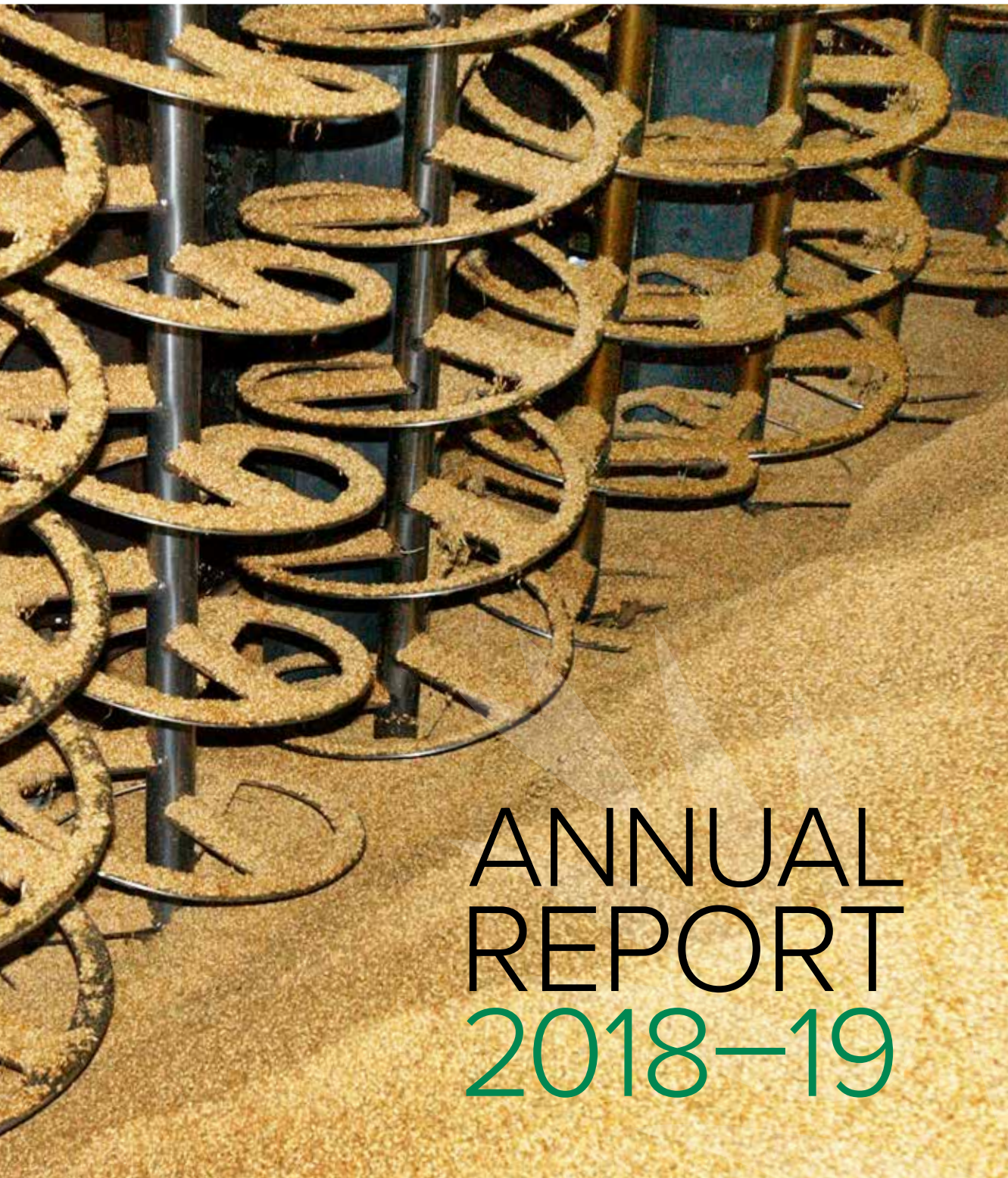
Australian Government

Grains Research and Development Corporation

GRDC

GRAINS RESEARCH & DEVELOPMENT CORPORATION



ANNUAL REPORT 2018–19

GRDC

The **Grains Research and Development Corporation** is a corporate Commonwealth entity established to plan and invest in research, development and extension (RD&E) for the Australian grains industry.

Its primary objective is to drive the discovery, development and delivery of world-class innovation to enhance the productivity, profitability and sustainability of Australian grain growers and benefit the industry and the wider community.

Its primary business activity is the allocation and management of investment in grains RD&E.

OUR PURPOSE

To invest in research, development and extension to create enduring profitability for Australian grain growers.

Cover photo: Malting barley at the Barrett and Burstons malting plant in Geelong, Victoria. Arthur Mostead. © AM Photography

Letter of transmittal

Australian Government
Grains Research and Development Corporation

GRDC
GRAINS RESEARCH & DEVELOPMENT CORPORATION

15 October 2019

Senator, the Hon Bridget McKenzie
Minister for Agriculture
Parliament House
CANBERRA ACT 2600

Dear Minister

It is my pleasure to present the annual report of the Grains Research and Development Corporation (GRDC) for the year ended 30 June 2019, in accordance with section 46 of the *Public Governance, Performance and Accountability Act 2013* and section 28 of the *Primary Industries Research and Development Act 1989* (PIRD Act).

The GRDC is confident that its performance in 2018–19 contributed to the industry's and the government's vision for a sustainable, productive, competitive and profitable Australian grains industry.

This achievement is consistent with the GRDC's responsibility to plan, execute and report against the:

- objects of the PIRD Act as they apply to the GRDC
- planned outcomes of the GRDC's 2018-2023 Research, Development and Extension Plan and Annual Operational Plan 2018–19
- outcome and performance measures set out for the GRDC in the Agriculture Resources Portfolio Budget Statements 2018–19
- core requirements of the Funding Agreement 2015–19.

The annual report was prepared under the direction of the Board and approved by a resolution of the corporation's directors on 13 October 2019.

Yours sincerely

John Woods
Chair

P PO Box 5367 Kingston, ACT 2604 Australia
T +61 2 6166 4500 **F** +61 2 6166 4599 **E** grdc@grdc.com.au
GRAINS RESEARCH & DEVELOPMENT CORPORATION ABN 55 611 223 291

grdc.com.au

Highlights of 2018–19

- 179 new investments commenced, collectively worth more than $22 million in that year.
- GRDC's performance as an investor in grains research is viewed positively by 85 per cent of growers surveyed in 2019. This is the highest result nationally since 1995.
- 76 per cent of growers are comfortable with paying a levy.
- Despite the significant effects of drought across most of the eastern grain growing regions, the majority of growers believe the industry is in fair to good shape (81%) and 41% believe it is in extremely good to good shape.
- The survey indicates that optimism about the future remains high among growers (score of 7 out of a possible 10).
- 77 per cent of growers believe they have directly benefitted from grains industry RD&E.

INCOME

$114.2m Grain grower levy

$69.4m Australian Government

$23.4m Interest, royalties and other

EXPENSES

$174.0m Research and development

$19.2m Suppliers and other

$13.3m Employee benefits

CROP LEVIES

$57.9m Wheat

$28.6m Coarse grains

$10.7m Grain legumes

$16.9m Oilseeds

RD&E investments

$70.1m Improve yield and yield stability

$11.0m Maintain and improve price

$65.4m Optimise input costs

$3.1m Reduce post-farmgate costs

$2.2m Manage risk to maximise profits and minimise losses

$18.3m Frameworks

$3.9m Research Management

Table 1: Five years at a glance

	2018–19	2017–18	2016–17	2015–16[a]	2014–15
Revenue	$206.7m	$213.8m	$242.4m	$200.9m	$203.1m
Expenditure	$206.5m	$219.8m	$227.7m	$215.0m	$216.0m
Operating result	$0.26m	–$6.0m	$14.8m	–$14.1m	–$12.8m
Total assets	$312.8m	$268.2m	$307.2m	$271.9m	$278.4m
Total equity	$263.0m	$199.4m	$205.8m	$187.5m	$191.3m
Industry contributions	$114.2m	$117.3m	$139.4m	$110.4m	$117.5m
Commonwealth contributions	$69.4m	$71.3m	$73.3m	$70.2m	$68.0m
R&D expenditure	$174.0m	$192.1m	$198.1m	$192.8m	$194.1m
Employee benefits	$13.3m	$13.2m	$10.9m	$10.5m	$10.7m
Suppliers	$16.6m	$10.5m	$11.6m	$9.4m	$9.4m
Number of projects[b]	767	742	700	898	942
Grains industry					
Estimated number of grain farms[c]	22,845	23,000	22,156	24,000	25,350
Estimated gross value of production	$13.9b[d]	$14.2b	$17.0b	$13.9b	$13.1b
Total grain production—summer and winter crops ('000 tonnes)	31,794[e]	39,302	63,404	42,279	40,700

a Some 2015–16 figures were updated in 2016–17 as a result of a prior period correction.

b Projects that received funding during the financial year, including R&D investments, research support and research management costs.

c Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) preliminary estimates. The methods used by ABARES to calculate numbers of grain farms have varied since 2013–14, but the results are broadly comparable.

d Latest ABARES forecast for the gross value of production of grains, oilseeds and pulses, excluding cottonseed and rice—from the June 2019 *Agricultural Commodities* report.

e Latest ABARES estimates for total summer and winter crop production, excluding cotton seed and rice—from the June 2019 *Australian Crop Report*.

Contents

1 OVERVIEW 1

Report from the Chair and the Managing Director 2

About the GRDC 5

Portfolio management 10

2 OUR PERFORMANCE 13

Performance framework 14

Annual performance statements 15

Objective 1—Improve yield and yield stability 20

Objective 2—Maintain and improve price 22

Objective 3—Optimise input costs 24

Objective 4—Reduce post-farmgate costs 26

Objective 5—Manage risk to maximise profit and minimise losses 28

Benefit-Cost Analyses – summaries 30

Commercialisation 32

3 OUR ORGANISATION 35

Board 36

Accountability 43

Work health and safety 46

Ecologically sustainable development and environmental performance 47

4 FINANCIAL STATEMENTS 49

Independent auditor's report 50

Statement by the Directors, Managing Director and Chief Finance Officer 52

Statement of Comprehensive Income 53

Statement of Financial Position 54

Statement of Changes in Equity 55

Cash Flow Statement 56

Notes to and forming part of the financial statements 57

APPENDICES 81

Appendix A– 17 BE(ta) Executive remuneration 82

Appendix B— Expenditure against the National Science and research priorities and Rural R&D Priorities 85

Appendix C— 17BE(ka) – Management of Human Resources 86

REFERENCES 89

Abbreviations list 90

Compliance index 91

Alphabetical index 93

FIGURES

Figure 1: Structure at 30 June 2019 5

Figure 2: Planning and reporting framework 7

Figure 3: Grain-growing region characteristics 8

Figure 4: Performance Framework 14

TABLES

Table 1: Five years at a glance iv

Table 2: GRDC performance against portfolio budget statements measures 16

Table 3: Board committees 40

Table 4: Attendance at board and committee meetings, 2018–19 41

Table 5: Companies in which the GRDC had shares or membership at 30 June 2019 45

Table 6: Work health and safety performance 46

Table A1: Information about remuneration for key management personnel 83

Table A2: Information about remuneration for senior executives 83

Table A3: Information about remuneration for other highly paid staff 84

Table A4: Australian Government Science and Research Priorities, dollar and percentage value 85

Table A5: Australian Government Rural Research, Development and Extension Priorities, dollars and percentage values 85

Table A6: All Ongoing Employees Current Report Period (2018–19) 86

Table A7: All non-ongoing employees Current Report Period (2018–19) 86

Table A8: All Ongoing Employees Previous Report Period (2017–18) 87

Table A9: All Non-Ongoing Employees Previous Report Period (2017–18) 87

1 Overview

Report from the Chair and the Managing Director 2

About the GRDC 5

Portfolio management 10

Report from the Chair and the Managing Director

Investment in grains research, development and extension (RD&E) over the past two decades has had an enormous impact on the Australian grains industry. The gross value of grains production has tripled from approximately $5 billion to approximately $15 billion in that time and ABARES estimates that adoption of new technologies by grain growers is responsible for more than 90% of this improvement. RD&E has led to the creation of new, high value crop industries in Australia including canola, chickpeas and lentils, and a doubling of water use efficiency. Many new constraints to grain production have also evolved over this time including new or increasingly prevalent pests, diseases and herbicide resistant weeds. Grains RD&E has provided grain growers with the tools and solutions that effectively manage these evolving constraints.

Despite this success grain growers continue to face declining terms of trade and a more variable and often hostile production environment. Global markets and customer preferences are also rapidly changing as major consumers of Australian grain demand greater traceability and sustainability of production and healthier food options. To meet these opportunities and challenges GRDC committed to a major readjustment and realignment of structure and investment culture that commenced just over three years ago. We are very pleased to report that this phase was largely realised during the 2018–19 financial year and the three year change process is almost complete.

GRDC has built the readjustment and realignment process around a clarified purpose to invest in RD&E to create enduring profitability for Australian grain growers. This is reflected in a new five-year RD&E plan together with the development of detailed strategies around 30 Key Investment Targets that underpin grower profitability. We have launched 15 summary strategies to date and expect the remaining 15 to be launched over the next couple of months. GRDC has recruited new staff with different skills whose focus is on collaborating as a team to deliver a return on investment to grain growers. These internal cross functional teams, also involving panel members from each region, have consulted with discipline experts across the country and overseas to develop the strategies or investment plans ready for implementation. We have strengthened our regional presence with now almost 50% of staff located in regional offices to provide greater availability to our primary stakeholder, the Australian grain producer.

We have also spent time exploring how we can deliver more impact to grain grower profitability through improved relationship management with research collaborators. A part of this process has been a focus on extending the diversity of organisations with whom we partner with a particular focus on expanding our interactions with the private sector and venture capital. Our new GrainInnovate program is an example of this. GrainInnovate is a $50 million venture capital partnership with Artesian, Australia's largest and most active early stage venture capital firm, to draw the best and brightest tech start-ups from across the globe to focus on innovative solutions for grain growers' hardest to solve problems. We have been very excited with the business ideas and potential new partners who have come to our attention through this initiative to date.

The 2018–19 financial year was a tough one for our growers particularly in large parts of New South Wales, southern Queensland, parts of Victoria and South Australia. A critical role for GRDC is to invest in new technologies that can ensure that growers capture the greatest possible profit when it does rain and reduce their losses in the poor seasons, ultimately assisting in growers building financial and business resilience.

Despite the lower than average production of wheat and coarse grains in the 2018–19 season, prices were strong due in part to high demand for feedstocks. However, levy income for R&D was down, and as a result the Board decided to reduce the R&D investment expenditure by approximately $10 million to $174 million and take an additional $20 million from reserves.

This allowed us to maintain our long-term investments and invest in new initiatives such as our $42 million partnership with the WA Department of Primary Industries and Regional Development (DPIRD) to overcome soil constraints in Western Australia.

Our total investment portfolio was made up of 767 projects across all regions of Australia.

Grower opinions

GRDC continues to survey approximately 1200 growers across Australia annually. This is an important source of information about growers' perceptions of how GRDC is performing, whether RD&E is providing a benefit to their business, and their level of confident in the industry generally.

Despite the significant effects of drought across most of the eastern grain growing regions, most growers believe the industry is in fair to good shape (81%). The survey indicates that while optimism about the future remains high (score of 7.5 out of a possible 10), optimism is significantly higher in western growers s as a consequence of difficult conditions across most of the eastern grain growing areas.

RD&E investments

GRDC completed several long-term initiatives in 2018–19 contributing to profitable grains production. The investments in canola pre-breeding are an example of our commitment to long-term, collaborative and strategic investments. The investment combines the efforts from scientists in Australia, India and China that utilised the canola progenitor (ancestral) species to resynthesise the canola plant from scratch. This resulted in a broadening of the genetic diversity of available canola lines with potentially valuable heat and drought-tolerance traits that can help protect yield under these types of stresses.

GRDC is also supporting projects that aim to deliver heat stress tolerance in wheat. Research has identified lines from various international programs that have considerably improved heat tolerance to current varieties.

Research being undertaken in partnership with CSIRO aims to develop new genetics for wheat varieties that will improve the utilisation of precious and increasingly variable rainfall. CSIRO researchers have identified new, alternative dwarfing genes that could potentially reduce crop stature without impacting coleoptile length or early growth. These new lines show considerable promise in breeding wheats with improved water-use efficiency, weed-competitiveness, and larger root systems enabling greater nitrogen uptake. Plants with the desired combination of genes have now been passed on to wheat breeders to validate in their own programs.

Long term, strategic investments have also focussed on the issue of poor quality and problem soils that continue to limit grower opportunities The Soils Constraints West project has been a 5-year co-investment with the DPIRD. Some of the many and varied outcomes of this investment have included assessing the impact of inversion tillage, deep-ripping, lime incorporation, gypsum application and water harvesting on soil quality as well as improved mapping of soil constraints and the development of decision tools. WA growers are now better equipped to understand how and why their soils may be restricting plant growth. However, there is still more to be done and GRDC is maintaining momentum in this important work through a new $42 million co-investment between GRDC and DPIRD. The new research will consider the yield potential of WA soils where all constraints have been removed, using agronomic tools such as controlled-traffic farming, crop rotations and water harvesting strategies. This provides the information required to determine how big the gap is between potential and actual yield and how much of that gap can be profitability addressed.

GRDC continues to play an important role in maintaining national R&D capacity and capability GRDC has partnered with USQ to open a new $16million world-class Agricultural Science and Engineering Precinct in Toowoomba, Queensland. The glasshouses and new facilities will be used for pre-breeding programs for wheat and chickpeas, specifically assisting in the development of varieties with improved tolerance to drought and heat, and resistance to disease.

Accelerating the pace of change through innovation and smarter approaches is crucial to increasing the profitability of growers. Innovation will also be the key to meeting the National Farmer Federation's (NFF) goal of lifting the value of Australian agricultural production to $100 billion by 2030.

The year ahead

With the majority of GRDC's realignment and redesign process complete, the organisation will focus on delivering on the new five-year RD&E plan. We will be taking more strategic risks with our investments as we seek transformative innovation of our growers. For example, the new frost investment strategy will be focussed on investments that are higher risk but potentially higher reward, reflecting the fact that incremental improvements in managing frost have already been adopted by growers and transformative change is required.

GRDC is also working with our partners to overhaul its investment in variety development. The emphasis is on modernising breeding approaches to utilise the most appropriate developments in genetic improvement as well as expanding the target areas of production for higher value crops. In particular, GRDC is focussing on providing reliable and profitable pulse varieties in farming systems that currently lack access to an adapted legume as well as exploring opportunities to expand the production of cereals such as oats that have the potential for increased production.

GRDC is also actively seeking opportunities to work collaboratively with partner RDCs and other parties on a wide range of important agricultural industry issues. These include climate risk, farm health and safety, spray drift, virtual fencing, irrigation, sustainability, extension approaches and community trust.

For some time now, GRDC has recognised that doing more of the same is simply not acceptable to grain growers going forward.

Re-aligning GRDC to be ready for the future, while continuing to invest in innovative RD&E has been a major priority over the past three years.

Now, the focus is on realising the benefits to this re-alignment to deliver impact on grower profitability.

John Woods
Chair

Steve Jefferies
Managing Director

About the GRDC

The GRDC's purpose is to invest in research, development and extension (RD&E) to create enduring profitability for Australian grain growers.

The GRDC invests to deliver new and improved varieties, farming practices, technologies and capability to the Australian grains industry. These investments drive the discovery, development and delivery of world-class innovation.

Structure

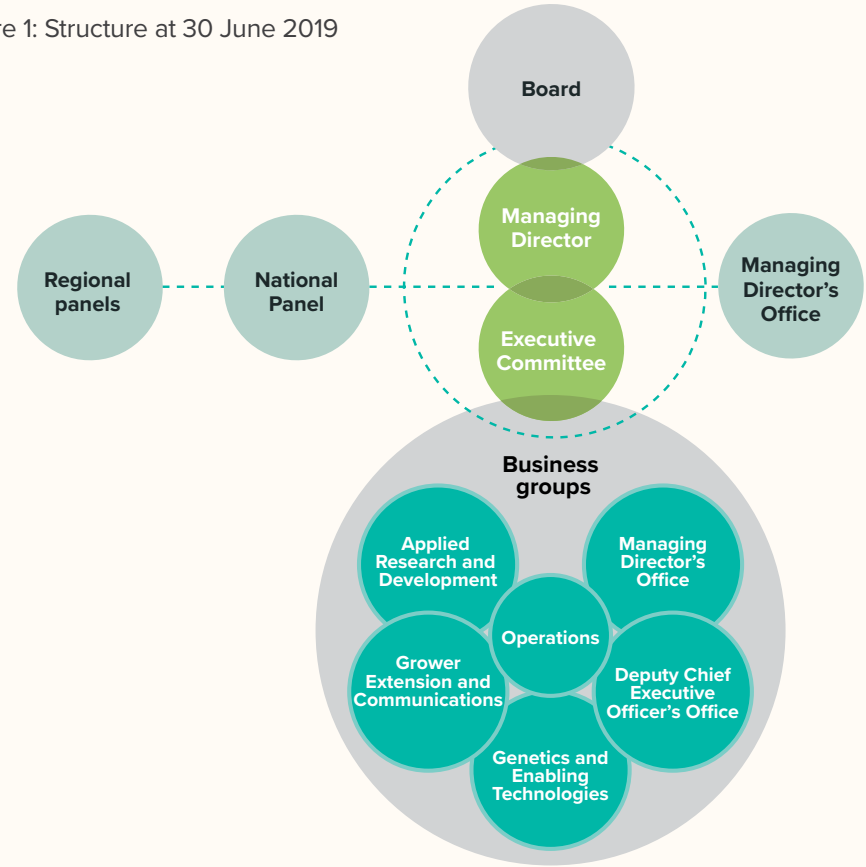
Figure 1 shows the GRDC's organisational structure at 30 June 2019.

Board and executive

The GRDC Board is responsible for the stewardship of the corporation and oversees corporate governance within the GRDC. Its functions centre on setting strategic direction and monitoring the ongoing performance of the business. More information on the Board is provided in Part 3 of this report.

