
Cotton Research and
Development Corporation

Grains Research and
Development Corporation

Fisheries Research and
Development Corporation

Rural Industries Research and
Development Corporation

Sugar Research and
Development Corporation

Grape and Wine Research and
Development Corporation



SUBMISSION BY

**COUNCIL OF
RURAL RESEARCH
AND DEVELOPMENT
CORPORATIONS**

in response to

the
**Productivity Commission
Draft Report**

on

**Rural Research & Development
Corporations**

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Attribution

This submission was prepared by *Garry Goucher & Associates* in collaboration with the Council of Rural Research and Development Corporations (CRRDC).

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EXECUTIVE SUMMARY

- This submission by the Council of Rural Research and Development Corporations (CRRDC) addresses certain draft findings and recommendations in the Australian Government Productivity Commission's draft report (of 23 September 2010) on the Rural Research and Development Corporations (RDCs), where they are relevant to the CRRDC's role.
- The CRRDC welcomes the Commission's conclusion that the RDC model has many strengths not found in other programs within the rural research and development (R&D) framework, including close links with industry that maintain the relevance of R&D, a systems integration role within the rural R&D framework, expertise in procuring and managing R&D and that RDCs have delivered considerable benefits to industry and the community as measured by very high benefit cost ratios.
- There are many recommendations in the draft report that the CRRDC supports, including the need to assemble better data on R&D spending, to better coordinate the various rural R&D programs, to implement consolidated reporting of funding and performance across the RDC network and to review the performance of the Levies Revenue Service (LRS).
- The CRRDC rejects the recommendation to reduce the cap on matching contributions for all statutory levies from 0.50% to 0.25% of each industry's gross value of production. This represents a 50% reduction of Government funding for industry RDCs (except Fisheries Research and Development Corporation). The CRRDC believes there is a fundamental inconsistency in the Commission's finding that the RDC model is sound and well managed, then recommending a significant reduction in funding.
- To recommend cutting around \$110 million from industry specific RDCs when there are other programs that would appear to be less effective in delivering good outcomes for the community will, in CRRDC's view, have adverse consequences for productivity growth and community well being. Further, the CRRDC believes it is highly unlikely that all industries will vote to increase levy rates in the face of a withdrawal of matching Government contributions.
- The CRRDC acknowledges that there are areas of R&D that offer the prospect of returning high public benefits that the Government considers should be pursued as a priority. The CRRDC believes that an important first step in addressing the Government's and Commission's concerns about the level of strategic and public good R&D is to define the Government's aspirations in this area, establish R&D priorities and clearly articulate these priorities to R&D agencies. The CRRDC is happy to work with Government on developing rural R&D priorities.
- The CRRDC believes there are more effective ways to address public good R&D without establishing a new RDC and that industry and public good R&D priorities should be addressed within the existing infrastructure. The CRRDC considers that the proposal to establish Rural Research Australia (RRA) is costly and not in the best interests of ensuring that R&D is relevant and is adopted by industry. CRRDC proposes instead that the Rural Industries Research and Development Corporation (RIRDC) should be restructured to expand its role in managing high public good R&D. This model builds on the current strong frameworks for collaborative and

cross-sectoral work, including the Primary Industries Standing Committee (PISC) Research, Development and Extension (RD&E) Framework.

- The CRRDC is concerned at the apparent dismissal of the relevance of the large body of economic analysis evaluating the benefits of rural R&D that demonstrates the substantial economic benefits that are produced. The CRRDC does not agree with the Commission's conclusion that the Government contribution to RDCs is delivering only modest additional R&D.
- The CRRDC agrees that evaluation is an important management tool for RDCs. The RDC evaluation program, led by the CRRDC, is the largest and broadest of this type of analysis of rural R&D in Australia. This evaluation process demonstrates the strong collaboration between RDCs, rural industry, government and research partners and shows significant benefits are generated in areas targeted by the National Research and Rural Research and Development Priorities. It also demonstrates the high level of commitment the RDCs have to the process, with all RDCs participating in the 2010 evaluation and providing ongoing commitment to the program.
- The CRRDC does not accept the conclusion the Commission reaches that the levy system is doing most of the work in addressing the potential for under-investment in rural R&D. Levies on their own fall far short of providing sufficient investment in R&D — they are not a perfect instrument in terms of individual decision making. The Government contribution is very important in obtaining support for levies and obtaining a socially optimal amount of private investment in R&D.
- The CRRDC acknowledges the Commission's intent to provide broad guidance to the Government R&D policy by promulgating broad policy principles, but recommends that any such principles must be clearly defined and capable of practical application. The CRRDC questions the additional conditions and requirements which the Commission has proposed should be legislated or otherwise be incorporated in the administration of RDCs. Where these are not very clear, specific and definable, there is a high risk that they will lead to a greater administrative burden, more debate and less certainty about funding and performance, without delivering better outcomes for industry or the community.
- The 'additionality' principle, on which many of the draft recommendations are based, is acknowledged by the Commission to be complicated by imperfect information, is at best a 'rule of thumb' and only a 'starting point' for decisions on funding. CRRDC does not accept that this is a practical and useful principle on which to base major change to the RDC model.
- The Commission's proposal to make funding provided to RDCs conditional on compliance with a list of specific criteria, which would in effect operate as if they were contractual conditions, will create uncertainty for RDC funding. The criteria proposed by the Commission are loosely defined and cannot be readily and accurately assessed. The CRRDC believes that funding should only be conditional on continued use of funds for proper purposes.
- The CRRDC welcomes the opportunity to participate in the Productivity Commission Inquiry into the RDCs and will continue to actively engage in this process.

1. INTRODUCTION

This submission by the Council of Rural Research and Development Corporations (CRRDC) responds to the Productivity Commission (hereafter the Commission) Draft Report on Rural Research and Development Corporations, released on 23 September 2010 (referred to herein as the draft report).

The CRRDC is an unincorporated body comprising the 15 Rural Research and Development Corporations (RDCs) listed at Appendix A. Throughout the submission, unless otherwise indicated, we use the term RDC to refer collectively to the six statutory corporations under the Primary Industries and Energy Research and Development Corporations Act 1989 (PIERD Act) as well as the nine industry owned companies (IOCs) that have responsibility for research and development for their respective sectors. The CRRDC is the peak forum for the RDCs, facilitating coordination on research and strategic direction, for evaluating the collective impact of the RDCs and for developing collaboration on projects of national significance.

The purpose of this submission is to respond to the Commission's draft recommendations and findings and the supporting discussion of those recommendations. This submission addresses those matters that apply broadly to the RDCs and the RDC model; the funding of RDCs; their operation and the benefits of their research and development (R&D); governance and levy arrangements. It is not the role of the CRRDC to respond to matters that are specific to individual RDCs or R&D in particular sectors. Matters of this type that have been raised by the Commission will be addressed by the relevant RDC or other participants.

The CRRDC welcomes the Commission's conclusions that the RDC model is fundamentally sound and has many superior features including its linkages to industry that are crucial in ensuring the R&D remains relevant, focused and valuable.

However, the CRRDC considers that the Commission's draft report shows a fundamental inconsistency in finding that the RDC model is sound and well managed, but then recommends that Government funding for industry focused rural R&D be reduced by around \$110 million per annum. The evidence presented by the Commission to support its recommendation to reduce funding to industry-specific RDCs, on the CRRDC's reading of the report, lacks rigorous analysis and comprehensive review. There is no evaluation of the expected impact of reduced funding on the amount of industry focused R&D, nor estimates of the potential effects on industry decisions about R&D levy rates, on productivity growth, industry output or industry adjustment pressures. Such failure to examine the possible effects of policy change is disappointing when the Commission has been such a strong advocate for basing policy formation on evaluation of sound evidence.

In broad terms the RDC program comprises about one third of the total rural R&D program, with the remainder comprising a range of CRCs, university, state, CSIRO and departmental programs. While the Commission's terms of reference did not include comprehensive reviews of these other programs, the CRRDC contends that the RDC program delivers R&D that is better planned, scrutinised and evaluated than many of these other programs and has clearer requirements to deliver public benefits and industry adoption. The CRRDC considers that it would be a policy failure to make any cuts to the RDC program without consideration of the administration of other programs to determine their deficiencies and weaknesses as well as their performance in delivering socially valuable research outcomes. Therefore, the CRRDC does not support any reduction in the current funding of the RDCs nor in the current contributions by Government that match industry levy funds.

While the CRRDC holds a number of concerns about the Commission's report and its draft recommendations, there are also many positive elements in the report which are supported.

The CRRDC welcomes the Commission's conclusions that the RDC model is fundamentally sound and well managed. The recommendation that the Department of Agriculture, Fishing and Forestry needs to do more to assemble comprehensive and consistent data on rural R&D spending and performance would — if implemented — do a lot to better inform future consideration of the effectiveness of the rural R&D framework. In addition, clearer elucidation of Government's responsibilities to RDCs and a commitment to review the services of the Levies Revenue Service (LRS) will all serve to improve the administrative environment in which RDCs operate. The CRRDC also welcomes the recognition by the Commission of efforts by the CRRDC to pursue administrative efficiencies within the RDC network and to develop a culture of rigorous project evaluation.

The Commission appears to have over-estimated the extent to which the levy system can, and does, address the potential for under-investment in rural R&D, compared to the importance of Government funding contributions. This influences the Commission's subsequent conclusions about the amount of 'additional' industry focused R&D conducted by RDCs, the appropriate funding balance for RDCs and the willingness of industry to increase levy funding support for RDCs.

The CRRDC believes that the Commission has not appreciated or not made clear in its draft report that almost all rural R&D produces both public and industry benefits that are joint and inseparable outputs. Applying a theoretical model for public funding that does not recognise these connections is likely to result in perverse outcomes for both Government and industry. The CRRDC believes that adverse consequences will flow from any attempt to isolate R&D into separate industry-specific and public good R&D organisations.

There is an underlying theme linking the Commission's key recommendations for changes to the RDC model. Broadly, the Commission considers that the RDC model has many good features and benefits, but has concluded that:

- public funding of the RDCs is supporting R&D that industry would likely fund on its own and that by comparison is more generous than support for R&D in other industry sectors;
- industry-specific RDCs are focused on doing industry specific, adaptive, productivity improvement research and have not responded to, and may not be appropriately structured, to address Government desires for more 'cross-cutting', 'blue sky' and public good R&D; and
- a solution to these conclusions, is to reduce the level of matching Government funding to industry specific RDCs, and to divert some of these funds into cross-sectoral and public good R&D through a new, non-industry-specific RDC targeted at performing these types of R&D.

The CRRDC does not accept the reasoning or the conclusions that the Commission has reached on these matters. The proposed reduction in the public funds to match rural research levies, would be likely to significantly reduce RDC funded R&D and diminish both the public and industry benefits that the R&D produces.

The CRRDC disputes that RDCs are not able to undertake adequate levels of strategic, 'cross-cutting' and public good R&D. Some RDCs already spend significant amounts on this type of R&D and thus, it would be unjust to penalise them by reducing funding, as well as damaging the research output. To the extent that some RDCs devote a smaller share

of funds to this area, the CRRDC contends that this is due predominantly to a failure by Government to clearly elucidate the research priorities it wants RDCs to undertake.

The CRRDC has considered mechanisms to improve the current model by building on the strengths of the RDC model identified by the Commission. This submission proposes an alternative solution to the issues raised by the Commission in relation to Government desires to see more cross-sectoral and high public good R&D. In outline, CRRDC proposes that:

- Government, in consultation with RDCs and other key stakeholders in the rural R&D framework needs to clearly define its priorities for cross-sectoral and public good R&D. As part of this process, it is anticipated that Government will also broadly identify the funding it will commit to addressing these priorities.
- Through the terms of the funding agreements, approval of R&D and operational plans, RDCs should be required to respond to the priorities that have been identified, through a combination of individual RDC investments and cross-sectoral investments.
- Rural Industries Research and Development Corporation (RIRDC), with appropriate re-structuring, will be responsible for identified public good R&D and managing cross-sectoral and collaborative projects between RDCs in areas not already catered for by National RD&E strategies or already being undertaken collectively by RDCs.

The CRRDC sees the following benefits in this approach:

- Producer support for the levy system is not substantially threatened.
- Cross-sectoral and public good R&D priorities are defined and conducted with greater involvement and commitment from industries and greater prospects for adoption.
- Differences between RDCs in the commitment to cross-sectoral and public good R&D are reduced, without penalising those already performing well in this area.
- The model provides a balance between close industry connections (through industry RDCs) and independent R&D program management capabilities through RIRDC that should be well suited to delivering the Primary Industry Standing Committee (PISC) research, development and extension (RD&E) cross-sectoral strategies.
- The requirement for a new RDC is removed by, wherever possible, conducting cross-sectoral and public good R&D through the National RD&E Framework or RDC collaborative projects. RIRDC would manage additional cross-sectoral projects and undertake stand-alone, non-industry specific projects.

The CRRDC considers that funding levels for the public good R&D should be determined after the priorities have been identified through a scoping process. It will then be clearer to what extent the priorities will be funded through existing RDC funding and how much additional funding would be required for the management of cross-sectoral projects and for new non-industry specific projects.

Additional funding for RIRDC to address its broader responsibilities should be provided by Government from the savings achieved from the closure of Land and Water Australia (LWA) and past reductions in funding to RIRDC for public good R&D.

2. IMPROVING THE BROAD FRAMEWORK

DRAFT FINDING 5.2

Setting an indicative target for the share of total spending on rural R&D to be met by governments would be a blunt, and quite possibly counterproductive, approach. Rather, the appropriate share — and in turn the appropriate overall level of public funding — should ‘emerge’ from:

- ***an assessment of all of the various programs through which governments currently contribute funding to rural R&D against the public funding principles spelt out in draft recommendation 5.1; having particular regard to the characteristics of the R&D conducted and thus the likelihood that public funding will induce a commensurate amount of additional, socially valuable, research***
- ***any evidence that the current program portfolio is failing to cater for particular types of socially valuable rural R&D that would meet the additionality requirement for public funding support.***

The CRRDC does not support draft finding 5.2 in its current form. Key points in the supporting discussion in the draft report contain statements by the Commission that are in the CRRDC’s view misleading, incorrect or are untested.

