



**Australian Government**  
**Grains Research and Development Corporation**

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Mr Philip Weickhardt  
Presiding Commissioner  
RDC Inquiry  
Productivity Commission  
LB2 Collins Street East  
Melbourne VIC 8003  
Email: [rural-research@pc.gov.au](mailto:rural-research@pc.gov.au)

Dear Commissioner,

The Grains Research and Development Corporation (GRDC) is pleased to provide this response to the Productivity Commission's Draft Report on its *Inquiry into the Australian Government Research and Development Corporations (RDC) Model*. The GRDC appreciates this opportunity to engage with the Commission to examine and provide comment on the proposed changes to the RDC model. We offer the following comments for the Commission to consider further before preparing its final report to Government in February 2011.

The GRDC welcomes the Commission's strong support for the broad RDC model and its core elements (Section 6.3, pages 141-142). As outlined in our earlier submission, we support making adjustments to individual aspects of the current RDC model, while leaving the overall model intact. We are therefore very pleased that the Commission's draft report includes recommendations in a number of areas for possible improvements. These include:

- Draft Recommendation 8.4 to add a provision for both statutory and industry-owned RDCs to request the appointment of a government director to their boards.
- Draft Recommendation 8.5 to conduct regular project evaluations. This would further build on the evaluation work conducted by the RDCs over the past three years under the framework developed by the CRRDC as well as GRDC's own extensive program of impact assessments.
- Draft Recommendation 8.6 to conduct external performance reviews every 3 years.
- Alignment to the National RD&E Framework for primary industries. The GRDC notes the Commission's view that it will be important to closely monitor the outcomes of the initiative with a view to modifying or terminating the framework should certain issues such as 'directive consolidation going too far' arise.

Although GRDC welcomes the Commission's strong support for the RDC model and its core elements, at this point we do not support two major changes to the current RDC model proposed by the Commission—namely, draft recommendation 6.1 to establish Rural Research Australia (RRA) to sponsor predominantly public good R&D; and draft recommendation 7.1 to reduce the cap on the Government's funding contribution to the industry-specific RDCs to half its current level, albeit over 10 years.

## **GRDC does not support a reduction in the Government contribution to RDCs**

The GRDC believes that the rural RDC model is very much a partnership between Australia's primary industries and Government that was entered into over 20 years ago in recognition of the important contribution that primary industries make to Australian society in terms of food and fibre production. The historical context is that Australia's primary producers wanted to build on their history of forming cooperatives and form a new 'cooperative' with Government to jointly fund the rural R&D needs of Australia's primary industries. This desire by industry gained momentum as successive governments became more accepting of the need for government intervention in the area of rural research (Price, 2002). Ultimately, after a series of reforms that culminated in the late 1980s, this led to the establishment of the existing rural RDC model under the enabling legislation of the *PIERD Act 1989*.

Just as producers cooperated voluntarily to market their produce, they also initiated voluntary research schemes (Price, 2002). However, since voluntary research levy schemes were not completely successful, the wool industry approached government in 1936 with a request for statutory powers to help the industry fund its own research needs.

The co-funding arrangement dates back to a precedent set in 1945 to match inadequate wool industry research levies 'pound for pound'. The current arrangements for government matching contributions were specifically designed to encourage additional industries to join in the statutory research funding arrangements, and industries already involved to increase their levies. The government gave a commitment to match industry research levies up to the equivalent of 0.5 percent of their gross value of production. It is this commitment from government that the Commission now seeks to place under review. This is very disappointing to GRDC as we believe the co-funding arrangement goes to the very heart of the RDC model and is one of its core strengths.