The Executive Committee is composed of the Managing Director and the General Manager of each of the six business groups. The Executive Committee leads the GRDC's business activities and meets regularly to ensure operations are monitored and managed efficiently and effectively. The Executive Committee advises the Board on strategy and operations and implements the Board's decisions.

Figure 1: Structure at 30 June 2019



Funding

The GRDC is principally funded by levies paid by grain growers and contributions paid by the Australian Government.

The levies are collected at the first point of sale and based on the net farm gate value of 25 crops:

- wheat
- coarse grains—barley, oats, sorghum, maize, triticale, millets/panicums, cereal rye and canary seed
- pulses—lupins, field peas, chickpeas, faba beans, vetch, peanuts, mungbeans, navy beans, pigeon peas, soybeans, cowpeas and lentils
- oilseeds—canola, sunflower, safflower and linseed.

The Australian Government matches the levy contributions up to a maximum of 0.5 percent of the three-year rolling average of the gross value of production of the 25 leviable crops.

Other sources, including interest, royalties and grants, contribute to the GRDC's total income.

Business groups

The GRDC had six business groups with subgroups as follows:

- Managing Director's Office—Legal; Human Resources; and Industry and Government Relations
- Deputy Chief Executive Officer's Office—Economics; Strategy; Commercial; and Business Development
- Genetics and Enabling Technologies—Pre-breeding; Data Analytics; National Variety Trials; and Statistics and Bioinformatics
- Applied Research and Development—Agronomy; Farming Systems; Soils; Nutrition; Crop Protection; and Regional Offices
- Grower Communications and Extension—Communications; Extension; and Corporate Affairs
- Operations—Governance and Reporting; Finance; IT; and Business Services.

Investment planning, implementation and assessment are performed by cross-functional teams involving input from relevant units across the GRDC with advice from regional advisory panels and third-party experts where required. Individual investment contracts are negotiated and monitored by managers within relevant units.

Advisory panels

Three regional advisory panels represent each of Australia's major grain-growing regions and are composed of grain growers, agribusiness representatives and researchers. The advisory panels provide input on priorities and proposals for RD&E investment.

The National Panel comprises the chairs of each of the regional panels and the executive.

The National Panel:

- assesses RD&E priorities across the GRDC's investment portfolio and makes recommendations on investment priorities to the Managing Director
- assists the Managing Director to maintain links with grain growers, advisers and research partners.

More information on the advisory panels is provided on the GRDC website, at grdc.com.au/about/what-we-do/regional-panels.

Collaboration and partnerships

Effective partnerships with co-investors enable the GRDC to leverage resources and research capability; share market knowledge, technologies and intellectual property; and reduce the risk associated with individual investments.

Most GRDC co-investors are also research collaborators. They include state government departments, CSIRO, universities, farming systems groups, cooperative research centres, and private sector bodies. The number of effective linkages between the GRDC and agribusiness participants, including farm advisers and agronomists, is also increasing. Partnerships with agribusiness have tended to focus on the identification of R&D priorities and facilitation of the adoption of R&D outputs by grain growers.

The GRDC also co-invests with other rural R&D corporations (RDCs) where common opportunities or constraints exist, and mutual benefit is likely to be delivered. There is a focus of collaborative investments to address cross-sectoral issues defined under the National Primary Industries Research, Development and Extension Framework. This includes collaborations related to the Managing Climate Variability initiative, plant biosecurity, and soil health. Further collaborations with other RDCs exist under the Rural Research and Development for Profit (RRD4P) program, including projects such as:

- Boosting profit and reducing risk of mixed farms in low and medium rainfall areas with newly discovered legume pastures enabled by innovative management methods led by GRDC.
- Improving plant pest management through cross industry deployment of smart sensor, diagnostics and forecasting led by Horticulture Innovation Australia.
- Forewarned is forearmed: equipping farmers and agricultural value chains to proactively manage the impacts of extreme climate events led by Meat and Livestock Australia.

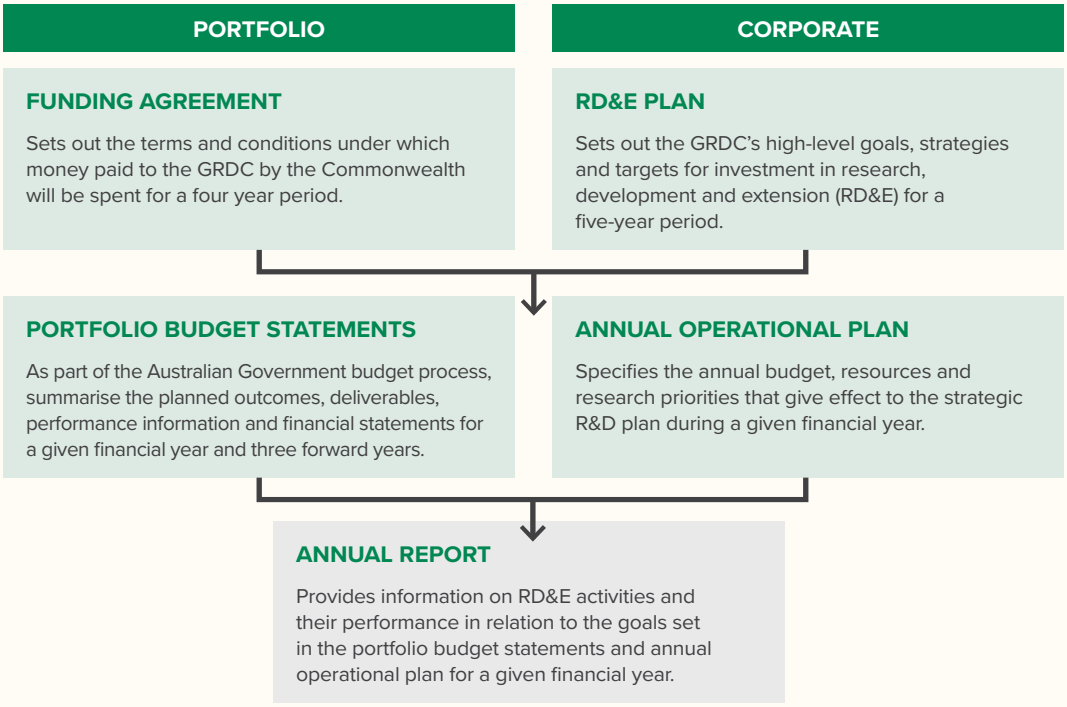
The GRDC also builds strong relationships with international partners to broaden the resources available to the Australian grains industry and to access international RD&E expertise and/or capacity. An example of this is the GRDC's continuing investment with Bayer to discover new herbicides suitable for Australian conditions.

Planning and reporting

The GRDC is committed to delivering the best possible value to its stakeholders. It does this through careful planning, active investment management, continuous investment review and reporting of its performance. Information on the GRDC's accountability to grain growers, and to the Australian Government and the broader community, is provided in Part 3 of this report.

Figure 2 outlines the core elements of the GRDC's planning and reporting activities against planned objectives and statutory requirements. Relevant documents are available for download from the GRDC's website.

Figure 2: Planning and reporting framework



Location

Australian grains production occurs across three regions—comprising 13 different agroecological zones—with distinct climate, cropping, farming systems and market characteristics, as described in Figure 3.

To best deliver tailored investment for growers in these regions and agroecological zones, GRDC maintains a network of six offices in Canberra, Adelaide, Perth, Toowoomba, Wagga Wagga and Horsham.

Contact details are listed inside the back cover of this report.

Figure 3: Grain-growing region characteristics

NORTHERN REGION

Soil fertility is generally high, although there is increasing evidence that this has been run down over time.

The region has relatively high seasonal rainfall and production variability compared with the other two regions. Yield depends, to a significant degree, on conservation of soil moisture from summer rainfall.

The region has the highest diversity of crop production, including maize, sorghum and tropical pulses as well as wheat, barley, winter-growing pulses and oilseeds. It is the largest source of Australia's premium hard high-protein wheat.

Demand for feed grains from the region's livestock industries is a key driver of production.

Key characteristics:

- high proportion of vertosol clay soils
- tropical, sub-tropical and temperate environments
- summer dominant cropping in Queensland, winter dominant cropping in New South Wales
- high proportion of mixed farming, including sugarcane, cotton and pastures
- large and diverse domestic and export markets.

SOUTHERN REGION

The region has a diverse suite of soils with generally low fertility and many subsoil constraints, such as salinity, sodicity and toxic levels of some elements. However, some areas have very productive soils.

Yield potential depends on seasonal rainfall, especially in autumn and spring, and is less dependent on stored soil moisture than in the Northern Region.

Crop production systems are varied and include many mixed farming enterprises with significant livestock and cropping activities.

Key characteristics:

- relatively infertile soils
- temperate climate
- yield depends on reliable spring rainfall
- smaller enterprise size and diverse production patterns and opportunities
- innovative phase farming with perennials
- shift toward intensive livestock production and demand for feed grains
- large and diverse domestic market.

WESTERN REGION

Soil fertility is generally low to very low, and yield depends on winter and spring rainfall.

In many areas, low yields are compensated for by the large scale and degree of mechanisation of cropping enterprises.

Long-term variability in seasonal rainfall and production is lower in the coastal areas than in the Northern and Southern regions.

Wheat, barley, canola and lupins are the dominant crops. Mixed farming systems with livestock are generally less important.

The region has a relatively small domestic market and exports more than 85 percent of its grain production.

Key characteristics:

- low soil fertility
- Mediterranean climate
- dependence on winter rainfall as spring rainfall is unreliable
- large enterprise size
- leading grain storage practices
- narrow range of crop options
- dominant export market, and transport advantage to South-East Asia.

Portfolio management

The GRDC's RD&E portfolio in 2018–19 included 767 investments delivering various aspects of research, development and extension.

In the 2018–2023 RD&E Plan, the GRDC outlined a balanced portfolio approach to RD&E investment structured around five core objectives aligned with the GRDC's purpose and government and industry priorities.

The objectives focus on the four key drivers of profit—yield, price, costs and risk—and comprises a balanced mix of investments to:

- support incremental improvements in profitability in the short to medium term
- achieve transformational impact in the longer term, and
- maintain grower profitability and sustainability.

Balance

To ensure the ongoing profitability of growers, the GRDC will continue to invest in RD&E in areas such as genetics, biosecurity; pest and disease management; weed management; soils, agronomy, farming systems, grain quality and classification; and market access and competitiveness.

In keeping with its focus on an investment culture that balances risk and return, the GRDC will continue to shape the investment portfolio to deliver continual incremental (one-two percent) improvements in profit while also targeting higher risk investments for transformational (10-20 percent) improvements to profitability.

RD&E investments to support incremental profitability improvements generally delivers on-farm changes in the short to medium term (up to eight years), and are characterised as having lower technical, commercial and/or adoption risk. They are important in maintaining grower competitiveness in current international markets.

Investment in transformational innovation underpins competitiveness of Australian grain growers in the long term. RD&E to support transformational change is generally high risk and requires longer time periods for delivery.

Geography

The delivery of benefits or potential benefits to growers on a geographical basis is an important portfolio balance consideration. The geographic distribution of investment funds on the other hand, is not a consideration in investment analysis. The location of RD&E investments is determined only by the capability and capacity required. The GRDC will continue to identify the most suitable collaborators based on merit regardless of location including investment with international entities where appropriate.

It is important to note that investment at regional and local level is a critical component of any program seeking to discover, validate and adopt new innovations and will continue to be a focus particularly for development and extensions activities.

2 Our performance

Performance framework	14
Annual performance statements	15
Objective 1—Improve yield and yield stability	20
Objective 2—Maintain and improve price	22
Objective 3—Optimise input costs	24
Objective 4—Reduce post-farmgate costs	26
Objective 5—Manage risk to maximise profit and minimise losses	28
Benefit-Cost Analyses – summaries	30
Commercialisation	32

Performance framework

At a strategic level, the performance of the GRDC is measured in terms of the achievement of five objectives, as detailed in the 2018–2023 RD&E Plan and the Annual Operational Plan 2018–19.

Figure 4 provides an overview of the GRDC's performance framework in 2018–19, showing the relationships between the KPIs of each objective and the priorities of the grains industry.

Figure 4: Performance Framework

Our purpose	To invest in research, development and extension to create enduring profitability for Australian grain growers				
What we do	A minimum of 6% average farm business Rates of Return by 2023				
Key Performance Indicators	Improve yield and yield stability	Maintain and improve price	Optimise input costs	Reduce post-farmgate costs	Manage risk to maximise profit and minimise losses
Performance Targets	Minimum yield increases equivalent to 1 per cent per annum for cereals, 2 per cent per annum for pulses and 1.5 per cent per annum for oilseeds. By 2023 a minimum 20 per cent closure of the gap between potential yield and actual yield.	Identification of potential new products that attract premium prices. Identification of opportunities for product differentiation. Defence of current market access programs.	Maintain increases in chemistry costs below the five-year trend (2018–2023) equivalent to $85.50 per hectare or a ratio of input to crop revenue of 0.166. Maintain increases in fertiliser costs below the five-year trend (2018–2023) equivalent to $84.30/ha or a ratio of input to crop revenue of 0.164.		
Enabling frameworks	Data management and analytics	Biosecurity	Grower communication and adoption	Capacity and ability	
Collaboration	Leveraged research, industry and government partners				
Organisational KPIs	Grower satisfaction with GRDC as an investor in grains research.	Growers comfortable with paying levy.			

Annual performance statements

The Board, as the accountable authority of the Grains Research and Development Corporation (GRDC), presents the 2018–19 annual performance statements of the GRDC, as required under paragraph 39(1)(a) of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act) and section 28 of the *Primary Industries Research and Development Act 1989* (PIRD Act).

In the Board's opinion, these annual performance statements are based on properly maintained records, accurately reflect the performance of the GRDC, and are in accordance with subsection 39(2) of the PGPA Act.

Agriculture and Water Resources Portfolio Alignment

The GRDC delivered against one outcome of the Agriculture and Water Resources portfolio in 2018–19:

> New information and products that enhance the productivity, competitiveness and environmental sustainability of Australian grain growers and benefit the industry and wider community, through planning, managing and implementing investments in grains research and development.

GRDC also contributed to the portfolio outcomes:

> Outcome 1: More sustainable, productive, internationally competitive and profitable Australian agricultural, food and fibre industries through policies and initiatives that promote better resource management practices, innovation, self-reliance and improved access to international markets.
>
> Outcome 2: Safeguard Australia's animal and plant health status to maintain overseas markets and protect the economy and environment from the impact of exotic pests and diseases, through risk assessment, inspection and certification, and the implementation of emergency response arrangements for Australian agricultural, food and fibre industries.
>
> Outcome 3: Improve the health of rivers and freshwater ecosystems and water use efficiency through implementing water reforms, and ensuring enhanced sustainability, efficiency and productivity in the management and use of water resources.

Purpose

The GRDC's purpose is to invest in RD&E to create enduring profitability for Australian grain growers.

Results

The 2018–2023 Research, Development and Extension Plan (RD&E Plan) establishes the performance framework for the GRDC purpose and objectives. The achievement of targets is measured through a combination of economic, survey or other data, case studies that are relevant to the objective and cost-benefit analyses of recently completed investments that align with the objectives.

Where the GRDC has adopted external economic indicators of grain farm/industry performance as proxies, the GRDC contribution is supported with case studies and benefit-cost analyses. As GRDC progressively develops Key Investment Target (KIT) strategies, KIT outcomes and measures will be developed and provided as further support of performance.

Progress against the GRDC's performance criteria for each objective is outlined in Table 2.

Table 2: GRDC performance against portfolio budget statements measures

KEY PERFORMANCE INDICATOR	TARGET	2018–19 RESULT
Purpose	A minimum 6% average farm business rate of return by 2023	In 2018–19 drought had a major impact on the profitability of Australian grain growers across most of the Southern and Eastern grain growing regions. Despite high grain prices and good production in the Western region, overall farm cash income fell by approximately 18 per cent. This led to a weaker forecasted national average rate of return per farm of 1.8 per cent.* **ABARES Farm Performance: broadacre and dairy farms 2016–17 2018–19 March 2019*
Objective 1		
Improve yield and yield stability	• Minimum yield increases equivalent to 1% per annum for cereals, 2% per annum for pulses and 1.5% per annum for oilseeds, achieved while identifying and investing in technology for transformational improvement in yield potential and yield stability	Changes in year on year yields (2018–19) Cereals:(0.03%) Pulses:(0.04 %) Oilseeds:(0.04%) Yield target increases for summer crops were mostly met; however, winter crops (except oats) were all lower than the target due to the prolonged drought in the growing regions of the eastern states. Barley (1.46%) Corn (maize) (.79%) Oats 1.17% Triticale (2.52%) Wheat (2.91%) Canola (3.78%) Soybeans 4.28% Sunflower 3.28% Chickpeas (4.64%) Field peas (8.60%) Lupins (3.17%) *All yield figures are preliminary estimates from ABARES Australian Commodities June 2019.*
	• By 2023 a minimum 20% closure of the gap between potential and actual yields	The yield gap**, or the difference between actual and potential yield in wheat, was 1.1, 1.2 and 1.3t/ha across the Northern, Southern and Western GRDC regions of the Australian grain belt, respectively in 2015 and 2016.* **Yield Gap Australia website* ***Yield gap for wheat is the proxy measure for all grains.* GRDC continues to invest in the National Paddock Survey to understand the critical drivers of the yield gap across Australia and to inform investments targeted at closing this gap that do not expose growers to undue risk.

Table 2: GRDC performance against portfolio budget statements measures (cont.)

KEY PERFORMANCE INDICATOR	TARGET	2018–19 RESULT
Objective 2		
Maintain and improve price	• Identification of potential new products that attract premium prices	Through the Australian Export Grains Innovation Centre (AEGIC), GRDC invested in studies to examine market opportunities for value adding in malt barley, feed barley, oats and wheat.
	• Identification of opportunities for product differentiation	• GRDC invested in two scoping studies to identify potential investment opportunities for high value pulse products and crop bioproducts. • Through AEGIC, GRDC has invested in examining the potential development of an oat noodle product as an alternative to the traditional wheat noodle. AEGIC has researched consumer perceptions and preferences of oat noodles particularly in South East Asia and China. Australian oat varieties have also been assessed and determined to be suitable for the Chinese market. A significant achievement of this investment has been the development of a processing methodology incorporating more than 50% oat flour in a noodle acceptable to the Chinese food industry.
	• Defence of current market access programs	• GRDC worked with ABARES and industry organisations to consider non-tariff measures across several markets. • GRDC undertook a review of the costs of ergot and live snails in export cargoes to India and China. The results show that costs can be considerable and generally accrue to growers through the need to control ergot and snails in crops and to screen these contaminants from grain before it is received by grain handlers. • Grains Industry Market Access Forum (GIMAF) hosted three meetings for industry to review activities being undertaken to manage market access issues and set market access priorities. • GIMAF attended meetings with other Australian government representatives in Indonesia, China and Singapore to build relationships across governments and better understand opportunities and constraints for the trade of Australian grains. • AEGIC organised and hosted 11 Australian grain technical seminars Indonesia, China, Vietnam, Japan, Korea, Myanmar, Thailand, Malaysia, the Philippines and Taiwan, attended by more than 500 millers, brewers, maltsters and processors. These seminars, held in conjunction with Australian industry partners, increased the understanding of the quality and functionality of Australian wheat and barley and the Australian industry with international grain customers.

Table 2: GRDC performance against portfolio budget statements measures (cont.)

KEY PERFORMANCE INDICATOR	TARGET	2018–19 RESULT
Objective 3		
Optimise input costs	• Maintain increases in chemistry costs below the five-year trend (2018–2023) equivalent to $85.50/ha or a ratio of input to crop revenue of 0.166	In 2017–18 the amount of crop input was significantly reduced leading to the average costs of crop and pasture chemicals of $82.91 per hectare, or a ratio of 0.129 input to crop revenue over the period 2013–18. **ABARES Agsurf data*
	• Maintain increases in fertiliser costs below the five-year trend (2018–2023) equivalent to $84.30/ha or a ratio of input to crop revenue of 0.164	In 2017–18 the average cost of fertiliser was $75.68 per hectare, or a ratio of 0.134 input to crop revenue over the period 2013–18. This result reflects the drought conditions and reduction in crop inputs through 2017–18. **ABARES Agsurf data*
Objective 4		
Reduce post-farmgate costs	• Timely submissions to government to support policy decision-making based on sound RD&E • Timely advise on technical barriers to trade issues	• The Department of Agriculture and grains industry organisations responded to a World Trade Organisation issue raised by China over barley exports in 2016. GRDC provided background data to support government and industry's response to the issue. • The use of Glyphosate has been challenged via a series of civil court cases in the United States. This issue has centred on perceived doubts over the safety of Glyphosate and its on-going use for agricultural purposes. GRDC has invested in information products on the appropriate use of Glyphosate and is providing information and data as required to government and industry.
Objective 5		
Manage risk to maximise profit and minimise losses	• Increased number of growers undertaking appropriate business training	As measured in the 2019 GRDC Grower Survey: • Growers continue to engage paid expertise such as financial advisors and business advisors. 87 per cent of growers surveyed indicated that they engage professional financial advice. This is significantly up from the 2017 result of 75 per cent. • 77 per cent of growers surveyed adopt strategies to minimise work, health and safety risks.
	• Establishment of a behavioural economics initiative to research grower decision-making	Not yet achieved. GRDC expects to achieve this indicator by 2023. The Key Investment Target strategy '5.2 Understand grain grower decision-making and the drivers for adoption of new technology' has been published and will guide GRDC's investment in the area of behavioural economics.

Note: Key performance indicators and targets are defined in the Agriculture Portfolio Budget Statements 2018–19, pages 166 –167, and the GRDC Annual Operational Plan 2018–19, pages 7–10. Survey results are derived from the most recent survey in which the target was measured.

For cropping farms in drought-affected regions, farm incomes are projected to be substantially lower in 2018–19 (on average) due to lower crop areas and yields. Elsewhere, high prices for most grain, oilseed and grain legume crops are helping to keep incomes for cropping farms at historically high levels. This may result in a smaller percentage of farms achieving Rates of Return in line with the GRDC's measurement of purpose.

