

Response to the Productivity Commission
Draft Inquiry Report

On

Rural Research and Development
Corporations

23 November 2010

Prepared by

Department of Agriculture and Food

Western Australia

**DEPARTMENT OF AGRICULTURE AND FOOD WESTERN AUSTRALIA
RESPONSE TO THE DRAFT PRODUCTIVITY COMMISSION REPORT
INTO RURAL RESEARCH AND DEVELOPMENT CORPORATIONS**

PREAMBLE AND BACKGROUND

The Department of Agriculture and Food Western Australia (DAFWA) is the government agency responsible for developing the long-term profitability of Western Australia's (WA) agricultural and food sectors that provide 11 per cent of the state's jobs and 9 per cent of its Gross Product. DAFWA has significant plant, animal, natural resource management and economic research and development (R&D) capability delivered through individual project frameworks.

DAFWA's expends around \$120 million annually on non regulatory research, development and extension activities. Of this, around \$80 million is provided by the state government and the remainder from a wide range of co-investors, of which the RDCs are the largest single group (\$12.7m). Of the \$80 million of state government funds spent on non-regulatory functions approximately \$35 million is spent on research and development.

DAFWA made a submission to the Productivity Commission (PC) Inquiry Into Rural R&D in July 2010 which was structured around six themes addressed in the PC's discussion paper:

- the appropriateness of government investment in rural R&D
- the effectiveness of the current rural R&D and extension framework
- the fundamental soundness of the RDC model
- the level of public and private investment in rural R&D
- the model's application to emerging industries
- the scope for reducing administrative costs

DAFWA's submission focused on functions directly relevant to the furthering of R&D rather than those geared towards marketing, promotional or industry representation.

In responding to the PC Draft Report, DAFWA reiterates its previous position that the current RDC model is sound but requires significant modernisation to improve its efficiency and effectiveness.

DAFWA recommends there is a substantial case for well-placed government investment in rural R&D because of its potential to create strategic economic and community value. Creating and maintaining a critical mass of scientific capacity (human and physical) provides a means of exercising greater options and flexibility in the face of uncertainty and future opportunities.

There is a long history of partnership between the, governments, state governments and industry for the funding of R&D programs in Australia, and the National R,D&E strategy is based around a partnership model between these parties. There is a risk that state governments could take any proposed Commonwealth government decrease in investment as a signal for their disinvestment which would put the national RD&E system at risk.

In addition there is a very strong argument for predominantly Commonwealth government funding of many national benefit R&D programs, many of which are also currently supported by state governments. There is a risk that state governments could decrease investment in national benefit R&D if the Commonwealth withdraws.

If Australia wishes to have an internationally competitive agricultural sector, then some level of industry development support will be needed by government to enable Australian industries to be competitive against the subsidization applying to their principal competitors in other countries – with R&D being a more rewarding means of support than other measures including subsidies or tariffs.

CURRENT SUBMISSION

DAFWA's response to the PC's Draft Report "*Rural Research and Development Corporations*" focuses on recommendations in five key areas and concludes with some gaps yet to be addressed.

The five key areas include:

- The rationale for public expenditure in research and development
DAFWA believes that the narrow definition of where public funding is justified used by the PC, which allows them to more easily argue its case for winding back the public funding for R&D, need to be challenged.
- Reform of RDC's and their place in the innovation system
DAFWA believes the place of RDCs in innovation systems has been overlooked by the PC and deserves more investigation and commentary.
- The mooted reduction of public expenditure in R&D by the Commonwealth
The PC has drawn conclusions about relative levels of public and private R&D levels by deference to international comparisons, when such comparisons are fraught with many difficulties. The Department believes these are inadequately acknowledged, as are the risks to the system of the Commonwealth government reducing its investment.
DAFWA did not see within the PC Draft Report any sound case to support the recommendation that Australian Government contribution to RDC's be halved.
- The regional distribution model, coordination of funding, data acquisition and reporting
The fact that the PC believes it is not necessary to align the distribution of benefits with distribution of levy payments is inconsistent with their expectation of increases in payments from industry. The Department contends that growers in various regions should share benefits according to the support they provide.
- The formation, scope and quantum of funding, for Rural Research Australia
DAFWA contends that the funding for the new Rural Research Australia (RRA) R&D Corporation proposed by the PC is totally inadequate for the types and volume of R&D that is expected of this body and that the scope is not adequately defined.

THE RATIONALE FOR PUBLIC EXPENDITURE IN RESEARCH AND DEVELOPMENT

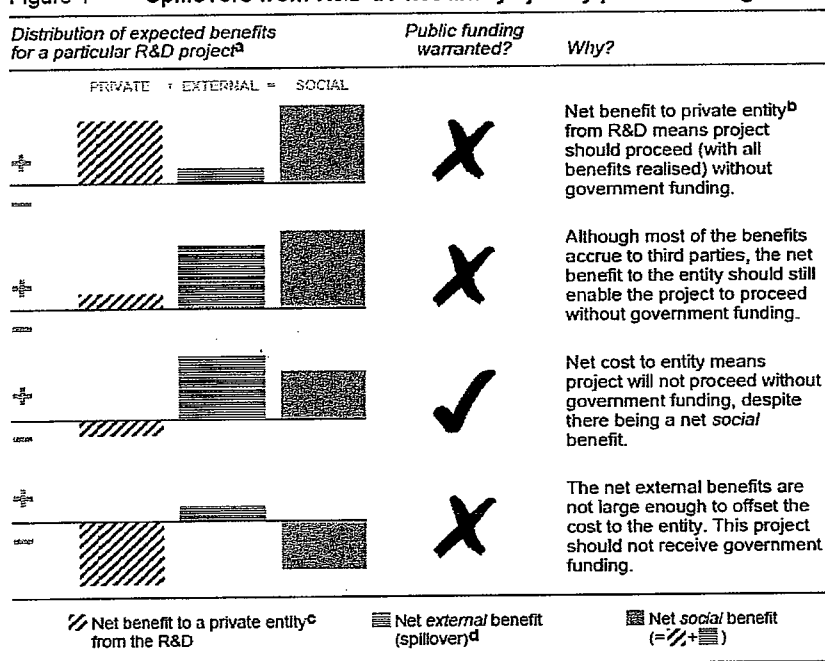
PC DRAFT RECOMMENDATION 5.1

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.

DAFWA RESPONSE:

Consistent with this recommendation, and elsewhere in the report, the PC argues that the only projects or priority areas deserving of public funding are those that private firms would otherwise not undertake, were it not for supplementary public funds that generate sufficient social (private and external) benefits. These are category 3 projects in PC's Figure 1 shown below.

Figure 1 Spillovers from R&D do not always justify public funding



As illustrated in Figure 1, the PC have adopted a clear and prescriptive R&D funding model. The PC indicates that no public (taxpayer) funds should be allocated to projects that fall into the first two categories in Figure 1.

Although projects in these two categories might ordinarily be undertaken by private firms, nonetheless **this is not sufficient justification for exclusion of any supporting public funds**. In other words, the presence of an incentive for individuals or firms to privately invest is not a sufficient reason for exclusion of public funding. Why? Inclusion of public funds (e.g. seed funding, co-ordination, awareness raising, facilitation, information gathering and provision) may cause these mostly privately-funded projects in categories 1 and 2 to occur more quickly, more cheaply and to greater effect than otherwise might have been possible if these projects solely relied on private funding. Additional public funding could cause the size of private and external benefits to be greater than otherwise would be the case in the absence of such public funding. Moreover, the additional external benefits achieved could be sufficiently high to make the public investment worthwhile and defensible. In other words the ratio of *additional* external benefits to public funds could be sufficiently high to make the investment highly ranked.

