are captured by industry, others suggest that public benefits outweigh private benefits by five to one. Given such discrepancies a sensible approach is required and a 50:50 funding split between industry and government would seem justified.

Additionally, the competitive structure of the industry means that any research benefit that does accrue to growers will be quickly dissipated and passed along the supply chain. In the main this will result in lower prices to consumers, although the large supermarkets (which retail roughly 50 to 60 percent of fresh apple and pears), may have enough market share to not fully pass on the potential savings.

That fact that consumers ultimately benefit from research induced productivity improvements should not be understated. It is acknowledged that lower prices will stimulate greater consumption to the benefit of growers. But greater consumption of apple and pears also benefits the community generally through a healthier population.

It also appears that there is a perception within government and their agencies that matched funding singles out agriculture and is discriminatory to other sectors of the economy that do not receive such funding. However this is not true. As argued in the Across Agriculture Submission the R&D Tax Concession (which is accessible to businesses in all sectors of the economy) and the rural RDC arrangements are broadly similar in terms of the level of financial incentive they provide. So, although the matched funding for rural RD&E represents expenditure from Consolidated Revenue and is therefore more readily observed, it is roughly equivalent to the incentives provided to other industries through the less visible R&D Tax Concession (which is no more than revenue forgone from Consolidated Revenue). Moreover, the R&D Tax Concession applies to research which is of a purely proprietary nature and businesses are not required to demonstrate the public good that the research provides. In contrast, HAL and other RDCs are required to invest in research that is aligned with government rural research priorities and national research priorities.

It is also worth noting that the R&D Tax Concession (and forthcoming Tax Credit) would not be an appropriate vehicle for rural RD&E, especially in horticulture and apple and pears specifically. This is because few if any businesses would be of sufficient scale to be

able to invest in R&D, let alone at the level required to meet the eligibility criteria of the tax concession system.

The importance of Government continuing to match (at a minimum) industry R&D funds, is illustrated by considering the counterfactual. Specifically, to explore this issue we have looked at the consequences of a hypothetical situation where HAL is only responsible for monies raised from the industry and is not able to access any matching contributions from Government. This would have dire consequences for research in horticulture.

For the apple and pear industry the following scenario is easily envisaged:

- Most projects which have not yet been committed would immediately be put on hold;
- This would allow sufficient monies to be “banked” to ensure that contractually committed projects could continue;
- Future projects would almost entirely focus on “within farm” productivity improvements and other areas where growers will realise the most immediate and the highest benefit. This in turn implies that:
 - Particular areas of research are unlikely to be funded, especially those where the benefits of research predominantly accrue to the wider community (some aspects of environmental management) or have long term outcomes (such as climate change) or have a basic rather than an adaptive focus (such as funding of CRC Plant Biosecurity).
 - Collaborative efforts across horticulture and agriculture more generally would fall away, simply because a lack of funds;
- Research management would return to the inefficient practices of the past where many ad hoc projects rather than a few strategically aligned programs are deployed. The contraction in the pool of funds would prevent the apple and pear industry from achieving the scale required for integrated research programs such as the model presented by the PIPS research program (see Box 1). The need to spread the reduced funding pool across many critical issues would also create an ad hoc approach.
- Voluntary contributions from donor companies and grower organisations would shrink, if not cease.

The matching of government funds to the monies presented as voluntary industry contributions is just as important as the matching of monies collected from levies. Although VC projects account for only 9 per cent⁵ of current RD&E expenditure within the apple and pear industry many of these projects focus on the adoption of technology and know-how or industry development more broadly. There is a critical need for HAL to

⁵ Excludes PIPS and Prevar™

fund these extension activities to compensate for the contraction or withdrawal from this sector by many state governments.

Receiving a matched contribution from government also enables donor companies and organisations to achieve the necessary financial scale that is required by the specification of their particular project. Some research of interest to companies simply doesn't happen because they lack the finances to fund it. Scaling projects down (or up) to suit the finances is not always possible and one half of a project is no project at all. Additionally, the size of the investments considered by donor companies would normally prevent them from exploiting the government's system of R&D tax credits. Similarly, a number of VC projects which are undertaken within the apple and pear industry are funded by not-for-profit grower organisations which are not eligible for the tax concessions. Finally, the contribution from government provides "seed" money which allows other segments of the industry, including those further along the supply chain, to add value to the overall research effort. Whilst that research may not be directed to overcoming on-farm issues, it assists the industry by improving the efficiency of the supply chain.

4.2 Impact of Reduced Funding

Numerous studies have clearly demonstrated that research outcomes and the development and adoption of new production technologies is a key driver of agricultural productivity growth. ABARE (2009) has noted for example, that:

For Australian agriculture and food producers to maintain international competitiveness and ensure environmental sustainability, productivity growth is essential. Australian farming has a strong tradition of innovation and adaptation in response to emerging challenges. Agricultural research, development and extension collectively play a key role in supporting technological innovation in farming systems and other business activities across the value chain⁶.

Taking the scenario painted in the preceding section further, it is easy to envisage the consequences of reduced funding for research in the apple and pear industry for growers and their rural communities. Specifically, decreased funding for research would lead to reduced levels of on farm productivity. Lower levels of productivity inevitably reduce competitiveness and profitability. Communities within agricultural areas can ill afford this as they are generally amongst some of the most disadvantaged areas of Australia.

⁶ ABARE (2009), *Promoting productivity in the agriculture and food sector value chain: issues for R&D investment*. ABARE and BRS report for the Rural R&D Council.

Take, for example, the apple industry which is of unique economic importance in a number of distinct regions in Australia. This is because of the highly localized nature of production, with orchards concentrated in distinct regions including: Stanthorpe in Southern Queensland, Orange and Batlow in New South Wales, the Goulburn Valley and Southern Victoria, Huon Valley in Tasmania, Adelaide Hills in South Australia and the Perth Hills, Donnybrook and Manjimup regions in Western Australia.

Given the local significance of apple production to these micro-economies, any reduction in the level of research (and hence farm productivity) would have an adverse impact on community well-being. This would only exacerbate the significant socio-economic challenges faced by many of the communities within apple producing areas, especially in the country's oldest growing regions around Huonville in Tasmania, Batlow in NSW and Goulburn Valley in Victoria.

The level of disadvantage inherent within many apple producing communities has been measured by the ABS with SEIFA (spell out) which was created from last (2006) Census information⁷.

The index of relative socio-economic disadvantage indicates that the Stanthorpe community is in the lowest decile within the country – that is, 90% of Australians better off (more advantaged) than households and individuals that live within the Stanthorpe area. Residents of Huonville, Batlow, Manjimup and Shepparton fare little better, registering as within the 20% most disadvantaged Australian households, whilst Forbes and Ardmona rank in the bottom one-third of the country (Table 2).

Households in some apple producing areas fare a little better in terms of relative socio-economic disadvantage. This reflects their location - being closer to major cities they have better developed amenities and broader economic opportunities. Some areas are more reliant upon tourism (Adelaide Hills) or higher valued agriculture (Harcourt and Bacchus Marsh) or act as a major service centre (Orange). Nevertheless, it is important to note that, apart from Lenswood⁸, all other towns located within apple producing areas are only just at or still well below the national average.

⁷ The SEIFA indexes can be used to explore different aspects of socio-economic conditions by geographic area. The Index of Relative Socio-economic Disadvantage summarises information about the economic and social resources of people and households within an area. A low score indicates relatively greater disadvantage and a lack of advantage in general. For example, an area could have a low score if there are many households with low incomes, many people in unskilled occupations, and many people with low levels of education and poor access to social assets (internet connection, transport).

⁸ Compared to others, residents within the Lenswood area are amongst the least disadvantaged in the country. Lenswood, however, is located within the Adelaide Hills which has a strong economy based on tourism, wine, light industry and technology in addition to agriculture (apples, pears, cherries and

Table 2 Index of relative Socio-economic Disadvantage (2006)

Major Apple Producing Areas

	Percentile	Decile
<i>Queensland</i>		
Stanthorpe	10	1
<i>NSW</i>		
Batlow	11	2
Forbes	25	3
Orange	39	4
<i>Victoria</i>		
Shepparton	20	2
Ardmona	27	3
Bacchus Marsh	40	4
Yarra Junction	38	4
Harcourt	59	6
<i>South Australia</i>		
Lenswood	83	9
<i>Western Australia</i>		
Donnybrook	31	4
Manjimup	16	2
<i>Tasmania</i>		
Huonville	13	2
Grove	45	5

Source: ABC Cat. 2033.0.55.001 "Socio-economic Indexes for Areas (SEIFA), 2006. Issued May 2008; [http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/379403E9EBEDF2A4CA2574570017FBFA/\\$File/2033.0.55.001%20seifa,%20state%20suburb%20codes,%20data%20cube%20only,%202006.xls](http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/379403E9EBEDF2A4CA2574570017FBFA/$File/2033.0.55.001%20seifa,%20state%20suburb%20codes,%20data%20cube%20only,%202006.xls)

4.3. An optimal funding level

As noted earlier, the underlying rationale for public funding of agricultural research relates to the need to overcome market failures, most notably spill overs and free-rider issues. Without government funding, there would be an under-investment in agricultural research.

Whether government matching has overcome this under-investment or whether investment in apple and pear research remains at a sub-optimal level is difficult to

vegetables). Moreover the Adelaide Hills area acts as a commuter base with well developed infrastructure and social amenities.

determine. However, as noted within the Across Agriculture Submission, an “analysis of levels of Australian and international agricultural R&D investment intensity, and the rates of return to agricultural R&D investment indicate that current agricultural R&D investment levels in Australia are probably lower than optimal, and have been declining since the late 1980s”.

On this basis an upward adjustment of the level of government funding rural RD&E is clearly required. APAL considers that the government could entertain a number of alternative modifications. Some of these include:

- An increase in the government’s matching rate to something larger than 50 percent;
- An increase in the threshold to which the government matches rural industry funding. Currently at 0.5% of Gross Value of Production (GVP), this threshold has constrained HAL on a number of occasions in recent years to the detriment of the research effort. For the apple and pear industry this has meant that a number of VC projects have been knocked back. It has also meant that some existing VC projects have had their milestone payments deferred because of the financial constraints placed on HAL.
- An increase in funding of the Rural Research and Development Council to provide support to the rural RDCs;

4.4. Differentiating government contributions

4.4.1. Differentiating contributions on the basis of industry growth potential or maturity

The Productivity Commission has also raised the possibility that the system of matching government contributions on a dollar for dollar basis could be replaced by mechanisms that differentiate between industries or across RDCs. However this raises questions as to whether such modifications would be any better at overcoming under-investment and its associated market failures.

APAL is of the view that treating all industries the same with matched dollar for dollar public support is more likely to overcome the under-investment issue than a system which discriminates between industries and introduces inefficiencies as a consequence.

For example, APAL does not support a situation where government contributions differ on the basis of an industry having high growth potential, a greater potential for productivity improvement or on the basis of whether they are emerging rather than mature industries. Inevitably such distinctions force governments to pick “winners and losers”, a task for which government is ill-equipped. In addition to the complex equity and efficiency issues associated with such discrimination, governments would also face

difficult practical issues such as how “maturity” or “emerging” are defined and to determine the differential rates that might apply. Additionally, while the under-investment in research caused by market failure may be overcome for those industries which are treated favourably, it would remain an issue for those treated less well.

Matching government contributions on the basis of an industry having high growth potential or that they are emerging rather than more mature industries also has no bearing on the strategic needs of the industries concerned.

