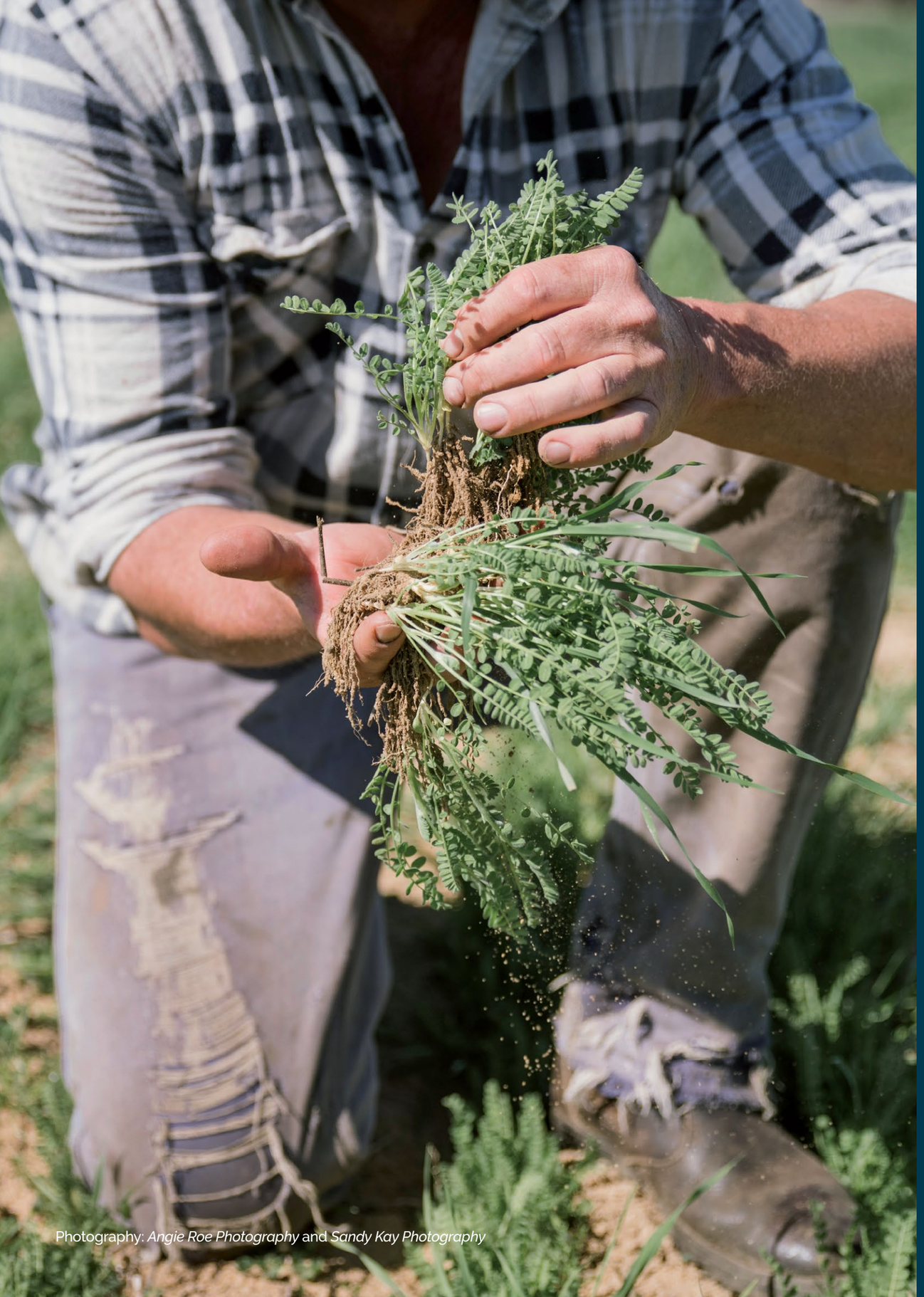
SOiL CRC

Performance through collaboration

ANNUAL REPORT

2019

CRC FOR HIGH
PERFORMANCE SOILS LIMITED
ABN 63 618 897 224



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ABOUT THE SOIL CRC

The Cooperative Research Centre for High Performance Soils (the Soil CRC) was established in 2017 to give farmers the knowledge and tools they need to improve their soil management.

It bridges the gap between soil science and farm management, bringing together scientists, industry and farmers to find practical solutions for improving the performance and productivity of Australia's soil.

This enables farmers to optimise their productivity, yield and profitability, and ensure the long-term sustainability of their farming businesses.

Through its soil research and innovation program, the Soil CRC is developing new solutions that are unlocking the full potential of Australia's agricultural sector.

The Soil CRC is the biggest collaborative soil research effort in Australia's history.

PARTICIPANTS

- **4** STATE GOVERNMENT AGENCIES
- **8** UNIVERSITIES
- **8** INDUSTRY PARTNERS
- **20** FARMER GROUPS

2019 IN REVIEW

- **$39.5 million** Australian Government investment
- **$127 million** cash and in-kind industry support
- **10** Years funding
- **$14.5 million** committed to new projects
- **4 programs**
- **24 new projects** approved
- **32** Milestones achieved to date

MAJOR PARTNERS

The University of Newcastle Australia
Charles Sturt University
NSW Government Department of Primary Industries
Federation University Australia
Griffith University
Manaaki Whenua Landcare Research
Murdoch University
SAGIT
Southern Cross University
University of Southern Queensland
University of Tasmania

PARTNERS

Agriculture Victoria
aora australian organics recycling association
BCG Shared Solutions
Facey Group Shaping the Future
North Central Catchment Management Authority Connecting Rivers, Landscapes, People
NSW EPA
Government of South Australia Primary Industries and Regions SA
SoilsForLife An Outcomes Australia Project
South East Water
wantfa
Wimmera CMA

ASSOCIATES

Burdekin Productivity Services Sustainability
Corrigin Farm Improvement Group
CWFS Central West Farming Systems
EPARF Eyre Peninsula Agricultural Research Foundation Inc.
FarmLink change · adapt · prosper
Gillamii Centre Sustainable Agriculture In Practice
HART
HCPSL Herbert Cane Productivity Services Ltd.
Holbrook Landcare Network
Landmark
Liebe Group Working together in Agriculture
Mallee Sustainable Farming
MFMG www.mackillopgroup.com.au
RiverinePlains
SPAA Society of Precision Agriculture Australia
SFS Southern Farming Systems
West Midlands Group
wheatbelt natural resource management

CHAIR'S REVIEW

Soil is very much on the national policy agenda this year.

The Cooperative Research Centre for High Performance Soils (the Soil CRC) has successfully completed its second full year of operations. In its first year, 2017–18, we laid down solid foundations to ensure the delivery of our agreed research milestones. More broadly, we are positioned to deliver on the promise to increase the productivity and profitability of Australian agriculture through quality, relevant and farmer-led research.

In our second year, just completed, we have progressed to full implementation with a large portfolio of research projects and activities now underway, involving participants from across Australia.

The inaugural Soil CRC Participants Conference signalled the end of the start-up phase and the transition into the delivery phase of the CRC. Held in Newcastle, NSW in April, the Conference was the highlight of 2018–19 and was a tremendous success.

Seeing so many of our participant organisations represented at the conference was very encouraging. The collaboration and shared desire amongst all participants to use the knowledge, experience and expertise within the Soil CRC to its fullest extent is why I believe the CRC is on track to succeed.

In 2020, we plan to extend the conference to open it to all those who have an interest in the work of the Soil CRC. We anticipate it will be an equally great time to share knowledge, collaborate and solidify our connections amongst the Soil CRC partner organisations and beyond.

We continue to focus on this concept of meaningful engagement between researchers and end-users; it is a cornerstone of the Soil CRC. Our Strategic Plan, developed by the Board at the recent Strategic Planning workshop, reflects this concept. It outlines our organisational priorities for the next four years and gives direction to the staff and participants in the CRC.

I was heartened to see that soil is very much on the national policy agenda this year, with the Prime Minister acknowledging that soil health is so important that he is reappointing Major General Michael Jeffery as the National Soils Advocate. We look forward to working with General Jeffery again in the coming year in his role as Patron of the Soil CRC, which neatly complements his National Soils Advocate role.

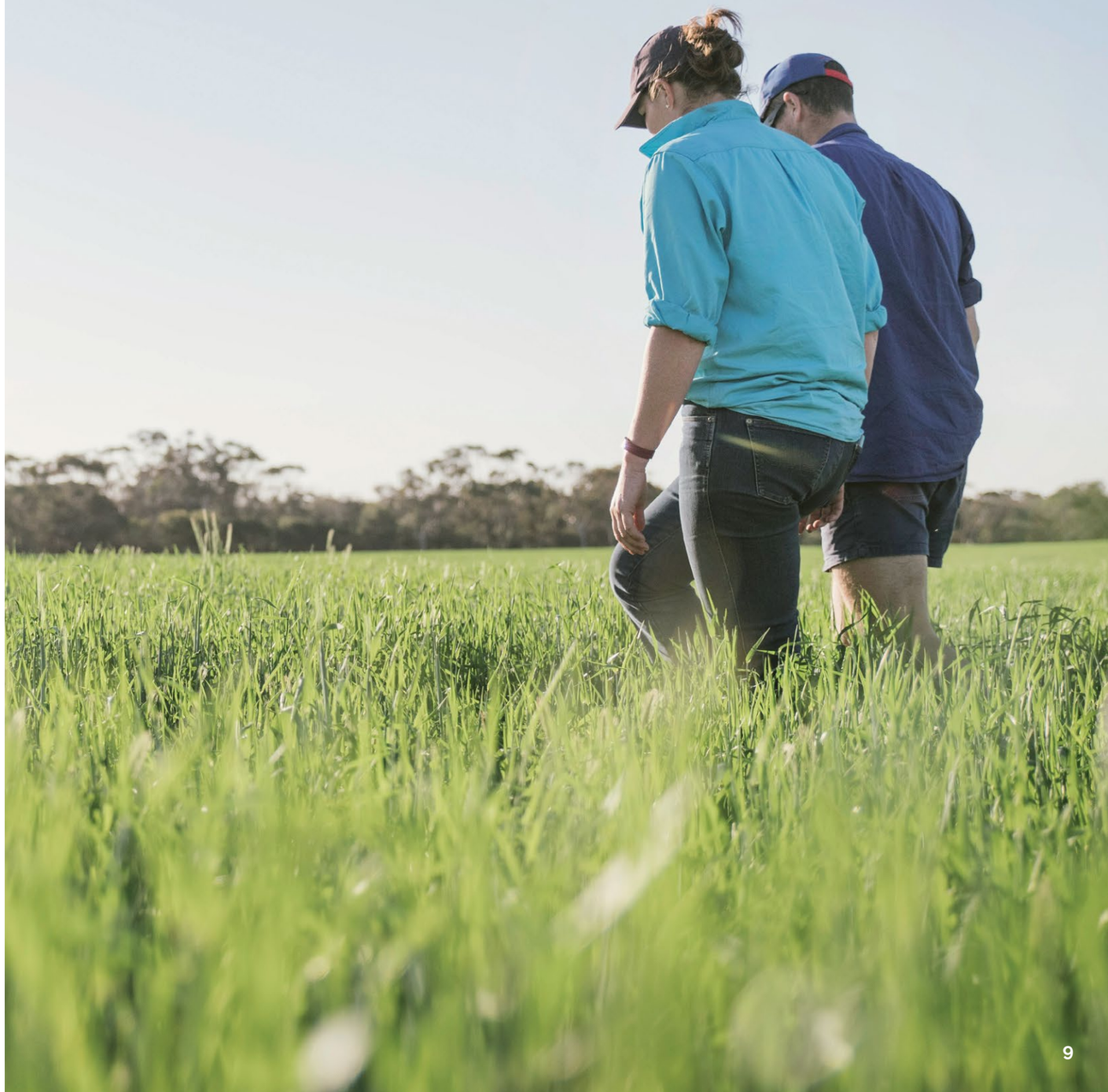
One of the emerging challenges for a number of the Soil CRC participants is how to achieve soil improvements in changing and increasingly difficult climatic conditions, including the current ongoing and expanding drought affecting many parts of Australia. These issues are at the forefront of the research of the CRC. Part of the challenge will be to reinforce and educate the broader community on the value of improved soils.

We are facing great challenges, but I believe the Soil CRC is well placed to face some of these head on and make significant steps forward for Australia's soils and agriculture.

In conclusion, I would like to extend my gratitude and thanks to the members of the Board for the valuable contributions they have made again this year.

On behalf of the Board, I would also like to thank all the participants and staff of the Soil CRC for their efforts and work to make the CRC an effective and relevant centre for soil research.

Dr Paul Greenfield AO FTSE
Chair, Soil CRC



CHIEF EXECUTIVE OFFICER'S REPORT

It all starts with the soil.