The CRRDC also considers that there are a number of flaws in the principles put forward in draft recommendation 5.1 and therefore does not support any assessment of rural R&D programs against those principles in their current form.

The three points put forward by the Commission on page 94 of the draft report to support its contention that Australian governments are bearing too much of the overall funding load for rural R&D do not withstand critical analysis and review. These points, especially the Commission’s conclusions about ‘additionality’ are restated on many occasions throughout the draft report and form part of, or underpin, many of the draft recommendations. These then are critical points and any deficiencies in their soundness, as are discussed in following sections of this submission, undermine the central recommendations for change to the RDC model and its funding.

The Commission, quite correctly in the CRRDC’s view, concludes that “... setting some sort of lower target share for governments’ overall contribution to rural R&D, and then arbitrarily reducing funding support to move towards that target, would be a poor policy approach” (draft report, p. 95). However, the Commission also put forward three points which it considers suggest that Australian governments are bearing too much of the funding load. The CRRDC challenges these points. The CRRDC’s concerns are introduced briefly here and are dealt with in more detail in later sections.

1. ***Funding for adaptive research that producers would have sound reasons to fund themselves*** — The Commission contends that because adaptive and industry specific R&D produces positive net benefits for producers, that “primary producers **would have had sound financial reasons** (emphasis added) to fund [the R&D] themselves”. It does not automatically follow from this statement that producers would have, in actual fact, funded this R&D through compulsory industry levies if public funding had not been provided. The Commission **does not critically test** the assertion that public funding has simply ‘crowded out’ private funding that would otherwise have been available, nor does it appear to look for evidence that would support or disprove this crucial conclusion. In fact, there are a number of indicators

that public funding has not ‘crowded out’ private funding and that the public funding has produced substantial ‘additional’ R&D with widespread benefit to the community. The discussion in Box 1 deals with ‘additionality’ in detail.

2. *Government support is more generous than in other parts of the economy* — The Commission’s statement that the Government share of total R&D spending at 40% is around half the apparent Government share for rural R&D does not, in isolation, sustain a conclusion that the support of rural R&D is too generous. The level of support must be assessed in context of the returns from the R&D, the distribution of those returns between private interests and the wider community, and the factors that contribute to under-investment by producers. While the Commission has discussed some of the distinguishing characteristics of the rural sector elsewhere in the draft report, the conclusion that these are not sufficient to warrant the disparities in support, seems to rely more on opinion than on critical assessment of available evidence.

The Commission’s calculation purporting to show that support for the RDC program is several times more generous than provided through general R&D tax provisions is misleading because calculation of the Government’s share of R&D spending is based on an inappropriate definition of a tax benefit that does not include all foregone tax revenue. In fact, the Government’s share of RDC funding is about 1.8 times the private contribution, while the Government share under the 150% R&D tax concessions to apply to R&D spending from July 2010 is 0.82 times and under the previous 125% concession rate was 0.6 times. This matter is discussed in detail in Appendix C.

3. *The public funding share in Australia appears to be higher than in other developed countries* — It is misleading to compare the public/private funding balance in Australia (a relatively small market, geographically isolated) with larger developed economies of the United States and Europe. A substantial share of the private investment in rural R&D in the United States and Europe is made by multi-national companies engaged in plant breeding, pesticides and veterinary medicines, and agricultural machinery that are developing products for global application and consumption and are located in those countries for reasons of convenience, proximity to regions of major demand, government incentives or historical domicile. More appropriate comparison with countries such as Canada or New Zealand does not suggest that Australia is out of step with other comparable countries.

While CRRDC has very serious concerns with the draft finding, it does concur with the point made by the Commission that a level of public funding should be the result of assessing all the various programs through which governments contribute to rural R&D. Reductions in funding to one program without comparable consideration of the merits and effectiveness of other programs, runs a significant risk of creating gaps in R&D performance, or cutting highly effective programs while leaving less effective programs untouched, resulting in poorer outcomes for the rural sector and the community as a whole.

CRRDC recommends that the finding be amended to read:

Setting an indicative target for the share of total spending on rural R&D to be met by governments would be a blunt, and quite possibly counterproductive, approach. Rather, the appropriate share — and in turn the appropriate overall level of public funding — should ‘emerge’ from:

- ***an assessment of all of the various programs through which governments currently contribute funding to rural R&D having particular regard to the characteristics of the R&D conducted***

- ***clear evidence that the current program portfolio is failing to cater for particular types of socially valuable rural R&D.***

DRAFT RECOMMENDATION 5.1

The Australian Government should incorporate the following high level public funding principles in all of its rural R&D policies and funding programs.

- ***The primary aim of government funding is to enhance the productivity, competitiveness and social and environmental performance of the rural sector and the welfare of the wider community by inducing socially valuable R&D that would not otherwise be undertaken.***
- ***Public funding programs for rural R&D should:***
 - ***give appropriate recognition to non-R&D related drivers of performance improvement in the rural sector***
 - ***facilitate, or at least not impede, structural adjustment in the sector***
 - ***be consistent with other policies and programs designed to improve the performance of the sector.***
- ***The design of individual funding programs should:***
 - ***encourage the efficient delivery of quality research outputs, including through promoting effective intra- and inter-program coordination***
 - ***build in appropriately resourced mechanisms to facilitate the adoption of worthwhile research outputs***
 - ***promote transparency and accountability in regard to program outcomes through effective governance, evaluation and reporting requirements***
 - ***promote transparency in funding flows and discourage leveraging behaviour that is administratively costly and/or designed solely to shift costs.***

The Australian Government should further:

- ***commit to regular independent review of its various rural R&D programs against these principles***
- ***through the Primary Industries Ministerial Council, seek the agreement of State and Territory Governments to incorporate the principles and the review requirement:***
 - ***in all of their rural R&D policies and funding programs***
 - ***in the National Primary Industries RD&E Framework initiative.***

The CRRDC does not support implementation of the principles as put forward by the Commission in draft recommendation 5.1. While some of the principles are uncontroversial others are impractical or are not determinative (e.g. additionality, leveraging), or are unclear in their intent or wording (e.g. recognising non-R&D drivers). The CRRDC considers that, in their current form, the proposed principles are likely to create more uncertainty and debate about public funding, than they are to provide clarity or consistency for stakeholders and administrators in the provision of funding.

The Commission defines the objectives of introducing these principles as: giving consistent direction to those who implement policy, condition the expectations of stakeholders and provide a benchmark for evaluating performance. This suggests it is intended that these principles will have effects beyond guiding policy formation by Government and will also affect the day to day decision making and assessment of funding and performance by RDCs and other agencies involved in rural R&D. As such, any deficiencies in formulation of the principles will have significant implications for R&D outcomes.

The following comments address in detail the concerns which the CRRDC has identified with the reasoning that underlies the principles and with their wording.

Dot point one — is a re-statement of the objects of the PIERD Act, but constrained by an ‘additionality’ clause, i.e. “... inducing socially valuable R&D that would not otherwise be undertaken”. The deficiencies of an ‘additionality principle’ as a guide to policy formation and administration is discussed in Box 1 and it is acknowledged by the Commission that an ‘additionality principle’ has real complications that limit its practical usefulness.

From a legal and administrative point of view, any difference between objects as stated in the PIERD Act and principles stated in other documents must, unavoidably, cause confusion and uncertainty. This may ultimately threaten the funding for RDCs or at the very least create an additional administrative burden for RDCs and government departments in seeking to demonstrate how the (essentially abstract) principle had been observed or complied with.

The CRRDC cannot agree that a ‘rule of thumb’ which requires a ‘common sense’ approach to its application can at the same time constitute a ‘clear and soundly based principle’, or provide an effective ‘benchmark for evaluating performance’ or ‘promote accountability for outcomes achieved’ (draft report, p. 95).

Dot point two — does not make clear what the practical outcome would be of requiring public funding programs to “... give appropriate recognition to the non-R&D drivers of performance improvement ...”. In all likelihood, this principle will simply give rise to further uncertainty and questions such as: how should non-R&D drivers be recognised, or what would the impact of recognition (or lack of it) be on funding decisions.

The Commission’s discussion (draft report, p. 96) of factors other than R&D that contribute to productivity improvement is confused. Advances in agricultural machinery and chemicals are themselves products of rural R&D (conducted mostly in the private sector) being adopted by producers, and so cannot be portrayed as non-R&D drivers of productivity improvement. Spill-in technology such as GPS and information systems are predominantly only of value following specific adaptive research to apply the technology in rural industry. Productivity improvement arising from this technology is a result of adoption of a combination of rural R&D and some spill-in benefits. The contribution of education levels to productivity growth have been explicitly recognised in recent econometric assessments (e.g. Shang, Mullen and Zhao 2010), but it not clear how administrators should recognise progressive improvement in education levels of producers when devising R&D programs.

A requirement that policies and funding programs be consistent with other policy and programs is perhaps not controversial and is not disputed by the CRRDC. The Commission points out that it is important that R&D does not deflect attention from instruments that enhance incentives for producers to take account of adverse impacts of their activities for the environment. However, R&D has likely enhanced environmental awareness and there is no evidence that R&D has been in conflict with environmental policy. Nor is there evidence that R&D has been biased towards smaller or less efficient producers, or has otherwise stood in the way of structural adjustment in the rural sector.

Dot point three — the Commission discusses leveraging at some length, acknowledging that, of itself, leveraging is not a problem and can be beneficial. The CRRDC agrees that there are beneficial effects of leveraging including, bringing coordination to R&D within a topic, sharing funding and risks among interested parties (public and private), and obtaining engagement of relevant technical specialties. The Commission seeks to draw a distinction between beneficial leveraging and ‘non value-adding cost shifting’, but it is not at all clear that the examples provided are ‘non value-adding’ or how such a distinction is to be drawn in practice.

The CRRDC rejects the implication in the Commission’s comments that RDCs are in any way at fault in forming collaborative funding arrangements with research providers. These

relationships are seen as highly beneficial and contribute strongly to the quality of the R&D and to its adoption by producers. The CRRDC also rejects any suggestion that RDCs, as purchasers of research services, should be held responsible for decisions by research providers about the cost at which they provide their services. As corporate entities RDCs have a responsibility to their stakeholders to engage with research providers and to make best use of the available funds to implement their research plans.

It is not clear from the Commission's discussion how this 'principle' would be applied to single out leveraging that is 'administratively costly' from productive beneficial leveraging, and thus it is not clear how the principle would guide policy and funding programs.

The Commission indicates that it expects these principles will, among other things, condition the expectations of stakeholders and notes that there is "... still an entitlement mentality in parts of the sector" (draft report, p. 96). However, the objects in the PIERD Act clearly state that R&D must benefit the community as well as industry and the Commission acknowledges that many in the sector are well aware of this. Logically then, the misplaced 'entitlement mentality' of some in the sector is a result of inadequate communication and not that the objects of the Act are unclear. To the extent that the mis-perception of some in the industry is a problem, the solution will lie in more effective communication. It is unrealistic to expect that changes to the objects of the Act, or insertion of funding principles into other documents will affect the perceptions of those few who mis-perceive the current objects of the PIERD Act.

In summary, the CRRDC acknowledges the Commission's intent to provide broad guidance to the formation of rural R&D policy and funding decisions by Government through elucidating a set of general principles. However, to make a valuable contribution to policy formation and administration, such principles must be clearly defined, be capable of practical application in relation to funding decisions and evaluation, and not lead to conflict or uncertainty in the administration of rural R&D. In their current form, the principles proposed by the Commission do not achieve these ends. The CRRDC recommends to the Commission that any policy principles it advances should address policy formation by Government separately from on-going administration of legislation and policy by departments and agencies.

BOX 1 – A comment on the ‘additionality’ principle

CRRDC does not agree with the Commission’s singular reliance on the notion of ‘additionality’ as the only criteria upon which public funding for rural R&D can be justified. It may have conceptual appeal, but in reality, has limited practical application as a tool in formulating clear and sound policy, guiding specific funding decisions or evaluating performance.

The Commission itself expresses ambivalence about the concept’s value. It concedes that additionality is complicated by imperfect information (draft report, p. 62). It acknowledges that it does not provide a precise basis for determining when, or how much, governments should contribute to rural R&D and that judging whether a project would proceed in the absence of funding is “...very difficult” (draft report, p. 97). The Commission finds that it is only “...a *starting point* for examining the case for government funding” (draft report, p. 98).

Additionality can only be assessed at a project by project level and cannot, in most cases, be determined at a program level. The concept does not help to determine entitlement to public funding for broad programs with long-term R&D plans, except by tallying up the subjective assessments of individual projects within a program.

Assessing additionality relies on determining a counterfactual question – would a project proceed without public funding? Further, the answer to this question is time dependant – the answer will be different when assessed ex-ante compared to ex-post.

The recent Tax Laws Amendment (Research and Development) Bill 2010 is an example of an attempt to inject the ‘additionality principle’ into policy that shows its weaknesses. The Bill includes in its objects, to “... encourage industry to conduct R&D activities that might not otherwise be conducted”. However, the Bill does not strictly pursue this object, since it offers a tax incentive to all R&D, not just that which would not otherwise have been conducted. There is an important difference between general support for R&D, which will undoubtedly result in more R&D being performed than would otherwise occur, and applying support only to that R&D which would not occur in the absence of the assistance. This distinction may be subtle, but it shows clearly that the current Bill is merely paying lip service to a policy principle that cannot, practically, be implemented. Were the legislation to attempt to only support ‘additional’ R&D, the problems of definition, proof and equitable treatment of tax payers would make it unworkable.

