

# Survey Report

## National RD&E Survey

*Australian RDC and CRC organisations*

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A draft Survey Report was issued in July 2010. This report was finalised and updated in January 2011.

The final report recognises developments in the interim including the Productivity Commission Draft Rural Research and Development Corporations Report, the PISC RD&E Extension Framework Project and initiatives of the Council of Rural R&D Corporations (CRRDC) and CRC Association.

## Disclaimer

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## They said...

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One CRC commented ... *the science community being aware of (R&D) outputs is less important than industry being aware.*

A number of respondents reported strong and direct linkages with government extension agencies although a small number reported that ... *linkages with government (extension) agencies are becoming more difficult, expensive to deal with or are in decline.*

Respondents also commented on links with the agribusiness sector ... *it is a vital link to support uptake by end users ... the links are program/project dependent ... seeking to/exploring strengthened/more formalised links ...* while others reported concerns about commercial integrity and particular delivery mechanisms and the need to ... *support not hinder private sector growth.*

In terms of enabling adoption related actions to be fully implemented, there appears to be urgency to implement plans to address these needs, recognising structural issues such as ... *not all researchers are suited to deliver information to end users, and there is a need to ... discuss the value of next users in supporting this process, as well as ... implementing cultural change with project leaders so they see E&A is part of their responsibility.*

Respondents have plans to ensure research outputs are effectively adopted by users and ... *their focus on adoption will remain strong.*

Comments on MER issues revolved around ... *the large variation in how this is completed and to what depth, noting cost being a limiting factor.*

Overall comments on going forward included ... *share learnings/understanding around extension practice and adoption ... creating a Centre of Excellence or more contemporary CVCB for common issues and sharing ... single access point for research and extension/adoption materials ... engaging universities in a more focused approach to improving extension and adoption ... promoting innovation and entrepreneurship, and ... how to access non-traditional approaches from outside primary industries.*

# Executive Summary

## Key messages

The Extension and Adoption of R&D outcomes is a fundamental component of the national RD&E programs managed by RDCs and CRCs. Their application along the whole supply chain aims to support changed practices by end users – farming enterprises, local government and landholders – through the adoption of new technologies that are relevant to those specific end users.

It recognises that next users – private consultant advisers, national company advisers, publically funded advisers, extension officers, NRM organisation personnel, etc – all have a potentially significant role in this process. The provision of information through a range of delivery processes is supported by the synthesis of the R&D outcomes so that end users understand how best to apply the information in order to achieve benefit through practical on-ground application of these R&D findings.

However the specific role of RDCs and CRCs in the Extension, Adoption and Practice Change continuum is poorly articulated. Functions such as Marketing, Promotion, Public Relations, Education, Training, Capacity Building, Monitoring and Evaluation, etc are largely considered to be part of this continuum although their 'fit' lacks clarity. Varied industry sectors are known to have specific programs and processes that have been developed or evolved to meet their needs.

The nature of Extension and Adoption (the overarching term used in this report) and its pivotal nature for end user beneficiaries of the national rural R&D program, means there is value in creating a baseline of the status of Extension and Adoption (E&A) in Australia. As a result this National RD&E Survey Report aims to create a baseline commencing in 2010.

The Key Messages arising from the survey findings are:

### **Common understanding of Extension and Adoption processes**

Survey respondents were asked to comment on the brief working definitions of the various functions indicated earlier – namely Marketing, Promotion, Public Relations, Communication, Engagement, Extension, Advisory, Adoption, Education, Training, Monitoring and Evaluation. Some such as Engagement, Training, Monitoring and Evaluation received no comment indicating general agreement.

The remainder were the subject of both general and quite specific comment, discussion and review with the terms Public Relations, Extension and Adoption attracting greatest comment. The specific comments revealed a very detailed understanding of the terms, their application and many nuances by a number of respondents – which was in contrast to the less considered responses.

These responses revealed some commonality with strongly held views on key terms and key concepts.

They also revealed great variance in understanding amongst respondents – some views are inclusive while others are explicit and exclusive and others appear somewhat unsophisticated.

This has implications for how the RDCs and CRCs guide strategic and operational thinking about E&A at the researcher, research administration/manager and user and adviser levels across the public and private sectors.

It is therefore relevant to consider whether a common understanding of the definitions and their application would prove valuable by removing diversity and confusion in relation to key E&A principles.

*A common approach to E&A principles, process and application would prove valuable across the RDC and CRC sector. At the least this would ensure cross-fertilisation of thinking in the sector; at best it would promote commonality where it is warranted.*

### **Responsibilities for E&A including Triple Bottom Line**

Respondents were asked to rate the level of their responsibility in terms of ensuring that R&D findings are adopted and used. Out of 10, where 10 is 'totally our responsibility', the CRCs' average rating was 8.7 while the RDCs rated 6.8. The Intensive and Extensive industries rated similarly.

This demonstrates higher commitment by the CRCs than the RDCs to E&A. For those sectors with both a CRC and RDC, this may prove effective in separating the functions of undertaking R&D and ensuring E&A. For those without a CRC, the focus on E&A could potentially be less.

Other relevant responsibility issues are – there was general agreement that the RDC/CRC role is to facilitate the researcher to user continuum at varied levels (from the program to the project level), ensuring that both end users and next users are aware of R&D outputs and can search to access them, then measuring the use and benefits of application of R&D outputs and ensure the outputs are effectively used by beneficiaries.

There is variation in – whether the R&D agencies are 'facilitators' or 'ensurers' of the Extension and Adoption of R&D outputs, the extent to which there is a key role to ensure the science community is aware of the R&D outputs (one CRC commented ... *the science community being aware of (R&D) outputs is less important than industry being aware*) and how to determine/assign/measure a level of responsibility/priority to the delivery of R&D outputs to end users whether at program or project level. One CRC reported ... *conflict with its industry RDC*.

The responses revealed considerable variation in the preparedness to take responsibility for E&A and measure effectiveness – including through the supply chain. They also revealed that respondents most focused on economic/productivity benefits from their research to adoption, then environmental, followed by social benefits.

## Executive Summary – cont'd

These responses lead to questions regarding – why undertake R&D if there is uncertainty regarding who is responsible for E&A? Similar questions relate to accessing data to assess the extent of the adoption process. Other questions relate to the low emphasis on social benefits when the focus of R&D is ultimately on E&A to provide value to beneficiaries.

*It is apparent that strategic thinking is required regarding the extent to which the RDC and/or CRC sector takes responsibility for the E&A function. This includes the extent to which these responsibilities relate to end users, next users and the science community. Such strategic thinking could also usefully focus on whether or not there is need to increase the focus on creating social benefits.*

### Linkages to other providers

The survey sought to understand the extent of linkages with government extension agencies, with NRM bodies, with the agribusiness sector and with other providers.

In terms of government extension agencies, all respondents indicated fairly strong linkages (with CRCs rating 8 out of 10 and RDCs rating 7.2). A number reported strong and direct linkages although close to a quarter reported that ... *linkages with government (extension) agencies are becoming more difficult, expensive to deal with or are in decline.* These observations raise questions about the risk management strategies of RDCs/CRCs if relationships with one of their major collaborators is becoming problematic. This is a particular issue if there is a very high or total reliance on government agencies for R&D and/or E&A. A number reported ... *capability varies between the states.*

In terms of NRM bodies moderately low links exist – CRCs rating 4 and RDCs rating 4.5. Intensive industries have much weaker links than do extensive industries (ratings 2.7 and 5.6 respectively) with many reporting low levels of relevance. In the extensive industries NRM bodies are seen to be 'needed' and 'effective in supporting communication to end users' although there is variation amongst respondents.

Overall respondents reported moderately strong links with the agribusiness sector (private consultants and national reseller/supplier/agent/pastoral houses) with little variation between RDCs and CRCs and between intensive and extensive industries. A number commented ... *it is a vital link to support uptake by end users and others commented that ... the links are program/project dependent.* Several reported that they are ... *seeking to/exploring strengthened/more formalised links* and some reported concerns about commercial integrity and particular delivery mechanisms while others reported the need to ... *support not hinder private sector growth.*

Some respondents also commented that their most effective engagement with end users is 'direct engagement' using a range of tools and methods whereas others prefer to use collaborators.

The consideration of the links with other providers in this survey raises significant questions regarding risk. First is the risk of increasingly uncertain relationships with government extension (and R&D) agencies particularly where there is high reliance on them.

Second is the increasingly vital link with the agribusiness sector and uncertainty regarding how best to engage with them. This includes recognition of the need to support rather than hinder the E&A function of this sector. The work of the Cooperative Venture for Capacity Building reported that the agribusiness sector is seeking stronger engagement with the RDC/CRC sector as are end users.

*As the linkages with other providers appears to be a significant area of risk for both RDCs and CRCs; some form of strategic consideration of risk mitigation would appear essential to secure the future of both the national R&D and E&A functions of the rural sector.*

### Building human capacity

There appears to be strong and targeted investment in fostering post-graduate research/studies across RDCs and CRCs in specific industries. RDCs were particularly active in the VET arena, informal skilling and supporting local community/industry groups, and schools based activities (year 8-12). Extensive industry CRCs were also quite active in the VET, community/industry groups.

The data suggests that a very sector specific focus is taken in all elements of building human capacity. In a number of cases there appears to be strong within sector collaboration and joint ventures. There is 'occasional across RDC/CRC collaboration (greater amongst RDCs than CRCs)' with the exception of the PICSE and Investing in Youth programs in which approximately half the RDCs invest (similar to the now concluded Cooperative Venture for Capacity Building).

The data also demonstrates the 'plethora' of programs in which principally RDCs invest. A number of respondents commented that they are 'developing new strategies' for 'people development programs'.

It is noteworthy that underinvestment and low levels of measurement of the benefits of social elements of the Triple Bottom Line have already been reported. Accordingly it would appear to be beneficial for a much more strategic approach to be taken to building human capacity. It would appear valuable for all elements of the 'human capacity supply chain' to be examined as part of this strategy and to examine how greater leverage of the funds that are spent could be achieved. A similar aim characterised the Cooperative Venture for Capacity Building. It may be timely for such a collaborative program to be re-visited.

*Due to the plethora of building human capacity programs that appears to be funded by RDCs/CRCs, a strategic examination of the human capacity supply chain appears warranted as does strong measurement of the social benefits.*

# Executive Summary – cont'd

## Budget allocations

The data shows that:

- RDCs allocate the biggest proportion of budget to marketing, public relations and promotional activities in contrast to CRC's where these activities receive the smallest proportion.
- CRC's allocate the largest proportion of their budget to Education and Training activities.
- Intensive industry organisations appear to allocate twice as much budget to Education and Training and Communication and Engagement activities than those in Extensive.
- Monitoring and Evaluation activities generally receive the lowest proportion of organisational budgets (except for CRCs by a small margin where Marketing, Promotion and PR receives the smallest proportion).

It was noted by the majority of respondents that some costs for these functions are bundled into program and project budgets making detailed assessments complex. While budget management is an administrative function, the key strategic questions are:

- To what extent is it important to report separately on these budget functions on an organisational basis or across RDCs and/or CRCs?
- To what extent is reporting on the Impact important in terms of Benefit:Cost or Return On Investment?
- To what extent should these budget allocations be linked to demonstrated E&A?

*The answers to these questions relate to the extent to which a common approach to E&A principles, process and application would prove valuable across the RDC and CRC sector, as raised earlier in this report. As one CRC reported conflict with its industry RDC regarding E&A, then budget management of these functions on behalf of that overall industry might prove the catalyst to resolve such issues. A consistent manner of reporting these E&A functions 'in the national rural RD&E industry' could also prove valuable to demonstrate transparency.*

## Details of Extension and Adoption activities

Four CRCs and 12 RDCs provided details of their major projects. Methods ranged from accepted and traditional methods to more contemporary methods such as webinars, etc. Many examples of cross collaboration and co-funding were reported across other providers, as well as between and across RDCs/CRCs. Considerable data was provided on these projects.

While many reported clear and measureable impact focused goals, others used much less robust terminology. Whether the less robust goals were a function of the survey responses/survey process or a function of actually having less impact focused goals, is unknown.

*To demonstrate robust outcomes to industry and stakeholders, the habitual use of 'impact terminology' would facilitate the most positive view of the success or otherwise of such projects.*

Details were also sought on the methods by which respondents could demonstrate how R&D outputs fed into the adoption process. Again significant detail emerged and is summarised as:

- Development of plans, strategies and contractual clauses covering use and delivery of outputs
- Engagement of steering committees, working groups, program/project teams of researchers, next / end users
- Phases of development resulting in delivery of outputs.

It was noted however that few respondents explicitly built monitoring and evaluation functions into their processes. It was also noted that a comprehensive and diverse set of methods were reported – many of which could be valuable ideas/experiences to share amongst co-workers.

*Further collaboration and sharing of experiences across the national RD&E industry on demonstrating how R&D outputs feed into the adoption process, including monitoring and evaluation processes, could prove valuable.*

## Effective adoption – needs and plans

Respondents identified three key areas to enable adoption related activities to be fully implemented:

1. Evaluating the effectiveness of delivery and adoption
2. Support of researchers to deliver information to end users
3. Developing systems to support researchers in their delivery processes.

A number of respondents commented on the urgency of implementing plans to address these needs. Some commented on structural issues such as ... *not all researchers are suited to deliver information to end users* and discussed the value of next users in supporting this process, as well as ... *implementing cultural change with project leaders so they see E&A is part of their responsibility.*

A number discussed the need for wider collaboration in the sector. Others commented on the importance of ensuring ... *we are meeting the needs of next users and end users.*

In terms of planning, all respondents have plans to ensure research outputs are effectively adopted by users and ... *their focus on adoption will remain strong.* For some this is at the strategic plan and business plan level, for others at monitoring and evaluation level and for others at the 'guidelines level' so they are 'embedded in projects' and via 'products and services'.

## Evaluation activities

Data on key evaluation issues included – varied time frames over which evaluation work is undertaken (periodic, quarterly, half yearly, annually and up to 5-years); it occurs at project or program level or organisational level; participation in the CRRDC joint RDC program occurs and there is varied focus on surveys and Benefit:Cost (BCA) at organisational levels.

## Executive Summary – cont'd

A range of approaches to monitoring evaluation and reporting (MER) are undertaken. They include very structured and disciplined methodologies embedded in organisational and program level activities – in some cases based on common approaches, business and strategic plan focussed programs that aim to report on impact against objectives, the use of both qualitative and quantitative measures, 'economist centric' approaches vs. attitudinal and social measures of adoption, recognition of mitigating circumstances such as droughts, notes about the costs of undertaking robust monitoring and evaluation creating dis-incentives, the role of program/research managers as the responsible personnel and outlines of very structured and focused approaches compared with quite open and unstructured approaches.

One respondent reported on the MER issues as being ... *the large variation in how this is completed and to what depth noting cost being a limiting factor.*

In common with other issues raised in this survey, there is significant variation in the extent to which MER is undertaken – from very structured to relatively unstructured strategies and methods. The BCA focused approach provides strong economic data and can be based on varied assumptions which are often focussed on 'hard issues' such as the economics raised earlier in this report. However reporting on overall economic, productivity, environmental and social benefits is an ideal strategy.

*While the varied methods and approaches to MER occur within an overall strategy as promoted by the CRRDC, for some respondents there could be value in learning from their more experienced counterparts within and across the sectors. This could support wider reporting that encompasses economic, productivity, environmental and social benefits and add to the disciplined and robust nature of the MER required to maximise both accountability and continuous improvement.*

### Duplication and collaboration

The consensus is that there is minimal duplication across RDCs and CRCs with any duplication being 'with-in industries' – the key reasons being competition for time, money and resources. However a number reported the need to ... *coordinate adoption / awareness programs to reinforce key messages* and to ... *share learnings around extension practice and adoption*. A number reported on the value of their communication programs in addressing these issues, via testing during 'crisis management'.

Others reported that, structurally through national policy initiatives such as the PISC RD&E Strategy, duplication can be minimised. There were comments regarding – duplication amongst states through 're-branding of extension programs' and competition between public and private providers.

Respondents reported options to further minimise duplication. Some did so in context of seeking overall industry improvement.

These options include:

- Re-establishment of a more contemporary CVCB or Centre of Excellence for E&A
- Establishing industry coordinators (persons or plan) for the E&A function
- Shared understanding of key issues – within and across industries – including defined collaboration
- Single access point for research findings to be stored or accessed
- Strong focus/method/setting to enhance and manage collaboration around current and futuristic thinking that is solution based and embeds outcomes in defined ways.

*It is apparent that further coordination of E&A functions at program, organisational, industry and sector levels would be beneficial. Shared learnings and understanding of other approaches to E&A are clearly sought as are methods of ensuring open access to R&D results as well as ways of sharing ideas and futuristic approaches to E&A. There is a strong focus on embedding change to avoid similar problems in the future.*

### Final comments

It was generally concluded that greater collaboration amongst and between RDCs and CRCs will be of benefit to end users. Several structural ways of doing so include:

- Creating a Centre of Excellence or re-badged CVCB
- Sharing of experiences and resources
- Creating a central repository of information
- An across industry funding process for common issues
- Consideration of how to engage universities in a more focused approach to improving E&A
- How to access non-traditional approaches from outside primary industries
- Promoting innovation and entrepreneurship.

*In summary, a desire to focus on greater collaboration is apparent. There appears to be a strong case for establishing a collaborative mechanism to deal with the key issues that have arisen from this survey and to commence the innovation and change processes that have been articulated.*

### Recommendations

That a formal Adoption and Capacity Building Program is established across the RDCs initially, then extended to key CRCs, to ensure consistent common principles, approaches, pathways, frameworks and practices for E&A, MER and People Development are used.

That such a Program focuses on supporting the implementation of Best Practice strategies and actions that are embedded at program and project level and demonstrate that R&D outcomes are adopted by users.

That the Program acts as a forum for sharing of current processes/practices and investigating relevant systems.

That the program includes focus on supporting researchers in their own adoption of such practices to facilitate the cultural changes needed for such embedding.

# Process and Purpose

## Background

Extension and adoption is a fundamental component of investment in rural research and development to ensure the translation of science to practical application along the whole supply chain. Its focus is on achieving changed practices by end users – farming enterprises, local government and landholders, etc – that occurs from the adoption of new technologies. It recognises that next users – consultants and advisers from the public and private sectors, extension officers and NRM organisations, etc – all potentially have a role in the synthesis of R&D outcomes into data/information/packages/services that can be used effectively by end users to meet their needs.

The PISC RD&E Framework recognises this by including extension as a core element in the overall framework. The PISC R&D Subcommittee has established a working group on extension and is considering how this will be included in the development of both industry and cross-sectoral strategies under the framework.

The RDCs also recognise that extension, adoption, training and education are key factors in capacity building and that investment in this area must be allocated at the same time that investment is being provided to research and development.

The CRRDC has identified that investment in extension and adoption is not widely understood across the RDCs. Gaining a picture of the capacity building environment will assist in identifying opportunities for both collaborative and individual initiatives to build skills and capacity in the areas of science, research and innovation.

## Purpose

The CRRDC is working with the national market research and monitoring and evaluation company QualDATA Pty Ltd to establish the status of the extension, adoption, practice change and capacity building functions across the RDCs through a national RD&E survey. The CRC Association has also agreed to support the project through their primary industries, NRM and environment focussed CRCs in order to provide stronger data that can inform the outcomes.

This work will seek to create a baseline understanding of the extent to which national RD&E organisations are addressing this function as part of their funded programs. It is proposed that this survey will become an annual project to establish and assess change over time. It is anticipated that this benchmarking process will lead to an opportunity to foster change in the activities of RD&E organisations in recognition of the data that is emerging.

The following outcomes will be achieved through this process:

- Mapping what the RDCs currently do in the areas of extension and adoption to provide information on status/progress, assess actual and potential duplication and define any gaps and help understand the requirements of particular rural industry sectors that may be common or unique;
- Establish the potential for further initiatives to better foster extension, adoption, practice change and capacity building;
- Establish and review extension and adoption plans for the future, both specific and general; and
- Consider the implications of these findings in a strategic manner so that they can be addressed and issues resolved.

## Methodology

A survey was developed by QualDATA to collect data on the extension, adoption, practice change, education and capacity building components of the RDCs and CRCs directed towards both next users and end users.

This survey was circulated to RDCs and relevant CRCs in mid-April 2010 and aimed to identify the following:

- How the RDCs link with extension providers, including government, community, business and agribusiness;
- How RD&E organisations ensure R&D is adopted and how they measure practice change/adoption;
- How the RDCs deliver information to end users;
- What initiatives are being undertaken to build human capacity, particularly in relation to PhD students, community skills, formal programs in schools/university and to upskill farm and industry workers; and
- Define communication, extension and adoption processes related to key target audiences.

It is noteworthy that the survey closed a month later than planned on 23 June 2010 due to requests by respondents for extensions of time to allow them to contribute effectively. At close 14 RDCs had contributed with the exception of GRDC. Seven CRCs also contributed. Varied levels of contributions occurred – from exhaustive contributions with highly comprehensive data addendums to minimalist contributions. GRDCs contribution was added in January 2011.

In order to report on the findings, a rating system out of 10 was used. The RDCs were reported as a group and the CRCs were reported as a separate group allowing comparison of the two. The CRCs and RDCs were then grouped into Extensive and Intensive industries – and then both were compared to assess any differences.

# Respondent details

**Figure 1:** The table below lists the organisations that responded to the survey and groups them according to organisation type (RDC or CRC) and whether they are intensive or extensive management. Definitions are below.