The stated aim of the National Farmers' Federation is that the value of Australian agriculture will reach $100 billion per year by 2030. Many factors will influence the ability of Australia's agriculture sector to achieve that target, including market access, labour, capital, value adding, transport and logistics, biosecurity, genetics, agtech, automation and robotics, irrigation, and crucially, soil management.

Everyone involved and invested in agriculture understands the importance of the soil resource in the agricultural value chain. It all starts with the soil. If we are to grow more crops and produce more livestock through pastures and other feed sources, then it all starts with the soil.

This reality is now being recognised more and more by others, both at a community and consumer level, and at a political and industry level.

The Soil CRC plays an important role in leading and contributing to Australia's research effort in soil management and in agriculture. It brings together 40 organisations from across Australia to collaborate in undertaking and delivering research that will give farmers the tools and knowledge to better manage their soils and improve their productivity and profitability.

After focussing on establishing the Soil CRC in 2017–18, our second year has seen us transition into a fully operating CRC. We no longer need to talk about what we are going to do; we can talk about what we are doing.

During 2018–19, the Board approved 24 projects and allocated over $14 million to new projects. These projects were developed by collaborative teams drawing on contributions from research, industry and farmer groups. They all involve multiple partners and many of them involve field trials or some other form of partnership with farmers.

Many of these projects have now commenced and they promise to deliver some potentially exciting outcomes that will help to transform the way farmers manage their soils across the country.

As mentioned in the Chair's Review, a key milestone in the evolution of the Soil CRC was the inaugural Soil CRC Participants Conference, held in Newcastle in April 2019. For the first time, we were able to bring together over 100 people involved in our CRC from all across Australia—researchers, advisers, students, farmer groups and more. It was inspiring to see the energy and enthusiasm that was generated as people were able to meet each other and exchange perspectives and ideas. It is these types of interactions that lay the foundations for productive collaborative relationships in future years, thus fuelling the success of the Soil CRC.

Once again, I acknowledge and thank the Soil CRC's Board of Directors, chaired by Dr Paul Greenfield, for their support and guidance, both to me and to our CRC.

Our Patron, Major General the Honourable Michael Jeffery was again vigorous in his support for the Soil CRC, and I congratulate him on being reappointed by the Prime Minister as the National Soils Advocate.

Our four Program Leaders—Catherine, Richard, Nanthi and Lukas—continue to assist me to set and implement the research direction of the Soil CRC. I thank them for their program leadership and acknowledge their organisations for their valued contributions.

Finally, I would like to thank the staff—Jodi, Mark, Katherine, Millicent, Jessie and Kathy—for their professional, proactive and instrumental contribution to the establishment and progress of the Soil CRC.

I commend this annual report to you as a formal record of our second year.

Dr Michael Crawford
Chief Executive Officer, Soil CRC

EXECUTIVE SUMMARY

ACHIEVEMENTS

- **The Soil CRC was officially launched on 2 August 2018** by Senator the Hon. Zed Seselja, Assistant Minister for Science, Jobs and Innovation, at The University of Newcastle. Other speakers included the Vice Chancellor of The University of Newcastle, Professor Caroline McMillen, the Soil CRC Patron, Major General Michael Jeffery, the Chair of the Soil CRC, Dr Paul Greenfield and the CEO, Dr Michael Crawford. There were over 50 attendees from across universities, government agencies, industry and farmer groups.
- The inaugural Soil CRC **Participants Conference** was held in Newcastle, NSW in April 2019. There were **110 attendees**, with good representation from students and participant farmer groups. It was a valuable time for connecting all sectors of our participant organisations. The relationships formed from the conference will build the Soil CRC to be a strong, collaborative research centre over the next eight years.
- A new participant joined the Soil CRC. **The NSW Environment Protection Agency (EPA) signed on as a partner** in April 2019. The EPA is the primary environmental regulator for NSW and brings knowledge and experience that will enrich our research projects. Its interests are highly aligned with the CRC's outputs around the development of new products for soil fertility and function.
- **The first four research projects were delivered.** These projects received co-funding from the NSW Government's Research Attraction and Acceleration Program (RAAP) and were delivered by our NSW university partners. Through these projects, the first five Soil CRC funded project staff were appointed.
- **24 new projects were approved** by the Soil CRC Board at its August 2018 and January 2019 meetings, bringing the total number of approved Soil CRC projects to 36. The majority of these projects commenced in 2018–19, with the remaining few commencing in the early part of 2019–20. **The CRC has now allocated over $14.5 million of cash resources to projects.**
- We commenced **building technical capacity for improved soil management.** The Soil CRC was awarded funding in May 2019 by the Australian Government through its Natural Resources Trust Fund. The funding will allow us to deliver workshops over the next two years targeting farmer groups and natural resource management groups to help them build their soil technical knowledge, and in turn, their capacity to deliver soil knowledge to farmers.
- The Soil CRC **Research and Adoption Committee (RAC) was established**, replacing the interim Research and Adoption Panel. The RAC is chaired by Professor Roger Swift, an internationally recognised soil scientist and Soil CRC Independent Director, and its membership brings expertise in both science and farming, ensuring that end-users are represented.
- The Soil CRC **Project Management System, 'SoilCentral' was launched**. This system has revolutionised the project proposal submission process by enabling online submissions. It is being further enhanced to support ongoing project management by Soil CRC administration staff, Program Leaders and Project Leaders.
- The inaugural **Annual General Meeting (AGM) and Participants Meeting were held** on 21 November 2018 in Canberra, coinciding with the National Soils Conference. Annual and Financial Reports were presented, and **Dr Paul Greenfield was appointed as inaugural Chair of the Soil CRC**.
- **All Major Partners** of the Soil CRC were admitted as **'Members' of the Soil CRC Company**, consistent with the process outlined in the Constitution.

RISKS AND IMPEDIMENTS

The Soil CRC Audit and Risk Management Committee (ARMC) actively uses a Risk Register for the management and reporting of risks. The ARMC was satisfied with the Items in the Risk Register, and found the risks identified to be managed acceptably. The Risk Register is formally reviewed each quarter or as required in the event of an unexpected event, none of which have occurred during the year.

A review of the risks in the Soil CRC computer systems and applications commenced, with an independent IT specialist reviewing and reporting on the risks. The independent review has been completed and the CRC management has implemented an action plan to manage disruption.

A review of the Soil CRC Intellectual Property (IP) and Management System commenced to safeguard protection of IP; and staff training is planned to ensure skill sets can manage IP as it is used and created within the CRC.

The ongoing and expanding drought in many parts of Australia in 2019 potentially affects the Soil CRC in two ways. Firstly, there is a likelihood that some field experiments may be impacted by a lack of rain and thus not yield meaningful results. However, this risk is somewhat mitigated by the broad distribution of field sites across Australia, meaning that not all sites will be significantly affected.

Secondly, there is a likelihood that some farmer group participants are more focussed on the important short-term priority of helping their members cope with the drought. We continue to work closely with our farmer group participants to identify how the work of the CRC can assist in this outcome in both the short and long-term.

A variation to the Commonwealth Funding Agreement was executed on 13 August 2018. This covered the situation that occurred during the establishment of the Soil CRC—where four organisations did not proceed with their commitment and another organisation was admitted as a participant—as well as incorporating various minor changes to reflect changes in government procedures.

The CRC is now managing the commitments to the variation without impediment with the one exception of in-kind committed contributions. The CRC has not met its in-kind contributions as committed, but given the CRC life cycle and the awarding of 24 major projects that contain significant in-kind contributions, the CRC is confident that it will catch up on the committed contributions in coming years.

The Soil CRC was fully compliant in its management and governance of the CRC including the Soil CRC Constitution, the Commonwealth Funding Agreement, the Participant Agreements and all relevant laws and regulations.

Work continued on developing and approving a range of policies and procedures to ensure consistency, transparency, integrity and good governance in all aspects of the Soil CRC's business.

PERFORMANCE AGAINST ACTIVITIES

RESEARCH

The Soil CRC is committed to increasing the productivity and profitability of Australian farmers by providing them with the knowledge and tools to improve the performance of their soils.

In our second year, we made further progress towards reaching this objective.

Four projects with additional funding through the NSW Department of Industry's Research Attraction and Acceleration Program (RAAP) were completed, taking the total completed projects to 12. Twenty-four new projects were approved for funding, with the majority commencing during the year. A specific call for PhD Scholarships was released at the end of the reporting period. These proposals will be assessed by the Research and Adoption Committee and submitted to the Board for approval early in 2019–20.

The Soil CRC is currently on track to meet all research output targets, with six of the seven milestones due for completion during 2018–19 being achieved on time. One milestone is partially completed and has been delayed by six months. The CRC has now completed 20 milestones successfully, and has commenced activities in another 32 milestones during the year.

The Soil CRC will undertake a review of all milestones within the next 12 to 24 months and there may be changes proposed for future research directions diverging from the initial outputs and milestones that were identified in the CRC's application in 2016–17.

The high levels of industry and participant involvement in the Soil CRC research continued during the year. The ratio of participant in-kind contributions to CRC cash committed to the 24 projects averaged at 2.0. The Research and Adoption Committee takes into account the level of in-kind contribution committed by participants when recommending proposals to the Board for funding.

Now that many projects are underway, project progress is being closely monitored via the following mechanisms:

- Implementation of the online project management system, SoilCentral.
- Submission and assessment of quarterly project reports from project leaders.
- Monthly meetings between the CEO, four Program Leaders and the Operations Manager.
- Oversight of project investments and progress by the Research and Adoption Committee.
- Initiation of targeted reviews with a specific focus, such as intellectual property and commercialisation.
- Implementation of gate reviews on projects deemed high risk.
- Annual review of Soil CRC milestones.
- Regular reporting of research investments to the Soil CRC Board including project agreement execution status, project commencement and completion dates, PhD student progress, project quarterly report summaries and Soil CRC milestone reports.

The research activities of the Soil CRC are being delivered through four research programs:

PROGRAM 1:
Investing in high performance soils

Supporting farmers to maintain the long-term integrity and fertility of soils for future generations.

PROGRAM 2:
Soil performance metrics

Developing tools that allow farmers to monitor and assess the performance of their soils, and identify corrective action where needed.

PROGRAM 3:
New products to increase fertility and function

Developing a range of new products to better address challenges in soil management.

PROGRAM 4:
Integrated and precision soil management solutions

Synthesising our current understanding of soil science and how it should be applied to the key soil types across Australia.

PROGRAM 1

Investing in high performance soils

Associate Professor Catherine Allan
Charles Sturt University

Program 1 aims to help farmers achieve their soil stewardship and profitability goals through research in the disciplines of economics and social science.

Program 1 researchers are seeking ways for sustained soil stewardship to be financially and socially rewarded to enable long lasting and positive practice change. More than 40 economists, social scientists, extension practitioners, farming systems entrepreneurs and farm management experts are providing expertise to this program.

Collaboration continued to build in 2018–19, with a number of key networks formed among academics from different institutions and farmer groups.

All projects, which ranged from helping to design a comprehensive partnership package to understanding how to reward good soil management through property prices, relied heavily on the input of farmer groups.

Research

There were five active projects and two completed projects in 2018–19. Each active project built upon either the scoping studies completed in 2017–18 or the two Research Attraction and Adoption Program (RAAP) projects completed in December 2018. Activities within the projects contributed to meeting all three Soil CRC milestones due within 2018–19.

Market activation, adoption and innovation are the three focal areas for Program 1. The design of Program 1 projects consolidated and extended on all three of these focal areas.

The two completed RAAP funded projects were led by staff from Charles Sturt University. The **Innovation capability building project** had a particular focus on Small and Medium Enterprises, and in developing potential for innovation within them. The design of the next project and a new university level subject will continue to develop this innovation within the farmer groups and the individual farm businesses they in turn serve. The results from the **How better soil management could affect property prices** project identified that there is value in further pursuing hedonic pricing in relation to good soil stewardship, and provided an indication of how this might be possible.

The five active projects cover:

- Understanding and promoting good soil stewardship, including developing a clear definition of soil stewardship,
- Investigating what factors contribute to the adoption or otherwise of soil management practices,
- Understanding how farmers can be financially rewarded for managing their soil well, by collaborating with the finance, insurance and agricultural industries,
- Identifying current farming practices through surveying farmers, to help inform future Soil CRC projects and to monitor practice change over the period of the Soil CRC, and
- Building the long-term capability of farmers to lead the innovation process from ideation right through to adoption.

Collaborations continued across the program but specifically through integrating farmer group input into the design of questionnaires; and considering how collaboration with industry players who are not normally part of a soils research program, can be used to transform financial approaches to rewarding good soil stewardship. Underlying all this cross-disciplinary collaboration is the collaboration between researchers at different universities working within Program 1 projects.

All of the projects are ultimately aimed at increasing uptake by industry of the research outputs, through better understanding of the social, cultural and economic influences on that potential uptake. The written products provide new information for soil research and extension staff, including those operating within the umbrella of the Soil CRC.