The Commission presents ‘additionality’ as a stop/go decision matrix (see figure 3.1, draft report, p. 62). This is an over simplification, since the real policy challenge for applying an ‘additionality principle’ should be not only to identify R&D that would not proceed without public funding support, but to identify the quantum of public support needed to enable a socially valuable project to proceed. As a broad principle, it offers little guidance in resolving the question of the level of funding that may be appropriate.

The matrix depicted in figure 3.1 (draft report, p. 62) depicting a justification for public funding is a theoretical analysis that is unlikely to hold in reality and would not maximise community well-being. When availability of private capital is limited (along with other factors that lead to under-investment by private capital) investment will be made in projects with the highest private returns, irrespective of the size of the public benefits. Projects with low private benefit, but potentially higher net social benefits may be overlooked.

BOX 1 – A comment on the ‘additionality’ principle - continued

The CRRDC considers that applying an ‘additionality principle’ would be in conflict with the objects of the PIERD Act, which envisages shared public and private benefits from the R&D funded under the RDC program. The shared public and private funding for the R&D is an essential input to generating shared public and private benefits. There is a strong equity consideration implicit in its design. Subjecting the RDC program to an additionality criteria abrogates this equitable approach to funding and, in effect, sanctions public free riding across a broad expanse of rural R&D where there are joint public and private benefits.

The CRRDC considers that the ‘additionality principle’ proposed by the Commission is a simplistic theoretical device which, although appealing, is, in practice, too vague and imprecise to assist Government or administrators with decisions about funding of R&D and would further complicate evaluation of performance. If applied as a condition of funding, it would create debate and risk instead of clarity and certainty.

It is implausible that subjecting policy and administration to a principle that the Commission concedes can only work with a ‘common sense’ approach and that should at best be used as a ‘rule of thumb’ will contribute to more efficient use of public or private funds, or lead to better outcomes for Government, industry or the public.

DRAFT RECOMMENDATION 5.3

The Australian Government should establish a mechanism to better inform and coordinate the totality of its funding for rural R&D with a view to:

- ***promoting consistency in approaches across specific and more general Australian Government programs that provide funding for rural R&D***
- ***assisting in the identification of gaps or unnecessary overlaps in program coverage and means to address them***
- ***informing considerations of the effectiveness of overall Australian Government funding support for rural R&D***
- ***ensuring that the States and Territories and other relevant entities are fully aware of changes in Australian Government funding programs and the likely implications for other rural R&D funding arrangements.***

The CRRDC agrees with the objective of this recommendation and believes that ensuring common understanding about strategic direction for rural R&D, improving coordination among the various participants in rural R&D and achieving a common approach to evaluation and reporting on outcomes, will significantly improve rural R&D outcomes for industry and the community.

However, the CRRDC contends that any mechanism that is established to better inform and coordinate funding for rural R&D needs to take account of the efficiency and effectiveness of each of the participants that are funded to contribute to rural R&D. This includes CSIRO, the Australian Research Council (ARC), the cooperative research centres (CRCs) and the universities as well as the RDCs. Effective coordination and efficient use of funds will be compromised if the coordination mechanism does not have good information about the capability, performance, strengths and weaknesses of the various contributors. The CRRDC considers that a review of the other elements in the rural R&D environment would provide clarity to the coordination process.

The CRRDC has given consideration to existing structures that currently have responsibilities related to rural R&D that could, with suitable modification, undertake the proposed coordination role. CRRDC considers that a coordination structure needs to have:

- executive representation from each of the key research providers within the rural R&D framework;
- executive representation from each of the key research purchasers;
- industry representation;
- representation of principle science disciplines;
- power to consult widely across industry, science and government agencies; and
- capacity to respond to Government policy direction and advise governments on broad RD&E strategy and plans across the rural RD&E framework.

Following is an overview of the PISC RD&E Subcommittee, the Rural R&D Council, the Coordination Committee on Innovation and the National Rural Advisory Council. While none of these structures precisely conform to these requirements, each contains elements that form part of a suitable model.

Primary Industry Standing Committee RD&E Subcommittee

The PISC RD&E Subcommittee comprises representation from all PISC agencies, representatives of the RDCs, CSIRO and the Australian Council of Deans of Agriculture. The PISC, RD&E Subcommittee has a role in developing broad communication and other plans to facilitate the dissemination of national research to relevant regions.

The CRRDC fully supports the need to have a cooperative mechanism that operates at the national level and considers that the PISC RD&E Subcommittee has worked well in this role.

The primary function of the PISC RD&E Subcommittee is to:

- develop the scope of the National RD&E Framework for approval by PISC and the Primary Industries Ministerial Council;
- work with the members to identify co-leadership and support roles;
- define, oversight and monitor a broad process for sector and cross-sector strategy development;
- develop the necessary agreements to ensure the National RD&E Framework functions effectively;
- at a level above the individual strategies, to work cooperatively to foster collaboration and change management plans and stakeholder engagement; and
- establish a process for reporting on the implementation of the National RD&E Framework.

The National RD&E Framework supports a strong culture of collaboration and coordination between the bodies, strengthens national research capability to better address sectoral and cross-sectoral issues and focuses RD&E resources so they are used more effectively, efficiently and collaboratively, thereby reducing capability gaps, fragmentation and unnecessary duplication in primary industries RD&E.

Rural Research and Development Council

The Rural Research and Development Council (Rural R&D Council) is the Government's key advisory body on rural R&D. Its role is to provide high level advice and coordination to better target and improve the effectiveness of the Government's investment in rural R&D.

The Minister for Agriculture, Fisheries and Forestry has requested the Council to:

- develop a National Strategic Rural R&D Investment Plan based on an agreed list of national priorities for profitable, globally competitive, sustainable, innovative and adaptable primary industries;
- establish a performance measurement and reporting framework against an agreed list of national priorities and key performance indicators;
- provide advice on enhancing cross-sectoral, cross-disciplinary, cross-jurisdictional and international cooperation and collaboration;
- provide advice on improving communication and uptake of new knowledge and technology across all rural industries and at all scales of enterprises;
- foster innovation as integral to the culture of rural communities and industries;
- foster the building of capacity of the rural R&D sector to ensure that Australia is prepared for challenges to global competitiveness, productivity, adaptability and

sustainable development into the future, including the challenges associated with climate change; and

- provide advice on any other matters relating to rural R&D referred to it by the Minister for Agriculture, Fisheries and Forestry.

The Council has a central role in facilitating more effective use of public resources to address priority issues of importance to Australia's primary industries and associated value chains; to enhance the speed of delivery of research outputs to Australia's primary producers and uptake of R&D by them; and to enhance domestic and international cooperation and collaboration.

The Council is due to provide the National Strategic Rural R&D Investment Plan to Government in late 2010.

Coordination Committee on Innovation

The Coordination Committee on Innovation (CCI) is a coordination mechanism for Australian Government departments and agencies with responsibilities or interests that impact on the national innovation system. The Committee acts as an information sharing forum for Australian Government innovation activities and for coordination of cross portfolio advice on innovation matters.

The CCI's role is to:

- gather and monitor up-to-date information on new and existing science and innovation programs and initiatives in Australia as a basis for better coordination of relevant programs and activities, and better informed policy development;
- report on agency activities under the relevant national innovation and research priorities and provide information to inform development of a public annual report on the performance of the national innovation system;
- monitor information on local and international innovation drivers and trends;
- provide coordinated input on innovation to relevant international forums and programs; and
- establish working groups to investigate and progress issues referred through the Minister for Innovation, Industry, Science and Research.

The CCI provides advice or raises issues through the Minister for Innovation, Industry, Science and Research.

National Rural Advisory Council

The National Rural Advisory Council (NRAC) is a skills-based independent advisory council to the Minister for Agriculture, Fisheries and Forestry.

NRAC was established in December 1999 following legislative changes to the *Rural Adjustment Act 1992* (the Act) to provide independent expert advice to the Australian Government Minister for Agriculture, Fisheries and Forestry on rural, regional and industry issues affecting agriculture in Australia.

NRAC's function, as defined under the Act, is to give advice and information as requested by the Minister, including, but not restricted to:

- rural adjustment,
- regional issues,
- education and training, and
- Exceptional Circumstances declarations.

3. SHOULD THE RDC MODEL BE RETAINED?

DRAFT RECOMMENDATION 6.1

The Australian Government should retain a modified Rural Research and Development Corporation (RDC) model.

- ***It should establish and fund a new RDC, 'Rural Research Australia' (RRA) to sponsor non-industry specific R&D intended to promote productive and sustainable resource use by Australia's rural sector.***
 - ***RRA's remit should broadly encompass land, water and energy use, with the precise coverage of its activities determined having regard to the further input to this inquiry.***
 - ***As part of that coverage decision, consideration should be given to the benefits and costs of bringing the 'national rural issues' R&D that is currently the responsibility of the Rural Industries RDC within the new entity.***
 - ***However, RRA's remit should not extend to the sector-specific 'public good' research undertaken by the Fisheries RDC.***
- ***RRA should be created as a statutory R&D corporation under the Primary Industries and Energy Research and Development Act 1989 (Cwlth).***
 - ***It should be funded by an annual appropriation from the Australian Government under a quadrennial funding agreement.***
 - ***RRA should be able to supplement its appropriation from the Australian Government with funding from other sources, including from other RDCs.***
- ***Following the establishment of RRA, the other RDCs — except for the Fisheries RDC — should focus predominantly on sponsoring R&D of direct benefit to their levy payers.***
- ***In consequence, the funding contributions from the Australian Government for all of the existing RDCs, except for the Fisheries RDC, should be gradually reduced (see draft recommendation 7.1).***

The CRRDC strongly welcomes and supports the Commission's underlying conclusions in the draft report that the RDC model is fundamentally sound and has many benefits. The Commission has highlighted the strong linkages with industry that reduce the risk of investment in projects of low industry or community value (draft report, p. 70) and increase the rate or level of adoption of the research results (draft report, p. 71). The Commission also acknowledges that through linkages with researchers, RDCs have kept abreast of developments in knowledge and the capability among researchers (draft report, p. 71). The RDCs have performed a valuable system integration role through collaboration with other research funders including CRCs, CSIRO and state departments of primary industries (draft report, p. 100). The RDCs have developed considerable expertise in the procurement and management of research (draft report, p. 75).

The CRRDC is opposed to the changes to the RDC model proposed by the Commission, including the creation of RRA as a new RDC, narrowing the focus of existing industry RDCs and reducing the matching Government contributions to industry R&D.

The CRRDC believes the management principle that '*structure should follow strategy*' is no less applicable to rural R&D than to other commercial business and should be followed in this case. In contrast, draft recommendation 6.1 puts structure before strategy by

proposing the establishment of RRA before its R&D responsibilities and priorities for public good and cross-sectoral R&D have been determined.

Accordingly, the CRRDC proposes that the most important first step in addressing the Government's and the Commission's concerns about the level of strategic (blue sky), and public good R&D and the structure through which this R&D is managed, is to define the Government's aspirations for this research and establish R&D priorities. In recent times, the RDC network has been given mixed messages about what is expected of it. While the Commission is advocating a need for more public good R&D (that it sees as being more 'additional'), the Government has been progressively cutting the funding for 'public good' R&D by abolishing LWA, reducing the funding for RIRDC to pursue public good research and seeking more 'cross-cutting' R&D from the industry RDCs (draft report, p. 130). Effective solutions cannot be developed until this confusion over objectives is resolved.

The CRRDC believes it is vitally important that all stakeholders in the broader RD&E system, including the RDCs, the PISC RD&E Subcommittee, the ARC, CRCs and others, participate with Government in a scoping process that will address this crucial task. In this context, Government representation should include the Departments of: Agriculture, Fisheries and Forestry; Innovation, Industry, Science and Research; Climate Change and Energy Efficiency; Regional Australia, Regional Development and Local Government; Sustainability, Environment, Water, Population and Communities.

In this process, Government must clearly articulate the nature and scope of the rural R&D it is seeking in the broader 'cross-cutting' and public good area. This will include identifying the broader areas of Government priorities for rural R&D, including productivity related R&D and public good R&D, cross-sectoral R&D as well as strategic R&D. Government should also identify its desired portfolio balance across these areas and the broad levels of investment it believes are appropriate. Along with this, the desirable delivery mechanisms and agreed measurement and reporting protocols should be identified.

The Rural R&D Council is currently developing a National Strategic Rural R&D Investment Plan which should provide a good starting point for this process.

It is inevitable that as the Government's aspirations are defined and developed into R&D priorities, the required R&D will spread across a spectrum from strategic to applied R&D, with varying proportions of public and private good inherent in its outcomes. Some of the R&D will be best suited to collaborative projects between RDCs, some may be undertaken by larger RDCs on their own and some will be best pursued as stand alone projects without industry RDC involvement. However, the CRRDC believes that the R&D should, wherever possible, be conducted through industry RDCs or with industry RDC participation, in order ensure its relevance to industry (to the extent that it has industry application), close integration with applied, industry-specific R&D and to ensure the best opportunity for adoption.

The CRRDC disputes the view that a distinction can be drawn between industry-specific, productivity oriented R&D and non-industry specific, public good R&D. Other than pure basic research undertaken solely for the acquisition of knowledge as a benefit in its own right (generally undertaken by CSIRO or universities), all strategic and applied R&D has a specific purpose or application in mind. This R&D comprises elements of both industry orientation and public good objectives, with public and private benefits arising from the research as joint and inseparable outcomes. Isolating this R&D into a separate organisation poses a real risk that the R&D will lose relevance and will be isolated from related applied R&D and from its most direct path to adoption.

