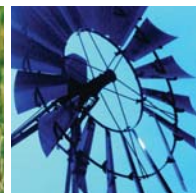
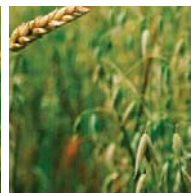
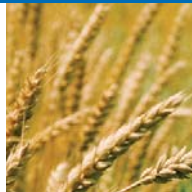


# PART 1 Overview

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The Grains Research and Development Corporation (GRDC) was founded in 1990 under the *Primary Industries and Energy Research and Development Act 1989* (PIERD Act).

The corporation has two key customer groups: Australian grain growers and the Australian Government. Its role is to invest in R&D and related activities to benefit grain growers, other grains industry participants and the wider community. In doing so, the GRDC invests in research where obstacles to industry's progress exist and where R&D may be effective in overcoming such obstacles.

This includes:

- investigating and evaluating the requirements for R&D in the grains industry
- coordinating or funding R&D activities
- facilitating the dissemination, adoption and commercialisation of the results of R&D.



The GRDC determines its priorities in consultation with industry, government and research partners, and acts in partnership with public and private researchers, other R&D funding organisations, agribusiness and grower groups.

The GRDC is funded jointly by a levy collected from grain growers based on the value of grain they produce, and contributions from the Australian Government. The industry levy is collected on 25 crops, spanning temperate and tropical cereals, oilseeds and pulses.<sup>1</sup>

The GRDC's organisational structure and objectives recognise the complexities of the grains industry and its investment needs. Planning, delivering and communicating R&D outputs occurs in an environment that embraces governments, industry groups, research partners, other R&D investors and those operating in the industry itself—particularly Australian grain growers.

### Organisational outcome

In a dynamic environment, the GRDC addresses R&D priorities to meet national, regional, commodity and multicommodity challenges, in order to achieve the following overall outcome:

**Through its commitment to innovation, an Australian grains industry that is profitable and environmentally sustainable for the benefit of the industry and wider community.**

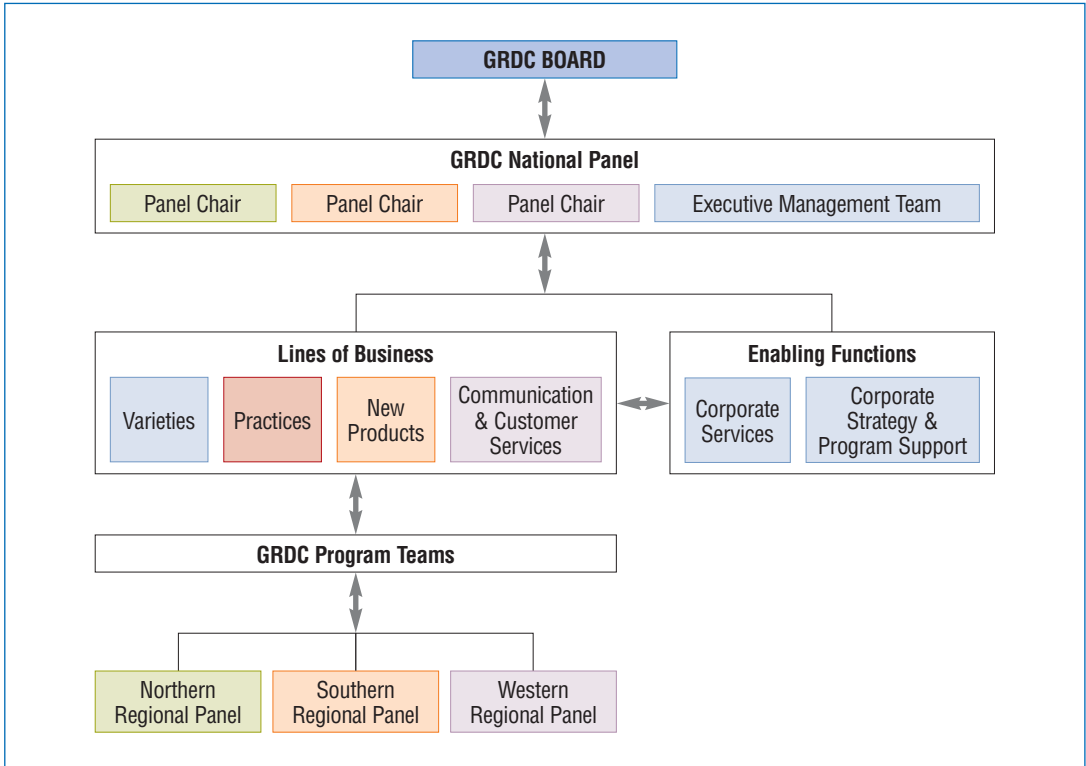
The outcome reflects the corporate vision in *Driving Innovation*: the GRDC Five Year Research and Development Plan 2002–07, and is consistent with the Department of Agriculture, Fisheries and Forestry's portfolio goal of achieving more sustainable, competitive and profitable Australian agricultural, fisheries, food and forestry industries.