For example, the apple and pear industry is mature, in that the industry has existed within Australia for a long period, virtually since white settlement, and there is a well-established supply chain infrastructure that enables product to get from tree to table. However the industry is also immature in the sense that until now, it has never faced competition from imports. With imports likely within the next 12 months, the apple industry requires a continued substantial R&D investment to raise productivity to internationally competitive standards, to improve the consistency and quality of product, to meet community and consumer expectations in regard to the environment (including soil and water management and chemical residues) and to improve access to export markets. Reducing the level to which apple and pear levies are matched would severely undermine grower efforts to overcome the challenges they face.

APAL is sympathetic to the needs of emerging industries that do not have access to sufficient funds to invest in a level of R&D required to “kick start” their industries. Similarly, APAL is sympathetic to mature industries that require additional funds to enable them to undertake ‘step-up’ structural changes. In both cases, however, funding should come from government as initiatives that are separate from and independent of the RD&E process.

4.4.2. Differentiating on the basis of community benefit focus

Similarly, APAL does not support the concept of paying higher contributions on classes of RD&E that have a demonstrable focus on wider community benefits and an offsetting lower rate on RD&E with an industry-specific focus. As argued in the Across Agriculture Submission, research effort directed within the farm gate does indeed have a wider community impact. Government should not assume that the first beneficiary of a research outcome is the only beneficiary.

Determining *ex ante* which projects have a demonstrable focus on wider community benefits and which projects do not is a difficult task. So too would the basis for applying discriminatory rules - what proportion of the outcome must benefit the community over the grower; - is the benefit taken to be the short term or the long term one?

APAL is also of the view that significant consideration is already given to the way in which research projects can contribute to community wide issues. In the first instance,

the strategic planning process requires that the apple and pear industry address both community as well as grower and supply chain priorities. Part of the community benefit is assessed by ensuring that the government's National Research Priorities and the Rural Research Priorities are considered in the strategic planning process. Second, consideration of government priorities is given when project proposals are evaluated and commissioned research programs are designed. Third, the national priorities are a key driver of investment within the Across Industry program which includes across RDC projects.

4.5 Importance of Leveraging

The ability to leverage additional R&D funding from other sources has become increasingly important to the apple and pear industry. This is because the industry is steadily moving away from an R&D effort focussed on many ad hoc and uncoordinated projects to a managed portfolio of a small number of multi-faceted, integrated programs. Excluding breeding and varietal research, individual ad hoc projects often require only small amounts of funding (the average Life of Project spend in the apple and pear industry is currently just under \$200,000).

Integrated programs, however, require a much larger funding base, not only to undertake all of the "mini" projects within the program, but also to ensure the research program delivers more than the sum of the individual parts. This last point is fundamental. Achieving lower administrative costs by co-ordinating research effort across similar work-streams is only one, albeit important, goal. Realising "additionality" by integrating research effort to achieve multiple outcomes requires greater infrastructure, a wider pool of skill sets, a more intense level of oversight and stronger leadership. These all require a greater pool of funds.

The PIPS program is a good example of grower levies being matched by government and then used to access sufficient additional financial resources to fund a large scale research program. Finalised at the end of 2009, the 'Productivity, Irrigation, Pests and Soils Program', or PIPS program is a \$12 million dollar, five-year apple and pear research program administered by the Tasmanian Institute of Agricultural Research (TIAR) at the University of Tasmania.

The breadth and depth of the research streams within the program design (see Box 1) necessitated a scale beyond the capacity of HAL whose total annual apple and pear matched levy program is around \$3.5m. To meet the required scale, the industry's \$1 million levy investment was leveraged against both international and state government funding pools. The result was extraordinary, with a voluntary contribution by the New Zealand Institute for Plant & Food Research Limited (PFR) of over \$3 million, taking the total funding provided by HAL to \$7.5 million, including matched government contributions. Further in-kind co-investment by TIAR, Victorian Department of Primary

Industries, and the Queensland Department of Employment, Economic Development & Innovation has brought the Life of Project funding up to \$12 million. It is unlikely that any one of the parties would be willing or financially able to take sole custody of an innovative and comprehensive investment program such as this. In the PIPS example, leveraging has been an important catalyst which unlocks separate and disjointed research effort to fast-track critical outcomes for both growers and the community at large. The PIPS program is a significant, high-profile development for industry. The integrated and multi-faceted nature of the program will undoubtedly provide a role model for how projects will be formulated in the future.

Box 1: PIPS

The PIPS program represents a significant departure from previous single focus project based research. It packages research efforts from four organisations to address a number of inter-related orchard productivity and on-farm environmental issues.

Specifically, the program requires collaboration between scientists in a number of key sub-program areas: integrated pest management (IPM), tree structure, and soil, water and nutrients. One objective is to increase profitability of orchards by managing bud types to reduce tree inputs and optimise apple quality. An inter-related objective is to minimise water use and improve soil structure and nutrients through superior orchard practices.

Minimising the use of agricultural chemicals for pest management and soil conditioning is a further key objective which will not only reduce on-farm costs but create a more eco-efficient production system. Currently, the use of environmentally friendly chemical products and techniques is often a more expensive option. This is because particular chemicals are now almost exclusively targeted to a single pest or disease and hence multiple chemicals and applications may be required to cover a range of pests and diseases.

PIPS illustrates the synergies between the strategic research needs of growers and government preferences as expressed in the Rural Research and Development Priorities. The PIPS program aims to demonstrate to growers how changes to orchard practises can reduce their environmental footprint and simultaneously achieve tangible cost savings and hence improved levels of profitability. The program will provide tools and guidelines to advise growers of changes that will be required to improve the long term sustainability of their orchards.

Leveraging funds across state and international organisations has enabled the Australian apple industry to create the necessary financial might to allow program of the size and complexity required of PIPS design. But leveraging and co-investment has also provided PIPS access to specialist expertise across a number of technical disciplines: entomology and pathology, soil science, biology and environmental science. As a co-operative research program, PIPS will not only utilise the research capability from within TIAR (Tasmania), DPI (Victoria), DEEDI (Queensland) and PFR (New Zealand) but will require integration of work-streams to ensure that findings are practical and can be integrated into current orchard practices.

Co-investment by New Zealand, via PFR's access to funds through the New Zealand government's Foundation for Research, Science and Technology (FRST), is a big win-win for both the Australian and New Zealand pipfruit industries. It up-skills the research capacity in Australia and brings in both resources and the latest in international research to the program. These are currently not available in Australia. Plant and Food Research New Zealand has a stated vision to be a major R&D provider to Australian horticulture, and the Chief Executive Officer at PFR, Peter Landon-Lane has indicated of this trans- Tasman partnership: "Industry will benefit from this combined approach to research challenges of common interest. By pooling our efforts, we can achieve much more than we could working separately."

5. RESEARCH ISSUES

5.1 Impact of Government Priorities

The Productivity Commission perceives a growing tension between the requirements of levy payers who wish to see their contributions spent on RD&E that is of direct benefit to the industry concerned and the Australian Government who wish to see their contributions spent on RD&E that is:

- aligned to national and rural research priorities;
- takes a cross-sectoral (across industry) approach; and,
- takes a 'cross cutting' (more inclusive of downstream supply chain research) approach

APAL believes that specification of stakeholder priorities is critical to sound investment choices as it forces decision-makers to focus on the optimum use of the scarce funds that are available for research. Nevertheless, APAL notes that:

- i. Government stakeholders often wrongly assume that investment decision-making is driven by a desire to fund those areas of research likely to provide the greatest and most immediate improvement to orchard profitability.

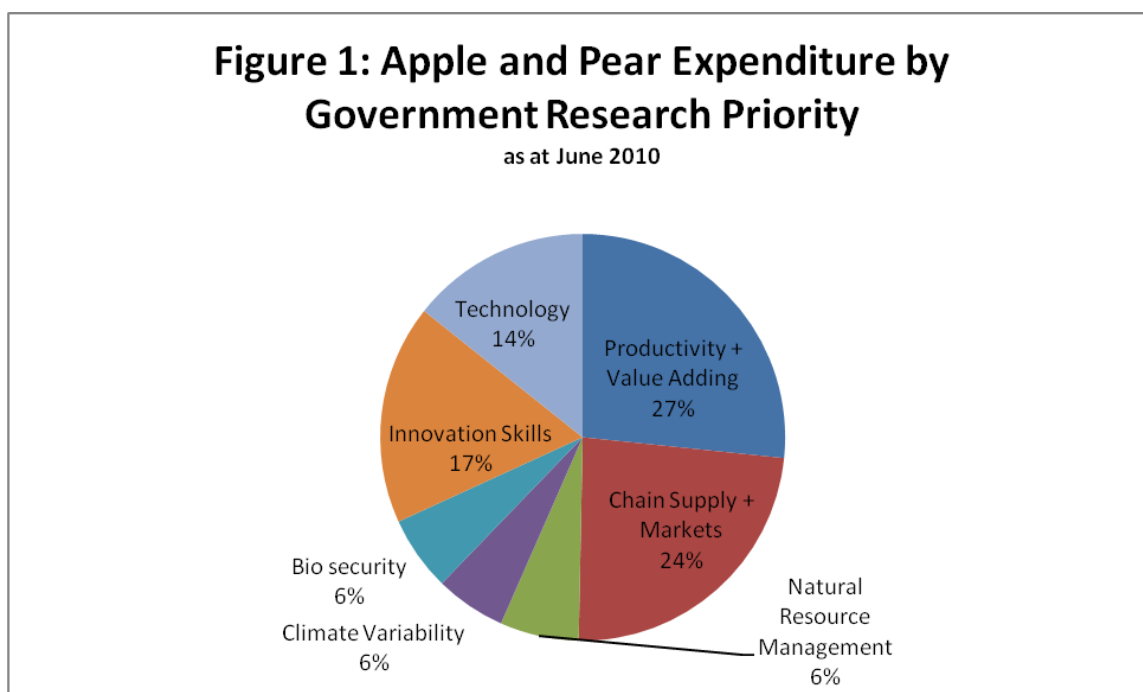
This is not the case. Instead, research is funded on the basis of meeting the *strategic needs* of the industry to ensure longer term sustainability. Growers accept that long term sustainability of their business incorporates productivity (competitiveness and profitability) as well as the environmental health of the orchard and the eco-footprint that farm practices leave.

For example, *New Horizons 2015*, the apple and pear industry strategic plan, and the associated RD&E investment plan will act as the key guiding documents upon which the Industry Advisory Committee will select research investments over the 2010 to 2015 period. The Government's National Research Priorities and Rural Research and Development Priorities were key considerations when setting the strategic direction outlined in *New Horizons 2015*.

- ii. The level of detail provided within the National Research Priorities and Rural Research and Development Priorities is sufficient to guide research to meet government stakeholder requirements. Any greater specificity or tightening of those priorities would hinder the flexibility of HAL and other RDCs to carry out their responsibilities efficiently and effectively.

- iii. There are synergies between the Government's priorities and those of growers. The PIPS program (Box 1) is a good example. That program aims to assist growers to minimise their water and chemical use. This will improve the environmental impact of orchard practices. But it will also reduce farm input costs and improve profitability.
- iv. But there are circumstances where growers fail to see relevance of research and become concerned that levy monies are used for intangible returns. Take, for example, the use of levies to fund the National Climate Change Research Strategy for Primary Industries (CCRSPI) program. A partnership between State primary industry agencies, the rural RDC's, DAFF and the CSIRO, CCRSPI undertook (Phase 1) research to understand the opportunities and threats and the capacity required of primary industry to meet climate change mitigation and adaptation needs. Most of this research is broad in nature and lays the foundations for more detailed industry specific research. As such the benefits to primary producers of broad agricultural studies may be less immediately apparent than research tailored to their own industries.