The GRDCs 'partnership' view of the RDC model means that like all partnerships, if one side subsequently reduces its commitment, it can be destabilising. The Commission itself noted that a major disruption to the RDC model's funding arrangements may destabilise the relationship between government and growers (page XXVII of the Overview). Alternatively, some argue that if industry contributions were reduced as a consequence of implementing recommendation 7.1, it could suggest that industry does not consider that their investment in RDCs generates sufficient value for them. Care must be taken with this rationale as pressing immediate on-farm circumstances affecting farmers today such as drought may heavily influence a decision on an important element supporting productivity gains for the medium to longer term.

To ensure society benefits from productivity gains, focus must remain squarely on stimulating innovation and supporting its adoption to encourage productivity growth. In a 'market failure' context, the Commission argues that public funding support for the RDC model has been of limited value in terms of buying genuinely additional, socially valuable research and hence cannot be justified on strict economic rationalist grounds. Rather than focus on research activity, GRDC looks to outcomes achieved. Analysis of GRDC's investment portfolio by Allen Consulting Group highlights that the likely benefits achieved from GRDC's investment portfolio to be roughly in proportion to investment made by each of GRDC's two key stakeholders (Table 1). This demonstrates that it is possible through the current RDC model and funding arrangements to satisfy both public and private stakeholders in the RDC partnership.

GRDC believes that much can be achieved through the RDC model within the current arrangements. Examples are:

- Further clarifying objectives with the key stakeholders being grain growers and the Australian Government
- Increasing the level of collaboration between domestic providers
- Increasing linkages with overseas researchers
- Forming public-private partnerships to bring technology to Australia
- Coordination of an overall RD&E agenda along themes (even across sectors!)
- Helping farmers generate higher value agricultural product
- Ensuring that R&D is extended to generate economic, social and environmental benefits
- Providing quality information to industry to empower growers to mitigate risk in their own farming systems and to increase sustainability
- Providing for greater participation in RD&E by growers as well as by partnering with advisers and consultants with strong links to growers
- Tapping into *de novo* innovation occurring on farm and extending that more widely
- Encouraging new entrants into the innovation space, etc.

It is these sorts of efforts that will stimulate innovation and productivity growth.

TABLE 1. OVERALL ASSESSMENT OF POTENTIAL BENEFITS FROM GRDC INVESTMENT PORTFOLIO 2010-11

Research area	Weight	On-farm benefits	Industry benefits	Public benefits
Genetic Resources	1.9	2.00	2.00	1.50
National Variety Trials	4.7	3.00	1.00	1.50
Platform Technology/ Enabling	3.9	2.00	3.00	1.00
Crop Breeding	11.9	3.00	1.50	1.50
Pre-Breeding	21.2	2.00	1.00	2.00
Crop Protection	14.9	2.50	1.00	3.00
Environment Climate	6.5	2.00	1.00	3.00
Farming Systems	11.2	3.00	1.00	1.50
Capacity Building	6.6	3.00	2.50	1.00
Soil Nutrition/Biology	4.9	2.50	1.00	2.00
Tactical Crop Management	7.2	3.00	1.00	3.00
Supply Chain and Markets	6.2	1.00	2.50	1.00
<b>Portfolio Result</b>	<b>100.0</b>	<b>2.48</b>	<b>1.36</b>	<b>2.00</b>

0 to 1 indicates relatively low potential, 1 to 2 indicates medium potential for benefits, and 2 to 3 indicates high potential for benefits. For further commentary, see pages 14-22 of appendix 3 of the initial GRDC submission to the Productivity Commission [http://www.pc.gov.au/data/assets/pdf\\_file/0010/99532/sub129.pdf](http://www.pc.gov.au/data/assets/pdf_file/0010/99532/sub129.pdf)

In its lead into developing scenarios for its next 5 year strategic plan, GRDC will discuss its place of greatest effectiveness within the total innovation system, and examine approaches that have been recognised for generating significant, big steps in innovation (free market approach such as the USA) as well as those approaches leading to steady incremental gains in innovation (coordinated approach such as in Germany). It is likely that a mixture of these approaches may be applied by GRDC through the current arrangements for the RDC model, all with the aim of

stimulating innovation further. We invite both the Commission and the Australian Government more broadly to participate in this exploration of ways to further stimulate innovation.

*The GRDC would like to explore with the Commission and the Australian Government more broadly the possibility of looking beyond the 'market failure' economic rationale to what Australia needs as a policy environment to stimulate greater innovation to improve the rate of productivity growth.*

### **Issues around the proposed establishment of Rural Research Australia (RRA)**

Alston *et al.* (1999) described the Commission's longstanding preference to encourage:

- Rural industries to take greater financial and managerial responsibility for research that provides direct industry benefits
- Governments to take full responsibility for, and confine its activities to, research with predominantly public good characteristics.

The Commission's draft report is consistent with the above and targets RDC funding arrangements as a mechanism to implement their preference.

GRDC supports the notion of the Australian Government making its public good objectives as clear as possible to the RDCs without being directive, and for the RDCs to factor these into their own priority setting and planning processes. We also support the notion of coordination across RDCs and believe we (the RDCs) are already making considerable progress in this area. However, we question the practicality, in general, of separating public good from grower and industry good considerations when it comes to selecting and managing research projects. The reality is that addressing key R&D challenges, including those of a cross-cutting nature such as water, climate change and farm management requires a mix of actions that will have both public and private good aspects intertwined. Also, what is not clearly a public good outcome is not necessarily a private good outcome because of the difficulties the agricultural sector has in capturing the full benefits of actions undertaken on-farm in terms of increasing the profitability of individual producers. So even though the Commission's intention might be to help the RDCs, in practice it would be counterproductive and impractical for GRDC to try to transfer all projects with significant public good aspects to another RDC, as this would represent a large segment of the RD&E projects it currently funds.

In our initial submission to the Commission, we raised the possibility of a similar scenario to the establishment of RRA being considered, and also discussed some issues around this (p. 35-36). The issues included challenges around:

- unravelling public benefit efforts from industry good (acknowledged by the Commission on p. 61 of the draft report)
- achieving efficient adoption of public good project outputs without strong participation of the private sector generated through extension of industry-good outcomes
- stability of funding.

The GRDC appreciates that the Commission will have considered the issues raised in GRDC's submission in the process of drafting its recommendations, and therefore seeks to work with the Commission to determine the functionality of the RRA model. To this end, the GRDC believes it needs to understand more about the following:

- The nature of the RD&E to be undertaken by RRA: Can the Commission illustrate what project clusters in Table 1 above correlate to each of the four spillover scenarios in Figure 1 of the Commission's draft report?
- Would projects that GRDC currently manages on behalf of Government (e.g. Caring for our Country) be expected to move to RRA? GRDC believes it has demonstrated to Government its capability of being the lead agency for these programs.
- With the ability for industry-specific RDCs to now increase their focus on research of direct benefit to their levy payers, what will the residual obligations to Government be? Should GRDC continue to assess all its proposals for how they meet Government priorities? It should also be highlighted that a number of Government priorities have strong industry components with examples including *Productivity and Adding Value* and *Supply Chain and Markets*.
- GRDC has considerable investment and management involvement in addressing cross-sectoral issues such as covered by Grain & Graze and Managing Climate Variability. Are the industry-specific RDCs to cease their cross-sectoral work where the outcome is largely public in nature? We would argue that any recommended cross-sectoral issues should be in addition to existing programs and not have existing programs transferred from existing arrangements.

Another issue around RRA and the difficulty separating public and private good benefits is the partial contradiction between certain aspects of draft recommendations 6.1 and 8.2.