The Commission's recommendations to change the model by narrowing the focus of industry RDCs appears to be premised on a view that industry-specific RDCs are overtly

focused on responding to levy payers and conducting adaptive, productivity-enhancing R&D, and are not suited to conducting cross-sectoral and high public good R&D. This, in conjunction with the notion that this research can be neatly distinguished from industry specific R&D, leads the Commission to conclude that the best means to progress this research is to establish a new RDC with specific responsibility for 'non-industry specific' R&D.

The CRRDC considers that, on the evidence, it is incorrect to view all RDCs as giving insufficient attention to strategic, cross sectoral and public good R&D. For example, the animal welfare RD&E strategy is an excellent example of an alliance between Government and industry investors, including many of the RDCs, under an agreement and mandate that supports cooperation and collective action. Across the RDCs the performance differs, with some (e.g. Dairy Australia, Fisheries Research and Development Corporation, Grains Research and Development Corporation, Meat & Livestock Australia) investing more strongly in these areas, while others have invested less. Appendix B provides a sample of RDC research portfolios categorised in ways that demonstrate the diversity of types of R&D undertaken. The CRRDC regards this as proof that RDCs can successfully invest in strategic, cross-sectoral and public good R&D. Where this has not occurred, there are specific reasons that contribute to the differences in outcomes. As the Commission acknowledges, requests by Government for RDCs to do more in this area have been relatively recent and it takes time to adjust R&D programs. Government has also given little specific guidance on the priorities and specific targets for 'cross-cutting' and public good R&D that it considers RDCs should be addressing. For some RDCs, scale issues in smaller industries where, say, 10% of their total R&D budget is insufficient to undertake a meaningful strategic R&D program, and excessive spill-overs from potential strategic projects to other rural industries, may constrain the ability to balance their R&D portfolio between productivity enhancing R&D and strategic, cross-sectoral and public good R&D. It is also likely that industries go through cycles in relation to the need to urgently address specific productivity related issues and prospects for high payoffs from strategic R&D compared to productivity oriented R&D, so that a review of the portfolio of an RDC at one time may not reflect longer term investment in strategic R&D.

Rather than recommend substantial change to the RDC model because some RDCs are perceived to be spending an insufficient share of their budget on strategic, cross-sectoral and public good R&D, the CRRDC recommends that the Commission propose changes that aim to increase RDC investments in these R&D areas. In essence, the CRRDC believes it is better to apply a little more Government direction to the existing RDC model to shift the balance in the R&D programs of RDCs in response to Government policy, than to make changes to the model that have a moderate to high risk of significantly diminishing its overall effectiveness and undermining the rural R&D effort.

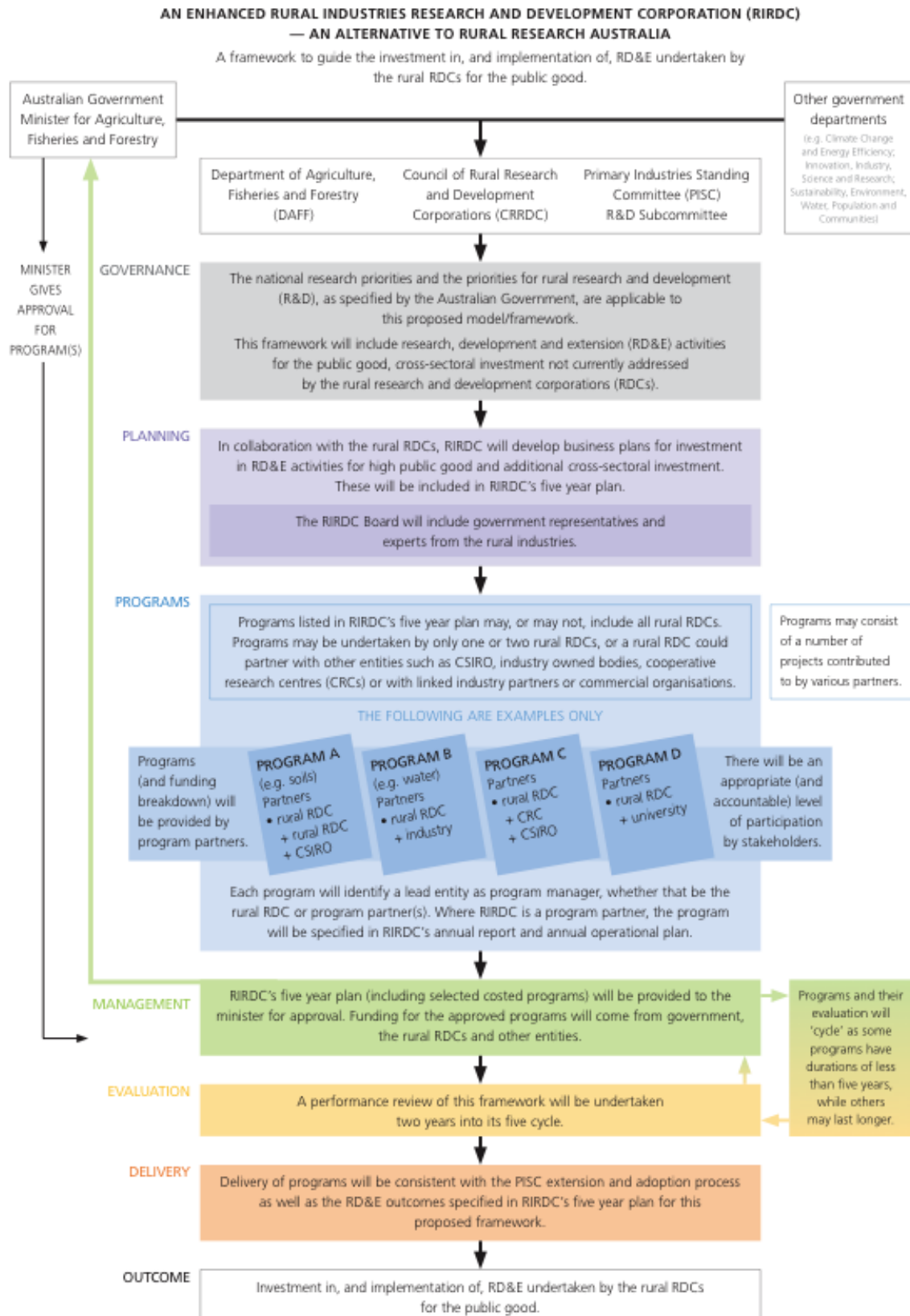
An alternative approach to establishing RRA

The CRRDC believes establishing RRA would be a costly, inefficient option that would require considerable time and resources to become operational, before it could be effective. The CRRDC proposes an alternative option within the existing RDC structure that can commence immediately, to be followed by legislative underpinning that is relatively simple when compared with that required under the RRA proposal.

The CRRDC considers that the most effective means of increasing the amount of cross-sectoral (including the PISC RD&E cross-sectoral strategies) and high public good R&D is to revise the structure and objects of the existing RIRDC, in preference to creating a new RDC, and for Government to be more specific in its directions to RDCs about the additional R&D priorities it expects to be pursued.

This model does not prevent RDCs pursuing opportunities with each other for co-investment or collaborative projects, as currently occurs, and implementing strategies through the PISC RD&E Framework. The RDCs increasingly collaborate and co-invest in cross-sectoral projects. The importance of this should not be under-estimated and should continue to be a feature of rural R&D. However, the CRRDC acknowledges there are priority areas which the Government sees as important and that need to be addressed over and above the current investment. This model is intended to respond to additional cross-sectoral priorities identified by Government that are not being addressed through current processes, or respond to priorities more efficiently and effectively. The current funding model for the RDCs should be continued to enable them to undertake industry specific and cross-sectoral investments in parallel with any additional R&D requirements identified through this model. The proposed model is presented diagrammatically in figure 1.

Figure 1. A model of enhanced public good and cross-sectoral R&D through RIRDC



It is proposed that an enhanced RIRDC would retain responsibilities including:

- cross-sectoral investment — e.g. methane to markets, bio-energy, bio-products and energy program, new plant projects, organics; and
- public good projects — e.g. current RIRDC national rural issues: dynamic rural communities, weeds, farm, fishing, health and safety, rural youth, rural women, capacity building, rural leadership, social research, global challenges and infrastructure.

In addition, it is envisaged that an enhanced RIRDC would undertake non-industry specific public good projects identified by Government through the scoping process outlined previously. This could include the following:

- PISC RD&E Framework cross-sectoral strategies where RIRDC is considered the most appropriate lead agency, e.g. the Climate Change Research Strategy for Primary Industries (CCRSPI) initiative; and
- investment in land, water, soil, salinity and energy R&D not already covered through other processes and projects from the national land and water audit.

It is proposed that an enhanced RIRDC would operate according to the following guidelines:

- RIRDC will have core funding to undertake R&D for public good and new and emerging industries.
- RIRDC's five year R&D Plan and Annual Operating Plans will respond to the Government's aspirations and priorities for cross-sectoral and high public good R&D.
- RIRDC will, with relevant industry stakeholders, identify gaps in meeting public good and cross-sectoral priorities and build a business case for each area of cross-sectoral or collaborative activity.
- Some projects may involve all the RDCs while others may only involve some of the RDCs. Other organisations may also be co-investors.
- Where RIRDC identifies a co-investment or collaborative project that it is not best led by them, a suitable lead organisation will be identified and will take responsibility for the project, as currently occurs.
- The programs that RIRDC will lead will be included in RIRDC's five year R&D plan which will then be provided for consultation with stakeholders including the CRRDC, RDCs, DAFF and the PISC RD&E Subcommittee.
- RIRDC's five year R&D plan will be subject to approval by the Minister.
- Upon approval of RIRDC's five year plan, the Minister will write to individual RDCs directing them to spend the agreed amount of investment on the agreed cross-sectoral projects included in the five year plan.
- RDCs will build these projects into their individual R&D plans and budgets
- Both RIRDC and the RDCs will identify the investment in their respective annual reports.
- An appropriate performance review process will be instigated to evaluate the performance of RIRDC and provide feedback to stakeholders.

The role of RIRDC in relation to high public good, and potentially blue sky R&D will need to be clearly defined and coordinated (through the process discussed under recommendation 5.3) with the other participants in the broader rural R&D framework, including the ARC, CRCs, CSIRO as well as the RDCs. This field of R&D is not a separate area that can, or should, be entirely allocated to RIRDC, or to the RDC network, alone.

It will also be essential to document RIRDC's mandate, to ensure that it does not become a repository for any unrelated R&D project that the Government may want undertaken from time to time in the future. This would compromise the ability of RIRDC to successfully deliver on the projects within its scope.

It will be appropriate to re-structure RIRDC, including its board and board selection criteria to ensure an appropriate mix of skills and experience to manage its wider R&D responsibilities. An appropriate mix of director's skills would include an understanding of public good investment, adoption by industry and land custodianship. The board may include Government appointed directors to ensure the Government's interests are properly represented.

An appropriate arbitration mechanism will also need to be established to address any disputes that may arise about individual RDC involvement and funding of cross-sectoral projects. The CRRDC will continue to provide the collective views of the RDCs through its collaborative evaluation and reporting mechanisms.

The CRRDC believes this model has several advantages over the creation of an additional, new RDC. The administrative cost of establishing and maintaining RRA with a budget of around \$50 million would be about \$6 million per annum. Using RIRDC to manage this R&D and pursue R&D through collaborative projects with industry RDCs will avoid much of the additional administrative cost of RRA. The proposed model will not penalise or disadvantage those RDCs that are already investing significant amounts in strategic and public good R&D by withdrawing funds and capability to support this R&D and disrupting existing programs. This model is also more flexible than the RRA proposal in how the R&D is managed and maintains closer involvement of the industry RDCs. In turn, this will maximise relevance, social value and the prospects for adoption of the outcomes. The model also minimises the risk of disrupting the current strong industry support for the RDC model and its shared funding.

The model provides a balance between close industry connections through all the RDCs ensuring comprehensive representation of industry and independent R&D program management capabilities through the re-structured RIRDC. The CRRDC believes that the capacity to merge these strengths will provide an ideal channel through which to deliver PISC RD&E cross-sectoral strategies which require elements of high public good, strategic R&D and strong industry grounding to ensure relevance and industry adoption.

The CRRDC believes that this model also has a strong message for industry on the importance of delivering shared public and private benefits required from shared funding. The Commission noted that some in rural industry have an 'entitlement mentality' to the public funding. The CRRDC believes that narrowing the focus of RDCs explicitly to productivity focused research of direct benefit to levy payers, even with a smaller matching funding rate, will re-inforce an 'entitlement mentality' and more strongly characterise the public funding as a subsidy. By comparison, encouraging some RDCs to broaden their R&D plans to increase the share of public benefit R&D will help instil a notion of responsibility to deliver joint public and private benefits in return for the shared funding.

Funding

The CRRDC proposes that the amount of funding for public good R&D within RIRDC should be determined only after completion of the scoping study proposed earlier that defines more precisely the research issues to be addressed. Certainly, in the absence of the creation of a new structure, the funding requirement for this R&D will be less than that proposed by the Commission.

The CRRDC agrees with the Commission's proposal that core funding from the Government for public good R&D should be provided under a quadrennial funding agreement and that RIRDC supplement this appropriation with funding from other sources including other RDCs.

The CRRDC recommends that the additional appropriation funding for RIRDC to pursue new public good and cross-sectoral research should be provided from a combination of funds previously appropriated for LWA and RIRDC for public good R&D and, if required, funding raised by reductions in other departmental, CSIRO and university programs currently funded to progress public good rural R&D which, as the Commission noted, are less well linked to industry.

CRRDC proposes that recommendation 6.1 be revised to read:

The Australian Government should retain the Rural Research and Development Corporation (RDC) model, but address the following changes to increase the capacity for public good and cross industry RD&E.