PROGRAM 2

Soil performance metrics

Associate Professor Richard Doyle
University of Tasmania

Program 2 is developing tools that allow farmers to monitor and assess the performance of their soils and identify corrective action where needed.

This involves defining the key soil metrics along with both improving existing sensors and creating new sensors for farmers to measure soils on-farm in a cost-effective manner.

Many farmers express concern about the declining health of their soils, in particular the biological functionality. Program 2 is working on the calibration of existing mobile soil sensing technologies and traditional laboratory-based methods to assess more easily soil biological health in the field.

Researchers will also use data analytics and computer modelling to empower soil sensor data to deliver better decision-making tools for farmers. This will help make soil data more accessible and easier to use.

Several PhD students have started their research work within the program. These students will work across the range of outputs and milestones identified in Program 2. They will work with research teams across the partner universities while engaging with end-users to co-develop their ideas and research activities.

Research

Program 2 had four active projects and one completed RAAP funded project in the reporting period. The four active projects will be completed over the next two to four years. All second-year milestones were met.

The RAAP funded project examined soil health using the isotopic composition of soil nitrogen and carbon. The team examined the role of the isotopic ratios at two depths in 413 soil samples and found carbon isotopic ratios are strongly related to land use pressure with cropped soils having significantly higher ratios of ^{13}C to ^{12}C. In uncultivated soils, nitrogen isotopic ratios were influenced by climate (aridity), but this trend was less clear for cultivated soils due to modification of the natural mineralisation rate.

The four active projects cover:

- Visualising soil data—improving soil data availability and encouraging the generation of new research ideas, collaborations and investment, both locally and globally,
- Developing better measures for critical soil health indicators and testing and developing a wide range of soil sensor innovations,
- Working on several field-ready, affordable and lab-on-a-chip capable soil fertility sensing devices. These also involve efforts to develop a tactile, measuring and mapping ‘Smart Shovel’ to put robust, mobile soil sensing capability in farmers hands using tools with which they readily identify and utilise daily, and
- Working on making soil sensors smarter as they read field data and learn environmental trends and plant responses to derive wise farm management decision making.

PROGRAM 3

New products to increase fertility and function

Professor Nanthi Bolan
The University of Newcastle

Program 3 aims to develop a range of new fertilisers, soil amendments and delivery mechanisms for farmers to enhance the performance of their soils.

These products will harness conventional intervention approaches and introduce emerging technologies such as polymers, nanotechnology and biotechnology, as well as using innovative ways to recover and reuse nutrients from waste streams.

Program 3 is collaborating with external agencies at a project level in order to better coordinate overlapping research supported by these agencies. There is also a need to consider and address regulatory issues when developing projects to meet specific milestones. An example of this is waste-derived fertiliser products.

Three PhD students have been enrolled and two more students will be recruited as part of the six active projects.

The first field day was held at the Longwarry Wastewater Plant as part of the **Application of liquid biosolids** project. This was the first major public event conducted in which the Soil CRC is a partner. There were 100 participants with interests including water and sewage management, Landcare and farming.

Research

Six active projects and one completed RAAP were funded project in 2018–19. All second-year milestones, except one, were met for Program 3.

The RAAP-funded project focussed on unlocking soil nutrients. Soil samples were taken from 12 different sites representing different farming systems. All sites had a history of organic manure application including chicken litter and pig manure. Results revealed zones of highly localised phosphorous availability. High resolution techniques provided unique information relating to phosphorous availability in soils. The data will be used to identify biophysical processes to unlock nutrients in soil.

The six active projects cover:

- Identifying and preparing suitable nanomaterials to develop nano-nucleation and precipitation techniques for recovery of phosphorus from waste streams,
- Developing methods to modify natural clay-based materials as nanocarriers and identifying and characterising clay-based nanomaterials for encapsulating pesticides,
- Synthesising, identifying and characterising more than 70 organic substrates as microbial carriers,
- Completing a major field experiment examining the value of liquid injection of biosolids for improving soil structure, fertility and function,
- Addressing complex subsoil constraints through recent advances in chemical engineering and innovative organic based amendments, and
- Adding clay-based amendments to sandy soils to make step changes towards high performance sandy soils.

PROGRAM 4

Integrated and precision soil management solutions

Dr Lukas Van Zwieten
NSW Department of Primary Industries

Program 4 aims to achieve cost-effective and sustainable solutions to address complex soil problems.

This aim will be achieved through developing and testing technologies that optimise the functioning of the rhizosphere—the interface between plant roots and the soil. Primarily this will occur through new physicochemical methods to address complex and often multiple surface and sub-surface soil constraints. It will also be achieved through the development of new diagnostic frameworks; hybrid systems of machine learning and modelling; ground truthing, sensibility testing and improvement; and the development, deployment and evaluation of decision support tools.

Two PhD students and a post-doctoral researcher have been appointed.

Research

Program 4 had five active projects in the reporting period. Together, these projects directly engaged 10 farmer groups, two industry partners, three state agencies, one international research organisation and seven universities (totalling 23 collaborators).

The five active projects cover:

- Understanding the degradation rate of four persistent herbicides in order to better understand the role of herbicide residues on crop yield potential,
- Reviewing the science around soil constraints and developing model improvements to represent these constraints in order to build better decision support systems,
- Addressing complex soil constraints in a single application through combining different interventions,
- Determining soil health under environmental pressures of compaction and drought, and
- Identifying how crop rotations, cover crops and green manure crops might improve soil health and increase profitability for farmers.

Collaboration continues between research participants and industry and farmer group participants, through meetings and workshops. Farmer groups have been engaged in field trial design, sampling, site management and interpretation of results. Some field trials will also be an important resource for PhD students.

Planning workshops held as part of the Soil CRC Conference in April provided opportunities to co-design field and experimental work. This resulted in farmer group collaborators establishing five long-term field sites. These field sites will evaluate the role of rhizosphere re-engineering in developing soil health and productivity.

SOIL CRC PROJECTS 2018–19

PROGRAM 1

Project ID	Title	Project Leader	Lead Partner	Partners	Start	Finish
1.1.002	How better soil management could affect property prices (RAAP)	Mark Morrison	CSU	UTas, UON	2018	2018
1.1.003	Understanding and promoting good soil stewardship	Mark Morrison	CSU	UTas	2018	2021
1.2.002	Why soil management practices are adopted	Vaughan Higgins	UTas	CSU, USQ, WANTFA, MFMG, BCG, RPI, CWFS, EPARF	2019	2021
1.2.003	Collaborative approaches to innovation	Nick Pawsey	CSU	FedUni, Murdoch, USQ, UTas	2019	2020
1.2.004	Surveying on farm practices	Hanabeth Luke	SCU	CSU, NC CMA, NSW DPI, WANTFA, PIRSA	2019	2021
1.4.001	Innovation capability building (RAAP)	David Falepau	CSU		2018	2018
1.4.002	Building farmer innovation capability	David Falepau	CSU		2019	2020

PROGRAM 2

Project ID	Title	Project Leader	Lead Partner	Partners	Start	Finish
2.1.002	Is the isotopic composition of bulk soil carbon and nitrogen a robust indicator of agricultural soil health? (RAAP)	Naomi Wells	SCU		2018	2018
2.2.002	'Smart' soil sensors	Marcus Hardie	UTas	USQ, FedUni	2019	2022
2.2.003	New sensors for measuring soil nutrients	Craig Lobsey	USQ	Landcare NZ, HCPSL, Burdekin	2019	2022
2.2.004	Affordable rapid field-based soil tests	Liang Wang	UON	UTas, HCPSL, Burdekin	2019	2022
2.3.001	Visualising Australasia's soils	Peter Dahlhaus	FedUni	Landcare NZ, UTas, USQ, BCG, Burdekin, CWFS, Gillamii, HCPSL, Landmark, Liebe, MFMG, MSF, NC CMA, RPI, SFS, WANTFA, Wimmera CMA	2019	2021

PROGRAM 3

Project ID	Title	Project Leader	Lead Partner	Partners	Start	Finish
3.1.002	Identifying the processes for unlocking soil phosphorus to increase soil productivity (RAAP)	Dane Lamb	UON	NSW DPI, SCU, Griffith, CWFS, CSU, AORA	2018	2018
3.1.003	Recovering nutrients from organic waste streams	Dane Lamb	UON	Griffith, SCU, CWFS, PIRSA, AORA, SEW, HCPSL, Landcare NZ	2018	2021
3.1.004	Application of liquid biosolids	Aravind Surapaneni	SEW	UON	2019	2022
3.2.001	Improving pesticide delivery efficiency	Yanju Liu	UON	Burdekin, Griffith, HCPSL	2019	2022
3.3.002	New products for subsoil constraints	Ehsan Tavakkoli	NSW DPI	UON, USQ	2019	2022
3.3.003	New amendments for sandy soils	Richard Bell	Murdoch	PIRSA, FedUni, WMG, AORA	2019	2021
3.4.001	Evaluating alternative rhizobial carriers	Chengrong Chen	Griffith	UON, Murdoch, CWFS, WANTFA, HCPSL, Burdekin, AORA	2018	2021

PROGRAM 4

Project ID	Title	Project Leader	Lead Partner	Partners	Start	Finish
4.1.002	Plant based solutions to improve soil performance	Terry Rose	SCU	CWFS, NSW DPI, Murdoch, CSU, Facey, HCPSL, RPI, Hart, FarmLink	2019	2022
4.1.003	Evaluating soil functional resilience	Mehran Rezaei Rashti	Griffith	Facey, HCPSL, NSW DPI	2019	2021
4.2.001	Improved management of herbicide residues in soil	Michael Rose	NSW DPI	Murdoch, SCU, WANTFA, EPARF, BCG	2019	2022
4.2.002	Addressing complex soil constraints	Jason Condon	CSU	NSW DPI, DJPR, FarmLink, CWFS, RPI, BCG, Hart, Facey	2019	2021
4.3.002	Improving decision support systems	Keith Pembleton	USQ	FedUni, UTas, NSW DPI, WMG, Burdekin, BCG, RPI	2019	2021

EDUCATION AND TRAINING

Four Soil CRC Higher Degree by Research (HDR) Doctor of Philosophy (PhD) students commenced in 2018–19. In total, 17 PhD scholarships were supported in the reporting period and the Soil CRC is now well on its way to meeting its target of 46 PhD commencements by 2023.

Three Soil CRC PhD students presented at the inaugural Soil CRC Participants Conference held in April 2019: Xiangyu Liu—Griffith University; Darren West—University of Tasmania; and Md Zahangir Hossain—University of Newcastle.

A PhD Scholarships Round opened 5 June 2019 and closed on 15 July 2019. This will help to increase student numbers within the Soil CRC to over 30.

To manage the student cohort effectively within the Soil CRC, the CRC will appoint an Education Coordinator in 2019–20. This will be a 0.5 FTE role and be based at one of the participant universities.

The Soil CRC was awarded a grant from the Australian Government's Department of Agriculture through the Natural Resources Trust Fund Program for $466,650 (GST incl.) for a two-year project **Building Technical Capacity in Soil Management**, ending in June 2021. The purpose of the grant is to enable the CRC to conduct training and education activities for 30 staff from farmer groups and Natural Resource Management organisations across Australia, training them in soil knowledge and increasing their technical capacity.

This project is not linked to our Soil CRC milestones and our main contribution is to link our farmer groups with researchers. This grant is viewed by the CRC as a way to add further value to our participants and further develop collaborations between them. Felicity Harrop from North Central Catchment Management Authority (NC CMA) in Victoria was appointed to the position of Project Manager following a highly competitive expression of interest process from within the CRC participants.

PhD Students

Project ID	Name	Country of origin	University	PhD Title	Primary Supervisor	Start	Finish
2.2.002	Darren West	United Kingdom	University of Tasmania	Development of smart soil moisture sensors through machine learning soil parameters	Marcus Hardie	2018	2021
2.2.003	Jaye Hill	Australia	University of Southern Queensland	Proximal soil nutrient sensing using integrated electrochemical sensing	John Bennett	2019	2021
3.1.003	Md Zahangir Hossain	Bangladesh	University of Newcastle	Biochar and nutrient interactions	Nanthi Bolan	2017	2021
4.1.003	Xiangyu Liu	China	Griffith University	Developing sensitive soil health indicators of Australia agricultural land	Chengrong Chen	2018	2021

INTELLECTUAL PROPERTY MANAGEMENT

The legal and beneficial ownership of all intellectual property (IP) generated through Soil CRC funded activities is vested in the CRC on creation.

In the first two years of operation, there was no commercially valuable intellectual property generated. The IP generated through projects completed to date is being used to inform future investment priorities of the Soil CRC and project activities and is available to all participants for research purposes.

The Soil CRC has paid particular attention to ensuring that Project Leaders have detailed all pre-existing material (background IP) and third-party IP before the execution of project agreements. All requests for variations have been carefully considered on an individual basis and legal advice has been sought when required from the CRC's lawyers FAL, Melbourne.