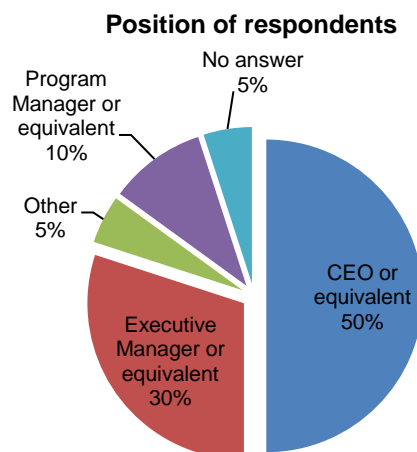
**Intensive management:** Industry that is quite defined, contained and constrained in terms of the overall on-farm and industry management. For example, many have a smaller numbers of producers, have quite intensive overall management processes and programs,

are restricted geographically and the value chain is likewise contained – pork and eggs are ready examples.

**Extensive management:** Industry that is quite open and far less defined. For example cotton while it is defined geographically is a ‘broadacre industry’ and as such growers and others come and go from the industry in response to changed circumstances.

Type of organisation	Name of organisation	CRC	RDC
Intensive industry	AB-CRC	1	
	Australian Egg Corporation Limited		1
	Australian Pork Limited		1
	Grape and Wine RDC		1
	Horticulture Australia Limited (HAL)		1
	LiveCorp		1
	Pork CRC	1	
	Rural Industries Research and Development Corporation		1
<b>Intensive industry Total - 8</b>		<b>2</b>	<b>6</b>
Extensive industry	Australian Wool Innovation		1
	Cotton Catchments Community CRC	1	
	Cotton R&D Corporation		1
	CRC for Beef Genetic Technologies	1	
	Dairy Australia		1
	Dairy Futures CRC	1	
	Fisheries Research and Development Corporation		1
	Forest and Wood Products Australia		1
	Future Farm Industries CRC Ltd	1	
	Meat & Livestock Australia		1
	SRDC		1
Grains Research and Development Corporation		1	
<b>Extensive industry Total - 12</b>		<b>4</b>	<b>8</b>

**Figure 2:** Respondents tended to be CEO or equivalent (50%) and executive managers or equivalent (30%).



# Definitions

**Figure 3:** Respondents were asked if they had any comments/proposed alternatives to the extension/adoptions brief working definitions given in the survey.

Responses are detailed in the table below. More general comments are on the next page.

Terms and working definition	Comments
<b>Marketing</b> – encouraging sales of industry products	<ul style="list-style-type: none"> <li>• Activities encouraging the sale of products/services (RDC)</li> <li>• Encouraging demand and competition for industry products to maximise industry revenues (RDC)</li> </ul>
<b>Promotion</b> – promoting the organisation or industry and its benefits	<ul style="list-style-type: none"> <li>• Communication messages that influence the sale of products/services (RDC)</li> </ul>
<b>Public Relations</b> – maintaining a positive media presence	<ul style="list-style-type: none"> <li>• Building relationships to enhance the image of products/services (RDC)</li> <li>• In Beef CRCs definitions, PR also includes management of stakeholder relationships in a positive and interactive manner, designed to elicit feedback (differentiating it from communication). It also includes the activities described below as engagement. (CRC)</li> </ul>
<b>Communication</b> – keeping stakeholders up to date with policies, activities, outputs, information and opportunities (without expecting feedback)	<ul style="list-style-type: none"> <li>• Keeping stakeholders up to date with policies, activities, outputs, information and opportunities (RDC)</li> </ul>
<b>Engagement</b> – providing opportunity for input into policy, strategies and activities	<ul style="list-style-type: none"> <li>• No comments</li> </ul>
<b>Extension</b> – using a range of informal education approaches to encourage adoption and change	<ul style="list-style-type: none"> <li>• Using a range of adult education approaches to encourage adoption and change (RDC)</li> <li>• Definition should also include extension activities that involve researchers (RDC)</li> <li>• Prefer term 'Delivery' we want to remove term 'extension' because of 'baggage' this only labels an 'extension officer'. (CRC)</li> </ul>
<b>Advisory</b> – one-on-one technical or business support usually provided by private consultants and/or agribusiness; or NRM group personnel sometimes with support of state agencies	<ul style="list-style-type: none"> <li>• One-on-one technical or business support (RDC)</li> </ul>
<b>Adoption</b> – active support to users to enable research information, new approaches and/or tools to be applied in practice by the intended users of that research output	<ul style="list-style-type: none"> <li>• Beef CRC's definition of Adoption: Achievement of a decision to implement an improvement or innovation as an appropriate course of action to achieve a specific outcome (e.g. an increase in profit) Accelerating Adoption: Increasing the number of improvements. (CRC)</li> <li>• Prefer term 'uptake' or 'development' is taking research outputs and turning them into products for end users. (CRC)</li> </ul>
<b>Training</b> – using formalised approaches to 'teach' new approaches or skills	<ul style="list-style-type: none"> <li>• No comments</li> </ul>
<b>Education</b> – formal courses/study through schools, TAFE/Vocational Training, University	<ul style="list-style-type: none"> <li>• No comments</li> </ul>
<b>Monitoring</b> – reviewing the effectiveness of processes being used to encourage adoption and change	<ul style="list-style-type: none"> <li>• No comments</li> </ul>
<b>Evaluation</b> – measuring the impact of activities on the capacity of people to make changes, the level of adoption that has occurred and the impact of that adoption in economic, environmental and/or social terms.	<ul style="list-style-type: none"> <li>• No comments</li> </ul>

# Definitions

**Figure 4:** Other general comments about the definitions are below.

Terms and working definition	Comments
<p><b>General comments</b></p>	<ul style="list-style-type: none"> <li>• Most are fine but some needed refining...<b>(AECL)</b></li> <li>• Just a general note....<b>Dairy Australia</b> has several components to the practice change investment and strategy with the National Centre for Dairy Education (Australia) being the additional 'bow' not commonly incorporated in RDCs. With respect to the above definitions, the NCDEA is involved with the Training and Education components of what we refer to as the 'Learning Continuum' in DA. Why the continuum? Basically because we have a range of practice change pillars from private engagement, through public sector MoU's to extension (via private, public and collective (levy) investment) to now Education (NCDEA). This Learning Continuum is supported in many ways, with one important plank being the Rural Research and Innovation Group located at Melbourne Uni and supported by DA. Social research.</li> <li>• <b>Beef CRC</b> differentiates 'Education and Training', 'Communication and PR' (with PR including pro-actively managing stakeholder relationships, Awareness (i.e. activities designed to make end-users aware of CRC technologies as a pre-requisite for uptake and adoption and including some aspects of promotion and industry training as well as extension)) and 'Adoption' (i.e. specific activities designed to achieve uptake of technologies, including measuring, monitoring and evaluation of the impact of the technologies at individual enterprise level).             <ul style="list-style-type: none"> <li>○ <i>Awareness:</i> Knowing of a practice or technology that may have potential to increasing profit.</li> <li>○ <i>Benchmarking:</i> A standard that provides a measuring-stick for relative performance; measuring progress toward a goal at intervals prior to the anticipated attainment of the goal.</li> <li>○ <i>Capacity Building:</i> Providing individuals with the necessary knowledge, skills, technologies, tools, support and resources to achieve specific outcomes.</li> <li>○ <i>Impact Analysis:</i> Using specific criteria to identify estimate and describe the effect or pay-off that an opportunity will have on achieving the specified outcomes.</li> </ul> </li> <li>• <b>FFI CRC</b> has adopted the term 'path to industry use' and now requires an industry use plan for all R&amp;D projects. This term is more appropriate and value-neutral than 'adoption' which is variously perceived as a process (the definition above) and an end-state (farmer behaviour change). Importantly the industry use plan selects from the repertoire of strategies defined above and includes commercialisation as a legitimate path to industry use (or adoption).</li> <li>• A definition for communication is missing that should include reference to formal and informal approach. <b>(RIRDC)</b></li> <li>• <b>HAL</b> uses the term 'Industry Development' to describe 'Capacity Building' initiatives. HAL's definition of Industry Development = The process of informing and empowering those in horticulture to make better business decisions. In other words: Industry Development bridges the gap between R&amp;D and industry adoption, enabling industry strategic plans to be implemented. To help ensure efficient and effective investments in Industry Development, HAL is working with the 40 different industries it represents to complete an Industry Development Needs Assessment (IDNA). The IDNA involves assessing industry characteristics, understanding the strategic direction of the industry, evaluating options for industry development, identifying and prioritising industry development initiatives.</li> <li>• There is a Nexus in all this, industry wants adoption of R&amp;D outputs to create an Impact or Change, R&amp;D agencies want peer reviewed papers to judge the performance of researchers so papers are their end point. R&amp;D agencies put little emphasis on Adoption and Impact. This disconnect is one of our biggest issues as we need to focus on demonstration of adoption and Impacts. <b>(CRDC)</b></li> <li>• Monitoring should not be limited to adoption and change, it should also include monitoring of more basic and applied research. <b>(GRDC)</b></li> </ul>

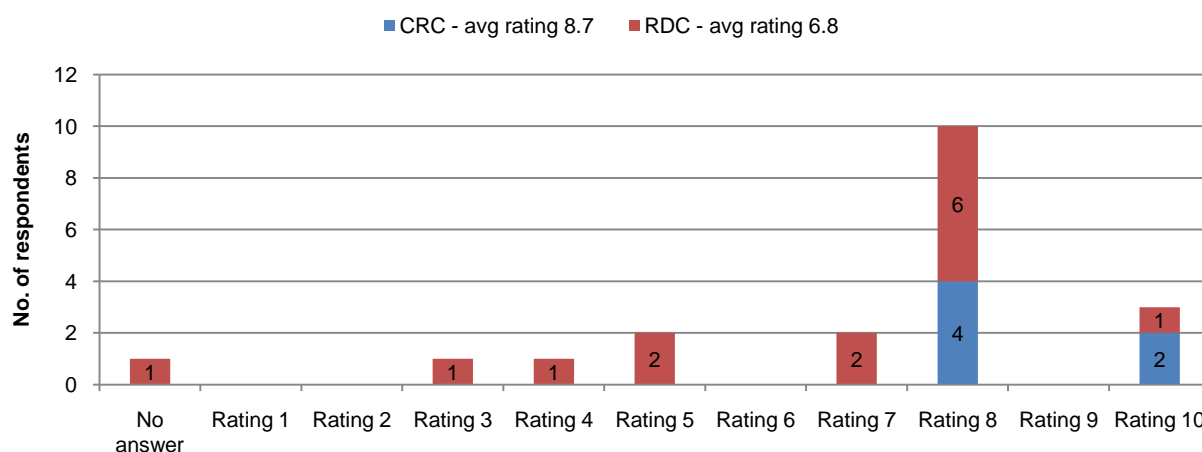
# Overall role and funding

**Figure 5 & 6:** Overall, respondents rated their responsibility quite highly in terms of ensuring that R&D findings are adopted and used (average rating 7.4 where 0= not our role and 10 = totally our responsibility).

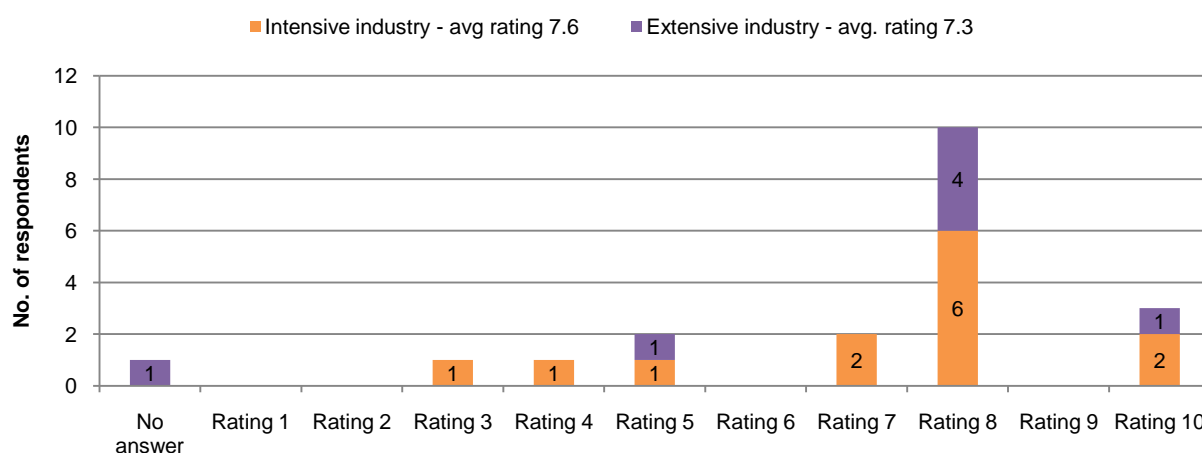
There was little difference between the average ratings for the Extensive (average rating 7.3) and Intensive (average rating 7.6) management categories.

CRC respondents rated their level of responsibility very highly (average rating 8.7) in comparison to RDC respondents who on average rated their responsibility level at a more average level (average rating 6.8).

**Level of organisation's responsibility in terms of ensuring R&D findings are adopted and used - overall average 7.4**



**Level of organisation's responsibility in terms of ensuring R&D findings are adopted and used - overall average 7.4**



# Overall role and funding

**Figure 7 & 8:** Respondents saw themselves as having a broad spread of roles on the 'researcher to user' continuum. *Ensuring that the science community is aware of outputs* respondents saw as the least of their roles. A couple of respondents noted that the science community was not as important as end users in terms of adoption. *The science community being aware of outputs is less important than industry being aware, that is simply their professional development while industry livelihood is based on Adoption of outputs (Cotton CRC).*

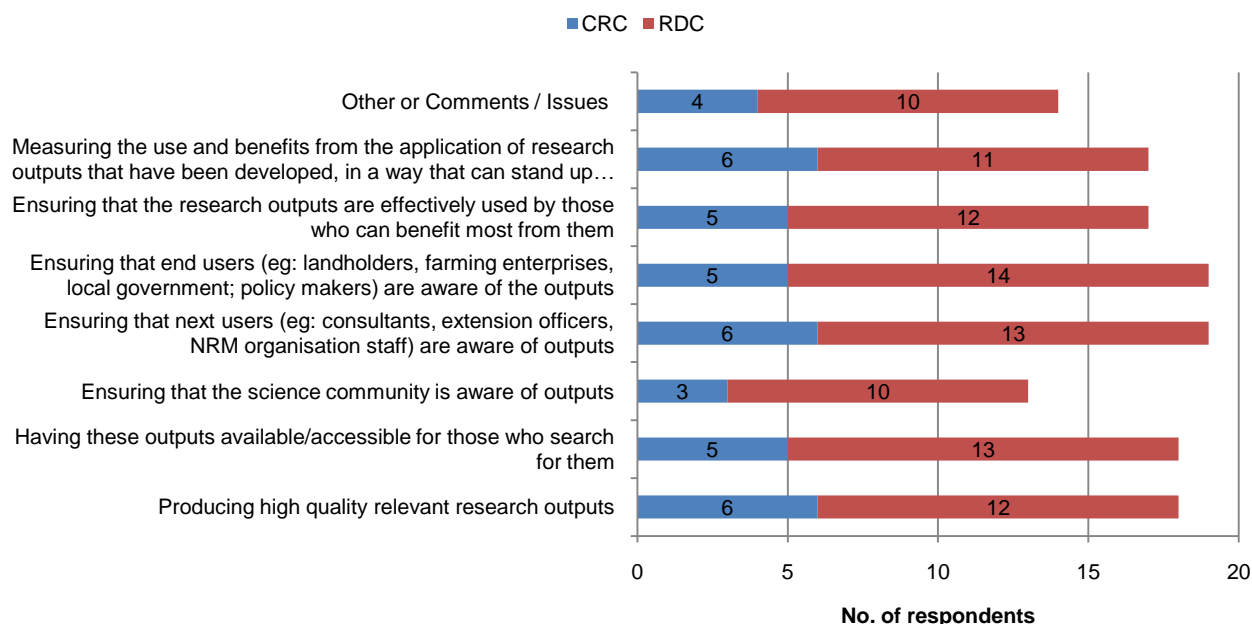
Respondents further clarified their roles in comments detailed on the following pages.

A couple of respondents commented that their responses were in the context of their R&D investments only.

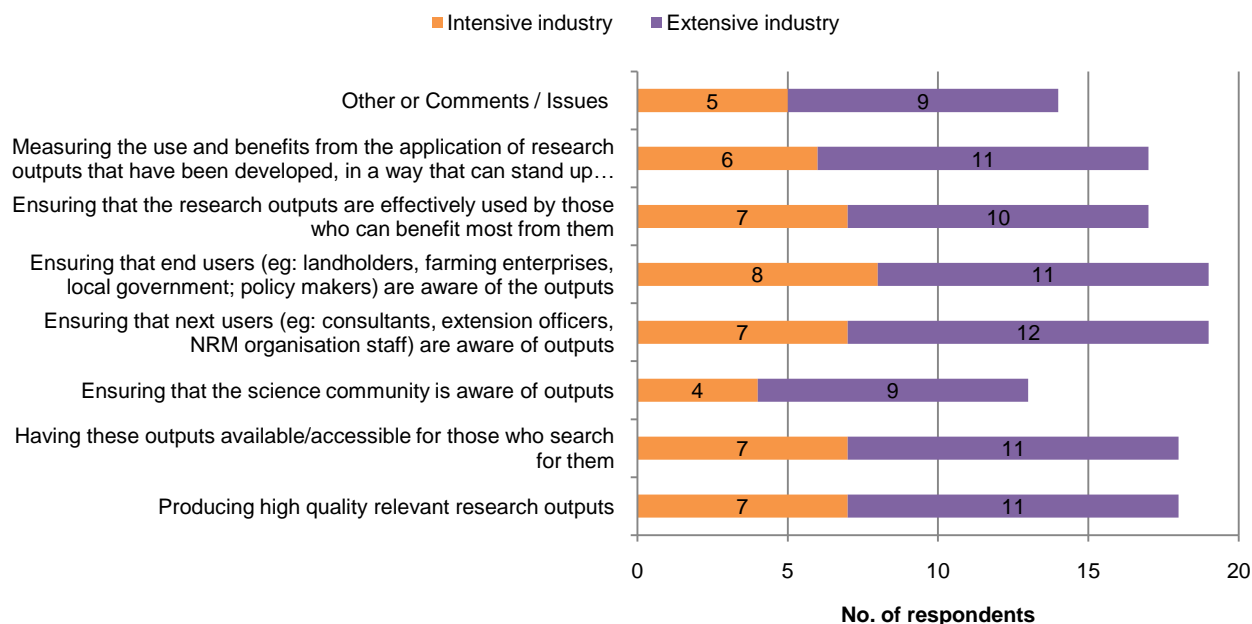
There was general agreement that RDC and CRCs role was to facilitate the 'researcher to user' continuum at various levels, with some noting that this could vary according to projects.

In general RDCs noted that their role is to facilitate the use of technologies and research. On the role of RDCs RIRDC commented...*RDCs are able to facilitate adoption, rather than ensure adoption.*

## Organisation's role in the 'researcher to user' continuum



## Organisation's role in the 'researcher to user' continuum



# Overall role and funding

Figure 9: Other comments about roles and funding included:

	CRC	RDC
Intensive industry	Our role is to ensure good science is used to alleviate or remove constraints to further improvement in the efficiency and profitability of end users and to enhance the reputation and careers of scientists. <b>(Pork CRC)</b>	In terms of Q5, this is purely in response to the R&D funded by <b>AECL</b> , it does not encapsulate other R&D funded or generated by other organisations in/for our industry. In terms of Q6, AECL does not produce research outputs. Rather, we direct then sponsor/fund the production of research outputs by research providers such as universities, state departments, etc.
		Inclusion of the term 'ensuring that R&D findings are adopted' in the question is too strong for RDC functions. RDCs are able to facilitate adoption, rather than ensure adoption. Through strong relationships that RIRDC has with industry stakeholders, significant uptake of <b>RIRDC</b> R&D is achieved.
		Proving benefits as a result of research and development throughout the livestock export supply chain from point of production through to point of production (breeding) or processing in the international markets that import Australian livestock. <b>(Livecorp)</b>
		Evaluation of adoption levels is very important, but can be a very expensive exercise. Low cost methods/processes need to be developed. Those we rate highly are - R&D outputs, access to all, awareness of end users about outputs. Those we rate medium are - science community awareness, next users, measurement of application of R&D. <b>(HAL)</b>
Extensive industry	Next users can include landholders and farmers who influence other farmers. <b>(FFI CRC)</b>	I have answered the above questions in relation to our R&D investments only. We do not have an active role in R&D that is funded by other agencies. <b>(Forest and Wood Products Australia)</b>
	All are important however the Nexus remains the big issue. Researchers need to sign on for delivery of outcomes that can be / are being used; rather than just conducting research. The science community being aware of outputs is less important than industry being aware, that is simply their professional development while industry livelihood is based on Adoption of outputs. <b>(Cotton CRC)</b>	Most of these activities are part of our role and closely aligned to our mission. <b>(SRDC)</b>
	Based on a 2003 MLA survey, <b>Beef CRC</b> assumes that 25% of industry stakeholders (the innovators and early adopters) will readily adopt technologies if they are made aware of them. With regard to 'effective usage' Beef CRC is specifically targeting the early adopters and early majority to achieve uptake of its technologies by 35% of end-users (based on cattle numbers) from the production, feedlotting and processing sectors of the beef industry. This means Beef CRC is generally targeting the early adopters and early majority amongst the specialist beef producers with herd sizes of ≥600 head [NB a paper was provided outlining their philosophy].	The highest priorities have been ticked but all are appropriate. <b>Dairy Australia</b> sees it has a key role in ensuring that the technologies and innovations that are constructed go most effectively to market and as such have a strong leaning towards understanding and operationalising practice change investments. At the bottom of the day, we wish to promote practice change on farm, change which results in increased profitability, sustainability, resilience. To the extent that we are committed to that overall outcome (the benefit of the levy payer), we are committed to such collaboration across our within dairy value chain that produces it. DA goes from the farm, through technical issues, marketing and manufacture...it covers the chain. We are a service body committed to supporting relevant and appropriate change.
	The above answers are conditional on their potential to enhance not damage the industry. We can't ensure their effective use but rather facilitate their use. <b>AWI</b> has responsibility to facilitate adoption however we cannot ensure adoption by farmers.	