Several of the performance targets were not achieved during 2018–19, in large part due to severe drought across the Eastern states. While individual seasonal conditions can be particularly challenging, the GRDC has set its sights on achieving positive results across the life of the 2018–2023 RD&E Plan.

GRDC also maintains a series of corporate KPIs that include measures of grower satisfaction with GRDC's performance as an investor in grains RD&E and perceptions of the usefulness of grains RD&E. Growers continue to recognise the benefits of RD&E with 77 per cent of growers surveyed acknowledging the benefits of RD&E.

Feedback through the annual Grower Survey demonstrates that grain growers are increasingly resilient and remain optimistic about the industry's future with 81 per cent of growers perceiving the industry to be in *fair* to *extremely good* shape.

Objective 1—Improve yield and yield stability

RD&E	PROJECTS	INVESTMENT
New	84	$14.2m
Ongoing	188	$55.9m
Total	**272**	**$70.1m**

The goal to close the gap between actual and potential yields is a critical part of delivering immediate improvements in grower profitability. Delivering enduring profitability to grain growers will also require investments aimed at further improving the yield potential and yield stability of all Australian grain crops. Maintaining yield stability under the impacts of various environmental factors is also an important aspect of delivering grower profitability and supporting the management of production risk especially under adverse production conditions.

Elevating yield potential can be achieved by increasing inherent genetic yield potential and by limiting the impact of yield constraints (e.g. frost, hostile soils and heat). Investments to decrease the impact of pests, weeds and diseases are captured under Objective 3.

Investment highlights 2018–19

Examples of investments in 2018–19 that support the achievement of this objective include:

Manipulating barley phenology to maximise yield potential

This investment targets understanding the genetic control of the timing of growth stages that contribute to yield potential such as flowering and grain development. Research supported by this investment has identified key genes that regulate growth stage and this information will form the basis of future work to define the optimal combination of genes to maximise yield potential in different environments.

Improving wheat yields on sodic, magnesic, and dispersive soils

A major yield constraint in a number of grain growing regions is the prevalence of alkaline sodic soils characterised by high levels of exchangeable sodium that are prone to dispersion (they lose structure and become dense when wet), waterlogging and a range of mineral toxicities (mostly boron). Variation for improved tolerance to specific stresses associated with alkaline sodic soils (high boron, high pH, high aluminium under alkaline conditions, root growth through dense soil and waterlogging) has been identified among varieties screened under this investment. A program is underway to combine these tolerances in a single line that can be tested in the field and, if validated, made available to breeding companies.

Optimising mungbean yield in the northern region - Mungbean Physiology

Mungbeans are an important option for summer cropping in the Northern growing region supported by GRDC investment in breeding with the Queensland government. While the breeding program has contributed significant improvements in potential yield, relatively little is known about the interaction of nitrogen fixation and nitrogen fertilisation in mungbean production. Initial results from this investment indicate that additional nitrogen application for mungbeans does not influence yields when the potential is less than 1.5t/ha and there is adequate available nitrogen already applied (approximately 120 kg/ha). Under these levels of available Nitrogen, mungbean nodulation is severely impacted and can even result in no nodulation. In this situation growers need to ensure that there is adequate available N to the crop to optimise yield.

Objective 2—Maintain and improve price

Maintaining current market positions will depend on maintaining the premium quality reputation of Australian grain. Important functions driving the maintenance of reputation includes Australia's grain classification systems as well as the effective and prompt management of trade and market access issues as they arise.

RD&E	PROJECTS	INVESTMENT
New	19	$1.4m
Ongoing	13	$9.6
Total	**32**	**$11.0m**

Traceability and demonstrated food safety continue to be key customer requirements and are expected to increase in importance in the short-to-medium term. Australian growers are well placed to service customer requirements in this area.

Improvements in price can be attained through the differentiation of crops currently produced in a region and/or the production of new crops that attract a higher price.

Opportunities to change the functionality and/ or composition of traditional commodities will underpin future markets and increases in demand and prices.

Investment highlights 2018–19

Examples of investments in 2018–19 that support the achievement of this objective include:

Expansion of chickpea production area

Chickpeas offer the opportunity for growers to produce a high value crop that also contributes nitrogen in the rotation. Chickpea production in Australia is dominated by desi types with most of the production coming from the Northern region. Larger kabuli chickpeas have also historically been produced in the Wimmera. More recently, chickpea production has extended into Southern NSW and the Victorian Mallee although there has been relatively little focus on breeding varieties specifically for these areas. Previous efforts to establish chickpea production in Western Australia have not been successful due to the relatively poor performance of varieties in the Western agro-ecological zones.

GRDC has been working with the NSW Department of Primary Industries to completely restructure chickpea variety development to deliver high performing varieties to the emerging production zones in the South and West while maintaining ongoing variety improvement in the North. This includes significant new investment from both parties to adopt new breeding technologies and expand the genetic base of the program as well as establish the required infrastructure to support an expanded breeding effort.

Barley grain defects

Sound, bright and plump malt barley grains attract a price premium and enhance the competitiveness of Australian barley varieties in international markets. In contrast, barley grain defects (kernel staining, pre-harvest sprouting and black point) result in downgrading at receival and have caused tens of millions of dollars economic loss to growers and the barley industry.

This investment aims to provide growers with access to barley varieties that have a lower incidence of grain defects. Large scale screening of domestic and international barley lines for seed dormancy, pre-harvest sprouting, black point, kernel discoloration and germination rate in Western Australia and Queensland has been completed. To date, over 500 barley accessions have been evaluated and new germplasm with reduced risk of pre-harvest sprouting suitable for Northern region has been identified.

Objective 3—Optimise input costs

On farm

International comparison of average input costs per tonne confirms that Australian growers are subject to relatively high costs of production.

RD&E	PROJECTS	INVESTMENT
New	59	$5.6m
Ongoing	144	$59.8m
Total	**203**	**$65.4**

A wide range of opportunities exist that can lead to incremental and transformational reductions in input costs while maintaining yield potential and optimising profitability. Investments under this objective consist of those addressing incremental opportunities to match costs with production at a regional scale as well as those identifying transformational opportunities on a national scale.

Investment highlights 2018–19

Examples of investments in 2018–19 that support the achievement of this objective include:

Optimising plant establishment, density and spacings to maximise crop yield and profit in the southern and western region

In 2018, a survey of crop establishment in 140 paddocks and field trials was completed in Victoria, South Australia and Western Australia. The survey highlighted low establishment rates and highly variable plant densities in crops in the western and southern regions, especially in canola planted early into high stubble loads. The survey suggested improvements in crop establishment could be achieved with conventional seeding equipment.

In 2019, field trials were established in South Australia and Victoria to examine yield responses to sowing rates and row spacing in different types of seeders. Results from the trials indicate that sowing with a precision planter did not improve establishment but did increase yields in South Australia, but not at Victoria. Further work will be conducted in the Southern and Western regions to determine the factors that contribute to good establishment and its relation to yield.

Increasing the effectiveness of nitrogen fixation in pulse crops

Commencing in 2018, two related projects have been designed under a single investment program to build on previous research and development to boost the contribution of nitrogen fixation by pulse crops in farming systems of the southern region. In the first instance, the program focusses on the development of three strains of acid tolerant faba bean/lentil rhizobia identified in earlier field trials. An improved, acid tolerant rhizobial inoculant should be ready for commercial release in 2022. Chickpea rhizobial strains are also being tested for their ability to tolerate low pH before entering field trials.

Updated nutrient response curves in the Northern and Southern regions

This investment maintains a total of 22 trial sites exploring crop responses to varying soil nitrogen (N), phosphorous (P), potassium (K) and sulphur (S) availability . While severe drought conditions through 2018–19 has limited the planting opportunities across the trial sites, the priority has been in establishing the responsiveness of pulses and oilseeds to N,P,K and S availability, for which little crop response data exists.

Benchmarking of this data against relatively well-researched wheat or sorghum responses should allow extrapolation of relative responsiveness to other soil types and regions. Matching fertiliser application to crop response on different soils is a critical component to minimising costs while maintaining yield potential.

The program is also evaluating inoculant formulations and application rates and has demonstrated that nodulation is most reliably achieved when inoculating with peat-based inoculants applied to seed. Granule inoculants were less consistent in their performance but may be better suited to dry sowing. Freeze-dried formulations resulted in poor nodulation outcomes at several sites, confirming recommendations that they should only be used where sowing conditions are optimal and seed is sown into wet soil within hours of inoculation.

Innovative crop weed control for northern region cropping systems

This investment aims to develop weed management techniques and strategies to minimise herbicide resistance and the costs associated with weed control. To date the research has reviewed the effectiveness and efficiency of chemical, physical and thermal weed control technologies when applied as broadcast (whole field) or site-specific treatments. Site-specific weed control creates the opportunity to use alternate weed control technologies and could be combined with a competitive winter crop to suppress emergence, growth and seed production of summer weeds. RD&E in this program is targeted at the control of summer weeds including sow-thistle, fleabane, Feathertop Rhodes grass and Awnless Barnyard grass.

Hydrogen to Ammonia

GRDC is partnering with CSIRO and Orica P/L though a co-funded investment with the Australian Renewable Energy Agency (ARENA). The Hydrogen to Ammonia R&D investment aims to develop an ammonia production process that is less energy intensive than the conventional Haber-Bosch process with lower greenhouse gas emissions. A prototype ammonia producing reactor will be built to demonstrate the operation with electricity supplied by a solar PV, thus showcasing the technology potential for export of Australia's vast renewable sources of energy.

The technology will reduce the required energy input per tonne of ammonia and is less capital intensive potentially making it suitable for use with renewable sources on a farm or regional level.

Objective 4—Reduce post-farmgate costs

GRDC has traditionally limited its investment in post-farm gate activities because it is difficult to demonstrate a direct return to growers. However economic principles indicate that the costs of post farm gate supply chains, as well as much of the benefits, accrue to the parties at the ends of those supply chains; growers and consumers. As such, improvements in post farm gate supply chain efficiencies and effectiveness will deliver benefits to growers and are a legitimate target of RD&E.

RD&E	PROJECTS	INVESTMENT
New	3	$0.06
Ongoing	4	$3.1
Total	**7**	**$3.1m**

GRDC will continue to support R&D into understanding the variables that drive supply chain costs to inform management and policy decisions. In addition, the GRDC will consider investment in transformational approaches to improve freight and supply chain dynamics, as well as developing extension packages that assist growers in minimising post-farm-gate costs.

Investment highlights 2018–19

Examples of investments in 2018–19 that support the achievement of this objective include:

Improving on-farm grain storage management practices through technical training

Many growers now recognise the need to store grain for longer periods of time to extract maximum value from price changes. This in turn requires more attention to the management of stored grains to maintain quality and prevent damage from pests and mechanical handling. This investment delivers workshops and information to growers through a range of media including the dedicated website www.storedgrain.com.au that provides growers with access to short video presentations and trial results on successful storage strategies.

Thirty workshops on maintaining grain quality during storage were delivered in the 2018–19 year. Workshops were attended by over 6,000 growers and advisors and 83 per cent of workshop participants surveyed have applied learnings to their grain storage decisions as a result of attending a workshop. Forty-seven per cent of attendees were interested in gaining knowledge about aeration – a key to maintaining quality during storage.

Other information products developed as part of this investment program include a phone app with storage and monitoring information recording capability, fact sheets, an e-learning manual, a redeveloped Grain Quality Management booklet, and the redevelopment of a booklet on the economics of on-farm storage.

Objective 5—Manage risk to maximise profit and minimise losses

Risk is an important part of the profit equation.

Risk management that is too conservative can limit profit in above-average production years, while approaches that are too aggressive can expose the grower to losses that adversely impact profit and future operations.

RD&E	PROJECTS	INVESTMENT
New	14	$1.1m
Ongoing	12	$1.1m
Total	**26**	**$2.2m**

Grower attitude to risk is also a key determinant of the speed and scale of uptake of new technology

Investment highlights 2018–19

Forewarned is forearmed: Managing the impacts of extreme climate events

This investment is part of the Rural R&D for Profit program and includes collaboration with DAWR, other RDCs, universities and farming system groups. The investment is coordinated by the BOM and has generated valuable scientific insights to help improve the performance and utility of the new seasonal forecast system ACCESS-S. Improved seasonal forecasts are an important aspect of managing climate risk and a key achievement of the project has been the development of new experimental forecasts for extreme heat events. The investment will continue to develop experimental forecast products and key products will be operationalised for the benefit of Australian grain growers.

Methods to predict plant available water capacity of soils

The major determinant of yield is plant available water (PAW), be it from in-season rainfall and/or stored moisture in the soil. Stored soil moisture is a critical component of PAW but is difficult to accurately quantify as water availability differs with soil type. This investment utilises data from previous characterisations of 1,100 soils across Australia to predict plant available soil water at the farm level where soil characterisations are currently unavailable.

Benefit-Cost Analyses – summaries

GRDC is adopting an ex-ante and ex-post approach to predicting and measuring impact. Ex-post analyses adopt the framework developed by the Council for Rural RDCs and a selection are presented below. Adoption rates are calculated using the ADOPT tool developed by the Farming Futures CRC and updated by CSIRO with support from GRDC.

Project title: Evaluation of wheat germplasm derived from Indian materials for specific traits of importance to the Australian cropping environment.

Project Commencement date: 1 July 2013

Project Completion date: 30 June 2018

Project budget total:$204,600

Adoption rate: Linear 100% (It was assumed that 20 % of growers in the regions would adopt new varieties.)

Year start costs	2013
Year start benefit	2023
Year end benefits	2045
Year of peak adoption	2026
Max benefit $	2,237,211
Standard deviation	4

2019	0-5 YEARS	6-10 YEARS	11-15 YEARS	16-20 YEARS	20-25 YEARS	26-30 YEARS
Present Value Investment	$259,820	$259,820	$259,820	$259,820	$259,820	$259,820
Present Value Benefits	$0	$0	$6,096,895	$12,831,618	$18,383,096	$22,743,212
NPV	**$259,820**	**$259,820**	$5,837,074	$12,571,797	$18,123,276	$22,483,392
BC Ratio	0.00	0.00	23.47	49.39	70.75	87.53
IRR	0.00	0.00	36%	39%	39%	39%
MIRR	-100%	-100%	26%	24%	21%	18%

All investments and future benefits were inflated or deflated using ABS GDP deflator (ABS series 5204.0 & 5206.0) and 5 % discount rate on future benefits.

Environmental Outcomes

The deployment of new heat tolerant materials is likely to be environmentally neutral.

Social outcomes

Increased yield and yield stability attributed to more temperature tolerant materials will improve the stability of grain grower income with spillovers to regional communities through economic stimulus, employment opportunities and lifestyle improvements.

References

Neil Clark and Associates: crop, area and yield data. Data season 2015-16 to 2019-20 inclusive.

Project title: Understanding how waterlogging affects water and nitrogen use by wheat.

Project Commencement date: 1 July 2016

Project Completion date: 30 June 2019

Project budget total: $725,995

Adoption rate: Linear 60%

Year start costs	2017
Year start benefit	2026
Year end benefits	2046
Year of peak adoption	2020
Max annual benefit $	6,153,670
Standard deviation	4

2019	0-5 YEARS	6-10 YEARS	11-15 YEARS	16-20 YEARS	20-25 YEARS	26-30 YEARS
Present Value Investment	$750,881	$750,881	$750,881	$750,881	$750,881	$750,881
Present Value Benefits	$0	$0	$7,641,072	$16,081,517	$23,039,035	$28,503,449
NPV	-$750,881	-$750,881	$6,890,191	$15,330,636	$22,288,153	$27,752,568
BC Ratio	0.00	0.00	10.18	21.42	30.68	37.96
IRR	0%	0%	23%	27%	27%	28%
MIRR	-100%	-100%	19%	19%	17%	15%

Cumulative investments and benefits GDP deflator and 5% discount rate

Environmental Outcomes

Knowledge derived from this project can contribute to development of improved management practices for waterlogged situations. For example, improved management of nitrogen so that less is lost from waterlogged soils, providing a benefit to farmers (less wasted inputs) and the environment (less greenhouse emissions, less nutrient contamination of waterways).

Social outcomes

By providing a basis for further work to reduce yield losses from waterlogging, this project can contribute to the productivity and profitability of cropping in the HRZ, with follow-on benefits for industry development and community wellbeing.

References

Pers. Com: Discussions with Greg Haigley landscape drainage contractor: GRDC Field trip 2 July 2019 Launceston, Tasmania.

Samuel C. Zipper, Mehmet Evren Soylu, Eric G. Booth, and Steven P. Loheide II, 2015 Untangling the effects of shallow groundwater and soil texture as drivers of subfield-scale yield variability. Water Resources Research. https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1002/2015WR017522

N. P. S. Yaduvanshi, T. L. Setter, S. K. Sharma, K. N. Singh and N. Kulshreshtha

Influence of waterlogging on yield of wheat (Triticum aestivum), redox potentials, and concentrations of microelements in different soils in India and Australia

https://www.publish.csiro.au/sr/sr11266

Project title: Optimising Mungbean Yields

Project Commencement date: 15 December 2017

Project Completion date: 2 October 2018

Project budget total: $420,904

Adoption rate: Linear 20%

Year start costs	2017
Year start benefit	2020
Year end benefits	2030
Year of peak adoption	2023
Max annual benefit $	4,635,819
Standard deviation	4

DISCOUNT RATE 5 %	0-5 YEARS	6-10 YEARS	11-15 YEARS	16-20 YEARS	20-25 YEARS	26-30 YEARS
Present Value Investment	$396,754	$396,754	$396,754	$396,754	$396,754	$396,754
Present Value Benefits	$816,324	$3,397,977	$5,373,945	$5,373,945	$5,373,945	$5,373,945
NPV	$419,571	$3,001,223	$4,977,192	$4,977,192	$4,977,192	$4,977,192
BC Ratio	2.06	8.56	13.54	13.54	13.54	13.54
IRR	31%	58%	59%	59%	59%	59%

Environmental Outcomes

The project results indicated differences in the intensity of weed, insect and pest control do not explain yield gaps, indicating that additional use of insecticides or pesticides would not increase mungbean yields. Higher yields would save additional synthetic nitrogen in the subsequent crop and therefore reduce nitrification.

Social outcomes

None identified.

References

ABARES Australian Commodity Statistics 2017.

Commercialisation

In many cases, commercial channels are the most efficient means of delivering the benefits of RD&E investments to growers. The GRDC's commercialisation strategy consists of:

- analysing returns on investments to ensure that the GRDC is investing in areas that deliver on the GRDC's objective of creating enduring profitability for Australian grain growers
- leveraging capital and expertise from co-investors, to optimise opportunities to bring innovative technology to the marketplace
- managing intellectual property, to protect the GRDC's investments and leverage co-investment
- accessing technologies owned by third parties for evaluation and use in Australia
- identifying appropriate paths to market for new technology
- managing the GRDC's commercial investments and partnerships.

Usually the GRDC is only one of a number of public and/or private investors in the development of a new technology. Investment partnerships are desirable and necessary not only from a financial viewpoint, reducing the risk to the GRDC in the funding of new technologies, but also because partner organisations bring benefits such as research capacity, market knowledge, commercial expertise, infrastructure and access to complementary technologies.

Where the GRDC is a member of a research collaboration using public and private sector funds, it has influence over the terms of commercialisation, and determines them with the other investors to ensure that all parties achieve their desired outcomes.

New crop varieties

In 2018–19, collaborative breeding programs that received financial support from the GRDC released new varieties of:

- durum wheat – DBA Spes
- desi chickpea—PBA Drummond
- faba beans—PBA Bendoc, PBA Marne and PBA Nanu
- mungbean—Onyx-AU
- red lentil – PBA Hallmark XT

In selecting commercial partners for releasing new varieties, the GRDC and its research partners take into consideration capabilities such as the ability to produce quality seed, the ability to market seed successfully, and the targets for seed production and variety uptake. The management and collection of end point royalties, including the terms and conditions imposed on growers, are also taken into consideration.

In the case of commercially bred crops such as wheat and canola, the GRDC has no ownership in new varieties and the responsibility for commercialisation lies with the breeding companies alone. The GRDC is a shareholder in some of the breeding companies including Australian Grain Technologies and Intergrain.

Intellectual property management

The GRDC usually owns a share of all intellectual property generated by research investments that it funds. This consists of registrable intellectual property (plant breeder's rights, patents and trademarks) and non-registrable intellectual property (intellectual know how and trade secrets).

The corporation actively manages its intellectual property to:

- ensure that research ouputs are adopted as quickly and effectively as possible, by extension and/or commercialisation
- provide access to GRDC intellectual property and gain access to third-party intellectual property where it will facilitate the delivery of research outputs.

The GRDC seeks protection of its intellectual property where to do so will achieve the above objectives and maintains a register of its registered intellectual property.

Plant breeder's rights

The GRDC's plant breeder's rights (PBR) portfolio consists of 144 granted certificates and 22 applications for PBR, across 20 different crop species.

In 2018–19, most of the activity in the GRDC PBR portfolio was related to the progression to grant applications for new varieties released by the Pulse Breeding Australia chickpea, lentil and faba bean programs.

Patents and trademarks

At 30 June 2019 the GRDC had an interest in 22 patent families, comprising over 290 patent applications over 43 jurisdictions, and held 18 trademarks either in its own right or jointly.

3 Our organisation

Board 36

Accountability 43

Work health and safety 46

Ecologically sustainable development and environmental performance 47

Board

Board members

At 30 June 2019, the Board comprised eight non-executive directors.

The Board has combined expertise in business management; commodity production, processing and marketing; economics; finance; management and conservation of natural resources; environmental and ecological matters; R&D administration; science and technology; technology transfer; communication; and public administration.

Directors at 30 June 2019

John Woods
BAppSc, MAICD

Chair (Non-executive)

Appointed as Director (Non-Executive): 8 March 2012 until 30 September 2017; reappointed to 30 September 2020

Appointed as Chair: 1 October 2016 until 30 September 2019

Reappointed as Chair: 1 October 2019 until 30 September 2022

Member: Remuneration, People and Performance Committee

John is partner and manager of a broadacre agribusiness based in northern New South Wales and southern Queensland. He has responsibility for all business aspects, including financial management, production and crop husbandry, marketing and logistics, resource management and work health and safety. He is also Chair of R&R Hire Services in Queensland.

John has a history of working collaboratively with a range of public and private organisations in the development, extension and adoption of new technology.

He was Chairman of the Science Advisory Group of the National Agricultural Monitoring System (NAMS) between 2005 and 2009, and a member of the NAMS Advisory Reference Group and Steering Committee. He also spent six years, to 2005, on the National Rural Advisory Council.

John was Chairman of ChemCert Training Queensland from 2002 to 2004 and has held positions with Cotton Australia and Farmsafe Queensland.

Roseanne Healy
BA(Econ), MBA, MBR(Com), MAICD

Appointed as Director (Non-executive)

Appointed: 4 November 2014 to 30 September 2017; reappointed to 30 September 2020

Appointed as Deputy Chair: 6 December 2017 to 30 September 2020.

Member: Audit and Risk Committee (Chair from 6 December 2017) Remuneration, People and Performance Committee

Roseanne has over 20 years of corporate advisory experience and expertise in strategy, investment review and corporate governance.

Roseanne started her corporate advisory career as an economics and market researcher for a number of Australia's global brands. As a tribunal member for the Office of Consumer and Business Affairs (South Australia) and CEO of SA Great, she influenced South Australia's economic credentials for investment attraction, spanning agriculture, aquaculture, food and wine, technology and infrastructure.

Roseanne is Chair of Vinehealth Australia, DairySafe and Peninsula Leisure Pty Ltd and a non-executive director of Airborne Research Australia Ltd, Enterprise Corporation Pty Ltd, Dairy Australia, GP Partners Australia and Nyamba Buru Yawuru Ltd.

Roseanne was previously a director of the Rural Industries Research and Development Corporation.

Dianne Angus
BSc (Ed), BSc (Hons), M Biotech, Grad Dip IP, MAICD

Appointed as Director (Non-Executive): 1 October 2017 to 30 September 2020

Member: Audit and Risk Committee

Dianne has worked as an executive in the biotechnology industry for over 20 years. She held a senior management position in a joint venture alliance between Florigene (Australia) and Suntory (Japan) to yield and commercialise floricultural products, and was Chief Operating Officer of Prana Biotechnology, a firm that develops novel neurological agents.

Dianne's career is marked by her passion to build competitive product portfolios, through investment in innovative research to end-stage product commercialisation. She has created global partnerships between industry and academia to yield novel and competitive medical, pharmaceutical and agricultural product candidates.

Dianne has negotiated many commercial licenses and product development agreements, with entities ranging from large pharmaceutical and agrichemical companies to global research institutes. She has expertise in business development, regulation, intellectual property and finance, together with strong capabilities in corporate governance and compliance.

Chris Blanchard
BAppSci (Hons 1), PhD

Appointed as Director (Non-Executive): 1 October 2017 to 30 September 2020

Chris has had a long association with the grains industry and the GRDC. He completed a GRDC-funded PhD in plant molecular biology/virology and was a GRDC-sponsored participant in the Australian Rural Leadership Program.

Chris has more than 20 years' experience leading research projects aimed at increasing the profitability of grain production. Currently, he leads the Australian Research Council Industrial Transformation Centre for Functional Grains, which focuses on research that aims to transform the Australian grains industry and is involved in research aimed at improving outcomes for farmers in developing countries.

Chris has served on industry and academic committees such as the GrainGrowers National Policy Group and the National Committee for the International Year of Pulses. He was Chair of the Royal Australian Chemical Institute Cereal Chemistry Division and is currently a member of the Australian Academy of Sciences National Committee for Agriculture, Fisheries and Food. Chris is the current Chair of the Australasian Grain Science Association Council.

Richard Heath
BSc (Hons), GAICD

Appointed as Director (Non-Executive): 1 October 2017 to 30 September 2020

Richard grew up on a family farm on the Liverpool Plains in north-west New South Wales. He managed the cropping operations of the farm for nearly 20 years, overseeing production of wheat, barley, chickpea, faba beans, canola, sorghum, sunflowers, mung bean and cotton. Richard has been an early adopter of new farming technologies and travelled on a Nuffield Scholarship in 2003 to research precision applications of fertiliser.

Richard is the Executive Director of the Australian Farm Institute, an independent agricultural policy research organisation.

Prior to this role, Richard was Associate Professor of Agronomy and Farm Management at the University of Sydney, where he was responsible for managing the university's north-west farms group, including the Plant Breeding Institute at Narrabri.

Richard was a member of the Northern Regional Panel of the GRDC from 2005 to 2011 and was a director of Nuffield Australia Farming Scholars from 2011 to 2017. He is currently a member of the external advisory committee of CSIRO Agriculture and Food.

Helen Garnett
PSM, BSc (Hons), PhD, FTSE, FAICD

Appointed as Director (Non-executive)

Appointed: 4 November 2014 to 30 September 2017, reappointed to 30 September 2020

Member: Audit and Risk Committee

Remuneration, People and Performance Committee (Chair from 5 February 2018) Helen is an accomplished director and leader, building on an earlier research career, including with industry, in pathogenesis and the development of diagnostics. She was awarded the Public Service Medal (2004) and the Centenary Medal (2000) for scientific and institutional leadership.

Helen is Chair of Generator Property Management. Helen is the Chair of Generator Property Management. She is a non-executive director of Sugar Research Australia, the Crawford Fund, Developing East Arnhem P/L, Energy Consumers Australia and until the end of 2019, National Centre for Vocational Education Research.

Helen was previously Chair of the Australian Centre for Plant Functional Genomics Pty Ltd, Chair of the Australian Biosecurity Intelligence Network, a non-executive director of the Grape and Wine Research and Development Corporation, a director of Energy Resources of Australia Ltd, Vice Chancellor of Charles Darwin University, and Chief Executive of the Australian Nuclear Science and Technology Organisation.

Steve Jefferies
AM, BAgSc, PhD, GAICD

Managing Director

Appointed: 4 July 2016

Dr Steve Jefferies has more than 35 years of experience working in the Australian grain industry mostly in research management. In July 2016 Steve commenced as Managing Director of the Grains Research and Development Corporation (GRDC). From its inception in 2002 until June 2016, Steve was the CEO of Australian Grain Technologies (AGT), Australia's largest and market leading field crop breeding company. From 1996 to 2002 Steve was a wheat breeder, barley breeder and Senior Lecturer with the University of Adelaide. From 1984 to 1996 Steve held several positions in research management and Ministerial liaison in the State Government of South Australia.

Until taking his current position as Managing Director of GRDC Steve was also Non-Executive Director of Birchip Cropping Group, Non-Executive Director of Barley Australia, Chairman of the Australian End Point Royalty Steering Committee, and member of the Australian Wheat Quality Classification Council responsible for managing the wheat quality class system in Australia.

In June of 2016 Steve was appointed a Member of the Order of Australia in the Queen's birthday honours list for significant services to primary industries.

Stephen Powles
BSc, MSc, PhD, FAA, FTSE

Appointed as Director (Non-Executive): 1 October 2017 to 30 September 2020

Member: Audit and Risk Committee

Stephen has an international reputation as a researcher in herbicide resistance, weeds and crop science. He was awarded the Centenary Medal in 2001 for service to Australian society in plant production and culture.

Originally from a dairy farming region of New South Wales, Stephen attended Tocal College and Hawkesbury Agricultural College then continued his education in the United States and France. He developed and led large research programs at the Waite Research Institute and the University of Western Australia.

Stephen is a fellow of the Australian Academy of Science and the Australian Academy of Technology and Engineering. He has interests in a broadacre cropping farm in the great southern region of Western Australia.

Stephen has been Managing Director of the Australian Weed Management Cooperative Research Centre, Director of the Australian Herbicide Resistance Initiative, Chair of the Gene Technology Technical Advisory Committee and a board member of the Western Australian No-tillage Farmers Association.

Sharon Starick
BAgSc (Hons); MAICD

Appointed as Director (Non-Executive): 30 November 2018 to 30 September 2020

Since 1993, Sharon and her husband have been producing grain and pork in the Mallee region of South Australia. Her extensive knowledge of sustainable primary production was developed through her own on-farm practices and past participation in Mallee Sustainable Farming and the South Australian No-Till Farmers Association.

Through Sharon's strong interest in policy development and collaboration within Australian agriculture, she currently holds the positions of:

- Director of Animal Health Australia
- Director of the Regional Investment Corporation
- Chair of Rural Business Support
- Committee member, Murray Plains Farmers

She also has a passion for natural resource management and conservation that is reflected in her past involvement as Chair of the South Australian Murray–Darling Basin Natural Resources Management Board and as a member of South Australia's Natural Resources Management Council, the Australian Landcare Council and the Community Advisory Committee for the Murray–Darling Basin Ministerial Council. As a past director of Land & Water Australia, Sharon has experience in strategic planning for research and extension.

Board selection

Members of the GRDC Board are selected and appointed in accordance with the *Primary Industries Research and Development Act 1989* (PIRD Act). Under that Act, the Minister is responsible for the selection and appointment of the Chair of the GRDC Board. The Managing Director is selected by the Board.

All other board members are identified by a selection committee and appointed by the Minister in consultation with the industry representative other grower organisations.

Changes in board membership

Ms Sharon Starick was appointed to the GRDC Board on 30 November 2018 to fill a casual vacancy.

Committees

At 30 June 2019, the Board had two committees, as described in Table 3. The Board receives formal reports from the committees, and any decisions that the Board makes in relation to those reports are recorded in the minutes of the subsequent board meeting.

Policies and practices

The Board Charter sets out the responsibilities and processes of the Board, including the code of conduct for directors. The Board reviews this document at least once a year.

Key policies and practices of the Board include:

- induction and continuous education—New board members participate in a formal induction process, and all board members undergo a process of continuous education.
- disclosure of interests—Directors must comply with the GRDC's policy and procedures for conflict of interest and with legislative requirements regarding material personal interests. The Board reviews declarations of conflicts of interest at the start of each meeting and directors regularly update their declarations.
- performance monitoring—The Board sets out a detailed plan for the corporation at the start of each year and reviews the corporation's performance throughout the year.
- external review—the GRDC commissioned a review of performance against the Funding Agreement with the Commonwealth. The results of the review are published on the GRDC website https://grdc.com.au/__data/assets/pdf_file/0034/380995/GRDC-Performance-Review-Report_Submitted_17Jan2019.pdf.

Table 3: Board committees

ROLE	MEMBERSHIP
Audit and Risk Committee	
Assists the Board in fulfilling its corporate governance responsibilities and reviews the GRDC's: • external financial and performance reporting process • internal control system • risk management strategy and processes • internal and external audits • statutory reporting obligations.	At least three non executive directors appointed by the Board.
Remuneration, People and Performance Committee	
Reviews and makes recommendations to the Board on matters relating to: • the recruitment, remuneration, development, performance and retention policies of the GRDC, including strategic workforce planning and organisational development • fostering a performance culture • the selection, remuneration and performance of the Managing Director • the development and performance of the Board.	Chair, Deputy Chair and up to two other non-executive directors appointed by the Board

Meetings

During 2018–19, the Board held two meetings in Canberra and one meeting each in Perth, WA; Adelaide, SA; Melbourne, Vic; and Horsham, Victoria.

Each director's attendance at meetings during the year is set out in Table 4.

Table 4: Attendance at board and committee meetings, 2018–19

MEMBERS	BOARD		AUDIT AND RISK COMMITTEE		REMUNERATION, PEOPLE AND PERFORMANCE COMMITTEE	
	Meetings attended	*Meetings held and eligible to attend*	*Meetings attended*	*Meetings held and eligible to attend*	*Meetings attended*	*Meetings held and eligible to attend*
Dianne Angus	6	6	4	5	–	–
Chris Blanchard	5	6	–	–	–	–
Helen Garnett*	5	6	5	5	2	2
Roseanne Healy	6	6	5	5	2	2
Richard Heath	6	6	–	–	–	–
Steve Jefferies	5	6	–	–	–	–
Stephen Powles	6	6	3	5	–	–
Sharon Starick	4	4	–	–	–	–
John Woods	6	6	–	–	2	2

*Unavailable for August 2018 Board meeting due to a late change to the scheduled date of the meeting.

Corporate governance

The GRDC Board has overall responsibility for corporate governance within the organisation and places high value on continuously improving the GRDC's performance in this area.

Key corporate governance activities overseen by the GRDC Board in 2018–19 included:

- assessing the GRDC's operating environment and strategic risk profile
- monitoring and approving governance policies
- approving the policy for management of the Levy Payer Register
- monitoring compliance with the funding agreement with the Commonwealth
- approving delegations and instruments relating to the organisational restructure
- allocating resources to, and assessing the effectiveness of, RD&E investments
- reviewing and revising the Board Charter.

Risk management and fraud control

The GRDC continually reviews and refines its risk management framework to reflect changes in the business environment and the GRDC's structure.

The Board considers a strategic risk report at its monthly meeting and reviews the operational risks every six months, or more often if significant changes arise in the operating environment.

The GRDC commissions external assessments of its fraud risk every two years. The Fraud Control Plan was finalised in 2017 and will be updated again toward the end of 2019.

The Board's Audit and Risk Committee oversees the preparation and implementation of the GRDC's risk management initiatives and fraud control policy and plan.

Independent audits

The Auditor-General is required to audit each Commonwealth entity's financial statements. In addition, the *Auditor-General Act 1997* confirms the power of the Auditor-General's office to carry out performance audits of Commonwealth entities and, in this role, to obtain documents and information.

The Auditor-General's independent audit report on the GRDC's financial statements for 2018–19 is presented on pages 50 and 51.

Code of conduct

The GRDC Code of Conduct sets out the principles and expected standards of behaviour for directors, staff and panel members. New directors and staff members are introduced to the code during induction, and presentations on the code are made to staff at regular intervals. All staff have access to the code via the policies section of the GRDC intranet.

Indemnities and insurance premiums for officers

The GRDC holds directors' and officers' liability insurance cover through Comcover. During the year, no indemnity-related claims were made. The cost of directors' and officers' indemnity insurance for 2018–19 was $15,452.50 (GST exclusive).

Judicial decisions and reviews by outside bodies

In 2018–19, the GRDC was not affected by judicial decisions or reviews by administrative tribunals, the Auditor-General, parliamentary committees, the Commonwealth Ombudsman or the Office of the Australian Information Commissioner.

External reviews conducted in 2018–19 were:

- Independent review of Performance of Compliance with the Funding Agreement 2015-19 – completed by ACIL Allen.
- Australian National Audit Office – Performance Audit of Probity Management in Rural Research and Development Corporations.

Accountability

The GRDC is accountable to Australian grain growers and the Australian Government for its performance in addressing its identified priorities.

The GRDC also has governance responsibilities as a corporate Commonwealth entity.

Legislation

The GRDC was established in 1990 under the *Primary Industries Research and Development Act 1989* (PIRD Act).

As a corporate Commonwealth entity, the GRDC is subject to the requirements of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act) and other Commonwealth legislation.

Accountability to the Australian Government

The GRDC is part of the Australian Government's Agriculture portfolio.

During 2018–19, the position of Minister for Agriculture and Water Resources was held by the Hon David Littleproud MP until 29 May 2019. From 30 May 2019 Senator, the Hon Bridget McKenzie was Minister for Agriculture.

Ministerial directions

The GRDC complies with relevant directions made by ministers under the PIRD Act, the PGPA Act or other Commonwealth legislation.

Under section 143 of the PIRD Act, the Minister for Agriculture may give written directions to the GRDC as to the performance of its functions and the exercise of its powers. No such directions were given in 2018–19.

Under section 22 of the PGPA Act, the Minister for Finance may give written directions to the Corporation regarding complying with the general policies of the government. No such directions were given in 2018–19.

Funding agreement

On 1 June 2015, the GRDC signed a funding agreement with the Department of Agriculture in line with the requirements of the PIRD Act. The funding agreement sets out the terms and conditions under which money paid to the GRDC by the Commonwealth will be spent during the period from June 2015 to June 2019. In early 2019 the funding agreement was extended by six months to December 2019.

In accordance with the funding agreement, the GRDC operates a cost allocation policy and also complies with the funding agreement by integrating government priorities into its strategic approach to RD&E investment, observing government policies in its operations, and working in consultation with the grains industry representative organisations.

The GRDC meets on a biannual basis with the Department of Agriculture to assess compliance against the funding agreement and review progress on policy issues of mutual interest.

Significant events

The GRDC Board writes to the Minister after each board meeting, outlining all key decisions and actions taken at the meeting. This communication includes particulars of any significant decisions, activities or changes as described in section 17BE(p) of the PGPA Act.

The Board advised the Minister of a number of significant decisions or issues during 2018–19, including:

- Establishment of GrainInnovate – a $50 million co-investment fund managed by Artesian Venture Partners
- Progress on negotiation with industry to consolidate the delivery of industry good functions through a single incorporated entity
- Development of three of the Frameworks under the RD&E Plan: Communications and Extension; Capacity and Ability; and Data and Analytics

The GRDC had nothing to report to the Minister under section 17BE(h) of the PGPA Rule, which relates to non-compliance with the finance law.

Government RD&E priorities

The GRDC's RD&E investment strategies, as articulated in each five-year RD&E plan, are designed to address the Australian Government's Science and Research Priorities and Rural Research, Development and Extension Priorities. The GRDC's R&D investments to meet the priorities are detailed in Appendix A.

Accountability to the grains industry

The GRDC is accountable to the Australian grains industry through the industry's representative organisations, as described in the PIRD Act, and consults widely with other industry organisations and grower groups.

Representative organisations

In 2018–19, Grain Growers Limited (GrainGrowers) and Grain Producers Australia Limited were the declared representative organisations under section 7 of the Act.

The GRDC meets with the representative organisations at least once every six months, and provides a formal opportunity for them to review the GRDC's performance annually.

Consultation with the representative organisations in 2018–19 included discussions on:

- presentation of the GRDC's operating results for 2017–18
- the implementation of the GRDC's RD&E plan for 2018–23 and annual operational plan for 2019–20
- the Grains industry Levy Payer Register
- the Australian Grains Industry Discussion Group's industry good company strategy and novation of the Wheat Industry Export Grant
- biosecurity research
- the Independent review of GRDC performance against the Funding Agreement with the Commonwealth
- GrainInnovate
- Development of Key Investment Target strategies
- National Variety Trials
- Social licence
- Grower Communications and Extension Framework
- Spray Drift

The GRDC paid $24,255.28 (including GST) to GrainGrowers for industry consultation costs during 2018–19, in accordance with section 15 of the PIRD Act and $25,000 (GST excl.) for conference sponsorship. No payments were made to Grain Producers Australia in 2018–19.

Business relationships

Many of the GRDC's business relationships are governed by research agreements, licence agreements to commercialise intellectual property, and agreements to procure services.

In some cases, the formation of companies and joint venture partnerships (for profit or not for profit) is the most effective way to deliver technologies, services, information and policy advice to Australian grain growers and the wider grains industry.

Table 5 describes the companies in which the GRDC had shares or membership at 30 June 2019. In most cases the GRDC also nominated one or more directors to the company's board.

Table 5: Companies in which the GRDC had shares or membership at 30 June 2019

NAME	ACTIVITY	GRDC ROLE
Companies limited by guarantee		
Australian Export Grains Innovation Centre Limited ACN 160 912 032	Provides R&D related to the Australian export grains industry.	Is a member of the company. Nominates a director.
Invasive Animals Ltd ACN 114 965 276	Serves as the IP holding/management company for the Invasive Animals Cooperative Research Centre.	Is a member of the company. Does not nominate a director.
Wheat Quality Australia Limited ACN 147 439 656	Manages and delivers the wheat variety classification process.	Is a member of the company and pays the company for services. Nominates a director.
Companies limited by shares		
Australian Grain Technologies Pty Ltd ACN 100 269 930	Undertakes commercial wheat and barley breeding.	Is a 39% shareholder. Nominates three directors.
InterGrain Pty Ltd ACN 128 106 945	Undertakes commercial wheat and barley breeding.	Is a 38.3% shareholder. Nominates one director.
Grain Foods Innovations Pty Ltd ACN 105 757 711		Was a 38.3% shareholder. Grain Foods Innovations Pty Limited went into voluntary liquidation on 20 May 2011 and the share value was written down in the same year because of this action. Liquidation of Grain Foods is reaching its conclusion with a distribution of the June 2019 BAS required before liquidation can be finalised.

Grains industry RD&E priorities

The GRDC consulted extensively with grains industry participants to develop the RD&E Plan 2018–23. The consultation involved multiple consultative mechanisms to reach the widest range of stakeholders, including workshops, roadshows, face-to-face meetings, surveys and open submissions.

The GRDC continually monitors evolving industry priorities, nationally and regionally, through its advisory panels, Regional Cropping Solutions networks and Grower Solutions Groups.

Each year, the industry priorities are embedded in the GRDC's annual operational plan and the GRDC's performance in meeting the priorities is described in the corresponding annual report.

Industry levies

In 2018–19, a levy rate of 0.99 percent applied to all leviable crops covered by the GRDC, except for maize, which was levied at 0.693 percent.

The levies were imposed and collected as stipulated by the:

- *Primary Industries (Excise) Levies Act 1999*, supported by the Primary Industries (Excise) Levies Regulations 1999, Schedules 4, 12, 20 and 25
- *Primary Industries Levies and Charges Collection Act 1991*, supported by the Primary Industries Levies and Charges Collection Regulations 1991, Schedules 8, 19, 29 and 34.

Proceeds from levies in 2018–19 are recorded in Note 1.2B of the Notes to the Financial Statements.

The GRDC paid the Department of Agriculture and Water Resources $722,000 for the collection and management of levies in 2018–19.

Work health and safety

The GRDC's work health and safety mission is to create a workplace environment where the health, safety and wellbeing of employees are highly valued and people are encouraged and supported to adopt and maintain a healthy lifestyle.

Table 6 summarises the GRDC's results in relation to reportable indicators of work health and safety performance in 2018–19.