<sup>1</sup> Leviable crops are: wheat; coarse grains—barley, oats, sorghum, maize, triticale, millets/panicums, cereal rye and canary seed; pulses—lupins, field peas, chickpeas, faba beans, vetch, peanuts, mung beans, navy beans, pigeon peas, cowpeas and lentils; and oilseeds—canola, sunflower, soybean, safflower and linseed. The levy for all crops is 0.99 percent of the net farm gate value of grain produced, except for maize, which is levied at 0.693 percent of net farm gate value.

## Structure

The organisational structure of the GRDC is shown in Figure 7.

**Figure 7** GRDC structure, 2006–07



**Note:** For the purposes of reporting against the GRDC Annual Operational Plan 2006–07 and the Australian Government Department of Agriculture, Fisheries and Forestry Portfolio Budget Statements 2006–07, each of the four lines of business represents an output group.



Western Victoria grower Lawrence Richmond (left) with Syrian-based researcher Dr Ken Street, during his recent visit to Australia. Photo: Brad Collis



*The GRDC Executive Management Team.*

*L–R: Back—Vic Dobos (Communication and Customer Services), Vince Logan (New Products), Peter Reading (Managing Director), Greg Fraser (Practices). Front—Gavin Whiteley (Corporate Services), John Harvey (Varieties), Iftikhar Mostafa (Corporate Strategy and Program Support).*

## Board and Executive Management Team

As described in more detail in Part 3, a board of directors governs the GRDC, while a team of executive managers based in Canberra leads the corporation's business activities.

### National Panel

The National Panel includes the chairs of the GRDC's three regional panels, the GRDC's Managing Director and the GRDC's executive managers. It is the key body for developing and recommending to the Board the GRDC's overall corporate strategies and direction, and assists the Board in maintaining links with its two key customer groups—Australian grain growers and the Australian Government—as well as research partners.

The National Panel also develops and recommends investment proposals for the national elements of the GRDC's research programs. In doing so, the National Panel considers advice from the four program teams that manage the GRDC's R&D investment portfolio. The program teams are discussed in more detail in Part 3.