- ***It should re-structure RIRDC to better suit it to plan and, in the absence of a more appropriate lead agency, manage collaborative projects between RDCs on non-industry specific R&D intended to promote productive and sustainable resource use by Australia's rural sector.***
 - ***RIRDCs remit should broadly encompass land, water and energy use, with the precise coverage of its activities determined having regard to the further input to this inquiry.***
 - ***As part of that coverage decision, the 'national rural issues', and small and emerging industries R&D that is currently the responsibility of the RIRDC should be retained.***
 - ***However, RIRDC's remit should not extend to the sector-specific 'public good' research undertaken by the Fisheries RDC.***
- ***RIRDC should continue as a statutory R&D corporation under the Primary Industries and Energy Research and Development Act 1989 (Cwlth).***
 - ***It should be funded by an annual appropriation from the Australian Government under a quadrennial funding agreement.***
 - ***RIRDC should be able to supplement its appropriation from the Australian Government with funding for this cross-industry R&D from other sources, including from other RDCs.***
 - ***RIRDC should, wherever feasible, pursue cross-industry R&D through collaborative and jointly funded projects with other RDCs.***

In addition, industry specific RDCs will undertake to address specific cross-sectoral projects identified through the PISC R,D&E Sub-committee or agreed by Government and stakeholders as priorities for cross-sectoral or public good R&D.

4. FUTURE GOVERNMENT FUNDING OF RDCS

DRAFT RECOMMENDATION 7.1

The Australian Government should contribute to the cost of rural R&D sponsored by the Rural Research and Development Corporations (RDCs) on the following basis:

- ***There should be direct appropriations for the proposed new RDC, Rural Research Australia (RRA); for ‘public-good’ research sponsored by the Fisheries RDC; and for ‘national rural issues’ research sponsored by the Rural Industries RDC (RIRDC), unless responsibility for this research is transferred to RRA (see draft recommendation 6.1).***
- ***The appropriation for RRA should be progressively increased over five years to around \$50 million a year, with additional funding provided for any research responsibilities transferred to the new entity from other programs (see draft recommendation 6.1).***
- ***The Australian Government should continue to link its funding for the industry-specific RDCs to contributions made by the industries concerned.***
 - ***However, the cap on matching contributions for all statutory levies should be reduced from 0.50 per cent to 0.25 per cent of an industry’s gross value of production (GVP). This reduction should be phased in over ten years, with the cap reducing by 0.025 per cent of GVP each year during this period.***
 - ***The appropriation for RIRDC should allow it to continue to match voluntary industry contributions at the current level.***

The CRRDC’s response to the proposed creation of RRA and its funding has been addressed previously. The following comments deal specifically with dot point three of draft recommendation 7.1, addressing the Commission’s proposed change to the contributions to industry RDCs to match statutory levies.

The CRRDC considers it logically inconsistent for the Commission to find that the RDC model is fundamentally sound and has features superior to other mechanisms for managing rural R&D and to also recommend that funding to industry RDCs be reduced by around \$110 million a year. The RDC program represents approximately one third of total rural R&D and about 30% of Australian Government spending on rural R&D. It is a key component of the rural R&D framework and the most important contributor to rural productivity growth. The Commission finds that the program has better linkages to industry, better adoption of results, better R&D management and produces high rates of return. Against this background, the CRRDC believes reduced Government funding for RDCs will inevitably reduce the total funding received by industry RDCs, reduce the overall efficiency of rural R&D, result in lower productivity growth in rural industry and less public benefits from the Government’s investment in RDCs.

The Commission’s conclusions about funding for RDCs appear to stem from its conclusion, in chapter 4 of the draft report, that the levy system, rather than contributions from Government, are doing most of the work in addressing the potential for under-investment in rural R&D. The evidence quoted by the Commission for this conclusion is mostly circumstantial. It views high benefit-cost ratios as evidence of strong incentives for private investment in the R&D. However, a high benefit-cost ratio for *the industry* is not the same as high benefit-cost ratios for individual producers currently making a levy payment or voting for a levy rate. The individual’s benefit-cost ratio will be very different, probably even

negative if they are close to retirement age. The fact that *some* producers pay voluntary levies not matched by Government is evidence only about perceptions of R&D payoffs from that RDC and does not prove that R&D in other industries, or across the rural sector as a whole, has similar payoffs, or that other producers would be willing to vote for higher levies to support more industry R&D. It is salutary to remember in this context that, for the most part, levies only exist *because* of Government contributions, and nothing in the process of their creation suggests that the levies are more important in redressing under-investment in rural R&D than the Government contribution.

Much of the Commission's proposed changes to the RDC model appears to rest on this proposition about the relative importance of the levy system in redressing under-investment in rural R&D. The subsequent conclusions: that Government funding is obtaining only modest 'additionality', that the Government's matching funds could be replaced by higher levies and that industry RDCs relying on a predominance of industry levy funding and focused on industry specific R&D is a viable model, all appear to follow from this proposition. Yet, the Commission does not subject the original proposition about the effectiveness of the levy system, or the subsequent conclusion, to critical review or analysis. After the Commission has championed the importance of 'evidence-based policy' and quality ex-ante evaluation of policy options this is a disappointing omission.

Guidance on the relative importance of levies compared to matching Government grants can be taken from Alston, Freebairn and James (2004), who considered the relationships between producer and national benefits from levy funded research and the implications for appropriate rates of matching Government grants. The analysis shows that under a pivotal supply shift, when demand is inelastic, or when demand is less elastic than supply, that producers would rationally choose a zero levy regardless of the matching grant. In these circumstances, it is the matching grant that is most important in redressing under-investment, not the levy. The analysis also gives theoretical guidance on the question of the willingness of producers to increase levy rates. In the circumstances described earlier, producers acting rationally would be unwilling to increase levy rates since the benefits of R&D accrue to consumers. In other circumstances, the optimal balance between levy and matching grants will vary for different industries and different types of research. A conclusion to be drawn from this analysis is that producers do not always have sound reasons to fund R&D themselves (even when benefit-cost ratios are high) and will not always be willing to increase levy rates if the matching Government grant is reduced.

Current levels of support

The Commission's recommendation to reduce the Government funding to RDCs is also based on an analysis of current levels of support for rural R&D compared to support for R&D in other sectors of the economy that is biased by use of an inappropriate base for comparison.

Table 7.1 in the draft report represents that \$8.11 is the Government contribution per \$100 of net, after tax, industry contribution to R&D via the 125% R&D tax concession. This is based on The Treasury definition of 'tax expenditures' that measures only the additional deduction above that which applies to ordinary business expenditure. This is inappropriate as a measure of the total Government contribution to the cost of R&D, as it does not include the foregone revenue from ordinary deductibility of expenditure on R&D. Use of the 'tax expenditures' base to measure the Government contribution is only valid if, were a business not to invest in R&D, it spent the same amount on other deductible expenditure.

Appendix C details calculations by the CRRDC that show the total Government contribution per \$100 of R&D expenditure in the non-rural sector ranges from \$37.50- \$52.50 under existing and planned R&D tax provisions. A **maximum** comparable figure for R&D undertaken through rural RDCs is \$63.35. On these calculations the Government

contribution to rural R&D ranges from 1.2 to a maximum of 1.7 times the contribution provided to non-rural R&D, far below the 3-11 times claimed by the Commission.

The Commission's comparison of the assistance to R&D through the tax concessions, and to rural R&D through RDC funding, as a percentage of gross value added (GVA) are also misleading. The data used in this comparison also relies on the 'tax expenditures' definition which does not account for all foregone tax revenue. Averaging the Government contribution across total value added for all non-rural industries is also misleading to the extent that this includes a range of service sectors, where the prospects for valuable R&D are limited or do not qualify for the tax concession. Calculations presented in Appendix C show that the Government contribution to RDCs represents 0.78% of GVA whereas the foregone tax revenue and tax offsets for R&D comprise 0.66% of GVA in manufacturing industries and 0.99% of GVA in the mining industry.

On the evidence presented, the CRRDC rejects the Commission's argument that Government support of investment in RDCs is demonstrably disproportionate or generous compared to the Government contributions to other industry sectors through the R&D tax concession provisions.

Can current support be justified

The Commission argues in chapter 7 that the current level of Government support for RDCs does not generate adequate community return. Although the Commission is recommending significant changes to the RDC model based on this argument, it has not provided data or analysis that would sustain its conclusions.

The Commission cites limited instances in which corporate farming businesses conduct R&D in addition to levy payments that support RDC projects. However, these examples in no way disprove the existence of widespread free-riding on intra industry spill-overs that leads to substantial under-investment in R&D. Indeed, the Commission's example could be interpreted as evidence that levy funding is an imperfect substitute for private investment in R&D and that compulsory levies do not entirely redress under-investment in rural R&D.

Underlying the Commission's recommendation is the view that R&D conducted by RDCs is dominated by short term, adaptive, industry specific, productivity oriented projects that deliver little public benefit. This view is not supported by an analysis of RDC R&D portfolios, but by extension, the Commission goes on to conclude that producers will, in the absence of Government funding, vote to increase levy rates to replace the withdrawn funds and maintain the total investment through RDCs. The CRRDC contends that RDCs are investing in a substantial range of strategic research projects which predominantly contribute to the rural R&D knowledge base and environmental projects that have a substantial public benefit in their outputs, as well as industry benefits. The CRRDC believes that the Commission needs to assess more precisely the nature of RDC funded R&D in terms of its time horizons, the science that is involved and the breadth of the public and industry beneficiaries of its outputs before drawing conclusions about the orientation of the R&D and balance of public and private benefits.

As discussed in Box 1, the concept of 'additionality' is a weak and imprecise tool on which to attempt to base policy decisions. Further, the Commission's assessment that the degree of additional R&D induced by Government contributions is modest and relies on the assertion that industry levies will rise to replace the removal of Government contributions. The evidence does not support this assertion. Were industry prepared to make additional investment in R&D via levy rates above the amount that attracts matching Government support, it would logically follow that this should already have occurred. That levy rates vary significantly, variously below, at, or above the cap for matching Government

contributions, shows there are factors other than the presence of Government funds that discourage industries from voting to increase levies rates.

The Commission's view that a compulsory levy is effectively doing most of the work to overcome the incentive for producers to under-invest in rural R&D should, as discussed previously, be subjected to critical consideration. Concerns about intra-industry spill-overs (e.g. balance in RDC spending between Western Australia versus eastern Australia, northern Australia versus temperate Australia) and temporal constraints on realising benefits from R&D when time lags are very long will also contribute to producers making rational decisions to set levy rates that are below a socially optimal level. The rapid pass-through of benefits when adoption occurs (in effect inducing a spill-over of benefits to consumers or others in the supply chain) will also lead producers to adopt levy rates that are less than socially optimal for the R&D opportunities that are available. These factors, which discourage individual investment in rural R&D, are alluded to by the Commission but, appear to the CRRDC to be given insufficient weight as a contributor to industry to setting sub-optimal levy rates and being unlikely to vote to increase levy rates.

Were levies a comprehensive solution to these problems, industry would be expected to vote for higher levies, irrespective of Government support until the returns from R&D were driven down to their own marginal opportunity cost of funds. With benefit-cost ratios of around 10:1, this has not occurred and the magnitude of the difference between the return from additional R&D and growers' returns from alternative investments, is a measure of the limited extent to which levies actually resolve spill-over problems and under-investment.

The CRRDC is also very concerned that a departure from the implicit agreement between industry and Government to match industry levy funds up to 0.50% of GVP could undermine the RDC model to the long term detriment of rural R&D. There is a significant risk that some industries may vote to reduce their R&D levy rates if matching Government funds are reduced. A reduction in funding would also put considerable pressure on RDCs to obtain higher leverage rates on their funds, with consequent pressure on research providers to accept a greater share of the cost of individual projects, or to completely cut funding to projects that had lower returns or lower leverage rates.

Box 2. RDC funding — an industry / Government agreement

When Government initiated the RDC model in the 1980s, it did so with the explicit objective of seeking greater industry commitment to investment in rural R&D. There was, at the time, considerable industry resistance to the proposals for compulsory levies. To obtain industry support, Government made the offer to rural industries that, as an incentive, it would match their contributions, dollar-for-dollar up to 0.50% of GVP and made it optional for industries to participate in the arrangements.

On these very explicit conditions, industry supported the Government's policy and the introduction of the legislation. But even so, it took time for individual industries to accept the offer to participate and to vote for levy rates. Reservations existed about how the R&D would be administered, the cost of administration, whom the R&D would benefit, consultative processes, responsiveness to industry research needs and intra-industry/regional balance in spending. Many industries and segments of industries were, and remain tentative, about the benefits, reflected often in the levy rates that have been approved.

This history serves to demonstrate that support for the RDC model is by no means immutable or fixed. Industry organisations agreed to participate on the terms of the Government's offer at the time it was introduced, and hold the right to withdraw if they consider the agreement has been broken.

To most in industry, a reduction in the rate of matching funding for R&D levies would be seen as a cynical move by Government, breaking its original agreement.

CRRDC strongly recommends that recommendation 7.1 be removed from the Commission's final report.

5. SUPPORTING CHANGES TO THE RDC MODEL

DRAFT FINDING 5.1

It would not be appropriate to establish a target level for overall spending on rural R&D — nor a target for rural R&D intensity. Rather, the emphasis should be on ensuring that the policy framework is comprehensive and soundly based, and that settings within the framework facilitate efficient use of available public and private funding, and timely and effective funding responses to emerging needs.

The inquiry's terms of reference request that the Commission examine the appropriate level of investment in rural R&D. In a theoretical, economic context, the socially optimal amount of investment that would maximise the net benefits to the community. That is, the point at which the difference between the total benefits and the total costs is maximised, or equivalently the point at which the marginal net benefits equal the marginal net costs. Determining the appropriate level of investment in R&D for a country is, however, a complex question on which many factors impinge. The limitations of analytical techniques, measurement and data make it impossible to precisely resolve this question analytically. These constraints notwithstanding, the Commission is asked to give the best guidance it can on an appropriate level of investment in rural R&D. The CRRDC does not consider it is acceptable for the Commission, as it has done, to completely avoid the question, seemingly because of the analytical difficulties, essentially leaving this question to be resolved politically without technical guidance.