The view that public funds should only generate external (public) benefits that otherwise might not be generated is fine as long as it is widely (rather than narrowly) applied. The narrow category 3 application as advocated by the PC overlooks the potentially important catalytic and efficiency-improving characteristic of outcomes from public funding. In fact the PC implicitly considers that these outcomes from public funding are unlikely, as the PC states:

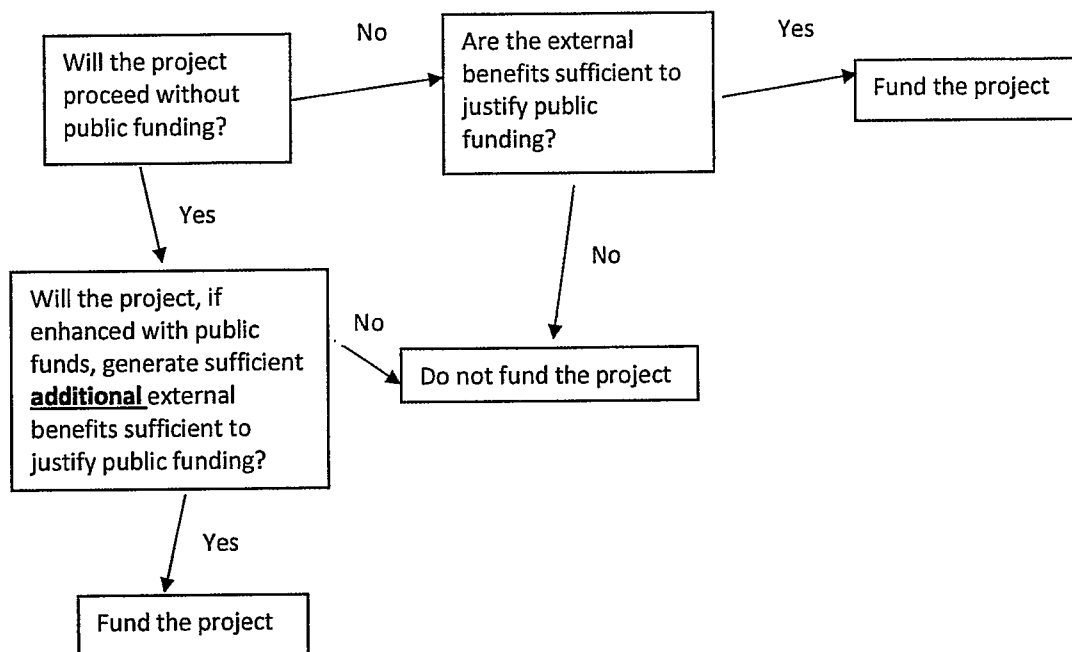
If a primary producer can expect to capture sufficient benefits to make investment in a piece of research privately profitable, then a public funding contribution is unlikely to lead to a different investment outcome. Rather it will simply shift part of the cost of the investment onto taxpayers. (p. xviii)

Provision of any public funding to support privately funded activity in projects within categories 1 and 2 appears to be viewed by the PC always to be 'cost-shifting' or 'crowding-out' rather than co-investment or transitional funding. Whether there is empirical support for the PC view, or the contrary view contended here, requires investigation. For example, due to the price elasticity of demand for certain agricultural commodities it is clear that substantial consumer benefits (increases in the consumer surplus) accompany the supply-shifting impacts of R&D. It could easily be argued that taxpayers as consumers and major beneficiaries of such R&D would be willing to contribute to this research, and that the R&D levy system is a sound process for capturing consumer (taxpayer) contributions. However, such beneficial supply-shifting R&D, if falling in category 1 or 2 of the PC project classification would be excluded from receipt of any public funding. So, on the one hand the PC argues that the RDC levy system has merit in lessening 'free-riding' by producers and yet it supports the 'free-riding' of taxpayers and consumers by limiting the use of public funds to category 3 projects only. The PC needs to address its marked inconsistency of argument.

It is somewhat surprising that these crucial issues of project classification and associated relative returns to use of public funds appear to have escaped examination by the PC. It is too easy from reading the prescriptive view of the PC to conclude that, narrowing the set of justifiable applications for public funding, helps support the PC's main recommendation to wind back the level of public funding, relative to that from private sources, for RDCs.