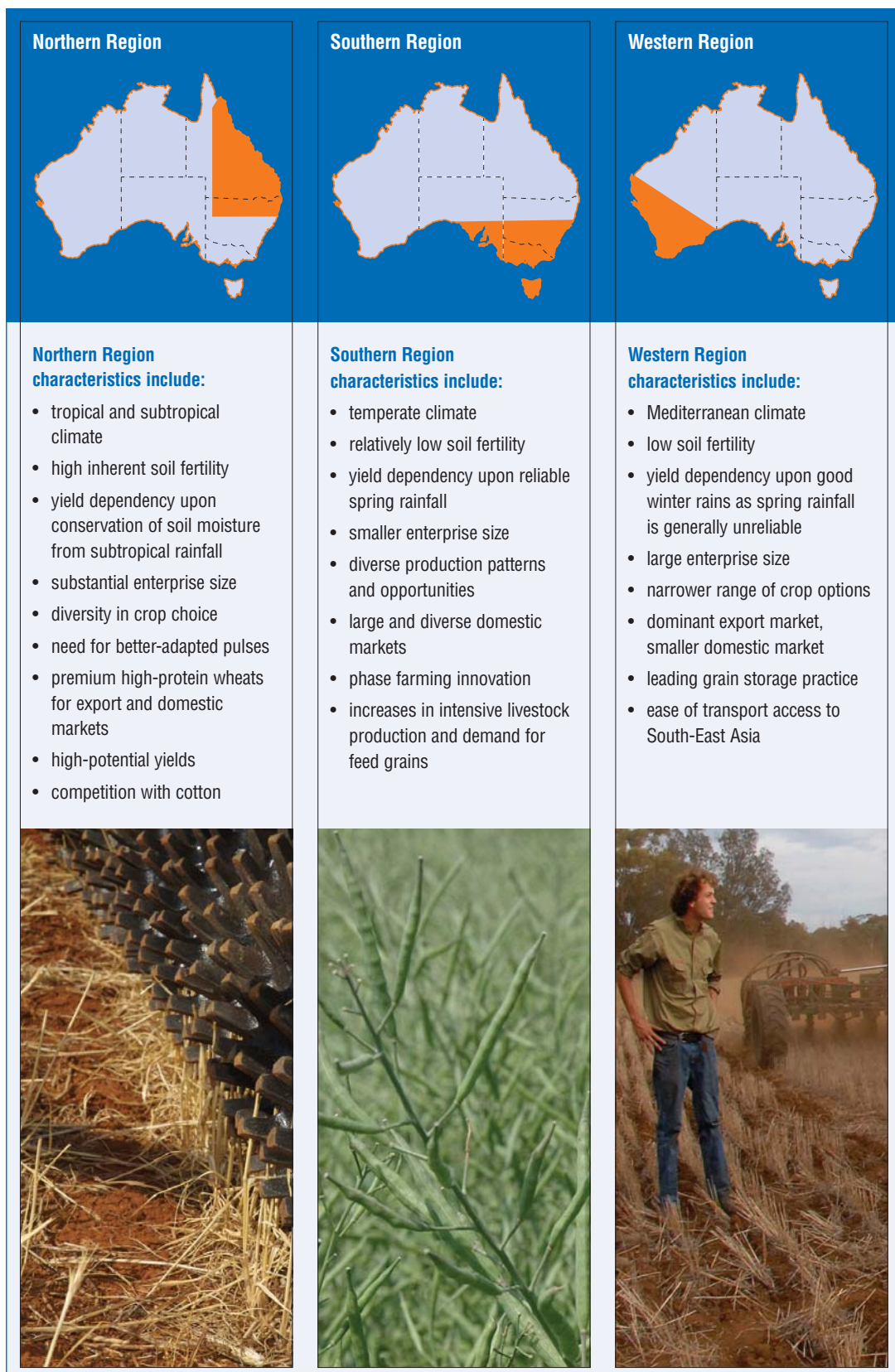
### Regional panels

Recognising variations in local conditions, the GRDC has three separate advisory panels to cover the northern, southern and western grain-growing regions of Australia. Figure 8 illustrates the geographical spread and characteristics of each region. Part 3 provides details on the membership of the regional panels.

The three regional panels develop regional investment priorities and make recommendations on the allocation of investment budgets to meet regional needs. This is also achieved through their representation on program teams that advance recommendations on investments to the Board through the National Panel. Regional panels also identify investments that may respond to national priorities.

An additional core function of the regional panels is to provide an interface with grain growers and researchers, to promote awareness of GRDC investments and research outcomes and the corporation's strategic direction.

Figure 8 GRDC regions



## Planning and reporting approach

The GRDC is a statutory corporation, operating as a research investment body on behalf of Australian grain growers and the Australian Government. As well as its responsibilities under the PIERD Act, the corporation has accountability and reporting obligations set out in the *Commonwealth Authorities and Companies Act 1997* (CAC Act) and in the Commonwealth Authorities and Companies (Report of Operations) Orders 2005. The GRDC is a portfolio agency of the Australian Government Department of Agriculture, Fisheries and Forestry.

In line with its enabling legislation, the GRDC Board communicates its strategic directions and performance objectives through a five-year strategic plan that delivers:

- a statement of the GRDC's objectives and priorities
- an outline of the GRDC's strategies to achieve those objectives and priorities.



GRDC Western Panel member Ruth Young.



Cumnock NSW grower Andrew McCalman. Photo: Rebecca Thyer

The strategic document current in 2006–07, *Driving Innovation: the GRDC Five Year Research and Development Plan 2002–07*, was approved by the Minister on 16 May 2002. In 2006–07 the GRDC completed the development of the new strategic R&D plan, *Prosperity through Innovation*, for the period 2007–12. The new plan was submitted to the Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry on 19 June 2007 and took effect from 1 July 2007.

