

# IMPACT

Delivering value to the  
Australian grains industry



**GRDC**  
GRAINS RESEARCH  
& DEVELOPMENT  
CORPORATION

# GRDC leads investment in grains research, development and extension (RD&E) in Australia.

A partnership between the Australian Government and grain growers, GRDC's 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.

We strive to deliver tangible, on-the-ground impact for Australian grain growers through strategic and tactical investments in RD&E. We engage and consult with growers, farm advisers, industry stakeholders and government to understand constraints and opportunities so our investments are well informed and align with industry needs and our RD&E Plan.

From there, we collaborate and develop partnerships with the very best researchers and most innovative research organisations from across Australia and around the globe to deliver quality research outcomes to Australian grain growers.

Our portfolio of RD&E investments is balanced to ensure we continue to improve the environmental, social and economic position of Australian grain growers and span regions, farming systems, timeframes and grain types.

## MEASURING OUR IMPACT

Measuring impact is critical to understand where we are driving positive change and delivering on our purpose and strategic objectives.

Impact assessment underpins decisions on when to invest, how, where and with which partners. This analysis ensures we are investing in RD&E that delivers the greatest impact for growers and maximum return on investment.

The GRDC Impact Plan 2021-22 outlined a range of metrics to measure the impact of GRDC investment represented by 15 indicators across the three areas of:

1. investment-level impact;
2. on-farm adoption and impact of project outputs arising from investment; and
3. cumulative impact aggregated at the grains sector level.

The report on these metrics demonstrates the impact on-farm and the value of RD&E investments to growers and the Australian grains industry.





## IMPROVED PRODUCTIVITY

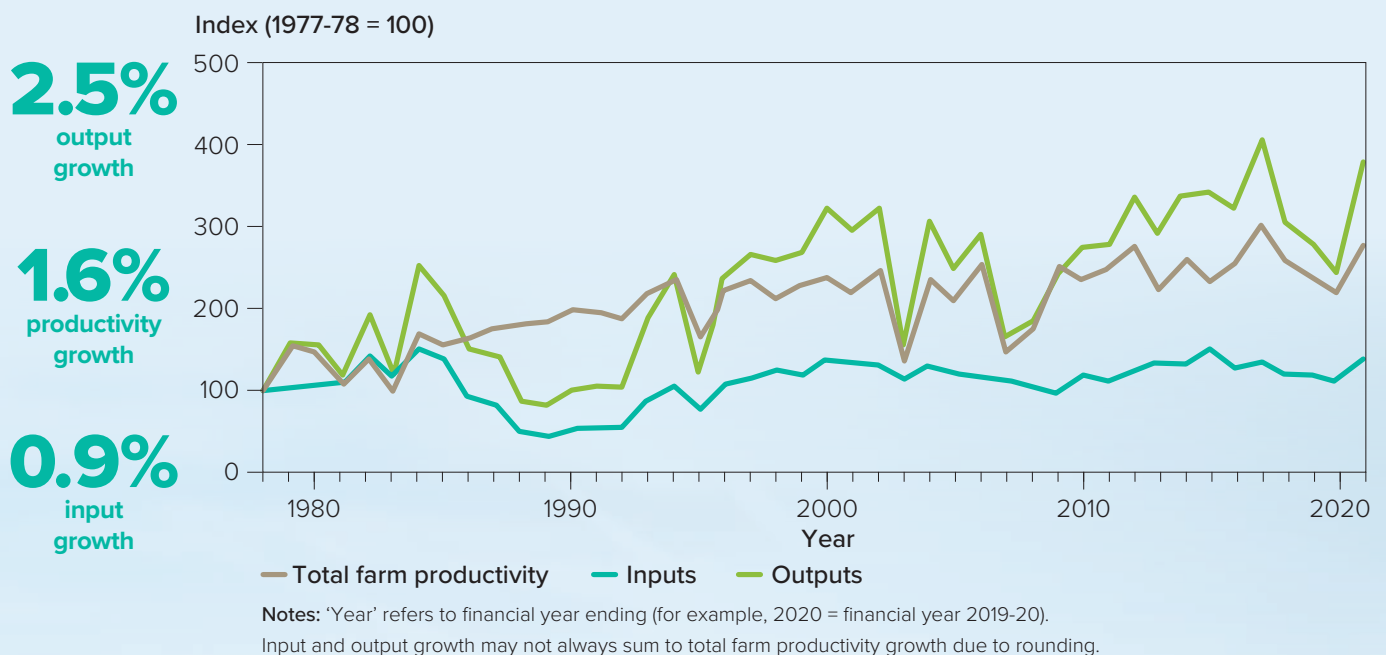
**Total factor productivity (TFP)** growth is a long-run measure of the use of inputs to produce outputs over time. The output side includes crop yields and prices; the input side covers farm inputs such as seed, fertiliser, chemicals, fuel and labour (**Figure 1**).