Table 6: Work health and safety performance

INDICATORS	PERFORMANCE
Initiatives undertaken during the year to ensure the health, safety and welfare of workers who carry out work for the GRDC	Work health and safety was a standing agenda item at board meetings and staff meetings. Activities to ensure that facilities were well maintained included: • twice yearly inspection of fire extinguishers • annual checking and restocking of first aid kits • annual checking and tagging of electrical leads and power cords • regular inspections of smoke and heat detectors • regular cleaning of carpets • driver training • mental health awareness training • counselling through the Employee Assistance Program • influenza vaccinations • the provision of fresh fruit daily.
Health and safety outcomes (including the impact on injury rates of workers) achieved as a result of initiatives	No lost days arising from injury in 2018–19.
Statistics of any notifiable incidents of which the GRDC became aware that arose out of the conduct of businesses or undertakings by the GRDC	No notifiable incidents occurred.
Details of any investigations conducted during the year that relate to the businesses or undertakings of the GRDC, including details of all notices given to the GRDC under Part 10 of the *Work Health and Safety Act 2011*	One investigation was conducted, and no notices were given.
Other matters as required by the guidelines approved on behalf of the Parliament by the Joint Committee of Public Accounts and Audit	No other matters were required to be reported.

Ecologically sustainable development and environmental performance

The principles of ecologically sustainable development (ESD) set out in the *Environment Protection and Biodiversity Conservation Act 1999* are embodied in the outcomes of the GRDC.

Achieving sustainable use and management of natural resources is one of the GRDC's core functions under the PIRD Act. It is also a key element of the Australian Government and grains industry priorities that underpin the GRDC's RD&E investment decisions.

In 2018–19, the GRDC invested in many projects that contributed to ESD objectives, such as work to:

- improve profitability while reducing environmental impact, for example through tactical agronomy, tillage and stubble management, break crops, and varieties adapted for local conditions
- understand and preserve soil and water quality
- optimise biological diversity, for example in pest-suppressive landscapes and disease-suppressive soils
- foster the economic, environmental and social health of the grains industry, in the present and the longer term, through collaboration, education and knowledge sharing

At the operational level, the GRDC is committed to managing its corporate activities with minimal impact on the environment. For example:

- The GRDC's largest office, in Canberra, is located in a building with a National Australian Built Environment Rating System (NABERS) 5-star rating. An energy-efficient free-air liquid cooling system is used in the room that houses the GRDC's key IT infrastructure.
- Where possible, the GRDC uses IT meeting solutions to reduce the need for staff travel.
- The GRDC's printing services contract requires the provider to comply with ISO 14000 environmental management standards and Australian Government policies related to ESD.
- The GRDC has significantly reduced its printing of corporate publications, placing more emphasis on the availability of materials on the GRDC website.

4 Financial statements

Independent auditor's report	50
Statement by the Directors, Managing Director and Chief Finance Officer	52
Statement of Comprehensive Income	53
Statement of Financial Position	54
Statement of Changes in Equity	55
Cash Flow Statement	56
Notes to and forming part of the financial statements	57

Independent auditor's report

Australian National Audit Office

INDEPENDENT AUDITOR'S REPORT

To the Minister for Agriculture

Opinion

In my opinion, the financial statements of the Grains Research and Development Corporation ('the Entity') for the year ended 30 June 2019:

(a) comply with Australian Accounting Standards – Reduced Disclosure Requirements and the *Public Governance, Performance and Accountability (Financial Reporting) Rule 2015*; and

(b) present fairly the financial position of the Entity as at 30 June 2019 and its financial performance and cash flows for the year then ended.

The financial statements of the Entity, which I have audited, comprise the following statements as at 30 June 2019 and for the year then ended:

- Statement by the Directors, Managing Director and Chief Financial Officer;
- Statement of Comprehensive Income;
- Statement of Financial Position;
- Statement of Changes in Equity;
- Cash Flow Statement; and
- Notes to and forming part of the financial statements, comprising a Summary of Significant Accounting Policies and other explanatory information.

Basis for opinion

I conducted my audit in accordance with the Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing Standards. My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report. I am independent of the Entity in accordance with the relevant ethical requirements for financial statement audits conducted by the Auditor-General and his delegates. These include the relevant independence requirements of the Accounting Professional and Ethical Standards Board's APES 110 *Code of Ethics for Professional Accountants* (the Code) to the extent that they are not in conflict with the *Auditor-General Act 1997*. I have also fulfilled my other responsibilities in accordance with the Code. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

Accountable Authority's responsibility for the financial statements

As the Accountable Authority of the Entity, the Directors are responsible under the *Public Governance, Performance and Accountability Act 2013* (the Act) for the preparation and fair presentation of annual financial statements that comply with Australian Accounting Standards – Reduced Disclosure Requirements and the rules made under the Act. The Directors are also responsible for such internal control as the Directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Directors are responsible for assessing the ability of the Entity to continue as a going concern, taking into account whether the Entity's operations will cease as a result of an administrative restructure or for any other reason. The Directors are also responsible for disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the assessment indicates that it is not appropriate.

GPO Box 707 CANBERRA ACT 2601
19 National Circuit BARTON ACT
Phone (02) 6203 7300 Fax (02) 6203 7777

Auditor's responsibilities for the audit of the financial statements

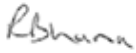
My objective is to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Australian National Audit Office 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 statements.

As part of an audit in accordance with the Australian National Audit Office Auditing Standards, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

- identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Entity's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the Accountable Authority;
- conclude on the appropriateness of the Accountable Authority's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Entity's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Entity to cease to continue as a going concern; and
- evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

I communicate with the Accountable Authority regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

Australian National Audit Office



Rita Bhana

Senior Director

Delegate of the Auditor-General

Canberra

14 August 2019

Statement by the Directors, Managing Director and Chief Finance Officer

GRAINS RESEARCH AND DEVELOPMENT CORPORATION

STATEMENT BY THE DIRECTORS, MANAGING DIRECTOR AND CHIEF FINANCIAL OFFICER

In our opinion, the attached financial statements for the year ended 30 June 2019 comply with subsection 42(2) of the *Public Governance, Performance and Accountability Act 2013* (PGPA Act), and are based on properly maintained financial records as per subsection 41(2) of the PGPA Act.

In our opinion, at the date of this statement, there are reasonable grounds to believe that the Corporation will be able to pay its debts as and when they fall due.

The statement is made in accordance with a resolution of the directors.

Signed.....	Signed.....	Signed.....
Mr J D Woods	Dr S P Jefferies	Mr M W Priest
CHAIRMAN	MANAGING DIRECTOR	CHIEF FINANCIAL OFFICER
13 August 2019	13 August 2019	13 August 2019

Statement of Comprehensive Income

for the period ended 30 June 2019

	NOTES	2019 $'000	2018 $'000	ORIGINAL BUDGET 2019 $'000
NET COST OF SERVICES				
Expenses				
Employee benefits	1.1A	**13,275**	13,152	14,000
Research and Development		**174,044**	192,082	212,731
Suppliers	1.1B	**16,611**	10,476	-
Depreciation and amortisation	2.2A	**2,535**	1,815	2,139
Impairment loss allowance on financial instruments	1.1C	**-**	2,262	-
Losses from asset sales	1.1D	**14**	10	-
Total expenses		**206,479**	219,797	228,870
Own-source Income				
Own-source revenue				
Interest	1.2A	**6,907**	6,908	6,559
Industry contributions	1.2B	**114,171**	117,310	125,306
Project refunds	1.2C	**3,947**	7,516	1,742
Royalties	1.2D	**7,142**	6,028	3,302
Grants income	1.2E	**3,165**	2,425	3,220
Dividends	1.2F	**1,560**	1,946	1,000
Rental income	1.2G	**142**	74	-
Other revenue	1.2H	**521**	290	-
Total own-source revenue		**137,555**	142,497	141,129
Gains				
Other Gains	1.2I	**83**	-	-
Total gains		**83**	-	-
Total own-source income		**137,638**	142,497	141,129
Net cost of services		**(68,841)**	(77,300)	(87,741)
Revenue from Government	1.2J	**69,350**	71,262	73,964
Share of associates and joint ventures accounted for using the equity method		**(251)**	-	-
Surplus / (Deficit)		**258**	(6,038)	(13,777)
OTHER COMPREHENSIVE INCOME				
Items not subject to subsequent reclassification to net cost of services				
Changes in asset revaluation surplus	2.2A	**-**	(427)	-
Items subject to subsequent reclassification to net cost of services				
Gains/(Losses) on financial assets at fair value through other comprehensive income		**11,814**	-	-
Total other comprehensive income / (loss)		**11,814**	(427)	-
Total comprehensive income / (loss)		**12,072**	(6,465)	(13,777)

The above statement should be read in conjunction with the accompanying notes.

Statement of Financial Position

as at 30 June 2019

	NOTES	2019 $'000	2018 $'000	ORIGINAL BUDGET 2019 $'000
ASSETS				
Financial assets				
Cash and cash equivalents	2.1A	**2,333**	33,660	16,136
Trade and other receivables	2.1B	**23,825**	18,486	26,734
Equity accounted investments	2.1C	**4,749**	-	-
Investments in managed funds	2.1D	**197,515**	199,165	165,199
Other investments	2.1E	**68,883**	4,215	4,214
Total financial assets		**297,305**	255,526	212,283
Non-financial assets				
Land and buildings	2.2A	**2,117**	2,457	5,287
Property, plant and equipment	2.2A	**1,834**	1,447	1,282
Intangibles	2.2A	**8,310**	6,229	7,704
Other non-financial assets	2.2B	**196**	159	3,000
Total non-financial assets		**12,457**	10,292	17,273
Assets held for sale	2.3	**3,000**	3,000	-
Total assets		**312,762**	268,818	229,556
LIABILITIES				
Payables				
Suppliers	2.4A	**2,779**	2,312	
Research and development	2.4B	**38,760**	59,610	47,224
Other payables	2.4C	**4,454**	3,911	-
Total payables		**45,993**	65,833	47,224
Provisions				
Employee provisions	3.1	**2,395**	2,038	1,832
Other provisions	2.5	**1,405**	1,584	1,405
Total provisions		**3,800**	3,622	3,237
Total liabilities		**49,793**	69,455	50,461
Net assets		**262,969**	199,363	179,095
EQUITY				
Retained surplus		**157,898**	88,792	68,097
Contracted research reserve		**103,400**	108,900	110,998
Asset revaluation surplus		**1,671**	1,671	-
Total equity		**262,969**	199,363	179,095

The above statement should be read in conjunction with the accompanying notes.

Statement of Changes in Equity

for the period ended 30 June 2019

	NOTES	2019 $'000	2018 $'000	ORIGINAL BUDGET 2019 $'000
RETAINED EARNINGS				
Opening balance				
Balance carried forward from previous period		**88,792**	99,780	81,874
Adjustment for changes in accounting policies		**51,534**	-	-
Adjusted opening balance		**140,326**	99,780	81,874
Comprehensive income				
Surplus/(Deficit) for the period		**258**	(6,038)	(13,777)
Other comprehensive income		**11,814**	-	-
Total comprehensive income		**12,072**	(6,038)	(13,777)
Transfers between equity components		**5,500**	(4,950)	-
Closing balance as at 30 June		**157,898**	88,792	68,097
ASSET REVALUATION RESERVE				
Opening balance				
Balance carried forward from previous period		**1,671**	2,098	2,098
Adjusted opening balance		**1,671**	2,098	2,098
Comprehensive income				
Other comprehensive income		**-**	(427)	-
Total comprehensive income		**-**	(427)	-
Closing balance as at 30 June		**1,671**	1,671	2,098
CONTRACTED RESEARCH RESERVE				
Opening balance				
Balance carried forward from previous period		**108,900**	103,950	108,900
Adjusted opening balance		**108,900**	103,950	108,900
Transfers between equity components		**(5,500)**	4,950	-
Closing balance as at 30 June		**103,400**	108,900	108,900
TOTAL EQUITY				
Opening balance				
Balance carried forward from previous period		**199,363**	205,828	192,872
Adjustment for changes in accounting policies		**51,534**	-	-
Adjusted opening balance		**250,897**	205,828	192,872
Comprehensive income				
Surplus/(Deficit) for the period		**258**	(6,038)	(13,777)
Other comprehensive income		**11,814**	(427)	-
Total comprehensive income		**12,072**	(6,465)	(13,777)
Transfers between equity components		**-**	-	-
Closing balance as at 30 June		**262,969**	199,363	179,095

The above statement should be read in conjunction with the accompanying notes.

Cash Flow Statement

for the period ended 30 June 2019

	NOTES	2019 $'000	2018 $'000	ORIGINAL BUDGET 2019 $'000
OPERATING ACTIVITIES				
Cash received				
Industry contributions		**114,478**	117,613	125,306
Commonwealth contributions		**60,667**	84,658	74,817
Interest		**6,764**	6,292	6,363
Grants receipts		**2,818**	1,767	-
Dividends		**1,560**	1,946	-
Net GST received		**19,787**	16,756	21,272
Other		**10,853**	17,437	6,044
Total cash received		**216,927**	246,469	233,802
Cash used				
Research and development		**211,711**	237,934	251,183
Suppliers		**14,768**	10,554	-
Employees		**15,744**	12,996	13,950
Total cash used		**242,223**	261,484	265,133
Net cash from / (used by) operating activities		**(25,296)**	(15,015)	(31,331)
INVESTING ACTIVITIES				
Cash received				
Proceeds from sales of property, plant and equipment		**-**	6	-
Investments		**10,000**	30,000	50,000
Loan Repayments		**-**	17,891	-
Total cash received		**10,000**	47,897	50,000
Cash used				
Purchase of property, plant and equipment		**4,676**	3,134	4,005
Purchase of financial instruments		**6,355**	5,621	20,000
Purchase of investments		**5,000**	-	-
Total cash used		**16,031**	8,755	24,005
Net cash from / (used by) investing activities		**(6,031)**	39,142	25,995
Net increase / (decrease) in cash held		**(31,327)**	24,127	(5,336)
Cash and cash equivalents at the beginning of the reporting period		**33,660**	9,533	21,472
Cash and cash equivalents at the end of the reporting period	2.1A	**2,333**	33,660	16,136

The above statement should be read in conjunction with the accompanying notes.

Notes to and forming part of the financial statements

For the year ended 30 June 2019

Overview

The Basis of Preparation

The financial statements are general purpose financial statements and are required by section 42 of the *Public Governance, Performance and Accountability Act 2013*.

The financial statements have been prepared in accordance with:

1. *Public Governance, Performance and Accountability (Financial Reporting) Rule 2015 (FRR)*; and
2. Australian Accounting Standards and Interpretations – Reduced Disclosure Requirements issued by the Australian Accounting Standards Board (AASB) that apply for the reporting period.

The financial statements have been prepared on an accrual basis and in accordance with historical cost convention, except for certain assets and liabilities at fair value. Except where stated, no allowance is made for the effect of changing prices on the results or the financial position. The financial statements are presented in Australian dollars.

New Accounting Standards

Adoption of new Australian Accounting Standard Requirements

No accounting standard has been adopted earlier than the application date as stated in the standard.

The implementation of AASB 9 has had a material effect on the financial statements for this financial year. No other [new/revised/amending standards and/or interpretations] that were issued prior to the sign-off date and are applicable to the current reporting period had a material effect on the entity's financial statements.

Taxation

The Corporation is exempt from all forms of taxation except Fringe Benefits Tax (FBT) and the Goods and Services Tax (GST).

The only exception to this was for payroll tax where the Corporation was liable for payroll tax during the year. However, from 1 April 2019 the legislation sunset and the Corporation is now exempt from payroll tax.

Events After the Reporting Period

There was no subsequent event that had the potential to significantly affect the on-going structure and financial activities of the Corporation.

Comparatives

Adjustments have been made to comparatives to ensure consistency with 2018–19 disclosures.

Key management personnel remuneration figures have been restated for FY 2017/18 at Note 3.2 to remove salary sacrifice components incorrectly included in short-term benefits in 2017–18.

Budget Variance Commentary

The following tables provide a comparison of the original budget as presented in the 2018–19 Portfolio Budget Statements (PBS) to the 2018–19 final outcome as presented in accordance with Australian Accounting Standards for the Corporation. The Budget is not audited. Explanations of major variance are provided below.

Variances are considered to be 'major' based on the following criteria:

- The variance between budget and actual is greater than +/- 10% of the original budget and $10 million for a line item; or
- The variance between budget and actual is greater than 2% of the relevant sub-total (i.e. total expenses, total income, total assets or total liabilities) and $10 million, or
- An item below this threshold but is considered important for the reader's understanding or is relevant to an assessment of the discharge of accountability and to an analysis of performance of the Corporation.

MAJOR VARIANCE AND EXPLANATIONS	AFFECTED LINE ITEMS
Statement of Comprehensive Income	
Total expenses were $22 million lower than the original budget estimate as a result of reduced research and development spend in anticipation of lower levies and to fund balance sheet research and development investments. Suppliers are also slightly lower than budget.	Total expenses Research and development costs Supplier expenses
Industry contributions were $11 million lower than budget as a result of a lower national crop harvest due to below average weather conditions across South and Eastern Australia. This variance was largely offset by the project refund variance of $2.2 million and royalties received variance of $3.8 million.	Total own-source income Industry contributions Project refunds Royalties received
The variance for other comprehensive income of $11.8 million is the result of GRDC unlisted shares being revalued upwards to fair value during the year in line with the implementation of AASB 9.	Total other comprehensive income/(loss) Gains/(Losses) on financial assets at fair value through other comprehensive income
Statement of Financial Position	
Total financial assets are higher than budgeted predominately due to higher balances in investments in managed funds ($32 million variance to budget) and other investments ($65 million variance to budget – see below), which have been partially offset by lower cash and cash equivalents (($13.8) million variance to budget)	Total financial assets
Investments in managed funds is higher than the original budget due to a timing difference ($30 million was drawn down from the invested funds in early July 2019 rather than as expected in late June 2019).	Investments in managed funds
Other investments are higher than budget due to the implementation of AASB 9 and the upward revaluation to fair value of unlisted share holdings.	Other investments
Cash and cash equivalents are lower predominately due to the timing of the drawn down from managed funds and the remainder of the variance can be attributed to the difference between estimated and actual receipts and payments.	Cash and cash equivalents
The retained surplus variance (of $90 million) reflects the adjustment following the implementation of AASB 9 and higher Other Comprehensive Income from valuation uplift.	Retained surplus
Cash Flow Statement	
Receipts from industry and commonwealth contributions were lower than budgeted as a result of a lower national crop harvest due to below average weather conditions across South and Eastern Australia.	Industry contributions Commonwealth contributions
The reduced research and development spend has resulted in commensurately lower cash outflows for this financial year.	Research and development
Cash from the investment activities were lower than budget as GRDC were able to effectively manage cash flows which reduced the amount of investment funds required to be realised to fund operating outflows	Net cash from investing activities Investments

Financial Performance

1.1: Expenses

	2019 $'000	2018 $'000
1.1A – Employee Benefits		
Wages and salaries	**11,479**	11,316
Superannuation		
Defined contribution plans	**1,173**	1,094
Defined benefits plans	**108**	149
Leave and other entitlements	**331**	255
Separation and redundancies	**184**	338
Total employee benefits	**13,275**	13,152

Accounting Policy

Accounting policies for employee related expenses are contained in Note 3.1.

	2019 $'000	2018 $'000
1.1B – Suppliers		
Goods and services supplied or rendered		
Staff travel and accommodation	**2,475**	2,224
Consultants	**674**	349
Contractors	**3,033**	31
Corporate communications	**566**	781
Corporate governance	**153**	195
Corporate services	**6,263**	4,009
Levy collection costs	**722**	560
Other	**1,013**	736
Total goods and services supplied or rendered	**14,899**	8,885
Goods supplied	**433**	128
Services supplied	**14,466**	8,757
Total goods and services supplied or rendered	**14,899**	8,885
Other suppliers		
Operating lease rentals in connection with		
Minimum lease payments	**1,690**	1,538
Workers compensation expenses	**22**	53
Total other suppliers	**1,712**	1,591
Total suppliers	**16,611**	10,476

1.1B – Suppliers (continued)

Leasing commitments

The Corporation in its capacity as lessee has entered the following leases:

NATURE OF LEASE	GENERAL DESCRIPTION OF LEASE AGREEMENT
Leases for office accommodation	Lease payments are subject to annual reviews in accordance with the lease agreements. The lease of the Canberra office commenced on 1 May 2014 for a period of 10 years. There is an option to extend the lease term for 4 years. The annual review of this lease is a fixed percentage increase. As part of the lease agreement, a cash incentive of $1,785,525 (GST exclusive) was received, which has been applied as a rent-free period at the beginning of the lease term. The lease of the Adelaide office commenced on 19 February 2018 for a period of 5 years. There is an option to extend the lease term for 3 years. The annual review of this lease is a fixed percentage increase. The lease agreement includes a monthly rent reduction as a lease incentive. The lease of the Dubbo office commenced on 8 February 2016 for a period of 5 years. There is an option to extend the lease term for 5 years. The annual review for this agreement is based on CPI. As part of the lease agreement, a rent-free period was provided at the beginning of the lease term. The lease of the Toowoomba office commenced on 15 February 2018 for a period of 5 years. There is an option to extend the lease term for 5 years. The annual review of this lease is a fixed percentage increase. The lease of the Perth office commenced on 11 July 2016 for a period of 5 years. There is an option to extend the lease term for 5 years. The annual review for this agreement is based on CPI with market reviews at different times during the lease term. As part of the lease agreement, a rent-free period was provided at the beginning of the lease term. The lease of an additional meeting room for the Perth office commenced on 1 June 2018 for a term of 38.33 months. The annual review of this lease is a fixed percentage increase. The lease of additional office space for the Perth office commenced on 15 March 2019 for a term of 27.32 months. The annual review of this lease is a fixed percentage increase. The lease of the Melbourne office commenced on 1 December 2017 with a term of 1 year and was extended for another ten months. The lease of the Horsham office commenced on 4 March 2019 with a term of 1 year. The lease of the Wagga Wagga office commenced on 2 July 2018 with an initial term of 7 months. It remains on a month to month basis as at the 30 June 2019
Motor vehicles	Leased as part of salary packages and for general employee usage in carrying out work duties. No contingent rentals exist.

	2019 $'000	2018 $'000
1.1B – Suppliers (continued)		
Commitments for minimum lease payments in relation to non-cancellable operating leases are payable as follows:		
Within 1 year	**1,894**	1,927
Between 1 to 5 years	**5,428**	6,335
More than 5 years	**-**	934
Total operating lease commitments	**7,322**	9,196

Accounting Policy

Operating lease payments are expensed on a straight-line basis which is representative of the pattern of benefits derived from the leased assets.

	2019 $'000	2018 $'000
1.1C – Impairment Loss Allowance on Financial Instruments		
Impairment on managed funds	-	2,058
Impairment on investments (embedded derivative)	-	204
Total write-down and impairment of assets	-	2,262
1.1D – Losses from Asset Sales		
Loss from asset sales from:		
Plant & equipment	**14**	10
Total loss on asset sales	**14**	10

1.2: Own-source Revenue and Gains

Own-source Revenue

	2019 $'000	2018 $'000
1.2A – Interest		
Deposits	**372**	664
Managed Funds	**6,355**	6,056
Convertible notes	**116**	127
Loans	**64**	61
Total interest	**6,907**	6,908

Accounting Policy

Interest revenue is recognised using the effective interest method.

	2019 $'000	2018 $'000
1.2B – Industry Contributions		
Coarse grains	**28,596**	27,131
Grain legumes	**10,716**	16,484
Oilseeds	**16,922**	17,414
Wheat	**57,937**	56,281
Total industry contributions	**114,171**	117,310

Accounting Policy

Revenue paid to the Corporation under Section 30 of the *Primary Industries Research and Development Act 1989,* where a research levy is attached to grain producers' output, is for the purpose of providing funds for research and development. Industry contributions are recognised when they are entitled to be received by the Corporation.

	2019 $'000	2018 $'000
1.2C – Project Refunds		
Project refunds	**3,947**	7,516
Total project refunds	**3,947**	7,516

Accounting Policy

Project refunds are recognised upon receipt of the refund when it relates to prior years expenditure and when the funds accrued are no longer required for the completion of the project.

	2019 $'000	2018 $'000
1.2D – Royalties		
Coarse grains	**3,315**	3,406
Grain legumes	**1,904**	367
Oilseeds	**501**	458
Wheat	**1,026**	1,579
Other	**396**	218
Total royalties	**7,142**	6,028

Accounting Policy

Royalties are recognised when they can be reliably measured and when they are entitled to be received by the Corporation.

	2019 $'000	2018 $'000
1.2E – Grant Income		
Other grant income	**3,165**	2,425
Total grant income	**3,165**	2,425

Accounting Policy

Grants income is revenue paid to the Corporation for the purpose of funding specific research and development projects. Grants and other non-reciprocal contributions from non-government entities are recognised as revenue when the Corporation obtains control over the assets comprising the contributions. Control is normally obtained upon receipt. Grants from government entities are recognised on a systematic basis over the periods in which the Corporation recognises as expenses the related costs for which the grants are intended.

	2019 $'000	2018 $'000
1.2F – Dividends		
Other	**1,560**	1,946
Total dividends	**1,560**	1,946

Accounting Policy

Dividend income is recognised when the right to receive payment is established.

	2019 $'000	2018 $'000
1.2G – Rental Income		
Office rental income	**142**	74
Total rental income	**142**	74

Subleasing rental income commitments

The Corporation in its capacity as lessor has entered into an arrangement to sublease 130m$_2$ of the Canberra office. The sublease commenced on 12 November 2018 with a term of 1 year.

Commitments for sublease rental income receivables are as follows:

Within 1 year	**62**	11
Between 1 to 5 years	**-**	-
More than 5 years	**-**	-
Total sublease rental income commitments	**62**	11

	2019 $'000	2018 $'000
1.2H – Other Revenue		
Levy penalties	**148**	106
Advertising income	**340**	163
Publications revenue	**3**	8
Other	**30**	13
Total other revenue	**521**	290

	2019 $'000	2018 $'000
1.2I – Other Gains		
Change in fair value through profit or loss	**83**	-
Total other gains	**83**	-

	2019 $'000	2018 $'000
1.2J – Revenue from Government		
Department of Agriculture and Water Resources		
PIRD Act 1989 contribution	**69,350**	71,262
Total revenue from Government	**69,350**	71,262

Accounting Policy

Revenue from Government

Revenue paid to the Corporation under Section 32 of the *Primary Industries Research and Development Act 1989,* representing no more than 0.5% of the gross value of production of grains, is for the purpose of funding research and development activities. Revenues from Government are recognised when they are entitled to be received by the Corporation.

Funding received or receivable from non-corporate Commonwealth entities (appropriated to the non-corporate Commonwealth entity as a corporate Commonwealth entity payment item for payment to the Corporation) is recognised as Revenue from Government by the Corporation unless the funding is in the nature of an equity injection or loan.

Financial Position

2.1: Financial Assets

	2019 $'000	2018 $'000
2.1A – Cash and Cash Equivalents		
Cash at Bank	**2,333**	33,660
Total cash and cash equivalents	**2,333**	33,660
2.1B – Trade and Other Receivables		
Goods and services receivables		
Goods and services	**18,009**	9,136
Accrued interest	**18**	55
Accrued income	**1,355**	659
Statutory receivables	**3,110**	4,251
Total goods and services receivables	**22,492**	14,101
Accrued interest The interest rates range from 0.40% to 1.50% (2018: 0.65% to 1.50%) and the frequency of payments is monthly.		
Other receivables		
Security deposits receivable	**28**	27
Convertible notes receivable[1]	**-**	3,117
Loans receivable[2]	**1,305**	1,241
Total other receivables	**1,333**	4,385
Total trade and other receivables (net)	**23,825**	18,486

No indicators of impairment were found for trade and other receivables.

1 GRDC hold a convertible note with InterGrain Pty Ltd which has been reclassified as FVTPL with the introduction of AASB9 and is now reported as an investment rather than a receivable. Details can be seen at Note 2.1E.

2 At the end of the reporting period, the Corporation had a loan receivable totalling $1,304,909. The loan was made to an entity in which the Corporation is an equity holder. The loan matures on 15 July 2022.

Accounting Policy

Financial assets

Trade receivables, loans and other receivables that are held for the purpose of collecting the contractual cash flows where the cash flows are solely payments of principal and interest, that are not provided at below-market interest rates, are subsequently measured at amortised cost using the effective interest method adjusted for any loss allowance.

	2019 $'000	2018 $'000
2.1C – Equity accounted investments		
Grains Innovation Investment Trust	**4,749**	-
Total investments accounted for using the equity method	**4,749**	-

Details of investments accounted for using the equity method

	Ownership	
	2019	2018
Name of entity	**%**	%
Grains Research Development Corporation[1]	**100**	-

1 The value of the Grains Innovation Investment Trust is based on the net asset value of the entity which is $4.7m (2018: Nil)

Accounting Policy

Jointly Controlled Entities

Interests in jointly controlled entities in which the entity is a venturer (and so has joint control) are accounted for using the equity method.

Under the equity method, investments in the associates are carried in the entity's statement of financial position at cost as adjusted for post-acquisition changes in the entity's share of net assets of the associates.

Goodwill relating to an associate is included in the carrying amount of the investment. There was no goodwill to include in the carrying value this financial year.

After the application of the equity method, the entity determines whether it is necessary to recognise any impairment loss with respect to the net investment in associates. No impairment loss was recognised this financial year.

	2019 $'000	2018 $'000
2.1D – Investments in Managed Funds		
Managed Funds Investments		
At market value	**197,515**	199,165
Total managed funds investments	**197,515**	199,165

Individually managed funds

The funds are available at call. Interest rates will vary to reflect varying market interest rates.

Ministerial approval

The Corporation has received approval under paragraph 59(1)(b)(iii) of the *Public Governance, Performance and Accountability Act 2013* to hold the investments listed above.

Accounting Policy

Accounting policies for investments in managed funds are contained in Note 5.1A.

	2019 $'000	2018 $'000
2.1E – Other Investments		
Shares in unlisted companies[1]		
Australian Grain Technologies Pty Ltd (AGT)[2]	**51,902**	11,386
Allowance for impairment	**-**	(7,171)
Total share value of AGT	**51,902**	4,215
InterGrain Pty Ltd[3]	**9,623**	8,630
Allowance for impairment	**-**	(8,630)
Total share value of InterGrain	**9,623**	-
Total shares in unlisted companies	**61,525**	20,016
Hybrid contracts		
Convertible note[4]	**7,358**	-
Total hybrid contracts	**7,358**	-
Gross Other Investments	**68,883**	20,016
Total allowance for impairment	**-**	(15,801)
Net other investments[5]	**68,883**	4,215

The shares held are ordinary shares.

All such investments are expected to be recovered in more than 12 months.

1 Shares in unlisted companies were previously classified as available-for-sale financial assets with an allowance for impairment recognised. Under AASB 9, these shares were required to be measured at fair value on initial application and then subsequently measured at fair value at the end of each reporting period.

The Corporation has applied the irrevocable election to measure the equity instruments at fair value through other comprehensive income. On derecognition or reclassification, the cumulative gains or losses in other comprehensive income will not be recycled to profit or loss.

2 On 1 July 2018, AGT shares were valued at the fair value of $42,930,000 following the implementation of AASB 9. This resulted in the reversal of the impairment allowance of $7,171,000 and an increase to retained earnings of $38,715,000. On 30 June 2019, the shares were subsequently revalued at $51,902,000 with the gain in fair value of $8,972,000 being recognised in other comprehensive income.

3 On 1 July 2018, InterGrain shares were valued at the fair value of $8,777,000 following the implementation of AASB 9. This resulted in the reversal of the impairment allowance of $8,630,000 and an increase to retained earnings of $8,777,000. On 30 June 2019, the shares were subsequently revalued at $9,623,000 with the gain in fair value of $846,000 being recognised in other comprehensive income.

4 In 2018 the convertible note was valued using amortised cost and the embedded derivative through profit and loss. With the introduction of AASB 9 the convertible note has been reclassified as FVTPL and valued as a whole.

On 1 July 2018, the convertible note was valued at the fair value of $7,159,535 resulting in an increase to retained earnings of $4,042,000 following the implementation of AASB 9. On 30 June 2019, the convertible note was subsequently revalued at $7,358,175 with the gain in fair value of $83,000 being recognised through profit or loss.

5 Net Other Investments have increased from 2018 to 2019 by $64,668 million due to the implementation of AASB 9 *Financial Instruments* and the revaluation of the shares held in AGT and shares and convertible note held with InterGrain.

GRDC also holds 38,337 shares at zero value in Grain Foods Innovations Pty Ltd (a company in liquidation). The liquidation will be completed post 30 June 2019 with a distribution of $1,297.71 expected to be received.

Accounting Policy

Accounting policies for other investments are contained in Note 5.1A.

2.2: Non-Financial Assets

2.2A – Reconciliation of the Opening and Closing Balances of Property, Plant and Equipment and Intangibles

Reconciliation of the opening and closing balances of property, plant and equipment and intangibles – 2019

	BUILDINGS ON LEASEHOLD LAND $'000	OTHER PROPERTY, PLANT & EQUIPMENT$'000	INTANGIBLES $'000	TOTAL $'000
As at 1 July 2018				
Gross book value	3,940	2,371	9,752	**16,063**
Accumulated depreciation, amortisation and impairment losses	(1,483)	(924)	(3,523)	**(5,930)**
Total as at 1 July 2018	**2,457**	**1,447**	**6,229**	**10,133**
Additions: By purchase	69	925	3,190	**4,184**
Depreciation and amortisation expense	(401)	(538)	(1,596)	**(2,535)**
Other movements Work in progress	6	-	487	**493**
Disposals: Other	(14)	-	-	**(14)**
Total as at 30 June 2019	**2,117**	**1,834**	**8,310**	**12,261**
Total as at 30 June 2019 represented by:				
Gross book value	4,001	3,296	13,429	**20,726**
Accumulated depreciation, amortisation and impairment losses	(1,884)	(1,462)	(5,119)	**(8,465)**
Total as at 30 June 2019	**2,117**	**1,834**	**8,310**	**12,261**

No indicators of impairment were found for buildings, land, property, plant and equipment or intangibles.

Revaluations of non-financial assets

All revaluations were conducted in accordance with the revaluation policy stated below. A revaluation of land and buildings immediately prior to the classification as Held for Sale was conducted during the previous reporting period by an independent valuer, Herron Todd White.

Accounting Policy

Assets are recorded at cost on acquisition except as stated below. The cost of acquisition includes the fair value of assets transferred in exchange and liabilities undertaken. Non-financial assets are initially measured at their fair value plus transaction costs where appropriate.

Assets acquired at no cost, or for nominal consideration, are initially recognised as assets and income at their fair value at the date of acquisition, unless acquired as a consequence of restructuring of administrative arrangements. In the latter case, assets are initially recognised as contributions by owners at the amounts at which they were recognised in the transferor's accounts immediately prior to the restructuring.

Asset Recognition Threshold

Purchases of property, plant and equipment are recognised initially at cost in the statement of financial position, except for purchases costing less than $2,000, which are expensed in the year of acquisition (other than where they form part of a group of similar items which are significant in total).

The initial cost of an asset includes an estimate of the cost of dismantling and removing the item and restoring the site on which it is located. This is particularly relevant to 'make good' provisions in property leases taken up by the Corporation where there exists an obligation to restore the property to its original condition. These costs are included in the value of the Corporation's leasehold improvements with a corresponding provision for the 'make good' recognised.

Revaluations

Following initial recognition at cost, property, plant and equipment are carried at fair value less subsequent accumulated depreciation and accumulated impairment losses. Valuations are conducted with sufficient frequency to ensure that the carrying amounts of assets do not differ materially from the assets' fair values as at the reporting date. The regularity of independent valuations depends upon the volatility of movements in market values for the relevant assets.

Revaluation adjustments are made on a class basis. Any revaluation increment is credited to equity under the heading of asset revaluation reserve except to the extent that it reversed a previous revaluation decrement of the same asset class that was previously recognised in the surplus/deficit. Revaluation decrements for a class of assets are recognised directly in the surplus/deficit except to the extent that they reversed a previous revaluation increment for that class.

Any accumulated depreciation as at the revaluation date is eliminated against the gross carrying amount of the asset and the asset is restated to the revalued amount.

Depreciation

Depreciable property, plant and equipment assets are written down to their estimated residual values over their estimated useful lives to the Corporation using, in all cases, the straight-line method of depreciation.

Depreciation rates (useful lives), residual values and methods are reviewed at each reporting date and necessary adjustments are recognised in the current, or current and future reporting periods, as appropriate.

Depreciation rates applying to each class of depreciable asset are based on the following useful lives:

	2019	2018
Buildings on leasehold land	**25 years**	25 years
Other infrastructure, plant & equipment	**3 to 12 years**	3 to 12 years

Impairment

All assets were assessed for impairment at 30 June 2019. Where indications of impairment exist, the asset's recoverable amount is estimated, and an impairment adjustment made if the asset's recoverable amount is less than it's carrying amount.

The recoverable amount of an asset is the higher of its fair value less costs to disposal and its value in use. Value in use is the present value of the future cash flows expected to be derived from the asset. Where the future economic benefit of an asset is not primarily dependent on the asset's ability to generate future cash flows, and the asset would be replaced if the Corporation were deprived of the asset, its value in use is taken to be its depreciated replacement cost.

Derecognition

An item of property, plant and equipment is derecognised upon disposal or when no further economic benefits are expected from its use or disposal.

Intangibles

The Corporation's intangibles comprise software and intellectual property. Software is carried at cost less accumulated amortisation and accumulated impairment losses. Software is amortised on a straight-line basis over its anticipated useful life as follows:

	2019	2018
Information management system	**2.5 years**	2.5 years
Other software	**6 years**	6 years

All intangible assets were assessed for indications of impairment as at 30 June 2019.

Development costs

Research costs are expensed when incurred. An intangible asset arising from development expenditure is only recognised when technical feasibility studies identify that the expenditure will deliver future economic benefits and these benefits can be measured reliably. Other development expenditure is recognised in the Statement of Comprehensive Income as an expense when incurred.

Following initial recognition of development expenditure, the cost model is applied requiring the asset to be carried at cost less any accumulated amortisation and accumulated impairment losses.

	2019 $'000	2018 $'000
2.2B – Other Non-Financial Assets		
Prepayments	**196**	159
Total other non-financial assets	**196**	159

All Other Non-Financial Assets are expected to be recovered in no more than 12 months.

No indicators of impairment were found for non-financial assets.

	2019 $'000	2018 $'000
2.3: Assets Held for Sale		
The following assets have been classified as held for sale:		
Land and buildings on leasehold land	**3,000**	3,000
Total assets held for sale	**3,000**	3,000

In August 2018 the Corporation entered into an arrangement to sell Level 1, 40 Blackall Street, Barton. This arrangement to sell the land and buildings expired at the end of July 2019 where the Corporation entered a Deed of Extension with the Buyer extending the Completion Date until 30 January 2020.

Accounting Policy

Assets are classified as held for sale if their carrying amount will be recovered principally through a sale transaction rather than continuing use and a sale is highly probable. They are measured at the lower of their carrying amount and fair value less costs to sell. Assets classified as held for sale are not depreciated or amortised.

2.4: Payables

Settlement is usually made within 30 days apart from those payables with specific settlement terms after 30 days.

	2019 $'000	2018 $'000
2.4A – Suppliers		
Trade creditors – external parties	**1,223**	1,074
Accrued expenses – external parties	**1,556**	1,238
Total supplier payables	**2,779**	2,312

	2019 $'000	2018 $'000
2.4B – Research and Development		
Research and development payables	**38,760**	59,610
Total research and development payables	**38,760**	59,610

2.4C – Other Payables		
Salaries & Wages	**741**	658
Unearned grant income – related parties	**3,713**	3,253
Total other payables	**4,454**	3,911

Accounting Policy

Accounting policies for payables are contained in Note 5.1A. Refer to Note 1.2E regarding the Corporation's accounting policy on grant income.

2.5: Other Provisions

	LEASE INCENTIVE $'000	PROVISION FOR MAKE GOOD $'000	TOTAL $'000
As at 1 July 2018	1,042	542	1,584
Amounts used	179	-	179
Total as at 30 June 2019	**863**	**542**	**1,405**

The Corporation currently has an agreement for the leasing of premises which have provisions requiring the Corporation to restore the premises to their original condition at the conclusion of the lease. The Corporation has made a provision to reflect the present value of this obligation.

People and Relationships

	2019 $'000	2018 $'000
3.1 – Employee Provisions		
Leave	**2,395**	2,038
Total employee provisions	**2,395**	2,038

Accounting Policy

Liabilities for 'short-term employee benefits and termination benefits expected within twelve months of the end of reporting period are measured at their nominal amounts. Other long-term employee benefits are measured as net total of the present value of the defined benefit obligation at the end of the reporting period minus the fair value at the end of the reporting period of plan assets (if any) out of which the obligations are to be settled directly.

Leave

The liability for employee benefits includes provision for annual leave and long service leave. The leave liabilities are calculated on the basis of employees' remuneration at the estimated salary rates that applied at the time the leave is taken, including the Corporation's employer superannuation contribution rates, to the extent that the leave is likely to be taken during service rather than paid out on termination. The liability for long service leave has been determined by using the Australian Government shorthand method. The estimate of the present value of the liability takes into account attrition rates and pay increases through promotion and inflation.

Separation and Redundancy

Provision is made for separation and redundancy benefit payments. The Corporation recognises a provision for termination when it has developed a detailed formal plan for the terminations and has informed those employees affected that it will carry out the terminations.

Superannuation

The Corporation's staff are members of the Commonwealth Superannuation Scheme (CSS), the Public Sector Superannuation Scheme (PSS), the PSS Accumulation Plan (PSSap), or other Superannuation funds held outside of the Australian Government.

The CSS and PSS are defined benefit schemes for the Australian Government. The PSSap and other superannuation schemes are defined contribution schemes.

The liability for defined benefits is recognised in the financial statements of the Australian Government and is settled by the Australian Government in due course. This liability is reported in the Department of Finance's administered schedules and notes.

For CSS and PSS members, the Corporation makes contributions based on the rates determined by an actuary to be sufficient to meet the current costs to the Government. The Corporation accounts for the contributions as if they were contributions to defined contribution plans.

For Australian Super and other approved superannuation schemes, the Corporation contributes a minimum of 9.5% of superannuable salaries.

As at 30 June 2019, superannuation contributions payable were $NIL (2018: $NIL).

3.2: Key Management Personnel Remuneration

Key management personnel are those persons having authority and responsibility for planning, directing and controlling the activities of the entity, directly or indirectly, including any director (whether executive or otherwise) of that entity. The Corporation has determined the key management personnel to be the Directors, including the Managing Director, and the Deputy CEO. Key management personnel remuneration is reported in the table below:

	2019 $'000	2018 $'000
Short-term employee benefits	**1,080**	1,084
Post-employment benefits (superannuation)	**104**	102
Other long-term employee benefits	**81**	75
Total key management personnel remuneration expenses[1]	**1,265**	1,261

The total number of key management personnel that are included in the above table are 9 individuals (2018: 13 individuals). During 2018 several key management personnel transitioned in and out of Directorships. In 2019 there were no changes to GRDC Directors, and the number of key management personnel held constant at 9 throughout the year.

Additional to the amounts disclosed in the table above, the Corporation has a fee-for-service contracted arrangement for the provision of Key Management Personnel services. The Corporation incurred costs in relation to this contract of $50,425 (2018: $49,428).

1 The above key management personnel remuneration excludes the remuneration and other benefits of all Cabinet Ministers and the Portfolio Minister. The Portfolio Minister's remuneration and other benefits are set by the Remuneration Tribunal and are not paid by the Corporation.

3.3: Related Party Disclosures

Related party relationships:

The Corporation is an Australian Government controlled entity. Related parties to this Corporation are Directors, Key Management Personnel including the Executive, and other Australian Government entities.

Transactions with related parties:

Given the breadth of Government activities, related parties may transact with the government sector in the same capacity as ordinary citizens. Such transactions include the payment or refund of taxes, receipt of a Medicare rebate or higher education loans. These transactions have not been separately disclosed in this note.

Several directors of the Corporation and their close family members hold directorships with other organisations. Any transactions between the Corporation and those organisations or any dealings between the Corporation and the Directors and their close family members individually are conducted using commercial and arms-length principles.

The Corporation made payments of $1,018,424 to Charles Sturt University. The Corporation receipted funds from Charles Sturt University of $54,691 (2018: $35,465). At the time of payment and receipt of funds, a Director of the Corporation was a Director of the Charles Sturt University, Functional Grain Centre. At 30 June 2019 there was no amount owing from Charles Sturt University (2018: $2,708).

The Corporation made payments of $20,890 (2018: $40,590) to the Australian Farm Institute. At the time of payment, a Director of the Corporation was an Executive Director of the entity.

The Corporation made payments of $31,246 (2018: NIL) to Dairy Australia. At the time of payment, a Director of the Corporation was a Director of the entity. Transactions have been conducted on normal commercial terms. Dairy Australia was not a related party during the financial year ended 30 June 2018.

The Corporation made payments of $11,000 (2018: NIL) to Rural Business Support. At the time of payment, a Director of the Corporation was a Director of the entity. Rural Business Support was not a related party during the financial year ended 30 June 2018.

The corporation made payments of Nil (2018: $12,139) to AgCommunications Pty Ltd for communication services. At the time of payment, a Director of AgCommunications Pty Ltd was a close family member of a Director of the Corporation. Transactions have been conducted on normal commercial terms.

No loans were made to the Directors or Director-related entities during the reporting period (2018: NIL)

Managing Uncertainties

4.1 Unquantifiable contingencies

At 30 June 2019 the Corporation has engaged legal representation in relation to an ongoing intellectual property matter. It is not currently possible to determine whether there would be any cash outflows or in flows resulting from this matter. The Corporation maintains a professional indemnity insurance policy. The Corporation believes if unsuccessful in defence of any proceedings related to this issue, insurance will indemnify for damages or judgments. (2018: $NIL).

Accounting Policy

Contingent liabilities and contingent assets are not recognised in the statement of financial position but are reported in the notes. They may arise from uncertainty as to the existence of a liability or asset or represent an asset or liability in respect of which the amount cannot be reliably measured. Contingent assets are disclosed when settlement is probable but not virtually certain and contingent liabilities are disclosed when settlement is greater than remote.

5.1: Financial Instruments

	2019 $'000	2018 $'000
5.1A – Categories of Financial Instruments		
	$'000	$'000
Financial Assets under AASB 139		
Loans and receivables		
Cash and cash equivalents		33,660
Trade and other receivables		6,586
Total loans and receivables		40,246
Available-for-sale financial assets		
Shares in unlisted companies		4,215
Total available-for-sale financial assets		4,215
Financial assets at fair value through profit or loss		
Managed funds		199,165
Embedded derivative		-
Total financial assets at fair value through profit or loss		199,165
Financial Assets under AASB 9		
Financial assets at amortised cost		
Cash and cash equivalents	**2,333**	
Trade and other receivables	**4,690**	
Total financial assets at amortised cost	**7,023**	
Financial assets at fair value through other comprehensive income		
Fixed interest individually managed funds	**197,515**	
Total financial assets at fair value through other comprehensive income	**197,515**	
Financial assets at fair value through other comprehensive income (investments in equity instruments)		
Shares in unlisted companies[1]	**61,525**	
Total financial assets at fair value through other comprehensive income (investments in equity instruments)	**61,525**	
Financial assets at fair value through profit or loss		
Convertible note	**7,358**	
Total financial asset at fair value through profit or loss	**7,358**	
Total financial assets	**273,421**	243,626
GRDC owns shares in two unlisted companies, 39.11% of AGT and 38.33% of InterGrain.		
Financial Liabilities		
Financial liabilities measured at amortised cost		
Payables	**43,668**	61,742
Total financial liabilities measured at amortised cost	**43,668**	61,742
Total financial liabilities	**43,668**	61,742

Classification of financial assets on the date of initial application of AASB 9

FINANCIAL ASSETS CLASS	NOTE	AASB 139 ORIGINAL CLASSIFICATION	AASB 9 NEW CLASSIFICATION	AASB 139 CARRYING AMOUNT AT 1 JULY 2018 $'000	AASB 9 CARRYING AMOUNT AT 1 JULY 2018 $'000
Cash and cash equivalents	2.1A	Loans and Receivables	Amortised Cost	**33,660**	**33,660**
Trade and other receivables	2.1B	Loans and Receivables	Amortised Cost	**6,586**	**3,469**
Fixed interest individually managed funds	2.1D	FVTPL[1]	FVOCI[2]	**199,165**	**199,165**
Shares in unlisted companies	2.1E	Available for sale	FVOCI[2]	**4,215**	**51,707**
Convertible note	2.1E	Loans and Receivables	FVTPL[1]	**-**	**7,159**
Total financial assets				**243,626**	**295,160**

1 FVTPL – Fair Value Though Profit or Loss

2 FVOCI – Fair Value Through Other Comprehensive Income

Reconciliation of carrying amounts of financial assets on the date of initial application of AASB 9

	AASB 139 CARRYING AMOUNT AT 30 JUNE 2018 $'000	RECLASSIFICATION $'000	REMEASUREMENT $'000	AASB 9 CARRYING AMOUNT AT 1 JULY 2018 $'000
Financial assets at amortised cost				
Loans and receivables				
Cash and cash equivalents	33,660	-	-	33,660
Trade and other receivables	6,586	(3,117)	-	3,469
Total amortised cost	**40,246**	**(3,117)**	**-**	**37,129**
Financial assets at fair value through other comprehensive income				
Available for sale – equity instruments				
Shares in unlisted companies	4,215	-	47,492	51,707
FVTPL				
Fixed interest individually managed funds	199,165	-	-	199,165
Total fair value through other comprehensive income	**203,380**	**-**	**47,492**	**250,872**
Financial assets at fair value through profit or loss				
Loans and receivables				
Convertible note	-	3,117	4,042	7,159
Total fair value through profit or loss	**-**	**3,117**	**4,042**	**7,159**

Accounting Policy

Financial assets

With the implementation of AASB 9 Financial Instruments for the first time in 2019, the Corporation classifies its financial assets in the following categories:

a) financial assets at fair value through profit or loss;

b) financial assets at fair value through other comprehensive income; and

c) financial assets measured at amortised cost.

The classification depends on both the Corporation's business model for managing the financial assets and contractual cash flow characteristics at the time of initial recognition. Financial assets are recognised when the Corporation becomes a party to the contract and, as a consequence, has a legal right to receive or a legal obligation to pay cash and derecognised when the contractual rights to the cash flows from the financial asset expire or are transferred upon trade date.

Comparatives have not been restated on initial application.

Financial Assets at Amortised Cost

Financial assets included in this category need to meet two criteria:

1. the financial asset is held in order to collect the contractual cash flows; and

2. the cash flows are solely payments of principal and interest (SPPI) on the principal outstanding amount.

Amortised cost is determined using the effective interest method.

Effective Interest Method

Income is recognised on an effective interest rate basis for financial assets that are recognised at amortised cost.

Financial Assets at Fair Value Through Other Comprehensive Income (FVOCI)

Financial assets measured at fair value through other comprehensive income are held with the objective of both collecting contractual cash flows and selling the financial assets and the cash flows meet the SPPI test.

Any gains or losses as a result of fair value measurement or the recognition of an impairment loss allowance is recognised in other comprehensive income.

Financial Assets at Fair Value Through Profit or Loss (FVTPL)

Financial assets are classified as financial assets at fair value through profit or loss where the financial assets either doesn't meet the criteria of financial assets held at amortised cost or at FVOCI (i.e. mandatorily held at FVTPL) or may be designated.

Financial assets at FVTPL are stated at fair value, with any resultant gain or loss recognised in profit or loss. The net gain or loss recognised in profit or loss incorporates any interest earned on the financial asset.

Impairment of Financial Assets

Financial assets are assessed for impairment at the end of each reporting period based on Expected Credit Losses, using the general approach which measures the loss allowance based on an amount equal to lifetime expected credit losses where risk has significantly increased, or an amount equal to 12-month expected credit losses if risk has not increased.

The simplified approach for trade, contract and lease receivables is used. This approach always measures the loss allowance as the amount equal to the lifetime expected credit losses.

A write-off constitutes a derecognition event where the write-off directly reduces the gross carrying amount of the financial asset.

Financial liabilities

Financial liabilities are classified as either financial liabilities 'at fair value through profit or loss' or other financial liabilities. Financial liabilities are recognised and derecognised upon 'trade date'.

Financial Liabilities at Fair Value Through Profit or Loss

Financial liabilities at fair value through profit or loss are initially measured at fair value. Subsequent fair value adjustments are recognised in profit or loss. The net gain or loss recognised in profit or loss incorporates any interest paid on the financial liability.

Financial Liabilities at Amortised Cost

Financial liabilities, including borrowings, are initially measured at fair value, net of transaction costs. These liabilities are subsequently measured at amortised cost using the effective interest method, with interest expense recognised on an effective interest basis.

Supplier and other payables are recognised at amortised cost. Liabilities are recognised to the extent that the goods or services have been received (and irrespective of having been invoiced).

	2019 $'000	2018 $'000
5.1B – Net Gains or Losses on Financial Assets		
Financial assets at amortised cost		
Interest revenue	**436**	852
Net gains on financial assets at amortised cost	**436**	852
Investments in equity instruments at fair value through other comprehensive income (designated)		
Gains recognised in equity	**9,818**	-
Net gains on investments in equity instruments at fair value through other comprehensive income (designated)	**9,818**	-
Financial assets at fair value through other comprehensive income		
Interest Revenue	**6,355**	-
Change in fair value	**1,996**	-
Net gains on financial assets at fair value through other comprehensive income	**8,351**	-
Financial assets at fair value through profit or loss		
Interest Revenue	**116**	6,056
Change in fair value	**83**	(2,262)
Net gains on financial assets at fair value through profit or loss	**199**	3,794
Net gain on financial assets	**18,804**	4,646

There was no net gains or losses on financial liabilities.

5.2: Fair Value Measurements

Accounting Policy

The Corporation measures its managed fund investments using Level 1 inputs, that is, using quoted prices in active markets for identical assets that the Corporation can access at measurement date.

The share in unlisted companies were valued at fair value this financial year, in line with the implementation of AASB 9, using Level 2 and Level 3 inputs.

Valuations of non-financial assets are conducted with sufficient frequency to ensure that the carrying amounts of assets do not differ materially from the assets' fair values as at the reporting date. The regularity of independent valuations depend upon the volatility of movements in market values for the relevant assets. Non-financial assets are measured using a range of Level 2 and Level 3 inputs.

The Corporation measures its Leasehold improvements using Level 3 inputs at the reporting date, using the Depreciated replacement cost valuation methodology.

The Corporation measures its Other property, plant and equipment using Level 2 inputs, using adjusted market transactions as a basis.

Immediately prior to the reclassification as assets held for sale, the Corporation revalued its land and building using Level 2 inputs. The inputs included the Capitalisation Approach and the Direct Comparison approach, on a rate per square metre of floor area.

Fair value measurements at the end of the reporting period

	2019 $'000	2018 $'000
5.2A – Fair Value Measurement		
Financial assets		
Investments in managed funds[1]	**197,515**	199,165
Shares in unlisted companies	**61,525**	4,215
Convertible note	**7,358**	-
Total financial assets	**266,398**	203,380
Non-financial assets		
Leasehold improvements[1]	**2,117**	2,457
Other property, plant and equipment[1]	**1,834**	1,447
Total non-financial assets	**3,951**	3,904
Assets held for sale	**3,000**	3,000
Total fair value measurements of assets in the Statement of Financial Position	**273,349**	210,284

1 No change in valuation technique occurred during the period

	2019 $'000	2018 $'000
5.3: Aggregate Assets and Liabilities		
Assets expected to be recovered in:		
No more than 12 months	**225,564**	250,112
More than 12 months	**87,198**	18,706
Total assets	**312,762**	268,818
Liabilities expected to be settled in:		
No more than 12 months	**47,269**	66,896
More than 12 months	**2,524**	2,559
Total liabilities	**49,793**	69,455

Appendices

Appendix A– 17 BE (ta) Executive remuneration 82

Appendix B— Expenditure against the National Science and research priorities and Rural R&D Priorities 85

Appendix C— 17BE(ka) – Management of Human Resources 86

Appendix A

17 BE(ta) Executive remuneration

Remuneration policies and practices

GRDC Key Management Personnel comprise the Chair and Non-Executive Directors, Executive Director and the Deputy Chief Executive Officer.

GRDC Key Management Personnel comprise the Chair and Non-Executive Directors, Executive Director and the Deputy Chief Executive Officer. The remuneration for the Chair and Non-Executive Directors is determined by the Remuneration Tribunal, (Remuneration and Allowances for Holders of Part-time Public Office) Determination 2019 made under subsections 7(3) and (4) of the Remuneration Tribunal Act 1973.

Appointment of Non–Executive Directors is determined under S17 of the *Primary Industries Research and Development Act 1989* (PIRD Act) and the Executive Director's appointment is determined by S77 of the PIRD Act.

The terms and conditions for all GRDC employees is set out in s87 of the PIRD Act and this is given effect through the GRDC Enterprise Agreement and senior management employment contracts. This employment framework supports the development and capability of GRDC staff.

The GRDC Enterprise Agreement came into effect 1 June 2016 and allows for staff development, flexible working arrangements and appropriate remuneration. The EA provides for annual pay increases and performance bonus where organisational and individual targets are met. Any increases in pay or bonuses are funded from the GRDC budget.

Senior managers are engaged on common law contracts that determine pay and conditions. The nature of the work, specific skills, location and individual contributions to the organisational performance targets and GRDC Purpose are key factors in determining senior management remuneration.

Governance

The GRDC Board review and approve the employment framework, through its Remuneration, People and Performance Committee. This includes developing and approving organisational performance targets and reviewing the annual organisational achievement of performance targets, which in turn determine any bonuses or salary increases.

Table A1: Information about remuneration for key management personnel

Information on remuneration in the following tables is prepared on an accrual basis.

NAME	POSITION TITLE	SHORT-TERM BENEFITS			POST-EMPLOYMENT BENEFITS	OTHER LONG-TERM BENEFITS		TERMINATION BENEFITS	TOTAL REMUNERATION
		BASE SALARY	BONUSES	OTHER BENEFITS AND ALLOWANCES	SUPERANNUATION CONTRIBUTIONS	LONG SERVICE LEAVE	OTHER LONG-TERM BENEFITS		
Dianne Angus	Director	$46,050			$4,375				$50,425
Christopher Blanchard	Director	$38,050			$3,615				$41,665
Roseanne Healy	Director	$52,589			$6,597				$59,186
Richard Heath	Director	$38,050			$3,615				$41,665
Steve Jefferies	Managing Director	$330,212	$47,369	$47,989	$40,343	$9,389	$35,887		$511,189
Stephen Powles	Director	$46,050			$4,375				$50,425
Sharon Starick	Director	$22,537			$2,141				$24,678
Stephen Thomas	Deputy CEO	$302,686	$29,192	$2,675	$31,986	$ 9,776	$26,156		$402,471
John Woods	Chairman	$76,090			$7,229				$83,319
Helen Garnett	Director	$50,424			-				$50,424

Note: Included in the amounts disclosed in the table above, the Corporation has a fee-for-service contracted arrangement for the provision of Key Management Personnel services. The Corporation incurred costs in relation to this contract of $50,425.

Table A2: Information about remuneration for senior executives

TOTAL REMUNERATION BANDS	NUMBER OF SENIOR EXECUTIVES	SHORT-TERM BENEFITS			POST-EMPLOYMENT BENEFITS	OTHER LONG-TERM BENEFITS		TERMINATION BENEFITS	TOTAL REMUNERATION
		AVERAGE BASE SALARY	AVERAGE BONUSES	AVERAGE OTHER BENEFITS AND ALLOWANCES	AVERAGE SUPERANNUATION CONTRIBUTIONS	AVERAGE LONG SERVICE LEAVE	AVERAGE OTHER LONG-TERM BENEFITS	AVERAGE TERMINATION BENEFITS	AVERAGE TOTAL REMUNERATION
$0- $220,000									0
$220,001–$245,000									0
$245,001–$270,000									0
$270,001–$295,000	1	232,499	30,879	2,675	24,436	4,616			295,055
$295,001–$320,000	2	233,038	37,852	2,623	26,567	6,666			306,746
$320,001–$345,000	1	268,111	36,814	0	26,357	5,239			336,520
$345,001–$370,000									0
$370,001–$395,000									0
$395,001–$420,000									0
$420,001–$445,000									0
$445,001–$470,000									0
$470,001–$495,000									0
$495,001–....									0

Table A3: Information about remuneration for other highly paid staff

TOTAL REMUNERATION BANDS	NUMBER OF OTHER HIGHLY PAID STAFF	SHORT-TERM BENEFITS			POST-EMPLOYMENT BENEFITS	OTHER LONG-TERM BENEFITS		TERMINATION BENEFITS	TOTAL REMUNERATION
		AVERAGE BASE SALARY	AVERAGE BONUSES	AVERAGE OTHER BENEFITS AND ALLOWANCES	AVERAGE SUPERANNUATION CONTRIBUTIONS	AVERAGE LONG SERVICE LEAVE	AVERAGE OTHER LONG-TERM BENEFITS	AVERAGE TERMINATION BENEFITS	AVERAGE TOTAL REMUNERATION
$220,001–$245,000	6	189,772	16,525	939	21,631	3,326			232,193
$245,001–$270,000	2	209,460	16,990	2,675	22,134	5,768			257,027
$270,001–$295,000	1	228,512	18,429	2,675	23,034	4,941			277,591
$295,001–$320,000									0
$320,001–$345,000									0
$345,001–$370,000									0
$370,001–$395,000									0
$395,001–$420,000									0
$420,001–$445,000									0
$445,001–$470,000									0
$470,001–$495,000									0
$495,001–....									0

Appendix B

Expenditure against the National Science and research priorities and Rural R&D Priorities

The following tables summarise the total expenditure allocated against the Australian Government's Science and Research Priorities and Rural Research, Development and Extension Priorities within the 2018–19 financial year. The allocation of funds is shown in both dollar and percentage terms for each investment theme.

Table A4: Australian Government Science and Research Priorities, dollar and percentage value

STAKEHOLDER PRIORITIES	2018–19 EXPENDITURE	
	$M	% OF RESEARCH PORTFOLIO
National Science and Research priorities		
Food	$33.7	19.4
Soil and Water	$17.8	10.2
Transport	-	-
Cybersecurity	-	-
Energy	-	-
Resources	-	-
Advanced manufacturing	$2.0	1.1
Environmental change	$40.8	23.4
Health	$0.02	0.01
Other^	$79.7	45.8

Table A5: Australian Government Rural Research, Development and Extension Priorities, dollars and percentage values

Rural RD&E priorities		
Advanced technology	$26.6	15.3
Biosecurity	$39.9	23.0
Soil, water and managing natural resources	$31.1	17.9
Adoption of R&D	$28.7	16.5
Other^	$47.6	27.3

a Other includes a number of investments that relate to commercialisation, Impact Assessment, evaluation of the portfolio and adoption of R&D project.

Appendix C

17BE(ka) – Management of Human Resources

Table A6: All Ongoing Employees Current Report Period (2018–19)

	MALE			FEMALE			INDETERMINATE			TOTAL
	FULL TIME	PART TIME	*TOTAL MALE*	FULL TIME	PART TIME	*TOTAL FEMALE*	FULL TIME	PART TIME	*TOTAL INDETERMINATE*	
NSW	1	0	1	0	0	0	0	0	0	2
Qld	3	0	3	6	0	6	0	0	0	9
SA	10	0	10	1	0	1	0	0	0	11
Tas	0	0	0	0	0	0	0	0	0	0
Vic	1	0	1	1	0	1	0	0	0	2
WA	2	0	2	6	0	6	0	0	0	8
ACT	19	0	19	18	3	21	0	0	0	40
NT	0	0	0	0	0	0	0	0	0	0
Overseas	0	0	0	0	0	0	0	0	0	0
Total	**36**	**0**	**36**	**32**	**3**	**35**	**0**	**0**	**0**	**71**

Table A7: All non-ongoing employees Current Report Period (2018–19)

	MALE			FEMALE			INDETERMINATE			TOTAL
	FULL TIME	PART TIME	*TOTAL MALE*	FULL TIME	PART TIME	*TOTAL FEMALE*	FULL TIME	PART TIME	*TOTAL INDETERMINATE*	
NSW	-	-	-	-	-	-	-	-	-	-
Qld	-	-	-	-	-	-	-	-	-	-
SA	-	1	1	-	-	-	-	-	-	1
Tas	-	-	-	-	-	-	-	-	-	-
Vic	1	0	1	-	-	-	-	-	-	1
WA	-	-	-	-	-	-	-	-	-	-
ACT	-	-	-	-	-	-	-	-	-	-
NT	-	-	-	-	-	-	-	-	-	-
Overseas	-	-	-	-	-	-	-	-	-	-
Total	**1**	**1**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**2**

Table A8: All Ongoing Employees Previous Report Period (2017–18)

	MALE			FEMALE			INDETERMINATE			TOTAL
	FULL TIME	PART TIME	*TOTAL MALE*	FULL TIME	PART TIME	*TOTAL FEMALE*	FULL TIME	PART TIME	*TOTAL INDETERMINATE*	
NSW	-	-	-	1	0	1	-	-	-	1
Qld	3	-	3	5	-	5	-	-	-	8
SA	10	-	10	1	-	1	-	-	-	11
Tas	-	-	-	-	-	-	-	-	-	-
Vic	-	-	-	-	-	-	-	-	-	-
WA	2	-	2	7	-	7	-	-	-	9
ACT	19	-	19	24	6	30	-	-	-	49
NT	-	-	-	-	-	-	-	-	-	-
Overseas	-	-	-	-	-	-	-	-	-	-
Total	**34**	**-**	**-**	**38**	**6**	**44**	**-**	**-**	**-**	**78**

Table A9: All Non-Ongoing Employees Previous Report Period (2017–18)

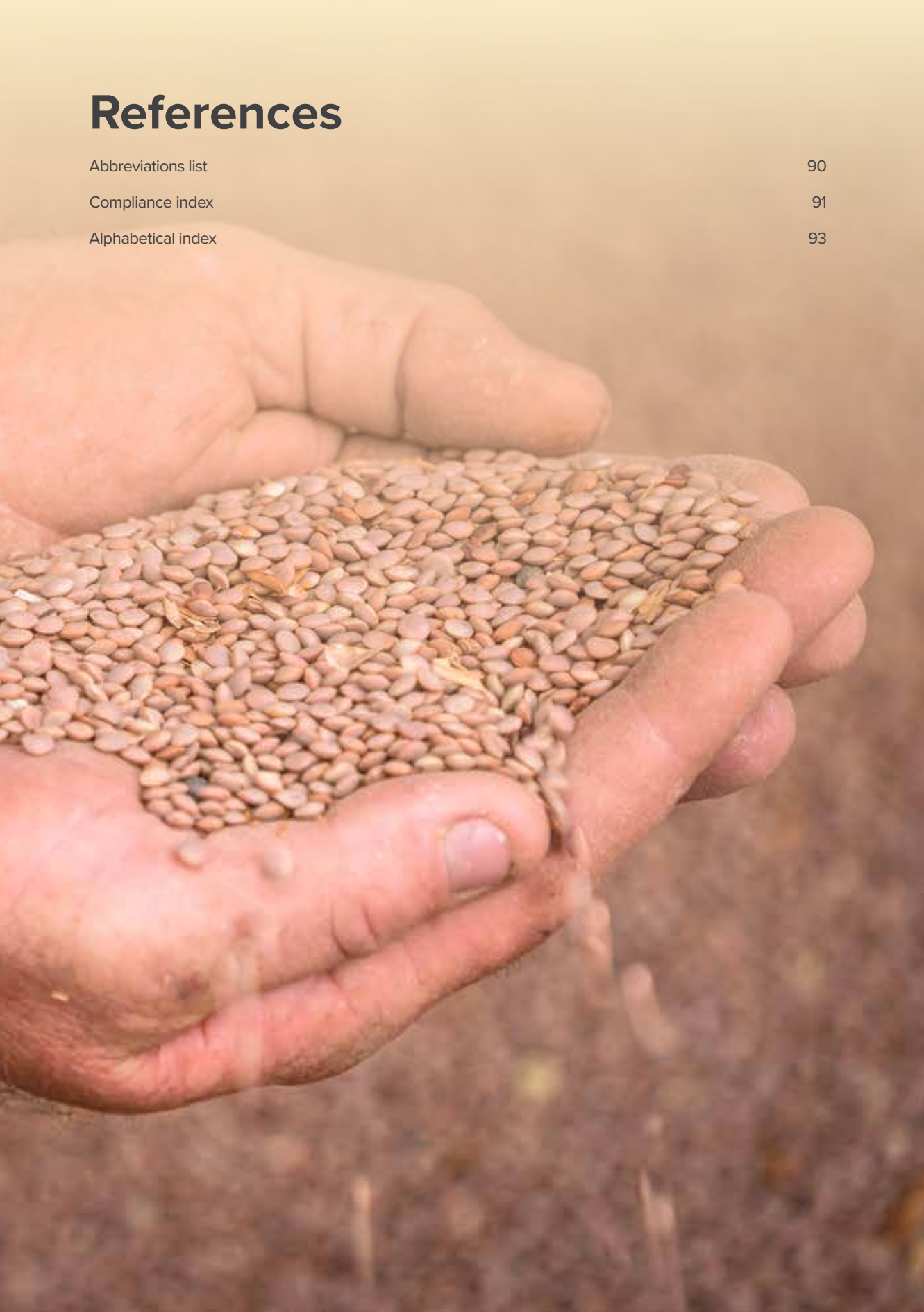
	MALE			FEMALE			INDETERMINATE			TOTAL
	FULL TIME	PART TIME	*TOTAL MALE*	FULL TIME	PART TIME	*TOTAL FEMALE*	FULL TIME	PART TIME	*TOTAL INDETERMINATE*	
NSW	-	-	-	-	-	-	-	-	-	-
Qld	-	-	-	-	-	-	-	-	-	-
SA	-	1	1	-	-	-	-	-	-	1
Tas	-	-	-	-	-	-	-	-	-	-
Vic	2	-	2		-	-	-	-	-	-
WA	-	-	-	-	-	-	-	-	-	-
ACT	-	-	-	-	-	-	-	-	-	-
NT	-	-	-	-	-	-	-	-	-	-
Overseas	-	-	-	-	-	-	-	-	-	-
Total	**2**	**1**	**3**	**-**	**-**	**-**	**-**	**-**	**-**	**3**

References

Abbreviations list 90

Compliance index 91

Alphabetical index 93



Abbreviations list

AEGIC	Australian Export Grains Innovation Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
ESD	ecologically sustainable development
GRDC	Grains Research and Development Corporation
GST	goods and services tax
KIT	Key Investment Target
Minister, the	Minister for Agriculture
PBR	plant breeder's rights
PGPA Act	*Public Governance, Performance and Accountability Act 2013*
PIRD Act	*Primary Industries Research and Development Act 1989*
R&D	research and development
RD&E	research, development and extension

Compliance index

REQUIREMENT	SOURCE	PART OF THE REPORT
***Primary Industries Research and Development Act 1989* (PIRD Act)**		
R&D activities	Paragraph 28(a)(i)	ii, 2–4, Chapter 2 14-32
Marketing activities funded by levy	Paragraph 28(a)(ia)	None to report
Expenditure on R&D activities	Paragraph 28(a)(ii)	iii, iv, Chapter 2 14–32, Financial statements
Impact of R&D activities on the grains industry	Paragraph 28(a)(ii)	2–4, Chapter 2 14–32
Revisions of the R&D plan	Paragraph 28(a)(iii)	None to report
Agreements under sections 13 and 14	Paragraph 28(a)(iv)	Published separately
Patents and commercialisation	Paragraph 28(a)(v)	33
Companies	Paragraph 28(a)(vi) and (vii)	45
Real property	Paragraph 28(a)(viii)	33, Financial statements
Assessment of operations	Paragraph 28(b)	2–4, Annual performance statements 14–32
Contribution to the objects of the Act	Paragraph 28(c)	14–32
Sources and expenditure of funds	Paragraph 28(d)	iii, 6, 45, Financial statements
Public Governance, Performance and Accountability Rule 2014		
Approval of the report by directors	Section17BB	Letter of transmittal
Parliamentary standards of presentation	Section 17BC	Throughout
Plain English and clear design	Section 17BD	Throughout
Enabling legislation	Paragraph 17BE(a)	43
Legislated objects and functions	Paragraph 17BE(b)(i)	43
Purpose	Paragraph 17BE(b)(ii)	Inside front cover
Responsible minister	Paragraph 17BE(c)	i, 43
Ministerial directions	Paragraph 17BE(d) and (f)	None to report
Policy orders	Paragraphs 17BE(e) and (f)	None to report
Annual performance statements	Paragraph 17BE(g)	15–19
Significant issues related to financial compliance	Paragraph 17BE(h) and (i)	None to report
Information on members of the accountable authority	Paragraph 17BE(j)	36–41
Organisational structure	Paragraph 17BE(k)	5
Human resource statistics	Paragraph 17BE(ka)	Appendix C
Location	Paragraph 17BE(l)	8, inside back cover
Governance	Paragraph 17BE(m)	41–42
Related entity transactions	Paragraphs 17BE(n) and (o)	Financial statements
Significant activities and changes	Paragraph 17BE(p)	43
Judicial decisions or decisions of administrative tribunals	Paragraph 17BE(q)	42

REQUIREMENT	SOURCE	PART OF THE REPORT
Reports by the Auditor-General, a parliamentary committee, the Commonwealth Ombudsman or the Office of the Australian Information Commissioner	Paragraph 17BE(r)	42, 50–51
Information from subsidiaries	Paragraph 17BE(s)	None to report
Indemnity and insurance	Paragraph 17BE(t)	42
Executive remuneration	Paragraph 17BE(ta)	Appendix A
Compliance index	Paragraph 17BE(u)	91
Funding Agreement 2015–19		
Implementation of strategies under the National Primary Industries Research, Development and Extension Framework	Paragraph 11.10(a)	7
Rationale for mix of RD&E investments	Paragraph 11.10(b)	10
Extension activities	Paragraph 11.10(c)	14–32
Collaborations not covered by ss. 13 and 14 of the PIRD Act	Paragraph 11.10(d)	None to report
Sources of income	Paragraph 11.10(e)	iii, Financial statements
Costs of R&D and marketing	Paragraph 11.10(f)	iii, Financial statements
Implementation of the strategic R&D plan	Paragraph 11.10(g)	14–32
Efficiency and effectiveness of investments	Paragraph 11.10(h)	Annual performance statements 14–32
Implementation of government priorities and guidelines	Paragraph 11.10(i)	Appendix B
Consultation with representative organisations	Paragraph 11.10(j)	44
Other matters notified by the Commonwealth	Paragraph 11.10(k)	None to report
Other reporting requirements		
Government R&D priorities incorporated into the annual operational plan as requested by the Minister		Appendix B
Environment Protection and Biodiversity Conservation Act 1999	Section 516A	47
Work Health and Safety Act 2011	Schedule 2, Part 4	46

Alphabetical index

A

abbreviations, 90
ACCESS-S, 29
accountability
  to Australian Government, 43–44
  Board, 15, 43
  to grains industry, 44–45
acid tolerant legume and lentils development, 25
ACIL Allen, 42
ADOPT tool, 30
advisory panels, 6, 45 *see also* National Panel
Agriculture and Water Resources Portfolio Alignment, 15
ammonia, 25
Angus, Dianne, 37
animal and plant health *see* Outcome 2 animal and plant health
annual performance statements, 15–19
apps for storage and management information, 27
Artesian Venture Partners, 2, 43
Audit and Risk Committee, 40, 41
Auditor-General, 42
Auditor-General Act 1997, 42
audits, independent, 42, 50–51
Australian Bureau of Australian Resource Economics and Sciences (ABARES), 17
Australian Export Grains Innovation Centre (AEGIC), 17
Australian Government Science and Research Priorities, 44
  expenses against, 85
Australian Government Rural Research, Development and Extension Priorities, 44
  expenses against, 85
Australian Grain Technologies, 33
Australian National Audit Office, 42
  independent auditor's report, 50–51
Australian Renewable Energy Agency (ARENA), 25

B

barley
  Chinese issue with exports, 18
  grain defects, 23
  manipulating phenology to maximise yield, 21
Bayer, 7
benefit-cost analysis summaries, 30–32
  mungbean yields, 32
  waterlogging and nitrogen effects on wheat, 31
  wheat germplasm from India, 30
Blanchard, Chris, 37
Board, 40
  accountability, 15, 43
  attendance at meetings, 41
  code of conduct, 42
  corporate governance, 41–42, 82
  judicial decisions and external reviews, 42
  members, 36–42
  selection of members, committees, policies and practices, 40
  structure, role and responsibilities, 5
Board Charter, 40
boron, 21
Bureau of Meteorology (BoM), 29
business groups, 6
business relationships, 44–45

C

canola, 33
  pre-breeding development investments, 3
cereals yield, 16
Chair, 36
  letter of transmittal, i
  report from, 2–4
  statement, 52
chickpeas
  acid tolerant strains, 25

expansion of production areas, 23
new crop varieties, 33
pre-breeding investments, 4
Chief Financial Officer statement, 52
China, issue with barley exports, 18
climate events (extreme) impacts, 29 *see also* drought
coarse grains
crop levies, iii, 6
reduced production, 2
code of conduct, 42
collaborations, 6–7, 29
breeding programs, 33
state governments, 3, 21, 23
see also partnerships
commercialisation strategies, 32–33
committees *see* Audit and Risk Committee; Executive Committee; Remuneration, People and Performance Committee
compliance index, 91–92
contacts, inside back cover
corporate governance, 41–42
corporate planning and reporting frameworks, 7
costs
chemicals and fertilisers, 18
see also Objective 3: Optimise input cost; Objective 4: Reduce post-farmgate costs
Council for Rural RDCs, 30
crop and pasture chemicals cost, 18
crop levies, iii, 6
crop varieties, new, 33
CSIRO, 3, 25, 30

D

Department of Agriculture and Water Resources (DAWR), 29, 43, 45
drought
impact on farm income, 19
impact on field trials, 25
impact on grain-growing regions, 16
drought-tolerance development
wheat, 3

E

Eastern region, drought impact on, 16, 19
ecologically sustainable development (ESD), 47
employees
ongoing and non-ongoing, 86–87
regional office, 2
remuneration policies and practice, 82–84
work health and safety, 46
see also Board
Environment Protection and Biodiversity Conservation Act 1999, 47
environmental outcomes
mungbean yields, 32
waterlogging and nitrogen effects on wheat, 31
wheat germplasm from India, 30
ergot management, 17
Executive Committee, 5
executive remuneration, 82–84
expenses, iii, iv
Australian Government Science and Research Priorities and Rural Research, Development and Extension Priorities, 85
reduced R&D, 2
export cargo management, 17
external reviews, 40, 42

F

faba beans
acid tolerant strains, 25
new crop varieties, 33
Farming Futures CRC, 30
fertiliser costs, 18
field trials, 25
financial statements, 50–79
independent auditor's report, 50–51
five years at a glance, iv
food safety, 22
frameworks
performance, 14
planning and reporting, 7
fraud control, 41–42
Fraud Control Plan, 41

funding, 6
funding agreements,40, 42, 43

G

Garnett, Helen, 38
genetic breeding program, chickpeas, 23
Glyphosate, 18
Grain Growers Limited, 44
grain legumes, crop levies, iii
Grain Producers Australia Limited, 44
Grain Quality Management booklet, 27
grain-growing region characteristics, 8–9
GrainInnovate program, 2, 43
Grains Industry Market Access Forum (GIMAF), 17
GRDC Enterprise Agreement, 82
GRDC Grower Survey 2019, 18, 19
Grower Solutions Groups, 45
growers' opinions, 3

H

Healy, Roseanne, 36
heat-tolerance development
    canola and wheat, 3
Heath, Richard, 37
highlights 2018–19, ii–iv
Horticulture Innovation Australia, 7
human resources management, 86–87
Hydrogen to Ammonia R&D, 25

I

income, iii, iv
    levies, 2, 6
indemnities and insurance premiums, 42
independent auditor's report, 50–51
independent audits, 42
industry consultations, 44
inoculants formulation and applications, 25
intellectual property management, 33
Intergrain, 33
investment opportunities *see* Objective 2: Maintain and improve price
investments
    highlights 2018–19, ii, 21, 23, 25, 27, 29
    portfolio, 10
    reduced R&D, 2
    RD&E, iii–iv, 3–4

J

Jefferies, Steve, 4, 38 *see also* Managing Director

K

Key Investment Target (KIT) strategies, 2, 15, 18
Key Management Personnel remuneration policies and practices, 82–84
key performance indicators (KPIs), 16–18
    Objective 1: Improve yield and yield stability, 16,
    Objective 2: Maintain and improve price, 17
    Objective 3: Optimise input cost, 18
    Objective 4: Reduce post-farmgate costs, 18
    Objective 5L Manage risk to minimise profit and minimise losses, 18

L

lentils, acid tolerant, 25
letter of transmittal, i
levies
    crop, iii, 6
    income, 2, 6
    industry, 45
Littleproud, David, 43

M

maize levy, 45
Managing Director
    report from, 2–4
    statement, 52
markets, changing needs of, 2
McKenzie, Bridget, 43
Meat and Livestock Australia, 7
meetings, 41
ministerial directions, 43
mungbean
    benefit-cost analysis, 32
    new crop varieties, 33
    optimising yield in northern regions, 21

N

National Farmer Federation (NFF), 4

National Paddock Survey, 16

National Panel, 6

National Primary Industries Research, Development and Extension Framework, 7

nitrogen fixation, pulse crops, 25

nitrogen in soil

- crops that contribute, 23
- impact on mungbean yield, 21
- wheat benefit-cost analysis summaries, 31

Northern region

- chickpea production, 23
- crop weed control, 25
- grain-growing characteristics, 9
- new barley strains, 23
- optimising mungbean yield, 21

NSW Department of Primary Industries, 23

O

oat noodle product development, 17

Objective 1: Improve yield and yield stability, 16, 20–21

Objective 2: Maintain and improve price, 17, 22–23

Objective 3: Optimise input cost, 18, 24–25

Objective 4: Reduce post-farmgate costs, 18, 26–27

Objective 5: Manage risk to minimise profit and minimise losses, 18, 28–29

offices

- location, 8
- regional staff, 2
- sustainability aspect of, 47

oilseeds, iii

- crop levies, 6
- yield, 16
- *see also* canola

organisational structure, 5

- Board members, 36–42

Orica P/L, 25

outcome, inside front cover

Outcome 1 sustainability and productivity, 15

Outcome 2 animal and plant health, 15

Outcome 3 river and freshwater ecosystem health, 15

P

partnerships, 6–7

- CSIRO, 3, 25
- diversity of, 2
- Orica P/L, 25
- USQ, 4
- WA Department of Primary Industries & Regional Development (DPIRD), 3
- *see also* Soils Constraint West project

patents and trademarks, 33

performance

- annual statements, 15–19
- framework, 14
- against portfolio budget statements, 16–18
- work health and safety, 46

Performance Audit of Probity Management in Rural Research and Development Corporation, 42

Performance of Compliance with the Funding Agreement 2015–19, 40, 42

pest management, 17

phosphorus in soil, 25

planning and reporting frameworks, 7

plant available water (PAW), 29

plant breeder's rights (PBR), 33

portfolio

- Agriculture and Water Resources, 15
- management, 10
- performance against budget statements (KPIs), 16–18
- planning and reporting frameworks, 7

post-garmgate costs *see* Objective 4: Reduce post-farmgate costs

potassium in soil, 25

Powles, Stephen, 38

Primary Industries (Excise) Levies Act 1999, 45

Primary Industries (Excise) Levies Regulations 1999, 45

Primary Industries Levies and Charges Collection Act 1991, 45

Primary Industries Levies and Charges Collection Regulations 1991, 45
Primary Industries Research and Development Act 1989 (PIRD Act), 15, 40, 43, 82
Public Governance, Performance and Accountability Act 2013 (PGPA Act), 15, 43
Pulse Breeding Australia, 33
pulse crops
    crop levies, 6
    yield, 16

Q

Queensland, mungbean breeding program, 21

R

Rates of Return, 19
red lentil, new crop varieties, 33
Regional Cropping Solutions, 45
regional grain-growing characteristics *see* Eastern region; Northern region; Southern region; Western region
remuneration, executive, 82–84
Remuneration, People and Performance Committee, 40, 82
representative organisations, 44
research and developments investments, iii
Research Development & Extension Plan (RD&E) *see* 2018–2023 RD&E Plan
rights of plant breeders, 33
risk management, 28–29, 41–42 *see also* Objective 5: Manage risk to minimise profit and minimise losses
river and freshwater ecosystem health *see* Outcome 3 river and freshwater ecosystem health
Rural Research and Development for Profit (RRD4P) program, 7, 29

S

scoping studies, 17
seasonal forecasting system, 29
seminars, grain technical, 17
shareholding and membership, in companies, 33, 45
snail management, 17
social outcomes
    waterlogging and nitrogen effects on wheat, 31
    wheat germplasm from India, 30
soil
    crop responses in different regions, 25
    predicting available water capacity in, 29
    predicting yield potential, 3
soil fertility
    regional characteristics, 9
    yield constraints on, 21
Soils Constraint West project, 3
South Australia, field trials, 25
Southern region
    chickpea production, 23
    drought impact on, 16
    grain-growing characteristics, 9
staff *see* employees
Starick, Sharon, 39, 40
state government collaborations, 3, 21, 23
statement by Chairman, Managing Director and Chief Financial Officer, 50–51
storage, grain management practice training and workshops, 27
sulphur in soil, 25
summer crops
    Northern region, 21
    yield targets, 16
surveys, 3, 16, 18, 19, 25
sustainability development and productivity, 2, 15, 47 *see also* Outcome 1 sustainability and productivity

T

traceability factors, 2, 22
trademarks and patents, 33
training, grain storage and management, 27
2018–2023 RD&E Plan, 2, 10, 15, 43
    investments, iii–iv, 3–4
    priorities area, 44, 45

V

Victoria, field trials, 25

W

WA Department of Primary Industries & Regional Development (DPIRD), 3

water capacity in soils, 29

water management and reforms, 15

weed control and management, 25

Western Australia

- field trials, 25
- Soils Constraint West project, 3
- unsuccessful chickpea development, 23

Western region, grain-growing characteristics, 9

wheat

- alternative noodle product development, 17
- benefit-cost analysis of germplasm from India, 30
- benefit-cost analysis of waterlogging and nitrogen, 31
- crop levies, iii
- heat tolerant research, 3
- improving yields in different soils, 21
- new crop varieties, 33
- pre-breeding investments, 4
- reduced production, 2
- yield gap, 16

winter crops, yield targets, 16

Woods, John, i, 4, 36 *see also* Chair

work health and safety, 46

workshops, grain storage, 27

World Trade Organization, 18

Y

yield field trials, 25

yield gap, 32

- wheat, 16

yield potential

- barley, 21
- mungbean cost-benefit analysis, 32
- predicting, 3

yield targets

- summer and winter crops, 16
- *see also* Objective 1: Improve yield and yield stability

GRDC CONTACT DETAILS

Adelaide

Level 1, 187 Fullarton Road
Dulwich SA 5065

08 8198 8400

Canberra

4 National Circuit
Barton ACT 2600

02 6166 4500

Perth

Suite 5, 2a Brodie Hall Drive
Bentley WA 6102

08 9230 4600

Toowoomba

214 Herries St
Toowoomba QLD 4350

07 4571 4800

ISSN 1037–4531

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Concepts, text and research	GRDC
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Design and typesetting	Giraffe Canberra
Printing	CanPrint Communications

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