Australian
Farm Institute

RESPONSE

Productivity Commission

Draft Report on Rural Research and Development Corporations.

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Introduction.

The following comments and discussion have been prepared in response to the Draft Report released by the Productivity Commission arising from an inquiry that the Commission was asked to hold into the arrangements for rural research and development (R&D) corporations in Australia.

The Australian Farm Institute is an independent Institute which carries out and commissions research into strategic issues impacting on Australian farmers and the agriculture sector more generally, with the aim of promoting policies that maximise the opportunity for Australian farmers and the agriculture sector to operate in a profitable and sustainable manner.

The Institute has previously commissioned research to examine the links between research and development and productivity growth in Australian agriculture (Mullen and Crean, 2007). In response to the current Productivity Commission inquiry, the Institute was asked to prepare a submission on behalf of a diverse group of Australian agricultural organisations (Across Agriculture submission). The Institute has also recently carried out a survey of private sector investment in agricultural research and development in Australia (Keogh and Potard, 2010, *in press)*. The findings of these research projects are relevant to the current Productivity Commission draft report and recommendations.

There are a number of issues that arise from the conclusions reached by the Productivity Commission in its Draft Report that require comment. These include some important issues in relation to the definitions and data used by the Productivity Commission in reaching its draft findings, and indicate that a significant revision of those draft findings should be considered.

Definition of agricultural research and development.

For a range of reasons including the potential to compare R&D investment data over time and between jurisdictions, it is essential that a robust and consistent definition of '*agricultural R&D'* is used. Unfortunately, it appears that the definition used by the Productivity Commission in its draft report is inconsistent with the general definition used by Government and international agencies, and this has resulted in some incorrect conclusions being reached about differences between agricultural R&D investment levels in Australia and in other nations.

The Organisation for Economic Co-operation and Development (OECD) has compiled data on R&D policy and investment levels by different nations over the last two decades, and for consistency utilises the OECD Frascati Manual (OECD, 2002) as a means of standardizing classification of R&D investment so that spatial and temporal comparisons can be made. Importantly, the OECD manual not only specifies what <u>is</u> agricultural R&D, but also specifies what <u>is not</u>. In particular, investment in rural extension and communications are not classified as agricultural R&D investment under the OECD standard that has been adopted by Australia and other OECD nations.

Unfortunately, it appears that the data on investment in agricultural R&D in Australia included in the Productivity Commission draft report (Table 1 and Table 2.1) has not been compiled in accordance with the OECD definition, and includes a number of expenditure items (most notably expenditure on agricultural extension by State Governments and expenditure on environmental programs by the Commonwealth Government) that should not be included, and the inclusion of

which in the data creates the impression that Governments contribute a much greater proportion of total agricultural R&D investment in Australia that is actually the case, especially in comparison with the situation in comparable overseas nations.

It is notable that the Australian Government Department of Innovation, Industry, Science and Research publishes annual Budget Tables (accessible at http://www.innovation.gov.au) which provide data on annual Australian Government expenditure on agricultural R&D based on the standard OECD definitions. Unfortunately, it appears that this data has not been accessed by the Productivity Commission in preparing its draft report. Similarly, the Australian Government Department of Agriculture, Forestry and Fisheries collates data annually on investment in agricultural R&D by Australian State governments, again using the standard OECD definitions, for the purposes or reporting to the OECD on farm support levels in Australia. Unfortunately it appears the Productivity Commission has not accessed this data in compiling the draft report. In both instances, the use of this publicly available government data on agricultural R&D investment levels would have resulted in a substantially lower estimate of the contribution made by Australian Governments to total agricultural R&D investment in Australia, than the data that has been used by the Productivity Commission.

A further issue of clarification that applies in particular to international comparisons of investments by government and industry in agricultural R&D is the inclusion or exclusion of the food and beverage sectors from the data under comparison. For example, international papers analysing the role of government in agricultural R&D investment frequently cite the case of the USA, where some estimates indicate that the private sector accounts for approximately 50% of all R&D investment. However, it is important to realise that the US data on agricultural R&D investment also includes investment in R&D by the food and beverage sector, virtually all of which is investment by the private sector. Comparisons of agricultural R&D investment levels in Australia and the USA should only be made on the basis of a common definition of agricultural R&D, and in particular an explicit understanding of whether or not food and beverage sector agricultural R&D investment has been included in the data.

Relative rates of incentives for R&D.

An issue that has been the subject of some discussion and analysis in the Productivity Commission Draft Report concerns the relative levels of incentive to invest in R&D that is provided by Australian government policies. As a background to this discussion, Australia governments have repeatedly expressed a desire to encourage greater R&D investment by Australian industry as a means of encouraging innovation and productivity growth, and for non-agricultural sectors the Government does this via the R&D tax concession or rebate. For rural industries, the main incentive to invest in R&D is the matching public funding provided to rural R&D corporations, up to 0.5% of the value of industry gross output.

In earlier papers and in the recent Draft Report, the Productivity Commission has published calculations that purport to show that the rate of incentive provided to rural industries via the rural R&D Corporation matching funding model is from three to eleven times more generous that the incentive provided to encourage R&D investment in non-rural industries. In contrast to this, the Across Agriculture submission (Submission 116, Productivity Commission Inquiry) prepared by the Australian Farm Institute claimed that the R&D investment incentives provided to rural and

non-rural industries by Australian Government policies were broadly similar. When subsequently asked to clarify this statement, the Institute provided a further submission (Submission 163, Productivity Commission Inquiry) which provided a simple modelled example which highlighted that, depending on assumptions made and the 'metric' used for comparison purposes, the two R&D incentive policies were indeed broadly similar. This analysis was commented on in the Productivity Commission Draft Report (Box 7.2, P157), and several incorrect statements were made about the methodology used in the calculations in the Across Agriculture submission. While recognising the complexity of this issue, the Institute does not believe the criticisms made of the Australian Farm Institute calculation methodology by the Productivity Commission in the Draft Report are valid.

Subsequently, both Dairy Australia (Submission DR 265) and ABARES (Submission DR270) have provided more detailed modelling and comparisons which similarly conclude that the incentive provided to rural and non-rural industries by the two sets of policies are broadly similar, a finding that is in agreement with the conclusion in the Across Agriculture submission.

A separate structure for 'public good' R&D.

The Draft Report by the productivity Commission recommends the establishment of a separate body, Rural Research Australia, to sponsor non-industry specific R&D intended to promote productive and sustainable resource use by the rural sector. In effect, this recommendation is a reversal of the earlier decision to close down Land and Water Australia, although the new organisation would have a slightly wider role that also encompasses energy. While there may be merit in this approach, it should not occur as a result of a reduction in funding for agricultural R&D more generally, and there also needs to be some caution expressed about ability of R&D organisations to identify in advance the nature of benefits that may arise from successful R&D and subsequent innovation adoption. It is almost always impossible to envisage how agricultural innovations will be adopted and implemented, and the full range of the spillover benefits that will arise from that adoption. Hence, there is some risk associated with the establishment of a separate organisation unless it works in close association with existing rural R&D organisations. It is also important to recognise that the benefits from R&D arise from the adoption of successful innovations, not from the R&D itself. Therefore care is needed to ensure that rural-related R&D sponsored by a body such as the proposed RRA has an identified path to adoption to ensure that any benefits are actually realised.

Proposal to reduce public funding to 0.25% of agricultural GVP.

One of the most significant recommendations in the Productivity Commission Draft Report is the proposal that, over a ten year timeframe, public-sector funding for rural R&D should be reduced such that at the end of the period it would be capped at 0.25% of industry GVP, effectively halving the public sector level of investment.

Some of the key rationales put forward by the Productivity Commission in support of this recommendation appear to be as follows;

1. Current R&D incentives for rural industries appear to be much more generous than incentives provided to non-rural industries.
2. The main beneficiaries of investment by Australian rural R&D corporations are industry participants, who should therefore be prepared to increase investment in agricultural R&D.

3. Australian governments are responsible for more of the total agricultural R&D investment than is appropriate.
4. High government investment in agricultural R&D may be 'crowding out' investment by the private sector.

As noted earlier, there are strong grounds to challenge a number of the above rationales, which therefore leads to the conclusion that the Commission should revisit its draft recommendation on the future of matching public funding for agricultural R&D.

Firstly, as a number of submissions have pointed out, the methodology that the Productivity Commission has used to compare the level of incentives provided for R&D for rural and non-rural industries is challengeable, and a number of alternative analyses support the conclusion that R&D incentives for rural and non-rural industries are broadly similar, contrary to the Productivity Commission finding.

Secondly, while research indicates that investment in agricultural R&D in Australia does produce a high level of industry benefit, there is also evidence that such benefits are only able to be briefly captured by industry participants, and are rapidly transferred to both domestic and international consumers of Australian farm products. This inability to capture innovation benefits for more than a relatively short period of time means that industry participants are likely to be reluctant to support higher levels of compulsory industry R&D levies in the absence of continuing Government support. As a consequence the proposed reduction in matching government funding is likely to result in a net decrease in total agricultural R&D funding, and the longer-term consequence of this will be a further slowing of Australian agricultural productivity growth, and a reduction in public benefits flowing to the non-rural community. This means that, if implemented, the Productivity Commission recommendation would almost certainly result in a slowing of agricultural productivity growth in Australia, and a reduction in the welfare of the Australian community, a somewhat incongruous outcome for an organisation which has a main focus in achieving the exact opposite.

The finding that Australian governments are responsible for a relatively high proportion of total agricultural R&D investment in Australia is not supported by available data. As noted earlier, this finding arises from (a) an inappropriate definition of agricultural R&D investment that has been used by the Productivity Commission, and (b) a failure to recognise that international data on this issue also includes food and beverage sector R&D investment, the vast majority of which is private sector investment. Australian data used in comparisons by the Productivity Commission does not include R&D investment by the food and beverage sectors. As research by the Australian Farm Institute has identified (Keogh and Potard, 2010, *in press*,) depending on the treatment of compulsory industry levy contributions, the private sector share of total agricultural R&D investment in Australia is very similar to the private sector share reported for the USA.

Finally, the view that public sector investment in agricultural R&D in Australia may 'crowd out' investment by the private sector is not supported by available evidence, nor is it supported by data arising from the recent survey of private sector agricultural R&D carried out by the Institute. By way of evidence, over recent times there has been a series of announcements by major international agricultural biotechnology and chemical companies such as Dupont and Monsanto.

These companies have announced decisions to become joint-venture partners in major agricultural R&D facilities in Australia, and an important reason cited for these investments has been the availability of a high level of (publicly funded) expertise in plant breeding and related disciplines in Australia. In effect, publicly funded agricultural R&D expertise is seen as complementary to, and a greater incentive for private sector investment, a conclusion that is supported by the attitudes of respondents to questions on this matter in the recent Australian Farm Institute survey.

Conclusion.

The recommendations made in the Draft Report released by the Productivity Commission, in particular the recommendation to reduce the cap on matching public funding, are based on findings and data about which there is significant uncertainty, and in some case strong evidence to the contrary, as has been discussed above. This means the conclusion reached by the Productivity Commission – that as a consequence of the recommendations in the draft report '*the community as a whole would be better off*' – is not a robust conclusion and should be revisited.

References.

Mullen J and Crean J 2007. *Productivity growth in Australian agriculture: Trends, Sources and Performance.* Research Report, Australian Farm Institute, Surry Hills.

Keogh M and Potard G 2010. *Private sector investment in Agricultural Research and Development in Australia.* Research Report, Australian Farm Institute, Surry Hills. (*in press)*

OECD 2002. *Frascati manual; Proposed Standard Practice for Surveys on Research and Experimental Development.* OECD publications, Paris, France.