A snap shot of the allocation of expenditure by the apple and pear industry (projects for 2010/2011 endorsed as at June) is presented below.



5.2 Adaptive versus basic research

APAL is of the view that basic research is best funded by government and undertaken outside the RDC levy framework. This is because basic research is experimental and/or theoretical and is undertaken primarily to acquire new knowledge without any particular application in mind (Productivity Commission, 2007, page 8). The importance of basic research is acknowledged as a means of building a treasure chest of ideas, technologies and smart people that can be called upon in later times⁹. As such, basic research is relevant to society as a whole, rather than to specific industries, and is best funded on this basis.

Basic research cannot be easily aligned with an industry's immediate and longer-term needs. Growers are unwilling to invest in projects which do not provide outcomes which are tangible and go some way to improve the sustainability of their industry – through improvements to orchard profitability, the reduction of the environmental impact of their practices, the efficiency of the supply chain or through building consumer demand.

Consequently much of the apple and pear RD &E program is currently invested in “adaptive” research which is described by the Productivity Commission (2007, page 8) as being that which is directed primarily towards a specific practical aim or objective.

However not all “adaptive” research is focussed on short term objectives and much depends upon the discipline concerned or outcome sought. For example, research focussed on breeding new varieties and rootstocks and evaluating their suitability to particular growing regions within Australia is a long term exercise. Although HAL contracts are generally limited to 3-5 years, the apple and pear industry's funding of breeding programs have been on-going for more than 15 years. Similarly, some market access and biosecurity research (such as fruit fly control) has and continues to require effort over a considerable time period. In contrast, research activities relating to many aspects of orchard management (including crop production and managing environmental impacts) are generally undertaken over a three to five year period. Industry development and extension is purchased for short-term to immediate term delivery, though extension programs are often rolled out over a number of years.

Nevertheless, the apple and pear industry does support research that is somewhat “blue sky”. This includes, for example, the funding of the Plant Biosecurity CRC.

⁹ V Bush, cited in Rashid, R “Why it's essential to invest in basic research during hard times”
<http://microsoftontheissues.com/cs/blogs/mscorp/archive/2009/06/24/why-it-s-essential-to-invest-in-basic-research-during-hard-times.aspx>

5.3 Role of researchers in driving direction of R&D

It is not possible to determine the extent to which research in the apple and pear industry is driven by the existing skills, interests and capabilities of the research providers as opposed to that driven by stakeholder needs. In the past there has been an inadequate alignment of research submissions with the industry strategic plan. However this primarily reflects the way in which projects were identified, with a reliance on submission calls (reflecting what researchers were prepared to offer) rather than on tenders and project commissioning (reflecting what investors are prepared to fund).

Over the past two years APAL has worked with HAL to reorient the investment process to ensure that the new strategic plan and the accompanying RD&E investment plan are fully articulated and known to the research community. Moreover, APAL and HAL have embarked on a number of commissioned programs which target research efforts to outcomes required by the industry. The PIPS program (Box 1) and Future Orchards program (Box 3), are two examples. The RD&E investment plan, which is currently being drafted, is also likely to incorporate all current and future research efforts funded through HAL into a number of discrete programs that are aligned with strategic needs.

5.4 Health of rural R&D framework

APAL does not support the view that the RDCs have insufficient regard to the health of the wider rural R&D and extension framework, including to the infrastructure and skills required to sustain an effective research capacity over the longer term. For example, the apple and pear industry is fully supportive of programs that incorporate honours and post graduate students into the research effort. The PIPS program (Box 1) for example, has an honours student working on biochar and a graduate cadet working within the tree water use project and is currently seeking a PhD student in tree structure. Additional honours, masters and PhD resources will be co-opted to add value to the program wherever possible. Finally, PIPS will also fund a researcher from the Queensland Department of Employment, Economic Development and Innovation to visit Europe to improve his skills and knowledge base in tree management and increase the capacity for the transfer of technology from this project.

5.5 Intellectual Property issues

APAL considers that HAL has been an effective manager of intellectual property issues through:

- Embracing IP as a strategic business tool. Specifically, IP is recognised by HAL as a powerful instrument for sustaining competitive advantage in an increasingly globalised and commoditised market for horticultural produce. The incorporation of an IP focus in investments has enabled horticultural industries,

- including apple and pear, to protect technologies developed under HAL funded programs and to access innovations developed elsewhere.
- The provision of skilled legal IP expertise within HAL;
 - A willingness to utilise IP management skills that exist within the apple and pear industry;
 - The transfer of royalties gained from IP rights back into the relevant industry's own R&D fund.

The HAL approach has facilitated collaborative efforts in developing new apple and pear varieties. One example is the Australian Pome Fruit Improvement Program Ltd (APFIP) which was established in 1997 to promote prompt and secure access to and an evaluation of new varieties and rootstocks with characteristics suitable for pome fruit production in Australia (Box 2).

The management of Intellectual Property is a factor underpinning the success of the APFIP program. In particular, the program has leveraged the IP capacity developed within APAL through its product management of the global Pink Lady® business. The transfer of such knowledge and expertise has enabled APFIP to develop complementary skills in intellectual property protection through certification trademarks, plant breeder's rights and plant patents.

The APFIP program was initially fully funded by HAL using grower levies matched by government funding. APFIP has successfully developed a certification system for pome fruit planting material that is licensed to Australian nurseries through a registered certification trade mark. A royalty sharing agreement is in place with HAL in regard to royalty income from the use of the certification trade mark. Income from the use of this trade mark will ultimately provide 75 percent of APFIP's income and the call on matched grower levy government funding will be reduced accordingly.

Box 2: APFIP

The Australian Pome Fruit Improvement Program Ltd (APFIP) was established in February 1997 using grower levies with matched government contributions. APFIP was established to:

- Promote prompt and secure access to new varieties and rootstocks developed internationally by facilitating efficient quarantine services
- Evaluate varieties and rootstocks throughout different growing regions.
- Deliver independent and objective variety/rootstock information for the industry;
- Develop pathogen tested and certified pome fruit planting material by multiplying selected budwood and rootstock;
- Develop and promote standards for pome fruit material
- Seek and acquire rootstocks and varieties and safeguard material in repositories

Assisting the international competitiveness of the Australian pome fruit industry is the key objective underpinning the APFIP project. The majority of Australia's international competitors have access to certified planting material. This was not originally available to Australian growers because access was hampered by the length of time new varieties spent in quarantine and the fact that no State governments provided pome fruit certification systems.

APFIP has been largely successful in overcoming these issues. For example, changes in the importation protocols for budwood have resulted in a reduction of the post entry quarantine time from 4 years to 15 months. APFIP has also undertaken extensive evaluation of rootstock and varieties to give growers the information they require to make balanced decisions on variety choice relevant to their operations. Evaluation sites are planted as part of existing orchards to reflect commercial conditions and are located across Australian growing regions to test climate and soil suitability (from southern sub-tropical Queensland to the roaring forties in Tasmania). A new repository for certified varieties and rootstocks has been established in southern Tasmania and production of certified rootstocks is now being licensed to commercial nurseries. Extensive consultation in Australia and investigation of European certification systems led APFIP to introduce its own certification system for fruit tree propagating material.

Staff cross-overs between APFIP and APAL have afforded opportunities for knowledge transfer and the development of expertise in specialist and technical areas such as variety evaluation, certification, quarantine and intellectual property protection (including plant breeder's rights and plant patents). During the past 10 or more years APAL has developed considerable expertise and knowledge in product management specifically through its global Pink Lady® business. Also during this time APFIP has developed complementary skills

In addition, APFIP has recently developed a variety-consulting services business to provide growers and nurseries, on a fee-for-service basis, assistance with:

- Gaining plant protection including Plant Breeders Rights and trademarks in Australia;
- Arranging variety protection for Australian plant material in the USA and EU.

As this consulting business develops, the funding sought from HAL to underpin the APFIP program will be reduced.

5.6 Role of State Governments

Like most involved in agriculture, APAL is concerned by the continuing withdrawal of State Governments in research and development and the provision of extension services. This has hit the apple and pear industry, with the Tasmanian government closing the Grove research station and NSW ending its rootstock breeding activities. Similarly, Victoria and Queensland have withdrawn from their pear and apple breeding programs respectively.

State governments have tended to withdraw from providing some aspects of research and much of extension because of budgetary pressures and not because the activities were not beneficial to growers or the community, especially rural communities. Activities previously undertaken by State governments were important, particularly breeding programs, and APAL fully supports the need for HAL to fund them.

The scaling back of extension services has been of particular concern. As there is little point in undertaking research if the outcomes are not communicated to and adopted by industry, it is important for HAL to step in and replace that gap. HAL currently funds a number of State specific apple and pear extension activities, most notably for dedicated technology transfer personnel. In a number of cases state organisations were able to provide their own voluntary contributions, subsequently matched with government funds, to fund an industry development officer.

5.7 Farm Gate Focus

APAL rejects the proposition that the current levy payment and governance arrangements lead to an *excessive* focus on R&D effort within the 'farm gate'. The allocation of funds to RD&E activities at various points along the supply chain is best undertaken according to industry strategic needs. These needs are identified as part of the strategic planning process.

As indicated in earlier sections, there is some concern amongst growers that value which is added further down the supply chain are generally not passed back to growers. Understandably, growers are reluctant to use their levies to support research which is not expected to deliver a benefit of some kind. Nevertheless, the whole-of-chain viewpoint is a major feature of the current industry strategic plan, *New Horizons 2015*. There is recognition that the complex supply chain comprising multi-participant storage, handling and distribution activities that link growers to consumers is vulnerable. Potential breakdowns and inefficiencies can weaken the flow of produce, materials, information and business relationships.

In the past RD&E projects addressing productivity and supply chain issues have been undertaken as discrete units of study based on topics such as: agronomy, pest and

diseases, post harvest (storage and packaging and distribution) and fruit quality. There is a compelling need to take an integrated systems approach when tackling RD&E in this area. It is expected that going forward, the apple and pear industry RD&E effort will take a more systems based approach to address supply chain issues.

Cool storage facilities and packing sheds are two areas where research has been undertaken further along the supply chain and proven of considerable benefit to apple and pear growers. This includes the adaptation and uptake of cool store technology developed overseas, first with the introduction of controlled atmosphere techniques, and later SmartFreshTM. It also includes new uses of old technology to lower electricity use. These technologies have benefited growers enormously because it enables high quality product to be supplied year round as well as reducing the carbon footprint.

Both HAL and APAL have leadership roles in encourage companies further down the supply chain to develop research proposals for VC funded research and development activities. It is important that these projects are aligned to the industry strategic plan and government research priorities. One recent example is the VC and matched government funding of research to optimise the use of off-peak power to manage the Batlow Co-op cool-stores. The resulting savings not only improve the profitability of the co-operative to the benefit of those growers but will reduce the carbon footprint at the same time. Other cool-store operators will have access to the research outcomes when the proprietary time has elapsed.

5.8 Technology Transfer and Practice Change

APAL also rejects the proposition that the governance structure of the Board of HAL or the apple and pear industry IAC has focussed adaptation (development) and extension activities more favourably toward “top end” producers. RD&E efforts have been paid for by all growers and it is the responsibility of portfolio managers to ensure that such efforts are directed at assisting all growers. There is no exclusivity to which research outcomes are communicated and demonstrated. Nevertheless, APAL is acutely aware that there is on-going discussion about the best way to achieve practice change and an uptake of new technology. Agronomists often argue that average growers learn from the experiences of (and the risk taken by) more innovative producers. It may be that focussing effort on the progressive growers will be more cost efficient and more effective as they eventually pull ‘bottom end’ producers up.

