Acknowledgements

SRA acknowledges and thanks its investors, including levy payers (sugarcane growers and millers), the Commonwealth Government and the Queensland Government.

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Warning:

Our tests, inspections and recommendations should not be relied on without further, independent inquiries. They may not be accurate, complete or applicable for your particular needs for many reasons, including (for example) SRA being unaware of other matters relevant to individual crops, the analysis of unrepresentative samples or the influence of environmental, managerial or other factors on production.

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Australian Research Foundation for Agriculture
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Sugar Research Australia Limited

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I am pleased to present Sugar Research Australia Limited’s (SRA’s) Annual Operational Plan (AOP) for 2019/20. This AOP directly aligns with SRA’s Strategic Plan 2017/18 – 2021/22 and outlines the research, development and adoption (RD&A) activities and Investment program SRA will be undertaking during 2019/20 to achieve our strategic goals to drive profitability, improve sustainability, enhance capability and strengthen organisational excellence.

In setting our RD&A agenda for the coming year, SRA’s Board and Management recognise there will be several key challenges and potential opportunities for SRA.

Our grower and miller investors are facing significant operating and financial pressures at present, particularly in terms of sustained low world sugar prices, declining production, increasing regulation and maintaining social licence to operate. At the same time, SRA has a responsibility to balance our investor priorities and invest appropriately in RD&A that will mitigate the impact of these pressures and bring positive benefits to the industry and broader communities in which we operate.

SRA is not immune from the challenges faced by our Members and investors and our income will be impacted by these challenges. Effectively managing these pressures whilst delivering impactful RD&A will be challenging given the impact low sugar prices and decline in production will have on SRA’s income during the 2019/20 operating period. The SRA Board has reduced our current research investment and internal research capability and is confident that this process will succeed. The Board has therefore endorsed a deficit budget of $3.1 million for 2019/20 and will utilise a small proportion of our accumulated cash reserves to maintain our RD&A investment portfolio and support activities.

Although financial pressures prevail, our focus on delivering impact and returns for our investors remains equally strong. To this end, the SRA Board has adopted a targeted approach for new investment in 2019/20, with a specific focus on transformational research, variety development and milling efficiency and technology that will complement our current RD&A portfolio. New projects to be undertaken in 2019/20 include:

- Validation of high throughput phenomics technologies for sugarcane clonal selection;
- Near-infra-red (NIR) calibrations for key fibre quality parameters for use in plant breeding measurement systems;
- Strategies to improve mill processing of soft or low-fibre sugarcane varieties;
- Ratoon Stunting Disease (RSD) detection blueprint for use in sugar factories;
- Proof-of-concept for creation of a new tool for real-time, continuous monitoring of harvest losses;
- Development and commercial testing of new technology to eliminate arcing of mill rollers and improve crushing performance; and
- Development of training modules for sugar factory operators.

SRA will also support industry good initiatives through investment in social and scientific research associated with trade and market access and maintaining the Australian sugar industry’s social licence to operate, with a focus on the environment and human health/nutrition.

A primary strategy in working towards ongoing financial sustainability for SRA will be the leveraging of our RD&A investment through strategic partnerships, collaborations and business enhancement opportunities where they align with our Strategic Plan and the needs of our investors. This strong collaborative and solutions-focused strategy provides opportunities for SRA to build capacity, facilitate access to new knowledge, attract and leverage additional investment, and extend SRA’s standing as a world-class research organisation. Prime examples of where SRA is employing this strategy include:

- Leveraging of Investment and capability through the Commonwealth Government’s Rural RD and D for Profit Programme (Round 4) Biorefineries for Profit – Phase 2 project which is an SRA-led Joint Research and Development Corporations’ (RD&C’s) project entailing pilot-scale production of animal feedstock and biorefineries; and
- Additional external income secured through the Commonwealth Government’s Reef Trust and the Great Barrier Reef Foundation to undertake the Cane to Creek 2.0 project which expands on two successful water quality projects that have been running in the Wet Tropics under the direction of SRA.

SRA will also be collaborating with the milling sector to establish a long-term milling RD&A investment program, with a focus on improving milling efficiency and capital utilisation, and will also be continuing investment in the Small Milling Research Program (SMRP) scheme which provides a vehicle for targeted investment in small milling sector projects that develop a product, service or process that will deliver tangible outputs with almost immediate outcomes for our miller investors.

SRA will also continue to invest in sugarcane industry capability and innovation through a number of initiatives, including: the development of a Sugarcane Industry RD&A Employment and Capability Strategy; Next Crop leadership development program; SRA Sugar Industry Research Awards; SRA Postgraduate Research Scholarships; Travel and Learning Awards; and the Innovation Catalyst program for SRA researchers. These award programs help researchers to undertake projects to test new ideas that could lead to further research activity or directly contribute to productivity, profitability and sustainability outcomes for sugarcane growers and millers. Projects funded under these programs for 2019/20 include:

- Characterising nitrogen use efficiency in sugarcane;
- New approaches to quantifying nitrogen fluxes in enhanced efficiency fertilisers;
- Innovative techniques to coat the basecutter blades of harvesters to reduce wear; and
- Developing a marker system to measure dosage of alleles for use as a selection tool in the sugarcane breeding program.

Our expanded Adoption team will continue to provide a vital conduit between research outputs and sugarcane growers and millers, and will continue to collaborate with industry and private sector extension providers on the ongoing delivery of the industry-led adoption strategy.

We will also ensure that we continue to set the internal conditions to support continued RD&A delivery. This means continuing to develop an investor-centric and performance driven culture, with systems and processes in place to support our people to achieve SRA’s strategic objectives. It also requires ongoing investment in breakthrough scientific and digital technologies to ensure our ways of working continue to evolve to take advantage of new opportunities as and when they present.

Although SRA faces a challenging year ahead, we look forward to working with our Investors, research and adoption partners and industry stakeholders to effectively deliver our RD&A portfolio and achieve valued return on investment and positive impact on the profitability, sustainability and capability of the Australian sugarcane industry.

Neil Fisher
CHIEF EXECUTIVE OFFICER
2. INTRODUCTION

SRA is a sugarcane grower and miller owned company and the declared Industry Services Body for the Australian sugarcane industry under the Sugar Research and Development Services Act 2012 (Cth).

As the declared Industry Services Body, SRA is required to provide and manage RD&A activities for the benefit of the sugarcane industry and for the wider public good.

The objectives of SRA are to:

- Deliver cost-effective research and development (RD&D) services to the Australian sugarcane industry to enhance its viability, competitiveness and sustainability;
- Carry-out, coordinate and provide investment for RD&D activities in relation to the Australian sugarcane industry;
- Facilitate the dissemination, extension, adoption and commercialisation of the results of RD&D activities; and
- Support and develop industry research capacity.

To ensure our objectives are achieved, we maintain a strong presence across the major sugarcane growing regions of New South Wales (NSW) and Queensland, with approximately 150 full-time employees based at nine research farms, laboratories and offices.

To fulfill our responsibilities, SRA operates a contestable investment program that encourages sugarcane researchers and research organisations from the broader research community and other sectors, to investigate and create innovative solutions to address sugarcane industry challenges and opportunities.

SRA also undertakes core research activities that are crucial to the future of the Australian sugarcane industry, including activities in plant breeding and biosecurity.

Through the efforts of our own researchers and our research partners, SRA plans to invest $39.5 million in RD&A activities during 2019/20. These activities will be funded through statutory levy payments from sugarcane growers and millers (forecast $22.1 million in 2019/20), co-investment from both the Commonwealth Government (forecast $6.3 million in 2019/20) and Queensland Government (forecast $5.1 million in 2019/20) and collaborative investment from other research providers and private sector partners, as well as through other commercial activities.

With respect to managing and investing funds from levy payers and government investors, SRA has established a strategic management and planning framework that includes the development and delivery of a five-year Strategic Plan and AOPs for each year covered by the Strategic Plan. These planning documents are industry and outcomes focused and respond to current and emerging issues and opportunities and the RD&A needs and expectations of SRA’s investors.

This AOP outlines the direction and resourcing for SRA’s core activities and investments in RD&A projects (both as an investor and as a provider) to be undertaken during 2019/20, to deliver on SRA’s 2017/18 – 2021/22 Strategic Plan and optimise economic, environmental and social benefits for SRA’s industry and government investors. This AOP should be read in conjunction with the Strategic Plan.

In delivering on this AOP, SRA will continue to collaborate with its Members, levy payers, industry representative bodies, government, productivity services, extension providers, other industry stakeholders, researchers and international peers and partners. SRA also intends to leverage synergies and opportunities with other RDCs to address cross-sectoral issues impacting agricultural industries and identify and improve access to leading-edge innovation, best-practice and technological advancements.

3. STRATEGIC AGENDA

SRA’S STRATEGIC FRAMEWORK

SRA’s strategic agenda is set out in SRA’s five-year Strategic Plan and is structured to address the primary profitability, sustainability and capability challenges and opportunities facing SRA’s industry investors (Australia’s sugarcane growers and millers) and of significance to SRA’s government investors (the Commonwealth and Queensland Governments). A summary of SRA’s strategic framework is shown in Figure 1.

SRA has four overarching goals that drive the research agenda and ensure we never lose focus on our industry and government investor needs and expectations. These goals are as follows:

1. Drive profitability – through innovation-led productivity gains, step-change and value-adding;
2. Improve sustainability – through evidence-based research and sustainable production, biosecurity and environmental management;
3. Enhance capability – through strengthened research and industry partnerships, capability development programs and collaborative knowledge transfer and adoption mechanisms; and
4. Strengthen organisational excellence – through enhanced RD&A investment management, best practice organisational governance and a positive performance-focused organisational culture.

To deliver on these strategic goals, SRA has established nine key focus areas (KFA)s – each with set objectives, outputs, expected outcomes and measures by which to demonstrate success.

SRA has also established the following suite of enabling strategies to underpin delivery of our goals across the KFA’s and ensure we set the requisite internal conditions to achieve the greatest impact from our RD&A portfolio:

- Mapping the future – keeping abreast of and responding to current and emerging trends, issues and opportunities;
- Sustaining financial viability – achieving and maintaining a sustainable financial position for SRA;
- Partnering for impact – establishing new and strengthening existing partnerships to optimise RD&A outcomes;
- Innovating our science – fostering innovation, identifying transformative opportunities, adopting new technologies and enhancing capabilities;
- Optimising return on investment – enhancing our investment decision-making and governance processes; and
- Transforming our business culture – fostering a more agile operating model and supporting our people, leadership and capability.

Initiatives to support these strategic goals and enabling strategies are included in the key deliverables set out in this AOP and, at a more tactical level, in SRA’s internal organisational plan.
FIGURE 1: SRA’S STRATEGIC FRAMEWORK FOR DELIVERING VALUED SUGARCANE RD&A

Who we are
SRA is Australia’s specialist sugarcane research organisation

Why we exist
Enabling Australia’s sugarcane industry to be profitable, sustainable and resilient

What we do
We invest in evidence-based research, development and adoption activities to meet industry challenges and opportunities

Our goals
Drive profitability Improve sustainability Enhance capability Strengthen organisational excellence

Our key focus areas	Outcomes	Priorities
KFA1: Optimally-adapted varieties, plant breeding and release
Increased sugarcane yield and commercial cane sugar (CCS)
Restructure and modernise the breeding program and broaden the genetic base
KFA2: Soil health, nutrient management and environmental sustainability
Better soil health, reduced nutrient losses and improved water quality
Integrated and focused soil health program and enhance SUGARCANE STRESS guidelines and nitrogen management
KFA3: Pest, disease and weed management
Reduced or avoided yield losses and/or added input costs
Integrated new precision technologies and activities on a cost/benefit basis
KFA4: Farming systems and harvesting
Improved farm input-output efficiencies and profitability
Economic analyses and demonstration of new or improved technology, farm management practices and analysis tools
KFA5: Milling efficiency and harvesting
Enhanced capacity and new technology for improving processing and energy efficiency
KFA6: Product diversification and value addition
Diversified revenue streams and product innovation
Prioritised diversification opportunities for further BBD activity or market analysis
KFA7: Knowledge and technology transfer and adoption
Accelerated adoption of new technology and practice change
New strategy targeting industry needs, problems and solutions
KFA8: Collaboration and capability development
Enhanced industry and research capability and capacity
Leveraged industry, government and research partnerships and enhanced human capability programs
KFA9: Organisational effectiveness
Increased investor satisfaction and returns on investment
Embedded investor and performance-centric culture

RD&A PRIORITIES

The ethos that underpins both SRA’s Strategic Plan and this AOP is one that is outcome and investor focused, consultative and collaborative. SRA is committed to listening to our investors, understanding their needs and responding to these needs through innovative RD&D solutions that are successfully adopted and deliver significant value for the industry as a whole, as well as benefits for the broader Australian community.

The key deliverables laid out in this AOP respond to the priority challenges and opportunities of the sugarcane industry and, more broadly, the priorities of the agricultural sector, government and the wider Australian public. More specifically, the KFAs and associated RD&A activities respond to the issues raised during consultation with industry, government and researchers, as well as the principles, strategies and priorities set out in the following strategic documents:

- National Sugarcane Industry Research, Development and Extension (RD&E) Strategy, 2017
- Rural RD&E Priorities, Australian Government, 2015
- Department Strategic Objectives for funding projects for SUGARCANE, Queensland Department of Agriculture and Fisheries, 2018

There is strong alignment across these priorities, particularly with respect to delivering value for money; increasing profitability and productivity; enhancing environmental sustainability; advancing innovation; and improving adoption of BBD.

A matrix detailing the alignment between the research programs under each of SRA’s KFAs and the key industry and government priorities is provided in Attachment 1.

Figures 2 and 3 detail the proportion of SRA’s estimated investment for 2019/20 that align with the National Science and Research Priorities and the Rural RD&E Priorities.

FIGURE 2: SCIENCE AND RESEARCH PRIORITIES

- Food $19.5M (44.9%)
- Soil and water $7.5M (17.0%)
- Energy $0.5M (0.5%)
- Advanced manufacturing $3.8M (8.6%)
- Environmental change $3.6M (8.2%)

FIGURE 3: RURAL RD&E PRIORITIES

- Advanced technology $11.4M (26.2%)
- Biosecurity $8.2M (18.7%)
- Soil/health/RM $9.4M (21.5%)
- Adoption $5.1M (11.8%)
- Other $9.3M (21.8%)

* National Science and Research Priorities, Australian Government, 2015
* Other includes unallocated research, RD&D investment management, research stations and corporate support.
These industry and government priorities are key to meeting head on the opportunities and challenges in the sugarcane industry and RD&EA today and in the future. In responding to these priorities, SRA has embedded the priorities in all aspects of our operations, including: determining the direction of a project call; forming the primary criteria for investment decisions; and providing targeted areas for measuring SRA’s performance and delivery of valued return on investment.

To ensure SRA continues to meet investor priorities and expectations, SRA consults regularly with industry representative bodies and government representatives. These consultations include informal and formal scheduled meetings to discuss RD&EA priorities; SRA’s investment and research activities; SRA’s performance and returns to investors; statutory reporting; levy arrangements; and other matters of mutual interest.

SRA will report on our contribution and achievements against these priorities in our 2019/20 Annual and Performance Reports.

CRITICAL RESEARCH INVESTMENT PRIORITIES

In developing SRA’s 2017/18 – 2021/22 Strategic Plan, SRA investors identified a number of industry challenges and opportunities that required priority attention and/or increased investment. The currency and criticality of these research areas was further emphasised during Industry consultation to develop regionally-based sugar industry adoption strategic action plans for 2019/20. The priority research investments and deliverables for 2019/20 are as follows:

Modemising plant breeding and broadening genetic base

Varieties are central to helping make the Australian sugarcane industry more productive, sustainable and competitive. SRA’s plant breeding program is the primary producer of new varieties in Australia with up to 100,000 potential new varieties developed each year with promising clones progressing through the evaluation stages.

SRA continues to overhaul its plant breeding program with a view to achieving the ambitious target of two per cent annual genetic gain. In 2019/20, SRA will continue with the development of: new pre-breeding selection tools using DNA and unmanned aerial vehicle (UAV) based platforms; a more commercial focus in crossing; a more systematic approach to using wild relatives; earlier selection pressure for key economic traits; increased precision of field trials and screening methods; and improved management metrics.

Enhancing soil health and nutrient management

Soil health includes chemical, physical and biological factors that can be detrimentally impacted by farming practices that reduce organic matter and nutrient levels; allow accumulation of pathogens; maintain long-term monoculture; include aggressive tillage practices; and allow compaction from heavy machinery.

SRA’s Soil Health Program invests in, coordinates and delivers RD&EA projects that focus on implementing balanced nutrition on-farm with the ultimate aim of optimising productivity and profitability without adversely influencing soil fertility or causing off-farm effects. In 2019/20, the Soil Health Program will include a focus on: accelerating the adoption of best-practice nutrient management using SRA’s SIX EASY STEPS; continuing field trials on the effect of Enhanced Efficiency Fertilisers (EEFs) on cane and sugar yield, commercial cane sugar (CCS), nitrogen use efficiency and environmental losses; and understanding root system health.

Strengthening milling sector efficiency and capability

The primary objectives of Australia’s sugarcane mills are to maximise throughput of cane and maximise quality sugar output. Innovations in mill technology and processing to assist in the removal of extraneous matter, improve sugar recovery and sugar quality and improve energy efficiency contribute to the long-term sustainability of the milling sector.

In 2019/20, SRA will continue investment that aims to develop products, services or processes that will further optimise milling operations and advance research skills and capacity within the milling sector, including the following projects under the Small Milling Research Program (SMRP) scheme: evaluating the performance of the falling film tube evaporator; evaluating the suitability of the fixed element crystalliser for widespread adoption in Australian sugar factories; addressing operational and maintenance issues with cleaned belt intermediate carriers, and reducing surging in shredders.

Facilitating industry led adoption activities

SRA continues to facilitate the implementation of the Strategy for Industry Led Adoption Activities in the Sugar Industry (the Industry Adoption Strategy) that aims to improve the uptake of new and existing technologies and practice change across the Australian sugarcane industry.

In 2019/20, SRA’s Adoption unit will continue to work with the newly established Industry Adoption Advisory Committee and Regional Adoption Advisory Groups to deliver regional and cross-regional projects identified and designed to address strategic industry issues. SRA will also continue to facilitate the delivery of collaborative practice change initiatives including Cane to Creek 2.0.

Driving improvements in harvester design and harvesting practices

Harvesting losses are a major cost to the sugar industry; in particular the loss of marketable cane via the cleaning system during green cane harvesting. Research conducted into harvester performance has resulted in the development of Harvesting Best Practice (HBP) guidelines to reduce cane loss, improve cane quality, and reduce stock damage.

In 2019/20, SRA will continue to facilitate regional demonstration trials to showcase the significant benefits attributable to the application of HBP and commence work on the development of a decision support tool that will allow growers and harvesting contractors to determine optimal harvesting parameters. Recognising the need to build capacity and capability in the harvesting sector, SRA will also develop a training and accreditation program to be offered across the industry.

Understanding and managing Yellow Canopy Syndrome (YCS)

YCS is a condition of unknown cause affecting sugarcane crops in Queensland. Sugarcane plants affected by YCS display a specific pattern of leaf yellowing accompanied by abnormal and lethal accumulation of sucrose and starch in leaves.

In 2019/20, the YCS program will continue to draw on Australian and international expertise to: work toward a useful control for YCS that has the potential to be supported by an in-field diagnostic test that is in an advanced stage of development; investigate a number of likely biological entities together with physiological disruptions as potential causes of YCS; and investigate sugarcane variety responses to YCS to develop a better understanding of different varieties’ yield response to YCS, and the severity of impact for different varieties.

Leveraging collaborations and co-investment

SRA recognises the importance of collaborating with a range of partners to improve the efficiency, coordination and leveraging of research investment in areas of mutual interest and where beneficial for the Australian sugarcane industry and the broader public good. Strategic partnerships and joint investment in advanced technologies and agricultural practices are an important part of our investment strategy.

During 2019/20, SRA will seek to expand and strengthen partnerships and collaborative alliances with:

- Leading public research organisations, including universities and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and government to collectively develop the very best solutions to current industry opportunities and challenges;
- Sugarcane research counterparts overseas to create collaborative research opportunities and variety exchange programs that will benefit the Australian sugarcane industry;
- Private sector partnerships, both nationally and internationally, to catalyse the development and commercialisation of cutting-edge technology and research outputs;
- Productivity services organisations, advisory sector and Natural Resource Management (NRM) organisations to accelerate adoption of research outcomes and new technology;
- Other RDCs to share knowledge and learnings and to co-invest in cross-sectoral research programs; and
- Non-traditional partners to advance scientific knowledge, innovation and transformational change.

Supporting Industry good initiatives

SRA is conscious of the current and emerging pressures facing the industry with respect to maintaining social licence to operate and competing in a world market where market forces are strongly influenced by the trade actions of the world’s largest producers, namely Brazil and India. SRA currently supports the Australian sugarcane industry to address some of these challenges through scientific based research directed at improving soil nutrition, water quality and environmental management, as well as investing in the development of an economic model to support the industry’s trade and market access activities. In 2019/20, SRA will continue to support research projects towards addressing these ‘industry good’ pressures, along with social and scientific research into sugar nutrition aspects of human health.
4. DELIVERABLES FOR 2019/20
### KFA1: Optimally adapted varieties, plant breeding and release

**OUTCOMES**
Restructure and modernise the breeding program and broaden the genetic base

**PRIORITIES**
Increased sugarcane yield and commercial cane sugar (CCS)

**KEY IMPACTS**
- Profitability: Increased profitability through more productive varieties that are better aligned to specific regional and farm conditions, greater yielding (tonnes or CCS) and less input intensive.
- Sustainability: Improved sustainability through innovative sugarcane varieties bred with key traits requiring less chemical and energy inputs, optimally suited to their local environment and with greater resilience to climatic conditions.
- Capability: Increased capability through a highly efficient plant breeding program, with cutting-edge technology, and improved programs for delivery and grower-selection of varieties.
- Organisational Excellence: Enhanced organisational excellence through more streamlined and timely variety development process.

Key Focus Area 1 includes SRA’s core sugarcane plant-breeding program for the production of new and improved sugarcane varieties and their release and distribution for commercial production. In addition, KFA1’s contestable investment portfolio is aimed at developing tools, technologies and platforms to enable the breeding program to develop those varieties including the exploration and creation of new genetic diversity and improved genome and trait knowledge.

**Central Region grower Peter Hackett has always had a keen interest in new varieties making their way through the development pipeline, which is why he has continued to host Final Assessment Trials (FATs) on his property for the last 12 years.**

“My farm is a fairly average soil type for the district and it was unirrigated at that time I started with the trials, so I thought the information coming from this trial would be useful for the rest of the growers in the Plane Creek area,” he said.

“12 years later and we are still going. It continues to be interesting to observe the trials from the high rise spray tractor and see how much variation there is between different clones.”

### Key Performance Indicators

<table>
<thead>
<tr>
<th>KFA1/KPI</th>
<th>MILESTONES FOR 2019/20</th>
<th>TIMEFRAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>KFA1/KPI1</td>
<td>A 2% genetic gain per annum, as measured by FAT test</td>
<td>May-20</td>
</tr>
<tr>
<td>KFA1/KPI2</td>
<td>A 12% increase in varietal performance over 10 years.</td>
<td>Jul-19</td>
</tr>
<tr>
<td>KFA1/KPI3</td>
<td>SRA’s breeding program utilises molecular markers in selection by 2022.</td>
<td>Dec-19</td>
</tr>
<tr>
<td><strong>FORECAST 2019/20 INVESTMENT BUDGET</strong></td>
<td><strong>$13.0M</strong></td>
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</tbody>
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**PRIORITIES FOR 2019/20**
- Continued implementation of change management plan for enhancing SRA’s core plant breeding operations and increasing rates of genetic gain.
- Complete the establishment of the introgression breeding pipeline including cyrogenic characterisation of elite clones.
- Pilot test the use of molecular markers for smut resistance in a range of seedling populations.
- Establish yield trials for the first crosses selected for accelerated breeding strategies.
- Conduct extensive fibre quality testing to support the development of Near-Infrared (NIR) calibrations for shear strength, short fibre and impact resistance.