Draft recommendation 6.1 includes the following:

*"The Australian Government... 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"; and*

*"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."*

... while draft recommendation 8.2 includes the following:

*"...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-worthwhile rural R&D that would not otherwise be undertaken.*

These draft recommendations create a situation where, on the one hand, the Commission aims to allow the industry-specific RDCs to focus on R&D of direct benefit to their levy payers; while on the other, the Commission is trying to entrench the requirement for the RDCs to use the declining level of public funding they will receive to conduct genuinely additional public good R&D that the Commission believes should be the remit of RRA. If the Commission truly wishes to free up the industry RDCs to focus on RD&E of direct benefit to their levy payers, then the relevant part of draft recommendation 8.2 should be amended as follows to make it specific to RRA:

*“...the legislation and statutory funding agreement for Rural Research Australia (RRA) should indicate that the ultimate objective of the public funding it receives is to induce socially-worthy rural R&D that would not otherwise be undertaken.*”

The Commission argues (pages XVIII-XIX) that:

*“...public funding should add genuine value. That is it should be provided in a way that is likely to induce additional, socially valuable, research rather than merely substituting for private funding”.*

The GRDC recognises that, through a traditional economic lens, public funding can be seen to perpetuate market failure to the point where it becomes intrinsic to the innovation system. However, is this the most appropriate way of looking at innovation, which is an ever-changing phenomenon? Dodgson *et al.* (2010) challenge the traditional economic approaches being used to look at innovation on the basis that innovation produces economic variations and the market system adapts the allocation of resources to the possibilities that are implicit in the innovation. In other words, they challenge applying an optimal resource allocation theory suited to a static system when the innovation system is in reality dynamic.

From a practical perspective, GRDC is also not convinced that viewing the problem of declining productivity through a strict economic rationalist lens is particularly useful as it detracts from the main game of providing the best possible environment to stimulate innovation providing positive outcomes for productivity, the environment and the public. It seems that a structural solution has been arrived at prior to examining in depth the desired outcome. There is a lack of analysis in both the Rural R&D Council’s background paper by Mallawaarachchi *et al.* (2009) and the Commission’s draft report to probe whether separating out public good research would indeed enhance effectiveness in stimulating innovation. Does the Commission have a view on how public good benefits are to be achieved? In the absence of being able to deliver through industry good interfaces created by RDCs, will the Australian Government make incentive payments for growers to adopt the results of public good research?

If the Australian Government’s primary underlying concern is that the current RDC arrangement may not provide the best mechanism to coordinate a research portfolio that addresses a number of cross-cutting issues with high public good and industry strategic benefits, then the attributes of what makes an appropriate environment for collaboration and coordination need to be examined. These conditions were provided in GRDC’s initial submission to the Commission and focus on building relationships between people at different levels within collaborating organisations.

Mallawaarachchi *et al.* (2009) also refer to the possibility of a dedicated vehicle for R&D funding such as the NHMRC in the health sector. This is a significantly different situation to agricultural RD&E in Australia where legislation provides for a levy. NHMRC is tax payer funded and does not involve a partnership between industry and the Australian Government like the RDCs do. Should the draft recommendation to establish RRA be retained by the Commission, then GRDC does not support reducing funding to sectoral RDCs in order to generate funding for RRA – new funding from tax payers should be sourced for RRA.

If the Commission is unswayed by the arguments presented here that question whether establishing RRA is really going to further stimulate innovation to drive productivity gains, then the activities proposed for RRA should be done through an existing RDC such as RIRDC rather than create a new body.

However we believe it will be critical to clearly define what the functions of RIRDC would be in the areas of High Public Good, Cross-Sectoral R&D, Blue Sky Research and delivery against Government Priorities. The Australian Government will need to extensively consult with the RDCs and other key stakeholders in the rural RD&E framework to clearly define the High Public Good and Cross-Sectoral R&D that is not presently being done by institutions including the RDCs, CRCs, CSIRO, universities and State Departments. It will also be necessary to determine what “Blue Sky” research is not industry specific. For example around 15% of the GRDC portfolio is directed towards Strategic Research. It will also be important for the Australian government to clearly define its priorities and how its wants these delivered and funded.

### **Is declining public funding linked to declining productivity growth in agriculture?**

The GRDC appreciates that the Commission has closely examined the productivity studies by Sheng *et al.* (2010) and Beddow *et al.* (2009) (pp. 252-256 of the draft report). We also understand the Commission’s view that caution is required in drawing strong conclusions about the relationship between public R&D investment levels and agricultural productivity growth based on the findings of such studies.

However, the findings of such productivity studies cannot be ignored. Even the Commission notes that these studies are among the more rigorous and sophisticated in this area. It is certainly an area that GRDC believes should be explored further. The impression created is that the Commission is somewhat dismissive of the findings of such work generated by esteemed scientists and that has been subject to international peer review.

### **The need to focus on innovation to increase productivity**

Current projections of global population growth and future demand for food, together with evidence of slowing yield growth in the world’s staple crops, have made accessibility to food (i.e. food security) an increasingly prominent global issue. Comprehensive modelling by the Food and Agricultural Organisation of the United Nations (FAO) estimates that annual agricultural production must increase by at least 70 percent globally and nearly double in developing countries by 2050 to cope with a 40 percent increase in world population to around 9 billion. The assumptions underlying this modelling reveal the extent of the challenge:

- Average daily calories available to increase by 11 percent to 3130 kcal per person
- 4 percent of the developing countries’ population assumed to remain chronically undernourished
- An additional billion tonnes of cereals and 200 million tonnes of meat to be produced annually by 2050 (Bruinsma, 2010).

*FAO estimates that an additional billion tonnes of cereals as well as 200 million tonnes of meat will need to be produced annually by 2050.*

These estimates are made without taking into account the all important challenges of adaption to climate change and the increasing variability of weather.

Despite this challenge, the average annual yield gain being achieved in staple crops such as wheat, rice and maize is slowing and on current trends, will not be sufficient to meet global food,



feed and fuel needs without price increases in real terms. For food prices to remain reasonably stable (i.e. supply approximates demand, and food prices do not 'sky-rocket'), future yield gains must be increased compared to current rates. Continuing agricultural RD&E is essential to close the gap between on-farm yields and potential yields (Fischer *et al.*, 2009), as well as increasing agricultural production more generally.

The important link between agricultural RD&E and global food security was recognised two years ago by the then Minister for Agriculture, Fisheries and Forestry, The Hon. Tony Burke MP, (now Minister for Sustainability, Environment, Water, Population and Communities) who openly discussed global food security in the context of three critical global challenges—namely, the global food crisis, the global climate crisis, and the global financial crisis. Global grain stocks-to-use ratios were at or near historic lows, grain prices and farm input costs were at historic highs, and the prospect of food shortages was pervasive rather than restricted to famine in a single country or region. This crisis demonstrated how tightly linked public benefits such as food security are with agricultural production.

To help counter such rising risk levels, RD&E must increase the options available to growers so they can generate solutions within their own farming systems to retain enterprise viability and create value both for themselves and for society. The policy environment for investment into agricultural RD&E is absolutely critical in addressing this, as is the level of public investment into agricultural RD&E. Therefore GRDC does not support any reduction in public funding for agricultural RD&E. The policy establishing the RDCs including their significant public funding to partner industry funds was incredibly insightful and continues to provide appropriate stimulus for innovation and its adoption.

In closing, I would like to reiterate GRDC's support for the inquiry as an important way to improve the RDC model to ensure it continues to deliver benefits to Australia's primary producers and the wider community. The GRDC appreciates this opportunity to engage with the Commission to help shape future RDC arrangements. If you require any further information from the GRDC or wish to discuss any matter raised in either of our submissions, please contact Ms Leecia Angus, Executive Manager Corporate Strategy and Impact Assessment, on (02) 6166 4521 or email [l.angus@grdc.com.au](mailto:l.angus@grdc.com.au).

I look forward to seeing the final report after it is delivered to Government in February next year.

Yours sincerely



**PETER F. READING**  
Managing Director



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