APAL acknowledges that securing industry uptake of the outcomes of some research specifically directed at meeting the Government’s research priorities may be problematic. If growers or supply chain participants cannot see how changing practices by adopting new know how or technology can lead to improved productivity or profitability, they are unlikely to incorporate them. Like all businesses, apple and pear growers, packers and cool-store operators take-up new technologies and farm practices

on the basis that the immediate costs are at least matched by medium to longer term pay-offs. If the government desires growers and others to take-up research outcomes where no benefits are readily apparent, direct government subsidies would be required.

5.9 Regional distribution of research benefits

There is also no evidence to suggest that there is a mismatch between the regional distribution of levy payments from apple and pear growers and the regional distribution of the benefits from the ensuing R&D. The apple and pear IAC has adopted a national approach to research. Projects and programs are required to meet the strategic needs of the industry and have outcomes that will benefit industry irrespective of their location. Nevertheless, there is a requirement for some research to be conducted on a regional basis. This includes pest and disease research which is often regionally specific.

Adaptation of research outcomes is an important part of the apple and pear industry RD&E program. This is because climate and soil conditions vary across growing regions which not only impacts on the varieties grown but the production practices employed. Consequently most development effort is repeated across the country to determine the appropriate adaptation of research. For example, the APFIP program (Box 2) has an evaluation network which encompasses most major temperate tree fruit growing regions of Australia, including Stanthorpe, Batlow, Orange, Manjimup, Lenswood and the Goulburn, Yarra and Huon Valleys.

Distances between growing regions also necessitate industry development programs and extension activities to be designed and undertaken at a local level. The Future Orchards program, which represents the industry's principal industry development or extension activity, provides a good example. Since its inception Future Orchards (Box 3) has operated demonstration blocks in each of the major apple and pear growing regions across the country. The demonstration blocks are monitored to provide data to compare the costs and returns of different fruit tree planting densities and orchard practices. That information is made available to growers who visit the blocks on regular orchard visits or "walks". Orchard walks have been held four times a year in the Goulburn Valley and Southern Victoria, Batlow and Orange, Adelaide, Stanthorpe, Tasmania and Western Australia. In addition to the 'in-field' demonstrations, orchardists are provided with opportunities to hear from national and international guests with expertise in various aspects of apple and pear production as well as opportunities to discuss issues they face and provide feedback on the type of knowledge or information they require.

Box 3: Future Orchards 2012

'Future Orchards 2012' is an industry development program that was originally funded by the Department of Agriculture, Fisheries and Forestry's *Industry Partnership Program* but now funded by HAL through levies and managed by Apple and Pear Australia Ltd.

The main drivers for the project are to lower orchard production costs per kilogram of fruit, increase the percentage of premium fruit harvested and bring Australian orchardists up to international competitiveness in the domestic and export markets. At the commencement of the project in 2006 orchard production averaged 20 tonnes per hectare from an average 640 trees per hectare. Future Orchards 2012 aims to more than double average production to 45 tonnes per hectare and dramatically increase the density of plantings to about 2,500 to 3,000 or more trees per hectare.

Intensive orchards would produce a more consistent fruit size and make harvesting easier as well as increasing the harvest percentage of premium quality fruit. Intensive production systems aim to improve both productivity and profitability. There are also environmental benefits to intensive orchards. Chemical usage per tonne of fruit can be reduced by up to half. And because the same amount of fruit can be grown on less area, usage of other inputs such as water and fuel is lower as well.

However, intensive orchards are very capital intensive. They cost between \$40,000 and \$60,000 per hectare to establish (without hail and bird/flying fox netting protection which can add a further cost up to \$50,000 per hectare) compared to about \$10,000 per hectare with traditional planting. Because of this, growers need to be imbued with new skills to fully understand what is required before they make such a large investment.

The Future Orchards 2012 program was designed to afford growers opportunities to understand these costs and benefits. The project established designated blocks with different tree densities in each apple and pear growing district. Farm activity on each block was measured continuously as were input costs. This and related information was presented to growers at field days held four times each year at the blocks. This gave growers first hand comparisons of the costs and returns from different tree densities and newer style tree management systems introduced with the program.

The relationship between higher tree densities and improved productivity is not the sole focus of Future Orchards 2011. Growers are also provided with evidence that higher planting densities have immediate environmental outcomes as a result of consequential lower fuel, chemical and water inputs.

Future Orchards also proved particularly effective with growers experiencing in-field demonstrations of new farm practices and opportunities to interact with and extract know-how from the project researchers. The Future Orchards program harnesses both Australian and international research and extension expertise.

Reported uptake of improved orchard density is encouraging. Independent surveys have shown that the Future Orchards program has been highly successful, with over half of growers having attended at least one "walk" and a significant number (20%) of orchardists having attended five or more. Moreover, the Future Orchards program has prompted change and intentions to change across a range of grower techniques including thinning, tree training, tree planting density, water and chemical use and record keeping.

A next generation industry development program is currently being drafted to build on the success and momentum created by Future Orchards 2012.

5.10 Role of the Private Sector

The extent to which there is private investment in RD&E in the apple and pear industry is not known. However, a number of the larger grower/packer/cool store operators have initiated and self-funded the development of a range of expensive new technologies in recent years. For example, Batlow Apples, a co-operative in NSW has installed a near-infra-red system, which monitors and sorts apples on “under the skin” quality, enabling the company to provide a quality guarantee to their product. Similarly, two Australian companies, GP Graders and CVS, have developed such expertise with apple and pear grading machines that they are now substantial exporters to international markets.

Industry development or extension is one area where greater private sector involvement will be required in the future. Private advisors currently have little formal role in the apple and pear industry RD&E system. This represents a serious gap, especially in light of the disappearance of large-scale extension activities that used to be undertaken by state government departments. However the viability of privately funded extension advice (on a fee for service basis) across the apple and pear industry may be compromised by the structure of our sector. Specifically, providing extension services to a large number of individual producers who have small orchard holdings is likely to prove unprofitable for private sector providers. The commercial viability of private extension services is further weakened by the spread of apple and pear production across the country, with small pockets found in distinct regions, each with its own growing conditions. Hence it is likely that a continuing role exists for HAL to fund the collection and dissemination of extension advice to augment that provided by private industry agronomists and consultants.

6. COORDINATION AND COLLABORATION

6.1 Platforms for Collaboration

APAL supports the view that effective coordination and collaboration between the RDCs and with other parts of the rural RD&E framework (such as the CRCs) can have a range of benefits, including:

- Preventing wasteful duplication and minimising the administrative burden;
- Realising research synergies; and,
- Achieving critical mass where size of project is fundamental to research outcomes.

However, APAL also notes:

- Collaboration can sometimes create projects which are too broad, with outcomes that have no real meaning for participating industries. This is particularly the case when projects have been designed without grower representation and without some sense of the likelihood of uptake.
- Large projects or programs can sometimes internalise bureaucracies and create additional administrative costs;

As outlined in Section 10, rationalisation of funding pools is unlikely to create significant benefits for agriculture as a whole and will dissipate the benefits of research for specific industries.

Instead, APAL considers that greater effort is required in providing an over-arching framework that would improve the scope for the rural RDCs to more actively cooperate. This framework should include:

- A vision for a modern, profitable and sustainable agriculture sector and a supporting food industry policy;
- Clarification of the role of the Rural Research and Development Council (RRDC) and its relationship to the national RD&E Framework.

Vision for Agriculture

Research is about building a superior future and is supported by governments to better position industries to respond to market changes and improve competitiveness in the face of on-going economic and climatic challenges. The development of the national and rural research priorities have facilitated a shared understanding between research providers and the RDCs of the broad direction that rural research should take to enable Australia's agricultural industries to meet those challenges. However, these priorities and the direction that it takes agriculture must be filtered down to the grower level.

This is an important task because primary producers perceive that they currently operate within a vacuum, with no real sense of the contribution that governments expect agriculture to make to Australia's economic and environmental future. There is also little understanding of the role that governments expect rural communities to play in establishing a healthy dynamic society. From time to time tensions arise with views held in some quarters that agriculture is a sunset industry and is environmentally damaging. Such tensions accentuate a loss of importance.

It is incumbent on governments to place the research priorities and the implied policy direction within context. An appropriate context would be a vision for agriculture.

This vision should provide the platform which underpins the national strategic rural R&D investment plan currently being formulated by the Rural Research Development

Corporation (RRDC). The vision should also be used more comprehensively, to provide greater detail around policies by which the government intends to achieve profitable, globally competitive, sustainable, innovative and adaptable primary industries.

The role of the RRDC requires clarification.

The principal goal of the Rural Research Development Council (RRDC) is to provide high level advice and coordination to better target and improve the effectiveness of the government's investment in rural RD&E. In addition to developing a national strategic investment plan, the Council is charged with establishing a performance measurement and reporting framework, improving collaboration in research efforts, providing advice on improving the communication and uptake of new knowledge and technology across rural industries, fostering innovation as integral to the culture of rural communities and industries and building the capacity of the rural R&D sector to ensure that Australia is prepared for future challenges.

Whilst APAL does not take issue with the RRDC's terms of reference, it notes that they are very broad and the organization requires adequate resourcing to achieve its goals. However, as most of the RRDC's responsibilities are policy related, direct funding from Government is required and the matched levy payer system should not be used to fund these activities.

One of the key roles of the RRDC is to provide advice on ways to enhance cross-sectoral, cross-disciplinary and cross-jurisdictional collaboration in the rural research effort. How this role interacts with the national rural R&D framework and the Council of Rural Research and Development Corporation Chairs (CRRDCC) is not clear. Linkages with ad hoc DAFF and other commonwealth agency funding programs are also unclear. For example:

- Will the national strategic investment plan dictate areas in which the RDCs are obliged to invest?
- On what basis will the deliberations of the CRRDCC be taken into account when deciding on areas where collaborative effort can be achieved?
- What role does the RRDC have in overseeing the completion and implementation of the National Primary Industries RD&E framework, including its constituent parts?

Clear, explicit and enduring roles should be articulated for each of these organisations and how they intersect.

6.2 Role of National RD&E Framework

APAL supports the view that the Primary Industry Standing Committee's (PISC) National RD&E Frameworks will improve coordination and prioritisation of the rural research

effort. Co-ordination between research providers (across state governments, universities and the CSIRO) should remove areas of duplication and streamline research capability. Greater co-operation between investors and research providers should also ensure that research is focussed on meeting the strategic needs of individual industries as well as community needs.

Nevertheless, APAL is concerned that the process of adopting the frameworks will “legitimise” further cut-backs in agricultural research and extension efforts by State Governments.

6.3 Role of National Horticulture Framework

The National RD&E Framework for Horticulture has yet to be endorsed by PISC.

Nevertheless, the apple and pear industry has already seized the opportunity presented by the Horticulture Framework to strengthen coordination and prioritisation of the research task.

Specifically, in recent weeks a high degree of consultation has occurred between the representative of the Lead Agency for apple and pears (Victorian Department of Agriculture) and the RD&E subcommittee of the apple and pear Industry Advisory Committee. The subcommittee has been tasked with developing a five year RD&E investment plan for the apple and pear industry. The views and expertise of the Lead Agency have proved useful in drafting a proposed new approach to managing the research portfolio and prioritising programs and projects to achieve better alignment with the industry strategic plan.