In 2018–19, the Soil CRC commenced an external review of its commercialisation and utilisation, including the Commercial Utilisation Plan, Intellectual Property (IP) Policy and IP Management System, leading to a review of the CRC's draft IP Policy for approval by the Board. Early in 2019–20, strategies for securing the CRC's IP position will be considered within the policy and management plan. All CRC staff and Program Leaders will be trained in the new system once established and Board endorsed. An external consultant, Mr Dallas Gibb from IPActive, was contracted to undertake the review. IP Active specialises in IP management and technology commercialisation services to private and government research and development organisations.

The Soil CRC does not hold any patents currently.

COMMERCIALISATION

The Soil CRC is still in its formative years with respect to the generation of products and knowledge for commercialisation and utilisation. As such, there has not yet been any significant commercialisation or utilisation activity. However, all newly funded projects have been asked to clearly define and describe the pathways to adoption for their research outputs and in some cases, implement plans for that utilisation.

Much of the output of the Soil CRC will be 'public good'—i.e. not easy to patent or protect, or capture and return a commercial value to the CRC. In fact, the objectives of the CRC will best be met by ensuring that these public good outputs are adopted ultimately as broadly and fully as possible, which is where the utilisation plans are critical. A key contributor to successful utilisation of CRC research outputs will be the 20 farmer group participants, who are well placed to provide a conduit through to end-users, the farmers.

COLLABORATION

Collaboration is a key theme that is integral to the success of the Soil CRC.

The inaugural Soil CRC Participants Conference in April strengthened the collaborations that are a signature of participation in the CRC. Farmer groups, researchers and industry professionals established new connections, shared new ideas for research and exchanged knowledge.

Collaborations came in many forms. All 24 newly funded projects involve collaboration between Soil CRC participants in one form or another. Typically, projects involve at least two research institutions and two or more farmer groups working together.

There have been workshops, meetings, forums and conferences where CRC participants have worked together in order to plan and deliver high quality research. Excitingly, this collaboration has occurred across all programs. Teams have worked together to co-design and host field trial sites, to identify where data is needed, to write relevant surveys and to interpret results. Different farmer groups have worked together to host shared field sites.

Collaboration ensures that we are having three-way dialogue between farmers, researchers and industry. Feeding information back and forth will result in relevant research and successful outcomes for the Soil CRC and Australian agriculture.

SME ENGAGEMENT

More than half of the Soil CRC's participants are Small to Medium Enterprises (SMEs) in their own right, and are both profit and not-for-profit. Many of them, such as the farmer group and industry organisation participants, represent farmers and producers who are all SMEs. They are from every state of Australia, with a large representation from regional and rural areas. Consequently, the CRC's engagement with SMEs is a critical part of the CRC's program.

The end-user focus of the Soil CRC means that SMEs have every opportunity to be engaged in project design, development and implementation, and are critical to the interpretation of results and the dissemination of findings. Through the project development processes, representatives of SME organisations were able to sit at the same table as research scientists and other contributors, and ensure that their input was valued. All project proposals must identify their engagement with end users and the extent of end-user engagement is one of the criteria used in assessing projects for CRC investment. Moving to implementation, many projects are engaging with farmer groups through workshops, surveys and fieldwork.

SMEs are directly represented on the Board. Board Director Diana Parsons was the Chief Executive Officer for Central West Farming Systems group in NSW. Following the retirement of Diana Parsons from the Board in 2018–19, SMEs involved in the Soil CRC were asked to provide nominations for a replacement Director.

COMMUNICATIONS

As the Soil CRC moved into its second year of operations, communications activities shifted from brand establishment to sharing information about our research projects, building our audiences and continuing to raise our profile amongst our participants and the wider general public.

This move was signalled by the official launch of the Soil CRC in August 2018. Officiated by the Assistant Minister for Science, Jobs and Innovation, The Hon. Zed Seselja, the launch featured speeches from the Soil CRC Patron, Major General the Hon. Michael Jeffery, the Vice Chancellor of The University of Newcastle, Professor Caroline McMillen, the Chair of the Soil CRC, Dr Paul Greenfield and the CEO, Dr Michael Crawford. Working with the media department of the University of Newcastle and the office of the Assistant Minister, the Communications Manager secured broad media coverage of the launch on television, national radio and online press.

At the inaugural Soil CRC Participants Conference in April 2019, we filmed a short summary video for each of our 24 current projects. These videos now form a valuable part of our marketing collateral and are being utilised in a variety of ways across different channels. They are a fantastic tool for sharing information about our projects in an engaging way. The Communications Manager presented at the conference about communicating the CRC message.

The new bimonthly Soil CRC newsletter was launched in April 2019 and distributed by email to both participants and other interested parties. The newsletter provides information that relates to the CRC and its research, and features profiles of our staff and university participants and project updates. Its distribution list is growing and is currently at just over 600 recipients.

The CEO continues to keep the Soil CRC participants informed about all CRC activities through regular CEO Communiques. Eight communiques were delivered to over 450 participants in 2018–19.

Soil CRC social media channels Twitter, LinkedIn and YouTube continue to grow in both followers and engagement with regular posts sharing updates on workshops, project meetings and general CRC news.

The Soil CRC website is evolving to meet the growing needs of the organisation. A news page was created, with 29 news and media stories uploaded during the year. A publications page was added to host the fact sheets, technical reports, annual reports and newsletters. With more projects initiated, the programs and projects page was separated into two pages. This provides a useful resource with a summary of all projects, both current and completed.

As research projects have commenced, our media coverage has increased. The official launch saw a real spike in media interest in the Soil CRC. Other notable media coverage included Program Leader Nanthi Bolan and Michael Crawford's piece in The Conversation; articles in The Australian Farmer digital book and Forge magazine; and articles in various industry publications on the South East Water Field Day at Longwarry Water Recycling Plant.

We continued our sponsorship of relevant conferences, sponsoring the National Soils Conference in Canberra; the Australia New Zealand Biochar Conference on the Gold Coast; the Regenerative Cane Farming Conference in Ingham; the 2nd National Symposium on the Beneficial Use of Recycled Organics in Brisbane; and the Australian Biological Farming Conference on the Gold Coast. These conferences provide a great opportunity to raise the awareness of the Soil CRC and to meet face to face with many of our participants, enabling valuable two-way communications.

MEDIA/NEWSLETTERS FOR 2018–19

Date	Title / Subject	Publication	Type
Jul 2018	Practical solutions for soils	Graham Centre newsletter	e-Newsletter
Jul 2018	The Soil CRC	The Fertilizer	e-Newsletter
Jul 2018	Soil CRC overview	Holbrook Landcare Newsletter	e-Newsletter
Aug 2018	Soil CRC Launch	ABC North West Queensland	Radio
Aug 2018	Soil CRC Launch	ABC Western Queensland	Radio
Aug 2018	Soil CRC Launch	ABC NewsRadio	Radio
Aug 2018	Soil CRC Launch	ABC Radio National	Radio
Aug 2018	Soil CRC Launch	ABC New England North West	Radio
Aug 2018	Soil CRC Launch	ABC Upper Hunter	Radio
Aug 2018	Soil CRC Launch	1233 ABC Newcastle	Radio
Aug 2018	Soil CRC Launch	Heart 107.3	Radio
Aug 2018	Soil CRC Launch	KOFM	Radio
Aug 2018	Enriching our soil science (Soil CRC Launch)	Newcastle Herald	Newspaper
Aug 2018	Soil CRC Launch	KOFM	Radio
Aug 2018	Soil CRC Launch	NBN Gosford	Television
Aug 2018	Soil CRC Launch	NBN Newcastle	Television
Aug 2018	Soil CRC Launch	NBN News	Television
Aug 2018	There's a new team who'll be getting the dirt on Australia's under-performing soils	The Land	Newspaper
Aug 2018	Soil CRC Launch	1233 ABC Newcastle	Radio
Aug 2018	Soil CRC Launch	ABC Upper Hunter	Radio
Sept 2018	Chemistry Underfoot	Royal Chemical Institute	Magazine
Sept 2018	Soil CRC overview	BCG Newsletter	e-Newsletter
Oct 2018	We need more carbon in our soil to help Australian farmers through the drought	The Conversation	Online article
Oct 2018	We need more carbon in our soil to help Australian farmers through the drought	The Modern Australian	Online article
Oct 2018	We need more carbon in our soil to help Australian farmers through the drought	Live News NZ	Online article
Oct 2018	We need more carbon in our soil to help Australian farmers through the drought	Viw Magazine	Online article
Oct 2018	We need more carbon in our soil to help Australian farmers through the drought	Daily Bulletin	Online article
Oct 2018	We need more carbon in our soil to help Australian farmers through the drought	Australian Business	Online article
Oct 2018	Soil CRC overview	AORA e-Newsletter	e-Newsletter
Nov 2018	Soil CRC poised for ground-breaking work with industry	Forge	Magazine
Dec 2018	Ground breaking achievement for local soil researcher	University of Newcastle website	Online article
Dec 2018	Ground breaking achievement for local soil researcher	Research for Agriculture	e-Newsletter
Feb 2019	CRC for High Performance Soils: New projects	Know How magazine	Magazine
Feb 2019	Soil the essential factor	Know How magazine	Magazine
Apr 2019	$5.6 million funding for new soil research	Agriculture Victoria Soils Community of Practice	e-Newsletter
May 2019	Field Days: Evidence needed to support regenerative ag	Farmers Weekly NZ	Online article
May 2019	Biosolids a by-product worth saving and reusing	Stock and Land	Online article
May 2019	South East Water lead the way in biosolids research	Intelligent Water Networks	Online article
May 2019	Our $100 billion future starts with the soil	The Australian Farmer	Digital book
Jun 2019	Soil health goes on trial at Corrigin	Farm Weekly	Online article
Jun 2019	$5.6 million for new research	INGRAIN magazine	Magazine
Jun 2019	Could liquid biosolids help grow Australia's agricultural industry?	Water Source	Online article

PARTICIPANTS AND THIRD PARTIES

Participant Organisation	Abbreviation	ABN	Organisation Type
Australian Organics Recycling Association Limited	AORA	17 158 519 736	Individual SME
Birchip Cropping Group Incorporated	BCG	92 087 981 510	Individual SME
Burdekin Productivity Services Limited	Burdekin	18 107 846 060	Individual SME
Central West Farming Systems Incorporated	CWFS	37 814 703 505	Individual SME
Charles Sturt University	CSU	83 878 708 551	University
Corrigin Farm Improvement Group	CFIG	73 411 548 004	Individual SME
Department of Jobs, Precincts and Regions (Vic)	DJPR	83 295 188 244	State government
Department of Primary Industries (NSW)	NSW DPI	72 189 919 072	State government
Department of Primary Industries and Regions (SA)	PIRSA	53 763 159 658	State government
Eyre Peninsula Agricultural Research Foundation Incorporated	EPARF	94 833 615 975	Individual SME
Facey Group Incorporated	Facey	59 136 484 550	Individual SME
FarmLink Research Limited	FarmLink	23 109 837 505	Individual SME
Federation University Australia	Fed Uni	51 818 692 256	University
Griffith University	Griffith	78 106 094 461	University
Hart Field Site Group Incorporated	Hart	72 015 164 228	Individual SME
Herbert Cane Productivity Services Limited	HCPSL	71 100 551 826	Individual SME
Holbrook Landcare Group	Holbrook	64 092 836 658	Individual SME
Landmark Operations Limited	Landmark	73 008 743 217	Large Industry
Mackillop Farm Management Group Incorporated	MFMG	60 685 776 966	Individual SME
Mallee Sustainable Farming Incorporated	MSF	99 557 839 332	Individual SME
Manaaki Whenua Landcare Research (New Zealand) Limited	Landcare NZ		Other
Murdoch University	Murdoch	61 616 369 313	University
NSW Environment Protection Authority	NSW EPA	43 692 285 758	State government
North Central Catchment Management Authority	NC CMA	73 937 058 422	Individual SME
Riverine Plains Incorporated	RPI	95 443 809 873	Individual SME
Society of Precision Agriculture Australia Incorporated	SPAA	43 553 215 627	Individual SME
Soils for Life Trust	SFL	23 744 512 660	Individual SME
South Australian Grain Industry Trust Fund	SAGIT	23 116 814 640	Individual SME
South East Water Corporation	SEW	89 066 902 547	Large Industry
Southern Cross University	SCU	41 995 651 524	University
Southern Farming Systems Limited	SFS	54 093 170 631	Individual SME
The Gillamii Centre Incorporated	Gillamii	16 887 295 206	Individual SME
The Liebe Group Incorporated	Liebe	44 748 432 382	Individual SME
The University of Newcastle	UON	15 736 576 735	University
University of Southern Queensland	USQ	40 234 732 081	University
University of Tasmania	UTas	30 764 374 782	University
West Midlands Group Incorporated	WMG	47 325 820 894	Individual SME
Western Australian No-tillage Farmers Association (Incorporated)	WANTFA	33 038 818 613	Individual SME
Wheatbelt Natural Resource Management Incorporated	Wheatbelt NRM	61 661 518 664	Individual SME
Wimmera Catchment Management Authority	Wimmera CMA	83 900 830 261	Individual SME

Third Party Organisation	ABN	Organisation Type
Department of Agriculture	24 113 085 695	Australian Government
Department of Industry (NSW)	72 189 919 072	State government
National Australia Bank Limited	12 004 044 937	Large Industry
WA Composts Pty Ltd (C-Wise)	97 962 521 954	Individual SME

GOVERNANCE

BOARD, COMMITTEES AND KEY STAFF

Soil CRC structure

The Soil CRC is an incorporated company limited by guarantee. It is registered as a not for profit public company which is not listed. It is governed by its constitution and reports to its members. All Major Partners are eligible to be a member of the company and as at 30 June 2019, ten of the eleven Major Partners had exercised that option, with the remaining Major Partner having also now become a member.