# Overall role and funding

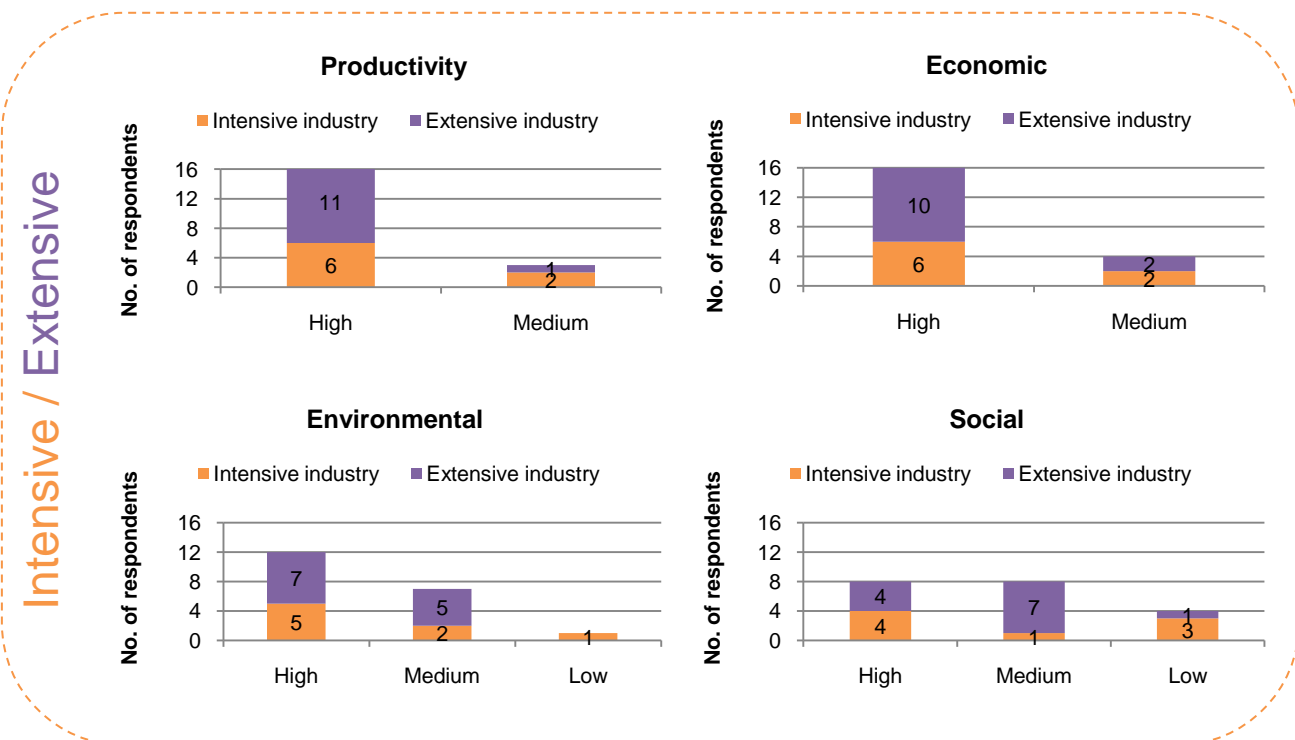
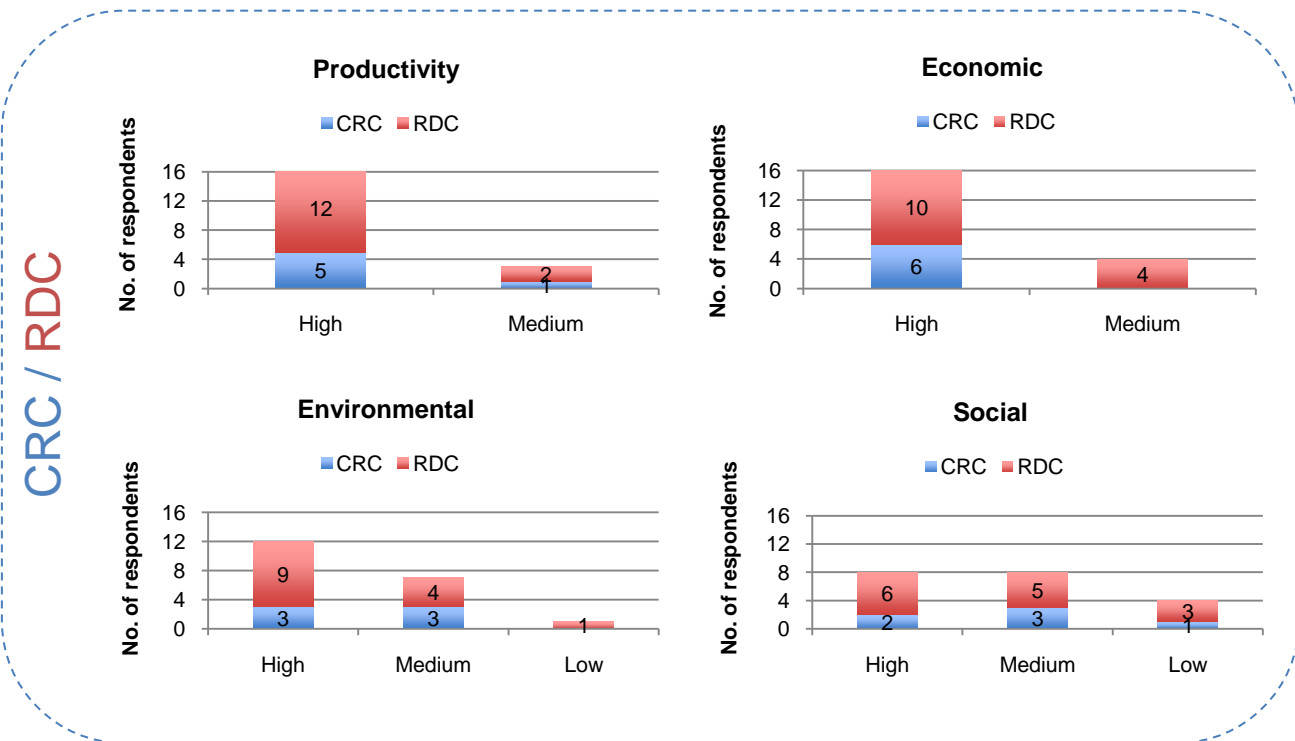
Figure 9 cont:

	CRC	RDC
Extensive industry		<p><b>MLA</b> cannot assign a single number to reflect our company's level of responsibility in terms of ensuring R&amp;D findings are adopted and used because the level of MLA involvement in the researcher to user continuum varies across project areas. For example programs such as Livestock Production Assurance and Meat Standards Australia have strong linkages to research, ensuring that it is very quickly and comprehensively applied into these programs. However, our on-farm research program has many appropriately indirect avenues to reach users such as government extension agencies, advisors and consultants.</p>
		<p>Ideally we should help facilitate the researcher to user continuum. However the problem is that it is not always one project that makes the difference. Where there is a grouping of research outputs (projects) that is where our role would be to coordinate and package/develop materials for use. Good example is the cochlear ear - was not made up of one project but twenty years of development. This would be a key role for <b>FRDC</b>.</p>
		<p>While GRDC has a role in all of the above – it partners with different stakeholders to achieve the desired outcome. (<b>GRDC</b>)</p>

# Overall role and funding

Figure 10 & 12: Respondents most highly emphasized Economic and Productivity benefits through their research to adoption activities. Social benefits were given the least emphasis after Environmental.

All CRCs indicated that they placed a high emphasis on Economic benefits.



# Links with Govt. extension agencies

**Figure 13, 14 & 15: All respondents indicated at least some link with government extension agencies.**

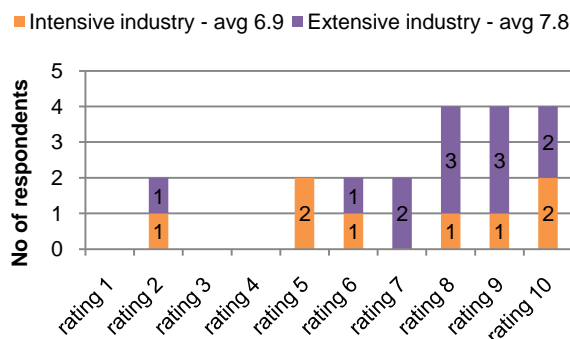
Overall both CRC and RDCs rated that their link was fairly strong (average rating 8 and 7.1 respectively where 10=strong link). All CRC respondents rated their link as 6 and above.

Intensive industry respondents in general had slightly weaker links with the government extension agencies (average rating 6.9) than those from extensive industry.

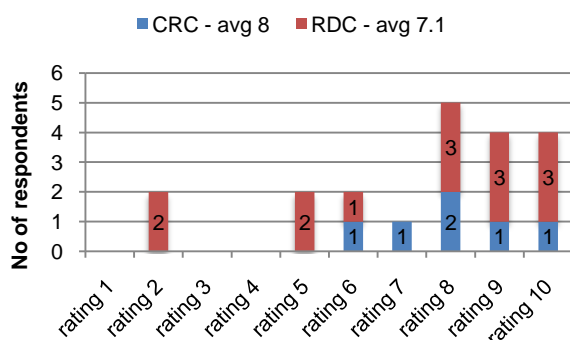
Details are provided in respondent comments with **some good examples provided of strong and direct linkages between government extension agencies and CRC/RDCs.** For example APL's strong linkages with state DPIs for all technology transfer and adoption activities; RIRDCs collaboration with Industry & Investment NSW to develop and deliver training to the honeybee industry and Beef CRC's direct partnership with all but the Tasmanian State Department extension agencies

It was noted however, by a few respondents (CRCs and RDCs) that **these linkages were becoming more difficult, expensive to deal with or were in decline.** AECL noted that they worked with state agencies regularly however, *this is becoming more difficult due to a reduction in government resources in the extension/advisory/training/adoption process.* The Cotton CRC agreed *...we perceive that governments do not value their R&D function very highly [due to low levels of pay and low quality of personnel]...*

**Linking with government extension agencies - average rating 7.4**



**Linking with government extension agencies - average rating 7.4**



	CRC	RDC
Intensive industry	We have Government organisations as partners/participants and new information and technologies are made available to their extension and research staff. In our industry Government extension staff and activities are declining rapidly. <b>(Pork CRC)</b>	All <b>APL</b> technology transfer and adoption activities link in with state DPIs. These activities include technical roadshows, PigLink (online presentations/webinars), refresher courses, publications etc.
		Capability varies greatly between states but is generally in decline. <b>(Grape and Wine RDC)</b>
		Conversing and working with state agencies on a regular basis. However, this is becoming more difficult due to a reduction in government resources in the extension/advisory/training/adoption process. <b>(AECL)</b>
		Huge variability depending on the specific hort industry, the industry development program for that industry and the relevant skills/experience within the Govt Extension Agencies. <b>(HAL)</b>
		Links with state Agriculture departments in R&D project delivery. Major link with Federal government on matters that relate to animal welfare. <b>(Livecorp)</b>
		Examples: Collaboration with Industry & Investment NSW to develop and deliver training to the honeybee industry; Collaboration with the state agencies and TAFEs to deliver training to industry participants in kangaroo harvesting; Investment in development of curriculum materials for the native flowers industry for use in TAFEs. <b>(RIRDC)</b>

# Links with Govt. extension agencies

Figure 15 cont:

	CRC	RDC
Extensive industry	<p><b>Beef CRC</b> directly partners with all but the Tasmanian State Department extension agencies.</p>	<p><b>AWI</b> has strong links with govt through AWI state extension networks, Making More from Sheep, Licesense, Wild Dog control groups, EverGraze, and the provision of a bi-annual R&amp;D Insights forum for service providers.</p>
	<p>Government agencies are becoming very expensive to deal with, we perceive that governments do not value their R&amp;D function very highly [due to low levels of pay and low quality of personnel]. They are becoming increasingly in-effective because of low staff quality and low level skills and younger personnel; therefore they are not taken seriously by end users. There seems to be a lack of focus and lack of attention to quality control. <b>(Cotton CRC)</b></p>	<p><b>FRDC</b> currently only links research projects outputs to Government extension agencies via the researcher. Important to note that there are few direct fisheries related extension agencies. There are however a number of associated agencies that do play in the fisheries area such as fishery compliance officers, EPA etc.</p>
	<p>Primary industry agencies' in four States (WA,SA, Vic &amp; NSW) are Participants in the CRC. Their extension staff are contracted in-kind contributions linked to specific farming systems/technology development. However, the functionality of the link varies State by State. <b>FFI CRC</b> has an Agribusiness Director and a National Adoption Team that coordinates this activity.</p>	<p>Links to the state agencies in NSW and Qld in particular have been strong for many years, and have they have been the primary agencies for the delivery of extension services. However this is starting to change. At present <b>CRDC</b> co-invests with the DEEDI in Qld to provide some of the cotton extension positions and a skills development position. In NSW there is no co-investment from I&amp;I in the provision of extension service position and hence other options for extension services are being explored through the Cotton CRC and with agribusiness.</p>
	<p>We are a new CRC which is starting with good links and intends to increase them as products are closer to requiring extension activity. <b>(Dairy Futures CRC)</b></p>	<p><b>MLA</b> has a very long history and strong linkages with all state and territory government extension agencies, fundamentally the DPIs. MLA's role in extension includes that of coordination of national programs, incorporating close collaboration with public and private agencies in the delivery of industry and private-good activities at a state and local level respectively. DPIs are also extensively involved in program-specific advisory panels and more generic consultation forums for our extension/ advisory/ training/ adoption activities. Through our nutrition research program, MLA has close ties with CSIRO, universities and FSANZ.</p>
		<p>Some government extension agencies (GBEs) are company members and active R&amp;D partners - strong links. Other government extension agencies have low focus on wood supply and we have no link. Growing link with training bodies. <b>(Forest and Wood Products Australia)</b></p>
		<p>Very strongly. We have recurrent funding agreements which cover the Departments of Agriculture in Victoria, Tasmania and South Australia. <b>(Dairy Australia)</b></p> <p>We work very closely with BSES extension - although it is not a formal government, it is the main provider of extension in the sugarcane industry. We also work with DEEDI extension people. <b>(SRDC)</b></p> <p>Depends on the capacity of the agency for extension, this is an area currently subject to ongoing and significant change. <b>(GRDC)</b></p>

# Links with NRM bodies

Figure 16, 17 & 18: Overall CRC and RDC respondents had moderately low links with NRM bodies (average ratings 4 and 4.6 respectively where 10=strong link).

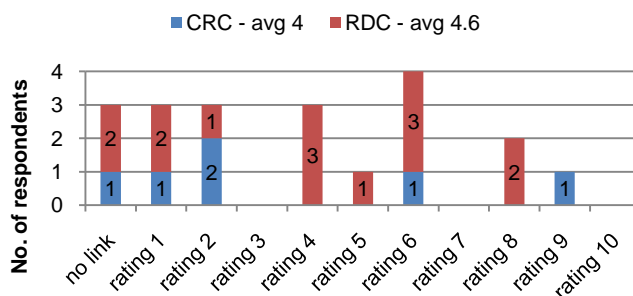
In comparison, **Intensive industry respondents indicated much weaker links to NRM bodies than those from Extensive industries** (average rating 2.7 and 5.6 respectively) who overall rated their links as moderate.

**Almost all intensive respondents indicated that links with NRM body was not a priority, key market or relevant to their industry.** APL explains that *this is more a reflection of our industry being intensive rather than extensive.*

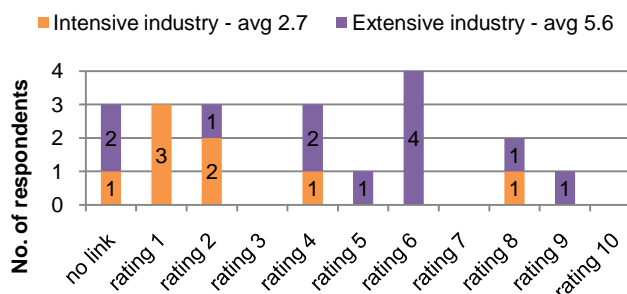
Most Extensive industry respondents provided some examples of where they have links with NRM bodies. There are a few organisations that note strong linkages including AWI who says that its State extension Networks and EverGraze are involved with NRM bodies.

A few commented (mostly extensive industry RDCs and CRCs) about **NRM bodies playing a role in communication and extension activities.** The Cotton CRC noted that *they are more effective in delivering our materials to end users, they need our information; we need their resources / personnel.* SRDC also noted that as well as specific R&D projects they *also involve them in many of our communication activities.*

Links to NRM bodies (CMOs, CMAs, Landcare) - overall avg 4.4



Links to NRM bodies (CMOs, CMAs, Landcare) - overall avg 4.4



	CRC	RDC
Intensive industry	Not the appropriate bodies for our industry. <b>(Pork CRC)</b>	A lower priority and limited impact for the egg industry. <b>(AECL)</b>
		This is more a reflection of our industry being intensive rather than extensive. <b>(APL)</b>
		Where relevant, <b>RIRDC</b> engages with NRM bodies e.g. projects in agroforestry and bioenergy. <b>(RIRDC)</b>
		Not a key market <b>(Grape and Wine RDC)</b>
Extensive industry		Minimal link here <b>(HAL)</b>
	Not relevant at this stage <b>(Dairy Futures CRC)</b>	A core block (around 50%) of <b>FRDC</b> funding goes to environmentally focused research. As such <b>FRDC</b> has developed stronger linkages with agencies/organisations that play in this space. For example <b>Seanet/Oceanwatch</b> undertakes a large block of work, in addition a number of other NRM agencies also do some work for <b>FRDC</b> .
	Some of <b>Beef CRC</b> 's 'Beef Profit Partnership' teams are based on CMA and Landcare groups.	We work with NRM bodies in some specific R&D projects. We also involve them in many of our communication activities. <b>(SRDC)</b>
	There are stronger links with selected CMAs (Vic, NSW) and NRM Boards (SA, WA) on a project by project basis, some directly contracted. <b>(CRC for Beef Genetic Technologies)</b>	<b>CRC</b> supports the efforts of the Cotton Catchment Communities CRC (Cotton CRC) which has developed very strong linkages and partnerships with a number of CMAs and regional bodies.

# Links with NRM bodies

Figure 18 cont:

	CRC	RDC
Extensive industry	They are more effective in delivering our materials to end users, they need our information; we need their resources / personnel ( <b>Cotton CRC</b> )	Strongly, particularly through the DA Regional Development Bodies and through the Recurrent Funding Agreements with State Agencies. ( <b>Dairy Australia</b> )
		<b>AWI</b> State extension Networks and EverGraze work with the NRM bodies.
		Where it is relevant we do link and interact with these groups having systematically explored with them the opportunities, at a strategic level, that allow us to value add what they are doing and ensure there is logical delivery of information into the market. Within specific projects, such as EverGraze, <b>MLA</b> has a role in co-funding, management and extension-delivery of a network of demonstration sites; and Grain & Graze, a co-funding and partnering program.
		Increasing importance as we undertake larger scale initiatives with both productivity and environmental/social focus. ( <b>GRDC</b> )

# Links with Agribusiness

Figure 19, 20 & 21: Overall, respondents indicated that they had moderately strong linkages with Agribusiness (average rating 6.8 where 10= strong). This did not really differ between CRCs and RDCs or Intensive and Extensive industries.

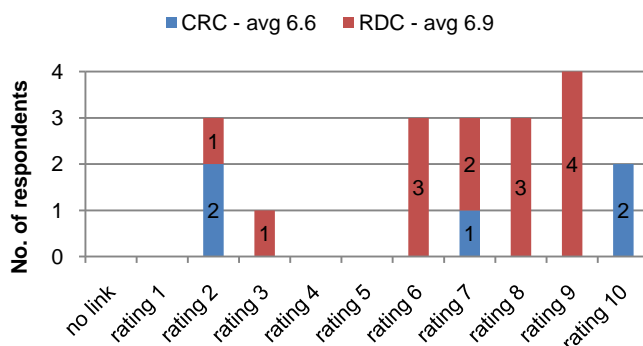
**A number of respondents see agribusiness as a key intermediate audience (GRDC / Grape and Wine CRC) providing a vital and strategic link with producers.**

Some good examples of how organisations are linking with agribusiness are provided in the comments below for example RIRDC's strong links with honeybees, rabbit, olives, truffles, coffee, crocodiles and green tea industries, and AWI's strong links through its state extension networks, Making More from Sheep, Licesense and the provision of a bi-annual R&D Insights forum for service providers. GRDC has a formal National Agribusiness Reference Group.

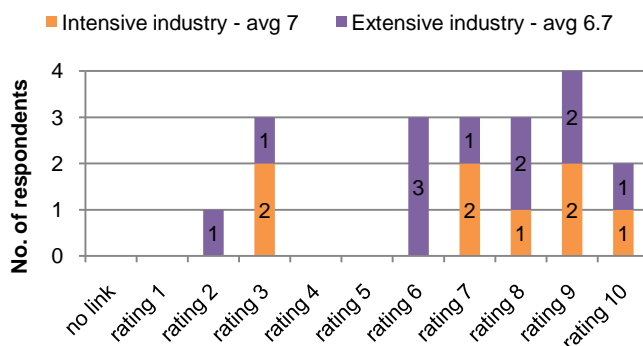
Some comment that **the linkages can be program/project/outcome dependent**. RIRDC notes that *linkage with agribusiness is program dependent* and the Pork CRC comments that for particular outcomes and technologies agribusiness are *major vehicles for the transfer of new information and the uptake of new technologies by end users*.