ABARES\* has estimated TFP for Australian cropping farms at 1.6 per cent a year for the period 1977–2021. Output growth was 2.5 per cent, whereas input growth was 0.9 per cent.

## Rate of return

GRDC uses the **ABARES rate of return (ROR)** excluding capital appreciation to measure the financial performance of cropping farms. Over the past three years the ROR for speciality cropping farms has increased from 2.3 per cent to 4.8 per cent a year. This compares with a ROR of – 0.5 per cent to + 1.7 per cent for livestock farms over the same period. Farm business profit for grain growers increased from an average \$129,090 in 2019-20 to \$417,000 in 2021-22, reflecting three good seasons of strong financial growth (**Figure 2**).

**Figure 1: Productivity data for cropping industry (specialised producers of cereal grains, coarse grains, pulses and oilseeds) in Australia 1978–2021, climate adjusted.**



**Figure 2: Financial performance of broadacre farms (specialist cropping and mixed farms) in Australia.**

**544**

survey  
sample

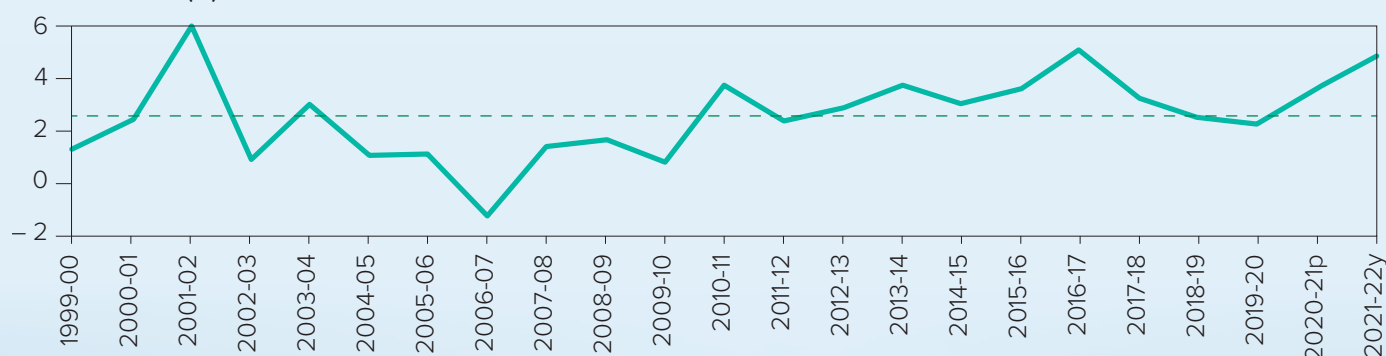
**14,114**

total  
population

Averages per farm	2019-20	2020-21p	2021-22y
Total cash receipts	\$1,122,720	\$1,280,400	\$1,637,000
– Total cash costs	\$744,940	\$871,300	\$1,065,000
= Farm cash income	\$347,770	\$409,200	\$572,000
+ Change in trading stocks	– \$16,490	\$55,400	\$47,000
– Depreciation and family labour	\$202,190	\$199,000	\$202,000
= Farm business profit	\$129,090	\$265,600	\$417,000
+ Finance costs	\$84,740	\$81,900	\$86,000
= Profit at full equity	\$213,830	\$347,500	\$503,000
÷ Total farm capital value	\$9,270,350	\$9,593,100	\$10,408,000
= Rate of return (excluding within year capital appreciation)	2.3%	3.6%	4.8%

p = preliminary. y = provisional

Rate of return (%)



All financial data in 2021-22 \$

Source: ABARES

## ON-FARM ADOPTION

The **key drivers** that underpin industry productivity and profitability trends in the Australian grains industry are improvements in farm management skill and technological progress in the development and adoption of new tools, practices and knowledge.

Measuring on-farm adoption of RD&E provides insight into the impact of GRDC projects and the uptake of research outcomes and knowledge. The *2021 GRDC Farm Practices Survey*\*\* of 1200 growers, representing 4.7 million hectares across Australia, shows clear grower adoption of improved practices in the past five years (2016–21) in areas where GRDC has invested in RD&E:

- 28 per cent more incorporated **lime** on-farm in southern Australia;
- 5 per cent increase in national cropped area under **controlled traffic**;
- 9 per cent increase in use of **yield mapping** nationally;
- 11 per cent of national cropped area where **variable-rate technology** was used for fertiliser application;
- **stubble retention** increased by 8 per cent;
- area planted to **break crops** for weed control almost doubled to 28 per cent;
- approximately two-thirds of the cropped land area received nitrogen application informed by **soil test** results; and
- more than 60 per cent of the national cropped area received **in-season fertiliser** nitrogen.





