



Submission to the *Rural Research and Development Corporations* consultation

The Australian Academy of Science welcomes the opportunity to provide a submission to the Department of Agriculture consultation on Modernising the Research and Development Corporation (RDC) system.

The Academy recommends that the review:

- Recognises the role that a growing agricultural sector, hand in hand with a productive agricultural science sector, can play in improving Australia's research and development performance
- Recognises the importance and value of financial contributions from levy payers and taxpayers to agricultural science research, and to the value it delivers to Australia.

And makes recommendations to:

- Reform and unify RDCs to improve efficiency and relevance. The R&D system should address cross-sectoral issues faced by the wider agricultural sector.
- Improve the governance of the RDC system.
- Improve RDCs collaboration with the private sector, including outside of the agriculture sector.

The Australian Academy of science strongly supports multidisciplinary research and acknowledges the importance of bridging mechanisms between different agriculture forms. The Academy considers RDCs to be crucial to developing the Australian agricultural R&D capacity, yielding benefits to both industry and regional communities. The Academy strongly supports a policy response that will modernise and strengthen the RDC system, based on a government-industry partnership model.

In particular our submission addresses the Department's discussion paper from the perspective of the requirements for agricultural research in Australia. In 2017 the Academy released *Grow. Make. Prosper: the Decadal Plan for Australian Agricultural Sciences for 2017-26*. This decadal plan recognised the highly successful role of the RDCs in the Australian agricultural research environment but identified that their near-to-market focus and single-industry perspective leave gaps in Australia's research potential.

The current RDC system is made up of five Commonwealth statutory bodies and 10 industry-owned companies (IOCs) which form a network that allows primary producers to deliver significant improvements in their outputs through effective R&D. This is done through strategic and targeted investment and through partnerships in R&D and commercialisation activities. Funding for these RDC activities is generated from levies on production and funding from the Australian Government. The current RDC system is delivering value for levy payers and taxpayers, but this system requires significant improvement.

The Academy makes the following recommendations.

Recognise the role that a growing agricultural sector, hand in hand with an essential agricultural science sector, can play in improving Australia's investment in research and development. While investment by the Commonwealth into agricultural research has been substantial, state agencies have decreased their investment in agricultural research, especially discovery or basic research. As the decadal plan identifies, agricultural research productivity has been static or declining in recent decades, with Australia's share of global publications from 6% of global publications in 1996 to 3% in 2011. At the same time our research intensity (the ratio of public investment in R&D to gross agricultural domestic product) declined from around 0.9% to around 0.4%. The decadal plan also identified that overall productivity in Australian agriculture has stalled since the mid-1990s and the number of Australian PhD candidates with an agricultural focus has also declined in real terms.

In addressing these declines and their impact on overall agricultural productivity, attention needs to be given to the mix of basic and applied research. In recent decades the pendulum has swung strongly towards applied and near market research, and transformational, strategic fundamental research is not well supported. There is the danger that Australia will become dependent on international spillovers rather than generating its own strategic research, unless components of available funds are dedicated to new science.

Recognise the importance and value of agricultural science research to Australia and of the financial contributions from levy payers and taxpayers. RDCs focus on delivering output/outcomes to farmers, meaning that these funds are generally deployed tactically rather than strategically, and funding mechanisms don't always focus on best practice in research. For example, some RDCs keep funding the same providers, without exploring the market. State Departments of Agriculture and CSIRO have strong organisational links to the RDCs, while Universities do not. Consequently, the RDCs do not take enough advantage of research talent held within Universities. R&D procurement processes can vary between individual R&D organisations, and generally lack transparency.

The review should consider mechanisms to diversify investment and encourage stronger links to universities; engage external experts to judge research tenders; and unify procurement processes across RDCs to enhance transparency.

Reform RDCs to improve efficiency and relevance. Most Australian farmers diversify their production to make the most economic use of their facilities. Many farmers engage in mixed crop and livestock farming activities – up to 16 percent of Australia's agriculture workforce of more than 140,000¹. Unifying the RDC system will provide efficiency for grant applications and strategic decision-making, and allow cross-sectoral identification of research needs and more efficient allocation of R&D resources.

The R&D system should address cross-sectoral issues faced by the wider agricultural sector. The Academy identifies climate change, drought, sources of freshwater including river and ground water, emissions reduction, biosecurity, soil nutrition, digital technology adoption, supply-chain traceability and provenance tracking as sector-wide issues. RDCs can increase investment and returns from cross-sectoral, transformative and public good research by avoiding duplication in investments, and by development of common, coordinated and collaborative strategies in these areas. By improving the ability of the RDC system to invest in and manage cross-sectoral research, investment in agricultural research can be leveraged to deliver immediate direct benefits to levy payers². This will

¹ http://www.agriculture.gov.au/abares/Documents/snapshotaustraliasagriculturalworkforce20181213_v1.0.0.pdf

² <https://www.pc.gov.au/inquiries/completed/rural-research/submissions/subdr271.pdf>

also allow the RDC system to take advantage of talent across the Australian research sector in order to achieve a modern fit-for-purpose RDC system.

Comprehensive engagement of levy payers is vital for informing investment decisions. Currently different RDCs use different strategies to seek stakeholder input into investment priorities. Industry and levy payers need greater engagement in the development of policies and how they affect their business. The RDCs have a role to play in adoption of new technologies and ensuring the translation of R&D to practical application. Increasing the engagement and participation of industry and levy payers will advance R&D planning activities, while RDCs will play an active role in the diffusion of R&D technologies and developing Australian agricultural R&D capacity.

There is need for improved governance in the RDC system. The Academy suggests that some of the approaches suggested by the Council of Rural Research and Development Corporations to improve the RDC system are worthy of consideration. These include:

- a) enhancing the governance processes and requirements in private sector and statutory RDCs, with the RDC boards ensuring that high standards of control and management are maintained.
- b) improving administrative efficiency and harmonising administrative services by standardising some key operating processes and systems within the RDCs. This includes interactions with managers from relevant local and international partners on a range of activities to improve sharing of knowledge, expertise and experience, and developing principles to govern intellectual property and commercialisation, insurance, indemnities and in-kind valuations³.
- c) encouraging coordination and collaboration of research between providers and between acquirers, and avoiding the duplication of effort while maximising positive interactions between related fields of inquiry and allowing for specialisation to occur. Collaborative projects should address common issues such as climate change impact, animal welfare and reducing emissions from livestock, and coordination of data collection and sharing.
- d) implementing a collective evaluation measure to ensure that future investment priorities by the RDCs are based on a systematic understanding of the impacts of previous investments across the RDC portfolio. RDC investment by the private sector and international partners extends over a wide range of issues such as climate change adaptation, energy systems and natural resource management. An effective evaluation framework will provide better information for policymakers on the contribution the RDC system is making in terms of productivity, and provide information on the net public benefits being delivered by the RDC system.
- e) improving the extension and adoption of new technologies.

RDCs collaboration with the private sector should be improved, including outside of the agriculture sector. This includes changes to evaluation processes and reporting, provision of specific data on co-investment and corporate memory, and accurate reporting of cross-RDC collaborative investments⁴. Getting the message out is very important. However, equally as important is making sure that the R&D carried out is of high quality, so that the outcome to the levy payer is useful. RDCs do not always engage experts in judging R&D. They rely on in-house staff, who don't necessarily have the range of expertise to judge track record and feasibility of a diverse range of research.

³ <https://www.pc.gov.au/inquiries/completed/rural-research/submissions/sub101.pdf>

⁴ <http://www.ruralrdc.com.au/wp-content/uploads/2018/08/161021-CRRDC-Cross-RDC-Impact-Assessment-2010-2015-FINAL-REPORT.pdf>

RDCs can play a stronger role in extension service delivery, in light of existing private and state government extension efforts. This can be achieved by incorporating extension service delivery as a core element in the RDC system and improving adoption of new technologies, while identifying opportunities for capacity-building in both collaborative and individual initiatives to build skills and capacity in science, research and innovation⁵.

If you would like to discuss any aspect of this submission, please contact Dr Stuart Barrow at stuart.barrow@science.org.au or 02 6201 9464.

⁵ <https://www.pc.gov.au/inquiries/completed/rural-research/submissions/sub128.pdf>