Australian Government

Sugar Research and Development Corporation

Sugar Research and Development Corporation Productivity Commission Rural Research and Development Corporations Review

Executive Summary

The Australian sugarcane industry has a significant and continuing history in the development of a major ($2b) export industry for Australia along the coastal areas of Queensland and northern New South Wales. Moreover, the industry has been the catalyst for the development of these coastal communities and continues to underpin the economic stability of these communities. Without the industry many of these small coastal regions would evaporate and leave behind significant tracts of unattended prime agricultural land.

Sugarcane has recently emerged as one of the key crops for the biobased economy. As current industrial manufacturers voice increasing concern at their total dependence on oil as the basis of the manufacture of most of their commodities, the availability, security and cost of oil has given rise to their commitment to finding alternative (green) sources of carbon as a future substrate to their continued supply of chemicals. Based on this renewed interest in sugarcane for reasons other than sucrose, the global sugar industry is now seeking to identify and develop through world class research, the very basis and operation of their future biofactories.

The Australian sugarcane industry has maintained a credible and significant supporter of R&D for the last 110 years. Through this support the industry has been able to stay at the forefront of the development and adoption of emerging technologies to maintain its competitive advantage. Based on this background the Sugar Research and Development Corporation (SRDC) is in an ideal position to offer a credible and realistic opinion as to the consequence of some of the Commission's recommendations.

SRDC supports most of the minor issues addressed in the report. However, SRDC is deeply concerned about the adverse consequences that could arise for the sugarcane industry specifically and for rural R&D more generally from the implementation of recommendations 6.1 and 7.1 and does not support them.

Rural Research Australia (RRA) should not be established. The Commission fails to adequately acknowledge that SRDC and many other RDCs currently make significant financial commitments to cross sectorial "public good" issues through and under the banner of Rural Industries Research and Development Corporation (RIRDC) and through jointly funded initiatives such as National Program for Sustainable Irrigation (NPSI) and National Climate Change Research Strategy for Primary Industries (CCRSPI). The shortcomings detected currently in the current RDC or even RIRDC approach to collaborative work on "public good" issues can be addressed through process solutions, including a revision of role and responsibilities of the various groups currently engaged in this work, to enable them to successfully perform the work envisaged for RRA.

Implementation of Recommendation 7.1 would result in a loss of Australian government rural R&D funding of $60m across the board and a likely significant decrease in industry co-investment in R&D. For SRDC alone, the loss would amount to $15.9m over the first 10 years and then $2.5m pa thereafter. This will result in an overall loss of R&D opportunity for the Australian sugarcane industry.

The Commission's Draft Report suggests that current RDCs are not adequately funding "public good" activities as required by the Commonwealth. The documentation to support this claim is disappointing. Furthermore, Commonwealth responses to the submitted Annual Operating Plan and 5 Year Plan, (developed in conjunction with the Australian sugar industry and agreed to by DAFF and the Minister) have never indicated dissatisfaction with the investment profile proposed in each of those documents.

In the case of SRDC, $2.77m was committed in 2009/10 to projects involving at least 70% "public good". An examination of a random sample of twenty SRDC projects by PricewaterhouseCoopers last year also concluded that SRDC's investment profile in 2009/10 consisted of 39% commitment

to economic benefit focussed projects, 21% to environmental benefit and 40% to social benefit projects.

The Commission has neither analysed the likely future R&D demand that will arise from national and international drivers, nor the implications for its future supply. It has recommended a decrease in Australian government co-contribution to RDCs despite recognising that Rural Research and Development Corporations (RRDCs) are a better rural R&D funding conduit than direct funding of organisations such as universities and CSIRO. It has not recognised the commitment that the Australian Government has already given and recommitted to several times, through its support for the principles of the national RD&E framework, to maintain its expenditure on rural RD&E.

The Commission has made much at the recent hearings of the original intention that funding was expected to reduce over time. This has already happened in real terms, even with the GVP formula remaining constant, as well as through the much increased governance demands placed on RDCs as a result of the Government co-contribution.

The Commission has further argued that the significant Commonwealth co-contribution has induced only moderate levels of genuinely additional research. The Commission fails to acknowledge the significant cost of additional reporting, auditing and planning imposed on the RDCs by Government as a condition of co-investment. Further investment is also expected by the Commonwealth to address "public good" issues where there may be very little genuine research components required.

The Commission also seems to dismiss the significantly long lag period associated with the development of emerging technologies such as GM sugarcane. It is these significant step-wise-change technologies which the SRDC believes will be critical to the increases in productivity and diversity required to maintain the international competitiveness of the Australian sugarcane industry. These technologies are expensive to undertake and require significant, sustained and increased funding in the national interests if the SRDC and Commonwealth are to meet "public good" aspirations for issues such as food security, biosecurity, increased GDP, energy innovations, biobased products etc.

The Commission has been inconsistent in its willingness to consider level of funding an issue. It uses level of funding comparisons to support its case, but at the same time says the overall level of funding of R&D through RDCs is not important. Further, the data that the Commission uses in its comparisons appear to have significant biases that serve to add support to its case.

The Commission's "model" for funding of rural R&D also has a significant flaw common to many simple economic analyses in that it does not consider the heightened risk that will accompany a decreased level of Australian government rural R&D funding through RDCs that will directly affect the sugarcane industry. This heightened risk arises from a series of issues in which the Commission has indicated relative disinterest, including:

- a future increase in R&D demand from both industry sectors for sustainable productivity growth and new product opportunities as well as Government for "public good" issues;
- the role that the trust and momentum of productivity oriented adaptive research and extension plays in leading and advancing, at a cheap price, the development and adoption of interlinked sustainability-oriented technologies;
- the opportunities that emerging rural R&D technologies and capabilities in Australia are providing to researchers to address ecological issues at marginal cost;
- the role of maintenance research in biological production systems;
- the importance of ensuring productivity growth to drive structural adjustment; the likely current change of trend in productivity growth for broadacre agriculture;
- under-appreciation of the complex human development and community impacts created and their significance;

- the intangible values supported by R&D; the importance of ensuring stability, resilience and flexibility in Australian industries that have long term cycles but still have a long term global comparative advantage; and
- the importance of reducing future risk through increasing preparedness now, and not decreasing it.

Without any maintenance R&D, advances in many biological systems are quite different from those of the more physical sciences in that they invariably revert towards their original position. Sugarcane breeding provides a very typical example of this phenomenon. Initial yield advances are slowly lost as new biotic factors such as soil pests and microbes emerge in association with the planting of the new varieties. This increase in soil biology invariably has a reducing effect on the yield potential of the new variety. Without any maintenance investment, the outcomes of the original investment will be lessened considerably. To reduce further investment simple heightens this rate of loss of earlier advances.

Unfortunately, Australian Governments over the last 20 years have had a poor track record of encouragement for, and commitment to, industry R&D. The current status of biotechnology investment in Australia is typical of this record. The investment capital available to this sector has been significantly reduced, even before the recent global financial crisis. Taxation changes in terms of definition of R&D through to the quantum of the co-investment risk issues have led most Biopharma groups to seek further investment and development overseas. As a result, the emerging Australian developed technologies are being exported as value adding opportunities for foreign countries more willing to make a realistic commitment to further R&D that reflects the nature of the work and the risks involved for the investors.

In the same light, any reduction in Australian government rural R&D funding will similarly decrease the incentive for farmers to co-invest in R&D in future. There are no indications in the literature and the Commission does not develop any logical argument that suggests the consequence of the Commission's recommendation will be to increase industry commitments to future R&D. In fact, it may well encourage industry participants to decrease their current level of funding of R&D. Reasons for this include:

- the leadership signal that Australian government would give through decreasing its investment;
- the impression conveyed by the Commission that attempting to increasingly free ride on international R&D is a better value bet;
- no near term pay-offs come from investing in R&D; and
- the potential for individual farmers to think more in terms of an assessment of the likely comparative pay-off of future R&D for themselves versus other farmers, than a collective industry return over the long term.

Recommendations other than recommendations 6.1 and 7.1 are of lesser significance to SRDC and are largely supported. A table with SRDC's responses to other recommendations are presented in the body of this paper. However, we would prefer to see existing structures for collaboration through the Council of Rural Research and Development Corporations (CRRDC) and through Business Manager groups be formalised and empowered to undertake joint investment activities, with an annual review and prioritisation process undertaken.

INTRODUCTION

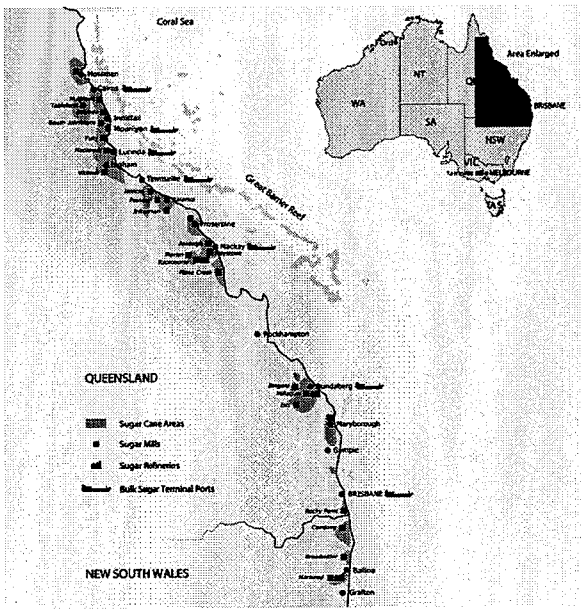
General

Cane growing and sugar production has been around for hundreds of years in Australia. It's been a catalyst for the development of many coastal communities and underpins the economic stability of many rural townships to this day.

Australia's sugarcane is grown in high-rainfall and irrigated district areas along coastal plains and river valleys on 2100 km of Australia's eastern coastline - between Mossman in far north Queensland and Grafton in New South Wales. The map at the bottom of the page shows a diagram of where cane is grown. Queensland accounts for about 95% of Australia's raw sugar production, and New South Wales around 5%.

More than 4000 sugarcane growing farms operate along Australia's eastern seaboard. While the average size of a cane farm is 100 hectares, some are in excess of 1000 hectares. While there are still a number of smaller farms, the average farm size is increasing each year, as the number of grower contracts and area farmed by their cane farming business expands. This consolidation is made possible by advances in technology, and while some corporate companies have established large cane farming operations, there are still some 6000 cane growers in Australia. The Australian cane industry produces 32-35 million tonnes of cane per year, which when processed, equates to around 4.5-5 million tonnes of sugar.

The industry's focus is squarely on its international competitiveness because most sugar is exported and there is no domestic support price or subsidies.



The Australian sugarcane industry has a proud history of R&D investment since 1900. For the first 90 years, this was all done at its own expense. Since the introduction of the PIERD arrangements, the Australian sugarcane industry has taken up the opportunity provided by the Commonwealth Government under the co-investment model, whilst maintaining its investment in the sugar research agency BSES Limited, milling research Sugar research Limited (SRL) and direct extension via Productivity Service companies. With this background, the industry has a strong track record in R,D&E and is well positioned to comment on the practicalities of impact of the recommendations of the Productivity Commission draft report on RDCs.

The Productivity Commission has been requested to:

- *examine the economic and policy rationale for Commonwealth Government investment in rural R&D;*
- *examine the appropriate level of, and balance between public and private investment in rural R&D;*
- *consider the effectiveness of the current RDC model in improving competitiveness and productivity in the agriculture, fisheries and forestry industries through research and development;*
- *examine the appropriateness of current funding levels and arrangements for agricultural research and development, particularly levy arrangements, and Commonwealth matching and other financial contributions to agriculture, fisheries and forestry RDCs;*
- *consider any impediments to the efficient and effective functioning of the RDC model and identify any scope for improvements, including in respect to governance, management and any administrative duplication;*
- *consider the extent to which the agriculture, fisheries and forestry industries differ from other sectors of the economy with regard to research and development; how the current RDC model compares and interacts with other research and development arrangements, including the university sector, cooperative research centres and other providers; and whether there are other models which could address policy objectives more effectively;*
- *examine the extent to which RDCs provide an appropriate balance between projects that provide benefits to specific industries versus broader public interests including examining interactions and potential overlaps across governments and programs, such as mitigating and adapting to climate change; managing the natural resource base; understanding and responding better to markets and consumers; food security, and managing biosecurity threats;*
- *examine whether the current levy arrangements address free rider concerns effectively and whether all industry participants are receiving appropriate benefits from their levy contributions.*

This paper is a response to the draft report released by the Productivity Commission in September 2010 as part of its review of RDC arrangements in Australia.
The SRDC has previously (July 2010) made a submission to the Commission in response to an Issues Paper the Commission released as part of the review. The submission is listed as No 140 on the Commission's website at the following address:
http://www.pc.gov.au/projects/inquiry/rural-research/submissions.

This paper will not reiterate the content of that submission, but SRDC anticipates that the Commission will wish to further examine and consider its content and that of other previously provided submissions, as it conducts further analysis and deliberates prior to preparing its final report.

In general, SRDC supports most of the minor issues addressed in the report. However, SRDC is deeply concerned about the adverse consequences that could arise from the implementation of recommendations 6.1 and 7.1 and does not support them.

SRDC is also concerned that this overall reduction would be accompanied by a loss of Australian, government-sourced, industry-specific funding to SRDC through the implementation of recommendation 6.1. This would occur as some Australian Government funding that would normally go to SRDC is redirected to a new RDC titled RRA (created to sponsor broader rural research that the Commission believes is likely to be under-provided by industry-specific RDCs such as SRDC).

Moreover, SRDC's overall reaction to the draft report is deep concern. This concern is strongly focussed on the proposed progressive reduction in Australian government funding of RDCs. SRDC

believes that the impact of this reduction on RDCs could be much more than the $60 million the Australian government sourced amount that is implicit in recommendation 7.1.

Support CRRDC response

The Council of Rural Research and Development Corporations (CRRDC) has prepared a separate response to the Commission's draft report. SRDC has been consulted in the development of that response and totally endorses its content.

In particular, SRDC endorses the following points made in the CRRDC submission:

- CRRDC opposes the recommendation to amend the legislation and statutory funding agreements for RDCs to incorporate the 'high level principles' proposed in draft recommendation 5.1, including the concept of 'additionality'.
- CRRDC supports the Commission's proposal in draft recommendation 5.2 that the Department of Agriculture, Fisheries and Forestry should assemble and maintain robust data on funding of rural R&D, but cautions against increases in compliance costs.
- The proposal in draft recommendation 6.1 to establish RRA and tighten the focus of industry RDCs to R&D of benefit to industry is underpinned by a notion that R&D can be differentiated into projects that deliver "public good" outcomes separately from those that deliver industry good outcomes. CRRDC rejects this view. Almost all rural R&D delivers both public and private benefits as composite, inseparable outcomes, and many of the "public good's" rely on industry adoption of the results of the R&D. Structures that attempt to separate "public good" and industry R&D do not reflect the reality of the science, entrench a 'silo' approach to R&D, risk a loss of relevance and will likely result in poorer adoption.
- CRRDC considers the proposed establishment of Rural Research Australia (RRA) to be costly, unnecessary and would be likely to lead to poorer research outcomes. It is flawed strategy to establish a structure, before the research task and priorities have been determined.
- The proposal in draft recommendation 7.1 to cut the level of public funds provided to match industry levy contributions to R&D is based on an implicit assumption by the Commission that industry will vote to increase levies to replace the withdrawal of public funds, otherwise the conclusion of 'modest additional R&D' will be proved wrong. The Commission has not assessed any of the evidence around whether industry would be likely to vote to increase R&D levy rates. Nor has the Commission made any assessment of the effects of lower investment in rural R&D if industry does not vote to increase levies. CRRDC believes it is highly unlikely that industry would vote to increase R&D levies in the face of reduced matching funds from Government, and some industries may reduce levies.

Structure of paper

The adverse impacts and risks that would result from the implementation of recommendations 6.1 and 7.1 are very significant. Section I of this paper exposes the fragile and inadequate foundation provided by the Commission to support its recommendations.

Section II of the paper provides brief comment in response to the other recommendations in the report.

INADEQUATE FOUNDATION

Information and discussion that undermines the foundation provided by the Commission to support its recommendations 6.1 and 7.1 is presented in the five inter-related areas below.

Paragraphs within the following subsections are numbered to facilitate any follow-up consultation that the Commission may wish to undertake.

Level of funding

1. The Commission has not analysed the demand side of the equation in relation to the aggregate level of rural R&D that should be carried out in Australia in the future. Demand at an aggregate level will increase greatly in future in response to national and international drivers. These drivers include population growth, potential food shortages, increased use of biofuels, stronger biosecurity threats, increased agricultural input costs, climate change, and a decreasing availability of arable land due to urbanisation, mining, salination, erosion, fertility decline and land being set aside for environmental purposes. Demand will be further enhanced through the opportunities now emerging in the development of a green carbon economy. This "Green revolution" is a significant opportunity for rural industries globally but particularly for countries such as Australia with a significant access to the emerging markets of south east Asia.

2. The Commission has highlighted that, at project and program levels, past returns on rural R&D investments should not be taken as a guide to future returns. This sensibly implies that an analysis how the future will likely look should be an important element of current decision making on the investment that should be made into projects and programs. The Commission has not however considered what may be lost, in terms of investment returns and impacts, as a result of a $60 million Australian government reduction in rural R&D expenditure in future, in light of increasingly challenging national and international drivers.

3. The report sends contradictory messages about whether it is appropriate to consider the level of expenditure on rural R&D. On the one hand the report suggests that the overall level of spending on rural R&D, and the appropriate Government share of this spending, is not important (Draft Findings 5.1 and 5.2). On the other hand, the report uses simple level-of-spending comparisons with others sectors and with other countries to conclude that the current level of rural R&D expenditure is relatively generous.

4. Further, the data presented in the report regarding R&D expenditure at international, national and state levels may have significant biases, particularly because of the treatment of extension. Extension is captured to an extent in the national R&D expenditure figure, through RDCs at least. Extension will not be captured to the same extent through international and state figures. US Extension Services are separate organisations to those carrying out R&D in the US and will not be captured as part of the US R&D expenditure. At state level in Australia, Australian Bureau of Statistics (ABS) figures – due to the definition applied by ABS - do not include extension.
   ABS figures are based on data from organisations that only capture the R&D they carry out (to avoid double counting). These data do not include expenditure by state governments to outsource some R&D through contracts to private providers, or through state government infrastructure grants to universities that partly support rural R&D. In addition, environmentally oriented research is more likely to have been captured in the data presented by the Commission at national level (which includes at least some non ABS data) than that presented at state level (ABS data).

   The issues just mentioned have set the scene for an 'apples and oranges' comparison in the report which inflates the national figure relative to international and state figures.

5. SRDC suggests that the starting point in deciding how much Australian Government funding should be committed to RDCs, and SRDC in particular, is the total level of rural R&D that should be undertaken in, and for, Australian primary industries in light of international, national and regional challenges and opportunities. The current and potential future economic, environmental and social impacts of (1) increased, (2) current and (3) reduced levels of rural R&D expenditure should be considered in this context before considering alternative impacts that could be created through alternative expenditure of some of the current expenditure on rural R&D, and the impacts of reduced overall flexibility in expenditure.

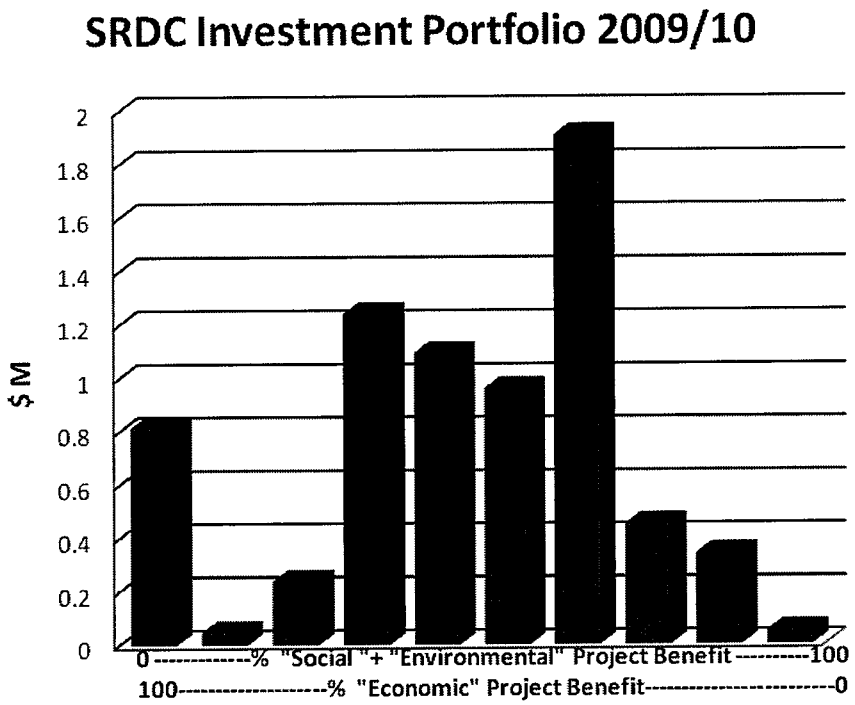
6. A reduction in Australian Government expenditure on research, development and extension (RD&E) is inconsistent with the principles of the national RD&E framework which are supported by the Australian government through the Department of Agriculture, Fisheries and Forestry (DAFF) and will impact on the confidence of this framework and the opportunities presented.

7. Unfortunately no information is supplied as to the implementation plan for the proposed funding loss, leaving any analysis of the effect of the recommendation difficult to calculate. However, on the assumption of a linear reduction over the first 10 years, this reduction would amount to an average reduction of Government co-contribution of $15.95m over the first 10 years (based on the 2009/10 Commonwealth contribution to SRDC) and approx. $2.5m pa thereafter for SRDC.

8. No effort has been made to limit the administrative costs associated with existing Government contributions. In fact there is a suggestion that both inflation and increased accountability costs has significantly reduced the purchasing power of the Commonwealth co-contribution.

9. The impact of the loss to SRDC would be a major issue for the SRDC Board. However such a loss is more likely to impact on their commitment to "public good" investments where the benefit to the sugarcane industry is not direct and more long term. This is unfortunate as the SRDC has an existing track record of investment in R&D issues relevant to more general environmental and social matters where the benefits are not immediate and obvious for the Australian sugarcane industry. This is a matter we would have expected the Commission to pay far more attention to in light of its recommendation.

   In 2009/10 SRDC committed $2.77m on projects for which the proportion of (combined) "social" and "environmental" benefit of the project exceeded 70% of the outcome value of the project (see graph below). An analysis undertaken by the CRRDC for its initial submission to the Commission showed that around 4.2% was spent by SRDC on collaborative (involving 2 or more RDCs) and "public good" projects in 2009/10.



10. The Commission advises that the RDC model is a better way to approach the conduct of rural R&D than the simple, direct funding of universities, CSIRO and government programs. However, the Commission does not suggest that the direct funding approach should be the first target if Australian Government rural R&D funding is to be decreased. This is puzzling and comes without full analysis.

11. The principles proposed by the Commission to guide the future allocation of R&D funding are quite broad. It is not evident how they will value-add to decision-making despite what the report states in the two dot points on page 96.

12. Currently SRDC develops and presents a 5 Year Plan and an Annual Operational Plan for both industry and Government for consideration and input. At no time in the last 20 years has there been any suggestion of anything other than complete satisfaction with the Plans. If it is now being proposed that either Government and/ or Industry are not happy with these Plans, some discussion is immediately warranted as to why this has eventuated and how these issues can be corrected within the system that currently exists. The problem does not need new infrastructure to solve.

13. Even the proposed RRA will require clear indications from Government as to the nature and type of investments the Government wishes to support in the area of "public good" R&D. Such information should be immediately identified and communicated effectively to the current RDC system.

14. The Commission used the example of cash flows associated with collaborative funding arrangements within the Australian sugarcane industry as the basis of highlighting the concept of "double dipping". The Commission's inference from the data provided willingly to them simply reflected the accountability requirements imposed on the likes of the CRC SIIB to identify funding sources for the operation of the CRC. If the data provided to the Commission did not sit within a simple framework they presumably required then further communication with the parties may have been a more appropriate way to deal with the matter. An alternative

interpretation of the same data are to highlight the degree to which collaboration in sugarcane industry R&D is operating (and accountable).

Risk

1. In its 2007 report titled *Public Support for Science and Innovation*, the Commission embraces the concept of preparedness and the value of reducing risk through research that, 'while not resulting in any changed practices now, may nevertheless be seen as having a significant option value because it reduces future risks' (p 9). In contrast, in its draft report on RDCs, the Commission does not explore the risk associated with reduced rural R&D expenditure and treats risk dismissively. The report states that risk on its own does not provide a strong basis for public funding support for rural R&D.

2. The Commission uses long term data to indicate that productivity increases on broadacre agriculture in Australia are currently plateauing. From this the Commission draws the conclusion that the evidence of a change in trend is not conclusive that therefore should be ignored. This conclusion is not consistent with a minimum risk management response to a critical national issue.

3. In recommending a reduction in Australian government funding of rural research there is increased risk that Australia will not have the human and financial capacity to adequately respond to the international and national demand drivers mentioned above.

4. In addition, there are some intermediate and wider research benefit pathways that the Commission appears to have underexplored or underappreciated. These are outlined below under headings that match the three programs that are funded by SRDC.

Emerging technologies

- Australia is a small player globally in many emerging technologies, such as biotechnologies, whose significance is rapidly increasing. Emerging technology R&D conducted in Australia for Australian primary industries is constantly upgrading the science platform in Australia that will serve not just primary industries. The focus on the development of critical mass of biotechnology knowledge, skills and applications for Australian primary industries is greatly increasing Australia's ability to leverage this capacity to address environmental issues in Australia at marginal cost.
- While primary industries are important to Australia they are of marginal interest (and therefore profitability) to major international private sector plant breeding and pesticide companies. Further, the R&D focus of these companies is more on propriety technologies whose intellectual property (IP) is easily captured, not on biological controls that may be more environmentally benign or beneficial, but not as readily captured through IP.
- The Commission underestimates the degree to which Australia needs to have an advanced and extensive domestic research capability (p 47) to enable Australia to be a strong participant in international sugar research and technology agendas, to import technology and vital technology understanding into Australia, and to conduct location-specific research that has to be carried out in Australia.

Regional futures

- Regional communities are inclined to grow or decline with the fortunes of their economic base and with changing technologies. Rural, mining and tourism industries underpin the economic persistence of regional communities but the fortunes of these industries are highly cyclical over long time periods.
- The basis of past Australian government support for regional communities has included wanting to ensure benefits such as regional infrastructure, decentralisation, regional and indigenous employment, national security, social capital and deepening and diversifying Australia's economic base.

- The current, recently elected Australian government has increased the value it is ascribing to positive outcomes in regional Australia. Consider, for example, the importance being placed on ensuring high speed broadband access in regional Australia.
- Although the Commission advises that regional outcomes are not, by themselves, sufficient reason for the government to contribute to research costs (p xix), the report does not analyse whether these outcomes in combination with a host of other 'spillover' outcomes, amount to something highly significant that will be jeopardised by reduced Australian government funding support for rural R&D. It is perhaps timely to recall that numerous, relatively minor impacts that appear diffuse and distant from a source can, in combination and in total, still mount to something enormous.
- SRDC believes that the Commission should give particular, additional attention to understanding the meshing of productivity-oriented and sustainability-oriented outcomes of RDC funding in regional areas.
- Farmers not only aim to manage profitable enterprises; most also acknowledge that they are managers and custodians of much of the national estate – the flora, fauna, soils and water quality. In some countries, and to a more limited extent in Australia, good stewardship is rewarded with tax or other concessions.
- It is difficult to foresee how sustainability-oriented research carried out by a range of organisations could be quickly transformed into action by primary producers. Without being integrated with farm productivity and profitability enhancing R&D outcomes, the research outcomes are likely to be inappropriate and lack credibility. It is critical that these activities effectively integrate with the currently accepted Best-Practice programs currently being adopted.
- The government through RDCs may be viewed not so much as subsidising 'low risk, adaptive research' that benefit farmers, as stated in the report (p xxix), but more as capitalising on industry and location specific extension activities. These latter activities have influence and momentum and should be used to benefit the environment immediately and in the short to medium term.
- The adaptive research and extension funded by SRDC goes beyond ensuring that current and future production practices avoid or minimise any negative environmental effects. It includes repairing, where possible, damage done to natural resources by past practices.
- As mentioned in the report, agriculture is carried out on 75% of the Australian land mass. To the extent that this land is vacated by agriculture, the government will have to spend significantly more to prevent the spread of invasive weeds and pest animals into these areas. SRDC suggests that the Commission may wish to seek further advice on this matter from the Queensland Land Protection Council.
- The Commission should consider future scenarios for global food production in terms of the potential balances of small and corporate farming enterprises that could eventuate from different R&D funding arrangements and levels, and what this may mean for the future prices for food and fibre paid by consumers. The strong presence of many, small production enterprises may be important in countering the possible emergence of global supply chains that have high barriers to entry.

People development

- Many farmers are managing businesses that are quickly becoming much more complex to manage for a range of reasons. Informal education carried out through rural extension spurs personal development and boosts management skills to create wide ranging economic, ecological and social benefits. The role that extension plays in initiating personal development is critical and often indispensible, including as a stepping stone to additional more self-directed learning in peer groups and to formal educational programs.
- The SRDC's investment in this form of personal development is also intended to foster industry leadership and travel opportunities to support the distribution of farmer experiences and concepts across districts.

- More generally, in reflecting on the risk issues associated with reduced Australian government rural R&D, the Commission does not appear to have considered the intangible values that such R&D will be partly supporting (for example, the kind of social culture we are creating and the moral obligations we are fulfilling). According to the Commission's 2007 report titled Public Support for Science and Innovation these intangible values can provide a convincing rationale for Australian government investment in science.
- Productivity increases arising from R&D are more likely to drive structural adjustment than detract from it, as the report implies.
- An important peculiarity of food and fibre production is that large amounts of 'maintenance' research needs to be carried out. Maintenance research refers to the need to rework existing technologies to maintain or increase productivity. For example, breeding new varieties is necessary because existing varieties are overcome over-time by fast-adapting pathogens. An understanding of the requirement for maintenance research assists understanding of how such high rates of return are delivered by rural R&D. In the absence of rural R&D the productivity of production systems would not remain stable. Productivity would gradually decline.

Incentive

1. Australia's food and agribusiness sector has the potential to have a long-term competitive advantage globally. The Australian government has to provide leadership and policy that will give agribusinesses confidence and encouragement to commit to a long term future despite major challenges.

2. Table, strong, long-term Australian government funding support for rural R&D is needed to counter long cycles in commodity markets, weather cycles, rural research lags and industry structures that require many small investors to agree to commit to research funding as a collective, deferred-gratification investment. Many farmers may not envisage the prospect of potentially benefiting personally by increasing their current contributions to RDCs because they think it likely that they will leave their farm for some reason in less than a decade.

3. The report suggests that famers will be prepared to increase the levies that they will pay for industry specific R&D funding through RDCs as the Australian government contribution to this kind of funding is halved. The report provides very little evidence or analysis to support this view. There are many reasons to be highly sceptical that this will happen, including:
   - Individual farmers may give credit to the Commission's view that more emphasis should be placed on trying to find ways to free ride on international research. For the global sugarcane industry this is somewhat problematical in practice. Production processes and new varieties in particular, are not transferrable across districts, environments, regions or countries. Most international research adopted by a new country, invariably requires further commitment of effort to tailor it to the new environment.
   - An individual farmer can focus more strongly on a peer comparison than an industry outcome. An individual farmer may not strongly support the immediate emphasis of the research being funded by SRDC because the outcomes will likely benefit some other farmers more than himself/herself. This could be due to a variety of reasons, including stage of their property's development (meaning that some technologies can be applied only after other technologies are applied), location or self-perceived current management skill. Research projects usually require certain scale and time to optimise their chances of generating the most valuable outcomes, and individual research priorities, from an R&D funder's perspective, can sometimes be best addressed (that is, create the greatest payoff) in sequence.
   - As Australian government funding is reduced, a higher proportion of that funding will be consumed by government administrative and regulatory requirements.
   - Farm profits are volatile and the prospect of an even lower net profit in lean years due to an increased investment in R&D is not attractive.

Industry-specific funding

1. Global sugar demand is projected to soar by 2030, led by developing countries such as India and China, according to a mid-term sugar outlook report from Czarnikow Group, a highly respected market services company that operates in agricultural commodity markets. Czarnikow is predicting that global demand will increase to 257 million tonnes by 2030 from 168 million today.

2. The competitiveness of the Australian sugarcane industry has to be maintained in the face of an increasingly competitive and volatile international market. Competition is strong not only because of subsidies provided in some highly developed countries; it is also because of lower labour and input costs in countries such as Brazil and India.

3. The Commission has been previously advised in a submission from the Victorian Department of Primary Industries, that Australian government support for rural R&D is a relatively benign and less distortionary intervention than other subsidies, particularly where it attracts an industry contribution through levies.

4. For the benefit of the Australian public, the emphasis on free-trade applied by the Commission to evaluate the need for continued Australian government funding for rural R&D needs to be modified to reflect trade realities. The achievement of further productivity improvements in the Australian sugarcane industry will be particularly important until international trade reform negotiations result in a lowering of subsidies by Australia's competitors.

5. SRDC supports the Commission's view that there are significant, public-benefit oriented, across industry research needs that are being insufficiently addressed through the efforts of industry-specific RDCs and across RDC investment. However, there is not a strong case to redirect some of the Australian government funding currently directed to SRDC for this purpose.

6. There are many major unmet research needs in the sugarcane industry that will best be addressed through specific-industry R&D funding through SRDC. The returns on SRDC's investments in sugar research appear unlikely to diminish in the future.

7. For example, there is a high probability that the outcomes of additional farming systems research over the next fifteen years will enable farm productivity to be boosted by an additional 20%, as well as creating a range of additional benefits (for example, greatly reducing irrigation requirements as soil structure improves, and lengthening the ratoon cycle).

8. It is noteworthy that one of the great strengths of RDCs has been their flexibility, as funders, to access the best combinations of expertise and infrastructure from research providers and others, as needed over time, to address R&D and extension needs. The Commission has depicted a 'money-go-round' (p 103) for sugarcane industry research that shows funding flows among the many stakeholders in sugar R&D. This diagram however also reflects the flexibility applied by stakeholders in sugarcane industry research and extension (and indeed in other rural industries) to get best value from funding. The Commission seems to presume, when it mentions leverage, that there are other sources of funding available that are not tightly aligned to the research priorities of other organisations. This is not the case.

9. RDCs also monitor and act on the need to maintain core capacities and to develop and maintain new capacities in vital science areas.

Potential RRA

1. The report recommends that 'the Government should create and fund a new non-industry RDC — Rural Research Australia (RRA) — to sponsor broader rural research that is likely to be under-provided by industry-specific RDCs.'

2. SRDC suggests that finding a process solution within existing structures may be a better and less costly way to ensure more adequate coverage of across industry R&D than the structural solution (of establishing RRA) proposed by the Commission. The RRA is likely to emerge to have its own special, equally-challenging problems and new unwelcome overheads.

3. Extension flowing from a structure such as RRA is not likely to be built on a strong short-term profit incentive to accelerate adoption. The best prospects for the short-term adoption of "public good" technologies may exist in packaging them with more profit-focussed technology improvements in industry focussed extension efforts.

4. Over many years SRDC and the other sugarcane industry R&D groups have fostered a supportive relationship in the overall R, D& E framework for the sugarcane industry. If it becomes operational the RRA will invariably need to access, for free, strongly focussed industry-specific, local extension services to adapt and integrate their technologies to the sugarcane industry, and to take advantage of the trust and momentum that often accompanies long term relationships that exist in the industry-specific extension arena. If this happens, this may be viewed as passing RRA costs back to financially stretched, industry-specific RDCs.

5. The establishment of the RRA will be accompanied by further unwelcome overhead costs of another organisation. SRDC believes that shortcomings detected currently in RDC and RIRDC can be addressed through process solutions (including a revision of RIRDC's role) to enable it to perform the work envisaged for RRA. More significantly however, the model proposed in point 2 above would provide at least as focussed an outcome as intended of the RRA but would do so with a significantly reduced overhead cost to that of the proposed RRA model.

RECOMMENDATIONS OTHER THAN 6.1 AND 7.1

Other than Recommendation 6.1 and 7.1, SRDC supports or does not object to the Commission's recommendations, with the following qualifications.

The scope and process used to collect more robust data on rural R&D (recommendation 5.2) will need to be sensitive to user's needs (which will need to be clearly defined and recorded) and to the cost versus scope and reliability trade-offs that will need to be made in designing the data collection program. There will also need to be consideration of the impacts of such a data collection activity on organisational overheads. It may be cleaner to engage a data collector specialist such as ABS / ABARE-BRS to provide a rigorous and defensible data collection and analysis service.

Table 1. SRDC responses to recommendations other than 6.1 and 7.1

PC Recommendation	SRDC response	Comment
5.1 Institute an overarching set of public funding principles covering: the basis for government to contribute to the cost of rural R&D; the relationship with other policy levers; and good program design features	Support	These principles will add-value if they can be clarified to enable them to be more readily applied in an operational way
5.2 Establish a process to collect and maintain robust data on funding and spending flows within the framework	Support	The scope and process to used to collect more robust data on rural R&D will need to be sensitive to user's needs (which will need to be clearly defined and recorded) and to the cost versus scope and reliability trade-offs that will need to be made in designing the data collection program
5.3 Establish a mechanism to coordinate the Australian Government's various funding programs for rural R&D *Information request* Input is sought on what form a mechanism to better inform and coordinate the totality of Government funding for rural R&D should take.	Support	PISC RD&E Framework would be appropriate Propose further use of existing CRRDC group and Industry Boards
8.1 Implement a set of principles setting out the conditions that should attach to public funding for RDCs and the obligations on the government as a key stakeholder in the program	Do not support at this stage	Not sure how principles will operate. May be feasible and worthwhile if not outweighed by its administrative burden
8.2 Legislation to state RDCs to undertake socially worthwhile R&D	Do not support at this stage	Need to be assured that there will not be adverse/dysfunctional operational implications for RDCs, before offering support for this recommendation Furthermore, this seems to be overkill since the Minister already has delegation to provide instruction on his preferred areas of investment. It would be helpful if this information were to come much earlier in the

		project commissioning process.
8.3 Allow statutory as well as industry-owned RDCs to take on industry-funded marketing functions	N/A	However it would be of concern if RDCs attempt to frequently redirect significant amounts of levy sourced funding between R&D and marketing. This will have adverse consequences for the national R&D workforce and R&D infrastructure (which have an inelastic supply). There will be more temporary appointments of scientists and the relative attraction of science in the food and fibre sector will decline as a career destination. The use of infrastructure will not be as optimal. The quality and availability of skills in agricultural science, which is has been identified as a high priority by the Australian Government, will decline.
8.3 Defer assessment of whether industry representation should be a generally allowable RDC function until next review	N/A	The sugarcane industry has three highly capable industry representative groups. There is currently no need for a research agency to duplicate these activities
8.4 Provide for the consensual appointment of a 'government director' to RDC boards	Support	Care will have to be exercised to ensure that the Commission's intention to 'improve dialogue with government' does not result in government board members transmitting information from board meetings into decision making within government. Government Directors should have an "Observer" role only
8.5 Require all RDCs to participate in a regular, comprehensive and transparent program-wide project evaluation process	Partially Support	There is however a need for everyone to understand what can be expected from evaluation processes and at what cost so that unrealistic expectations are not created of evaluation processes. We would suggest this be done every second year as this is an expensive exercise.
8.6 Require all RDCs to commission regular independent, performance reviews	Support	Period review by an independent expert (s) who has the ability to add-value in the administrative, governance and technical arenas in which RDCs operate may be useful. The annual reporting process should provide enough general data to allow assessment of most activities. This proposal adds to the overall overheads of RDCs and should be undertaken in conjunction with the Five Year Review Process.

8.7 Require DAFF to prepare a consolidated publicly available, annual report on RDC program outcomes *Information request* Further input is sought on sanctions for ongoing underperformance	Partially Support	RDCs already devote significant funding to meeting compliance obligations. These compliance costs should not be allowed to increase. DAFF may wish to use the annual reports of individual RDCs to periodically prepare an overall summary document at its own cost. Sanctions should be administrative in nature and undertaken through an independent review process.
9.1 Abolish product-specific maximum levy rates *Information request* Further input requested on whether R&D and marketing levies should be separate or combined.	Support	Marketing levies should be separate based on comments provided above beside recommendation 8.3
9.2 Streamline those parts of the levy principles and guidelines dealing with changes to levy rates	Support	Streamlining is always important but transparency and accountability needs to be retained.
9.3 Introduce an indicative time limit of six months for implementing a levy proposal that complies with the relevant requirements	Support	Not essential
9.4 Require the Levies Revenue Service to routinely monitor its performance and promptly communicate the results to levy payers	Support	Monitoring process should have integrity and be based on a best value-for-money approach. LRS already provide annual information via the Annual Reporting process.
9.5 After the RDC arrangements have been fully implemented undertake a further, independent, public review.	Do not support	Recommendation not applicable in light of SRDCs responses to major recommendations made by the Commission