Each year's planned activities are outlined in operational terms in an annual operational plan, and in terms of an outcome-based performance measurement framework in the portfolio budget statements. Both documents are subject to approval by the Minister for Agriculture, Fisheries and Forestry. The GRDC's annual report details the corporation's achievements against its planned outcomes. The output groups used for reporting purposes correspond to the lines of business that underpin the GRDC's business strategy and operations.

In both its five-year strategy and its annual planning, the GRDC responds to the ministerial priorities for rural R&D corporations and the Australian Government's National Research Priorities.



These priorities, and the GRDC's achievements in meeting them so far, are discussed in more detail in Part 2.

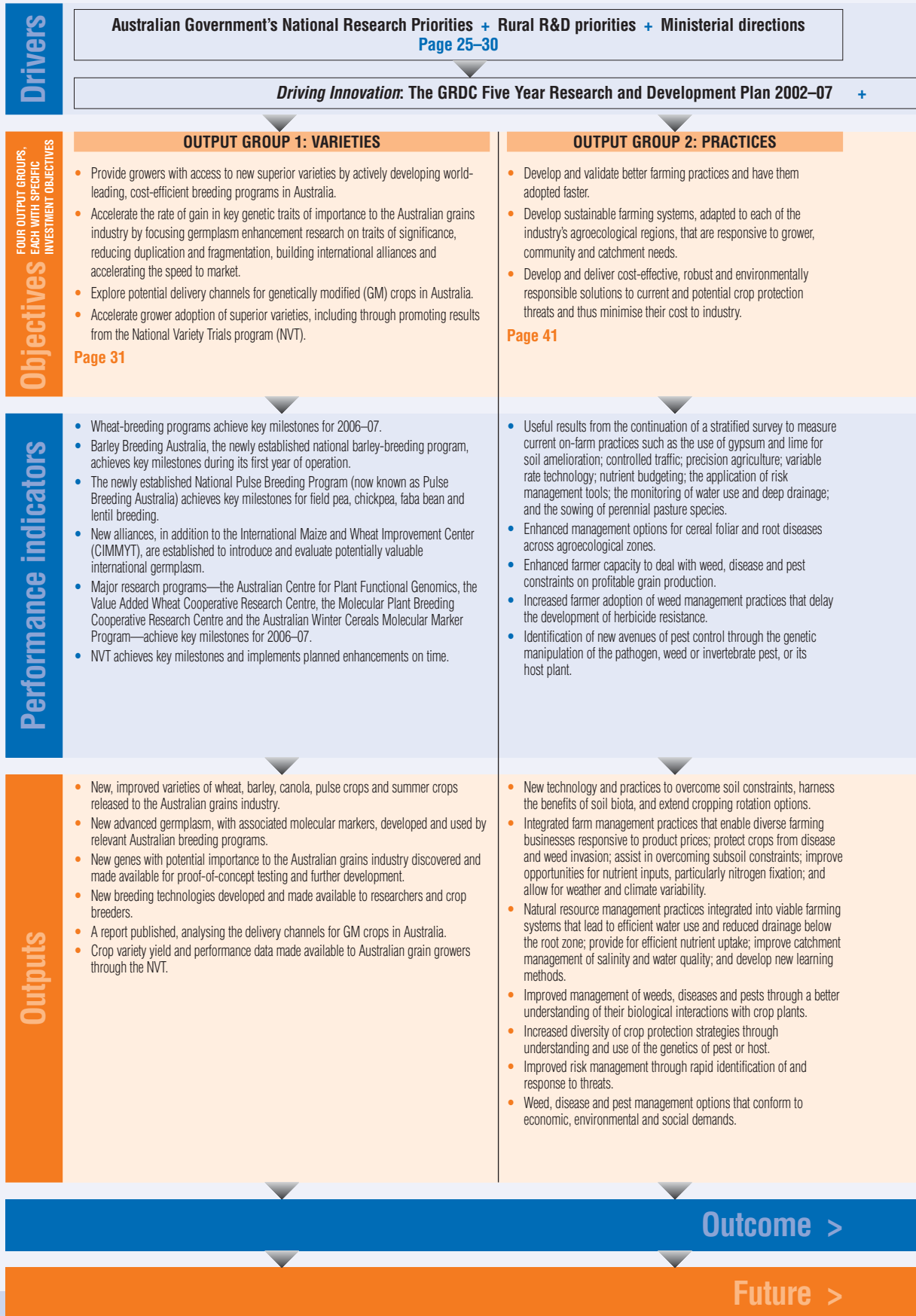
The corporation uses the Australian National Audit Office *Public Sector Governance Better Practice Guide* to assess the corporation's overall approach and ongoing development. The GRDC's corporate governance in 2006–07 is discussed in detail in Part 3.