It is expected that the Lead Agency representative will have an on-going role on the RD&E subcommittee once the investment planning phase is complete. The capacity of that role has yet to be determined and will need to take account of potential conflicts that may arise with future funding submissions lodged by the Lead Agency.

The extent to which the National RD&E Framework for Horticulture is likely to strengthen co-ordination between investors and research providers will depend upon the ability of PISC agencies to implement tangible activities to embed collaboration. This includes:

- i. *Leadership.* In addition to facilitating co-ordination and co-operation in specific research activities, the Lead Agency must act as a champion and provide sufficient leadership to other agencies to drive a shared understanding of the research priorities within the apple and pear industry. Separation of the Lead Agency’s role as the champion and as a research provider in its own right is important in this respect.

- ii. *Activity Statements.* The National Horticulture Framework is a strategic document which now requires statements of intent by each of the parties.

For example, the Victorian Department of Agriculture might articulate how it interprets its role of Lead Agency for apple and pears and the activities it intends to undertake to progress a nationally coordinated RD&E program. How does Victorian Department of Agriculture intend to interact with the apple and pear IAC and APAL as research investors, and how does it intend to interact with other research providers?

Similarly, “Major Priority” and “Support” agencies might articulate the preferred direction of their research effort and how this links in with the needs of the apple and pear industry and those of government (both state and federal). A number of agencies have, for example, made commitments to undertake research in broad disciplines such as plant health, crop production, breeding, environment and industry development (Table 3). Greater specificity in planned research activities and research capability would assist co-ordination across jurisdictions.

Table 3: Indicative Future RD&E Investment in Apple and Pears by PISC Agencies.

<i>Lead Agency</i>	<i>Future Investment Areas</i>
Victoria	Plant Health, Crop Production Environment
<i>Support Agency</i>	
Western Australia	Breeding
NSW	Plant Health Industry Development
Queensland	Crop Production
Tasmania	Environment,
<i>Link Agency</i>	
South Australia	

Source: National Horticultural Research Network “National RD&E Framework for Horticulture”, February 2010

- iii. *Development and Extension:* Both development and extension are critical to the adoption of research outcomes but little is said within the National Horticulture framework as to how development and extension will be supported.

The Victorian Department of Primary Industry’s (draft discussion document) “Priorities and Services for Victoria’s Horticulture Industry” is a good example of how agencies can communicate to industry the research, development and practice change services that will be provided. Although APAL may have issue with the way in which some services will be provided by the Victorian Department of Primary Industry (and especially the way some activities will not be provided),

APAL believes that documents of this type benefit a shared understanding of the development and extension effort.

- iv. *Frameworks by discipline.* It is understood that similar national RD&E frameworks will be developed for research disciplines including climate change and variability, food and nutrition, plant biosecurity, and water use in agriculture. The apple and pear industry has a particular interest in these across-industry research disciplines but has yet to be consulted on the either the intent or the content of the relevant frameworks.
- v. *International Linkages* In addition to facilitating co-ordination and co-operation across agencies within Australia, the National Horticulture Framework should also seek greater collaboration between Australian and international research providers. As argued in Section 6.6 below, there are considerable benefits to be gained, at least for the apple and pear industry, in exploiting the opportunities that the international research community presents.

6.4 The Horticulture Across-Industry Program

To a large extent, the *foundations* for ensuring that cross-sector issues are addressed and across industry collaboration is achieved are already in place within the existing HAL model.

Specifically, the Across Industry Program was established to fund research, development and extension activities for the benefit of all horticulture industries. Over the past five years an average of \$1.4 million has been invested annually by HAL through this program. The apple and pear industry is the second largest contributor after vegetables, and provided almost \$44,000 to the program in 2008/09.

Across industry expenditure by HAL in 2008/09 was about 1.7% of total expenditure. This exceeds the Statutory Funding Agreement requirement that 1% of all monies (levy and VC) be dedicated to across industry projects. The bulk – 81 percent – of the apple and pear industry contribution to the Across Industry program in 2008/09 was sourced from matched levies, with the remainder (20%) sourced from matched voluntary contributions (Table 4).

HAL's Across Industry Program is overseen by an Across Industry Committee (AIC). The Committee explores opportunities for sharing the research effort by examining the issues and research priorities that are common to members. The AIC process also enables more explicit consideration of how matched levy contributions from horticulture can target the government's Rural R&D Priorities and National Research Priorities.

The across industry program is funded by a compulsory one per cent contribution from industry R&D activity. This contribution is collected on all matched R&D levies and R&D funds, including the statutory levy and voluntary contributions. In effect this means that the government is able to leverage the funds provided by the private sector with its own funds to achieve its community research priorities.

Table 4: Source of Across Industry Funds (\$'000)

		2004/05	2005/06	2006/07	2007/08	2008/09
Apple and Pear	Levy	39.9	119.3	26.7	28.5	35.6
Apple and Pear	VC			3.9	5.4	8.3
Total		39.9	119.3	30.6	33.9	43.9
Other Horticulture	Levy	316.3	941	506.5	565.3	700.1
Other Horticulture	VC	755	1018	584.5	680.8	628.7
Total		1,071.30	1,959.00	1,091.00	1,246.10	1,328.80
Total Horticulture	Levy	1,111.2	2,078.3	1,121.6	1,280.0	1,372.7
Total Horticulture	VC					
Total		1,111.2	2,078.3	1,121.6	1,280.0	1,372.7

Source: HAL

APAL supports the Across Industry program because many of the projects that receive funding would be unlikely to proceed on an individual basis. This is because the cost would be too high for any one particular industry, especially given the size of most industries within horticulture. Additionally, crossover issues are generally associated with 'free-rider' problems and these would lead to under an investment in research activity.

The funding of the pesticide regulation co-ordinator is a good example of research which would probably not receive funding if a collaborative approach were not adopted. As noted by HAL, the pesticide regulatory environment is a very complex one and subject to continual change¹⁰. It is therefore difficult for individual industries to provide sufficient resources to stay abreast of pesticide reviews, both domestic and international, and to coordinate appropriate responses. The Across-Industry Program funds the coordinator to ensure horticulture industries are aware of proposed

¹⁰ Horticulture Australia Limited (2009) Across Industry Annual Report, p9

regulatory changes and their potential impacts. The coordinator assists with appropriate responses to pesticide reviews and risk assessments, and keeps industry informed of international pesticide issues that could affect industries that export.

The capacity of the horticulture sector to collaborate on research which has the potential to benefit growers and their regional economies as well as reduce the costs borne by government is illustrated by a number of fruit fly projects. In Australia fruit flies represent the single most significant phytosanitary barrier for domestic and export market access for fruit and vegetable commodities. Improving the effectiveness of surveillance and reducing the impact of incursions directly impacts on the viability of many horticultural industries and their reliant rural economies. One project aims to better predict and prove fruit fly presence by developing a dynamic targeted trapping grid (Box 4). Undertaken by the CRC for National Plant Biosecurity, the project is co-funded by the CRC, the Departments of agriculture in Western Australia, NSW and SA and by HAL. HAL funding uses matched levy payer funds - of which the apple and pear industry has provided 34 percent, citrus (33%) and the summerfruit industries (33%). The research outcomes will not only benefit growers (by providing orchard biosecurity), but also exporters (by ensuring market access), government (by reducing the costs of maintaining the national surveillance grid) and communities (who rely on horticultural industries for employment and economic growth).

Box 4: Trapping to better predict and prove fruit fly presence

Since 1990 areas of freedom from fruit fly have been managed through codes of practice under national and international agreements. The standard practice is based on the deployment of static trapping grids covering orchards, towns and urban areas. These grids are relatively effective when insect numbers are high, but are an inefficient strategy to detect early fruit fly incursions and are becoming increasingly expensive to deploy and maintain due to the prescribed fixed distances between traps. It is also clear that many traps are currently placed in unsuitable environments for fruit flies to satisfy trap spacing regulations and are highly unlikely to ever trap specimens. This leads to delays in detecting incursions requiring more expensive eradication efforts. While nil records are highly desirable, the grid system is cumbersome, expensive and not accurate although it is the best Australia has based on current knowledge. Many traps are placed in unattractive hosts because the grid system forces the placement at specified distances. Traps are often not in fruiting hosts for most of the year. The cost of maintaining these national grids exceeds \$12 million annually and is difficult to sustain under shrinking government budgets.

The fruit fly trapping project aims to develop a science based optimisation of trap placement that will replace the existing static trap grids. The outcomes will be better management of fruit fly incursions; an improved trapping system that is less expensive to maintain; a trapping system that will deliver a cost effective return on investment while minimising the number of undetected incursions which lead to breeding populations; and, a trapping system that will minimise incidences where market access is lost.

Source: Adapted from HAL

The Across Industry Program operated by HAL has also been an effective mechanism to fund research activities that extend beyond horticulture. The climate change CCRSPI program is one example. The collaborative effort between various horticulture industries to assist the pollination industry provides another example. In this case, a project was funded through HAL to ascertain what level of surveillance is needed to ensure early detection of an incursion of Varroa and the maximum chance that eradication is possible. The application of a risk analysis framework is being used to provide a clear decision support process that allows risk and consequence to be weighed against cost of implementation. The project is being funded by matched levies from the almond (13.9%), apple and pear (5.9%), avocado (3.5%), cherry (7%), dried prune (1%), onion (6.9%) and vegetable (52.1%) industries, as well as a matched voluntary contribution from the canning fruit (3%) and melon (6.9%) industries. The Rural Industries R&D Corporation (RIRDC) is the research provider, although the project is not funded by the bee industry.

6.5. Difficulties with the Across-Industry Program

Managing an Across-Industry program is difficult because horticulture comprises a significant number of very diverse industries, all with different research needs. Additionally, where areas of commonality do exist, priorities may diverge because each industry is in a different stage of development and faces a different set of challenges.

As a result, obtaining agreement within the Across Industry Committee for across-horticulture and across agriculture research investment can be difficult. There has been some criticism in recent years, for example, that not all horticulture industries should pay for export market access research as many have a purely domestic focus. Similarly, while investment in managing certain pests might benefit temperate fruit and vegetable industries those pests may not be relevant to tropical fruits and vegetables.

Multi Industry Program

These complexities do not signify, however, that the HAL RDC system, and especially the semi-silos around industry levies, is broken. To the contrary, HAL has adopted a flexible approach with a multi-industry program that can address issues common to some, but not all, members of the RDC. For example, funding for the national fruit fly strategy, which aims to integrate and co-ordinate all existing fruit fly research taking place in Australia, is being funded by all fruit and vegetable members of HAL but excludes the nut, turf and nursery industries which have no interest in this matter. Likewise, an integrated management strategy to control thrips is a project funded through HAL by the apple and pear and the stone fruit industries but excludes other fruit and vegetables which are not affected in the same way.

Approximately twelve percent of expenditure made by the apple and pear industry in 2008/09 was used by HAL to fund multi-industry projects (Table 5). These figures are in addition to the monies provided by the apple and pear industry to fund the across industry program presented in the earlier Table 4.