## MARKET SHARE

Independent consultancy findings and internal GRDC figures show:

### Cereals

- **84 per cent** of the 20 most commonly grown wheat varieties in 2020 utilised rust resistance genes or markers developed with GRDC investment.
- **80 per cent** of wheat varieties grown over the five years to 2018 had been developed using germplasm imported and evaluated with GRDC investment.
- **69 per cent** of wheat and barley pre-breeding material taken by commercial breeding programs is progressed along the development pipeline.

### Pulses

- Based on data from the varieties receivals database, **85 per cent** of pulses produced over the five years to 2021 were developed with GRDC investment. This is an increase of 1.16 per cent from the previous five-year average.

## YIELD GAIN

Improvements in year-on-year (YOY) gains in crop yields for the 2020-21 reporting year (ABARES) reflect the incremental portion of our investment portfolio against targets set in the GRDC RD&E Plan 2018–2023:

- In **wheat**, against a target of 1 per cent growth YOY tonnes per hectare, the industry achieved 1.72 per cent YOY growth (ABARES, 2022).
- In **oilseeds**, against a 1.5 per cent target, industry performed significantly higher at 7.29 per cent YOY growth (ABARES, 2022).
- In **pulses**, the target of 2 per cent YOY growth was not met in the 2021-22 period (– 2.4 per cent YOY) due to a record pulse crop in 2016 and droughts in 2019 and 2020 (ABARES, 2022).

## LEVERAGE

Importantly, for every Australian grain grower or taxpayer dollar we invested we were able to leverage on average an equivalent co-investment from our research partners (cash and in-kind contributions).

## RESPONSIVENESS TO SEASONAL ISSUES

Introducing the National Grower Network (NGN) and streamlining GRDC processes from issue to RD&E investment outcome has had positive results for industry. The NGN enables us to capture ideas, issues, constraints and opportunities for RD&E at a local and regional level.

In 2021-22, the first year of an evolved NGN model, we invested more than \$3.9 million in more than 60 on-the-ground projects with partners that included regional farming groups.

In demonstrating GRDC responsiveness, from the time of the NGN forums, 40 per cent of time-critical actions took on average 43 days to execution of relevant contracts, with this metric decreasing significantly over the course of the year.

**+ 28%**  
incorporating  
more lime

**+ 5%**  
controlled  
traffic use

**+ 8%**  
stubble  
retention

**28%**  
area planted  
with break crops

**+ 9%**  
use of yield  
mapping



## INDEPENDENT REVIEWS

“The overall finding of this report is that GRDC’s Impact Measurement Framework is generally consistent with best practices for the type of investments GRDC is making. The planned improvements set out in the GRDC Impact Evaluation Plan are well targeted to addressing recognised limitations in the current framework.”

(KPMG, 2022)

“Positively, the Evaluation Plan highlights the progressive nature of GRDC’s impact analysis and a desire to improve methods and approaches over time ... The framework shows sophistication in GRDC’s view of its impact evaluation and assessment challenges.”

(ACIL Allen, 2022)

**GRDC will continue to monitor and measure the impact of RD&E investments to ensure they continue to deliver for Australian grain growers.**

\*ABARES – Australian Bureau of Agricultural and Resource Economics and Sciences ([agriculture.gov.au/abares](http://agriculture.gov.au/abares)).

\*\*The 2021 GRDC Farm Practices Survey is available on the GRDC website ([grdc.com.au](http://grdc.com.au)).

ABARES 2022. *Australian crop report: June 2022*. Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra, June. CC BY 4.0. <https://doi.org/10.25814/04q1-sm04>



P Level 4, 4 National Circuit, Barton ACT 2600  
PO Box 5367, Kingston ACT 2604

T +61 2 6166 4500 F +61 2 6166 4599 E [grdc@grdc.com.au](mailto:grdc@grdc.com.au) W [grdc.com.au](http://grdc.com.au)

---

### Copyright:

© Grains Research and Development Corporation (GRDC). All rights reserved. All material published in this booklet is copyright protected and may not be reproduced in any form without written permission from GRDC.

**Disclaimer:** Any recommendations, suggestions or opinions contained in this publication do not necessarily represent the policy or views of the Grains Research and Development Corporation (GRDC) or its agents. No person should act on the basis of the contents of this publication without first obtaining specific, independent professional advice. GRDC or its agents will not be liable for any loss, damage, cost or expense incurred or arising by reason of any person using or relying on the information in this publication.