The company has a board of nine directors, one of whom acts as Chair. There are five independent and four non-independent directors. There are four committees that govern Research, Risk, Nominations and Remuneration. The CEO reports to the Board on the management of the Soil CRC. The CEO has a team that reports to him to operate the Soil CRC. The company has an ATO private ruling that confirms the company is income tax exempt and a FBT rebatable employer.

Patron

Major General the Hon. Michael Jeffery AC, AO (Mil), CVO, MC is Patron of the Soil CRC. General Jeffery served as Governor-General of the Commonwealth of Australia from 2003 to 2008, following a distinguished military career.

In 2019, General Jeffery was reappointed by the Prime Minister as Australia's National Advocate for Soil Health.

As National Soils Advocate, he has a broad global advocacy role on soils as part of the Government's broader global environmental agenda. General Jeffery advises across portfolios including education, training, overseas development assistance, science and technology, the digital economy, agriculture, water policy, and regional development on Australia's national soil strategies and initiatives.

His role as Patron of the Soil CRC aligns with his advocacy role and allows him to promote the objectives and capabilities of the CRC, whilst also providing valuable input to its directions and activities. The role of Patron is an honorary appointment and has no direct role in the governance of the organisation.

The Board

The Soil CRC is governed by a skills-based Board of Directors with an independent Chair and a majority of independent directors. The Board provides oversight of the Soil CRC activities, performance and strategic direction and has the responsibility for establishing, maintaining and monitoring an appropriate level of governance in relation to the core tasks of the Company.

Independent Directors are appointed by the Board from recommendations made by the Nominations and Selection Committee. Three non-independent Directors are provided by the Major Partners. One non-independent Director is provided by either the Partner or Associate collectives. All appointments are subject to confirmation by the members of the company.

Dr Paul Greenfield was ratified as the first Chair of the Soil CRC at the Annual General Meeting held in November 2018. As per the Constitution, the four longest serving Directors will be required to resign at the next Annual General Meeting. Retiring Directors are eligible to nominate for reappointment.

DIRECTORS

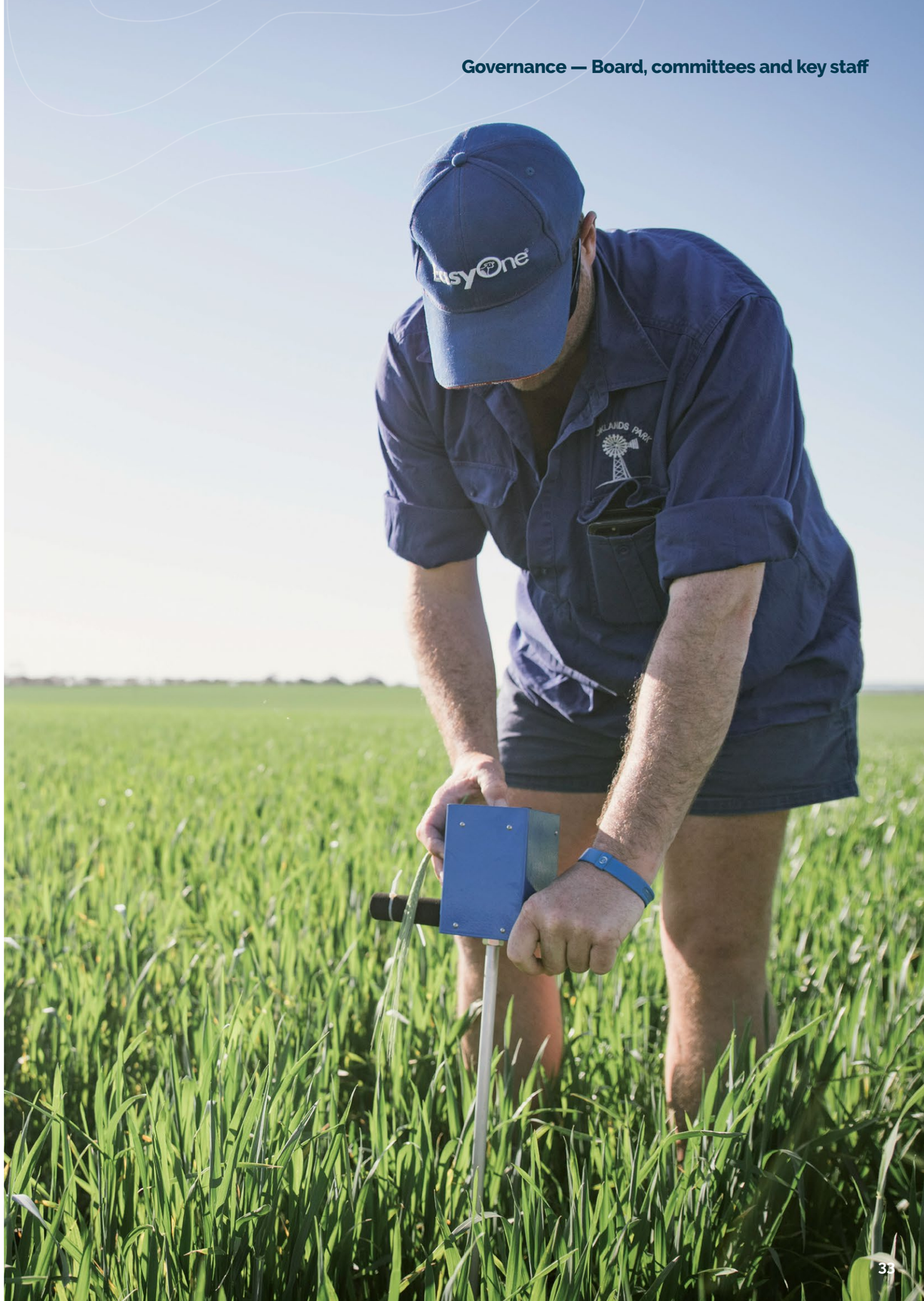
Name	Role	Appointed	Number of meetings held while in office	Number of meetings attended
Paul Greenfield	Independent Chair	10 July 2017	7	7
Malcolm Buckby	Non-independent Director	4 May 2017	7	6
Kevin Hall	Non-independent Director	4 May 2017	7	2
Ralph Hardy	Independent Director	28 June 2017	7	7
Anna Lavelle	Independent Director	14 September 2017	7	5
Kate Lorimer-Ward	Non-independent Director	17 January 2018	7	5
Diana Parsons*	Non-independent Director	4 May 2017	5	4
Robbie Sefton	Independent Director	26 July 2017	7	7
Roger Swift	Independent Director	10 July 2017	7	7

*Diana Parsons resigned from the Board on 22 February 2019.

BOARD MEETINGS

Board meetings were held at locations associated with our participant organisations, or by teleconference. Board meetings will continue to be held at different locations across Australia in order to maximise Board interactions with our participants in all states.

Number	Date	Location
1	8 August 2018	Griffith University, Brisbane QLD
2	12 September 2018	Teleconference
3	8 October 2018	Teleconference
4	21 November 2018	Australian National University, Canberra ACT
5	9 January 2019	Teleconference
6	27 February 2019	The University of Newcastle, Newcastle NSW
7	22 May 2019	Landmark, Melbourne VIC



DIRECTOR BIOGRAPHIES

Name	Board Position	Key Skills
Dr Paul Greenfield AO FTSE 	**Chair** Independent	Dr Paul Greenfield is a chemical engineer with extensive experience as a board director on company and CRC boards. He was awarded an Order of Australia in 2006 for services to science and engineering. He was Vice-Chancellor of the University of Queensland, and is currently Chair of the International Water Centre and on the Board of the Great Barrier Reef Foundation.
Malcolm Buckby 	**Director** South Australian Grains Industry Trust	Malcolm Buckby is a Project Manager for the South Australian Grain Industry Trust (SAGIT). He was the Manager for the Rural Services Office of the Royal Agricultural and Horticultural Society of South Australia until 31 December 2018 and now consults to them. Malcolm brings a strong knowledge of agricultural issues to the Board.
Prof Kevin Hall 	**Director** University of Newcastle	Professor Kevin Hall is the Senior Deputy Vice-Chancellor and Vice-President Global Engagement and Partnerships at the University of Newcastle. Professor Hall's research career focussed on water quality modelling, development of environmental monitoring, syndromic surveillance, and water and health in marginalised communities.
Ralph Hardy 	**Director** Independent	Ralph Hardy is a director and senior manager with extensive finance, commercial, and systems experience in the manufacturing and service industries. He currently leads multinational finance teams for the Ampcontrol Group. Ralph is also a Director of CRC CARE.
Dr Anna Lavelle FTSE 	**Director** Independent	Dr Anna Lavelle has over 25 years' experience serving on boards. From 2005 to 2016, Dr Lavelle was the CEO of AusBiotech. She has a PhD in Genetics from the University of Melbourne and is a Graduate of the Australian Institute of Company Directors (GAICD). Dr Lavelle is the Independent Chair of Medicines Australia and serves on a number of other boards.

Name	Board Position	Key Skills
Kate Lorimer-Ward 	**Director** NSW Department of Primary Industries	Kate Lorimer-Ward has high level strategic planning and corporate governance skills. She is Deputy Director-General—Agriculture with the NSW Department of Primary Industries and Chief Executive to the NSW Rural Assistance Authority. Kate has an extensive knowledge of agriculture and agricultural communities from her roles in the NSW public sector over the past 25 years.
Diana Parsons 	**Director** Central West Farming Systems	Diana and her husband owned and managed a livestock, cropping and irrigation farm in central west NSW until December 2018. Diana has served on many committees, including the NSW GRDC Farm Business Update Steering Committee and the South East Australia Barley Council. Diana resigned as a Board Director on 22 February 2019 as she and her husband took up a farming operation in Queensland.
Robbie Sefton 	**Director** Independent	Robbie Sefton is the Managing Director of strategic communication company Seftons and is a farmer of wool, meat and grains in northern NSW. Robbie is also Chair of the Murray Darling Basin Authority's Socio-Economic Assessment Panel and Deputy Chair of the National Australia Day Council, and has sat on advisory panels for the Australian Taxation Office, the Reserve Bank of Australia and Woolworths.
Prof. Roger Swift FTSE 	**Director** Independent	Professor Roger Swift is Emeritus Professor of Soil Science at the University of Queensland. He has held a number of academic and research positions in soil science and agriculture including as Chief of the CSIRO Division of Soils. Professor Swift is a world-renowned, extensively-published soil scientist and was a long-serving Board Member of the International Union of Soil Sciences.

AUDIT AND RISK MANAGEMENT COMMITTEE (ARMC)

The primary purpose of the ARMC is to assist the Board in fulfilling its responsibilities relating to the accounting and reporting practices of the Company and to provide oversight in respect of the risk management activities of the Company.

The ARMC met on five occasions in 2018–19.

NOMINATIONS AND SELECTION COMMITTEE (NSC)

The NSC meets on an as-needs basis to make recommendations regarding the appointment of the Chair, the CEO and Directors.

No meetings of the NSC were held in 2018–19.

REMUNERATION COMMITTEE

The purpose of the Remuneration Committee is to give the Board comfort that:

- Executives occupying senior management positions within the Company receive sufficient incentive to motivate enhanced performance and that they are fairly rewarded for their individual contributions to the Company's overall performance having due regard to the interests of the shareholders and the financial position of the Company,
- Levels of remuneration are sufficient to attract and retain executives of the quality required to successfully manage the Company, and
- A succession plan is in place for the Company, noting that some of the key individuals may not be in the direct employ of the Company.

The Remuneration Committee met on one occasion in 2018–19.

Name	Audit and Risk Management	Nominations and Selection	Remuneration
Malcolm Buckby	Director	Director	
Paul Greenfield		Chair	Chair
Kevin Hall			Director
Ralph Hardy	Chair		
Anna Lavelle			
Kate Lorimer-Ward			
Diana Parsons			
Robbie Sefton	Director		
Roger Swift		Director	Director

RESEARCH AND ADOPTION COMMITTEE (RAC)

The primary role of the RAC is to provide oversight of the research, adoption and education activities of the Soil CRC, and to review and advise the Board and the CEO on proposals for project funding.

Name	Role	Key Skills
Roger Swift	Chair, Director, Researcher	See Board description
Michael Crawford	CEO	
Neil Ballard	End User	Farmer, seed grower, consultant, Western Australia
Hong Di	International Researcher	Professor of Soil and Environmental Science, Lincoln University, New Zealand
Anna Lavelle	Director	See Board description
Ann McNeill	Australian-based Researcher	Adjunct Associate Professor, University of Adelaide, South Australia
Diana Parsons	Director, End User	See Board description—resigned 22 February 2019
Chris Sounness	End User	CEO of Birchip Cropping Group, Victoria

The RAC met on five occasions in 2018–19.

COMPANY SECRETARY

Company Secretary services are provided to the Company by an external organisation, CooperConsult, specifically Nick Baldock and Catherine Cooper.

STAFF OF THE SOIL CRC

Staff

Name	Organisation	CRC Position / role	Time commitment (FTE)
Dr Michael Crawford	Soil CRC	Chief Executive Officer	1.0
Millicent Crowe	Soil CRC	Research Administration Officer	1.0
Mark Flick[1]	Soil CRC	Finance Manager	0.5
Joanna Kelso[2]	Soil CRC	Research Administration Assistant	Casual
Jodi McLean	Soil CRC	Operations Manager	1.0
Chris Murphy[3]	Soil CRC	Business Development Manager	Consultant
Katherine Seddon	Soil CRC	Communications Manager	0.8
Kathy Stokes	Soil CRC	Executive Assistant	1.0
Jessie Xu[1]	Soil CRC	Finance Officer	0.4

Program Leaders[4]

Name	Organisation	CRC Position / role	Time commitment (FTE)
Assoc. Prof. Catherine Allan	Charles Sturt University	Program 1 Leader	0.5
Assoc. Prof. Richard Doyle	University of Tasmania	Program 2 Leader	0.5
Prof. Nanthi Bolan	University of Newcastle	Program 3 Leader	0.5
Dr Lukas Van Zwieten	NSW Department of Primary Industries	Program 4 Leader	0.5

[1] Mark Flick and Jessie Xu are employed by CRC CARE Pty Ltd and provide support to the Soil CRC under a Shared Financial Services agreement.

[2] Joanna Kelso was employed as a casual from March 2019 to May 2019 to backfill a staff member on long-term leave.

[3] Chris Murphy was first engaged in March 2019 and provides services on an ad hoc basis as required.

[4] Program Leaders are provided by their host organisation as an in-kind contribution to the Soil CRC.

FINANCIAL MANAGEMENT

The Soil CRC relies on the continued support from its participants and the Australian Government for its ongoing operations.

During the 2018–19 financial year, 73% of the Company's contributions (cash and in-kind) were provided by participants and 27% from the Australian Government.

The Company had invoiced all the contracted participants for their cash contributions for the year ended 30 June 2019. Receivables at year end included the Commonwealth quarterly payment, accrued as paid in arrears which formed the majority, and several participants who still owed their current quarters' contributions. Overall, the Soil CRC is in a strong financial position with $8m in cash to be applied to its future project commitments.

The Company signed a Deed of Variation with the Commonwealth on 13 August 2018 that reflects the contracted participant position and the commitment of the company to achieve the milestones of the activities. The Company is meeting the Deed's obligations. Whilst, in-kind contributions are running lower than targeted, this should be regarded in the context of the Soil CRC life-cycle as timing of these contributions are linked to the major project work, which ramped up in the latter part of 2018–19 and will continue to increase.

In 2018–19, research expenditure—cash increased from $437,702 (2017–18) to $3,474,574 as a result of awarding 24 major projects during the year. These projects will extend over the next two to three years. The employee benefits expense reduced from $739,640 (2017–18) to $400,989 as costs for staff who were directly involved in the four programs were allocated to research expenditure.

The overall financial performance of the Soil CRC is on track to allow the CRC to achieve its milestones for the activities within the committed contribution levels. Financial management strategies during the 2018–19 financial year included maintaining tight cost control and seeking additional participant contributions.

As with all CRCs, the continuing financial sustainability of the Soil CRC and its ability to support existing and new projects are dependent on the Company being successful in:

- receiving the continuing support of its participants and the Australian Government,
- securing additional funding where appropriate, and
- achieving sufficient future cash flows to enable its obligations to be met.

The Directors believe that the Company will be successful in the above matters and, accordingly, the accounts have been prepared on a going concern basis.

The overall financial management of the CRC is provided by way of a shared financial services arrangement with CRC CARE Pty Ltd. The shared financial service is led by the Finance Manager, Mark Flick, a Chartered Accountant, and assisted by the Finance Officer, Jessie Xu, a CPA. By leveraging the synergy of CRC CARE, the Company has continued to reduce administration costs whilst freeing up executive time.

The recent independent audit of the company noted that there were no control issues or material recommendations for improvement identified during the 2019 audit process. Financial reports are delivered to management monthly and quarterly financial reports are presented to the Board and its Audit and Risk Management Committee.

The independent auditor's report to the members of the Soil CRC for the financial year ending 30 June 2019 has expressed the opinion that the financial report of Soil CRC has been prepared in accordance with the *Corporations Act 2001* and is unmodified. Their opinion further states that the financial report as at 30 June 2019 gives a true and fair view of the Company's financial position as at that date and of its performance for the period ended on that date, and complies with Australian Accounting Standards.

OTHER ACTIVITIES

CRC future plans and transition arrangements

In the first two years of the Soil CRC, the focus has been on establishing the structures and processes to ensure that we deliver the agreed outputs over the 10-year life of the Soil CRC, and on identifying and commencing project activities to maximise the utilisation of these outputs by our participants, collaborators and end users. Consequently, not much attention has been specifically directed towards post-CRC activity (2027 onwards), but this will have an increased focus as the Soil CRC progresses.

Monitoring and review activity update

The Soil CRC has not been subject to monitoring or review during the reporting period.

Activities not covered by the Funding Agreement

In 2018–19, the Soil CRC delivered upon its NSW Government funded project supported by the Research Attraction and Acceleration Program, as detailed elsewhere in this report. There have been no other additional activities of any great consequence undertaken by the Soil CRC during the reporting period outside of the activities covered by the Funding Agreement.

FINANCIAL REPORT

CRC for High Performance Soils Limited

ACN 618 897 224

Cooperative Research Centre
For High Performance Soils

Financial Statements

For the Year Ended 30 June 2019

DIRECTORS' REPORT

30 June 2019

The directors present their report on CRC for High Performance Soils Limited for the financial year ended 30 June 2019.

Directors

The names of the directors in office at any time during, or since the end of, the year are:

Name	Position	Appointed/Resigned
Paul Greenfield	Chairman	
Anna Lavelle	Director	
Diana Janet Hazelton-Parsons	Director	Resigned 22/02/2019
Kate Alexandra Lorimer-Ward	Director	
Kevin Hall	Director	
Malcolm Robert Buckby	Director	
Ralph Hardy	Director	
Robbie Sefton	Director	
Roger Samuel Swift	Director	

Directors have been in office since the start of the financial year to the date of this report unless otherwise stated.

Principal activities

The principal activity of CRC for High Performance Soils Limited during the financial year was to fund research programs, to help farmers bridge the gap between soil science and farm management giving them the tools and knowledge to make decisions on complex soil management issues.

No significant changes in the nature of the Company's activity occurred during the financial year.

Members' guarantee

CRC for High Performance Soils Limited is a company limited by guarantee. In the event of, and for the purpose of winding up of the Company, the amount capable of being called up from each member and any person or association who ceased to be a member in the year prior to the winding up, is limited to $100 for members that are corporations and $100 for all other members, subject to the provisions of the Company's constitution.

At 30 June 2019 the collective liability of members was $1,000 (2018: $200).

DIRECTORS' REPORT cont.

Review of operations

The Company specialises in research and development of technologies to provide farmers with knowledge and tools they need to make decisions on extremely complex soil management issues. During the year, the Company received cash contributions of $6,369,000 (2018: $5,744,000) and in kind contributions of $7,023,574 (2018: $6,192,220).

Events after the reporting date

No matters or circumstances have arisen since the end of the financial year which significantly affected or could significantly affect the operations of the Company, the results of those operations or the state of affairs of the Company in future financial years.

Future developments and results

Likely developments in the operations of the Company and the expected results of those operations in future financial years have not been included in this report as the inclusion of such information is likely to result in unreasonable prejudice to the Company.

Auditor's independence declaration

The lead auditor's independence declaration in accordance with section 307C of the *Corporations Act 2001*, for the year ended 30 June 2019 has been received and can be found on page 45 of the financial report.

Signed in accordance with a resolution of the Board of Directors:

Chairman: _____

Paul Greenfield

Director: _____

Ralph Hardy

Dated : 2 October 2019

PKF

AUDITOR'S INDEPENDENCE DECLARATION UNDER SECTION 307C OF THE CORPORATIONS ACT 2001

I declare that, to the best of my knowledge and belief, during the year ended 30 June 2019, there have been:

(i) no contraventions of the auditor independence requirements as set out in the *Corporations Act 2001* in relation to the audit; and

(ii) no contraventions of any applicable code of professional conduct in relation to the audit.

PKF

PKF
Chartered Accountants

Martin Matthews
Partner

Newcastle, NSW

Dated : 2 October 2019

PKF(NS) Audit & Assurance Limited Partnership
ABN 91 850 861 839

Liability limited by a scheme approved under Professional Standards Legislation

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STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME

For the Year Ended 30 June 2019

	Note	2019 $	2018 $
Revenue	4	**11,458,982**	7,862,588
Other income	4	**96,440**	344,737
Consultants fees		**(56,272)**	(39,167)
Employee benefits expense		**(400,989)**	(739,640)
Finance costs		**(730)**	(771)
IT expenses		**(103,665)**	(11,008)
Legal expenses		**(2,694)**	(85,353)
Other expenses	5	**(454,123)**	(377,492)
Research expenditure—cash		**(3,474,574)**	(437,702)
Research expenditure—in-kind		**(7,023,000)**	(6,192,220)
Travel expenses		**(39,375)**	(31,245)
Bid expenses		**-**	(292,727)
Surplus before income tax		**-**	-
Income tax expense	2(i)	**-**	-
Surplus for the year		**-**	-
Other comprehensive income for the year		**-**	-
Total comprehensive income for the year		**-**	-

The accompanying notes form part of these financial statements.

STATEMENT OF FINANCIAL POSITION

As at 30 June 2019

	Note	2019 $	2018 $
Assets			
Current assets			
Cash and cash equivalents	6	**8,066,456**	4,672,812
Trade and other receivables	7	**1,029,451**	788,000
Other assets		**48,454**	7,622
Total current assets		**9,144,361**	**5,468,434**
Total non-current assets		**-**	**-**
Total assets		**9,144,361**	**5,468,434**
Liabilities			
Current liabilities			
Trade and other payables	8	**2,042,352**	526,385
Employee benefits		**19,133**	16,417
Other financial liabilities	9	**7,082,876**	4,925,632
Total current liabilities		**9,144,361**	**5,468,434**
Total non-current liabilities		**-**	**-**
Total liabilities		**9,144,361**	**5,468,434**
Net assets		**-**	**-**
Equity			
Accumulated surplus		**-**	-
Total equity		**-**	-

The accompanying notes form part of these financial statements.

STATEMENT OF CHANGES IN EQUITY

For the Year Ended 30 June 2019

2019	Accumulated Surplus $	Total $
Balance at July 1, 2018	-	-
Surplus for the financial period	-	-
Balance at 30 June 2019	-	-

2018	Accumulated Surplus $	Total $
Balance at incorporation	-	-
Surplus for the financial period	-	-
Balance at 30 June 2018	-	-

STATEMENT OF CASH FLOWS

For the Year Ended 30 June 2019

	Note	2019 $	2018 $
Cash flows from operating activities			
Cash contributions received from Commonwealth (inclusive of GST)		**3,933,600**	3,764,200
Cash contributions received from Participants (inclusive of GST)		**3,045,600**	2,554,200
Payments to suppliers and employees		**(3,681,266)**	(1,666,827)
Interest received		**96,440**	22,010
Finance costs		**(730)**	(771)
Net cash provided by operating activities	13	**3,393,644**	4,672,812
Cash flows from investing activities			
Net cash provided by/(used in) investing activities		**-**	-
Cash flows from financing activities			
Net cash provided by/(used in) investing activities		**-**	-
Net increase in cash and cash equivalents held		**3,393,644**	**4,672,812**
Cash and cash equivalents at beginning of year		**4,672,812**	**-**
Cash and cash equivalents at end of financial year	6	**8,066,456**	**4,672,812**

The accompanying notes form part of these financial statements.

NOTES TO THE FINANCIAL STATEMENTS

For the Year Ended 30 June 2019

The financial report covers CRC for High Performance Soils Limited as an individual entity. CRC for High Performance Soils Limited is a not-for-profit Company limited by guarantee, incorporated and domiciled in Australia.

The functional and presentation currency of CRC for High Performance Soils Limited is Australian dollars.

1 Basis of Preparation

In the Directors' opinion, the Company is not a reporting entity since there are unlikely to exist users of the financial statements who are not able to command the preparation of reports tailored so as to satisfy specifically all of their information needs. This special purpose financial report has been prepared to meet the reporting requirements of the *Corporations Act 2001*.

The financial statements have been prepared in accordance with the recognition and measurement principles of all applicable Australian Accounting Standards and Interpretations issued by the Australian Accounting Standards Board and the *Corporations Act 2001*.

The 2018 comparatives used in the Financial Statements are for the period May 2017 to 30 June 2018.

2 Summary of Significant Accounting Policies

(a) Revenue and other income

Revenue is measured at the fair value of the consideration received or receivable. Amounts disclosed as revenue are net of returns, trade allowances, rebates and amounts collected on behalf of third parties.

The Company recognises revenue when the amount of revenue can be reliably measured, it is probable that future economic benefits will flow to the entity and specific criteria have been met for each of the Company's activities as described below. The Company bases its estimates on historical results, taking into consideration the type of customer, the type of transaction and the specifics of each arrangement.

Grant revenue

Government grants are recognised at fair value where there is reasonable assurance that the grant will be received and the Company will comply with all attached conditions. Government grants relating to costs that have not yet been incurred are included in deferred revenue in current liabilities and are credited to the statement of comprehensive income in the period necessary to match them with the costs that they are intended to compensate.

Participants' contributions

Contributions received in cash (recorded as deferred revenue on receipt—for further information refer note 9) and in-kind from the Participants during the financial year are applied to expenditure incurred in carrying out the affairs of the Company under the terms of the Participants Agreement between the Company and the entities who have undertaken to provide contributions to the Company (other than the Commonwealth of Australia).

Contributions as detailed in note 15 are calculated on a cash basis for reporting purpose to Commonwealth of Australia.

(b) In-kind contributions

In-kind contributions of staff by research providers are valued in accordance with the Commonwealth Agreement, as per Table 1 of the Schedule 4 of the Agreement. Non-staff in-kind contributions are valued on the following basis:

1. Buildings—a reasonable estimate of the commercial rental value related to the area and time period of occupation related to the activities of the Company.
2. Capital equipment—either an allocation of the replacement cost of the equipment apportioned over the proportion of the useful life utilised by the activities of the Company or an agreed value determined with reference to the cost of an equipment service from a commercial operator.

Office accommodation is provided by the University of Newcastle as part of the Participants Agreement and is treated as in-kind contributions. Where a value cannot be readily obtained by applying the policy rules set out above, a Directors' valuation is used.

NOTES TO THE FINANCIAL STATEMENTS cont.

For the Year Ended 30 June 2019

(c) Cash and cash equivalents

Cash and cash equivalents comprises cash on hand, deposits held at call with financial institutions, and other short term, highly liquid investments with original maturities of three months or less that are readily convertible to known amounts of cash and that are subject to an insignificant risk of changes in value.

(d) Financial instruments

Financial assets

Financial instruments are recognised initially on the date that the Company becomes party to the contractual provisions of the instrument.

On initial recognition, all financial instruments are measured at fair value plus transaction costs (except for instruments measured at fair value through profit or loss where transaction costs are expensed as incurred).

The financial assets of the Company have been reclassified into one of the following categories on adoption of AASB 9 based on primarily the business model in which a financial asset is managed and its contractual cash flow characteristics:

- Measured at amortised cost
- Fair value through profit or loss (FVTPL)
- Fair value through other comprehensive income—debt instruments (FVOCI—debt)
- Fair value through other comprehensive income—equity instruments (FVOCI—equity).

Trade receivables

Trade receivables are recognised initially at fair value and subsequently measured at amortised cost, less provision for expected credit losses. Trade receivables are due for settlement no more than 30 days.

The amount of the impairment is recorded in a separate allowance account with the loss being recognised in finance expense. Once the receivable is determined to be uncollectable then the gross carrying amount is written off against the associated allowance.

Financial liabilities

The Company measures all financial liabilities initially at fair value less transaction costs, subsequently financial liabilities are measured at amortised cost using the effective interest rate method.

(e) Impairment of assets

Assets that are subject to depreciation or amortisation are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment loss is recognised for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell and value in use. For the purposes of assessing impairment, assets are grouped at the lowest levels for which there are separately identifiable cash flows (cash generating units).

(f) Trade Creditors

All trade creditors unpaid as at the reporting date are recognised at the amount invoiced, net of any applicable taxes. The Company's policy is to pay trade creditors no more than 30 days from the date of invoice.

(g) Employee benefits

(i) Wages and salaries, annual leave and sick leave

Liabilities for wages and salaries, including non monetary benefits, accumulating sick leave and annual leave expected to be settled within 12 months of the reporting date are recognised in respect of employee's services up to the reporting date and are measured at the amounts expected to be paid when the liabilities are settled.

Liabilities for non accumulating sick leave are recognised when the leave is taken and measured at the rates paid or payable.

(ii) Long service leave

The liabilities for long service leave and annual leave are not expected to be settled wholly within 12 months after the end of the period in which the employees render the related service. They are therefore measured as the present value of expected future payments to be made in respect of services provided by employees up to the end of the reporting period using the projected unit credit method. Consideration is given to expected future wage and salary levels, experience of employee departures and periods of service.

Expected future payments are discounted using market yields at the end of the reporting period of corporate bonds with terms and currencies that match, as closely as possible, the estimated future cash outflows. Remeasurements as a result of experience adjustments and changes in actuarial assumptions are recognised in profit or loss.

(h) Research expenditure

Research expenditure is recognised as incurred and consists of costs incurred as part of day to day research and development activities for research programs. The main items of expenditure are salaries, equipment, consumables and travel costs.

Salaries relate to research and non research staff working directly on research programs. In some instances, salary costs may be allocated between research expenditure and employee benefits when it is identified that time can be specifically attributed to research programs.

(i) Income Tax

The Company is exempt from income tax under Division 50 of the *Income Tax Assessment Act 1997*.

(j) New Accounting Standards and Interpretations

The AASB has issued new and amended Accounting Standards and Interpretations that have mandatory application dates for future reporting periods. The Company has decided not to early adopt these Standards. The following table summarises those future requirements, and their impact on the Company where the standard is relevant:

Standard Name	Effective date for entity	Impact
AASB 16 Lease	1 July 2019	The effect of AASB 16 is not considered to have a material impact to the company.
AASB 15 Revenue from contracts with customers and AASB 1058 Income for Not for Profit Entities	1 July 2019	The full impact of AASB 15 and 1058 has not been fully quantified by the company, but are not considered to be material to the company.

3 Critical Accounting Estimates and Judgments

The preparation of financial statements requires the use of certain critical accounting estimates. It also requires management to exercise its judgement in the process of applying the Company's accounting policies. Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectation of future events that may have a financial impact on the entity and that are believed to be reasonable under the circumstances.

The areas involving a higher degree of judgement or complexity, or areas where assumptions or estimates are significant to the financial statements are detailed below.

Key estimates—in-kind contributions

Staff contributions are valued in accordance with guidelines and the multiplier set by the Commonwealth of Australia and as detailed in note 2(a). The actual time recorded on project work requires a certain level of estimate and judgement by project leaders. In applying that judgement, consideration is given to project budgets and agreements, as set out and approved by Participants and the Company.

The capital and equipment rates and useful lives used for contributions are based on estimations and agreements as calculated by project Participants and the Company. Valuations are generally based on estimates of the percentage utilisation of capital and equipment depreciation directly related to project output. The Company believes that the estimates and assumptions in relation to in kind contributions result in recognition of amounts that represent the fair value of contributions received.

NOTES TO THE FINANCIAL STATEMENTS cont.

For the financial period ended 30 June 2019

4 Revenue and other income

Revenue from continuing operations

	2019 $	2018 $
Contributions revenue		
Allocated contributions from Commonwealth/ Participants—cash	**4,435,982**	1,670,368
Allocated contributions from Participants—in-kind	**7,023,000**	6,192,220
Total contributions revenue	**11,458,982**	**7,862,588**
Other income		
Interest	**96,440**	22,010
Bid revenue	**-**	322,727
Total other income	**96,440**	**344,737**
Total revenue and other income	**11,555,996**	**8,207,325**

5 Other expenses

Board expenses	**288,592**	207,659
Insurance	**27,579**	19,503
Compliance fees	**18,012**	15,140
Marketing	**43,629**	46,136
Other expenses	**76,311**	34,310
	454,123	**377,492**

6 Cash and cash equivalents

	2019 $	2018 $
Cash at bank	**2,499,802**	1,672,812
Deposits at call	**5,566,654**	3,000,000
	8,066,456	**4,672,812**

7 Trade and other receivables

Current		
Trade receivables	**1,029,451**	788,000
	1,029,451	**788,000**

8 Trade and other payables

Current		
Trade payables	**370,920**	69,641
GST payable	**107,428**	97,193
Accrued expenses	**1,564,004**	359,551
	2,042,352	**526,385**

9 Deferred revenue

Contributions from Commonwealth and Participants	**6,658,648**	4,659,132
Other deferred revenue	**424,277**	266,500
Total	**7,082,875**	**4,925,632**

As per the accounting policy in note 2, contributions from the Commonwealth of Australia and Participants (both cash and in kind) are treated as deferred revenue until matched against expenditure in the course of the Company's activities.

In the event of a wind up of the Company, any deferred revenue not matched against expenditure is required to be returned to the Commonwealth of Australia and individual Participants in accordance with the terms of the Agreements.

Deferred revenue arising from obligations to make contributions to the Company and not allocated to program expenses at balance date has been included as a current liability as it is anticipated that the relevant sum will be matched against expenditure during subsequent financial years.

10 Members' guarantee

The Company is incorporated under the *Corporations Act 2001* and is a Company limited by guarantee. If the Company is wound up, the constitution states that each member is required to contribute a maximum of $100 each towards meeting any outstandings and obligations of the Company. At 30 June 2019 the number of members was 10 (2018: 2).

11 Auditors' remuneration

	2019 $	2018 $
Remuneration of the auditor PKF, for:		
Auditing the financial statements	**19,450**	17,500
	19,450	**17,500**

12 Contingencies

In the opinion of the Directors, the Company did not have any contingencies at 30 June 2019 (30 June 2018: None)

13 Cash flow information

(a) Reconciliation of result for the year to cashflows from operating activities

	2019 $	2018 $
Reconciliation of surplus to net cash provided by operating activities		
Changes in assets and liabilities:		
– increase in trade and other receivables	(241,451)	(788,000)
– increase in other current assets	(40,832)	(7,622)
– increase in deferred revenue	3,361,697	4,925,632
– increase in trade and other payables	311,514	526,385
– increase in employee benefits	2,716	16,417
Cashflows from operations	3,393,644	**4,672,812**

14 Events occurring after the reporting date

The financial report was authorised for issue on 2 October 2019 by the board of directors.

No matters or circumstances have arisen since the end of the financial year that significantly affected or may significantly affect the operations of the Company, the results of those operations, or the state of affairs of the Company in future financial years.

NOTES TO THE FINANCIAL STATEMENTS cont.