Table 5: Expenditure by Apple and Pear Industry \$ million

		2004/05	2005/06	2006/07	2007/08	2008/09
Dedicated A&P	Levy	1.978	2.121	2.059	2.304	2.533
Dedicated A&P	VC	4.098	2.312	1.916	.716	1.479
<i>Total</i>		<i>6.076</i>	<i>4.433</i>	<i>3.975</i>	<i>3.020</i>	<i>4.012</i>
Multi-Industry	Levy	.111	.063	.239	.165	.535
Multi Industry	VC		.094	.02		
<i>Total</i>		<i>.111</i>	<i>.157</i>	<i>.259</i>	<i>.165</i>	<i>.535</i>
Across Industry	Levy	.040	.119	.027	.029	.036
Across Industry	VC			.004	.005	.008
<i>Total</i>				<i>0.031</i>	<i>0.034</i>	<i>0.044</i>
A&P Expenditure		6.227	4.710	4.265	3.219	4.591

Source: HAL

Implications of Changes to Across Industry Funding

Nevertheless, more can and will need to be done to encourage greater research co-operation within the horticulture group. This is especially important in light of the forthcoming changes to the Across Industry funding rules arising from the newly negotiated Statutory Funding Agreement (SFA) struck between DAFF and HAL.

Specifically, the across industry program is currently funded on the basis of a one per cent take on both the R&D levy income and industry voluntary contributions which is then matched by government contributions. From July 1 2010 the across-industry take on levy funds will increase to 1.5 percent and over the next three to four years will increase further up to a total of five percent by 2014.

Accounting difficulties will inevitably arise from changes to the Statutory Funding Agreement (SFA) which broadens the scope of Across Industry funding to include multi-industry projects as well as across industry and across-RDC program expenditure¹¹.

¹¹ Currently multi-industry projects are funded from each of the relevant individual industry fund pools. The Across-Industry funding pool is currently only used to support projects that cross all horticulture industries and includes those projects which HAL co-invests with other RDCs. Once multi-industry projects

But the scale of the Across-Industry program will also bring challenges. The potential to build a portfolio of projects that have relevance and benefit, as well as coincidental timing, to all or a subset of horticultural industries to match the five-fold increase in “tied” funds has yet to be explored. However there is a real possibility that there will not be enough projects that provide value. In this case it is likely that the across-industry program will include much research that has considerably less merit in aggregate to all industries than the aggregated merit of industry specific projects.

Some of the additional funds going into the Across-Industry pool could be spent on a more comprehensive stock-take of current research and industry strategic needs of all horticulture industries. This will provide a more detailed analysis of where commonalities lie and how they align with the research priorities across and within horticulture. One view might be to take subsets of horticulture so that common interests are more readily apparent and impediments to change less likely resisted. Subsets might be temperate fruit industries (apple and pears, stone fruits, cherries and nuts), tropical fruits, root vegetables and leaf vegetables. Obviously any artificial groupings or permutations will have their own limitations.

Additional effort will also be required to provide a greater understanding to HAL members of the benefits of cross-industry and cross-agriculture research. Horticulture industries must be provided with more persuasive information that demonstrates how proposed cross-industry or cross agriculture investment can create either: i) measurable savings or productivity improvements; ii) an expansion in domestic or export sales; iii) improved supply chain efficiencies or iv) community and consumer benefits including improvements to environmental management.

Strong leadership to bring about a major cultural shift may also be required. Horticulture is a nomenclature, not a relationship. Gaining a greater degree of mutual co-operation between the parties, so that differences are acknowledged but collaboration and support is embraced, is fundamental to moving forward.

6.6 Collaborative work with overseas entities

The apple and pear industry is well advanced in terms of both harnessing international expertise and in leveraging international funding. APAL clearly sees the international R&D community as an opportunity rather than a threat, and one that contains both knowledge and know-how that must be exploited to the advantage of the Australian industry.

are incorporated into the (bigger) Across Industry pool, a mechanism will be required to provide some comfort of fairness or equity to prevent particular industries from dominating expenditure within the pool.

It is not known what percentage of the world's apple and pear research is undertaken within Australia. It is likely, however, to be relatively minor given the small size of Australia's production of apple and pears compared to the rest of the world (at less than 1%). But buying "off-the-shelf" research outcomes is not always possible or desirable. There are often considerable delays in getting new technology and know-how to Australia. This can be due to proprietary rights or to quarantine requirements. Additionally, there is a need to adapt and develop international technology and know-how to the various regional growing conditions across the country.

Co-investment and joint effort with international research can benefit Australia enormously: it can increase the quality of research by uniting expertise from around the world and achieve research outcomes that may not otherwise be possible; reduce overall research costs by pooling knowledge and resources; and by up skilling Australian researchers through direct exposure to international scientific developments.

International collaboration in R&D is particularly important in the apple and pear industry given Australia's relatively low level of productivity compared with international standards. To this end, APAL and HAL work closely to promote the utilisation of experts located in New Zealand especially, but also Europe, South Africa and the USA.

For example, Dr María López from the Instituto Valenciano de Investigaciones Agrarias in Spain is currently finalising research into the role of insects in spreading fire blight from infected apples to healthy apples and demonstrating a transmission pathway of this disease through trade in apple fruit. A distinguished microbiologist and plant researcher, Dr López had previously worked (under another levy payer matched government project) to establish that mature apples could be carriers of fire blight without showing any kind of symptom. Knowledge such as this is critical to maintaining the healthy status of Australia's pome fruit industry and its national biosecurity.

Another example is Prevar™, a joint venture company established to access international economies of scale in the development and commercialisation of innovative apple and pear products (Box 5). Investment in breeding programs is considered important in Australia because growers require access to novel varieties of apples and pears in order to remain competitive. However an individual grower does not have the ability to undertake or fund this type of research, which requires specialist expertise and infrastructure as well as a considerable investment horizon (the length of time required to undertake crosses and selection of germplasm, growing trees and evaluating the fruit).

In an effort to overcome this market failure, the Australian apple and pear industry has seized the opportunity to join forces with Plant Food New Zealand which operates one of the most significant breeding programs in the world. The joint effort affords the Australian industry an opportunity to both influence the type of new varieties being

developed and to have first access to the products developed. Prevar™ was established in 2004 and involves the peak industry bodies in Australia and New Zealand (APAL and Pipfruit New Zealand) and Plant Food Research New Zealand. The project is funded by levy payers and matched government funds (A\$10.5 million Life of Project to date) and NZ\$12.4 million from New Zealand's Foundation of Research Science and Technology which underpins PFR's involvement.

Box 5: Prevar™

Prevar™ is a joint venture company with equal major shareholdings of Pipfruit NZ and APAL and a minor shareholding of PFR. Prevar™ is responsible for developing and commercialising innovative apple and pear products. Prevar™ has a service agreement with Plant Food Research New Zealand (PFR) to undertake a breeding programme to develop cultivars that meet consumer demand for novel, fresh, great tasting, healthy and convenient fruit varieties.

The program aims to improve the efficiency, effectiveness and timeliness of cultivar delivery by progressing classical breeding methods and integrating them with new genomic-based breeding technologies. These "fast-breeding" technologies include the identification of molecular markers that are associated with certain traits from (candidate) genes that regulate the trait's expression. These markers can then be used by breeders to select plants with the desired trait early in the breeding cycle.

Part of the research effort requires that a deep understanding of consumers' needs and market trends is developed and that requirements of retailers are understood.

Prevar™ has a service agreement with the Associated International Group of Nurseries which undertakes initial evaluation, commercial evaluation and subsequent nursery tree production to meet commercial demand.

Prevar™ has exclusive licensing rights to the varieties produced. To date three apple and two pear varieties have been released onto the Australian market for commercialisation.

6.7 Opportunities for greater collaboration

Data collection and analysis is one area where APAL would like to see greater collaboration. Well researched production and profitability data is required for the development of good public policy and provides the foundations for research and private sector planning. Across Industry funding would help individual industries defray the significant costs associated with detailed production censuses and profitability surveys.

Official data across the horticulture sector is extremely poor, following years of neglect by both the Australian Bureau of Statistics and the Australian Bureau of Agriculture and Resource Economics. While broad-acre farming has long enjoyed access to detailed, regular statistical information and analysis, horticulture has had to fund its own. Many don't, simply because of the costs involved.

For example, the apple and pear industry has recently had to cease the annual Apple and Pear Survey conducted by the Australian Bureau of Statistics because of a rise (in the space of one year) in the costs of undertaking the survey from about \$50,000 pa to \$320,000 pa. This survey provided on-going and invaluable information with regard to production by variety, distribution between the fresh market and processing, and, cool storage capacity. Basic information of this type is crucial to understanding the fundamentals of the industry.

Project evaluation is another area where APAL would like to see greater collaboration. APAL agrees that both *ex ante* and *ex post* project evaluation is required of major programs to examine whether the program is likely to deliver an appropriate return on investment and whether expected outcomes have been realised. Such information could be usefully employed by the apple and pear IAC to inform future R&D investment decisions. In addition to measuring the benefits realised from a specific research or industry development initiative, evaluation can be used to assess the performance of the research team and the methodology employed. Project evaluation can assist in assuring both growers and government stakeholders about the return on their investments. Project evaluation can also assist with developing lessons learned and ways to improve future project design as well as whether some research organisations are able to deliver more effectively than others.

Nevertheless, evaluation is complex and costly. Too much of the matched pool could be readily expended on measuring expected and actual outcomes and too little on research itself. Separate and additional government funding could be provided, perhaps for the Rural Research Development Council, to develop appropriate evaluation methodologies and to conduct project assessments. Having one organisation take responsibility for evaluation could reduce duplicated effort and provides a basis for consistency across RDCs. It might also reduce the burden associated with developing a means of measuring research outcomes at the "full" adoption/uptake stage which may be several years after project completion.

7. LEVY ARRANGEMENTS

7.1. The merits of compulsory levies

Research and development in the apple and pear industry is largely non-excludable and the potential for some to free ride on the efforts of others is a significant issue. Compulsory levies are the only meaning way to address this type of market failure.

Compulsory levies are also required to address the issue of scale. For example, the apple and pear industry is characterised by a large number of geographically dispersed growers (725 businesses in June 2009)¹² each accounting for only a small share of industry output. For example, 2 out of every 5 growers produced a crop valued at less than \$200,000 in June 2009 – returns from which labour, fuel, chemicals, water and borrowings must be paid.

The small size of individual operations means that the vast majority of apple and pear growers would simply not be in a position to fund research or development of the scale required to generate useful outcomes. Compelling orchardists to contribute ensures a pool of funds sufficient in size to undertake meaningful RD&E. It also ensures that growers have equal ownership of the research effort and equal rights to take-up the research outcomes and share the resulting benefits.

7.2. Levy collection arrangements

Over the past few years the Levy Revenue Service has recovered just over 3% of the levies collected from the apple and pear industry to cover their collection costs. It is understood that the Levy Revenue Service is currently reviewing its costs and the manner in which costs are allocated across industries. Whilst APAL is sympathetic to the concerns of many industries which face very large recovery fees, the apple and pear industry would not welcome any increase above the rate currently applied.

Minimising the potential for ‘leakage’, especially from wholesalers purchasing directly from growers, is one area that requires further investigation and the apple and pear industry believes that more effort could be applied to policing the levy collection process.

7.3. Levy Amendment arrangements

The procedures for amending levy rates are unduly cumbersome because of the complicated and costly consultation processes that are required when making any

¹² Australian Bureau of Statistics Agricultural Commodities 2008-2009 Cat No. 7121

amendments to the levy irrespective of whether proposed changes are significant or trivial.

APAL acknowledges that the twelve Levy Principles ensure good and necessary governance in cases where an industry proposes a new levy or where a proposed rate change is of significant magnitude. However the twelve Levy Principles are unnecessarily complex and costly where trivial changes are sought.