The Commission acknowledges the substantial body of analytical research examining the returns from rural R&D, but sought to dismiss this work on the grounds that "... benefits from past investments provides relatively little guidance on whether Australia should be spending more or less in this area in the future" (draft report, p. 90). The CRRDC believes this statement does not give due credit to the findings of careful, detailed analysis (Mullen 2007, Alston et al. 2007, Alston et al. 2010) which found there is no evidence that returns on investment in rural R&D are falling over time. On this evidence, there is no cause to expect that future returns will not continue to yield strongly positive returns, in turn providing a strong guide to the appropriateness of current levels of investment.

The Commission advances that "what is conceptually most relevant to funding quantum questions are returns at the margin of the project portfolio ..." (draft report, p. 90). However, it sought no evidence of the marginal returns, saying instead that identifying returns at the margin is very difficult and that "construction of a 'marginal' project portfolio would require a very detailed and disaggregated assessment of overall rural R&D investment" (draft report, p. 90). The results of hundreds of analyses that overwhelmingly find high returns from rural R&D, does not suggest that expected net returns from marginal projects are approaching zero. The following findings also offer strong guidance. Mullen (2007, p. 375) found "... over the range of research investment from 1953 to 2003, the marginal impact of increments to research investment is still increasing", and (ibid. p. 376) the investment "... has earned moderately high rates of return and there is little evidence that rates of return are likely to decline markedly either as investment increases or over time because of diminished research opportunities". Technical assessments, such as those presented by Sheng, Mullen and Zhao (2010, p. 7), "... that despite past research, average wheat yields of about 2.0 tn/Ha are still only about half the water-limited potential and that further research will be needed to increase yield closer to the water-limited potential", suggest ample opportunity for future research to deliver positive net returns. The CRRDC evaluation of a sample of randomly selected RDC projects also found

universally positive results and no suggestion that there are marginal projects, or groups of projects, consistently delivering negative net returns.

The Commission expressed concern about the significant methodological difficulties with the econometric work including separating out the contributions of R&D and other drivers of productivity improvement. Sheng, Mullen and Zhao (2010, p. 17), did consider this matter in their analysis of the contributions of education and terms of trade to productivity growth, finding that the shifts in productivity were not statistically significant and less important than climate and agricultural R&D investment in affecting broadacre productivity.

Throughout its discussion of the level of overall spending on rural R&D in Australia, the Commission has avoided drawing conclusions about the adequacy of the level of investment in rural R&D. While it may be reasonable, as the Commission states, to be "... very cautious about drawing **strong policy conclusions** (emphasis added) ... [from] these sorts of observations and correlations" (draft report, p. 91), or to find that the "... econometric evidence was too imprecise for calibrating funding levels" (draft report, p. 91), the available evidence is sufficient to support suggest broad conclusions and general directions about R&D funding levels.

The CRRDC considers that there are reasonable grounds for the Commission to make a finding of:

The considerable body of econometric evidence suggests that the returns from rural R&D are positive, often strongly positive, and there is no evidence that returns are declining. While it is not possible to analytically determine an optimum level of investment in rural R&D, it is highly likely that if the level of investment in rural R&D in Australia were reduced, the foregone value to the community of future productivity growth would substantially exceed any savings from reduced investment.

Such a statement would be consistent with the second part of the earlier draft finding, addressing the importance of ensuring that the policy framework facilitates efficient use of the available public and private funds. This point that is fully supported by the CRRDC, but it does not in any way obviate or supersede the need to provide guidance on an appropriate level of rural R&D for Australia.

DRAFT RECOMMENDATION 5.2

In consultation with its State and Territory Government counterparts, the Department of Agriculture, Fisheries and Forestry should establish a process for assembling and maintaining robust data on:

- ***total funding for rural R&D in Australia — including from R&D programs not specific to the rural sector, and indirectly through the charging practices of government research suppliers***
- ***the respective shares of that funding provided by governments and private parties***
- ***the programs and other channels through which this funding is spent, and the way in which spending is delineated across the main rural R&D provider groups.***

The CRRDC agrees with the objective of this recommendation. Poor information about many aspects of the rural R&D framework and its funding are not conducive to ensuring efficient use of public funds, or maximising the net social benefits from the rural R&D effort. The lack of transparency and consistency of information about funding and outcomes across the framework severely hinders proper consideration of the value of the contributions of various programs, and identification of where improvements can be made. In the absence of consistent information, there is a risk that attention is unduly focused on those areas with the most transparent reporting, simply because they are visible while, perversely, the less transparent programs escape critical review.

Transparent and consistent information is important to assessment of all R&D, not just rural R&D. The same problems of lack of transparency apply to R&D in other sectors. In order to determine policy actions in future on the basis of clear evidence it will be essential to assess rural R&D performance relative to R&D performance in other sectors. The CRRDC considers that other relevant agencies should also be encouraged to collect comparable data on R&D for other sectors.

DRAFT RECOMMENDATION 8.1

As a condition of receiving government funding, Rural Research and Development Corporations (RDCs) should:

- ***invest in a balanced project portfolio that includes longer-term, riskier and potentially higher-reward research, as well as short-term, low-risk, and adaptive research***
- ***have in place effective processes to ensure timely adoption of research results***
- ***use government funding solely for R&D and related extension purposes and not for any marketing, industry representation or agri-political activities***
- ***promote effective communication with industry stakeholders, researchers and the Australian Government***
- ***publish information on the outcomes of all completed research projects in a timely manner***
- ***implement board selection processes that result in boards with an appropriate balance of relevant skills and experience, rather than a balance of representative interests***
- ***pursue ongoing improvements in administrative efficiency***
- ***undertake rigorous and regular ex ante and ex post project evaluation***
- ***participate in regular and transparent independent performance reviews***
- ***remedy identified performance problems in an effective and timely manner.***

For its part, the Australian Government should:

- ***engage openly and constructively with RDCs and their industry stakeholders***
- ***discharge its administrative responsibilities in relation to the RDC program in a timely and efficient fashion***
- ***ensure that nominated representative bodies for each of the statutory RDCs continue to be suitably representative of the interests of the industries concerned, and not dependent on funding from the RDCs they are meant to oversight***
- ***monitor the RDCs' performance in a way that will enable transparent assessment of the outcomes of the program as a whole, and identification of specific performance problems***
- ***effectively communicate with RDCs in regard to opportunities to improve performance, and take prompt and appropriate action if performance problems are not satisfactorily addressed.***

Although the Commission indicates a concern at imposing additional pressures and costs on RDCs through introduction of prescriptive and new governance requirements, the CRRDC considers that the combined impact of a number of the recommendations (5.1, 5.2, 8.1, 8.5, 8.6, 8.7) will have this effect. These recommendations will subject the operations and funding of RDCs to various sets of objectives, principles, conditions and coordination requirements, in an uncertain hierarchy, that will place RDCs in an administrative web which will add significantly to costs and constrain effectiveness with, in some instances, limited beneficial outcome. The CRRDC believes it will be more appropriate for all of these matters to be dealt with, together, in a form of a standing operating agreement between the Government and each RDC.

By proposing that funding for RDCs be made conditional on complying with the suggested principles, the Commission is, in effect, proposing that the principles would operate as

contractual obligations on RDCs. The CRRDC cannot agree with imposing such obligations on RDCs in the terms set out in draft recommendation 8.1. The wording of the principles lacks clarity and definition, and cannot be easily and precisely interpreted so that compliance, or otherwise, can be readily determined. The CRRDC is concerned that in their current form, the conditions would undermine rather than add certainty to RDCs in relation to their public funding, and would also not assist Government to determine and administer its public funding commitments. The following comments address specific concerns with individual principles.

Dot point 1 — While maintaining a ‘balanced’ portfolio is conceptually appealing, the suggestion that projects fall into a spectrum between long term, risky, high return and short term, low risk, adaptive; is simplistic and false. These parameters are not necessarily correlated. Longer term or higher risk projects do not necessarily yield higher rewards. Industry and community returns from R&D could be reduced if the result of this condition was to drive RDCs towards investment in more longer term projects that yield lower returns. RDCs should be selecting the highest return projects, after appropriate adjusted for risk and timing of costs and returns. The CRRDC considers that a more appropriate wording for such a clause would be; *‘invest in the projects offering the highest rewards to industry and the public having regard for the long term strategic development of the industry’*

Dot point 2 — The wording implies, or could imply, that RDCs are responsible for delivering extension. RDCs are not positioned to be extension agencies and should only be required to ensure that extension of successful projects is promptly undertaken, whether by the RDC, the research provider, by separate agencies or a combination of these entities. A more appropriate wording would be: *‘ensure results of successful research are promptly extended to potential adopters’*.

Dot point 3 — The clause should refer to ‘commodity marketing’ since RDCs commonly and legitimately engage in promotion and marketing of their R&D activities to producers to maintain support for the levy system and as part of their extension program.

Dot point 4 — It is not clear what “promote effective communication...” is intended to mean, or what is intended to be communicated. The clause might more appropriately be worded: *‘communicate effectively with industry stakeholders, researchers and the Australian Government on research plans and performance’*.

Dot point 5 — It is not clear whether this clause is intended to require RDCs to publish results of research. Research providers who are conducting the research are the parties that should primarily be required to publish results. This would usually form part of the extension plans (see dot point 2) for a project. If this clause is intended to imply publication by RDCs of some type of impact statement, then it is not clear how this interacts with dot point 8 (evaluation).

Dot point 6 — This clause applies only to IOCs since the PIERD Act controls the selection process for statutory RDCs.

Dot point 10 — To be effective, a remedial clause must be specific about the defaults that can be actioned, the time within which remedy is to be affected and the penalties that may be applied if a default is not rectified.

Dot points 1, 6, 7, 8 and 9 — These would appear to be matters related to good governance that are an ongoing responsibility of an RDC’s Board rather than conditions relating to the proper use of public funds.

Australian Government dot point 2 — It would be more instructive to list specific administrative responsibilities and the relevant timeframes within which they are to be delivered.

Australian Government dot point 3 — The Government does not control and cannot be made responsible for the actions of representative bodies. Wording should be amended to read: *'scrutinise nominated representative bodies for each of the statutory RDCs and take appropriate action if a representative body is not suitably representative of the interests of the industries concerned or becomes dependant on funding from the RDCs they oversee'*.

The CRRDC considers that it is more appropriate for funding of an RDC to be conditional on continued use of those funds for proper purposes connected with achieving the objects of the RDC. Deficiencies in governance of an RDC (but not an IOC) that do not go to proper use of funds, should more properly be dealt with by provisions that allow Government to act to remedy the specific deficiency in governance, either by directing the RDC board to do certain things, power to do certain things that the RDC board has failed to do, or in extreme cases to dismiss the RDC board. Making this distinction between proper use of funds and matters of good governance means that the continuity of the R&D program is not threatened by matters that are not of immediate operational importance, while matters of probity, the remedies for which may quite protracted, are dealt with more directly. This approach would also obviate the need for a lengthy list of carefully worded conditions such as proposed in the Commission's recommendation.

DRAFT RECOMMENDATION 8.2

Consistent with the overarching public funding principles for the rural R&D framework (see draft recommendation 5.1), the legislation and statutory funding agreements for Rural Research and Development Corporations (RDCs) should indicate that the ultimate objective of the public funding they receive is to induce socially-worthy rural R&D that would not otherwise be undertaken.

With that guidance and the RDC-specific principles (see draft recommendation 8.1) in place, requirements for formal Ministerial involvement in priority setting and approving RDCs' plans should be removed, except for the Fisheries RDC and Rural Research Australia.

Draft recommendation 8.2 is opposed by the CRRDC and should be removed from the Commission's report. As discussed previously (draft recommendation 5.1), the Commission acknowledges there are significant practical difficulties with determining 'additionality'. It would create serious legal, management, governance and compliance difficulties to place in legislation or other legally binding documents, a funding criterion that is "complicated by imperfect information", is "... very difficult" to determine, and that is only "... a *starting point* for examining the case for government funding" and which cannot be precisely assessed.

The PIERD Act sets out objectives for statutory RDCs (reflected in similar terms in Statutory Funding Agreements for IOCs). Adding a separate objective for public funding might imply that the objective for public funds is separate and different to the objective for private funds. This in turn could imply running separate programs, each with different funding bases (an option that, elsewhere in the report, the Commission did not favour). It could alternatively imply that an RDC could not undertake R&D that might be able to be privately funded.

This recommendation is also contrary to the Commission's desires to see programs more transparently assessed against objectives, since such an objective could not, in practice, be administered.

The CRRDC considers that Ministerial approval of R&D and operating plans has not been an onerous or intrusive requirement for RDCs and forms an integral part of Government oversight that ensures RDCs make proper use of public funds. Ministerial approval of R&D and operating plans also forms part of the process for ensuring that RDCs invest sufficiently in the agreed public good and cross-sectoral priorities under the CRRDC's alternative to formation of RRA outlined previously.

DRAFT RECOMMENDATION 8.5

The Primary Industries and Energy Research and Development Act 1989 (Cwlth), and the statutory funding agreements for industry-owned Rural Research and Development Corporations (RDCs) should be amended so that all RDCs are required to participate in a regular, transparent and comprehensive program-wide project evaluation process, such as that currently facilitated by the Council of Rural Research and Development Corporations (CRRDC).