Against the PC's project classification and decision framework of Figure 1 is the more accurate and preferred decision pathway for public funding of R&D as outlined below in Figure 2. Moreover, although not acknowledged by the PC, in all categories of projects in Figure 1, government involvement or support invariably is involved through the use and maintenance of the raft of public institutions and infrastructure required to sustain economic activity in rural industries. Hence to advocate no public funding support for category 1 or 2 projects flies in the face of reality as public funds are already involved in supporting these projects.

Figure 2: Decision tree for use of public funding of R&D projects



REFORM OF RDC'S AND THEIR PLACE IN THE INNOVATION SYSTEM

PC DRAFT FINDINGS 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.

DAFWA RESPONSE:

Understandably, due to the terms of reference provided to the PC, its draft report examines the nature and performance of the RDCs; in part focusing on their role as recipients of private and public funds and as subsequent funders of R&D. We are surprised that during the course of their investigations, the PC appears to have not uncovered nor intimated the need for policy reform in the closely relevant areas of Australian agricultural research training and innovation system improvement. By emphasizing the funding and funding mix for agri-food research the PC glosses over the equally important issue of provision of R&D services and research training.

Perhaps more important, R&D funding and provision are only part of the needed innovation systems required to serve Australia's interests. There is a need to examine whether existing systems, with the incentives and constraints imbedded in them, operate efficiently and effectively to serve Australia's strategic economic interest.

The issue of innovation systems, and the place of RDCs in those systems, deserves more commentary by the PC. By illustration, it is worth asking: what is the innovation culture that appears to pervade many RDCs? By the PC's own admission the answer would appear to be a culture of incrementalism often based on narrow agricultural disciplines. There is a revealed reticence to invest in novel or basic research or strategic research. Moreover, it is not clear how much RDCs invest in scanning other sectors (biomedical, transport, ICT, materials handling) and other disciplines for their innovations that may have current or eventual application to agriculture.

Often associated with scanning exercises are *ex ante* appraisals of possible R&D efforts. We note that the PC recommends a greater use of *ex ante* and *ex post* R&D assessments to facilitate R&D prioritisation and accountability. However, we stress that, due to the risky nature of R&D activity and the uncertainty surrounding future returns, firstly *ex ante* analyses should be probabilistic and secondly, that a wide portfolio of R&D investments be developed and maintained, as this represents sound risk management.

We would also caution that R&D evaluation to facilitate resource allocation is itself a resource allocation problem. The quantum of resources devoted to facilitating resource allocation deserves some scrutiny as R&D funds can have high opportunity costs. Although analysing and reporting the impacts of R&D is necessary for a variety of reasons, it is important to find a balance between under-investing and over-investing in this activity.

THE MOOTED REDUCTION OF PUBLIC EXPENDITURE IN R&D BY THE COMMONWEALTH

PC DRAFT RECOMMENDATION 6.1

..., 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)

and....

PC DRAFT RECOMMENDATION 7.1

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.

DAFWA RESPONSE:

The PC, after reviewing rural R&D arrangements in several other countries, drew several conclusions such as:

(i) "In many other developed countries, primary producers and other private parties meet a considerably higher share of the cost of rural research activity." (p. xxii)

(ii) "... Australian governments are currently shouldering too much of the funding load for rural R&D." (p. xxii)

(iii) *public* (sic) "funding support from the Australian Government is generous in an international context." (p 162)

(iv) "the PC is strongly of the view that the current level of government support for the industry-specific RDCs is too high," (p. 162&163)

The PC observes that "In terms of public funding per unit of GVP, Australian support is over twice the comparable figure for the United States, 1.4 times that for Canada" (p. 162). Although the higher level of public funding for rural R&D observed in Australia is mostly a direct result of the RDC legislative framework that currently governs a substantial portion of rural R&D in Australia, it could also be argued that it arises from the way the public purse is opened to serve agriculture in developed economies like Canada and the USA.