On 1 March 2007, the GRDC received its first public Statement of Expectations (SOE) provided by the Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry. The SOE outlined the Parliamentary Secretary's expectations of the GRDC in five key areas: roles, government policies, performance reporting, communication and accountability. The GRDC responded with a Statement of Intent on 30 March 2007, and has been working to meet the Minister's expectations, as demonstrated in this annual report. The statements are discussed in more detail in Part 3.

The GRDC's drivers for action, outcomes to be achieved, detailed outputs and future directions are summarised in the performance framework shown in Figure 9.



Figure 9 Performance framework





**Industry priorities**  
**Pages 25–30**

**Role of the GRDC described in the objects of the *Primary Industries and Energy Research and Development Act 1989*** **Page 80**

**Portfolio Budget Statements 2006–07 + Annual Operational Plan 2006–07**

**OUTPUT GROUP 3: NEW PRODUCTS**

- Deliver new, value-added grain products and new farm products and services to growers.
- Identify and implement partnerships necessary to develop and deliver these products and services.
- Identify opportunities to help new technology reach the Australian grains industry sooner.
- Assess intellectual property from Australia and overseas to apply in the Australian marketplace.

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**OUTPUT GROUP 4: COMMUNICATION AND CUSTOMER SERVICES**

- Increase the adoption of research outcomes and innovations that improve the economic, social and environmental performance of the grains industry, through the development and targeted delivery of imaginative products and services.
- Communicate and promote the GRDC's achievements to stakeholders.
- Turn research outputs into relevant information, products and services that are delivered to meet stakeholder needs.
- Support the capacity building of growers, advisers and researchers, through professional development.
- Support studies related to agriculture and science in secondary schools, in order to encourage students to consider them as possible career paths.

**Page 59**

- A new incorporated joint venture for soil inoculants established, with field trials undertaken and first product(s) released.
- Objective grain quality testing technology developed to the stage at which a commercial partner can take it forward to develop instrumentation.
- Development of a research, development and commercialisation plan for near-infrared (NIR) and mid-infrared (MIR) technologies to measure soil, plant and grain qualities.
- Establishment of a governing body to develop and implement a post-harvest grain hygiene strategy.
- Completion of three or more case studies with different end-users to demonstrate and promote a rational basis for trading feed grains.
- Establishment of a new incorporated joint venture for high-amylose wheat, to deliver a non-GM breeding line with an amylose content in the order of 70 percent.
- Crop selection and identification of delivery channels for GM crops completed (with the Varieties output group) for the outputs of the Crop Biofactories Initiative.
- Identification of research opportunities for new technologies to produce biofuels from Australian grain crops.

- Customer segmentation categories identified and strategies implemented to deliver tailored information.
- Organisational performance surveys carried out to measure the relevance of information, products and services delivered by the GRDC.
- Increased participation by growers, advisers and researchers in the GRDC's capacity-building program.
- A range of educational packages available for teachers and secondary school students.

- An incorporated joint venture to introduce, test, distribute and market new soil inoculant technologies sourced from both Australian and international research programs.
- Extension of objective grain quality testing technology developed for wheat and barley to the stage at which it can be transferred to a commercial partner to enable the development of instrumentation capable of being used by grain majors.
- Development of NIR and MIR technologies to enable the development of on-farm instrumentation packages to measure soil, plant and grain qualities.
- Assistance for industry and researchers in order to form a governing body that will develop and implement a post-harvest grain hygiene strategy covering a range of issues requiring further R&D effort prior to commercialisation.
- Case studies supporting the technology transfer and commercial evaluation of new measures of feed grain quality to demonstrate and promote the benefits of the Premium Grains for Livestock Program (PGLP).
- Investment in new grain food products that have the potential to improve many aspects of human health, for example by reducing cardiovascular disease, colorectal cancer, diabetes and obesity.
- Continued development of new industrial uses for grain crops and commercial partnerships through the Crop Biofactories Initiative with CSIRO, as well as identification of possible investment opportunities in new technologies in the biofuels area.