### Outputs for 2019/20

| KFA1/DEL1 | Evaluating smut introgression derived clones in the two-year cropping cycle of temperate cane growing environments of NSW and in response to frost. | May-20 |
| KFA1/DEL2 | Preliminary estimates of accuracy of genomic selection for yield (tonnes of cane per hectare) and CCS. | Jul-19 |
| KFA1/DEL3 | Strategy for integrating genomic selection into breeding program. | Dec-19 |
| KFA1/DEL4 | Development of a genetic map and disease phenotyping for high value breeding cross (Q208 x Q209). | Jun-20 |
| KFA1/DEL5 | Development of a genetic map and disease phenotyping for high value breeding cross (Q208 x Q209). | May-20 |
| KFA1/DEL6 | Web-based sugarcane Knetminer database linking all publicly available genomic, transcriptomic, proteomic data plus relevant literature, allowing the identification of gene networks associated with traits. | Sep-19 |
| KFA1/DEL7 | Data on varietal differences in the ability of roots to grow in compacted soils from both pot experiments and field sites. | Feb-20 |
| KFA1/DEL8 | Data obtained for third ratoon stool architecture and associated biochemical markers, in a broad spectrum of varieties. | Apr-20 |
| KFA1/DEL9 | Parent selection and crossing to develop larger and improved breeding populations. | Ongoing |
| KFA1/DEL10 | Development and evaluation of introgression derived clones with a focus on ratoon crop performance. | Ongoing |
| KFA1/DEL11 | Assessment of germplasm through the three stages of the selection program in all regions. | Ongoing |
| KFA1/DEL12 | Disease screening of breeding clones including earlier stage selection for Fuchsia resistance. | Ongoing |
| KFA1/DEL13 | Robust experimental design and data analysis applied to maximise the precision of breeding and disease screening trials. | Ongoing |
| KFA1/DEL14 | Performance data on potential new varieties provided to Regional Variety Committees for commercial release decisions. | Ongoing |
| KFA1/DEL15 | Variety Release and Commercialisation: facilitated distribution of varieties and varietal information for commercial production. | Ongoing |
| KFA1/DEL16 | Plant Breeder’s Rights secured for new commercial varieties. | Ongoing |
| KFA1/DEL17 | Development of QCANESelect® as the key tool for growers to select varieties. | Ongoing |
| KFA1/DEL18 | Clean planting material of established and new varieties provided to Industry through conventional propagation and tissue culture. | Ongoing |
| KFA1/DEL19 | Provision of mill area statistics and varietal composition published data and ongoing data analysis report. | Ongoing |
OUTCOMES
Improved natural resource health

PRIORITIES
(INCORPORATED INTO PROGRAMS)
Integrated and focused soil health program and improved nutrient management through enhanced SIX EASY STEPS guidelines

KEY IMPACTS

PROFITABILITY
Safeguarded and improved profitability through farming systems that optimise inputs (particularly nutrients, water and energy) and enhance soil health to support sustainable production.

SUSTAINABILITY
Maintained industry social licence to operate and enhanced sustainability through increased uptake of technology and proven practices that optimise input use, improve natural resource health and minimise off-farm impacts.

CAPABILITY
Improved capability through appropriate and timely evidence-based knowledge transfer between researchers, industry, investors and the advisory sector.

ORGANISATIONAL EXCELLENCE
Enhanced organisational excellence through established regional networks, as well as collaborative partnerships and communication processes that identify and respond to regional issues in soil health and farming systems.

Key Focus Area 2 contains SRA’s RD&A investments concerned with improving soil health, management of nutrients and chemical inputs, capability to predict and adapt to variable climatic conditions and the industry’s environmental sustainability and social licence to farm. The focus area houses SRA’s dedicated Soil Health Program, charged with the coordination and delivery of the long-term investment needed to research and develop solutions to the industry’s soil-based constraints.

Rocky Point grower Josh Keith is enthusiastic that SIX EASY STEPS guidelines are being created for his district, after having been completed for all other districts.

“I kept hearing that when people use SIX EASY STEPS they are saving money and are more profitable,” Josh said. “So, I thought that’s what I want.”

Some of the SIX EASY STEPS team has been in the region recently, digging 11 soil pits and collecting samples on a range of different soil types and conditions. This information will be used to create a soils toolkit for the district and the local SIX EASY STEPS nutrient management guidelines for growers.

Josh Keith

KEY PERFORMANCE INDICATORS

MILESTONES FOR 2019/20
KFA2/DEL1 Continuation of development of a soil health hub as an industry resource for the improvement of soil health.
Ongoing
KFA2/DEL2 Baseline population data obtained using DNA-based assays for Pachymeta, parasitic nematodes and a range of soil biological parameters at key soil health project sites, including PAT sites in both the Wet Tropics and Central regions.
Jul-19
KFA2/DEL3 Identification of dynamic keyborne soilborne fungal communities in response to fallow treatments.
May-20
KFA2/DEL4 Optimised subset of indicators of soil health and impacts of farming practices on soil properties determined.
Nov-19
KFA2/DEL5 Decisions made on a package of relevant DNA-based assays selected for continued application in collaborative trials.
Jan-20
KFA2/DEL6 Optimised and cost-effective field sampling design for estimating root system health.
May-20
KFA2/DEL7 Refinement and calibration of the root DNA health assay for improved assessment of root system health.
May-20
KFA2/DEL8 Two economic case studies completed on long-term paired transition sites investigating impact of farming systems on soil properties.
May-20
KFA2/DEL9 Preliminary assessment of the impact of additional organic inputs, species mixed cropping and intercropping on soil condition.
May-20
KFA2/DEL10 Extension package developed for soil health field kit.
Nov-19
KFA2/DEL11 Web-based decision support tools and evidence which provides farm-specific guidance to advisors and growers on refining the SIX EASY STEPS recommendations in relation to a range of situations (including case studies), and in which advisors and growers have increased confidence.
Jan-20
KFA2/DEL12 Improved understanding of the nitrogen use efficiency of yield-constrained crops and the impact of late harvest and variable climatic conditions presented to the SIX EASY STEPS Advisory Committee and included in the specific nitrogen guidelines and modelling simulations in the SIX EASY STEPS toolkit.
Jun-20
KFA2/DEL13 Improved understanding of the effects of soil properties and different management practices on mineralisation and nitrification of legume residue nitrogen, including economic assessment of potentially nitrogen-efficient management strategies.
Jun-20
KFA2/DEL14 Improved understanding of nitrogen management practices on productivity, profitability and nitrogen use efficiency through harvesting, assessment and reestablishment of 60 trial sites across sugarcane regions.
Jun-20
KFA2/DEL15 Basis for prototype smartphone app developed and linked to web-based NutriCalc for decision-making on crop nutrition.
May-20
KFA2/DEL16 Validation and cost effectiveness of an online NIR spectroscopic analysis system to quantify availability of key nutrients in soil by-products.
Jun-20
KFA2/DEL17 Ongoing industry consultation regarding Bureau of Meteorology (BOM) risk maps for heat, cold and rainfall.
Ongoing
KFA2/DEL18 Impact of climatic conditions and harvest time on crop yields and simulated nitrogen response assessed for major soils in the Herbert region.
May-20
KFA2/DEL19 Industry-wide dataset on soil greenhouse gas (GHG) emissions, denitrification and nitrogen use efficiency from sugarcane.
Ongoing
KFA2/DEL20 Ongoing testing and implementation of an extension approach to enhance the adoption of improved pest and herbicide practices in the Tully, South Johnstone and Millmari Mills areas for improved water quality outcomes.
Sep-19
KFA2/DEL21 Feasibility assessment of using soil tests to capture end-of-season chemical and nutrient run-off.
Jun-20

FUTURE
Lead projects that contribute to environmental sustainability and social licence to operate.

FORECAST 2019/20 INVESTMENT BUDGET – $4.9M

Updated recommendations released by June 2020.
Interim results from EEF trials communicated to participating growers by June 2020.
KFA2/KPI3 90% of growers using SIX EASY STEPS by 2022.
Increase on previous year’s result towards 90%.
**KFA3: Pest, disease and weed management**

**OUTCOMES**
Reduced or avoided yield losses and/or added input costs.

**PRIORITIES (incorporating KFA programs)**
Integrated new precision technologies and activities on a cost/benefit basis.

**KEY IMPACTS**

**PROFITABILITY**
Safeguard and increased profitability through reduced or avoided losses (yield losses and/or added input costs) due to prevented, eliminated or reduced weeds, pests and biosecurity incursions.

**SUSTAINABILITY**
Enhanced sustainability through biosecurity protection, reduced reliance on chemical interventions, and pest, disease and weed management strategies with potential reduced environmental impacts.

**CAPABILITY**
Increased capability through access to appropriate management resources and expertise in biosecurity, pathology, entomology, diagnostics and weed agronomy.

**ORGANISATIONAL EXCELLENCE**
Enhanced organisational excellence through strong relationships with biosecurity agencies, agri-businesses, government and other bodies to ensure SRA research knowledge is current and to enable a continuous assessment and adoption of new technologies and practices to support biosecurity, pest, disease and weed management SRA.

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Key Focus Area 3 houses SRA’s internal pathological and entomological expertise and capability to diagnose and manage domestic and international biotic threats to the Australian sugarcane industry. The focus area also comprises the portfolio of contestable research and development investment delivering improvements in pest, disease and weed management and SRA’s Yellow Canopy Syndrome (YCS) research portfolio.

Cairns grower John Ferrando says biosecurity awareness is crucial for both maintaining a productive crop, and for the long-term sustainability of the industry.

“Feral pigs do lots of damage to the cane here,” Mr Ferrando said. “We also know that things can go horribly wrong when there is an incursion of an exotic pest or disease.

“It could take years for the industry to get on top of the problem, or worse, there could be no chemical controls for a new pest – so it is far better that we be vigilant and keep things clean to begin with.”

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**Priorities for 2019/20**

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun-19</td>
<td>Continued research on approaches that minimise off-site movement of insects, weeds and plant diseases.</td>
</tr>
<tr>
<td>Dec-19</td>
<td>Herbicide phytotoxicity testing continued to assess newly released SRA varieties to allow the informed selection of herbicides for weed control.</td>
</tr>
<tr>
<td>May-20</td>
<td>Effect of mill mud or mill ash on herbicide run-off and efficacy defined.</td>
</tr>
<tr>
<td>Jun-20</td>
<td>Yellow canopy syndrome (YCS): investigate causal factors and develop management strategies.</td>
</tr>
</tbody>
</table>

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<tr>
<th>Timeframe</th>
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<td>Jun-19</td>
<td>Development of new molecular diagnostic tests for a range of soil-related organisms.</td>
</tr>
<tr>
<td>Jun-19</td>
<td>Trials established to examine the impact of range of insecticides on Soldier fly larvae.</td>
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<tr>
<td>Jun-20</td>
<td>Improved understanding of the mechanisms by which Soldier fly larvae damage sugarcane.</td>
</tr>
<tr>
<td>Jun-20</td>
<td>Ongoing field trials to assess the efficacy of new insecticides against greyback and soldier flies.</td>
</tr>
<tr>
<td>Jan-20</td>
<td>Continuing investigation of mid-larval and herbicide loss minimisation through formulation, adhesive, placement and application.</td>
</tr>
<tr>
<td>May-20</td>
<td>Disease management: improve disease management strategies and technologies.</td>
</tr>
<tr>
<td>Jun-20</td>
<td>Provision of ongoing entomological expertise, diagnostic services, recommendations and improved pest management strategies to industry.</td>
</tr>
<tr>
<td>Jan-20</td>
<td>Improved assistance to industry to manage soil-borne diseases caused by Pachymetra root rot and nematodes through provision of soil assays (cost-recovery basis).</td>
</tr>
<tr>
<td>Feb-20</td>
<td>Rapid screening tests for chlorotic streak disease developed and tested.</td>
</tr>
<tr>
<td>Apr-20</td>
<td>Ongoing support for SRA’s plant breeding program for a suite of common endemic diseases.</td>
</tr>
<tr>
<td>Dec-19</td>
<td>Field management: improve weed management strategies and technologies.</td>
</tr>
<tr>
<td>Dec-19</td>
<td>Work with Biosecurity Queensland to declare an area freedom in central region for Fiji Leaf Gall.</td>
</tr>
<tr>
<td>Jun-20</td>
<td>Junior disease screening provided the SRA plant breeding program for a suite of common endemic diseases.</td>
</tr>
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</tr>
<tr>
<td>Jun-20</td>
<td>Prototype diagnostic test kit refined.</td>
</tr>
<tr>
<td>Aug-19</td>
<td>Correlation between YCS and putative pathogens tested using the full suite of diagnostic tools (PCR, sub-culturing, electron microscopy and next generation sequencing).</td>
</tr>
<tr>
<td>Jun-20</td>
<td>Effect of chemical interventions, and pest, disease and weed management strategies to industry.</td>
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<td>Field management: improve weed management strategies and technologies.</td>
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</table>

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**KFA3: Pest, disease and weed management**

**Outcomes**
Maintain expertise and preparedness, both within SRA and the Australian sugar industry, in the event of an exotic incursion.

**Priorities**

- Continue to evaluate management strategies for Soldier fly larvae to reduce disease and weed management strategies to industry.
- Continue to research approaches that minimise off-site movement of insects, weeds and plant diseases.

**Key Focus Area 3 provides for:***

- **Safeguard and increased profitability through reduced or avoided losses (yield losses and/or added input costs) due to prevented, eliminated or reduced weeds, pests and biosecurity incursions.**
- **Enhanced sustainability through biosecurity protection, reduced reliance on chemical interventions, and pest, disease and weed management strategies with potential reduced environmental impacts.**
- **Increased capability through access to appropriate management resources and expertise in biosecurity, pathology, entomology, diagnostics and weed agronomy.**
- **Enhanced organisational excellence through strong relationships with biosecurity agencies, agri-businesses, government and other bodies to ensure SRA research knowledge is current and to enable continuous assessment and adoption of new technologies and practices to support biosecurity, pest, disease and weed management SRA.**

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**Key Performance Indicators**

- **KFA3/KP1:** Up-to-date databases reflecting current knowledge for high-risk exotic threats, reviewed annually.
- **KFA3/KP2:** At least 20% of growers adopted new and/or improved pest management strategies within last five years.
- **KFA3/KP3:** At least 2,000 clones from various stages of the selection programs, parents and foreign clones screened annually.
- **FORECAST 2019/20 INVESTMENT BUDGET:** $4.2M.
**OUTCOMES**

- Improved farm input-output efficiencies and profitability.

**PRIORITIES**

Economic analyses and demonstration of new or improved technology, farm management practices and analysis tools.

**SUGAR RESEARCH AUSTRALIA LIMITED**

**ANNUAL OPERATIONAL PLAN  2019-2020**

**INDUSTRY**

**SRA**

**KFA4: Farming systems and harvesting**

Key Focus Area 4 houses SRA’s research and development activities dedicated to optimisation of sugarcane farming and harvesting systems. The portfolio encompasses precision agriculture, water management and on-farm energy efficiency research. KFA4 also contains SRA’s flagship harvesting best practices (HBP) program which is driving improvements in harvester design and practices with promising industry outcomes emerging from the harvesting groups participating in SRA’s demonstration trials.

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Childers grower and harvesting contractor Michael Russo harvests about 105,000 tonnes of cane each year using best practice strategies.

> “Some of the main changes have been slowing our ground speed down, changing the parameters on our primary extractor fan and slowing the fan down to suit different field conditions,” Michael said.

> “This has resulted in much better quality of cane supply going to the mill. For the grower it represents more profit because there’s less wastage in the field.”

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**KEY PERFORMANCE INDICATORS**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Milestones for 2019/20</th>
</tr>
</thead>
<tbody>
<tr>
<td>KFA4/KPI1</td>
<td>Positive input-output efficiency ratios resulting from adoption of new technology and practices. Case studies demonstrating research yielding improved farming input-output efficiencies.</td>
</tr>
<tr>
<td>KFA4/KPI2</td>
<td>Industry engagement continues regarding demonstration of harvesting best practice. 20 harvesting best practice trials completed with emphasis on Central and Burdekin regions.</td>
</tr>
</tbody>
</table>

**FORECAST 2019/20 INVESTMENT BUDGET – $1.3M**

Industry engagement continues regarding demonstration of harvesting best practice.

**ECONOMIC ANALYSES AND DEMONSTRATION OF NEW OR IMPROVED TECHNOLOGY, FARM MANAGEMENT PRACTICES AND ANALYSIS TOOLS**

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**PRIORITY FOR 2019/20**

- Continue irrigation efficiency research and develop resources to assist growers to reduce energy costs.
- Assess methods by which farming systems can be improved to achieve increased productivity, profitability and sustainability.
- Maintain industry focus on the reduction of losses during the harvest process to maximise returns to the whole value chain.

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**KEY IMPACTS**

**PROFITABILITY**

- Increased profitability through optimised sugarcane farming and harvesting practices and industry value chain efficiencies.

**SUSTAINABILITY**

- Optimised sustainable sugarcane production through application of evidence-based farming and harvesting systems that maintain and/or enhance the value of natural capital both on and off-farm.

**CAPABILITY**

- Enhanced regional research, grower, harvester and advisory sector capability in improved farming and harvesting systems.

**ORGANISATIONAL EXCELLENCE**

- Enhanced organisational excellence through application of farming best management practices on SRA stations, establishment of regional collaborations for practical demonstration and case studies, and attraction and retention of researchers,agronomists and adoption officers with on-ground sugarcane knowledge and networks.
KFA5: Milling efficiency and technology

OUTCOMES
Optimised production, improved capital utilisation and waste minimisation

PRIORITIES
Enhanced capability and new technology for improving processing and energy efficiency

KEY IMPACTS

PROFITABILITY
Increased profitability through reduced costs of production, improved market access due to high quality product and improved capital utilisation.

SUSTAINABILITY
Enhanced sustainability through improved processing and energy efficiencies and waste management strategies.

CAPABILITY
Improved capability of milling technicians and professionals through training, peer-learning and knowledge exchange.

ORGANISATIONAL EXCELLENCE
Enhanced organisational excellence through establishment of strong relationships and collaborations with milling technicians and professionals.

Key Focus Area 5 houses SRA’s investments pursuing greater milling process efficiency and utilisation, optimised cane quality and transport and improved sugar quality. The KFA includes SRA’s internal near infra-red (NIR) capability supporting Australian millers in the ongoing installation and calibration of Cane, Sugar and Bagasse Analysis Systems and adoption of laboratory and online NIR solutions. KFA5 also includes SRA’s Small Milling Research Program providing a vehicle for targeted investment in small milling investor projects that develop a product, service or process that delivers tangible outputs with almost immediate outcomes within the sugar factory.

Key Focus Area 5 houses SRA’s investments pursuing greater milling process efficiency and utilisation, optimised cane quality and transport and improved sugar quality. The KFA includes SRA’s internal near infra-red (NIR) capability supporting Australian millers in the ongoing installation and calibration of Cane, Sugar and Bagasse Analysis Systems and adoption of laboratory and online NIR solutions. KFA5 also includes SRA’s Small Milling Research Program providing a vehicle for targeted investment in small milling investor projects that develop a product, service or process that delivers tangible outputs with almost immediate outcomes within the sugar factory.

The Isis Central Sugar Mill installed a ProFoss NIR system in 2017 with the help of researchers at SRA.

Production Superintendent with Isis Central Sugar Mill, David Pike, said the mill identified that the hardware support for the Direct Light units was at risk, as Foss service contracts for these type of instruments expire at the end of the 2017 season. Isis had been running the Direct Light NIR system since 2007.

“The transition to the ProFoss was quite smooth, but not without some challenges,” Mr Pike said. “Our internal IT team had to realign the ProFoss data string with our cane receivals system and we also had some timeout and windows OPCR server problems.”

These were resolved quickly by the SRA team and without their ongoing maintenance support of the software and calibration platforms, the new ProFoss NIR system would not function to the level of confidence required for cane payment.”

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KFA5/KPI1 Miller Performance rating for SRA.

60% of millers rate SRA’s performance ‘high’ to ‘very high’ (representing a 2% year-on-year increase towards an overall 10% improvement by 2022).

KFA5/KPI2 Miller satisfaction with SRA.

Average rating of 4 out of 5.

FORECAST 2019/20 INVESTMENT BUDGET – $1.9M

PRIORITY FOR 2019/20
Develop a long term RD&A Program for milling in collaboration with the milling sector.

Continue investment in Small Milling Research Program.

Complete phase one of NIR calibration development for fibre quality traits for deployment in plant breeding.

OUTPUT FOR 2019/20

Milling RD&A strategic agenda enhancements and related RD&A investment, management and oversight processes.

KFA5/DEL1 Industry represented Milling Program Steering Committee established to oversee development of a holistic milling RD&A investment program.

July-19

KFA5/DEL2 Recommendations on Milling Program presented to SRA Board for commissioning targeted research investment.

Dec-19


Oct-19

KFA5/DEL4 Finalised analyses of effect of pan boiling techniques on sugar quality.

May-20

KFA5/DEL5 Provision of Cane NIR Systems (CAS), Bagasse NIR systems (BAS), Sugar NIR Systems (SAS) and Laboratory NIR solutions to Australian sugar factories.

Ongoing

KFA5/DEL6 NIR calibration development and maintenance for NIR installations in Australian sugar factories.

Ongoing

KFA5/DEL7 Established potential for NIR calibrations to estimate plant available nutrient levels in mill mud.

June-20

KFA5/DEL8 Data analysed from 2018 season factory trials of pan design and operation for low pressure vapour, and 2019 trials on four pans completed.

Oct-19

KFA5/DEL9 Computational fluid dynamics (CFD) models developed for batch pans in sugar factories.

Oct-19

KFA5/DEL10 Effect of evaporation operation on factory process streams, sucrose losses and acid formation during the 2018 season determined at four factories.

Oct-19

KFA5/DEL11 First-in-factory performance measurements completed of tube coatings and tube materials, chosen for their resistance to erosion and corrosion, installed into boilers.

May-20

KFA5/DEL12 Understanding of the best reusing/gas piping arrangement to produce condensate at pH above 6 from all vessels to minimise corrosion and minimise maintenance requirements.

May-20

KFA5/DEL13 Understanding of the effect of juice pH on the condensate pH levels in the evaporator train.

May-20

KFA5/DEL14 Recommendations on performance characteristics and key operational issues associated with installing, operating and maintaining falling film tube evaporators.

May-20

KFA5/DEL15 Recommendations on performance characteristics, operational issues and cost/benefits associated with fixed element crystallisers.

May-20

KFA5/DEL16 Best practice manual for the design, maintenance and operation of cleated/belt intermediate carriers.

June-20

KFA5/DEL17 A theory of operation of shredder feed rolls and guidelines for their design and setting, which will be made available to all milling companies.

June-20

KFA5/DEL18 New technology to eliminate arcing of mill rollers.

June-20

Knowledge transfer and adoption: improve extension, communication, information and technology transfer and adoption.

KFA5/DEL19 Modules for high and low grade fugalling, sugar drying, and cooling crystalliser modules completed in the New Learning Management System for Australian mills.

Dec-19

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SUGAR RESEARCH AUSTRALIA LIMITED ANNUAL OPERATIONAL PLAN 2019-2020

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KFA6: Product diversification and value addition

Key Focus Area 6 comprises SRA’s product diversification and value addition portfolio. Investment in KFA6 encompasses the identification of new opportunities and uses for sugarcane, economic and market analysis of value-add opportunities and prioritisation of future industry diversification options. The focus area invests in the development of diversification and by-product revenue streams to safeguard enduring industry profitability and sustainability.

OUTCOMES
Diversified revenue streams and product innovation

PRIORITIES (INCORPORATED INTO PROGRAMS)
Prioritised diversification opportunities for further R&D activity or market analysis

The topic of product diversification and value addition was a topic of discussion at the Industry Futures Forum in 2017. Mackay grower Joe Muscat attended the Futures Forum and said that the Australian industry needs to look at different end products. “Relying on one product is hard,” Mr Muscat said. “85 percent of what we produce in sugar goes into the world market and that is a very volatile market. We need to do more work on adding value to our commodity. With our input costs always increasing, we have to find ways to manage that and keep a profitable business. I see value adding as an opportunity going forward.”

KEY IMPACTS

PROFITABILITY
Sustained industry profitability secured through diversified sugarcane and sugarcane by-product revenue streams and maximised value addition through product innovation.

SUSTAINABILITY
Enhanced sustainability of industry through diversified product streams, including alternative uses for sugarcane waste.

CAPABILITY
Enhanced capability through access to expanded product and value add opportunities, as well as advanced technologies and modern processing and engineering methods.

ORGANISATIONAL EXCELLENCE
Enhanced organisational excellence through established effective processes to monitor and assess sugarcane industry diversification opportunities.

OUTCOMES FOR 2019/20
Diversified revenue streams and product innovation

PRIORITYs FOR 2019/20
Communicate findings and recommendations from in-depth review of diversification options for the Australian sugarcane industry.

Maintain market and technology watch service for identifying diversification opportunities in the Australian sugarcane industry.

Continue development of biorefinery technology and intellectual property (IP) for the production of more digestible animal feed from sugar-cane bagasse and feed probiotics, and advance the technologies toward commercial application.

FORECAST 2019/20 INVESTMENT BUDGET – $1.2M

SRA INDUSTRY

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Key Performance Indicators

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<th>Milestones for 2019/20</th>
</tr>
</thead>
<tbody>
<tr>
<td>KFA6/KPI1</td>
<td>Completion of technical review of diversification opportunities by 2019. Review complete and communicated to industry by July 2019.</td>
</tr>
</tbody>
</table>

FORECAST 2019/20 INVESTMENT BUDGET – $1.2M

SRA INDUSTRY
KFA7: Knowledge and technology transfer and adoption

Key Focus Area 7 concentrates on the development and implementation of knowledge transfer and adoption strategies, processes and activities to ensure transfer of research outputs and translation into on-the-ground outcomes. The focus area houses SRA’s internal Adoption unit and a contestable research portfolio facilitating specific adoption activities, research to understand and improve knowledge transfer and projects to improve sugarcane farm business, risk management and decision making. KFA7 also encompasses SRA’s Communication unit and industry engagement through the delivery of timely and professional publications and other communication across several mediums.

Key Focus Area 7

**Outcomes**
Targeted, measurable practice improvement through increased uptake and implementation of new and existing technologies

**Priorities**
Development of structures and strategies that identify industry needs, priorities and targeted solutions at regional and industry levels

**Key Impacts**

**Profitability**
Increased profitability through improved efficiency and optimised production along the value chain.

**Sustainability**
Enhanced sustainability through increased uptake of technology and proven practices that improve natural resource health; reduce inputs and minimise waste.

**Capability**
Increased capability through appropriate and timely knowledge transfer between researchers, industry and advisory sector.

**Organisational Excellence**
Enhanced organisational excellence through communication processes and leveraged partnerships that ensure effective knowledge transfer and adoption.

Herbert grower-contractor Darren Reinaudo said economics was a core driver of current farming and harvesting practices and growers need hard data from local field trials to determine whether there were financial benefits to changing practices.

“When making the decision to change or improve practices, we need to measure the difference between the existing practice and the recommended practice to understand whether the benefits in one area outweigh the costs in another,” Mr Reinaudo said.

“We’ve participated in a SRA harvesting trial and we’re looking forward to working through the economic analysis from that trial. If the data demonstrates that there’s a better way, it’s important we all work together to improve our situation.”

Key Focus Area 7

**Outputs for 2019/20**

**Forecast 2019/20 Investment Budget – $6.3M**

**Priorities for 2019/20**

- Continue implementation of the Strategy for Industry Led Adoption Activities in the Sugar Industry (the Adoption Strategy) and accelerated application of technologies and practices which lead to targeted and measurable practice change.
- Develop and implement effective extension, education and training initiatives to support adoption of SRA’s R&D outputs.
- Build industry knowledge on interactions between on-farm practice and water quality in priority Great Barrier Reef catchments.
- Engage and inform SRA investors and key stakeholders of SRA’s RD&A activities and outcomes in a timely manner.

**Key Performance Indicators**

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<td>KFA7/KPI1</td>
<td>Average grower and miller satisfaction with SRA adoption and communication activities rating of 4 out of 5 achieved by 2022.</td>
</tr>
<tr>
<td>KFA7/KPI4</td>
<td>Improved industry adoption outcomes through implementation of the Strategy for Industry Led Adoption Activities.</td>
</tr>
</tbody>
</table>

**Timeframe**

- Ongoing
- Aug-19
- Mar-21
- Oct-19
- May-20
**Key Focus Area 8** covers SRA’s efforts and investment towards ensuring the Australian sugarcane industry is highly skilled and is supported by a research workforce with the knowledge, capability and capacity to meet current and future industry needs. Through KFA8, SRA also actively invests in ‘industry good’ collaborative initiatives, such as social and scientific research into social licence to operate and trade policy and market access research, and cross-sectoral collaborations to leverage knowledge and resources, and extend SRA’s capacity to deliver value to industry and government investors.

The Next Crop program is a new investment by SRA in industry leadership and capability, starting for the first time in 2019. Through Next Crop, participants undertake a range of leadership and development activities. Burdekin grower Chris Lyne has been one of nine participants in the program and said he was excited to take part. “The future of the sugar industry depends on strong leadership at a range of levels, and this program is an opportunity to develop these critical skills,” Mr Lyne said. “It is a chance to learn with other growers from across the industry and bring our new skills back to our respective regions.”

To learn more, visit nextcropleaders.com.

**Outcomes**
Enhanced industry and research capability and capacity.

**Priorities**
Leveraged industry, government and research partnerships and enhanced human capability programs.

**Key Impacts**
- **Profitability**: Increased profitability through accelerated innovation resulting from enhanced industry and research capability and capacity.
- **Sustainability**: Maintained social licence to operate and delivered environmental and social benefits through leveraging investment in cutting-edge cross-sectoral and collaborative RD&A.
- **Capability**: Increased researcher and industry capability through leveraged expertise and resources and appropriate and timely learning and development programs.
- **Organisational Excellence**: Enhanced organisational excellence through proactive engagement and collaboration in research; industry and cross-sectoral skill development, innovation and networks.

**Outputs for 2019/20**
- Continue to build capacity in the sugarcane industry by providing Sugar Industry Research Awards, Postgraduate Research Scholarships, Travel and Learning Awards, and leadership and capability development programs.
- Foster, strengthen and extend RD&A partnerships, collaborations and networks to leverage investment, multi-disciplinary capability and multi-institutional resources, and deliver valued impacts for SRA’s investors.
- Support industry good collaborative social and scientific research aimed at revitalising the Australian sugarcane industry, maintaining the industry’s social licence to operate and maintaining the industry’s competitive position in the world sugar market.

**Key Performance Indicators**
- **SRA participation and investment in relevant collaborative and cross-sectoral programs**
- **At least four postgraduate scholarships and two research awards each year**
- **At least two short-term placements per annum of students and/or professionals in research or industry positions for industry exposure**
- **At least two placements in 2019/20**

**Forecast 2019/20 Investment Budget**
- $1.9M

**Priorities for 2019/20**
- Foster, strengthen and extend RD&A partnerships, collaborations and networks to leverage investment, multi-disciplinary capability and multi-institutional resources, and deliver valued impacts for SRA’s investors.
- Support industry good collaborative social and scientific research aimed at revitalising the Australian sugarcane industry, maintaining the industry’s social licence to operate and maintaining the industry’s competitive position in the world sugar market.
- Continue to build capacity in the sugarcane industry by providing Sugar Industry Research Awards, Postgraduate Research Scholarships, Travel and Learning Awards, and leadership and capability development programs.

**Outputs for 2019/20**
- Industry good collaboration.
- Support industry representative bodies in social and scientific research initiatives concerning the sugarcane industry and its role in health and environmental management.
- Foster, strengthen and extend RD&A partnerships, collaborations and networks to leverage investment, multi-disciplinary capability and multi-institutional resources, and deliver valued impacts for SRA’s investors.
- Support industry good collaborative social and scientific research aimed at revitalising the Australian sugarcane industry, maintaining the industry’s social licence to operate and maintaining the industry’s competitive position in the world sugar market.

**Forecasts for 2019/20**
- At least two research awards granted in 2019/20.
- At least four scholarships awarded in 2019/20.

**Milestones for 2019/20**
- Ongoing
- Jun-20
- Nov-19
- Ongoing
- Ongoing
- Ongoing
- Ongoing
- Ongoing
- Ongoing
- Ongoing
- Ongoing

**Key Focus Area 8** (KFA8): Collaboration and capability development

**KFA8/DEL1** Support industry representative bodies in social and scientific research initiatives concerning the sugarcane industry and its role in health and environmental management.

**KFA8/DEL2** Economic model delivered and first simulation run to underpin trade strategies and market access initiatives.

**KFA8/DEL3** Continued implementation and management of the National Sugarcane Industry RD&A Strategy.


**KFA8/DEL5** Strategic partnerships and alliances, with both traditional and non-traditional research partners (regionally, nationally and internationally), including collaborations with adoption and extension providers, industry productivity services organisations, Commonwealth and Queensland departments, NRM groups, the Australian Research Council (ARC), Cooperative Research Centres (CRC’s), non-government organisations and private sector.

**KFA8/DEL6** Support and participation in cross-sectoral research and development activities, including joint-RDC collaborations.

**KFA8/DEL7** Memorandums of Understanding (MoUs) with other research organisations to exchange knowledge and research material.

**KFA8/DEL8** Postgraduate research scholarship program to develop and enhance long-term industry research capacity.

**KFA8/DEL9** Travel and learning awards to promote the search and development of new industry research, development and adoption ideas.

**KFA8/DEL10** Research award program to develop and enhance long-term industry research, development and adoption.

**KFA8/DEL11** Sugar Milling RD&A Capability Building Program active at the Queensland University of Technology (QUT) to develop and enhance long-term milling industry capability and three capability appointments made.

**KFA8/DEL12** Innovation Catalyst awards providing seed funding to researchers to discover novel solutions or leads for future funding activity and develop innovative research skill sets.

**KFA8/DEL13** Review of Next Crop sugarcane industry leadership program.

**KFA8/KPI1** Maintain a minimum of four postgraduate scholarships and two research awards each year.

**KFA8/KPI2** At least four scholarships awarded in 2019/20.

**KFA8/KPI3** At least two short-term placements per annum of students and/or professionals in research or industry positions for industry exposure.

**KFA8/KPI4** At least two placements in 2019/20.
Industries and ING are working on developing a strategic investment management and corporate functions and aiming to ensure SRA’s strategic and investment framework, governance processes and fiscal, resource and asset management systems and processes can effectively support the delivery of an R&D&A investment portfolio that delivers valued impact and returns on investment.

KFA9 includes initiatives to strengthen organisational effectiveness and drive internal operations towards excellence through the ongoing enhancement of SRA’s values-based culture and performance-centric processes and systems, with a particular focus on improving investment decision-making and securing financial sustainability with a highly skilled, innovative and engaged workforce.

To improve workplace health and safety, and staff engagement, SRA has transitioned to a “Safety 2” culture. This shift in SRA’s approach to safety harnesses the expertise of our people. A Safety 2 culture focuses on being curious about the work we do, engaging with staff, and celebrating when things go well. SRA is committed to understanding the challenges and opportunities its teams face to ensure that staff are fully engaged in safety. This initiative is being led internally by Leader for Health, Safety and Environment, Ms Anne-Louise Slack.

**Outcomes**

- Increased investor satisfaction and returns on investment
- Enhanced organisational excellence
- Improved communication mechanisms to enable vertical and horizontal communication within the organisation, including: improved staff intranet; regular staff updates following Board meetings; rotating Executive and staff at various team meetings; inter-team meetings; SRA-wide video and teleconferencing, and CEO/staff engagement.
- Improved organisational culture: embed investor-centric and performance-driven values and culture across SRA.
- Continued transition to a Safety 2 culture with enhanced worker safety, wellbeing, physical security and worker engagement and participation, and aligned to SRA’s cultural transformation program.
- Continued support provided to employees in implementing company values to reflect internal culture and working environment and stakeholder engagement.
- Revised administrative systems to remove unnecessary duplication and streamline processes.

**Key Focus Area 9 (KFA9)**

**KFA9/DEL1**

Enhanced Stakeholder Engagement Framework and ongoing investor consultation, including regular scheduled consultation between industry representative bodies and government investor representatives.

**KFA9/DEL2**

Annual review and amendment, where appropriate, of SRA’s Strategic Plan.

**KFA9/DEL3**

Targeted R&D&A investment strategies and program logic framework developed, monitored and reviewed.

**KFA9/DEL4**

Transformational R&D&A in both SRA core and contestable research.

**KFA9/DEL5**

New and emerging technologies or methods to transform the way we conduct our science and support functions.

**KFA9/DEL6**

Innovation Catalyst initiative for employees to engage in team-based exploratory innovation and problem-solving activities, distinct and separate from core and contestable project activity.

**KFA9/DEL7**

Monitoring and evaluation system enhanced to support Board and investor reporting on R&D&A outputs, outcomes and impacts, including publication of Annual Performance Report.

**KFA9/DEL8**

Independent Performance Review process commenced.

**KFA9/DEL9**

Long-term industry vision and strategy developed in collaboration with industry representatives.

**KFA9/DEL10**

Culture: embed investor-centric and performance-driven values and culture across SRA.

**KFA9/DEL11**

Continued implementation of SRA’s values-based cultural transformation program, including: annual workshops on SRA’s annual culture and values assessment; and ongoing leadership development.

**KFA9/DEL12**

Continued support provided to employees in implementing company values to reflect internal culture and working environment and stakeholder engagement.

**KFA9/DEL13**

Improved communication mechanisms to enable vertical and horizontal communication within the organisation, including: improved staff intranet; regular staff updates following Board meetings; rotating Executive and staff at various team meetings; inter-team meetings; SRA-wide video and teleconferencing, and CEO/staff engagement.

**KFA9/DEL14**

Revised administrative systems to remove unnecessary duplication and streamline processes.

**Key Performance Indicators**

- SRA Investor performance (Rating increase to 85% by 2022).
- Improved on previous year’s result towards 85% target.
- Aggregated research investment benefit-cost ratio of 0.1 or above by 2022.
- Aggregate impact assessment result of 0.1 or higher.
- Maintain 100% compliance with statutory and contractual requirements.
- 100% compliance.

**Milestones for 2019/20**

- Strategic abstraction: deliver impact-driven strategic agenda and disruptive innovation.
- Ongoing
- Enhanced Stakeholder Engagement Framework and ongoing investor consultation, including regular scheduled consultation between industry representative bodies and government investor representatives.
- Ongoing
- Annual review and amendment, where appropriate, of SRA’s Strategic Plan.
- Aug-19
- Targeted R&D&A investment strategies and program logic framework developed, monitored and reviewed.
- Jun-20
- Transformational R&D&A in both SRA core and contestable research.
- Jun-20
- New and emerging technologies or methods to transform the way we conduct our science and support functions.
- Jun-20
- Innovation Catalyst initiative for employees to engage in team-based exploratory innovation and problem-solving activities, distinct and separate from core and contestable project activity.
- Interim milestone report Aug-19 Final Reports by Jun-20
- Monitoring and evaluation system enhanced to support Board and investor reporting on R&D&A outputs, outcomes and impacts, including publication of Annual Performance Report.
- Independent Performance Review process commenced.
- Apr-20
- Long-term industry vision and strategy developed in collaboration with industry representatives.
- Jun-20
- Culture: embed investor-centric and performance-driven values and culture across SRA.
- Ongoing
- Continued transition to a Safety 2 culture with enhanced worker safety, wellbeing, physical security and worker engagement and participation, and aligned to SRA’s cultural transformation program.
- Ongoing
- Continued support provided to employees in implementing company values to reflect internal culture and working environment and stakeholder engagement.
- Ongoing
- Improved communication mechanisms to enable vertical and horizontal communication within the organisation, including: improved staff intranet; regular staff updates following Board meetings; rotating Executive and staff at various team meetings; inter-team meetings; SRA-wide video and teleconferencing, and CEO/staff engagement.
- Ongoing
- Revised administrative systems to remove unnecessary duplication and streamline processes.
- Ongoing
### People: attract, retain and develop a first-class workforce

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KFA9/DEL15</td>
<td>Workplace health, safety and environmental management, framework and system improvements, reporting and support services.</td>
</tr>
<tr>
<td>KFA9/DEL16</td>
<td>People management planning and appraisal, including: leadership development and succession plans; employee performance plans and Executive mid-year performance appraisals; and benchmarking of employee remuneration and entitlements.</td>
</tr>
<tr>
<td>KFA9/DEL17</td>
<td>Human Resources (HR) Strategy that will drive a people, leadership and performance focused culture.</td>
</tr>
<tr>
<td>KFA9/DEL18</td>
<td>Review and enhancement of recruitment and HR policies, systems and processes and contemporary best practice performance management and remuneration and reward processes, to support our people and position SRA as an employer of choice.</td>
</tr>
<tr>
<td>KFA9/DEL19</td>
<td>Continuous implementation of professional development program.</td>
</tr>
</tbody>
</table>

#### Financial stewardship: maintain a sustainable financial position and improve treasury and budgetary management and oversight

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KFA9/DEL20</td>
<td>New or enhanced business opportunities, partnerships, commercial arrangements and/or alternative funding sources.</td>
</tr>
<tr>
<td>KFA9/DEL21</td>
<td>Leveraged alternative funding sources and opportunities.</td>
</tr>
<tr>
<td>KFA9/DEL22</td>
<td>Continued deployment of contemporary and compliant finance, treasury management, payroll, governance and operational strategies, management plans, processes, performance, control and reporting systems.</td>
</tr>
<tr>
<td>KFA9/DEL23</td>
<td>Fit-for-purpose budgeting, forecasting and reporting solution.</td>
</tr>
<tr>
<td>KFA9/DEL24</td>
<td>Review of fixed assets and cost optimisation opportunities.</td>
</tr>
</tbody>
</table>

### Resources: optimise resources, systems and processes to support leading-edge RD&A that meets the needs of our investors

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KFA9/DEL25</td>
<td>RD&amp;A investment framework, including: project calls and assessment; direct commissioning of projects; portfolio management; systematic portfolio analysis; project and program evaluations and cost-benefit analyses; and portfolio reporting.</td>
</tr>
<tr>
<td>KFA9/DEL26</td>
<td>Best practice governance processes and reporting.</td>
</tr>
<tr>
<td>KFA9/DEL27</td>
<td>Review and enhancement of SRA’s Compliance Framework, including Compliance Register and Compliance Calendar, linked to SRA’s Risk Management Framework, and allocation of roles and responsibilities to key personnel in specific business areas to be charged with responsibility for compliance.</td>
</tr>
<tr>
<td>KFA9/DEL28</td>
<td>Board and Executive oversight, review and approval of policies consistent with the company’s Strategic Plan and governance arrangements.</td>
</tr>
<tr>
<td>KFA9/DEL29</td>
<td>Review and enhancement of SRA’s Risk Management Framework, including strategic and operational risk registers.</td>
</tr>
<tr>
<td>KFA9/DEL30</td>
<td>Delivery of assurance and risk mitigation through execution of independently scrutinised, internal audit reviews. Two to four internal audit reviews performed annually, as prioritised based on ongoing assessment of key strategic risks.</td>
</tr>
<tr>
<td>KFA9/DEL31</td>
<td>Levy Payer Register established in collaboration with the Commonwealth Department of Agriculture.</td>
</tr>
<tr>
<td>KFA9/DEL32</td>
<td>IP management system for identification and ongoing management of current and future IP generated through SRA’s R&amp;D portfolio.</td>
</tr>
<tr>
<td>KFA9/DEL33</td>
<td>Asset management planning and systems, including: review of fixed assets and cost options; maintenance, refurbishment or redevelopment of facilities; best-practice certification for research station and farm management.</td>
</tr>
<tr>
<td>KFA9/DEL34</td>
<td>Redevelopment, launch and maintenance of breeding program database SPIDNET.</td>
</tr>
<tr>
<td>KFA9/DEL35</td>
<td>Information technology (IT) Strategy is finalised and a staged implementation plan developed for priority areas for system enhancement, capital investment and continual system improvement, including platforms that support SRA activities through enhanced integrated software and hardware; faster network; migration to cloud technology; enhanced data management; sharing, storage and security, and enhanced IT service delivery.</td>
</tr>
</tbody>
</table>
5. INCOME AND EXPENDITURE FORECAST

FORECAST FINANCIAL POSITION
SRA’s current RD&A investment portfolio is structured to meet our investor priorities and expectations with respect to delivering valued benefits and maximised return on investment. To deliver on this portfolio and achieve the planned outcomes, SRA’s operating expenditure is expected to be greater than our operating income, with a forecast deficit in 2019/20 of $3.1m. The downturn in operating income is due to a range of factors, including forecast reduction in Australian sugarcane production and a sustained negative outlook for world sugar prices. SRA will utilise accumulated financial reserves to fund our RD&A investment and activities for 2019/20, whilst SRA’s Board and Management will continue to implement strategies to work towards a balanced budget and ensure ongoing financial sustainability. A summary of SRA’s Board-approved forecast income and expenditure for 2019/20 is provided in Table 1.

SRA reviews income and expenditure on a monthly basis and undertakes a re-forecasting exercise every quarter of the year to account for changes in SRA’s operating environment and to enable flexibility to respond to immediate and/or emerging challenges and opportunities.

INVESTMENT ACROSS KFAS
Figure 4 details the expenditure allocation across the KFAs. Reflective of investor expectations with respect to SRA’s RD&A investment, and in line with SRA’s Strategic Plan, the majority of investment lies within our plant breeding program under KFA1.

Attachment 2 provides a breakdown of KFA expenditure by projects.

TABLE 1: FORECAST INCOME AND EXPENDITURE 2019/20

<table>
<thead>
<tr>
<th>OPERATING INCOME</th>
<th>2019/19 ($K)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry investment</td>
<td>22,120</td>
</tr>
<tr>
<td>Commonwealth co-investment</td>
<td>6,291</td>
</tr>
<tr>
<td>Queensland Government co-investment</td>
<td>3,010</td>
</tr>
<tr>
<td>Collaboration/Service Fee income</td>
<td>7,253</td>
</tr>
<tr>
<td>Interest</td>
<td>850</td>
</tr>
<tr>
<td>Other</td>
<td>840</td>
</tr>
<tr>
<td><strong>Operating income total</strong></td>
<td><strong>44,663</strong></td>
</tr>
</tbody>
</table>

RD&A

<table>
<thead>
<tr>
<th>RD&amp;D</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RD&amp;D contestable - externally won</td>
<td>8,341</td>
<td></td>
</tr>
<tr>
<td>RD&amp;D contestable - internally won</td>
<td>5,790</td>
<td></td>
</tr>
<tr>
<td>RD&amp;D internal core</td>
<td>11,974</td>
<td></td>
</tr>
<tr>
<td>Industrial contract research</td>
<td>2,858</td>
<td></td>
</tr>
<tr>
<td>Research Adoption</td>
<td>5,765</td>
<td></td>
</tr>
<tr>
<td>RD&amp;D operational support</td>
<td>4,790</td>
<td></td>
</tr>
<tr>
<td><strong>Operating income total</strong></td>
<td><strong>39,518</strong></td>
<td></td>
</tr>
</tbody>
</table>

Corporate

<table>
<thead>
<tr>
<th>Corporate</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Board and investor relations</td>
<td>1,100</td>
</tr>
<tr>
<td>Corporate support</td>
<td>2,908</td>
</tr>
<tr>
<td><strong>Corporate total</strong></td>
<td><strong>4,008</strong></td>
</tr>
</tbody>
</table>

**Operating expenditure total** 45,527

SRA operating result for the year (3,063)

INVESTMENT ACROSS KFAS

Figure 4 details the expenditure allocation across the KFAs. Reflective of investor expectations with respect to SRA’s RD&A investment, and in line with SRA’s Strategic Plan, the majority of investment lies within our plant breeding program under KFA1.

Attachment 2 provides a breakdown of KFA expenditure by projects.

SRA RD&A Investment and organisational expenditure

<table>
<thead>
<tr>
<th>KFA</th>
<th>MILLION</th>
</tr>
</thead>
<tbody>
<tr>
<td>KFA1 / OPTIMALLY ADAPTED VARIETIES, PLANT BREEDING AND RELEASE</td>
<td>$13.0M</td>
</tr>
<tr>
<td>KFA2 / SOIL HEALTH, NUTRIENT MANAGEMENT AND ENVIRONMENTAL SUSTAINABILITY</td>
<td>$4.9M</td>
</tr>
<tr>
<td>KFA3 / PEST, DISEASE AND WEED MANAGEMENT</td>
<td>$4.2M</td>
</tr>
<tr>
<td>KFA4 / FARMING SYSTEMS AND HARVESTING</td>
<td>$1.3M</td>
</tr>
<tr>
<td>KFA5 / MILLING EFFICIENCY AND TECHNOLOGY</td>
<td>$1.9M</td>
</tr>
<tr>
<td>KFA6 / PRODUCT DIVERSIFICATION AND VALUE ADDITION</td>
<td>$1.2M</td>
</tr>
<tr>
<td>KFA7 / KNOWLEDGE AND TECHNOLOGY TRANSFER AND ADAPTATION</td>
<td>$6.3M</td>
</tr>
<tr>
<td>KFA8 / COLLABORATION AND CAPABILITY DEVELOPMENT</td>
<td>$1.9M</td>
</tr>
</tbody>
</table>

**RD&A expenditure** $34.7M

**Corporate and organisational investment allocation 2019/20**

**RD&A investment and organisational expenditure**

<table>
<thead>
<tr>
<th>KFA</th>
<th>MILLION</th>
</tr>
</thead>
<tbody>
<tr>
<td>KFA1 / INDUSTRIAL EFFECTIVENESS</td>
<td>$8.8M</td>
</tr>
<tr>
<td>KFA9 / ORGANISATIONAL EFFECTIVENESS</td>
<td>$8.8M</td>
</tr>
<tr>
<td>Total expenditure</td>
<td><strong>$45.5M</strong></td>
</tr>
</tbody>
</table>

*Numbers are rounded.
6. BALANCED PORTFOLIO

SRA is committed to ensuring it invests, manages and participates in a balanced portfolio of RD&A activities that is appropriate to meeting investor needs and providing an attractive return on investment.

To achieve an optimally-balanced investment portfolio, SRA will undertake:

- Align RD&A investment with industry and government investor priorities at both regional and industry levels;
- Invest in short, medium and long-term projects across the research pipeline;
- Address current gaps in the existing portfolio in terms of delivering on the objectives of SRA’s Strategic Plan;
- Appropriately manage RD&A risk-profile, with a combination of low-risk projects targeting incremental improvements and higher-risk transformational projects;
- Leverage investment through partnerships and collaborations; and
- Maximise return for our investors through increased adoption and practice change.

SRA’s independent skills-based Research Funding Panel (RFP) and Research Funding Unit (RFU) manage the contestable research investment process and associated review and evaluation of investment projects. The primary objective of the RFP is to ensure transparent, independent and robust review of all RD&A project investment from SRA’s contestable pool of industry and government investment funds.

Research projects are ranked by the RFP using an Attractiveness/Feasibility process which has been designed to assess the magnitude of potential benefits, taking into account the likely adoption of the project outcomes or innovations (Attractiveness) and the prospects of the project delivering them (Feasibility). Attractiveness is assessed using an input-output-outcome-impact analysis of the project proposals, whilst Feasibility is assessed by considering research risk and quality, using peer assessment and RFP expertise. In 2019/20, the RFP will be implementing an improved investment framework that will incorporate econometric modelling to inform investment decision-making.

SRA’s RD&A portfolio comprises both core and contestable RD&A projects. The core projects are undertaken internally by SRA and include plant breeding, biosecurity and adoption activities. The contestable projects are undertaken by both SRA and external providers and cover the gamut of SRA’s KFAs.

SRA also has an established Risk Management Framework, including a Risk Management Policy and Risk Appetite Statement approved by the Board and reviewed annually. The Risk Appetite Statement outlines the type of risk and associated risk tolerance that SRA is willing to take in order to meet its strategic objectives. SRA’s current Risk Appetite Statement states that: “SRA seeks to balance the risk position between: investing in transformational and step change activities that may provide high impact benefits to the Australian sugarcane industry; and the need to remain a viable organisation with the capacity to continue to work for our members long into the future”.

To ensure SRA continues to provide a balanced portfolio that meets investor needs and expectations, SRA engages and consults on a regular basis with industry and government investors, industry representative bodies and regionally-based advisory groups and committees to identify RD&A priorities – at both a regional and whole-of-industry level – and report on the performance of SRA’s RD&A investment portfolio in terms of outputs, outcomes and return on investment being delivered.
ATTACHMENT 1
ALIGNMENT OF SRA’S KFAS TO INDUSTRY AND GOVERNMENT PRIORITIES

<table>
<thead>
<tr>
<th>STAKEHOLDER PRIORITIES</th>
<th>SRA KEY FOCUS AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Sugarcane Industry RD&amp;E Strategy – Themes 44</td>
<td>1. OPTIMALLY-ADAPTED VARIETIES, PLANT BREEDING AND RELEASE</td>
</tr>
<tr>
<td>1.  Products: Expanding uses for sugarcane</td>
<td>2. High value and demand for non-sugar products</td>
</tr>
<tr>
<td>2.  Productivity: Achieving significant productivity gains and increasing adoption</td>
<td>3. Food: Expanding use of sugarcane for food uses</td>
</tr>
<tr>
<td>3.  Stewardship: Improving environmental performance and industry’s social licence</td>
<td>4. Resources: Expanding sugarcane use for resources, energy and bioenergy</td>
</tr>
<tr>
<td>4.  People: Building the capability of the industry and research</td>
<td></td>
</tr>
<tr>
<td>Queensland Department of Agriculture and Fisheries – Theme Areas for Sugarcane Research Investment</td>
<td>1.  SUGAR IMPROVEMENT – TO IMPROVE PRODUCTIVITY, QUALITY AND PRODUCTION EFFICIENCY</td>
</tr>
<tr>
<td>1.  Sugarcane Improvement – to improve productivity, quality and production efficiency</td>
<td>2. Sugarcane plant protection</td>
</tr>
<tr>
<td>2. Farming Systems: Broad acre dryland and irrigated, and mixed crop farming systems in Queensland</td>
<td>3. Soil health</td>
</tr>
<tr>
<td>3. New market opportunities and processes</td>
<td>4. Agri-intelligent systems</td>
</tr>
<tr>
<td>4. Breaking barriers to adoption</td>
<td></td>
</tr>
</tbody>
</table>

ATTACHMENT 2
PROJECT PORTFOLIO AND INVESTMENT BY KFA

The following project type classifications are used within SRA’s Investment portfolio:
- **C** SRA – R&D contestable - internally won;
- **C Ext** – R&D contestable - externally won;
- **CRP** – collaborative research project; and
- **SRA** – R&D internal core and corporate support projects.

| KFA1: OPTIMALLY-ADAPTED VARIETIES, PLANT BREEDING AND RELEASE |
|-------------------|------------------|
| **PROJECT NO.** | **DESCRIPTION** | **PROJECT TYPE** | **2019/20 $K** |
| 2015001 | Australian support of the International Consortium for Sugarcane | C Ext | 29 |
| 2015022 | Exploiting introgression for the development of productive and regionally adapted varieties for New South Wales | CRP | 48 |
| 2015016 | Leaf sucrose: the link to diseases such as YCS and enhancement of sugarcane productivity | C SRA | 320 |
| 2016028 | Improving early stage selection of SRA breeding program by indirect selection of plant vigour | C SRA | 45 |
| 2016032 | Optimising productivity, variety recommendations and mill operations through analysis of mill data | C SRA | 304 |
| 2016044 | License to farm: nitrogen use efficient varieties to meet the future environmental targets | C SRA | 15 |
| 2017002 / 2017806 | Implementing and validating genomic selection in SRA breeding programs to accelerate improvements in yield, commercial cane sugar, and other key traits | CRP | 358 |
| 2018001 | Compendium of sugarcane traits and their associated genes | C Ext | 10 |
| 2018002 | Validating root system traits for enhanced nutrient capture in challenging environments | C Ext | 248 |
| 2018004 | Impact of stool architecture on ratooning: extending current trial to four ratoons to strengthen correlations | C Ext | 127 |
| 2018005 | Genetic analysis and marker delivery for sugarcane breeding | CRP | 230 |
| 2018006 | Selecting high value chromosomes from Saccharum species – extension to 2015026 | C Ext | 377 |
| 2018007 | Genetic analysis and marker delivery | CRP | 86 |
| 2019001 | NIR calibrations for fibre quality | C SRA | 222 |
| 2019002 | Validating high throughput phenomics technologies for sugarcane clonal selection | C SRA | 270 |
| ANDATA | Statistical analysis of data | SRA | 127 |
| BIODTLY / BIODWFD | Development of resistant varieties | SRA | 627 |
| INNOV | Speed-based in vitro propagation of crossing progeny for rapid evaluation | SRA | 38 |
| PLANBKN / PLANCF | Plant breeding – core selection | SRA | 6,249 |
### KFA1: Optimally-Adapted Varieties, Plant Breeding and Release (Continued)

<table>
<thead>
<tr>
<th>PROJECT NO.</th>
<th>DESCRIPTION</th>
<th>PROJECT TYPE</th>
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</thead>
<tbody>
<tr>
<td>PLANCRD</td>
<td>Plant breeding – crossing.</td>
<td>SRA</td>
<td>640</td>
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<tr>
<td>PLANDNA</td>
<td>Molecular Selection.</td>
<td>SRA</td>
<td>331</td>
</tr>
<tr>
<td>PLANGEN</td>
<td>Plant breeding – introgression.</td>
<td>SRA</td>
<td>351</td>
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<tr>
<td>PLANINT</td>
<td>Plant breeding – integrated database and crossing systems.</td>
<td>SRA</td>
<td>131</td>
</tr>
<tr>
<td>PLANLAB</td>
<td>Laboratory.</td>
<td>SRA</td>
<td>49</td>
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<td>PLANCRT</td>
<td>Breeding management.</td>
<td>SRA</td>
<td>530</td>
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<tr>
<td>PLANTCR</td>
<td>Plant Breeder’s Rights.</td>
<td>SRA</td>
<td>53</td>
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<tr>
<td>PLANCQS</td>
<td>QCANESelect Support.</td>
<td>SRA</td>
<td>29</td>
</tr>
<tr>
<td>PLANSPE</td>
<td>Spectracane Support.</td>
<td>SRA</td>
<td>214</td>
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<tr>
<td>PLANPRT</td>
<td>Variety Propagation and Distribution.</td>
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<td>697</td>
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<td><strong>Total Investment KFA1</strong></td>
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### KFA2: Soil Health, Nutrient Management and Environmental Sustainability

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>2015065</td>
<td>Improving nitrogen-use efficiency for sugarcane crops with constrained yield potential</td>
<td>C SRA</td>
<td>63</td>
</tr>
<tr>
<td>2015907</td>
<td>More profit from nitrogen enhancing the nutrient use efficiency on intensive cropping and pasture systems.</td>
<td>C Ext</td>
<td>47</td>
</tr>
<tr>
<td>2016804</td>
<td>Complete nutrient management planning for cane farming.</td>
<td>CRP</td>
<td>9</td>
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<tr>
<td>2016805</td>
<td>Improved water quality outcomes from on-farm nitrogen management.</td>
<td>CRP</td>
<td>31</td>
</tr>
<tr>
<td>2016807</td>
<td>Beef Trust 4 – cane farmer trials of enhanced efficiency fertiliser in the catchments of the Great Barrier Reef</td>
<td>CRP</td>
<td>1,399</td>
</tr>
<tr>
<td>2017004 / 2017805</td>
<td>SIX EASY STEPS – continuing perspectives in time and space.</td>
<td>CRP</td>
<td>1,087</td>
</tr>
<tr>
<td>2017005</td>
<td>Measuring soil health, setting benchmarks and driving practice change in the sugar industry.</td>
<td>C SRA</td>
<td>679</td>
</tr>
<tr>
<td>2017009</td>
<td>Unravelling the impact of climate and harvest time on nitrogen fertiliser requirements.</td>
<td>C SRA</td>
<td>384</td>
</tr>
<tr>
<td>2018003</td>
<td>Implementation of root system diagnostics to deliver a field-based measure for root health.</td>
<td>C Ext</td>
<td>247</td>
</tr>
<tr>
<td>2018007</td>
<td>Greenhouse gas emissions from sugarcane soils: strategies for increasing nitrogen use efficiency and reducing environmental pollution.</td>
<td>C Ext</td>
<td>282</td>
</tr>
<tr>
<td>2018008</td>
<td>Establishing sugarcane farming systems to improve soil health.</td>
<td>C SRA</td>
<td>288</td>
</tr>
<tr>
<td>2018013</td>
<td>SIX EASY STEPS Tool Box.</td>
<td>C SRA</td>
<td>146</td>
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<td><strong>Total Investment KFA2</strong></td>
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### KFA3: Pest, Disease and Weed Management

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<tr>
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<th>PROJECT TYPE</th>
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<tbody>
<tr>
<td>2014049</td>
<td>Solving YCS.</td>
<td>C SRA</td>
<td>622</td>
</tr>
<tr>
<td>2015804</td>
<td>Soldier fly management.</td>
<td>CRP</td>
<td>105</td>
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<tr>
<td>2015812</td>
<td>YCS screening.</td>
<td>CRP</td>
<td>7</td>
</tr>
<tr>
<td>2016003</td>
<td>Identifying new-generation insecticides for cane grub control as contingency for loss of amenity with the existing product.</td>
<td>C SRA</td>
<td>377</td>
</tr>
<tr>
<td>2016064 / 2016806</td>
<td>Investigation of biotic causes of YCS.</td>
<td>CRP</td>
<td>310</td>
</tr>
<tr>
<td>2017008</td>
<td>Keeping chemicals in their place – in the field.</td>
<td>C SRA</td>
<td>339</td>
</tr>
<tr>
<td>2017010</td>
<td>Delivering solutions for chlorotic streak disease.</td>
<td>C SRA</td>
<td>78</td>
</tr>
<tr>
<td>2017808</td>
<td>Feeding behaviour of Soldier fly.</td>
<td>CRP</td>
<td>92</td>
</tr>
<tr>
<td>2017809</td>
<td>Modern diagnostics for a safer Australian sugar industry.</td>
<td>CRP</td>
<td>310</td>
</tr>
<tr>
<td>2017902</td>
<td>Improving plant pest management through cross-industry deployment of smart sensors, diagnostics and forecasting.</td>
<td>C Ext</td>
<td>205</td>
</tr>
<tr>
<td>2018009</td>
<td>Development of commercial molecular biological assays for improved sugarcane soil health and productivity.</td>
<td>C SRA</td>
<td>186</td>
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<tr>
<td>2018010</td>
<td>Moth Boxers – how are we going to manage them when they arrive?</td>
<td>C SRA</td>
<td>140</td>
</tr>
<tr>
<td>2019003</td>
<td>Ratoon stunting disease (RSD) detection at the factory – disease detection blueprint.</td>
<td>C SRA</td>
<td>178</td>
</tr>
<tr>
<td>BIOBIO5</td>
<td>Development for an improved commercial assay for ratoon stunting disease (RSD).</td>
<td>SRA</td>
<td>8</td>
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<tr>
<td>BIOBIO6</td>
<td>Biosecurity entomology.</td>
<td>SRA</td>
<td>22</td>
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<td>BIOBIO7</td>
<td>Biosecurity pathology.</td>
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<td>367</td>
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<tr>
<td>BIOBIO8</td>
<td>Quarantine pathology.</td>
<td>SRA</td>
<td>258</td>
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<tr>
<td>BIOBIO9</td>
<td>RSD laboratory.</td>
<td>SRA</td>
<td>219</td>
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<tr>
<td>BIOBIO10</td>
<td>Soil pathogen laboratory.</td>
<td>SRA</td>
<td>303</td>
</tr>
<tr>
<td>INNOVA3</td>
<td>Develop a methodology to screen cane varieties for their tolerance to pre-emergence herbicides.</td>
<td>SRA</td>
<td>16</td>
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<tr>
<td>INNOVA4</td>
<td>Integrated solution for ‘on farm’ pathogen detection for sugarcane diseases.</td>
<td>SRA</td>
<td>14</td>
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<tr>
<td>PHEAMGT</td>
<td>Plant health management.</td>
<td>SRA</td>
<td>253</td>
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<td><strong>Total Investment KFA3</strong></td>
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<td><strong>4,200</strong></td>
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</table>
KFA4: Farming Systems and Harvesting

<table>
<thead>
<tr>
<th>PROJECT NO.</th>
<th>DESCRIPTION</th>
<th>PROJECT TYPE</th>
<th>2019/20 $K</th>
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<tbody>
<tr>
<td>2014048</td>
<td>Increased harvest recovery: reducing sugar loss and stool damage.</td>
<td>C SRA</td>
<td>240</td>
</tr>
<tr>
<td>2015007</td>
<td>Assessment of new management strategies and varieties for marginal soils.</td>
<td>C SRA</td>
<td>252</td>
</tr>
<tr>
<td>2016062</td>
<td>Remote sensing platform for precision agriculture.</td>
<td>C Ext</td>
<td>130</td>
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<tr>
<td>2016952</td>
<td>Understanding interactions between basecutters and other forward-feed components with the cane stalk, and determining practical strategies to minimise damage as harvester speed increases.</td>
<td>C Ext</td>
<td>295</td>
</tr>
<tr>
<td>2017012</td>
<td>Southern sugar solutions.</td>
<td>C Ext</td>
<td>162</td>
</tr>
<tr>
<td>2017014</td>
<td>Seeing is believing: managing soil variability, improving crop yield and minimising off-site impacts in sugarcane using digital soil mapping.</td>
<td>C Ext</td>
<td>204</td>
</tr>
<tr>
<td>2019004</td>
<td>Harvest losses assessment by real-time Machine Vision Systems.</td>
<td>C Ext</td>
<td>61</td>
</tr>
<tr>
<td>AGROMGT</td>
<td>Agronomy Management.</td>
<td>SRA</td>
<td>28</td>
</tr>
<tr>
<td>INNOVATE</td>
<td>Leveling paddocks while maintaining permanent beds.</td>
<td>SRA</td>
<td>22</td>
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</table>

Total Investment KFA4 1,296

KFA5: Milling Efficiency and Technology

<table>
<thead>
<tr>
<th>PROJECT NO.</th>
<th>DESCRIPTION</th>
<th>PROJECT TYPE</th>
<th>2019/20 $K</th>
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</thead>
<tbody>
<tr>
<td>20150113</td>
<td>Investigation into modifying pan boiling techniques to improve sugar quality.</td>
<td>C Ext</td>
<td>192</td>
</tr>
<tr>
<td>2016019</td>
<td>Developing online analytics systems to measure the available nutrients in mill mud.</td>
<td>C SRA</td>
<td>298</td>
</tr>
<tr>
<td>2016020</td>
<td>Reducing boiler maintenance costs and deferring capital expenditure through improved technology.</td>
<td>C Ext</td>
<td>19</td>
</tr>
<tr>
<td>2017006</td>
<td>Managing aspects of raw sugar quality in the Australian sugar industry – Part I.</td>
<td>C Ext</td>
<td>249</td>
</tr>
<tr>
<td>2017007</td>
<td>Investigations to mitigate the effects of sucrose degradation and acid formation in factory evaporators on sugar recovery and quality, corrosion and effluent loadings.</td>
<td>C Ext</td>
<td>131</td>
</tr>
<tr>
<td>2018012</td>
<td>Pan design and operational changes to suit Australian pan stages operating on low pressure vapour.</td>
<td>C Ext</td>
<td>189</td>
</tr>
<tr>
<td>2019005</td>
<td>Improved strategies to process soft canes.</td>
<td>C Ext</td>
<td>199</td>
</tr>
<tr>
<td>2019006</td>
<td>Australian Sugar Industry Training – Development of factory training modules – Phase 2.</td>
<td>C Ext</td>
<td>154</td>
</tr>
<tr>
<td>2019201</td>
<td>Falling film evaporators.</td>
<td>C Ext</td>
<td>50</td>
</tr>
<tr>
<td>2019202</td>
<td>Fixed element crystalliser.</td>
<td>C Ext</td>
<td>50</td>
</tr>
<tr>
<td>2019203</td>
<td>Cleated belts.</td>
<td>C Ext</td>
<td>29</td>
</tr>
<tr>
<td>2019204</td>
<td>Surging in shredders.</td>
<td>C Ext</td>
<td>19</td>
</tr>
<tr>
<td>NIRDMLR</td>
<td>NIR at Meringa.</td>
<td>SRA</td>
<td>109</td>
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<tr>
<td>PLANCAS</td>
<td>CAS Service and Support.</td>
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<td>304</td>
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Total Investment KFA5 1,932

KFA6: Product Diversification and Value Addition

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<th>PROJECT TYPE</th>
<th>2019/20 $K</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014801</td>
<td>Australian Research Council (ARC) linkage project: manipulation of carbon partitioning to enhance the value of sugarcane.</td>
<td>CRP</td>
<td>9</td>
</tr>
<tr>
<td>2019902</td>
<td>Biorefineries for Profit – Phase 2.</td>
<td>C Ext</td>
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Total Investment KFA6 1,209

KFA7: Knowledge and Technology Transfer and Adoption

<table>
<thead>
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<th>DESCRIPTION</th>
<th>PROJECT TYPE</th>
<th>2019/20 $K</th>
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<tbody>
<tr>
<td>2016002</td>
<td>Protecting our chemicals for the future through accelerated adoption of best management practice.</td>
<td>C SRA</td>
<td>289</td>
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<tr>
<td>2017011</td>
<td>Productivity improvements through energy innovation in the Australian sugar industry.</td>
<td>C Ext</td>
<td>180</td>
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<tr>
<td>2017810</td>
<td>Pathways to water quality improvements in the Myrtle Creek sub-catchment.</td>
<td>CRP</td>
<td>154</td>
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<tr>
<td>2018803</td>
<td>Care to Creep 2.G.</td>
<td>CRP</td>
<td>660</td>
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<tr>
<td>2018804</td>
<td>Pilot Agricultural Extension Work Placement Program.</td>
<td>CRP</td>
<td>22</td>
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<tr>
<td>COMPRAGTS</td>
<td>SRA communications, marketing and graphic design.</td>
<td>SRA</td>
<td>643</td>
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<tr>
<td>EXTREME</td>
<td>Executive management – research adoption.</td>
<td>SRA</td>
<td>426</td>
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<tr>
<td>PRECCOMM</td>
<td>Research adoption – non-project related.</td>
<td>SRA</td>
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Total Investment KFA7 6,338

KFA8: Collaboration and Capability Development

<table>
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<th>DESCRIPTION</th>
<th>PROJECT TYPE</th>
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<tbody>
<tr>
<td>2007003</td>
<td>Collaboration, cross-sectoral and industry good investment.</td>
<td>C Ext</td>
<td>436</td>
</tr>
<tr>
<td>2013900</td>
<td>Contribution to Council of Rural Research and Development Corporations (CRRDC).</td>
<td>C Ext</td>
<td>30</td>
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<tr>
<td>2014200</td>
<td>Research workshops.</td>
<td>C SRA</td>
<td>433</td>
</tr>
<tr>
<td>2014201</td>
<td>Board approved uncontracted 2019/20 capability investment.</td>
<td>C Ext / SRA</td>
<td>254</td>
</tr>
<tr>
<td>2014101</td>
<td>PhD Scholarship: Combining controlled-release and nitrification inhibitor properties to deliver improved fertiliser nitrogen use efficiency in high-risk environments.</td>
<td>C Ext</td>
<td>30</td>
</tr>
<tr>
<td>2016102</td>
<td>PhD Scholarship: Development and modelling of novel controlled-release fertilisers for improved nutrient delivery.</td>
<td>C Ext</td>
<td>30</td>
</tr>
<tr>
<td>2017013</td>
<td>Integrated standardised competency-based training for sugar milling operations.</td>
<td>C Ext</td>
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</tr>
<tr>
<td>2017014</td>
<td>PhD Scholarship: Re-evaluating the biology of the sugarcane root system: new knowledge allows for assessment of production impacts and implications for yield decline.</td>
<td>C Ext</td>
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</tr>
<tr>
<td>2017102</td>
<td>PhD Scholarship: Microwave sensors for sugarcane sugar analysis.</td>
<td>C Ext</td>
<td>30</td>
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<tr>
<td>2017402</td>
<td>Early Career/PhD Career Research Award.</td>
<td>C SRA</td>
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</table>
## KFA8: COLLABORATION AND CAPABILITY DEVELOPMENT (CONTINUED)

<table>
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<th>DESCRIPTION</th>
<th>PROJECT TYPE</th>
<th>2019/20 $K</th>
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<tbody>
<tr>
<td>2018015</td>
<td>Sugar Milling R&amp;D Capability Building Program.</td>
<td>C Ext</td>
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<tr>
<td>2018101</td>
<td>Scholarship: New approaches to quantifying nitrogen fluxes in enhanced efficiency fertilisers in Australian sugarcane soils.</td>
<td>C Ext</td>
<td>31</td>
</tr>
<tr>
<td>2018102</td>
<td>Scholarship: Characterising nitrogen use efficiency in sugarcane.</td>
<td>C Ext</td>
<td>31</td>
</tr>
<tr>
<td>2018506</td>
<td>Sugar Travel and Learning Awards.</td>
<td>C Ext</td>
<td>3</td>
</tr>
<tr>
<td>2018401</td>
<td>Research Award: Reducing basecutter cane loss and extending the wear life of basecutter blades through innovative hardfacing techniques.</td>
<td>C Ext</td>
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</tr>
<tr>
<td>2018402</td>
<td>Research Award: Developing a marker system to measure dosage of alleles for use as a selection tool in the sugarcane breeding program.</td>
<td>C Ext</td>
<td>4</td>
</tr>
<tr>
<td>2018500</td>
<td>NextCrop industry leadership development program.</td>
<td>C Ext</td>
<td>225</td>
</tr>
<tr>
<td>2018501</td>
<td>Building a sugarcane industry economic model to quantify and prioritise global trade policy and market access initiatives for the Australian sugarcane industry.</td>
<td>C Ext</td>
<td>193</td>
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Total Investment KFA8: 1,931

## KFA9: ORGANISATIONAL EFFECTIVENESS

<table>
<thead>
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<th>PROJECT NO.</th>
<th>DESCRIPTION</th>
<th>PROJECT TYPE</th>
<th>2019/20 $K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Various</td>
<td>Research funding management, research stations and resources.</td>
<td>SRA</td>
<td>4,790</td>
</tr>
<tr>
<td>Various</td>
<td>Board and investor relations.</td>
<td>SRA</td>
<td>1,500</td>
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<tr>
<td>Various</td>
<td>Corporate Support.</td>
<td>SRA</td>
<td>2,908</td>
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Total Investment KFA9: 8,798

## ATTACHMENT 3

### ABBREVIATIONS AND ACRONYMS

- AOP: Annual Operational Plan
- ARC: Australian Research Council
- BAS: Bagasse NIR systems
- BoM: Bureau of Meteorology
- C Ext: R&D contestable - externally won
- C SRA: R&D contestable - internally won
- CAS: Cane NIR Systems
- CCS: Commercial cane sugar
- CEO: Chief Executive Officer
- CRC: Cooperative Research Centre
- CRP: Collaborative research project
- CRCDC: Council of Rural Research and Development Corporations
- CSIRO: Commonwealth Scientific and Industrial Research Organisation
- Cth: Commonwealth
- DNA: Decoxygenibiotic acid
- EEF: Enhanced efficiency fertiliser
- FAT: Final assessment trial
- GHG: Greenhouse gases
- HBP: Harvesting Best Practice
- HR: Human resources
- IP: Intellectual property
- IT: Information technology
- K: Thousand
- KFA: Key focus areas
- KPIs: Key performance indicators
- LSB: Leaf sheath biopsy
- M: Million
- MoU: Memorandum of Understanding
- NIR: Near infra-red
- NRM: Natural resource management
- NSW: New South Wales
- PNG: Papua New Guinea
- PBR: Plant Breeder’s Rights
- PhD: Doctor of Philosophy
- PCR: Polymerase chain reaction
- qPCR: Quantitative polymerase chain reaction
- QLD: Queensland
- QUT: Queensland University of Technology
- R&D: Research and development
- RDAs: Research and development corporations
- RD&A: Research, development and adoption
- RD&E: Research, development and extension
- RFP: Research Funding Panel
- RFU: Research Funding Unit
- RSD: Ratoon Stunting disease
- SCHLOT: Sugarcane Harvesting Logistics Optimisation Tool
- SMRP: Small Milling Research Program
- SNP: Single nucleotide polymorphism
- SRA: Sugar Research Australia Limited
- STLA: Sugar Industry Travel and Learning Award
- SAS: Sugar NIR Systems
- SSMV: Sugarcane Streak Mosaic Virus
- UAV: Unmanned aerial vehicle
- YCS: Yellow canopy syndrome