For example, during 2009 APAL sought to amend apple grower levies to meet the increased subscription costs of membership to Plant Health Australia. APAL proposed to growers that the PHA levy applied to fresh apples (both domestic and export) be doubled from 0.01 cents per kilogram to 0.02 cents per kilogram and that the R&D levy be reduced accordingly, from 0.73 cents per kilogram to 0.72 cents per kilogram (for fresh domestic and fresh export apples).

APAL went to considerable effort and expense to ensure that all levy payers were aware of the proposed levy changes and had the opportunity to express a view on the proposals. The effort was consistent with the Levy Principles and involved extensive advertising, direct mailing to growers and 8 grower meetings held across Australia. These efforts culminated in a Levy Payers meeting at which voting took place. Due process associated with the Levy Principles was required despite the fact that the rate changes were of a magnitude of one tenth of one cent and that the net impact on growers was zero.

Because of the significant costs involved in undertaking this exercise, APAL took the opportunity to propose that an additional levy be established at the same time. Specifically, APAL proposed a funding mechanism (levy) to enable the industry to meet its share of the cost of managing an emergency plant pest or disease outbreak as required under the PHA Emergency Plant Pest Response Deed (EPPRD). The proposed levy was initially set at zero for fresh domestic, fresh export, juicing and processing apples and pears.

A commencement date of 1 January 2010 was proposed for both the new emergency response levy and the changes to the Plant Health Australia and R&D levies. A letter to the Department of Agriculture Fisheries and Forestry seeking amendments to the levies was submitted in early September 2009. APAL received an official notification from DAFF on 8 June 2010 (nine months later) that legislative instruments have been registered on the Federal Register of Legislative Instruments (FRLI). Obviously the planned commencement dates have come and gone. Consequently APAL's ability to fully meet its financial commitment to PHA was to be impeded and the apple and pear industry was left vulnerable to financial difficulties in the event of a significant pest or disease incursion.

Some method of streamlining the processes required for lodging levy amendment proposals and streamlining government consideration of such proposals is required.

7.4. Processor Levies

In addition to levies placed on fresh fruit sold to fresh domestic and export markets, levies are also currently charged on apples and pears sold into the juicing and processing markets (Table 6).

Only low quality fruit is directed to the juicing and processing sectors and few orchards are dedicated to servicing these markets. The considerably lower rates for R&D levies paid on fruit destined for the juicing and processing sectors is a direct reflection of their by-product nature.

Whether juicing companies and processors (predominantly canneries) deduct the cost of the levy from payments to growers or absorb it into their costs is not known. However, it is more than likely that a significant portion of the R&D levies are passed back so that apple and pear growers effectively pay the levy charged. This is because low cost imported concentrate can readily displace apples sourced from Australia. Similarly, canned Australian product is expensive relative to competing canned products particularly in overseas markets.

For example, over the eight years from 2001 an average of 17% per cent of the Australian apple crop has been directed to processing – principally for juicing, although a small quantity is directed to pie production. However an underlying downward trend has emerged in the last few years as processors have switched to cheap imported concentrated apple juice (CAJ), so that by 2008 only 13% of apples were taken by the processing sector.

Apple juice imports from China, which accounts for over 88 percent of Australian apple juice imports, have increased in volume by more than 20 percent in the past few years. The sheer volumes coming out of China make it a formidable competitor. It accounts for almost 45 percent of world production of fresh apples and exports over 50 percent of the world's trade in CAJ¹³. China is a very low cost producer, placing product into Australia at A\$1.16 per litre in 2009.

The decline in the processing market for apples is of particular concern because lower quality apples are forced back onto the fresh fruit market. This not only diminishes product returns overall with processing type apples fetching lower prices, but taints the consistency of product quality that the industry is working hard to protect.

¹³ World Apple Review, 2009.

Table 6: Levy Rates for Apples and Pears (excluding Nashi)
(As at June 2010)

Commodity	Active Rate	Unit	Marketing	R&D	PHA	NRS
domestic apples	1.845	cents/kg	1.03	0.73	0.01	0.075
domestic pears	2.099	cents/kg	1.249	0.775		0.075
export apples	1.845	cents/kg	1.03	0.73	0.01	0.075
export pears	2.099	cents/kg	1.249	0.775		0.075
juicing apples	\$2.75	\$/tonne	\$2.00	\$0.65		\$0.10
juicing pears	\$2.95	\$/tonne	\$2.25	\$0.60		\$0.10
processing apples	\$5.50	\$/tonne	\$4.00	\$1.30		\$0.20
processing pears	\$5.90	\$/tonne	\$4.50	\$1.20		\$0.20

Source: Levy Revenue Service May 2009.

A similar concern arises with pears. The past decade has witnessed a steady downward trend in the tonnages of fresh pears taken up within the processing (predominantly canning) sector. For example, only 32 percent of pears went to processors in 2007-2008 compared with more than 42 percent a decade earlier. The diminishing market for pears in processing aligns with the contraction in overall canned fruit production as Australian canned pear exports have been displaced in key markets by very low cost producers in China and Poland.

Growing the throughput of apples and pears into the Australian juicing and processing sectors is not a priority for the apple and pear industry because the returns for growers are simply not there. For example, orchardists currently receive about \$500 - \$800 per tonne for non-premium fresh apple fruit before grading and packing costs are extracted. This compares with \$100 per tonne (or less) for processing quality fruit.

8. GOVERNANCE ISSUES

8.1. Enhancing governance arrangements

APAL believes that the light handed governance arrangements around HAL have provided it with the necessary flexibility to discharge its responsibilities in a way that

suits the needs of a complex sector. Perhaps because of the number and range of industries, HAL is often under pressure to operate efficiently and effectively, and to respond to the reasonable expectations of all stakeholders.

As an “A” Class member of HAL, APAL is satisfied with the breadth and depth of skills of the HAL Board.¹⁴ As required under the HAL constitution, the Board is skills based, and current Directors possess an appropriate balance of experience and expertise in corporate governance, finance, public policy, business, trade, marketing, research and horticultural production and environmental management. The broad level of expertise on the HAL Board is one of the critical success factors behind the strategic direction and oversight of HAL operations. The Board has credibility, with a number of Directors possessing some experience in horticulture. For example, currently there are three directors who are levy payers in their own right: from the nursery industry, the nut industry and the vegetable industry; two of whom were formerly Chairs of their respective peak industry body. However it is equally clear that the HAL Board is not dominated by the vested interests of any one industry.

Establishing a functional Board that comprises a grower from every horticulture industry is simply not feasible. The issue of effective grower representation has been successfully overcome with the creation of the Industry Advisory Committee system which is so integral to managing the R&D portfolio.

Although external and independent expertise adds value to the IAC process, APAL is of the view that the Industry Advisory Committees must incorporate substantive grower representation. Divorcing the peak industry body from the IAC would lead to a number of problems including:

- The potential to create two “views” of the world. This would create confusion amongst growers and research providers;
- An increased cost arising from a need to consult with the peak industry body. At present the IAC - peak industry body relationship is one of liaison which incorporates both consultation and collaboration.

It would be logistically impossible for the HAL Board to make considered determinations in relation to the investment of RD&E monies and marketing funds on a commodity by commodity basis. The Industry Advisory Committee provides the means by which industry strategic plans can be developed and employed to align the R&D investment portfolio and marketing expenditure to the needs and priorities of each industry. As much of the detailed work in designing programs, monitoring progress, reviewing submissions and evaluating outcomes is undertaken by the apple and pear R&D subcommittee it is appropriate that this body (rather than the IAC) has more specialist expertise and fewer grower representatives.

¹⁴ The Chairman of APAL is a member of the Selection Panel of Directors of HAL.

APAL does not support the view that the HAL Board requires a government stakeholder representative or a government stakeholder observer. HAL is a not-for-profit, industry-owned company and it works well in partnership with individual industries to invest in research, development and marketing programs that provide benefit to both industry and the wider community. If the Government requires more accountability than it currently receives from HAL¹⁵ this issue should be pursued through the Statutory Funding Agreement between DAFF and HAL rather than through the composition of the Board. Nevertheless, APAL is generally supportive of suggestions of the attendance of the Chair of the National Horticulture Research Network (NHRN) as an advisor to the Board of HAL.

8.2 Industry Consultation Processes

APAL believes that the current industry consultation protocols are effective and that key stakeholders are routinely consulted with adequate opportunity to make their views known. Consultation protocols between HAL and its stakeholders include:

- With the Peak Industry Bodies (including APAL) through their individual IACs
- With members through the Industry Forums
- With growers through the a) production of an annual report to industry and b) funding for the peak industry body to undertake an Annual Levy Payers meeting.

Only a small number of apple and pear growers attend the Annual Levy Payers meeting (ALPM). This may reflect grower satisfaction with ongoing communications from APAL and the adequacy of the mailed copy of the report to stakeholders. Independent surveys indicate general satisfaction amongst stakeholders of both APAL and HAL.

The number, complexity and diversity of commodity stakeholders within horticulture make consultation both time-consuming and expensive. Nevertheless, APAL does not believe the legislative requirement for HAL to consult with peak industry groups should be scrapped. Replacing peak industry body consultations with a more generic requirement simply requiring consultation with an appropriate range of stakeholders would be inappropriate. This is because:

- Horticulture does not have one “voice” and each industry must be treated separately to provide an equitable hearing to growers within each of the industries. Even if a single entity were reformulated to represent horticulture, the role of that organisation would be targeted solely at representing the interests of horticulture to government.
- Individual PIBs have well established on-ground connections and communication paths. It would be costly for HAL to develop these connections.

¹⁵ HAL is currently held accountable to both members and the government through its Annual Report, Annual Report to Industry (for each commodity), three year review, publication of research outcomes and requirements under the Deed of Agreement.

- Direct interaction by HAL with “an appropriate range of stakeholders” raises the issue of what constitutes an appropriate range and how that actually differs from the PIBs themselves.
- Direct interaction by HAL with individual growers or a range of grower groups would inevitably expose HAL to agri-political issues. This would be inappropriate. It is the PIB’s role to interact with HAL in a manner that enables the RDC to carry-out its functions without compromising HALs relationship with ultimate stakeholders – the levy payers and government.

8.3 Combining R&D responsibilities and other industry services

APAL believes that it is imperative that HAL retain the responsibility for managing *both* R&D funds and the marketing levy. The current apple and pear industry strategic plan takes a whole of supply chain or tree to table approach to addressing the challenges that it faces. The Strategic Plan acknowledges that research and marketing efforts must be calibrated to ensure that promotional efforts to encourage greater apple and pear consumption and exports are not undermined. For example, a key element of the Apple and Pear Industry Strategic Plan – *New Horizons 2015* – is the development of an Aussie apple brand which aims to differentiate the Australian product from imported apples (which are expected to enter the domestic market within the next year). However, this is not simply a marketing exercise. A system of establishing and ensuring a base level of quality will be required to protect the brand. Research into what might constitute the appropriate elements of that base quality – colour, size, that it be free of residues and reasonably free of defects (pest and/or disease) - as well as research into how to maintain compliance, badge product (through branding stickers) and ways of co-existing with producer owned brands are some of the many research components associated with this exercise. This illustrates the manner in which marketing and research efforts are intertwined. Having the one body – the apple and pear IAC – to manage the two sets of funds is of strategic and practical importance.