- A segmented customer database with enhanced functionality to deliver relevant information to identified stakeholder groups. This includes the capacity to meet current information needs as well as respond to emerging issues in a timely way.
- Improved exchange of relevant research information among our government, industry and research partner stakeholders.
- Mechanisms put in place to build the capacity of growers, advisers and researchers.
- Faster adoption of research outcomes and innovations through delivery of information, products and services.
- Raised profile of agricultural science among secondary school teachers and students.

**Through its commitment to innovation, an Australian grains industry that is profitable and environmentally sustainable for the benefit of the industry and wider community**

**The GRDC be recognised as the leader in setting, coordinating and facilitating a national grains R&D agenda driven by market signals that will enable graingrowers to compete on world markets, and deliver against Australian Government priorities**

In 2006–07, Australia experienced one of the worst periods of drought in the country's recorded history. Drought conditions severely affected production of winter and summer crops. Grain growers also faced significant challenges in addition to the impact of the drought, such as higher energy costs, changing farm demographics and uncertainty in wheat export marketing arrangements.

The benefits of GRDC-supported grains R&D made a critical difference to many growers' circumstances. For example, crops that were grown under no-till regimes featuring stubble retention, which research has shown to preserve soil moisture levels, developed while many conventionally grown crops wilted. Robust crop varieties and the continuing refinement of agronomy and farming practices strengthened our capacity to withstand the challenging season of 2006–07.



*Terry J Enright*  
Chair



*Peter F Reading*  
Managing Director

## Grains industry production in 2006–07

The production of winter grains and oilseeds in 2006–07 was 15.7 million tonnes, a decrease of 25.5 million tonnes or 62 percent from the 41.2 million tonnes produced in 2005–06.<sup>2</sup>

The June 2007 *Australian Crop Report* from the Australian Bureau of Agricultural and Resource Economics reported that 2006–07 winter crop production in the two major crop-growing states was 7.5 million tonnes in Western Australia and 3.1 million tonnes in New South Wales, which together accounted for 67.5 percent of total winter crop production in Australia.

Summer crop production in 2006–07 was 1.3 million tonnes, showing a decrease of 49 percent compared with 2.6 million tonnes produced the previous year. For the major summer broadacre crop of sorghum, production fell by 52 percent, to 952,000 tonnes, compared to 2.0 million tonnes the previous year.

## The GRDC's drought strategy in 2006–07

The GRDC, in collaboration with its research partners, implemented a number of actions to maintain an effective grains R&D program despite the effects of drought in 2006–07. In particular:

- the GRDC Board gave approval for the GRDC to lower its reserves target, from between 50 percent and 75 percent to between 40 percent and 70 percent of next year's expenditure
- the GRDC's budgeted operating costs were reduced
- the GRDC worked closely with its research partners to identify projects which could be deferred or cancelled, and cases where savings could be made from existing projects.

These actions reflect a determined approach to the management of the GRDC's reserves and an in-depth analysis of operating costs.

<sup>2</sup> This total updates the figure of 40.5 million tonnes shown in last year's annual report, which was based on the best estimate available at the time of publication.

## The GRDC's achievements in 2006–07

The GRDC's achievements in 2006–07 were instrumental in implementing the strategies of *Driving Innovation: the GRDC Five Year Research and Development Plan 2002–07* and *The Way Forward*, the strategic business plan.

The GRDC facilitated the formation of the National Wheat Breeders' Alliance which is establishing R&D priorities for pre-breeding in Australia. In its first year of operations, Barley Breeding Australia commenced implementing a national plan for breeding improved varieties to benefit the barley industry.

The GRDC coordinated a national approach to reach agreement in developing the Australian Winter Cereals Pre-Breeding Alliance, involving representatives of Australian Government and state government departments, breeding entities and major research organisations such as the Australian Centre for Plant Functional Genomics, the Value Added Wheat Cooperative Research Centre (CRC), the Molecular Plant Breeding CRC and CSIRO. The purpose of this inclusive alliance is to generate a greater level of communication, coordination and collaboration between research partners involved in pre-breeding.