In these countries the farm sector receives substantial assistance from the public purse mostly in the form of a range of direct and indirect support measures. Hence, the need to provide further assistance through taxpayer-funded R&D is less necessary, and perhaps even less desired by farmers in these countries who would prefer the immediate and direct assistance provided by measures such as heavily subsidized crop insurance or mandated use of biofuels. Moreover, it could be argued that such taxpayer support increases the profitability of farming and increases their ability to pay for services and products based on R&D. Hence, private providers of R&D services in these countries are often likely to enjoy a market place where growers' downside income risk is removed, thereby facilitating farmers' purchases of goods and services derived from private R&D. It is possible, therefore, that the magnitude of private agricultural R&D in these countries is in part greater due to the level of government assistance received by the growers.

By contrast, in Australia, due to the relatively smaller size of its internal market, the great volatility in farmers' ability to pay for products and services derived from R&D and the far lesser assistance provided to agriculture by government, in concert makes private provision of R&D more problematic in Australia. For these reasons, it is no surprise that a larger proportion of rural R&D in Australia comes via the public purse.

The point we wish to stress is that drawing conclusions about relative levels of public and private R&D levels by deference to international comparisons is fraught with difficulty.

A further point worth stressing is that adoption of the PC recommendation to make RDCs mostly reliant on industry funds risks unleashing economic behaviour that is not socially advantageous. For example, where Australian farmers have a local comparative advantage in producing commodities characterised by price inelastic demand responses then strategic behaviour of slowing innovation and lessening output-enhancing innovation will be to the detriment of local consumers and to the advantage of producers. Clearly the original purpose of the RDCs was not to stifle innovation or purposefully limit social economic gain; but by increasingly excluding the role of the public purse in RDCs, such socially perverse outcomes could be possible.

THE REGIONAL DISTRIBUTION MODEL, COORDINATION OF FUNDING, DATA ACQUISITION AND REPORTING

PC DRAFT FINDING 9.2

Rural Research and Development Corporations (RDCs) should continue to recognise and cater for differing regional research needs. However, RDCs should not be required to more precisely calibrate the expected regional distribution of the benefits of their project portfolios with the regional distribution of levy payments. Similarly, in determining the regional spread of their spending with research suppliers, RDCs should be cognisant of the intent of the National Primary Industries R&D Framework.

DAFWA RESPONSE:

Our view is strongly opposed to the first part (i.e. second sentence) of this recommendation for three reasons. Firstly, we consider that on equity and efficiency grounds levy payers should expect to benefit according to the magnitude of their contribution. If levy payers come from particular regions then they should benefit according to the level and share of their contribution. Moreover, given the PC recommendations (e.g. DRAFT RECOMMENDATION

7.1) that industry RDCs should increasingly rely on growers' rather than taxpayers' contributions, then these growers in the various regions should share according to the support they provide, as they are increasingly likely to be the main source of the R&D funding, if the PC's recommendations are adopted.

Secondly, we believe that in the future it increasingly will be feasible to more easily estimate spatial costs and returns of rural R&D. This contention is based on adoption of some of the PC's other draft recommendations such as DRAFT FINDINGS 5.2, 5.3 and 8.1. In more detail these PC recommendations are:

DRAFT FINDINGS 8.1

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

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- *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*

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.*

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.*

These recommendations, if implemented, are likely to generate more detailed and accurate datasets on the spatial costs and returns of rural R&D in Australia. Hence we believe that in the future it will be more feasible to measure spatially project costs and returns in both *ex ante* and *ex post* settings.

Thirdly, if the latter part of this recommendation is implemented whereby the *National Primary Industries RD&E Framework* is adopted, then for this framework to receive enduring support from farmers will require the various centres or nodes of industry-based R&D to ensure that farmers in the various regions of Australia benefit, on average, in proportion to the funding they supply. In short, regional equity and efficiency in the provision of R&D and its outcomes are important and so should not be overlooked.