For the financial period ended 30 June 2019

15 Participants' contributions

(Cash basis ex GST as per note 2(a))

	2019 $	2018 $	Total $
Australian Organics Recycling Association Limited			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**87,500**	7,500	95,000
Other	**2,000**	-	2,000
Total	**89,500**	7,500	97,000

	2019 $	2018 $	Total $
Charles Sturt University			
Cash contributions	**200,000**	200,000	400,000
In-kind contributions			
Staff	**480,000**	345,000	825,000
Other	**8,000**	3,600	11,600
Total	**688,000**	548,600	1,236,600

	2019 $	2018 $	Total $
Department of Primary Industries and Regions (SA)			
Cash contributions	**100,000**	100,000	200,000
In-kind contributions			
Staff	**67,500**	60,000	127,500
Other	**3,000**	5,805	8,805
Total	**170,500**	165,805	336,305

	2019 $	2018 $	Total $
Federation University Australia			
Cash contributions	**100,000**	100,000	200,000
In-kind contributions			
Staff	**500,000**	500,000	1,000,000
Other	**80,000**	80,000	160,000
Total	**680,000**	680,000	1,360,000

Birchip Cropping Group Inc			
Cash contributions	**5,000**	5,000	10,000
In-kind contributions			
Staff	**150,000**	55,000	205,000
Other	**3,000**	8,650	11,650
Total	**158,000**	68,650	226,650

Corrigin Farm Improvement Group			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**-**	5,000	5,000
Other	**-**	-	-
Total	**-**	5,000	5,000

Eyre Peninsula Agricultural Research Foundation Inc			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**27,500**	10,000	37,500
Other	**-**	2,000	2,000
Total	**27,500**	12,000	39,500

Griffith University			
Cash contributions	**100,000**	100,000	200,000
In-kind contributions			
Staff	**305,000**	160,000	465,000
Other	**56,000**	67,803	123,803
Total	**461,000**	327,803	788,803

Burdekin Productivity Services Limited			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**27,500**	15,000	42,500
Other	**-**	1,000	1,000
Total	**27,500**	16,000	43,500

Department of Jobs, Precincts and Regions (VIC)			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**437,500**	385,000	822,500
Other	**5,000**	199,000	204,000
Total	**442,500**	584,000	1,026,500

Facey Group Inc			
Cash contributions	**5,000**	5,000	10,000
In-kind contributions			
Staff	**250,000**	250,000	500,000
Other	**3,000**	8,500	11,500
Total	**258,000**	263,500	521,500

Hart Field Site Group Incorporated			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**12,500**	15,000	27,500
Other	**-**	-	-
Total	**12,500**	15,000	27,500

Central West Farming Systems Inc			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**55,000**	130,000	185,000
Other	**10,000**	23,535	33,535
Total	**65,000**	153,535	218,535

Department of Primary Industries (NSW)			
Cash contributions	**450,000**	75,000	525,000
In-kind contributions			
Staff	**435,000**	595,000	1,030,000
Other	**22,000**	308	22,308
Total	**907,000**	670,308	1,577,308

Farmlink Research Limited			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**30,000**	20,000	50,000
Other	**4,000**	5,000	9,000
Total	**34,000**	25,000	59,000

Herbert Cane Productivity Services Limited			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**45,000**	12,500	57,500
Other	**-**	4,000	4,000
Total	**45,000**	16,500	61,500

NOTES TO THE FINANCIAL STATEMENTS cont.

For the financial period ended 30 June 2019

15 Participants' contributions cont.

(Cash basis ex GST as per note 2(a))

	2019 $	2018 $	Total $
Holbrook Landcare Group			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**10,000**	15,000	25,000
Other	**1,000**	1,463	2,463
Total	**11,000**	16,463	27,463

	2019 $	2018 $	Total $
Mallee Sustainable Farming Inc			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**15,000**	7,500	22,500
Other	**-**	250	250
Total	**15,000**	7,750	22,750

	2019 $	2018 $	Total $
South Australian Grain Industry Trust Fund			
Cash contributions	**150,000**	150,000	300,000
In-kind contributions			
Staff	**12,500**	10,000	22,500
Other	**-**	-	-
Total	**162,500**	160,000	322,500

	2019 $	2018 $	Total $
Society of Precision Agriculture Australia (SPAA)			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**10,000**	52,500	62,500
Other	**-**	-	-
Total	**10,000**	52,500	62,500

Landcare Research (New Zealand)			
Cash contributions	**267,000**	267,000	534,000
In-kind contributions			
Staff	**85,000**	135,000	220,000
Other	**5,000**	2,777	7,777
Total	**357,000**	404,777	761,777

Murdoch University			
Cash contributions	**113,000**	150,000	263,000
In-kind contributions			
Staff	**175,000**	30,000	205,000
Other	**-**	6,250	6,250
Total	**288,000**	186,250	474,250

South East Water Corporation			
Cash contributions	**30,000**	30,000	60,000
In-kind contributions			
Staff	**85,000**	80,000	165,000
Other	**6,000**	150,000	156,000
Total	**121,000**	260,000	381,000

The Gillamii Centre			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**-**	2,500	2,500
Other	**-**	-	-
Total	**-**	2,500	2,500

Landmark Operations Limited			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**187,500**	232,500	420,000
Other	**6,000**	2,250	8,250
Total	**193,500**	234,750	428,250

North Central Catchment Management Authority			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**120,000**	27,500	147,500
Other	**5,000**	-	5,000
Total	**125,000**	27,500	152,500

Southern Cross University			
Cash contributions	**200,000**	200,000	400,000
In-kind contributions			
Staff	**682,500**	655,000	1,337,500
Other	**159,000**	13,563	172,563
Total	**1,041,500**	868,563	1,910,063

The Liebe Group Inc			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**12,500**	12,500	25,000
Other	**-**	-	-
Total	**12,500**	12,500	25,000

MacKillop Farm Management Group Inc			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**7,500**	5,000	12,500
Other	**-**	-	-
Total	**7,500**	5,000	12,500

Riverine Plains Incorporated			
Cash contributions	-	-	-
In-kind contributions			
Staff	3,700	17,500	21,200
Other	-	-	-
Total	3,700	17,500	21,200

Southern Farming Systems Limited			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**15,000**	12,500	27,500
Other	**11,000**	5,838	16,838
Total	**26,000**	18,338	44,338

The Trustee for Soils for Life Trust			
Cash contributions	**20,000**	20,000	40,000
In-kind contributions			
Staff	**70,000**	5,000	75,000
Other	**3,000**	3,709	6,709
Total	**93,000**	28,709	121,709

NOTES TO THE FINANCIAL STATEMENTS cont.

For the financial period ended 30 June 2019

15 Participants' contributions cont.

(Cash basis ex GST as per note 2(a))

	2019 $	2018 $	Total $
The University of Newcastle			
Cash contributions	**300,000**	300,000	600,000
In-kind contributions			
Staff	**1,030,000**	530,643	1,560,643
Other	**172,000**	96,000	268,000
Total	**1,502,000**	926,643	2,428,643

	2019 $	2018 $	Total $
West Midlands Group Incorporated			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**7,500**	-	7,500
Other	**-**	-	-
Total	**7,500**	-	7,500

	2019 $	2018 $	Total $
Total Participant Contribution			
Cash contributions	**2,793,000**	2,012,000	4,805,000
In-kind contributions			
Staff	**6,401,000**	5,408,143	11,809,143
Other	**622,000**	784,077	1,406,077
Total	**9,816,000**	8,204,220	18,020,220

	2019 $	2018 $	Total $
University of Southern Queensland			
Cash contributions	**150,000**	150,000	300,000
In-kind contributions			
Staff	**217,500**	417,500	635,000
Other	**8,000**	35,595	43,595
Total	**375,500**	603,095	978,595

	2019 $	2018 $	Total $
Wheatbelt Natural Resource Management Incorporated			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**52,500**	57,500	110,000
Other	**12,000**	12,000	24,000
Total	**64,500**	69,500	134,000

	2019 $	2018 $	Total $
Total Commonwealth Contribution			
Cash contributions	**3,576,000**	3,422,000	6,998,000
In-kind contributions			
Staff	**-**	-	-
Other	**-**	-	-
Total	**3,576,000**	3,422,000	6,998,000

	2019 $	2018 $	Total $
University of Tasmania			
Cash contributions	**113,000**	150,000	263,000
In-kind contributions			
Staff	**470,000**	285,000	755,000
Other	**15,000**	30,000	45,000
Total	**598,000**	465,000	1,063,000

	2019 $	2018 $	Total $
Wimmera Catchment Authority			
Cash contributions	**-**	-	-
In-kind contributions			
Staff	**112,300**	152,500	264,800
Other	**23,000**	15,181	38,181
Total	**135,300**	167,681	302,981

	2019 $	2018 $	Total $
Total Contributions			
Cash contributions	**6,369,000**	5,434,000	11,803,000
In-kind contributions			
Staff	**6,401,000**	5,408,143	11,809,143
Other	**622,000**	784,077	1,406,077
Total	**13,392,000**	11,626,220	25,018,220

	2019 $	2018 $	Total $
Western Australian No Tillage Farmers Association			
Cash contributions	**10,000**	10,000	20,000
In-kind contributions			
Staff	**110,000**	100,000	210,000
Other	**-**	-	-
Total	**120,000**	110,000	230,000

	2019 $	2018 $	Total $
Other Third Party			
Cash contributions	**480,000**	-	480,000
In-kind contributions			
Staff	**-**	-	-
Other	**-**	-	-
Total	**480,000**	-	480,000

NOTES TO THE FINANCIAL STATEMENTS cont.

For the financial period ended 30 June 2019

16 Statutory Information

The registered office and principal place of business of the Company is:

CRC for High Performance Soils Limited
Level 1, IDC Building
University of Newcastle
University Drive
Callaghan NSW 2308

17 Commitments for Expenditure

At balance date the entity had the following commitments for expenditure:

- Funding obligations in relation to research projects that are relevant to the Company's obligations under the terms of the Commonwealth Agreement. The sum of the cash obligation is $10,682,298 (2018:Nil).
- Funding obligations for the secondment of employees to provide services to the company. The total sum of the obligations is $60,676 (2018:Nil).

	2019 $	2018 $
(Outstanding)		
Payable within 1 year	**3,855,447**	-
Payable greater than 1 year but less than 5 years	**6,887,527**	-
Total Commitments	**10,742,974**	-

The commitments will be funded from current resources and future funding contributions.

DIRECTORS' DECLARATION

The directors have determined that the Company is not a reporting entity and that these special purpose financial statements should be prepared in accordance with the accounting policies described in Note 2 of the financial statements.

The directors of the Company declare that:

1. The financial statements and notes, as set out on pages 46 to 60, are in accordance with the Corporations Act 2001 and:

(a) comply with Australian Accounting Standards as stated in Note 1; and

(b) give a true and fair view of the financial position as at 30 June 2019 and of the performance for the year ended on that date in accordance with the accounting policy described in Note 2 of the financial statements.

2. In the directors' opinion, there are reasonable grounds to believe that the Company will be able to pay its debts as and when they become due and payable.

This declaration is made in accordance with a resolution of the Board of Directors.

Chairman: 

Paul Greenfield

Director: 

Ralph Hardy

Dated : 2 October 2019

INDEPENDENT AUDIT REPORT

To the members of CRC for High Performance Soils Limited

Report on the Audit of the Financial Report

Opinion

We have audited the accompanying financial report, being a special purpose financial report of CRC for High Performance Soils Limited (the Company), which comprises the statement of financial position as at 30 June 2019, the statement of profit or loss and other comprehensive income, the statement of changes in equity and the statement of cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies, and the directors' declaration.

In our opinion, the accompanying financial report of the Company is in accordance with the *Corporations Act 2001*, including:

(i) giving a true and fair view of the Company's financial position as at 30 June 2019 and of its financial performance for the year ended; and

(ii) complying with Australian Accounting Standards to the extent described in Note 1 and the *Corporations Regulations 2001*.

Basis for Opinion

We conducted our audit in accordance with Australian Auditing Standards. Our responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Report* section of our report. We are independent of the Company in accordance with the auditor independence requirements of the *Corporations Act 2001* and the ethical requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants* (the Code) that are relevant to our audit of the financial report in Australia. We have also fulfilled our other ethical responsibilities in accordance with the Code.

We confirm that the independence declaration required by the *Corporations Act 2001*, which has been given to the directors of the Company, would be in the same terms if given to the directors as at the time of this auditor's report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Emphasis of Matter—Basis of Accounting

We draw attention to Note 1 to the financial report, which describes the basis of accounting. The financial report has been prepared for the purpose of fulfilling the directors' financial reporting responsibilities under the *Corporations Act 2001*. As a result, the financial report may not be suitable for another purpose. Our opinion is not modified in respect of this matter.

Other Information

The directors are responsible for the other information. The other information obtained at the date of this auditor's report is included in the Annual Report, but does not include the financial report and our auditor's report thereon.

Our opinion on the financial report does not cover the other information and accordingly we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial report, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial report or our knowledge obtained in the audit or otherwise appears to be materially misstated.

If, based on the work we have performed on the other information obtained prior to the date of this auditor's report, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of Directors for the Financial Report

The directors of the Company are responsible for the preparation of the financial report that gives a true and fair view and have determined that the basis of preparation described in Note 1 to the financial report is appropriate to meet the requirements of the *Corporations Act 2001* and is appropriate to meet the needs of the members. The directors' responsibility also includes such internal control as the directors determine necessary to enable the preparation of a financial report that gives a true and fair view and is free from material misstatement, whether due to fraud or error.

In preparing the financial report, the directors are responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Company or to cease operations, or have no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of the Financial Report

Our objectives are to obtain reasonable assurance about whether the financial report as a whole is free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Australian Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial report.

PKF

PKF Chartered Accountants

Martin Matthews Partner

Newcastle, NSW

Dated : 2 October 2019

CRC for High Performance Soils Limited

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Australian Government
Department of Industry, Innovation and Science

Business Cooperative Research Centres Program