Through the CRRDC, the RDCs should continue to explore means to increase the robustness of this evaluation process, including through:

- examining the scope to quantify, or put orders of magnitude on, environmental and social impacts***
- including an allowance for overhead costs and implicit subsidies from publicly-funded research providers in all evaluations***
- making provision for peer review of the evaluations***
- informing future evaluations with periodic reviews of past evaluations to assess whether assumptions about adoption rates and additional extension related costs have proved to be reliable.***

The CRRDC agrees in principle with routine project evaluation, but seeks from the Commission a clear statement of the purpose and objectives that the evaluations are to satisfy.

Project evaluations that produce benefit-cost ratios or similar measures of financial return are only a measure of the relative return of the projects assessed. For reasons the Commission has identified, they are not an absolute gauge of the return to industry or the community from the project investment. CRRDC views project evaluation primarily as a management tool to assist RDC Boards in developing, monitoring and updating research plans.

Steps need to be taken to ensure that benefit-cost evaluation is not seen as a measure of RDC performance, or as a determinant of access to funding. Evaluations cannot be used to assess the overall importance of, or benefits arising from, research programs.

The CRRDC also considers that other rural and non-rural research programs would benefit from undertaking routine project evaluation, but stresses that such evaluations are primarily a management tool and are not suited to, and should not become, a basis for assessing overall program benefits or value, or comparing program performance.

The CRRDC considers that a requirement to undertake routine project evaluation should be dealt with as a matter of good governance, as is currently the case through the CRRDC. The RDC evaluation program, led by the CRRDC is the largest and broadest of this type of analysis of rural R&D in Australia. This evaluation process demonstrates strong collaboration between RDCs, rural industry, government and research partners and shows significant benefits are generated in areas targeted by the National Rural Research and Development Priorities. It also demonstrates the high level of commitment the RDCs have to the evaluation process, with all RDCs participating in the 2010 evaluation program and providing ongoing commitment to participate.

The first year of the evaluation program in 2008 showed a strong return on investment, where, for every \$1 invested, \$11 was returned. This result was over a 25 year benefit-cost period and was highly time dependent. In 2009 the CRRDC included the 5, 10 and 15 year results along with the weighted average results. These results showed a benefit-cost ratio of 2.36:1 after five years, 5.56:1 after 10 years, rising to 10.51:1 after 25 years. That

is, for every \$1 invested, \$10 is returned after 25 years, largely consistent with the results from 2008.

Preliminary results have now been prepared for 2010 that show a \$7 return for every \$1 invested over 25 years. The preliminary aggregate result for the first three years of the evaluation program is a 25 year average benefit-cost ratio of 9.47:1. The year 5 and 10 benefit-cost ratios over the three years are 2.87:1 and 5.00:1.

In 2010, the total cluster/project costs were \$896 million including an RDC contribution of \$270 million. The 2010 net present value of total benefits was \$4 billion. This clearly demonstrates not only the value of R&D investments through RDCs, but also the opportunities that can be achieved from leveraging. It is important to note that these benefits are spread across all stakeholders — not just levy payers — therefore the individual return to each levy payer is much less than the total return on investment.

The CRRDC sponsored evaluations have now examined a total of 156 projects. One of the significant benefits of the program lies in the accumulation of data and lessons that can be gained from this data over time. The RDCs are recognising an increasing value in the evaluation process and are seeing it having a positive effect on their day to day businesses. To the best of our knowledge, there is no other body of equivalent research that is collected in such a systematic way.

DRAFT RECOMMENDATION 8.7

The Australian Government's Department of Agriculture, Fisheries and Forestry should prepare a publicly available, consolidated, annual monitoring report on the activities of the Rural Research and Development Corporations (RDCs). These monitoring reports should draw, as appropriate, on the outcomes of the program-wide project evaluation process (see draft recommendation 8.5) and independent performance reviews (see draft recommendation 8.6), and contain:

- ***detailed data on each RDC's funding arrangements, including a breakdown of industry and matching government contributions, as well as the division of expenditure between R&D-related activity and any other functions***
- ***a broad overview of R&D sponsored by the RDCs and associated outcomes***
- ***details of any identified breaches of obligations under relevant legislation and associated funding agreements during the monitoring period; and the steps that have been, or will be, taken to address those breaches***
- ***a summation of the Department's performance in implementing new R&D levies, and changes to existing levies (see draft recommendation 9.3).***

Subject to there being an agreed scope and methodology for RDCs to report to the Department of Agriculture, Fisheries and Forestry (DAFF) on their performance and that reporting does not cause an undue increase in administrative or compliance costs, the CRRDC supports the intent of this recommendation.

The CRRDC requests that the recommendation be amended to require DAFF and the RDCs to work cooperatively to produce an agreed scope and methodology on which the RDCs will prepare and provide information to DAFF for this purpose.

6. LEVY AND REVIEW ARRANGEMENTS

DRAFT RECOMMENDATION 9.4

The Levies Revenue Service should routinely monitor its performance and the costs of collecting levies, and promptly communicate the results of that monitoring — along with details of any proposed changes to its procedures or cost allocation protocols — to stakeholders.

The CRRDC agrees with the recommendation that LRS performance be subject to review. Since all RDCs are required to use the services of LRS and to meet the cost of the services provided, it is a proper and reasonable measure to protect the interests of industry, for these services to be regularly reviewed.

The CRRDC considers that the review process should, as a matter of good governance, be conducted independently. This will improve confidence in the reviews' outcomes and will be more effective in identifying areas for improvement.

The CRRDC recommends that a periodic review should be undertaken by the Commonwealth Auditor-General.

DRAFT RECOMMENDATION 9.5

At the end of the ten-year phase-in period for the new arrangements governing the funding and operation of the Rural Research and Development Corporations (RDCs), there should be a further independent and public review. Amongst other things, that review should examine:

- ***the impact of the new arrangements on the overall level and mix of R&D sponsored by the RDCs, the rate of uptake of research outputs by primary producers, and the resulting benefits for the community***
- ***the extent to which the new arrangements, and especially the establishment of Rural Research Australia, have helped to increase the amount of additional, socially valuable, R&D induced by the Government's funding contribution to the RDC program***
- ***the extent to which the proposed new data collection arrangements have helped to improve the transparency of funding and spending flows within the framework***
- ***the effectiveness of the proposed new mechanism for coordinating Australian Government funding for rural R&D***
- ***the case for making industry representation a generally allowable function for any RDC***
- ***the arguments for and against continuing to provide government contributions for levies paid by processors***
- ***the effectiveness of the statutory levy rate review requirements in helping to ensure that rates remain contemporary to an industry's R&D needs***
- ***the implications of changes in the wider rural R&D framework for the RDC arrangements.***

The CRRDC opposes the proposed changes to RDC funding and R&D responsibilities, and accordingly does not support the purposes of the proposed review.

The Commission has identified in the draft report the difficulty of reviewing individual components of the rural R&D framework in isolation from the rest of the framework. The CRDDC considers that future reviews of RDCs should only occur as part of a wider review of rural R&D so that performance of all aspects of the rural R&D framework can be assessed in context and against consistent terms of reference.

The CRRDC also considers that while periodic review of Government policy and structures is merited, the timing of future reviews should reflect industry and policy developments rather than be dictated by arbitrary timing intervals. Stability and consistency are important to the effectiveness of R&D that has long gestation periods (sometimes a decade or more). Overly frequent reviews and structural change undermine the capacity to plan and execute long term research programs. This is likely to be particularly relevant to many ecological, land use and water projects where observations and assessments of changed practices need to extend over long periods in order to reliably capture and reflect varying seasonal conditions.

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APPENDIX A. STATUTORY CORPORATIONS AND INDUSTRY OWNED COMPANY RDCs

Statutory corporations	
Cotton Research and Development Corporation	CRDC
Fisheries Research and Development Corporation	FRDC
Grains Research and Development Corporation	GRDC
Grape and Wine Research and Development Corporation	GWRDC
Rural Industries Research and Development Corporation	RIRDC
Sugar Research and Development Corporation	SRDC
Industry owned companies	
Australian Egg Corporation Limited	AECL
Australian Meat Processors Corporation	AMPC
Australian Pork Limited	APL
Australian Wool Innovation Pty Limited	AWI
Dairy Australia Limited	DA
Forest & Wood Products Australia	FWPA
Horticulture Australia Limited	HAL
LiveCorp	LiveCorp
Meat & Livestock Australia	MLA

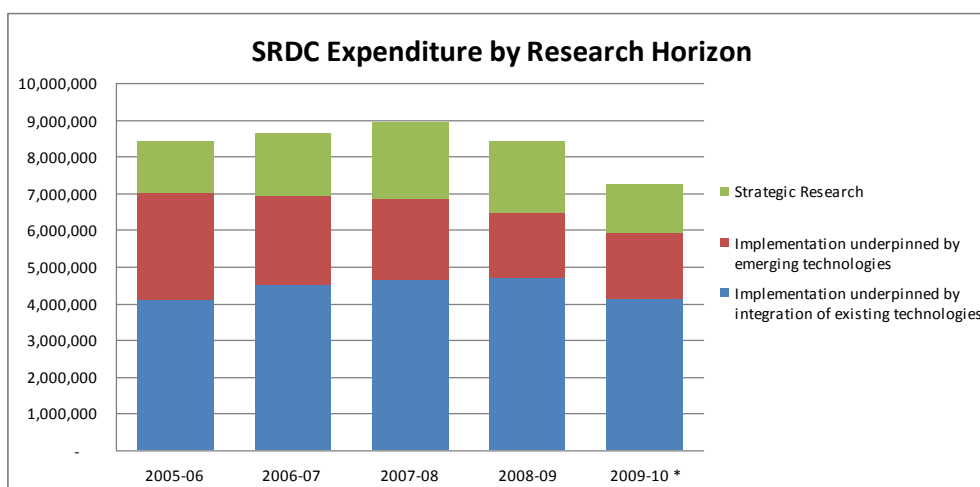
APPENDIX B. STRATEGIC AND LONG TERM R&D PERFORMANCE BY RDCS

The following data supplied by RDCs shows the diversity of types of R&D in the R&D portfolios of a selection of RDCs and the varying balance of investment in types of R&D within portfolios. It is presented to assist the Commission to understand the extent to which RDCs address priorities other than the immediate objective of short term, adaptive R&D focussed on industry productivity improvement.

Categorisation of R&D is largely subjective, and RDCs use different nomenclature to assess the contents and balance of their portfolios. CRRDC has not sought to harmonise the responses from RDCs, or analyse the data and presents the information for illustrative purposes.

Sugar Research and Development Corporation

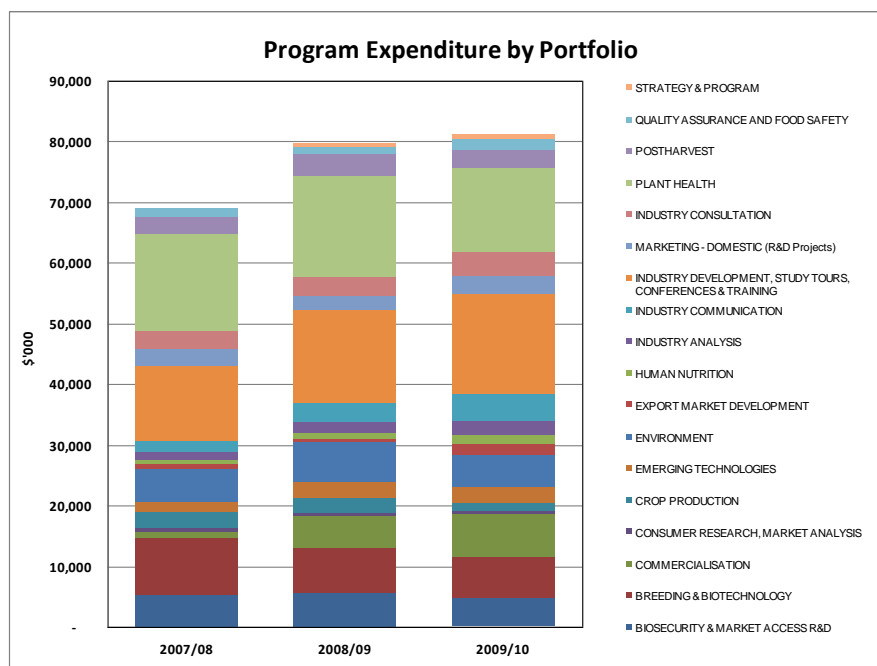
R&D Type	2005-06	%	2006-07	%	2007-08	%	2008-09	%	2009-10*	%
Implementation underpinned by integration of existing technologies	4,074,297	48.3%	4,498,315	53.4%	4,650,797	52.0%	4,676,832	55.5%	4,111,925	48.8%
Implementation underpinned by emerging technologies	2,968,536	35.2%	2,437,547	28.9%	2,198,019	24.6%	1,791,225	21.3%	1,811,646	21.5%
Strategic Research	1,383,894	16.4%	1,712,251	20.3%	2,090,591	23.4%	1,950,469	23.1%	1,310,273	15.5%
Total	8,426,727		8,648,113		8,939,406		8,418,526		7,233,844	



* Note that these figures account for approx 95% of SRDC total expenditure in research projects. A small proportion of the SRDC portfolio has not been included in this calculation.

Horticulture Australia Limited

R&D EXPENDITURE BY PORTFOLIO	\$'000		
	2007/08	2008/09	2009/10
BIOSECURITY & MARKET ACCESS R&D	5,223	5,599	4,740
BREEDING & BIOTECHNOLOGY	9,497	7,431	6,787
COMMERCIALISATION	969	5,352	6,955
CONSUMER RESEARCH, MARKET ANALYSIS	590	428	635
CROP PRODUCTION	2,601	2,500	1,280
EMERGING TECHNOLOGIES	1,711	2,590	2,816
ENVIRONMENT	5,563	6,642	5,139
EXPORT MARKET DEVELOPMENT	615	464	1,742
HUMAN NUTRITION	816	968	1,416
INDUSTRY ANALYSIS	1,181	1,758	2,457
INDUSTRY COMMUNICATION	1,850	3,250	4,340
INDUSTRY DEVELOPMENT, STUDY TOURS, CONFERENCES & TRAINING	12,353	15,413	16,699
MARKETING - DOMESTIC (R&D Projects)	2,695	2,112	2,841
INDUSTRY CONSULTATION	3,156	3,177	3,990
PLANT HEALTH	16,085	16,695	13,908
POSTHARVEST	2,625	3,726	3,086
QUALITY ASSURANCE AND FOOD SAFETY	1,473	1,140	1,669
STRATEGY & PROGRAM	16	411	767
TOTAL R&D EXPENDITURE	69,019	79,656	81,266



The following table shows the estimated value of Horticulture Australia Limited projects over the past five years that have an outcome expected to be 15 years or more into the future. Not all projects would be considered as strategic R&D, but all have a long term outlook.

Year	\$ Long term projects
05/06	712,791
06/07	1,010,833
07/08	2,610,341
08/09	116,450
09/10	504,951
<u>10/11</u>	<u>1,005,656</u>
Average	\$1,192,294

Meat & Livestock Australia

R&D Expenditure 2009/10

	%	\$m
Strategic Basic Research	11.1	9.1
Strategic Applied Research	26.9	22.1
Experimental Development	32.3	26.6
Adoption & Commercialisation	9.9	8.2
Capability Building	19.8	16.3
	100.0	82.3

Strategic Basic Research – provides a broad base of knowledge necessary for the future solution of recognised practical problems.

Output: New research knowledge platforms or research tools, enabling technologies.

Strategic Applied Research – to determine new ways of achieving some specific and predetermined objectives. Identifies a possible solution.

Output: "proof-of-concept" on limited scale.

Experimental Development – aims to produce new materials, products, devices, policies, behaviours or outlooks, or allow installing of new processes, systems or services, or modifications to existing new processes, systems or services.

Output: New "market-ready" products or services (or modifications to existing products or services), including pre-commercial development and validation (i.e. deliverables)

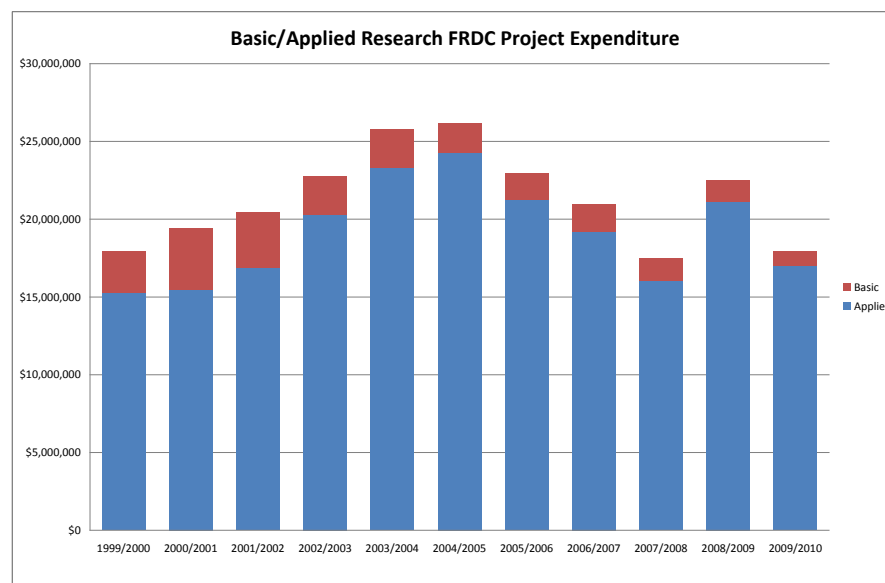
Adoption & Commercialisation – activities to facilitate adoption and/or commercialisation of specific products or services.

Output: Adoption and commercialisation related activities relating to the market take-up of specific products and services, IP protection, practice change or business improvement (financial, environmental, and social).

Capability Building – semi-formal and formal education.

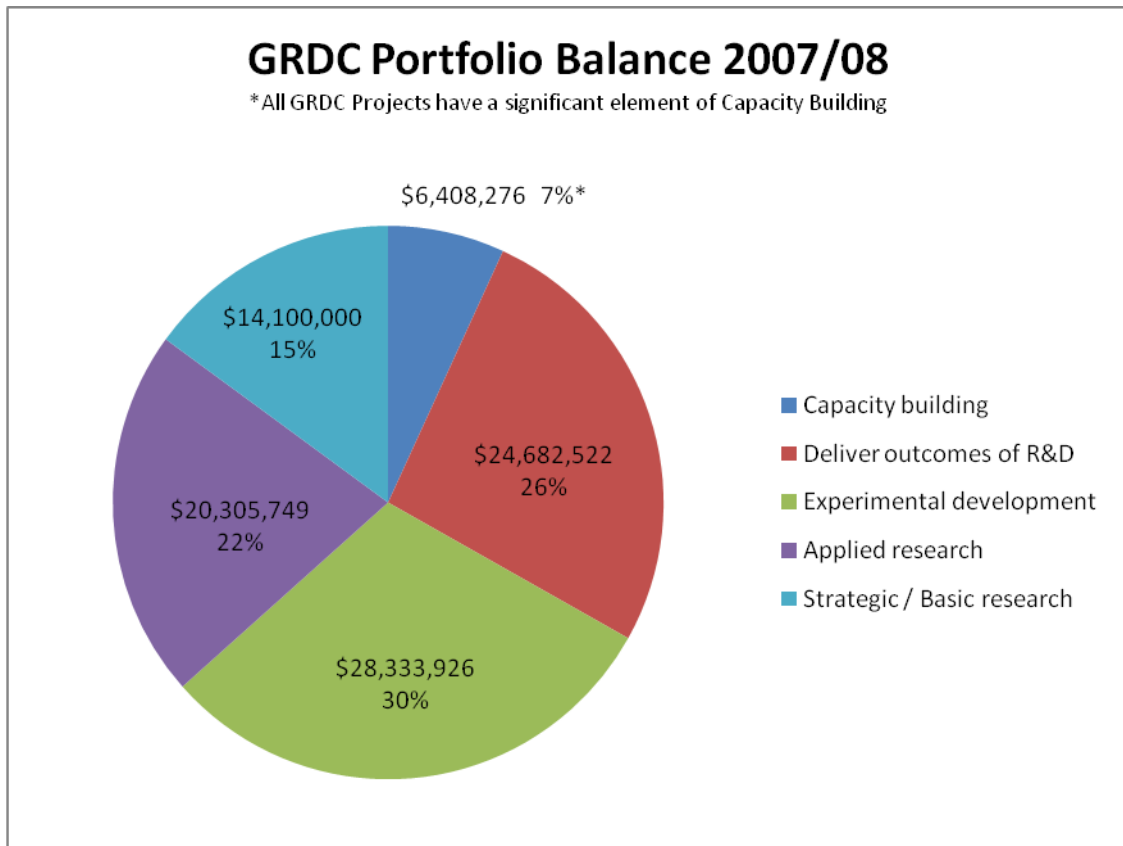
Output: Innovation capability, professional development, vocational training, etc – not product specific.

Fisheries Research and Development Corporation



Note that the 2009/10 data is only up to 30 April.

Grains Research and Development Corporation



APPENDIX C. COMPARISON OF TAX BENEFITS FOR R&D AND GOVERNMENT CONTRIBUTIONS TO RDCS

Table 7.1 in the Commission's draft report represents that \$8.11 is the Government contribution per \$100 of net, after tax, industry contribution to R&D via the 125% R&D tax concession. This is based on The Treasury definition of 'tax expenditures' that measures only the additional deduction above that which applies to ordinary business expenditure. This is inappropriate as a measure of the total Government contribution to the cost of R&D, as it does not include in the foregone revenue from ordinary deductibility of expenditure on R&D. Use of the 'tax expenditures' base to measure Government contribution is only valid if, were a business not to invest in R&D, it spent same amount on other deductible expenditure. Whereas, it is equally, if not more probable, that such funds not expended on R&D would contribute to taxable profits. The Commission's acceptance of inappropriately based data considerably understates the actual Government contribution to R&D under the tax incentive and tax offset scheme.

To accurately compare two different mechanisms through which Government contributes to the cost of R&D it is essential to measure the total Government contributions in each mechanism, including all appropriations and foregone tax revenues. Table 1 shows that the total Government contribution per \$100 of R&D expenditure in the non-rural sector ranges from \$37.50- \$52.50 under the previous and recently introduced R&D tax provisions. A **maximum** comparable figure for R&D undertaken through rural RDCs is \$63.35. On this basis, Table 1 shows that the Government contribution to rural R&D ranges from 1.2 to a maximum of 1.7 times the contribution provided to non-rural R&D. This differential is far below the 3-11 times claimed by the Commission (and which appears to be a major factor behind its recommendation to reduce the rate of matching funding provided to RDCs. Under either the proposed 150% tax offset scheme or the existing 175% premium rate of tax concession the net Government contribution to both rural and non-rural R&D are similar.

Table 1. Government contribution per \$100 of R&D expenditure

	Non-rural R&D expenditure	Non-rural R&D expenditure	Non-rural R&D expenditure	Rural R&D Corporation
Policy support measure	Previous 125% basic deduction	Previous 175% premium deduction	New 150% tax offset	Appropriation for matching levy contributions
R&D expenditure	\$100	\$100	\$100	\$100
Government RDC contribution				\$47.64 ^a
Gross industry outlay	\$100	\$100	\$100	\$52.36
Tax deductible amount for R&D outlay	\$125	\$175	\$150	\$52.36
Foregone tax revenue @ 30%	\$37.50	\$52.50	\$45.00	\$15.71 ^b
Net industry contribution	\$62.50	\$47.50	\$55.00	\$35.65
Net Government contribution	\$37.50	\$52.50	\$45.00	\$63.35
a – based on PC estimate of \$91 Government contribution per \$100 of rural industry contribution b – assumes primary producer pays 30% marginal tax rate, equivalent to corporate rate				

The RDC figures in Table 1 assume farmers deduct levies at the corporate tax rate of 30%. In many instances the rate of tax facing individual family farms will be less than this. In

these cases the comparable rate of Government contribution to rural and non-rural R&D will be closer to parity than shown in Table 1.

While Table 1 shows that RDCs receive a slightly higher level of support than that provided to other sectors through the R&D tax provisions, it should also be noted that the RDC model imposes additional obligations/restrictions in relation to Government contributions, as shown in Table 2. It is also acknowledged that the R&D conducted through RDCs generally has higher public good spill-overs than R&D in other sectors supported by the tax concessions.

Table 2. Conditions applying to Government R&D contributions

Condition of support	R&D tax concession	R&D tax offset	RDCs
Cap on expenditure eligible for Government contribution	No	No	Yes
Compulsory industry participation (1)	No	No	Yes
Obligation to direct R&D to Government priorities	No	No	Yes
Obligation to report R&D outcomes to Government	No	No	Yes
Refundable as cash	No	Yes (2)	No

- (1) It may be argued that RDC levies are voluntary (as farmers have the periodic right to vote for zero rate, but between votes participation is compulsory)
- (2) For small enterprises

The other measure used by the Commission to compare the support for rural R&D with Support for R&D in other sectors is to assess Government contributions relative to industry value added (draft report, p. 157). Here again, the Commission's calculations present a misleading picture. The Commission has averaged the RDC contribution over the gross value added (GVA) of farm output, excluding the GVA of farm related processing industries that fall within the coverage of various RDCs (which is inconsistent with the coverage of 'rural industry' specified in chapter 1 of the report).

The data in the Commission's comparison uses The Treasury 'tax expenditures' definition to calculate the Government contribution, which includes only the 25% or 75% additional deduction for R&D expenditure, not total foregone tax revenue. In addition, the tax concession is averaged across value added for all non-rural industries. This is misleading to the extent that this denominator includes a range of service sectors, where the prospects for valuable R&D are limited or do not qualify for the tax concession. When the full value of the foregone revenue from the deductibility of R&D expenditure is included in the calculation, the total outlays for R&D tax concessions and offsets as a percentage of value added is calculated by the CRRDC to be 0.37%, rather than 0.13% quoted by the Commission. Further, if the comparison was made using discrete industry sectors where R&D makes a significant contribution to productivity growth, the Government contribution through the R&D tax incentives as a share of value added is much higher. Table 3. shows the Government contribution through R&D tax concessions and offsets and GVA for mining and manufacturing for 2008/09, compared to RDC outlays as proportion of GVA from farm gate (or equivalent) agriculture, fishing and forestry output. On this data, the level of support provided through general R&D tax concessions and offsets as a percentage of GVA in these sectors is similar to, or above that, for RDCs in the rural sector.

Table 3. Total government contribution through R&D tax concessions 2008/9.

	Tax Concessions: Manufacturing	Tax Concessions: Mining	RDC outlays
Revenue foregone in R&D tax concessions ¹	\$731.3 mill	\$1134.9 mill	\$218 mill
Industry Gross Value Added ²	\$109.4 bill	\$114.5 bill	27.72 bill
Government support % of GVA ³	0.66%	0.99%	0.78%
¹ . Derived from tax expenditure data in Productivity Commission, Trade & Assistance Review 2008/9, adjusted by CRRDC to capture all foregone tax revenue. ² . ABS, Australian System of National Accounts, 5204.0, 2009/10 ³ . Using most recent ABS of 2008/9 GVA for Agriculture , Fishing and Forestry, results in slightly higher RDC outlays as % of GVA			

On the evidence presented, the CRRDC rejects the Commission's argument that Government support of investment in RDCs is demonstrably disproportionate or generous compared to the Government contributions to other industry sectors through the R&D tax concession provisions. In fact, the level of support for investment through the RDCs is similar to, or arguably less than, the level of support provided through R&D tax concessions to some other industry sectors.