THE FORMATION, SCOPE AND QUANTUM OF FUNDING, FOR THE PROPOSED RURAL RESEARCH AUSTRALIA

PC DRAFT FINDING 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).*

DAFWA RESPONSE:

We see some merit in forming a body such as the RRA. However the PC appears to have focused unduly on structural rather than functional solutions to this issues this recommendation seeks to address. The proposal potentially offers program efficiencies by housing some R&D programs such as listed in Box 2.3 on page 15 of the draft report, as well as undertaking additional "public good" R&D not currently, or inadequately, funded or co-ordinated. However, similar outcomes could be achieved by contracting existing (potentially consolidated) RDCs.

The formation of the RRA would appear a key recommendation of the PC as the Draft Report devotes several pages of discussion in arguing the case for its formation. Of particular relevance is the discussion on pages 163 and 164:

".. a useful benchmark against which to determine an appropriate budget for RRA is the former Land and Water Australia (LWA), which had expenditure of almost \$40 million in 2007-08 (LWA 2009). As outlined in chapter 6, the PC envisages that RRA would have a broader mandate than LWA, including research on rural-related energy issues. In addition, RRA could potentially take on some of the rural-related R&D currently occurring outside the RDC arrangements. For example, some rural-related climate change research and natural resource management programs run by government departments might be more efficiently managed by RRA.

The PC has therefore concluded that RRA should have a significantly higher annual budget than LWA's 2007-08 expenditure of \$40 million. What this translates into in terms of direct government contributions to RRA depends on the extent of leveraging. In 2007-08, direct government contributions to LWA only amounted to around one-third (\$13 million) of its expenditure. However, the PC considers that such a high rate of leveraging would not necessarily be appropriate for RRA. In particular, it poses the risk that RRA's research projects would have a greater industry-specific focus than would be desirable for a body meant to undertake non-industry-specific rural R&D.

In light of these coverage and leveraging considerations, the PC's judgement is that an appropriation from the Government of around \$50 million a year would ultimately be warranted for RRA." (p. 163-4)

However, the \$50 million allocation to underpin the newly formed "Rural Research Australia" that is intended to undertake only "public good" R&D would appear to be totally inadequate, given its increased mandate to cover a range of additional topics such as climate change, natural resource management and energy. Although the public purse commitment to the RRA would in real terms be around 3 times more than that provided to LWA nonetheless, by the PC's own estimates of rural R&D funding in Australia, this will represent only around 3 per cent of total annual R&D funding in Australia.

To devote only around 3 per cent of the total annual R&D funding in Australia to “public good” R&D of the type listed by the PC would appear to be far too small a contribution. Moreover, given the sorts of public good returns likely to flow from these investments and the nationally observed real decline in expenditures by key publicly funded state agricultural agencies in Australia in recent years, suggests that a larger allocation is warranted.

Furthermore, we have some concerns over the structure of the RRA as proposed. Despite the intended provision of quadrennial funding, the RRA would remain exposed to the vagaries of budgetary deliberations by any incumbent government. Decisions such as the abolition of the LWA already offer the precedent that future governments could apply to the RRA. Accordingly the legislative mechanism to underpin the RRA needs to prevent any rapid removal of taxpayer funding.

We acknowledge that, although the RRA is likely to be the appropriate structure to undertake cross-sectional, public good R&D, some issues (e.g. invasive species R&D) have both private and public costs and benefits associated with the R&D activity. Accordingly, we would find it useful for the PC to comment more fully on the sorts of R&D issues that the PC considers should be the ambit of the RRA.

Gaps still to be addressed

DAFWA considers that the PC Draft Report does not cover off adequately on the mechanisms to improve R&D in some cross-sectoral areas such as soils, pastures and biosecurity - none of which is adequately addressed by the industry RDCs that rely upon them. It is not clear whether it is expected that the establishment of a RRA will effectively solve such cross sectoral issues.

Potentially some of these cross sectoral areas could be managed in reformed and expanded Rural Industries Research Development Corporation (RIRDC) or placed with key organisations that have a mandate to ensure an integrated approach to development of appropriate R&D portfolios across various sectors.

DAFWA also considers that the report does not adequately consider the efficiency or otherwise of the current RDC structures – government corporation versus industry owned company, number – potential for amalgamations etc, to generate efficiencies.