Pulse Breeding Australia was launched in March 2007 to coordinate Australia's pulse-breeding efforts and create a world-class breeding and germplasm enhancement program to develop new, superior varieties more quickly for Australian growers. Flagship<sup>®</sup>, a new barley variety with high yields and exceptional export malting quality, from the University of Adelaide's breeding program, was launched in 2006–07.

A GRDC-supported lucerne breeding program at the New South Wales Department of Primary Industries (NSWDPI) released Pegasis<sup>®</sup>—a lucerne variety developed exclusively for short-term lucerne rotations and sustainable cropping systems. Pegasis<sup>®</sup> will be the first lucerne variety to be released through the Australian Lucerne Alliance, a partnership between the NSW DPI, the GRDC and Seedmark.

Part 2 of this report provides more details on these achievements, and on the outcomes of many other GRDC initiatives and ongoing projects.



*The Hon. Sussan Ley, MP, Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry, with Terry Enright, GRDC Chair, at Parliament House, Canberra, where Mrs Ley launched Prosperity through Innovation, the GRDC's new five-year strategic R&D plan.*

## Challenges in 2007–08

The GRDC operates in an ever-changing grains industry. Its business environment in the year ahead is expected to be influenced by various factors, including climate change, growers' terms of trade, total factor productivity, biosecurity, grain market dynamics and consumer attitudes.

The year 2007–08 will be the first year of *Prosperity through Innovation*, the GRDC Strategic R&D Plan 2007–12. The new strategic R&D plan emphasises collaboration, and clearly defines performance measures and outcomes that will provide growers with the technologies and practices they require to remain competitive in global grain markets. Improved measuring of the impact of R&D on the grains industry and the wider community will be another key focus over the next five years.

The GRDC's achievements depend on the effective and timely implementation of the corporation's strategies, which in turn depends on the cooperation of the Board, panel members and staff, and strong relationships with key customer groups and R&D partners. As it implements core strategies and line of business strategies in 2007–08, the GRDC will continue to build relationships with grain growers, the Australian Government and research partners. We thank them for their significant contributions to grains industry R&D in 2006–07.

We are pleased to note that our Annual Report 2005–06 has been recognised for high quality, and commend this year's report to the reader.

**Terry J Enright**  
Chair

**Peter F Reading**  
Managing Director

## Key achievements

In 2006–07, the GRDC in collaboration with its research partners successfully implemented a strategy aimed at minimising the impact of the drought on R&D investments.

Also in 2006–07:

- Barley Breeding Australia, the national barley-breeding program which rationalised six state-based barley-breeding programs into one national program with three regional nodes, commenced operations.
- The National Wheat Breeders' Alliance was established and is providing direction for R&D priorities for wheat pre-breeding in Australia.
- Agreement was reached between Australian Government and state government departments, breeding entities and other major research organisations to develop the Australian Winter Cereals Pre-Breeding Alliance.
- Pulse Breeding Australia (PBA) was launched, and commenced its role of coordinating Australia's pulse-breeding efforts and creating a world-class breeding and germplasm enhancement program. PBA commercialised several new varieties during the year, including two chickpea varieties, two lentil varieties and three peanut varieties.
- Flagship<sup>®</sup>, a barley variety resulting from the University of Adelaide's breeding program, was launched. Flagship<sup>®</sup> has a grain yield 7 percent higher than the current industry standard, and improved disease resistance. It is expected that Flagship<sup>®</sup> will soon be a leading export malting barley.
- Dune<sup>®</sup>, Australia's first variety of canola-quality juncea, was launched, providing growers in lower rainfall areas with a profitable and reliable canola crop.



Pulse Breeding Australia (PBA) was launched in March 2007. The Pulse Breeding Australia board consists of: (back row, left to right) Mike Keller, University of Adelaide; John Harvey, GRDC; Peter Reading, PBA Chairman and GRDC Managing Director; John Sykes, NSW Department of Primary Industries; Gavin Gibson, Pulse Australia; (front row) Peter Gibson, South Australian Research and Development Institute; David Bowran, Department of Agriculture and Food WA; Greg Bender, PBA Coordinator (non board member); and Rex Williams, