

# Research, development and adoption in the Australian sugar industry - maximising stakeholder value and impact

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## Abstract

Sugar Research Australia Ltd (SRA) is one of 15 Research and Development Corporations (RDCs) that operate on behalf of rural primary producers in Australia. The RDCs have a role to invest mandatory levy funds (those paid by farmers and millers in the case of sugar) along with government co-contributions to serve and further a particular industry's needs and interests. This joint funding forms the basis of a sustainable investment platform for the industry. SRA has a five-year strategic plan developed in consultation with our sugar industry investors and stakeholders to guide and ensure that it invests in research, development and adoption (RD&A) required by industry to deliver value and impact. Our purpose is to help growers and millers to maximise profit by improving productivity and value adding while enhancing the industry's sustainability and securing market access for its products. SRA has a crucial role in communication and facilitating adoption of new technologies and practices. The presentation discusses the driving forces on the sugar industry to rationalise and prioritise how levy funds are invested, and the strategies and opportunities available for further leverage of industry resources against other grant schemes and partnerships. This ensures that each stakeholder dollar works hard to provide high-impact returns to the Australian sugar industry.

The SRA Board and Research Funding Panel identified the need for a program approach across at least some of SRA's RD&A portfolio. This approach is more likely to deliver better medium to long-term industry outcomes, especially in complex areas, than *ad hoc* support of uncoordinated research projects. Three case studies are highlighted that illustrate the development of program structures through a participatory planning approach and facilitated consultations with industry, researchers, stakeholders and government policy staff. This has resulted in mandates for prioritised investment in areas of nutrient management, industry harvesting best practice (HBP) and soil health.

The Australian sugar industry operates in challenging and sensitive environments with proximity to the Great Barrier Reef. It is under pressure to manage mobile nutrients [such as nitrogen (N)] efficiently, benchmark crop fertiliser-use and quantify improvements in fertiliser use efficiency. The industry is well served by a decision support system like the SIX EASY STEPS (6ES) program. It provides a framework for incorporating information and technology developments that address identified knowledge gaps. Continuous updating of the 6ES interpretive guidelines provides industry with a vehicle for implementing improved nutrient use efficiency. The associated 6ES extension framework offers the potential for rapid dissemination of new information and approaches to industry. In particular, SRA works cooperatively to facilitate better coordination and communication of industry and government research, investment and extension activities. The aim is to maintain or improve crop production and grower profitability while realising water quality targets and positive environmental outcomes.

Harvest losses through mechanised harvesting in Australia are conservatively estimated to cost the industry about \$150 M each year. Three workshops were held in late 2015 for millers, growers, harvester operators and researchers to identify where there are

opportunities for improvement and to help prioritise ideas for RD&A investment. Following industry consultation, a program to address harvest losses was developed. It combines technology improvements with demonstration of HBP to individual harvesting groups. Research organisation and industry cash, and in-kind contributions have leveraged additional funding from the Australian government via the Rural R&D for Profit program.

Since the 1970's, sugarcane production has plateaued, coinciding with fully mechanised harvesting. Cumulative losses (plant cane – second ratoon) are estimated at 15-45% across the sugarcane production areas. Improving soil condition and capability is a multi-faceted problem and cannot be achieved without changes in the farming system. The Soil Health Program (SHP) strategy reflects an industry view of adoption and practice-change that is backed by R&D within an investment timeframe of at least 10 years. The program plans to build pathways for farmers to address whole-farm management problems that affect soil condition, and for R&D projects to develop innovations for subsequent adoption within best management practices.

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