A couple note that they **have fewer links in this area, but are looking to change this in the future**. HAL comments that they historically have minimal agribusiness linkages however *many specific hort industries are identifying the need to significantly increase linkages in this area*. CRDC are *currently exploring the potential for stronger engagement mechanisms with agribusiness, particularly crop and agronomic consultants*.

Links to Agribusiness - overall avg 6.8



Links to Agribusiness - overall avg 6.8



	CRC	RDC
Intensive industry	For particular outcomes and technologies these are the major vehicles for the transfer of new information and the uptake of new technologies by end users. <b>(Pork CRC)</b>	Conversing and working with other service and product suppliers to the egg industry who assist design research programs and projects. <b>(AECL)</b>
		<b>APL</b> also links its technology transfer activities with key consultants which are crucial to access the 'networks' given the small size of the Australian pork industry.
		The livestock export R&D program as a joint venture between MLA and <b>LiveCorp</b> provides a key linkage between producers, agents, exporters and transporters (land, sea & air). In addition a great number of consultants are engaged either directly in the completion of R&D projects, to deliver training or to deliver extension.
		The level of linkage with agribusiness is program dependent. Recent examples of where these links are strong include honeybees, rabbit, olives, truffles, coffee, crocodiles and green tea industries eg, Collaboration with a product supplier (under license through Industry & Investment NSW) to commercialise a harbourage device for small hive beetle for use by the honeybee industry. Collaboration with Modern Olives, a private sector Advisory service in the Olive Industry, to run training courses for growers. Collaboration with producers, processors and marketers on RD&E in the farmed rabbit industries to achieve: continued R&D into breeding and reproduction at commercial locations in Australian and French institutions;...(cont.)

# Links with Agribusiness

Figure 21 cont:

	CRC	RDC
Intensive industry		<p>...(cont.) improved processing automation for export of rabbit meat by AQIS and acceptance by the Thai government; strong collaboration through an annual industry/research field day at Coffs Harbour, NSW. We are currently collaborating with Agrifood Skills Australia, looking into the feasibility of some training and adoption of new industries for indigenous communities, as well as training options around coffee and horticultural industries in some regional areas with high unemployment. <b>(RIRDC)</b></p> <hr/> <p>Key intermediate audience. Anything that the RDC can do to upskill those that give advice and other help to producers should be encouraged. Support for this group as an audience for the outcomes of R&amp;D has been a key strategic choice. 'Suppliers' can provide context for R&amp;D in the advice that they provide producers. <b>(Grape and Wine RDC)</b></p> <hr/> <p>Minimal linkage in the past and at present. However, many specific hort industries are identifying the need to significantly increase linkages in this area. Mechanisms for putting this approach into practice are largely yet to be determined. <b>(HAL)</b></p>
	CRC includes many agribusiness participants and communicates with a broad cross-section of the wholesale, retail and other services businesses. <b>(Dairy Futures CRC)</b>	Like question 8a-d there are few consultants that play in this space. The commercial wild catch fishing industry is quite different to most forms of terrestrial farming. Aquaculture has some linkages, but it is still a distant cousin and does not use to the same extent the consultant/reseller/supplier model for accessing information. <b>(FRDC)</b>
	Reasonably strong links with livestock genomics companies but weak links with consultants (very few of these in the beef industry), product resellers and product suppliers <b>(CRC for Beef Genetic Technologies)</b>	We also work very close with many Productivity Services companies in the regions. Some of these companies are involved in specific R&D projects, participate in our communication activities and also work with us in helping us promote our research findings. <b>(SRDC)</b>
Extensive industry	With selected commercial service providers - Landmark is a full Participant in the CRC; two seed companies and an engineering company have formal agreements; and consultants attend training events and field days. <b>(FFI CRC)</b>	While the relationships and links with a range of agribusinesses in the cotton industry are sound, relatively few are based on any formal partnerships. This may change in the future and <b>CRDC</b> is currently exploring the potential for stronger engagement mechanisms with agribusiness, particularly crop and agronomic consultants.
	We are focusing on this now through some current work <b>(Cotton CRC)</b>	<p>A reasonable amount of our practice change agenda is through the incorporation of our knowledge and information into a value proposition for next users e.g. Countdown Down Under; drought response programs; Diploma in HR (Dairy) etc. One of the three strategic platforms for the NCDEA is around developing skills and knowledge in service providers. <b>(Dairy Australia)</b></p> <hr/> <p><b>AWI</b> has strong links with agribusiness through AWI state extension networks, Making More from Sheep, Licesense and the provision of a bi-annual R&amp;D Insights forum for service providers.</p>

# Links with Agribusiness

Figure 21 cont:

	CRC	RDC
Extensive industry		<p>On-farm <b>MLA</b> is increasingly engaged with this sector, primarily in the domain of on-farm consultants. This sub-sector is formally engaged in our major Communication &amp; Research Adoption programs, in both a delivery and advisory capacity. Corporate agribusiness, including pastoral houses, are also stakeholders and financial partners in our major programs. We do engage with smaller agribusinesses, including product suppliers, specifically in the provision of non-commercial information around R&amp;D and marketing. Further engagement with corporate agribusiness is planned to assist in the collaborative delivery of products and services to the industry's largest levy payers/ clients. Off farm MLA closely works with commercial organisations (and related consultants) for the delivery of R&amp;D outcomes to industry. This may involve early involvement of commercial organisations in the R&amp;D process (including co-funding) as well as commercial validation of prototype technologies via industry trials.</p> <hr/> <p>Increasing importance as extension and adoption activities move from the public to the private sector. We currently partner for research and Development and also have a National Agribusiness Reference Group that inputs issues and desired outcomes/outputs. <b>(GRDC)</b></p>

# Links with other providers – comments

**Figure 22:** General comments from respondents focused on providing further information about collaborative activities and philosophies.

The importance of this type of collaboration is noted by a couple of respondents. RIRDC says that *collaboration of this nature is fundamental to our interaction with all new and emerging industries*. AWI agrees: *The partnerships and collaboration with each of these sectors is essential to ensure that outcomes can be achieved using the available resources (both dollars and staff) to reach the target audience*.

Others mention that their most effective industry engagement is directly with end users. The Pork CRC notes that they do *this through producer advisory panels, industry seminars and producer based webinars*. The most effective industry engagement noted by the CRC for Beef Genetic Technologies is *directly with beef enterprises operating through regional teams known as 'Beef Profit Partnerships'*.

A couple of respondents have concerns in the collaborative area with HAL facing an issue of how to best engage with agribusiness without compromising commercial integrity, and Cotton CRC concerned about their delivery mechanisms.

MLA provides further information about its extension role and comments that it does very little *direct extension to industry and is largely dependent on on public, and increasingly private sector partners*. MLA comments that due to apparently increasing private sector activity, *care needs to be taken that the activities of RDCs and public RD&E providers is not hindering further growth in this sector. This is the basis for the extension investment principles being promoted by MLA*.

GRDC reports the importance of links with *whoever is most appropriate to deliver the desired outcomes*.

	CRC	RDC
Intensive industry	For the pork industry adoption activities are often most effective when discussed directly with end users. We do this through producer advisory panels, industry seminars and producer based webinars. <b>(Pork CRC)</b>	We link closely with many overseas Government departments on extension and training. <b>(LiveCorp)</b>
		Collaboration of this nature is fundamental to our interaction with all new and emerging industries. <b>(RIRDC)</b>
		Many Industry Development Needs Assessments (IDNAs) have indicated the need for greater engagement with Agribusiness. However, determining the best ways of achieving this without compromising information integrity for the sake of either perceived or real disproportional commercial gain is a major issue. <b>(HAL)</b>
Extensive industry	Our most effective industry engagement is directly with beef enterprises operating through regional teams known as 'Beef Profit Partnerships'. <b>(CRC for Beef Genetic Technologies)</b>	The sugarcane industry works differently to other industries. BSES and Productivity Services companies are dedicated mainly at servicing the sugar industry and take a very active role in extension. Therefore, <b>SRDC</b> works very closely with these organisations to ensure research is adopted.
	As described above, while <b>FFI CRC</b> is not an extension agency as such, it attempts a more rigorous and accountable relationship with selected organisations through its industry use planning.	The partnerships and collaboration with each of these sectors is essential to ensure that outcomes can be achieved using the available resources (both dollars and staff) to reach the target audience. <b>(AWI)</b>
	Our delivery mechanisms are of concern to us. <b>(Cotton CRC)</b>	

Continued next page.

# Links with other providers – comments

Figure 22 cont:

CRC	RDC
Extensive industry	<p>On-farm in the case of extension, <b>MLA's</b> role is that of (a) co-ordination of existing (b) identification of deficits in and (c) fostering additional capacity in extension. MLA does very little 'direct extension' to industry, apart from a relatively large portfolio of electronic / web resources. Beyond this, MLA is very dependent on public, and increasingly private sector partners.</p> <p>The draft 'Guidelines for MLA Investment and Co-investment in extension' clearly outline MLA's role in extension and MLA's investment in extension. Over the past two to three decades there have been changes to the roles of public and private sector. The changes have been exacerbated over the past three to five years in particular as the budgets of DPIs have fallen. These changes have included MLA becoming more involved in awareness and delivery and ensuring areas of critical RD&amp;E are maintained. In the area of extension, co-ordination and collaboration is our core business. More Beef from Pastures, Making More from Sheep, Going into Goats and our northern beef extension activities are all collaborative programs, in which we maintain an overarching co-ordination role. Guidelines have been developed to ensure the MLA investment in extension is deployed to achieve the best possible outcomes for industry; is apportioned in a transparent, consistent and logical manner; and has consistency in the measurement of, and accountability for, monitoring and evaluation of the efficacy of extension activities.</p> <p>On the extension side, there would appear to be increasing private sector activity, and care needs to be taken that the activities of RDCs and public RD&amp;E providers is not hindering further growth in this sector. This is the basis for the extension investment principles being promoted by MLA. Any effort to propagate private sector activity must be cognizant of the associated need to foster awareness and appreciation of the commercial drivers around such activity, that is, margins and profitability. Again, there is a transitional need to foster a culture of user pays/user part-pays for activities of moderate to significant levels of private benefit, this will require all RD&amp;E providers operating under the same guidelines (which is what MLA has proposed). Off farm Unlike in the on-farm sector, MLA focuses on direct extension (adoption and commercialisation) of R&amp;D outcomes. This may include direct commercial relationships (via the licensing of R&amp;D outcomes to commercialisers) as well as capability building or innovation acceptance in the target market for innovation. Typically, MLA may fund high risk, strategic research using industry/levy funds, but then involve a commercial organisation (preferably via co-funding) at an early stage. This provides a clear focus on realistic, commercial outcomes that are likely to be taken up by the target market. MLA will also encourage risk sharing via co-funded commercial validation of R&amp;D outcomes, as well as negotiating adoption targets via agreed commercialisation agreements and business plans...(cont.)</p>

# Links with other providers – comments

Figure 22 cont:

	CRC	RDC
Extensive industry		<p>...(cont.) References:1 The development of private sector extension capacity is happening, but not at a rate sufficient to offset what has been lost from the public sector. Addressing this gap, by promoting and fostering commercial extension activities, is a key role for MLA in the future. The bulk of private sector extension capacity is in on-farm consultancy, although other agribusiness (pastoral houses, vets, banks) are growing some capacity, especially as they seek to develop a point differentiation and a value proposition for the clients. Growth of private sector extension capacity may require some 'quality control' parameters. To date, these have not been available and/or used and patrons of extension services have operated under a 'buyer beware' basis. 2 Draft guidelines for MLA investment and co-investment in extension</p> <hr/> <p>We link with whoever is most appropriate to deliver the desired outcomes. <b>(GRDC)</b></p>

# Specific capacity building activities

**Figure 23:** The below table summarises responses and provides examples. A full table of responses is in the attached appendix.

There appears to be strong and targeted investment in fostering post-graduate research/studies across RDC and CRCs.

RDCs were particularly active in the VET arena, informal skilling and supporting local community/industry groups, and schools based activities (year 8-12).

Extensive industry CRCs were also quite active in the VET, community/industry groups.

Type of activity		CRC	RDC
Fostering Post-graduate research/studies	Intensive industry	<ul style="list-style-type: none"> <li>Supporting postgraduate students</li> <li>Active involvement in recruitment and training postgraduates</li> </ul>	<ul style="list-style-type: none"> <li>Strong and targeted investment across RDC's in postgraduate activities at PhD and Honors levels including awards, internships, funding research/studies, scholarships, grants.</li> <li>Examples include: Veterinary bursaries to attend stockman's training program for 2 students from each of the major vet schools per year; Several post graduate research grants in and for specific hort industries, including avocados; The RDC supports about 20 postgrad students at any one time and covers all parts of the value chain with their topics of study.</li> </ul>
	Extensive industry	<ul style="list-style-type: none"> <li>Strong support for postgraduate students with more than 170 students being funded across 4 CRCs and a number of universities.</li> </ul>	<ul style="list-style-type: none"> <li>Most RDC's have some activity in post graduate activities including scholarships; international visiting fellow bursaries; funding research</li> <li>Examples include: FRDC developed first school of fisheries economics at UTAS; post graduate presence in Animal Nutrition and Social Science</li> </ul> <p><b>EXAMPLES OF JOINT ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>SRDC contributed to five additional milling-related scholarships in conjunction with Sugar Research Limited and the Queensland University of Technology 2009/2010</li> </ul>
Schools based activities – Yrs 8-12	Intensive industry	<ul style="list-style-type: none"> <li>Little to no activity, Pork CRC has prepared and distributed teaching/learning material</li> </ul>	<ul style="list-style-type: none"> <li>A number of RDC's appear to have some activities in this area.</li> <li>Types of activities include: 'Pig in secondary school'; work experience students; funding PICSE model;</li> </ul> <p><b>EXAMPLES OF JOINT ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>Participation in programs supported by joint RDCs</li> <li>AECL is collaboratively producing a set of structured teaching resources suitable for schools based activities.</li> </ul>

# Specific capacity building activities

Figure 23 cont:

Type of activity		CRC	RDC
Schools based activities – Yrs 8-12	Extensive industry	<ul style="list-style-type: none"> <li>Some activities are being undertaken by CRC's in this area.</li> <li>Examples include: the Get into Genes program (Dairy Futures CRC); work experience; part time person involved at school; peripheral role in PICSE.</li> </ul>	<ul style="list-style-type: none"> <li>There are a few RDC's undertaking some activities at this level. One is reviewing their contribution to this area.</li> <li>Examples include: Developing school based materials and teacher's aids (FRDC); Career identification investments for secondary schools; support for primary industries education foundation; Virtual farm visit online; AFR business case studies</li> </ul> <p><b>EXAMPLES OF JOINT ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>FRDC working with Marine discovery centres of Australia to develop interactive school models.</li> <li>CRDC and Cotton CRC collaboratively invest in PICSE and plan to invest in a pilot Gateway School program in 2010/2011</li> <li>A number reported links with PICSE</li> </ul>
	Intensive industry	<ul style="list-style-type: none"> <li>Little or no activity</li> </ul>	<ul style="list-style-type: none"> <li>Minimal activity from RDCs</li> <li>Specified activities include: RIRDC's 'Workboot' series of books; Pig in primary school; AECL investment in student education project includes national delivery of structured program.</li> </ul>
Schools based activities – under Yr 8	Extensive industry	<ul style="list-style-type: none"> <li>Little activity in this area.</li> <li>A couple of examples given include development of web resources and part time person at school.</li> </ul>	<ul style="list-style-type: none"> <li>Minimal activity from RDC's at this level.</li> <li>Examples include: development of school and teacher resources; contribution of \$100k to Workboot series; support for primary industries education foundation</li> </ul> <p><b>EXAMPLES OF JOINT ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>'Workboot' series – RIRDC, AWI</li> <li>PICSE - GRDC and Cotton CRC</li> </ul>
	Intensive industry	<ul style="list-style-type: none"> <li>Little or no activity</li> <li>Pork CRC has developed an annually run course - Science to practice - for postgraduates, undergraduates and producers.</li> </ul>	<ul style="list-style-type: none"> <li>A number of RDCs have activities at the University level.</li> <li>Activities primarily include funding scholarships; training awards; Sponsoring prizes (e.g. animal welfare prize at Murdoch uni);</li> </ul> <p><b>EXAMPLES OF JOINT ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>Investment in Youth program aimed at school leavers</li> </ul>
University (undergraduate) focussed activities	Intensive industry	<ul style="list-style-type: none"> <li>Little or no activity</li> <li>Examples include: Cotton production course at UNE which can be accessed by other universities.</li> </ul>	<ul style="list-style-type: none"> <li>Little reported activity from RDCs at this level.</li> <li>Examples include: CRDC's undergraduate scholarship per year for Cotton CRC's Cotton Production Course; GRDC scholarships – <i>Grains Industry Research Scholarships (GRS)</i>, <i>Undergraduate Honours Scholarships (UHS)</i></li> </ul> <p><b>EXAMPLES OF JOINT ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>Collaborative undergraduate studentship project with RDCs managed by RIRDC</li> </ul>
	Extensive industry	<ul style="list-style-type: none"> <li>Little reported activity</li> <li>Examples include: Cotton production course at UNE which can be accessed by other universities.</li> </ul>	<ul style="list-style-type: none"> <li>Little reported activity from RDCs at this level.</li> <li>Examples include: CRDC's undergraduate scholarship per year for Cotton CRC's Cotton Production Course; GRDC scholarships – <i>Grains Industry Research Scholarships (GRS)</i>, <i>Undergraduate Honours Scholarships (UHS)</i></li> </ul> <p><b>EXAMPLES OF JOINT ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>Collaborative undergraduate studentship project with RDCs managed by RIRDC</li> </ul>

# Specific capacity building activities

Figure 23 cont:

Type of activity		CRC	RDC
Vocational Education Training activities	Intensive industry	<ul style="list-style-type: none"> <li>No activities reported</li> </ul>	<ul style="list-style-type: none"> <li>A few RDC's are fairly active in the VET area.</li> <li>Activities include: Cert 1-5 in pig production (an APL, industry, state govt collaboration); investment in curriculum materials, supporting regional extension programs; some hort industry activity.</li> </ul>
	Extensive industry	<ul style="list-style-type: none"> <li>A fair amount of activity was reported by CRC's at the VET level.</li> <li>Examples include: contribute to the curriculum and delivery of courses for the National Centre of Dairy Education; delivery of courses in specific areas relevant to Beef CRC; EverTrain project through FFI CRC; subcontract role at DEEDI Qld.</li> </ul>	<ul style="list-style-type: none"> <li>There seems to be quite a strong level of activity across a few RDCs at the VET level including provision of TAFE training programs; dedicated people development program; development of E-learning packages.</li> <li>Examples include: fund numerous leadership development projects including the Seafood Leadership and Australian Rural Leadership Program (FRDC); certified level 2, 3 and 4 training programs for VET delivery (CRDC); AECL has a training project which will provide approximately 60 certifications to industry personnel in the next 12-18 months (Certificate 3 to Advanced Diplomas in Poultry Production); the Agricultural Training Awards (GRDC)</li> </ul> <p><b>EXAMPLES OF JOINT ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>FRDC via the SCRC supports the A-Life program, which promotes fishing related careers to students.</li> <li>National Centre for Dairy Education – Dairy Australia invest about \$1m annually with RTO's and key providers contributing at least double.</li> </ul>
	Intensive industry	<ul style="list-style-type: none"> <li>Refresher courses run every 2 years with industry consultants, producers and international experts. (Pork CRC)</li> </ul>	<ul style="list-style-type: none"> <li>There are a few RDC's with some activities in the informal skilling area. HAL notes that they spend considerable activity and effort here and AECL has a project that develops specific skills for critical industry operations.</li> <li>Activities include: investment in field days and workshops; ad hoc activities; supporting Australian Rural leadership program (APL)</li> </ul>
	Extensive industry	<ul style="list-style-type: none"> <li>Some activity across CRCs.</li> <li>Activities include: contribution to conferences and industry workshops; training of cattle breed society your groups; EverTrain project includes non accredited training courses; field days, workshops, on farm demonstrations; 'Field to fabric' program</li> </ul>	<ul style="list-style-type: none"> <li>There is a fair amount of activity by RDCs in this area.</li> <li>Examples include: FRDC sponsors/funds a number of travel and learning bursaries; Mid-career programs (World Forestry Institute, Rural Leadership); grants to individuals or groups to extend their experience and try something new (sugarcane industry); investment in educational extension delivering cotton production skills (CRDC); Shearer and wool handler training; regional coaching; service provider R&amp;D updates; producer skills programs; ongoing education of researchers and extension officers; issue specific training and within project training programs (GRDC)</li> </ul>
Informal skilling			

# Specific capacity building activities

Figure 23 cont:

Type of activity		CRC	RDC
'In the industry' on the job work / experience	Intensive industry	<ul style="list-style-type: none"> <li>• Little or no activity (AB CRC)</li> <li>• Supported this level with APL (Pork CRC)</li> </ul>	<ul style="list-style-type: none"> <li>• Minimal activity in this area from most RDCs.</li> <li>• Activities mentioned include: Investing in Youth undergraduate program; internships, undergraduate industry placement awards</li> </ul>
	Extensive industry	<ul style="list-style-type: none"> <li>• A small amount of CRC activity at this level</li> <li>• Examples include: Industry service partners sending staff for hands on experience; training of honours year students at university in conjunction with industry partners; work experience from senior high school or university (Dairy Futures CRC)</li> </ul>	<ul style="list-style-type: none"> <li>• A small amount of activity across RDC's at this level.</li> <li>• Examples include: occasional support of projects addressing on the job work skills (FRDC); indigenous work experience projects (CRDC); student placement working on climate change; train the trainer; activities for delivery partners; research publications; establishing structured program for industry employees and service providers (AECL); Industry development awards (GRDC).</li> </ul> <p><b>EXAMPLES OF JOINT ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>• CRDC Gateway Schools project with the Qld Government aimed at attracting and retaining farm workers from within the potential regional workforce.</li> </ul>
	Intensive industry	<ul style="list-style-type: none"> <li>• Little or no activity</li> </ul>	<ul style="list-style-type: none"> <li>• A number of RDCs are actively supporting industry groups directly or indirectly through different programs and investments.</li> <li>• Examples include: technology transfer and adoption activities (APL); investment in newsletters (RIRDC); offering R&amp;D projects to meet specific needs as required (AECL); respond to the many community enquires relating to egg production, egg safety and nutrition (AECL); Farming systems groups (GRDC)</li> </ul>
Supporting local community/industry groups	Intensive industry	<ul style="list-style-type: none"> <li>• Little or no activity</li> </ul>	<ul style="list-style-type: none"> <li>• A number of RDCs are actively supporting industry groups directly or indirectly through different programs and investments.</li> <li>• Examples include: technology transfer and adoption activities (APL); investment in newsletters (RIRDC); offering R&amp;D projects to meet specific needs as required (AECL); respond to the many community enquires relating to egg production, egg safety and nutrition (AECL); Farming systems groups (GRDC)</li> </ul>
Supporting local community/industry groups	Extensive industry	<ul style="list-style-type: none"> <li>• There is quite a good amount of support from CRCs for community/industry groups.</li> <li>• Examples include: support industry conferences and participation in events; supporting industry networks; FFI CRC opened up its R&amp;D activities to 'supporting sites' hosted by community/industry groups and individual farmers; development of young persons support network</li> </ul>	<ul style="list-style-type: none"> <li>• There is strong activity across a number of RDCs through activities such as industry representative bodies (FRDC); national conferences; supporting regional development programs, workshops, expos and extension networks.</li> <li>• Examples include: Grower Group Innovation Projects (GGIP) which aim to help a group of growers build their capability for innovation (SRDC); support the 8 Regional Development Programs, which are the effective arm of DA in the regions; AWI state extension networks, 7 in total with an annual funding budget of \$1.05m</li> </ul> <p><b>EXAMPLES OF JOINT ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>• CRDC and the Cotton CRC jointly convened a National Conference on Sustaining Rural Communities in April 2009.</li> <li>• A LEADERSHIP blueprint which brings together the various strands of activity around the Leadership activity in the industry (DA) is supported and championed by the Australian Dairy Farmers Ltd.</li> </ul>

# Specific capacity building activities

Figure 23 cont:

Type of activity	CRC	RDC
	<p><b>Intensive industry</b></p> <ul style="list-style-type: none"> <li>• Vacation scholarships, staff placements, student placements, student professional development, undergraduate and masters unit development, professional training (AB CRC)</li> </ul>	<ul style="list-style-type: none"> <li>• LEP has significant activities in overseas markets</li> <li>• Above comments are examples only</li> <li>• HAL provided further comments about their industry development portfolio</li> </ul>
Other / overall comments	<p><b>Extensive industry</b></p> <ul style="list-style-type: none"> <li>• The Beef CRC noted that the activity with the greatest impact is a network of 'Beef Profit Partnerships' that extends across Australia and New Zealand.</li> <li>• Have an aboriginal employment and placement strategy; in Yr 10 they are able to work 1 day / wk at Narrabri research station. (Cotton CRC)</li> </ul>	<ul style="list-style-type: none"> <li>• Currently developing a new strategy for education and training (Forest and Wood Products Australia)</li> <li>• DA noted the many ways by which they build capacity.</li> <li>• MLA noted other activities used for capacity building.</li> </ul> <p><b>EXAMPLES OF JOINT ACTIVITIES</b></p> <ul style="list-style-type: none"> <li>• SRDC notes joint sponsored conferences with universities and jointly conducted seminars around research outcomes</li> <li>• CRDC assisted Agrifood Skills Australia to pilot regional flexible workforce initiatives in NSW and Qld in 2009/10.</li> </ul>

# Budget allocations

**Figure 24:** This table shows the average estimates of total organisational budgets allocated for the activities below. A few very general observations:

- RDCs allocate the biggest proportion of budget to marketing, public relations and promotional activities in contrast to CRC's where these activities receive the smallest proportion.
- CRC's allocate the largest proportion of their budget to Education & Training activities.

- Intensive industry organisations appear to allocate twice as much budget to Education & Training and Communication & Engagement activities than those in Extensive.
- Monitoring & Evaluation activities generally receive the lowest proportion of organisational budgets (except for CRCs by a small margin where Marketing, Promotion and PR receives the smallest proportion).

Activity	Overall % and response range	Average % of budget			
		CRC	RDC	Intensive	Extensive
<b>Marketing, Promotion and Public Relations</b>	<b>11.1%</b> Range from 0% to 53% n=17	2%	14%	10.6%	11.5%
<b>Communication and Engagement</b>	<b>6.9%</b> Range from 1% to 30% n=18	4%	8%	9.5%	4.8%
<b>Extension, advisory &amp; adoption</b>	<b>9.7%</b> Range from 0 to 30% n=17	7%	10.5%	9.4%	10%
<b>Education &amp; Training</b>	<b>8.9%</b> Range from 2% to 30% n=18	12%	7.7%	12.9%	5.7%
<b>Monitoring &amp; Evaluation</b>	<b>3.5%</b> Range from 0.01 to 10% n=18	3%	3.7%	3.4%	3.5%

# Budget allocations

Figure 25: Further comments about contexts and budgets are detailed in the table below.

	CRC	RDC
Intensive industry		<p><i>[NB 2 sets of figures were provided. For the purposes of this analysis, the second set of figures were used in calculating the figures above]</i> The first set of figures provided relate directly and only to the R&amp;D program budget. As an RDC responsible for marketing &amp; R&amp;D there is significant investment into the listed activities within other program areas as shown from a total budget point of view in the second column. <b>(LiveCorp)</b></p> <hr/> <p>The above figures are derived from <b>RIRDC</b> corporate investment in these activities. Additional expenditure in 'extension, advisory &amp; adoption', 'education and training' and monitoring and evaluation' is embedded in RIRDC investment in research projects. There are elements of extension, advisory and adoption in all the projects RIRDC funds and is guided by RIRDC's 'Adoption by design principles'.</p> <hr/> <p>Industry Development is the largest <b>HAL</b> portfolio with over 350 active projects/proposals. Annual budget of up to \$20 million in 2009/10, representing up to 20% of HAL R&amp;D spend (up from \$15 mill, 16% in 2006/07) Combined life of project value is up to \$66 million (up from \$40 mill in 2006/07). Projects are levy and VC funded Peak Industry Bodies (PIBs) are the main service providers. Challenges include projects often being administratively complex (such as having multiple VCs) and the 'political' challenges surrounding PIB's as Service Providers and differentiating between 'PIB only' activity from 'Industry Development' activity.</p> <hr/> <p>These are percentages against our total budgeted operating expenses for the 09/10 fiscal year and includes projects/initatives funded by both the promotional levy and the R&amp;D levy <b>(AECL)</b></p>

# Budget allocations

Figure 25 (cont.):

	CRC	RDC
Extensive industry	<p>The centre only started operations in 2010, and there will be a significant increase in activities through the middle years of the CRC. <b>(Dairy Futures CRC)</b></p>	<p>These are approximate and the proportions may change following a strategy review. <b>(Forest and Wood Products Australia)</b></p>
	<p>Our definitions above differ to the traditional - 4.9% of our budget is for Marketing, Promotion and Extension ('Awareness'); 2.8% for Communications and PR using the definitions categorised above; 5.1% is for Education and Training; and 7.3% is for Measuring, Monitoring &amp; Evaluation through the CRC 'Adoption' project. In general, <b>Beef CRC's</b> approaches to demonstrable uptake and measurable impact of technologies in individual beef enterprises are regarded with scepticism by some of our partner organisations, even those with a stated vested interest in 'adoption'. This has meant for example that it has been difficult to develop coordinated industry delivery programs with organisations such as Meat and Livestock Australia (though other organisations such as Meat and Wool New Zealand and the Australian Centre for International Agricultural Research are willing funders of such approaches due to the outcomes they achieve in industry). Competing with an RDC in industry delivery does not make sense to us, but our obligation is to demonstrable uptake of technologies and hence we were not prepared to compromise that obligation to increase our level of 'awareness' activities as suggested by MLA</p>	<p>The numbers cited above are for the coming 2010-2011 financial year. As noted <b>FRDC</b>, as part of their new RD&amp;E Five Year Strategy will invest around 10% annually into extension and adoption. This is a <b>NEW</b> program. Previously FRDC's extension and adoption activities were limited to being specifically incorporated into R&amp;D projects. In relation to people development and education FRDC has for the past three years consistently invested around 10% of its budget into this area. This will continue for the next five years as part of the new RD&amp;E plan.</p>
	<p><b>FFI CRC's</b> overall cash investment is 70% R&amp;D, 20% capacity building and 10% management. However, staff in-kind contributions more than double our operational resources and skew the balance more to capacity building.</p>	<p>These figures are only estimates only for the financial year 2009-10. To get a more accurate figure a more detailed analysis should be made. Furthermore the majority of our projects have allocated budget to conduct specific communication, education, and practice change activities. The figures presented do not include the funding allocated in particular projects. <b>(SRDC)</b></p>
	<p>Currently setting up a campaign based approach to outcome delivery rather than a generalist regional extension model approach - being run by Ken Flowers. <b>(Cotton CRC)</b></p>	<p>Resources are committed with multiple outcomes/activities <b>(CRDC)</b></p>

# Budget allocations

Figure 25 (cont.):

	CRC	RDC
Extensive industry		<p><b>MLA's</b> total budget is not limited to only RD&amp;E activities but also includes product marketing and market access activities as well as corporate administration. The proportional split between these broad areas is: Marketing + market access 53.8%RD&amp;E 40.2%, Strategic basic research 9%, Strategic applied research 26%, Development 34%, Capability building 21%, Adoption and commercialisation 10%Corporate services 6%</p> <hr/> <p>In 2008–09, investment totals included (refer GRDC Annual Report – 2008-09 - <a href="http://www.grdc.com.au/annualreport">http://www.grdc.com.au/annualreport</a>):</p> <ul style="list-style-type: none"> <li>- Validation and Integration - \$11,700,234</li> <li>- Extension and Grower Programs - \$2,124,432</li> <li>- Communication - \$4,022,523</li> <li>- Capacity Building - \$2,698,628</li> </ul> <p>Many elements of all of the above components are integrated within individual R, D and E projects. At the same time, individual extension components have also been introduced since the development of the GRDC Extension strategy in 2007. Results has included:</p> <ul style="list-style-type: none"> <li>• Improving the focus, coordination and direction of extension related activities invested either directly or indirectly by the GRDC</li> <li>• Identifying opportunities and desirable techniques and formats to improve the effectiveness of information dissemination to customers and involve growers wherever possible</li> <li>• Improving the role of the GRDC and partner R, D and E investments to influence grain grower decisions and adoption</li> <li>• Developing a process to ensure that active and future investments within the GRDC have an improved emphasis on delivery to customers</li> <li>• Identification of opportunities for greater integration of extension efforts across the Australian grains industry</li> <li>• Improving the utilisation of GRDC internal resources to improve two way collection and dissemination of research, development and extension activities</li> </ul> <p>This has resulted in steady growth in the extension program area since its inception. <b>(GRDC)</b></p>

# Details of extension/adoption activities

**Figure 27:** Four CRCs and 12 RDCs provided details of their major extension/adoption projects. Methods used ranged across the broad range of accepted extension approaches – including training (a number linked to formal accreditation or post graduate qualifications); workshops; demonstrations; group approaches; and media. The use of websites – and webinars – were noted in a number of cases.

There were **many examples of cross collaboration/co-funding between RDCs and related CRCs as well as between funding bodies and government agencies, universities, industry organisations, CMOs and agribusiness.** There were also some examples of strong collaboration across RDCs and CRCs – for example EverGraze (FFI CRC, MLA and AWI).

**There were some example of extension/adoption projects with clear and measurable goals** (eg: Reduce cost of production by 20-30 cents/kg carcass weight over 8 years) – while others were more general in nature.

The table below captures a sample (only) of major extension/adoption projects provided by each body. The full tables of activities are provided in an attachment.

Funding Body	Examples of major extension/adoption projects	Examples of co-funding/collaborating organisations	Examples of Range of Outcomes achieved/expected
<b>Cooperative Research Centres</b>			
Australian Biosecurity CRC	<ul style="list-style-type: none"> <li>• Periurban biosecurity/pigs</li> <li>• Livestock movement</li> <li>• Other projects include Syndromic reporting and Freedom from TB</li> </ul>	<ul style="list-style-type: none"> <li>• AHA; AHC/pig producers</li> <li>• Cattle producers</li> <li>• AHA; SCAHLS;AHC</li> </ul>	<ul style="list-style-type: none"> <li>• Reducing risks of outbreaks</li> <li>• More effective use of tools</li> <li>• Effective evaluation of reporting and analysis</li> </ul>
Pork CRC	<ul style="list-style-type: none"> <li>• Development of grains for the pork industry</li> <li>• Improving herd efficiency</li> <li>• Identifying and promoting the natural benefits of pork</li> </ul>	<ul style="list-style-type: none"> <li>• GRDC</li> <li>• APL</li> <li>• APL</li> </ul>	<ul style="list-style-type: none"> <li>• Reduced feed costs of 10% over 8 years</li> <li>• Reduce cost of production by 20-30 cents/kg carcass weight over 8 years</li> <li>• Increase the demand for pork</li> </ul>
CRC for Beef Technologies	<ul style="list-style-type: none"> <li>• Beef Profit Partnerships</li> <li>• Awareness</li> <li>• Adoption Research</li> </ul>	<ul style="list-style-type: none"> <li>• Beef CRC, ACIAR, Meat &amp; Wool NZ, state agencies</li> <li>• State agencies</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrate improvement in profitability of at least 5%/yr in each BPP business and sustain</li> <li>• Beef industry end-users aware of new technologies, practices and processes</li> <li>• New researchers trained in uptake of adoption</li> </ul>
FFI CRC	<ul style="list-style-type: none"> <li>• EverGraze</li> <li>• EverTrain</li> <li>• Other projects include provision of information, training and/or demonstration sites in saltland management, environmental investment and pasture management.</li> </ul>	<ul style="list-style-type: none"> <li>• MLA, AWI, state agencies</li> <li>• State agencies</li> <li>• Commonwealth and state agencies, CMOs</li> </ul>	<ul style="list-style-type: none"> <li>• 50% increase in profitability + NRM improvement</li> <li>• 250 trainees accredited to Cert III</li> <li>• Increase in carrying capacity, profitability and ground cover; savings through better investments.</li> </ul>

# Details of extension/adoption activities

Figure 27 cont:

Funding Body	Examples of major extension/adoption projects	Examples of co-funding/collaborating organisations	Examples of Range of Outcomes achieved/expected
<b>Research and Development Corporations</b>			
SRDC	<ul style="list-style-type: none"> <li>Mackay alignment of growers services</li> <li>Grower Group initiative projects</li> <li>Other projects included education and training, scholarships</li> </ul>	<ul style="list-style-type: none"> <li>Industry organisation and state government</li> <li>Industry organisations</li> <li>Mills and educational institutions</li> </ul>	<ul style="list-style-type: none"> <li>Improved service delivery</li> <li>Increased take-up of R&amp;D</li> <li>Increased skills and human capacity</li> </ul>
RIRDC Note wide range of specialised industries covered	<ul style="list-style-type: none"> <li>Kangaroo wildgame harvesting initiative</li> <li>Master Tree Growers</li> <li>Other projects include Industry specific field days, websites, Newsletters; Symposia; Industry development programs;</li> </ul>	<ul style="list-style-type: none"> <li>Industry organisations, federal government departments, processors</li> <li>LWA; CSIRO; Australian Wood Products Australia</li> <li>Universities; processors; banks; industry/grower organisations;</li> </ul>	<ul style="list-style-type: none"> <li>Increased harvester skills; assessment framework;</li> <li>Increased motivation , skills, confidence and support network</li> <li>Awareness, career development, information exchange, market development, improved biosecurity, IPM use</li> </ul>
Livecorp	<ul style="list-style-type: none"> <li>Breeding projects Indonesia</li> <li>SOP training for slaughterhouse staff</li> <li>Other projects training in the area of handling and welfare, meat preparation and handling, improved discharge, vaccination</li> </ul>	<ul style="list-style-type: none"> <li>MLA</li> <li>MLA/LTAWP</li> <li>MLA; DAFWA; AWT; DVS</li> </ul>	<ul style="list-style-type: none"> <li>Improved management and productivity and livestock demand</li> <li>Increased handling and welfare skills</li> <li>Increased efficiencies and welfare at all stages of value chain</li> </ul>
Australian Pork Limited	<ul style="list-style-type: none"> <li>Workshops, publications, webinars, conferences, training</li> </ul>	<ul style="list-style-type: none"> <li>Pork CRC, state agencies</li> </ul>	<ul style="list-style-type: none"> <li>Ensure that on an average basis, at least 70% of technologies developed and transferred to industry and at least 40% of those technologies are adopted on an annual basis by at least 40% of the industry</li> </ul>
Fisheries RDC	<ul style="list-style-type: none"> <li>Equipping the Mudcrab industry with innovative skills</li> <li>Recfishing research and extension improvement</li> <li>Other projects include activities included television. Advisory services, workshops and demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>DEEDI, Sydney Fish Market</li> <li>RecFish Australia, Infofish services</li> <li>SeaNet, OceanWatch, private companies</li> </ul>	<ul style="list-style-type: none"> <li>50% reduction in mud crab mortalities</li> <li>5% increase in awareness and use of R&amp;D outputs</li> <li>Increased uptake and awareness</li> </ul>
Forest and Wood Products Australia	<ul style="list-style-type: none"> <li>Technology transfer brokers</li> <li>Technical Resources program</li> <li>Other projects include the use of R&amp;D advisory groups; and Uptake of robotic timber sorting</li> </ul>	<ul style="list-style-type: none"> <li>None</li> <li>None</li> <li>FWPA, industry stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>Increased awareness of the industry relevance of FWPA sponsored project outputs</li> <li>Maintain capacity of trade and engineering graduates</li> <li>Increased awareness and identification of needs; installation of equipment</li> </ul>

# Details of extension/adoption activities

Figure 27 cont:

Funding Body	Examples of major extension/adoption projects	Examples of co-funding/collaborating organisations	Examples of Range of Outcomes achieved/expected
<b>Research and Development Corporations continued</b>			
Cotton RDC	<ul style="list-style-type: none"> <li>Cotton Industry R&amp;D and BMP implementation framework</li> </ul>	<ul style="list-style-type: none"> <li>Cotton CRC and Cotton Australia, DEEDI, NSW I&amp;I, Agrifood Skills Australia, Flexible Learning Australia, AACC, Tocal College.</li> </ul>	<ul style="list-style-type: none"> <li>Multiple outcomes across 13 best practice targeted areas with Adoption Leaders responsible for achieving progress on targets. (Details on targets available if required)</li> </ul>
Australian Egg Corporation Limited	<ul style="list-style-type: none"> <li>RD&amp;E development service</li> <li>Extension program development and communication</li> <li>Egg production software</li> <li>Quality assurance program</li> </ul>	<ul style="list-style-type: none"> <li>I&amp;I NSW</li> </ul>	<ul style="list-style-type: none"> <li>Improvement in technology transfer</li> <li>R&amp;D information readily available</li> <li>Improved recording, access to and use of production records</li> <li>At least 80% of the national flock accredited and therefore meeting industry best practice</li> </ul>
Dairy Australia	<ul style="list-style-type: none"> <li>Dairy Extension Centre (Vic and SA)</li> <li>Dairy Pathways (NSW); 20-12 program (Tas); 30-30 Program (Vic and SA); The People in Dairy Program</li> <li>NCDEA</li> </ul>	<ul style="list-style-type: none"> <li>DPIB, CMO, Dept of Sustainability &amp; Environment, Gardiner Foundation</li> <li>Not provided</li> <li>RTOs in relevant states</li> </ul>	<ul style="list-style-type: none"> <li>Increased productivity but also social and sustainability outcomes</li> <li>All programs contain a component of delivery or practice change.... extension, education.</li> <li>A sustainably increased profitability in our farm base.</li> </ul>
Australian Wool Innovation	<ul style="list-style-type: none"> <li>State programs: Sheep Connect – NSW, Tas, SA; Leading Sheep – Qld; Bestwool/Bestlamb – Vic;</li> <li>Bestprac (pastoral)</li> <li>Making More from Sheep</li> </ul>	<ul style="list-style-type: none"> <li>State agencies, UTAS, SA NRM Boards</li> <li>FarmReady</li> <li>MLA</li> </ul>	<ul style="list-style-type: none"> <li>Specifically address state priorities – sustainable and profitable practices (specific targets by state provided – see table attachment)</li> <li>Grow network to 400 members/associates, innovation culture</li> <li>At least 25% (5,500) of aware producers participating in MMfS activities by 2015. At least 50% of applying at least one procedure, that delivers improved productivity and profitability.</li> </ul>

# Details of extension/adoption activities

Figure 27 cont:

Funding Body	Examples of major extension/adoption projects	Examples of co-funding/collaborating organisations	Examples of Range of Outcomes achieved/expected
<b>Research and Development Corporations continued</b>			
MLA	<ul style="list-style-type: none"> <li>EDGEnetwork</li> <li>More Beef from Pastures</li> <li>Other projects include: Making More from Sheep; Beef Up; Producer Demonstration sites; Collaborative innovation program; and value adding capability program</li> </ul>	<ul style="list-style-type: none"> <li>Public/private (user-pays)</li> <li>Southern state agencies, private sector</li> <li>AWI; state agencies, Agribusiness and consultants, Cattle Council of Australia; private companies</li> </ul>	<ul style="list-style-type: none"> <li>Contributes to outcomes of other programs, builds knowledge skills</li> <li>Industry-level: NPV of \$56m over 7 years; BCA of 8:1 Enterprise level: \$1.86/DSE change in profit</li> <li>Increased profitability; updating knowledge; practice change; innovation; increased carcase value.</li> </ul>
Grape and Wine RDC	<ul style="list-style-type: none"> <li>GWDC Grassroots program</li> <li>Innovators Network</li> <li>Other projects include the post-graduate program and Future Leaders program</li> </ul>	<ul style="list-style-type: none"> <li>Regional Industry Groups</li> <li>None</li> <li>Various; Wine industry organisations</li> </ul>	<ul style="list-style-type: none"> <li>increased economic sustainability of businesses</li> <li>Up-skill advisors</li> <li>Skilled workforce and industry leadership</li> </ul>
Horticulture Australia Ltd	<ul style="list-style-type: none"> <li>Vegetable Industry Development Program</li> <li>Citrus Industry Development Program</li> <li>Nursery Industry Development Program</li> </ul>	<ul style="list-style-type: none"> <li>National and state-based vegetable industry bodies; other collaborators</li> <li>National, State and Regional Citrus Boards co fund and collaborate in this program.</li> <li>National and State based Nursery Industry Representative Bodies</li> </ul>	<ul style="list-style-type: none"> <li>double the Australian production of vegetables by 2020</li> <li>Increased use of market information in business decision making throughout the industry</li> <li>Increased number of: accredited businesses; trained industry members; recognised industry professionals and greater industry collaboration .</li> </ul>
GRDC	<ul style="list-style-type: none"> <li>Grains Research Updates</li> <li>IWM Training</li> <li>Foliar Disease Training</li> <li>Farming Systems</li> <li>Training Growers to Manage Soil Water</li> <li>Agribusiness Relationships</li> </ul>	<ul style="list-style-type: none"> <li>Agribusiness</li> <li>State departments (where appropriate)</li> </ul>	<ul style="list-style-type: none"> <li>Delivery of program information to growers and advisers through face to face updates</li> <li>Provide specialist advice to clients</li> <li>Plan and manage long-term weed, pest and/or disease control in crops</li> <li>Increased water use efficiency by 10%</li> <li>Provide and receive RD&amp;E information and priorities from/to agribusiness.</li> </ul>

# Specific adoption requirements for research projects

**Figure 28:** All respondents indicated that they had a process or specific requirements for research focused projects to ensure that outputs fed into the adoption process. The following table provides further details.

Examples of requirements include: an adoption plan at time of approval (AB-CRC); establishment of a Technology Transfer and Adoption reference group (APL, Pork CRC);

steering committees (LiveCorp); requirement of specific extension plans at funding stage (Grape and Wine RDC); use of an industry development needs process (HAL); specific clauses for tech transfer in contracts (Forest and Wood Products Australia); strong informative development phase for major projects (Dairy Australia); path to industry use planning for all R&D projects under a Board-approved policy (FFI CRC).

	CRC	RDC
Intensive industry	All projects include an adoption plan at the time of approval ( <b>AB-CRC</b> )	Technology Transfer and Adoption specialist group that develops a business annually to review and then recommend activities to enhance technology adoption. Researchers have to provide key information (not just research findings) to ensure adoption strategies are developed. <b>APL</b> and Pork CRC have established a Technology Transfer and adoption reference group (early adopters) to facilitate/enhance adoption of new technologies.
	All projects include a commercialisation and adoption plan. ( <b>Pork CRC</b> )	1. A number of key projects use steering committee structures to ensure they deliver outcomes of relevance and applicable to the industry. 2. All projects prior to commencement are presented to the R&D advisory committee which is made up of representatives of cattle and sheep producers, ship owners, exporters and an independent veterinary advisor. The direction and intent of the R&D program is presented and agreed upon prior to the commencement of each funding year through the AOP development process. ( <b>LiveCorp</b> )
		<p><b>RIRDC's</b> 'adoption by design principles' guide this process. Specific requirements in RIRDC's application form require applicants to specify: 'delivery mechanisms' (e.g. website announcement, short report, field days, stakeholder copies, advertising etc) for expected outcomes and outputs from the research; and 'adoption and commercialisation' strategies and opportunities likely to arise from the research, including a communications strategy for the research project.</p> <p><b>HAL</b> has over 350 active projects in this area. Some key messages include: the majority of HAL's hort industries have assessed their industry development needs. Using an IDNA process, often in conjunction with their strategic planning process. Many industries were initially reluctant to complete an IDNA, however, most reported significant benefit from the process. The majority of industries are now moving towards a: More nationally coordinated 'program' approach (as opposed to individual, unrelated projects); Regional delivery program/mechanisms; More focused industry development plan with direct links to the industry strategic plan; Greater focus on the entire supply chain, not just growers; Greater focus on ensuring market information drives decision making throughout the industry. Some industries have identified the need to work more closely with agribusiness, However, determining the best ways of achieving this without compromising information integrity for the sake of (either perceived or real) disproportionate commercial gain is a major issue. All project proposals are required to detail project communication and adoption processes. This can be undertaken as an integral part of the individual proposal or simply feed into the industry's industry development program. As to be expected, there is a large variation the adoption process across projects.</p>

# Specific adoption requirements for research projects

Figure 28 cont:

	CRC	RDC
Intensive Industry		Depends on the project; if they are short term with defined 'research products' they require specific extension plans and definition of target audiences to be outlined in the funding agreements. <b>(Grape and Wine RDC)</b>
Extensive industry	Path to industry use planning for all R&D projects under a Board-approved policy. See above. <b>(FFI CRC)</b>	<b>FRDC</b> has a requirement to develop an extension and adoption strategy as part of each project. This is monitored and milestones reported upon as part of the project.
	It is written into the research project plans and milestones are built around the adoption of outputs. We have changed the model because it stops the researchers doing what they want vs. ensuring they take a commercially focused approach to delivery of outcomes. <b>(Cotton CRC)</b>	All contracts have specific clauses for tech transfer (e.g., workshops, seminars) <b>(Forest and Wood Products Australia)</b>
	Partnerships with end-users. Linkages to state extension services and VET sector. Dedicated utilisation schedule to describe utilisation activities. <b>(Dairy Futures CRC)</b>	- Final reports: We make sure that our final reports are accessible to anyone who needs them unless they are confidential.- Project plan/proposal- Within the project proposal the proponents are asked to identify who will use the research outputs and means to communicate the research results and findings to them. Communication activities should be listed and reported against milestone reports. - Most projects will include a presentation to ASSCT (Australian Society of Sugarcane Technologist Conference) and media articles through BSES bulleting or canegrowers magazine.- SRDC will also ensure that any important results are communicated through SRDC update, enews and SRDC seminars. - SRDC also holds yearly workshops to report back on research outputs. <b>(SRDC)</b>
	Ensure that Rogers' (1995) factors that impact on the rate of adoption are accommodated during all R&D stages (Rogers EM (1995) 'Diffusion of Innovations,' Fourth Edition, New York: Free Press) For each 'product, practice or process, ensure that key CRC researchers work directly with knowledgeable industry end-users to distil the key messages for industry from the scientific results (known as a distillation workshop) For each 'product', practice or process, ensure that key CRC researchers work directly with economists and knowledgeable industry end-users to calculate 'proof-of-profit' at individual enterprise level. Key messages and 'proof-of-profit' calculations are then packaged in an information kit (PowerPoint presentations, written materials, training tools etc) that is made freely available to consultants, trainers, extension officers and stakeholder organisations interested in using the materials for their own training purposes. <b>(CRC for Beef Genetic Technology)</b>	Development of a communication and adoption strategy in which the key expected outputs and outcomes are identified along with the main targets groups and strategies/tactics for communicating results in scientific, industry and community circles. Where the research is of an applied nature, processes for the integration of R&D outputs and information into the cotton industry, new Best Management Practices system, myBMP, have been developed. <b>(CRDC)</b>

# Specific adoption requirements for research projects

Figure 28 cont:

	CRC	RDC
Extensive industry		<p>Our philosophy is that good research and extension/education practice is informed by a strong co development of knowledge around the target market and the agreed outcomes from any intervention. All major programs have a strong informative development phase. This ensures (or helps ensure) that research answers the relevant question in a way that facilitates practice change. It also informs (the market research or development work) the appropriate approach to practice change. In the post farm gate arena, practice change and influence is also strongly targeted towards next user groups such as nutritionists, dieticians, health professionals. This philosophy (of integrated RD and E or true innovation) is becoming apparent and available in our documentation around the PIMC process and how dairy attacks the issue of practice change. A document outlining this approach will be available by end of July. <b>(Dairy Australia)</b></p>
		<p>Ad hoc approach to feeding into adoption; options range from consultation with growers at commissioning of project through to inclusion in contract of a communications plan. Linkages are created between the extension networks and research projects to assist with delivery. <b>(AWI)</b></p>
		<p>Consideration of value proposition, specific target market and path to market when considering new projects, benefit:cost estimates, milestone sequences <b>(MLA)</b></p>
		<p>Milestones, Outputs and outcomes all include extension elements at the planning phase where investment partners are expected to outline delivery processes prior to contracting. <b>(GRDC)</b></p>

# Plans for effective adoption

**Figure 29:** All respondents have plans to further address the need for research to be effectively adopted by users.

Within the CRCs, adoption is viewed as a *critical part of the strategic plan (Dairy Future CRC) and a major focus (Pork CRC)* that is included in business plans (Beef CRC) and logical frameworks (FFI CRC). The AB-CRC notes that specific tailored adoption projects follow all research projects.

Some RDCs mention **new strategies, directions and better guidelines** for extension and adoption. Grape and Wine RDC note *further development of current programs which mark a distinct new strategic direction for the organisation* while FRDC has a new RD&E five year strategy and will invest around 10% annually in extension and adoption. CRDC is releasing a new

system in 2010 - myBMP - which is *expected to provide an improved capacity to identify the demand for information from growers and their advisors*; and SRDC is reviewing their stakeholder engagement strategies and policies.

Other RDCs mention that their **focus on adoption will remain strong** and continue to be *embedded in project development (Dairy Australia)*. Examples include LiveCorp where extension plans are included in project plans, AWI where projects must include communication plans and MLA with *an effective interface/integration between industry and R&D providers which ensures that research is customer driven; and that research outputs can be efficiently translated into industry-relevant outcomes*. GRDC recognises the need for *putting in place programs that engage stakeholders at each step of R, D & E planning and implementation*.

	CRC	RDC
Intensive industry	Specific tailored adoption projects follow all research projects ( <b>AB- CRC</b> )	Within projects that will deliver a direct, clear and tangible benefit straight away, an extension plan is included in the project plan. ( <b>LiveCorp</b> )
	Adoption or utilization of research outcomes is a major focus of the Pork CRC and we have a range of plans and vehicles to ensure adoption in place. ( <b>Pork CRC</b> )	<b>RIRDC</b> does not plan to undertake further initiatives. RIRDC facilitates to the maximum level possible the adoption of research output by user, given limited resources. This is achieved through the requirement for each RIRDC program and project to have, and implement, a communication strategy.
		Further development of current programs which mark a distinct new strategic direction for the organisation particularly the Grassroots and Innovators Network programs. ( <b>Grape and Wine RDC</b> )
Extensive industry	Critical part of the strategic plan ( <b>Dairy Futures CRC</b> )	The review of industry development needs by all of <b>HALs</b> industries is guiding efficient and effective adoption processes within horticulture. For more information, please contact Richard Stephens at HAL.
	<b>Beef CRC</b> is currently developing a business plan aimed at achieving co-investment to establish a 'BPP Innovation Hub' in conjunction with the University of New England Business School, ACIAR and several State Departments of Primary Industry to ensure the BPP model is sustainable beyond the life of Beef CRC.	As noted <b>FRDC</b> , as part of their new RD&E Five Year Strategy will invest around 10% annually into extension and adoption. This is a NEW program. Previously FRDC's extension and adoption activities were limited to being specifically incorporated into R&D projects.
		The organisation has recently put in place better guidelines for R&D reports to improve communication of findings. We have employed independent consults to review the completed R&D portfolio and determine what projects require further dissemination. We are developing a new website to improve tech transfer to architects and engineers. ( <b>Forest and Wood Products Australia</b> )

# Plans for effective adoption

Figure 29 cont:

	CRC	RDC
Extensive industry	<p>Completing the industry planning and integrating it with a monitoring, evaluation and reporting program that adheres to a vertically integrated logical framework (from inputs to adoption targets to outcomes) (<b>FFI CRC</b>)</p>	<p>- <b>SRDC</b> will also ensure that any important results are communicated through SRDC update, enews and SRDC seminars. - SRDC also holds yearly workshops to report back on research outputs.- SRDC is redesigning its website to make sure high impact is achieved- Stakeholder engagement strategies and policies are being reviewed.,SRDC's call for projects will also look for ways to enhance knowledge transfer and uptake of improved technologies, including assessment of the success of current approaches and potential new approaches. It will also call for improved means to develop human capacity, including of young people and new entrants.</p>
		<p>The release of the industry's new myBMP system in 2010 is expected to provide an improved capacity to identify the demand for information from growers and their advisors. More targeted delivery of knowledge, information and services is anticipated for the future including greater emphasis on maintaining the involvement of researchers in keeping myBMP up to date. In addition new emphasis on supporting communities of interest and social networks is expected to result in new services based on demand. In addition to the role myBMP may play in the future for promoting a more rapid pathway to adoption for R&amp;D outputs, <b>CRDC</b> also will encourage opportunities to identify and promote the innovations that come from growers (e.g.. the 'Big Day Out' event on the farm of the winner of the Cotton Industry Award for Innovative grower and the development of grower led projects to identify and share innovative ideas and practices; development of farming systems innovation case studies to document the results of innovators/high achievers in the industry). Collaboration with GRDC in joint communication initiatives will also address adoption and best practice.</p>
		<p>It is a focus; it is increasingly and strongly embedded in project development (as per above) and <b>Dairy Australia</b> is leading the thinking in the dairy industry's PIMC process....particularly the area around how we can achieve better practice change in a more complex environment (as above) We have a strong focus on service providers and providing value and support in their business models as being a key lever (but not sole) in the practice change discussion. We invest, and have invested over 8 years, in a strong social research dimension to underpin our development thinking and evaluation in this space.</p> <p>Within contacts with research providers, <b>AWI</b> requires the delivery of targeted communications material appropriate for the audience, including a communications plan for the project. This plan also needs to take into account the stage of research (e.g. initial scoping vs development vs commercialisation). All communications needs to be linked with AWI extension networks.</p>

# Plans for effective adoption

Figure 29 cont:

	CRC	RDC
Extensive industry		<p><b>MLA</b> ensures an effective interface/integration between industry and R&amp;D providers which ensures that research is customer driven; and that research outputs can be efficiently translated into industry-relevant outcomes. We achieve this through the: Development of a formal 'products and services development and delivery strategy' to guide a formal and integrated process for evaluating, modelling and sequentially delivering R&amp;D outputs into 'majority market' (prudent and pragmatic adopters of proven technology; and traditionalists who adopt technology after it becomes an industry standard) and 'lead user' (technology enthusiasts; and those first to match the technology to an actual or emerging opportunity to establish themselves a competitive advantage) research collaborators extension programs; Co-investment and collaboration principles within a structured 'communication &amp; research adoption' framework to ensure consistency and efficacy in the extension of R&amp;D outputs, including the delineation of the respective roles (and resourcing requirements) of the public sector, RDCs and the private sector; Consolidation of consultative, evaluation and delivery (including extension) activities for broader application under the National RD&amp;E Strategies; Off-farm capability building and 'market readiness' program to create demand for innovation with industry; In the area of nutrition research, the evidence-based results of the program are used to communicate and promote the latest nutrition information to healthcare professionals and the broader community.</p> <p>The grains industry is characterised by a remarkable ability to adapt to change and respond to pressures from natural and market phenomena. The next challenge is to underpin efficient and effective delivery of critical R,D&amp;E. This must be achieved within an environment characterised by:</p> <ul style="list-style-type: none"> <li>• ongoing budgetary pressure at both government and farm levels;</li> <li>• transition of some services previously provided by the public sector to the private sector;</li> <li>• a declining rural population (especially in more remote rural locations); and</li> <li>• the ongoing need for agriculture to compete with other industries and services for investment of public and private resources.</li> </ul> <p>GRDC recognises the value of participatory approaches to R, D&amp;E and is putting in place programs that engage stakeholders at each step of R, D &amp;E planning and implementation.</p> <p>State and federal agencies have recognised the need for a co-ordinated approach to R,D&amp;E delivery via the Primary Industries Standing Committee (PISC) process of developing sectoral plans. The process has included some industry consultation.</p> <p>Some of the key challenges are outlined in a discussion paper which considers R, D and E elements for specific issues. Refer to <a href="http://www.grdc.com.au/uploads/documents/Optimising_Investment_in_RDE_for_the_Northern_Grains_Region.pdf">http://www.grdc.com.au/uploads/documents/Optimising_Investment_in_RDE_for_the_Northern_Grains_Region.pdf</a> and <a href="http://www.grdc.com.au/director/about/stakeholder_engagement/deliveringDandE">http://www.grdc.com.au/director/about/stakeholder_engagement/deliveringDandE</a> for further information. <b>(GRDC)</b></p>

# Needs for effective adoption

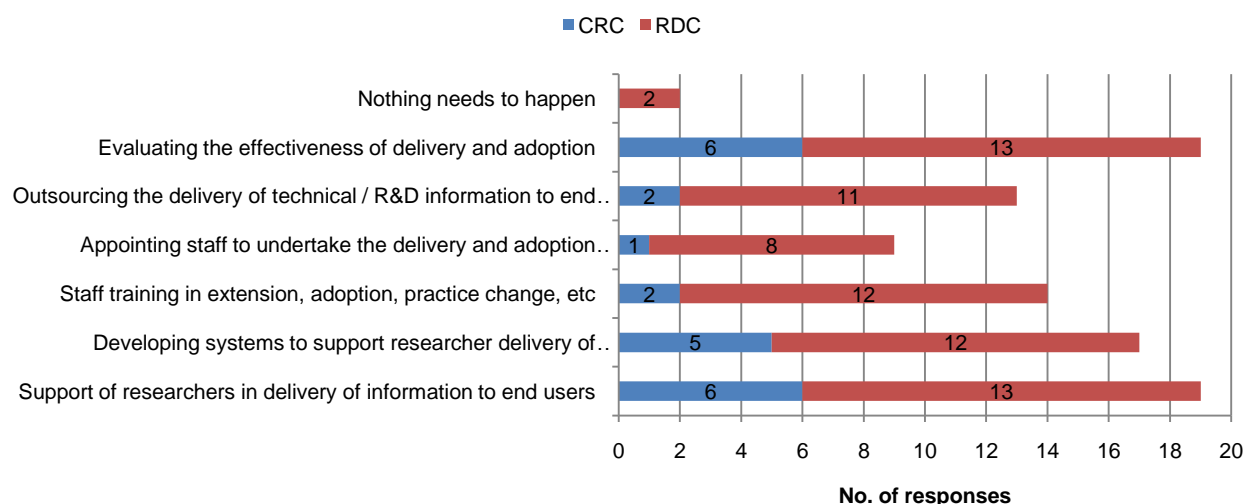
**Figure 30 & 31:** Respondents identify three main areas for attention to enable adoption related actions to be fully implemented. They are 'Evaluating the effectiveness of delivery and adoption', 'Support of researchers in deliver of information to end users', and 'Developing systems to support researcher deliver of information. This is consistent across CRC and RDCs.

**A number of respondents note that lots of actions (AB-CRC) are required and that research is needed into the most effective and innovative ways to do this (SRDC).** Cotton CRC agrees and points out that another category needs to be added – 'Undertake Development'. *We have a commitment to development that sees \$1 of R&D translate into \$17 of development available for end users.* Dairy Australia comments that all of the options below are needed and *in a more cohesive manner than ticking the boxes might lead us to imply.*

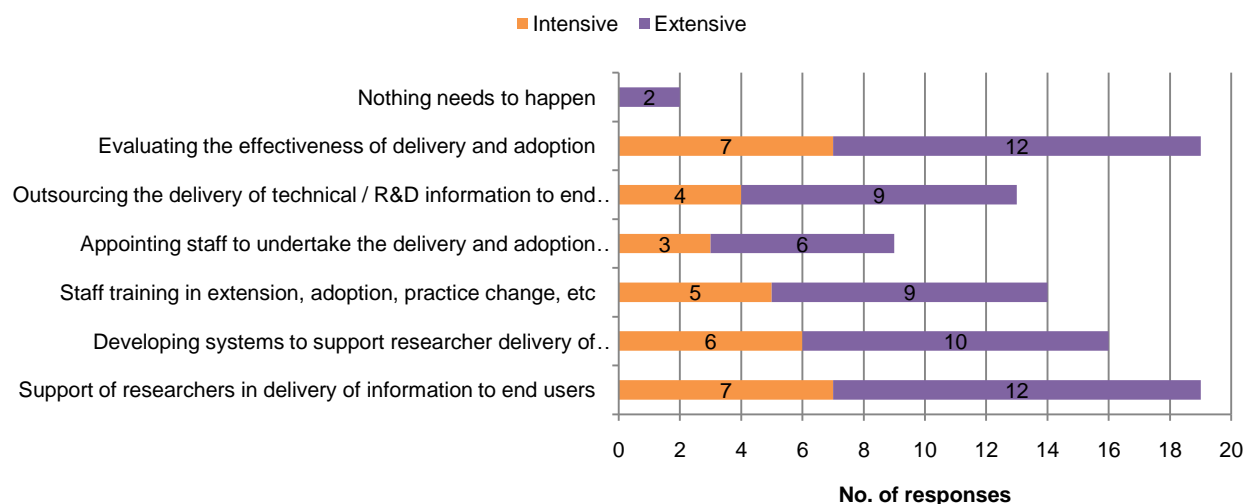
A couple of comments focused on **the skills needed to deliver R&D science to end users**. HAL notes that *not all researchers are suited to deliver info to end users via extension/adoption, etc activities* and suggests that *they could be employed by various organisations including consultants.* FRDC also commented on the need to locate *specific skills to convert R&D science (report outputs) into a useable format for extension.*

GRDC noted that *no one size fits all approach is appropriate.*

## What is needed to enable these actions to be fully implemented



## What is needed to enable these actions to be fully implemented



# Needs for effective adoption

Figure 32: 'Other' comments about what is needed to enable adoption activities to be fully implemented.

	CRC	RDC
Intensive Industry	Lots of other actions <b>(AB-CRC)</b>	<p>This is one of the most difficult areas to get across industry implementation. There will always be a range in how or how quickly an operation uptakes or implements new processes or technology. Clear commercial or operational benefit analysis needs to be developed to allow clearer identification of the outcomes. <b>(Livecorp)</b></p> <hr/> <p><b>RIRDC</b> undertakes the ticked activities as an integral component of the role of research managers. Additional funding would assist the delivery of these activities.</p> <hr/> <p>Not all researchers suited to deliver info to end users via extension/adoption, etc activities; they could be employed by various organisations including consultant. <b>(HAL)</b></p>
	Bringing about a cultural change with R&D project leaders that industry use planning and activities are part of their responsibility <b>(FFI CRC)</b>	Locating specific skills to convert R&D science (report outputs) into a useable format for extension <b>(FRDC)</b>
Extensive Industry	Need to add another box 'undertake development'. We have a commitment to development that sees \$1 of R&D translate into \$17 of development available for end users. <b>(Cotton CRC)</b>	Research is needed into the most effective and innovative ways to do this. <b>(SRDC)</b>
		<p>Collaborative human capacity building relationships and projects with a broad range of agencies, organisations and communities to initiate and support adaptive, flexible and resilient workforces and producers. <b>(CRDC)</b></p> <hr/> <p>All of the above, in a more cohesive manner than ticking the boxes might lead us to imply. The central requirement is a willingness, desire and range of processes which allow co-development (RD and E and farmers, end users) of interventions.....around an agreed position as to "what the problem we are trying to solve, or change, is?" For example, if we ticked the first box that support of researchers would need to go right back to ensuring that what they were about to deliver was in response to the industry question needing answering and incorporated the issues and concerns and view points of the end and next users. It is very difficult to support a researcher to deliver information that is not needed, in the wrong format, or answering the wrong questions. (Dairy Australia)</p> <hr/> <p>See notes attached <b>(MLA)</b></p> <hr/> <p>All of the above apply. The degree of importance of these activities is dependent on what GRDC is trying to get adopted and a one-size-fits all approach is not adequate. <b>(GRDC)</b></p>

# Evaluation activities – program/organisational level

**Figure 33:** All respondents provided some description of the type of evaluation and measurement activities happening at the organisational level. **A number give an indication of the timeframes** in which their activities operated with descriptions including *periodic, ongoing, each 90 days; every 6 and 12 months, twice yearly, annual, biannual, every five years.*

**Others describe their strategies.** For example, HAL explains that *individual industries have their own individual evaluation programs, based on their own industry development program.* As part of a broader evaluation approach, the Beef CRC use a *Continuous Improvement and Innovation approach, with formal reporting of uptake and impact every 180 days.* The FFI CRC takes a comprehensive reporting approach *under the monitoring, evaluation and reporting program for the whole CRC.* GRDC monitors and measures performance to continually improve its effectiveness and efficiency.

A few note their participation in the joint RDC evaluation program/use of Council of Rural R&D Corporation's evaluation framework (Grape and Wine RDC, FRDC, CRDC).

**Surveys and Cost:Benefit analysis are the most widely mentioned evaluation activities** amongst respondents as at the organisational level.

Examples of survey activities include Pork CRC twice yearly surveys of producers and nutritionists; annual stakeholder surveys (RIRDC, Cotton RDC; LiveCorp); industry specific surveys (HAL); biannual stakeholder survey (FRDC); regular surveys of key markets (Forest and Wood Products Australia); member satisfaction surveys (MLA); annual anonymous on-line survey of industry stakeholders (Beef CRC).

Examples of where Cost:Benefit analyses are used include CRDC's contribution of at least 3 sub-program level Cost/Benefit Analyses per year; an economist creating a framework for recording outcomes (Cotton CRC); all Dairy Australia programs programs being *subject to a benefit:cost analysis that has embedded assumptions around practice change;* and FRDC undertaking a rolling series of benefit cost analysis *like many of the RDCs.*

	CRC	RDC
Intensive Industry	Measure impact at an organisational level <b>(AB-CRC)</b>	Periodic review is undertaken including informal interviews, discussions at industry workshops, and within industry consultative committees. <b>(AECL)</b>
	We conduct twice yearly surveys of producers to garner information on the awareness and adoption of <b>Pork CRC</b> technologies. We do a similar survey of nutritionists to measure awareness and the use of Pork CRC technologies. We also discuss the uptake of product related technologies with suppliers to assess what how sales have changed in response to Pork CRC promotion of new technologies. Because the Pork CRC has a number of end user participants we also measure the uptake of new technologies by our participants and include the results in our annual report.	Development of full business plan with ex ante benefit cost analyses; ex post cost benefit analysis of the technology transfer and adoption program. <b>(Australian Pork Limited)</b>
		Annual stakeholder survey <b>(LiveCorp)</b>
		Annual stakeholder surveys at the organisational level. <b>RIRDC</b> 'Evaluation framework' guides evaluation against RIRDC Strategy, Near the end of each Five Year R & D plan, implementation (and before the development of a new R & D plan), a stakeholder survey is carried out which includes questions on adoption and practice change as a result of RIRDC research Benefit cost analyses of programs are undertaken.
Extensive Industry	Too early <b>(Dairy Futures CRC)</b>	Joint RDC evaluation program <b>(Grape and Wine RDC)</b>
		Individual industries have their own individual evaluation programs, based on their own industry development program. These often include qualitative (IE: case studies, informal feedback) and quantitative information (such as surveys). <b>(HAL)</b>
		The <b>FRDC</b> , like many of the RDCs, are undertaking a rolling series of benefit cost analysis. These analysis measure the outcome of clusters of R&D projects. In addition FRDC has undertaken a bi-annual stakeholder survey - qualitative and quantitative.

# Evaluation activities – program/organisational level

Figure 33 cont:

	CRC	RDC
Extensive Industry	<p>The BPP process routinely measures, monitors and evaluates (each 90 days) products, practices and processes that are trialled as part of the Continuous Improvement and Innovation approach, with formal reporting of uptake and impact every 180 days. All CRC awareness activities request completion of an evaluation survey at the end of the activity with the aim of assessing, 'intent to adopt'. Follow-up surveys are conducted with selected participants 6- and 12-months after the activity to determine whether 'intent' translated to 'adoption'. <b>Beef CRC</b> undertakes an annual anonymous on-line survey of industry stakeholders to determine whether their industry delivery needs are being met. It also undertakes an annual anonymous survey (conducted by an independent facilitator) of its partner organisations to determine whether their needs are being met and to identify areas for improvement.</p>	<p>Building closer links with Company members (growers and processors) and enduser markets, especially architects and engineers. Undertaking regular surveys of key markets. <b>(Forest and Wood Products Australia)</b></p>
	<p>Comprehensive reporting under the monitoring, evaluation and reporting program for the whole CRC. Economic impact assessment. Informed persons surveys. <b>(FFI CRC)</b></p>	<p>An evaluation of <b>SRDC</b> impact is done every five years.</p>
	<p>An economist has created a framework for recording outcomes eg. 135 attended 15x specific field days. <b>(Cotton CRC)</b></p>	<p>Annual survey practices and attitudes of growers and consultants in collaboration with the Cotton CRC and Crop Consultants Australia. Use of the C-VENT web-enabled survey and database tool for the development and delivery of regional or industry-wide surveys and analyses. Contribution of at least 3 sub-program level Cost/Benefit Analyses per year using the Council of Rural R&amp;D Corporation's evaluation framework. <b>(CRDC)</b></p>
		<p>All programs are subject to a benefit:cost analysis that has embedded assumptions around practice change. The major investments, particularly in response to drought and crisis over the past four years, had significant pre investment evaluation design via the social research unit at Melbourne University which enabled quantitative responses to be pursued. This is being done primarily at the major project level (below) i.e. the strong evaluation activity. <b>(Dairy Australia)</b></p>
		<p>A number of projects are included in an annual CBA as part of reporting for the annual report. No cross project reviews are conducted. <b>(AWI)</b></p>
		<p><b>MLA</b> member satisfaction survey (eg feedback on the use of a range of MLA services) Meat Standards Australia licensee database (eg carcase grading data, pass/fail data, wholesale/retail/consumer satisfaction data) Records of registration with the National Feedlot Accreditation Scheme (NFAS) since accreditation is conditional on adoption of best management practices promoted by MLA Analysis of participation rate data from LAMBPLAN/MERINO SELECT and BREEDPLAN genetic improvement programs facilitated</p>
	<p>The GRDC monitors and measures performance to continually improve its effectiveness and efficiency. The Board, Management and all staff are set performance objectives each year. Performance against these objectives is reviewed regularly. Some activities include: Solutions Marketing Farming Practices Survey, IPSOS grower surveys, Annual Impact Assessment, ABARE Farm Productivity <b>(GRDC)</b></p>	

# Evaluation activities – project level

**Figure 34:** Some respondents note that **evaluation activities are tailored to different projects**. HAL comments that there can be a *large variation in how this is completed and to what depth* with cost being a limiting factor. FRDC notes that *it only undertakes random evaluations on an adhoc basis*. However, this will change as part of its new new Extension and Adoption program where *more evaluations will be undertaken*. APL comments that subjective activity evaluation is undertaken *post each event*.

Others describe how **project evaluations are guided by an overall framework** where project outputs are reported against organisational outcomes. RIRDC notes that its *'evaluation framework' guides evaluation against project outputs*. MLA explains that *each individual project will typically contribute to adoption measurement and reporting at a program/annual operating plan level*. The FFI CRC *has quarterly reporting against whole of CRC milestones*. Forest and Wood Products Australia are participating in the 3rd round of project reviews using the agreed protocol.

A couple of respondents comment that they **use similar strategies at the project level as at the organisational level** (including Pork CRC, Beef CRC, Cotton CRC). The Grape and Wine RDC noted that at the project level they added in RDC specific *evaluations in relation to investments in leadership development and extension programs*.

The **individual program/research managers are noted by some respondents as being responsible** for ensuring that projects are on target for delivering against project objectives. RIRDC explains that *research managers evaluate milestone and final reports for each project to ensure they are on target for delivering against project objectives*. Similarly, SRDC notes that the *program manager monitors the progress of the projects*.

	CRC	RDC
Intensive Industry	Tailored to the activity <b>(AB-CRC)</b>	Some projects are evaluated by on-going participation of producers and their feedback; for example, the quality assurance, training and egg production software projects. Other projects are evaluated by the IP generated to serve the industry, for example specific nutritional information or the production of a vaccine and subsequent use in the industry. <b>(AECL)</b>
		Activity evaluation (subjective) post each event; measure of technology awareness and technology adopted by % of industry <b>(APL)</b>
	<b>(Pork CRC)</b> We measure the uptake of the outcomes of individual project outcomes in a manner similar to those described above.	<ul style="list-style-type: none"> <li>• Training recipient survey</li> <li>• Wet market butchers,</li> <li>• SOP recipients (Asia)</li> <li>• Animal handling assessments,</li> <li>• Feedlot training feedback forms,</li> <li>• AQIS/vet compliance level surveys?</li> <li>• Unloading rates – discharge ports</li> <li>• Stevedore and stockman feedback survey</li> <li>• MENA feedlot assessments (measuring improvements and adoption of advice),</li> <li>• Wet market promotions surveys – perceptions of beef / increase sales</li> <li>• Education forums – feedback forms</li> <li>• Govt education day (perceptions of the trade)</li> <li>• Mena tour – feedback forms <b>(LiveCorp)</b></li> </ul>
		<ul style="list-style-type: none"> <li>• RIRDC's 'Evaluation framework' guides evaluation against project outputs.</li> <li>• Research managers evaluate milestone and final reports for each project to ensure they are on target for delivering against project objectives.</li> <li>• Benefit cost analyses of programs are based on benefit cost analysis of individual projects.</li> </ul>
		As above but with specific additional RDC specific evaluations in relation to investments in leadership development and extension programs <b>(Grape and Wine RDC)</b>
	Each project includes evaluation. However, there is a large variation in how this is completed and to what depth with the cost of evaluation being a limiting factor. <b>(HAL)</b>	

# Evaluation activities – project level

Figure 34 cont:

	CRC	RDC
Extensive Industry	Too early ( <b>Dairy Futures CRC</b> )	Currently <b>FRDC</b> receives beneficiary responses on individual projects. In regards full evaluation of projects FRDC only undertakes random evaluations on an adhoc basis. It is envisaged that as part of the new Extension and Adoption program this will change and more evaluations will be undertaken.
	See 16a ( <b>Beef CRC</b> )	We are participating in the 3rd round of project reviews using the agreed protocol. ( <b>Forest and Wood Products Australia</b> )
	<b>(FFICRC)</b> Quarterly reporting against whole of CRC milestones, including adoption and commercialisation milestones External reviews, some covering adoption Project milestone reporting and review (for payment), some covering adoption	Final reports and milestone reports of research projects include updates on any communication/ extension/training activities undertaken by the research team. Program manager monitors the progress of the projects and also ensures activities planned in the project proposal take place during the project including information dissemination activities. ( <b>SRDC</b> )
	An economist has created a framework for recording outcomes eg. 135 attended 15x specific field days ( <b>Cotton CRC</b> )	Review of 6 monthly reports and final from researchers in which opportunities to develop new knowledge products or develop new tools for industry use can be identified. ( <b>CRDC</b> )
		<p>All 7 state extension networks are required to have an evaluation and monitoring plan. This includes a mid term review and external evaluation. MMfS conducts an annual survey and will complete a CBA at completion. (<b>AWI</b>)</p> <p>Each individual project will typically contribute to adoption measurement and reporting at a program/annual operating plan level. Typically, this process will operate as follows: • An 'ex ante' cost/benefit analysis is carried out at the project application or early R&amp;D stage, extrapolating potential, expected enterprise (e.g. farm or processor) and industry net benefits based on expected adoption levels. • During commercial validation or early trials of the R&amp;D that is being adopted, a further 'ex post' cost/benefit analysis is carried out using actual commercial, enterprise level data. • Average observed enterprise level net benefits are extrapolated to average industry benefits using the expected or actual adoption rates. • 'Ex ante' and 'ex post' industry benefits are compared with the R&amp;D investment in order to evaluate the success or otherwise of the R&amp;D investment. Specific output and outcome KPIs are set as milestones for each project, contributing to our overall program KPIs. (<b>MLA</b>)</p> <p><b>GRDC Extension and Adoption Training and Support</b> CQA00001 Extension provider upskilling - technology adoption UWA00082 Improving the adoption of technology by neighbourhood grower groups DAW00194 Taking Precision Agriculture (PA) to the paddock- increasing the adoption MCV00027 Monitoring and evaluation - Planned projects</p> <p>As well as extensive previous research (list available) (<b>GRDC</b>)</p>

# Significant evaluation activities

**Figure 35:** The below table provides further details of significant program or project evaluations of adoption undertaken in the last 12 months.

	CRC	RDC
Intensive Industry	<p><b>(Pork CRC)</b> This is an ongoing process.</p>	<p>All of the above (APL)</p> <hr/> <p><b>(LiveCorp)</b> • To be completed by CIE June 2010: Ex-post review of levy investments 2002-03 to 2008-09 LEP: MLA Program 1.3 — Maximising market options for producers and exporters in the livestock export trade</p> <hr/> <p><b>(RIRDC)</b> • Last financial year, benefit cost analyses were undertaken for RIRDC's: chicken meat; agroforestry; and fodder crops programs. • This financial year, benefit cost analyses are being undertaken for RIRDC's: global challenges; horse; and tea tree programs. • An evaluation of the Rare Natural Fibres program</p> <hr/> <p><b>(Grape and Wine RDC)</b> As above but these will not report until early 2011.</p> <hr/> <p><b>(HAL)</b> BCAs nearing completion/completion are listed below. At the program/organizational level; A. 2008-09. Economic evaluations (14 clusters with each varying number of projects) for Avocado, Nursery, Fresh and processed Potato completed. 1. Avocado – four clusters. i. Plant protection (10 projects) ii. Post harvest and Fruit Quality (8 projects) iii. Supply Chain (9 projects) iv. Market and Consumer Research (6 projects) 2. Nursery – four clusters. v. Business improvement (14 projects) vi. Industry development (6 projects) vii. Market information (6 projects) viii. Environment (14 projects) 3. Fresh and processed Potato ix. Seed production and seed quality (13 projects) x. Processor- disease-soil amendments (1 subprogram) xi. Processor – DNA monitoring tools (1 subprogram) xii. Agronomy and Production Management (16 projects) xiii. Environment and Health (4 projects) xiv. Extension (8 projects B. 2008-09. Economic evaluations for Onions (completed), Citrus, Table Grapes, Dried Grapes, Dried prunes and Dried Tree-fruits (underway - completion by 30 June 2010). each varying number of projects) for Avocado, Nursery, Fresh and processed Potato completed. 1. Onion – 4 clusters. xv. Market supply chain (8 projects) xvi. Extension and communication (6 projects) xvii. Supply Chain (9 projects) xviii. Market and Consumer Research (6 projects) 2. Citrus – 5 clusters. 3. Table Grapes – 4 clusters 4. Dried Fruits (consisting of Dried Prunes, Dried Grapes &amp; Dried Tree Fruits) – 3 clusters</p>

# Significant evaluation activities

Figure 6 cont:

	CRC	RDC
Extensive Industry	See 16a ( <b>Beef CRC</b> )	Three randomly selected "sub-program" cost/benefit evaluation completed under the Council of Rural R&D Corporation's evaluation framework. Evaluations conducted covered: R&D to encourage improved water use efficiency; cotton extension; and Agronomic and management BMPs to protect optimal fibre quality. In addition, in 2009, CRDC produced a comprehensive report entitled "R&D in Action" covering the 2003 – 2008 Strategic plan to highlight the R&D outputs; trends in performance at industry level; case studies and relevant evaluation results by R&D investment program. <b>(CRDC)</b>
	Stakeholder survey of 600 EverGraze next users, participants and non-participants covering factors associated with adoption ( <b>FFI CRC</b> )	
	A significant M&E element is built into the Ken Flower program. ( <b>Cotton CRC</b> )	
		Dealing with Today: Planning for Tomorrow (2009) phases 1 and 2. Phase 1 delivered a 10:1 benefit cost and Phase 2 something around 7:1. These programs exceeded \$2.5m of investment over 18 months and incorporated multi delivery agencies eg private provision (milk companies, consultants, fertiliser, banks....) and public provision (eg State Departments). The initiative had multiple funders with the primary funders being DA, DAFF and DPIV. ( <b>Dairy Australia</b> )
	Making More From Sheep Phase 1 ( <b>AWI</b> )	<ul style="list-style-type: none"> <li>• Annual KPI surveys of attribution and practice change levels</li> <li>• External reviews of specific programs:</li> <li>• Making More from Sheep</li> <li>• More Beef from Pastures</li> <li>• Sheep Genetics</li> <li>• Pastures Australia</li> <li>• northern Communication &amp; Research Adoption (C&amp;RA) program</li> <li>• Grain &amp; Graze</li> <li>• EverGraze</li> <li>• Beef Up forums</li> <li>• Grazing Land Management workshops</li> <li>• 3.3 Improving Industry and Market Information</li> <li>• Meat Processor Environmental Performance Review</li> </ul> <b>(MLA)</b>
		Adoption of no-till cropping practices in Australian grain-growing regions. This study was designed to determine the current status of no-till and conservation cropping practices in major grain growing regions of Australia and to identify opportunities for research, development and extension to further develop widespread and sustainable use. <a href="http://www.grdc.com.au/notilladoption">www.grdc.com.au/notilladoption</a> . Other assessments on a range of areas are also available at GRDC - Impact Assessment <b>(GRDC)</b>

# Duplication

Figure 36, 37 & 38: Respondents believe that there is generally a low level of duplication of effort occurring between RDCs, CRCs, State departments, universities, CMOs/NRM bodies/landcare and others in undertaking extension, adoption, education, practice change activities.

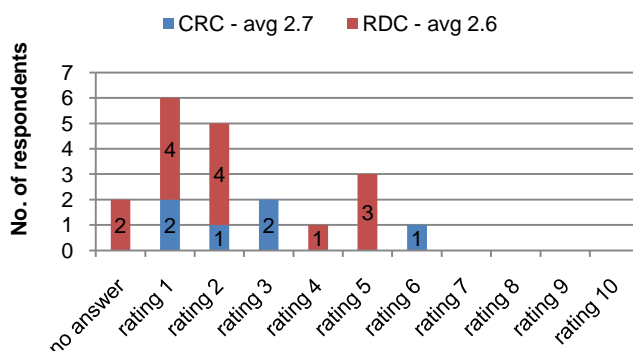
Based on comments, it would appear that any duplication is more industry based than across RDCs or CRCs. RIRDC notes that it puts considerable effort into avoiding duplication of effort through liaison directly with researchers, RDCs and CRCs. HAL agrees, noting that duplication doesn't seem to happen across RDCs as they deal with different industries. CRDC notes that it is more an issue of competition for time and resources than duplication.

More specialised industries appear to have very little duplication for reasons that include a lack of funds (Grape and Wine RDC) or the respondent being the major funder of R&D and most new technologies (Pork CRC).

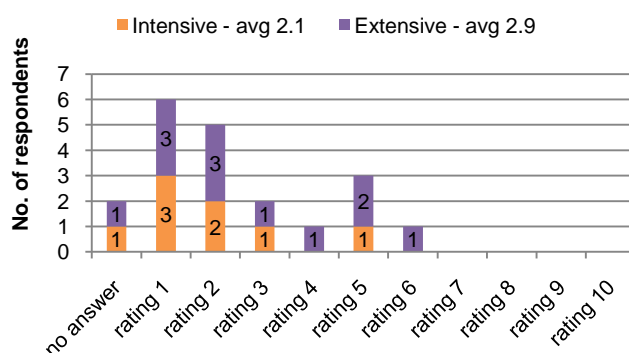
Others note small scale duplications in areas including extension materials (LiveCorp); awareness materials (Beef CRC); publications and workshops (SRDC); surveys, evaluation, communication and media contact with producers (SRDC); conflicting messages between public and private providers (MLA - This is likely to be reduced under MLA's revamped national adoption programs and under the national RD&E strategies).

The need to coordinate adoption programs is noted by a few respondents. HAL argues that duplication may actually be 'reinforcement' of consistent messages which actually encourages and leads to greater adoption. Therefore adoption programs need to be coordinated as much as possible with all relevant stakeholders. FFI CRC comments that its activities could be better integrated into RDC industry programs and vice versa. Dairy Australia says that the issue is about the extent to which we are sharing learning's around extension practice and adoption.

Level of duplication of effort - average rating 2.6



Level of duplication of effort - average rating 2.6



	CRC	RDC
Intensive Industry	In our industry we are the major funder of R&D and most new technologies come from the <b>Pork CRC</b> funded research so duplication is low -it (adoption activity) is largely stimulated and initiated by us.	Sometimes production of similar or the same type of extension materials, where things should be able to be shared more easily. NB: As our programs are very specific this does not occur very often and usually only in the area of animal welfare. <b>(LiveCorp)</b>
		<ul style="list-style-type: none"> <li>• RIRDC is unable to make an assessment under question 17.</li> <li>• RIRDC puts considerable effort into avoiding duplication of effort through liaison directly with researchers, RDCs and CRCs. This ensures RIRDC investment, and co-investment where appropriate, is complementary with that of other organisations.</li> </ul> <p>There is occasional overlap but it is not extensive. There are simply not enough funds around to support duplication of effort. <b>(Grape and Wine RDC)</b></p>

# Duplication

Figure 38 cont:

	CRC	RDC
Intensive Industry		In terms of gaining adoption of R&D, what can be interpreted as duplication may actually be 'reinforcement' of consistent messages which actually encourages and leads to greater adoption. Therefore adoption programs need to be coordinated as much as possible with all relevant stakeholders. Duplication doesn't seem to happen across RDCs as they deal with different industries. <b>(HAL)</b>
Extensive Industry	None in my experience between <b>Dairy Futures CRC</b> and all other agencies.	
	Some duplication of 'awareness' activities continues to exist, but we are working directly with MLA and industry end-users to better coordinate those areas; of more importance to <b>Beef CRC</b> is the failure of many organisations to directly invest in activities that are aimed at demonstrable uptake and measured impact of products, practices and processes in industry businesses.	Most of the organisations mentioned offer scholarships. Every organisation has publications and magazines - however many have different target audiences - sometimes you wonder if there are too many of them. All of these organisations also hold workshops – growers are normally invited to a large number of them. <b>(SRDC)</b>
	<b>FFI CRC</b> activities could be better integrated into RDC industry programs and vice versa. EverGraze is a good example.	
	There are more gaps than we can deal with – we are contracting personnel to fill them as they arise <b>(Cotton CRC)</b>	It is more an issue of competition for time and resources than duplication. <b>(CRDC)</b>
		I think the duplication is relatively low and can't provide a clear off the cuff example of where it is occurring. The issue is about the extent to which we are sharing learning's around extension practice and adoption. This is, undoubtedly, an area in which improvement can always be made. The On The Fast track program led by Dr Ruth Nettle (Melbourne University) which came out of the Cooperative Venture for Capacity Building (RIRDC coordination) was one example where learning's of process and practice were effectively shared across RDCs. <b>(Dairy Australia)</b>
		Survey collection and evaluation processes. Communication and media contact with producers. <b>(AWI)</b>
		The duplication or mixing of messages has been more prevalent in the past due to different states re-branding extension programs rather than using a national standard. In addition, conflicting messages have occurred (competition) between public and private providers. This is likely to be reduced under <b>MLA's</b> revamped national adoption programs and under the national RD&E strategies
		Mixed farming systems R, D&E although we are looking to minimise this. <b>(GRDC)</b>

# Minimising duplication / maximising collaboration

**Figure 39:** All respondents indicated that they have measures in place to minimise duplication and maximise collaboration. These include strong and proactive communication activities between industry specific organisations as well as cross industry liaison. For example LiveCorp has regular *cross program meetings with MLA to ensure alignment between livestock exports and other broader MLA activities* and are also starting to engage with Dairy Australia. The Pork CRC works *with APL and our State Department participants to coordinate these activities and it works very well*. Beef CRC conducts a bi-annual 'Coordination Forum' *specifically to identify areas of overlap across our partner and stakeholder organisations*.

Another measure in place is a requirement for researchers to undertake a full background search and/or literature review to ensure that the research has not previously been carried out (FRDC, RIRDC).

Other strategies mentioned include GWRDC funding or co funding *enough of the major extension activities that it is able to play a coordinating role*; HAL's IDNA process; and Dairy Australia's *social research unit at Melbourne University which works across and keeps in touch with the leading practice around adoption and adaptation within industries*. Information shared by Dairy Australia across industries (e.g. cotton, horticulture, viticulture, rice, meat) through DAFF *led to our successful delivery of large scale practice change when farmers were in crisis*.

	CRC	RDC
Intensive Industry	Seek co-investment in adoption activities. <b>(AB-CRC)</b>	<b>AECL</b> participates in collaborative programs for the communication, education and extension of key disciplines including animal welfare, climate change, feedgrains, mentoring and disease control (biosecurity). AECL actively seeks to collaborate in any relevant area to maximise the ROI of our R&D budget, to this end a project exists to facilitate the development and participation in collaborative activities.
		The <b>APL</b> R&D process for priority development involves a range of industry, govt, university, consultants and federal/state govt personnel. Where possible, APL uses the many networks to ensure that its activities are...[rest of response missing]
		Regular cross program meetings with MLA to ensure alignment between livestock exports and other broader MLA activities. Starting to engage through the planning process with Dairy Australia. Also through some of the combined collaborative work through the CRRDC group. <b>(LiveCorp)</b>
	We work with APL and our State Department participants to coordinate these activities and it works very well. <b>(Pork CRC)</b>	<ul style="list-style-type: none"> <li>• <b>RIRDC's</b> application form requires applicant to review the literature and attest that the proposed research is not previously been undertaken.</li> <li>• RIRDC's research managers and Research Advisory Committees assist in ensuring that duplication of research effort is not undertaken.</li> <li>• RIRDC puts considerable effort into avoiding duplication of effort through liaison directly with researchers, RDCs and CRCs.</li> <li>• Our strong association with the industries concerned through their (very strong) representation on each of our R&amp;D Advisory Committees that analyse and make recommendations on the funding of applications, gives the industries every opportunity to ensure every possible gain is wrung out of every cent spent on research for their industry...this model ensures the chances of duplication are minimized, and maximizes the coordination of research with other agencies and the complementarity of research funded by RIRDC.</li> <li>• Support for the PISC National R&amp;D Strategies.</li> </ul>
	In short money. <b>GWRDC</b> funds or co funds enough of the major extension activities that it is able to play a coordinating role in the way that other co investors spend their funds.	
	The IDNA process helps to address this. <b>(HAL)</b>	

# Minimising duplication / maximising collaboration

Figure 39 cont:

	CRC	RDC
Extensive Industry	Use common agreements. Access specialised staff from within organisations rather than duplicating services with our own staff Created an institution with a clear mandate, all investments in related areas are placed through the CRC Strategy to work with partners, rather than to build own capacity. <b>(Dairy Futures CRC)</b>	For <b>FRDC</b> this is a little easier as no-one else is doing marine research. Where there are overlaps, FRDC requires researchers to do a full background search to ascertain if other projects exist or other forms of work are being undertaken. FRDC also endeavours where possible to encourage researchers to build on existing research and seek collaborative partnerships to undertake research. FRDC also has regular meetings and discussions with associated organisations to minimise duplication.
	A bi-annual 'Coordination Forum' is conducted specifically to identify areas of overlap across our partner and stakeholder organisations, to better coordinate industry delivery activities and to minimise duplication. <b>(CRC for Beef Genetic Technologies)</b>	We are only involved in projects that we fund, so we are directly talking with the other bodies. <b>(Forest and Wood Products Australia)</b>
	Industry use planning to the project level coordinated by the Agribusiness Director and National Adoption Team. See above. <b>(FFI CRC)</b>	Frequent communication and meetings. <b>(SRDC)</b>
	The <b>Cotton Catchment Communities CRC</b> is that vehicle for the cotton industry	At cotton industry level there is regular communication, planning and co-investment occurring between <b>CRDC</b> , Cotton Australia and the Cotton CRC. At industry to industry level the most relevant communication with other RDCs is with GRDC. Program and communications teams from both RDCs meet biannually to discuss common issues and opportunities for closer collaboration and to plan numerous new co-investment or collaborative activities.
		We have a strong listening post in our social research unit at Melbourne University which works across and keeps in touch with the leading practice around adoption and adaptation within industries. That contact often leads to sharing of information and change experiences with (for example) cotton, horticulture, viticulture, rice, meat. The most recent large example was our sharing of method with those above (coordinated through DAFF) of the methodology and processes which led to our successful delivery of large scale practice change when farmers were in crisis. This meeting led to the announcement of DAFF's Irrigated Industries support program in, I think, 2007. <b>(Dairy Australia)</b>
	Extensive planning and consultation in the preparation and planning for projects eg Making More From Sheep business planning, <b>AWI</b> networks conference, Sheep CRC reports and strategic planning input, IACRC reports and strategic planning input, FFICRC reports and strategic planning input.	
	Formal state co-ordinator contracts for "majority market" programs Effective engagement and planning processes with all delivery partners National coordination (oversight) of all major programs <b>(MLA)</b>	

# Minimising duplication / maximising collaboration

Figure 39 cont:

	CRC	RDC
Extensive Industry		<p>Regular consultation with RDCs on planning committees</p> <p>Projects (refer to publication on collaboration below):</p> <ul style="list-style-type: none"> <li>• Working together - Introduction</li> <li>• Not so damned statistics</li> <li>• Feedgrain partners</li> <li>• Breed to feed</li> <li>• Dairy nutrition in black and white</li> <li>• The long and the short of weather forecasts</li> <li>• Greenhouse gas reduction</li> <li>• Flow-on effects from irrigation research</li> <li>• Root analysis</li> <li>• Critical nutrient concentrations</li> <li>• Grain legume break for sugarcane</li> <li>• A win-win outcome</li> <li>• Unified attack on pests and diseases (<b>GRDC</b>)</li> </ul>

# Minimising duplication / maximising collaboration

**Figure 40:** Respondents provided a variety of suggestions as to what more needs to be in place to assist rural RD&E organisations and programs to work more collaboratively/minimise duplication with respect to extension, adoption, education, and practice change activities.

A number mentioned the Cooperative Venture for Capacity Building (CVCB) commenting that it was a lost opportunity and calling for its revitalisation/next version (RIRDC, HAL, FFI CRC).

It was noted by a couple of respondents that a coordinating leader or plan for the industry should be identified *making it clear who the providers of innovation are what role they play in a coordinated education program and how new practices and information will be extended* (Pork CRC).

Others commented that more effort is needed to achieve shared understanding. CRDC observes that *from a shared understanding will come recognition of shared outcomes and from shared expectations will come the roles each can play in achieving outcomes*. FFI CRC suggests that *RDCs could jointly invest in a 'centre of excellence' for adoption research and best practice*.

SRDC agrees noting that there is a need to *work together in identifying common activities that could be developed in collaboration*.

FRDC comments that a single point/system where current and completed research can be searched is needed. They point out that *AANRO would have filled this space however, with changes it will not*.

Dairy Australia observes that *ultimately, there is a strong willingness with RDC management and practice change providers to collaborate and cooperate around the techniques and current thinking*. It notes further that *the collaboration must clearly speak to helping with solutions to the issues the operatives are currently facing, and be designed in such a way that the learning and collaboration is embedded*.

	CRC	RDC
Intensive Industry	A general plan for each industry is required making it clear who the providers of innovation are -what role they play in a coordinated education program and how new practices and information will be extended. For the pork industry the coordination of these activities is excellent. <b>(Pork CRC)</b>	<p>Financial support for implementation of the PISC National R&amp;D Strategies. Revitalisation of the Cooperative Venture for Capacity Building which was a collaborative Venture between most RDCs and other agencies (e.g. MDBC) where the relevant managers shared information and contributed to projects of common interest in relation to extension, adoption, education, practice change activities. It was managed by <b>RIRDC</b>.</p> <p>The Cooperative Venture for Capacity Building (CVCB) (the joint RDC initiative) provided valuable information and process to work more collaboratively/minimise duplication with respect to extension, adoption, education, practice change activities. The CVCB model (version 2) needs to refined and created ASAP. <b>(HAL)</b></p>
Extensive Industry	From my perspective the Dairy industry understands this well, and is actively working to ensure investment is done with maximum efficiency. <b>(Dairy Futures CRC)</b>	<p>A single point/system where current and completed research can be searched. AANRO would have filled this space however, with changes it will not. <b>(FRDC)</b></p> <p><b>(Forest and Wood Products Australia)</b> Identify who is the leader for particular projects or areas of activity</p>

# Minimising duplication / maximising collaboration

Figure 40 cont:

	CRC	RDC
Extensive Industry	<p>First, the issue is not simply duplication. State agency extension services vary a lot in their capability to accountably deliver agreed project outcomes. Also private service providers, including consultants, will not engage in public good activities even where longer term farm profitability is at stake. Second, the demise of the Cooperative Venture for Capacity Building managed by RIRDC was a lost opportunity. RDCs could jointly invest in a 'centre of excellence' for adoption research and best practice. Third, <b>FFI CRC</b> believes its path to industry use planning and management is a sound way to operate, acknowledging the shared capabilities with MLA and GRDC.</p>	<p>Work together in identifying common activities that could be developed in collaboration. Co-fund events, programs and activities that are mutually beneficial. All this needs to be done in the framework of the National and Rural research priorities and <b>SRDCs</b> Five Year Plan. The soon to be completed National Sugar Industry R&amp;D Plan will assist in this process.</p>
	<p>Continued focus on collaboration occurs via the CRC; the others are very institutionalised – the role of the CRCs is to pull things together. <b>(Cotton CRC)</b></p>	<p>More effort from all concerned needs to be put into achieving shared understanding and meeting shared expectations from the key players in the extension, adoption, education, and practice change sphere (including end users). From a shared understanding will come recognition of shared outcomes and from shared expectations will come the roles each can play in achieving outcomes. Many opportunities exist for joint investment in systems for knowledge sharing at the R&amp;D and producer target levels as has been demonstrated by <b>CRDC</b> and <b>GRDC</b>.</p>
		<p>Ultimately, there is a strong willingness with RDC management and practice change providers to collaborate and cooperate around the techniques and current thinking. The trick is to have this supported at senior RDC level with an equivalent understanding of the importance of the issue (because RDCs do vary in their remit around practice change, and in their capacity to drive that change) and to produce a process/training opportunity that does genuinely value add to whatever is being offered and happening now. That is, the collaboration must clearly speak to helping with solutions to the issues the operatives are currently facing, and be designed in such a way that the learning and collaboration is embedded. <b>(Dairy Australia)</b></p>
		<p>Access to skilled staff and staff training opportunities is limited. Consistent approaches to evaluation and key measures for comparisons. Large scale surveys across industries/states. <b>(AWI)</b></p> <p>Agreed principles for collaboration and co-investment in extension CRM capability to assist in targeted communication and engagement with stakeholders National approach (ideally under the RD&amp;E strategies) to "standard" curricula / extension frameworks, within which ALL extension agencies deliver their activities. <b>(MLA)</b></p>

# Final comments

**Figure 41:** Final comments from survey participants are in the table below. In general, respondents believe that a more collaboration is of benefit to end users and there are various suggestions (expanding from the previous table) as to how this can be achieved. These range from centre's of excellence to sharing of research outcomes to resources and training on extension/adoption/practice change methods. Many agreed that a central repository of information would be of significant value.

	CRC	RDC
Intensive Industry	<p>Application of research outcomes in the biosecurity sector is a difficult process given the breadth of the sector, the range of participants and complexity of the issues. I have written a paper that considers some of these matters and I am happy to provide you with a draft. <b>(AB-CRC)</b></p>	<p>A set of resources and access to specific training on the various methods and techniques of contemporary extension, adoption and practice change activities would be of great benefit. A professional organisation or society, that could facilitate training, provide tools, maintain a body of knowledge and resources, facilitate collaboration, or provide approved consultants, to support practitioners and program managers involved in the extension, adoption, education and practice change area would be of significant value to the primary industries. <b>(AECL)</b></p>
	<p>The RDCs and CRCs do and need to work closely together to address the major needs of their respective industries. There is no room for duplication of effort in the R&amp;D or extension/communication arenas. The different organisations (RDC or CRC) should decide on what areas each will cover and ensure there is no duplication of effort because in general the requirement of an industry are too wide ranging to be adequately covered by one organisation though room exists for reducing costs associated with administration. The latter should work given most CRCs have the respective RDC as a participant - this is how it should work. <b>(Pork CRC)</b></p>	<p><b>RIRDC</b> funds these activities for industries where there is a market failure (ie where no other RDC's or institutions provide funding), and where the activities and industries concerned are worthwhile or have significant potential. Last year, external budget cuts delivered a 35% cut in the amount of RIRDC's funding available to these new industries. In addition to significantly reducing our ability to continue supporting these industries we have been assisting to grow, these cuts effectively prevent us from helping out any new promising industries that come along. A significant boost in the funding available for us to assist new industries would increase both our impact on industries we are currently working with, and our outreach to new industries that may provide resilient alternatives to the many traditional rural industries that are climate-change-sensitive, and facing a bleak future.</p> <p>An across RDC funding process needs to be created to tackle common issues (such promoting careers in the rural sector, ensuring the electorate have a relevant and realistic understanding of rural issues (including environmental management)). <b>(HAL)</b></p>

# Final comments

Figure 41 cont:

	CRC	RDC
Extensive Industry	<p>The government could expand its definition of eligible funding to increase the expenditure on extension and adoption activities (significantly underfunded, with no clear line of responsibility Fed/State of who should invest to rectify) There needs to be more recognition of importance of development activities at universities and other research providers. This doesn't fit the current academic guidelines that measure research performance (publications, students etc), but don't value the work done to bring innovations to market and maximise their impact. <b>(Dairy Futures CRC)</b></p>	<p>There is a range of "non traditional" extension and adoption activities that are being undertaken outside the scope of the primary industry RDC//CRC space that have very little linkage. These non traditional activities include food safety agencies, Environment Protection Agencies, Enforcement agencies etc. Apart from more focus being needed by the RDC//CRC groups I believe more coordination and integration with these existing activities would be beneficial. Not sure how you do this though... In addition increasing capacity to undertake R&amp;D extension at a category/national level for groups of projects would be beneficial. As noted previously with the cochlear implant example, it is not always just one project that will deliver the results. <b>(FRDC)</b></p>
	<p>In <b>Beef CRC's</b> experience, the most effective model to achieve demonstrable uptake and impact of complex knowledge-based and integrated technologies and know-how is its 'Sustainable Improvement and Innovation' model described in an open-access Special Edition of the Australian Farm Management Journal (available online at <a href="http://www.csu.edu.au/faculty/science/saws/afbmnetwork/afbmjournal/Vol5/">http://www.csu.edu.au/faculty/science/saws/afbmnetwork/afbmjournal/Vol5/</a>). Beef CRC is not aware of any other model in the agricultural sector with the ability to generate innovation, entrepreneurship and continuous improvement, whilst simultaneously measuring, monitoring and evaluating impacts of complex knowledge-based systems and technologies at individual enterprise and industry levels. More traditional models of extension and knowledge transfer, including communication activities, are appropriate to generate 'awareness' of technologies. But if Australia is serious about increasing productivity levels in its agricultural sectors, the only way this will be achieved is through demonstrable uptake of technologies and know-how and increased levels of innovation and entrepreneurship.</p>	<p>There is no such thing as a "good idea" only a "good idea at the right time." Unfortunately, you can't ex ante predict the right time, so a lot of extension/adoption/education of R&amp;D findings will not be picked up by the target markets. Therefore, information must be readily accessible (e.g. website) and easily understood. Key is to have information repositories and good information translators. <b>(Forest and Wood Products Australia)</b></p>
	<p><b>FFI CRC</b> sees an opportunity to develop the 'adoption centre of excellence' idea and has the resources and emerging track record to do it, including an adoption R&amp;D project that has developed an adoptability assessment tool that has been reality tested with GRDC's Grain &amp; Graze Program. This whole area cries out for better coordination and RDCs are uniquely placed to lead and resource it.</p>	<p>Awareness of current sector extension projects to define if there is any fit with <b>AWI</b> extension priorities and to make savings on delivery and evaluation.</p>
		<p>Where R&amp;D have cross-sectoral outcomes, there needs to be collaborative communication of the outcomes. However there may also be different extension approaches depending on the audience and commodity type. <b>(GRDC)</b></p>