However, APAL does not believe that HAL or the apple and pear IAC has an industry representation role. This is because:

- i) HAL does not have an intimate understanding of apple and pear production and supply chains and is therefore not in a position to appreciate the implication of policy and regulatory developments.
- ii) HAL does not have on ground grower connections and would not be able to liaise with growers in regard to policy positions.
- iii) HAL would be conflicted in representational roles because across the 37 members there will always arise some conflict between members.

Nevertheless, APAL is sympathetic to the needs of many small PIBs that do not have adequate resources to undertake policy and regulatory analysis, strategic planning, issues management and industry representation.

9. OPERATIONAL ISSUES

9.1 Increasing administrative efficiency

APAL agrees that efficient administrative structures are important to ensure that levy payers and the Government obtain maximum value from their funding contributions. At present 13.1 per cent is applied as a corporate cost recovery (CCR) fee to RD&E (and marketing) projects¹⁶. This is above the 11.2 percent average rate applied over the 2006 to 2009 period. The corporate cost recovery rate is scheduled to drop to 11.6 percent in 2010/11 in line with a reorientation of some services, including the provision of project design work on a fee for service basis rather than as part of corporate costs.

Nevertheless, it is not clear how efficient HAL is relative to other RDCs and how the cost recovery rates compare. A process of benchmarking the costs and activities of all the RDCs would provide greater transparency as well as internal incentives for HAL to operate more efficiently.

As outlined in Section 10 below, APAL does not believe that administrative savings could be achieved by amalgamating HAL with other RDCs, irrespective of whether they cover crops or broader agricultural sectors. APAL believes that HAL has reached its maximum portfolio size and any incorporation would necessitate bigger bureaucracies to manage the significant workloads and competing priorities. These bureaucracies would add to the administrative burden and diminish the capacity for individual horticultural industries to “be heard”.

Instead, greater consideration might be given to amalgamating the “back office” facilities, such as legal, accounting, information technology, human resources and general administration, of the RDCs. These facilities might be purchased by HAL and other RDCs on a fee for service basis to ensure that larger more dominant industries are not cross-subsidised by industries that may not require the on-going use of such services.

APAL believes that it is important for HAL members to continually work with HAL management and the HAL Board to explore opportunities to streamline research

¹⁶ Some projects including industry annual reports, study tours and conferences have lower initiating and maintenance costs and therefore attract a reduced corporate cost recovery rate of 10.2 percent.

portfolio management practises. On-going administrative savings and greater alignment of research activities with industry strategic needs might be achieved through:

- A greater emphasis on commissioning research programs rather than purchasing research projects from general calls;
- Improving the speed of converting proposals into endorsed projects. In turn this might relate to the quality of evaluating projects prior to consideration by the RD&E subcommittee of the industry IAC and better and more prompt feedback to research sponsors;
- Improving the on-going oversight of the progress of investments;
- Improving the ex-post evaluation of investments;
- Improving the capacity to cross-fertilise the outcomes of research in one industry to benefit other horticulture industries

These activities require effort on the part of the IACs, HAL and the PIBs.

10. RESTRUCTURING THE RDC MODEL

10.1 HAL is an effective RDC model

APAL is fully supportive of the HAL model of an RDC. As indicated in this submission, it is clear that HAL is an effective portfolio manager of research monies from levy payers, industry (through voluntary contributions) and matching government funds. In the main, HAL works well. Although there is always room for improvement, both in terms of efficiency and in the degree of collaboration, these issues can be readily addressed by HAL members and the RDC community. Put simply, the horticulture RDC system is not “broken” and does not require restructuring.

Four fundamental platforms make HAL work. They are:

- The breadth and depth of a skills based Board to provide strategic leadership to portfolio management;
- The involvement of the PIBs within the IACs to guide investments that meet the strategic needs of individual industries;
- The Across-Industry program which assists in achieving collaboration between the horticulture industries (or appropriate subsets where relevant);
- The semi “silos” around the monies associated with individual industries.

The Productivity Commission proposed a number of alternative models in the Issues Paper. These relate to the possibility of amalgamating some of the RDCs and/or to the possibility of reallocating government funds to a special purpose body. These are explored in turn below.

10.2 Amalgamation of RDCs

The possibility of amalgamating some of the RDCs was raised (Productivity Commission 2010 Issues Paper) as a means of reducing duplication, improving collaboration and obtaining greater focus on meeting government research priorities.

Amalgamating HAL with any other RDC would be inappropriate. APAL believes that HAL has reached its maximum portfolio size. Any incorporation of other commodities would necessitate bigger bureaucracies to manage the significant workloads and competing priorities. These bureaucracies would add to the administrative burden and diminish the capacity for individual horticultural industries to “be heard”. Adding in more industries would create another level of complexity and multiply the lines of accountability. This would diminish HALs ability to understand its core business.

APAL does not wish to engage in a debate about the relative merits of amalgamating the non horticulture RDCs. Nevertheless, the experience of HAL indicates that:

- From time to time there will always be tensions where groups of commodities are connected;
- The system of silos around research monies is essential to achieve a degree of harmonisation and self-determination.

10.3 Redirecting Government funds

The possibility of reallocating matched government funds from the RDCs to a new body was also raised. Specifically, the Productivity Commission proposed two models:

- The new body would receive the “matched government” equivalent to fund research it purchases directly from research providers. Under this model the RDCs would only receive levy payer monies (and industry contributions) to fund RD&E but would not receive any matching from government. The RDCs would continue to be purchase research (albeit from a halved pool) from research providers (Figure 1)¹⁷.
- The new body would fund research proposals on a contestable basis from submissions made by the RDCs. Under this model the new organisation would receive the “matched government fund” equivalent. New organisation would seek submissions from the RDCs and allocate funds on a competitive basis. Successful RDCs would, in turn, sub-contract the project to research providers (Figure 2).

¹⁷ The Figures present a suite of RDCs - fibres (such as wool and cotton), intensive livestock products (dairy, eggs, poultry and pork), broad acre livestock (beef, sheep meat, live trade) and horticulture. This is for illustrative purposes only (to reduce the complexity of the diagram flows) and in no way presents an APAL preferred composition of the RDC system.

APAL believes that these proposals would be highly detrimental to the research effort in the apple and pear industry. The most immediate impact and the one of greatest concern is that the existing matched levy-payer funding pool would be halved. This would mean that a large proportion of the proposed research effort would be shelved, simply because of a lack of funds. This would pose a difficult choice upon the apple and pear IAC, with a significant overhaul in regard to priorities required. At present, research is spread across a number areas including: biosecurity, market access, germplasm development, productivity and the supply chain, climate change and industry development. Research in some of these areas would need to be scaled back considerably or shelved to enable others to proceed.

Continued funding of major programs such as PIPS and Future Orchards is of particular concern as these require scale in order to provide meaningful outcomes. Additionally, projects which have leveraged funding from other sources, particularly international sources, such as Prevar™ and PIPS, would become vulnerable and their viability challenged.

Voluntary contributions are also likely to decline. This is because government funding is often used as seed money. Without an ability to match their own limited resources, industry is unlikely to proceed with projects. There may also be a significant reduction in industry development, critical in gaining uptake of research outcomes, as a number of extension officers are co-sponsored by industry and government.

Additionally, the money available for apple and pear research will be squeezed further because the functions which HAL performs to support the research portfolio will be spread over fewer projects. It is not true to say that a halving of funds will create a commensurate reduction in services required.

Projects commissioned by the new organisation are also likely to be broadly based with a generic focus on agriculture. This in turn has two consequences. First, the traditional broadacre industries are likely to have a greater influence on the requirements of “agriculture” simply because of their dominance in the value of overall agricultural output. Second, the generic nature of broad based research creates an additional requirement for development – the process by which research outcomes are deconstructed for adaptation to specific industries. The relatively small size of the apple and pear industry means that research for “agriculture” is likely to have little alignment with the industry’s specific strategic needs.

It is also not clear that the proposed models would achieve the government’s objectives - reducing duplication, improving collaboration and obtaining greater focus on meeting government research priorities – more effectively or efficiently than the current RDC system. There are a number of complex issues that would need to be addressed to ascertain this, including:

- On what basis could greater co-operation between RDCs be obtained under a contestable model? With the reduction in the funding base of each RDC there is likely to be an increase in competitiveness to fill the gap.
- How could overall administrative costs be reduced? The new organisation would require its own suite of portfolio management expertise and supporting corporate functions (IT, Finance, HR, IP). This would add to, not reduce, the administrative costs of managing research investment.
- What mechanism or criteria would be used to allocate the “matched government contributions”? In the first model the new organisation would need to rationalise the research proposals submitted by research providers. Otherwise the new organisation would need to develop its own programs to commission them from research providers. In the second model, the new organisation would need criteria to select from the proposals submitted from the RDCs, either individually, jointly or from across subsets of RDCs.

Either way, judgements must be made on the merits of one project over another. It is unlikely that the strategic research needs of agriculture would be achieved if projects were chosen simply on the basis of the “best” fit with government research priorities or the highest degree of co-operative effort. New organisation would be compelled to judge the merits of research which it has no capacity to understand. Although the new organisation could readily establish an interface with each RDC and over-arching bodies such as the Chair of Chairs, it would not have the exposure to individual industries necessary to understanding the productivity, environmental and supply chain imperatives that each industry must meet in order to remain competitive in a globalised world.

**Figure 1: Government Matched Funds
determined by New Organisation**

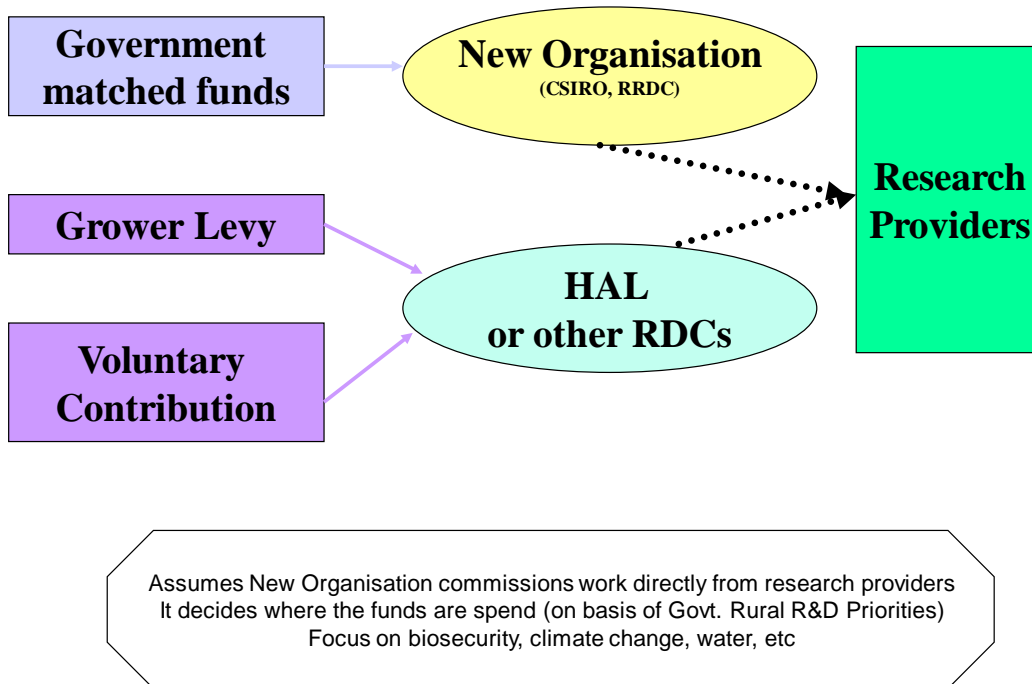


Figure 2: Government Matched Funds are Contestable

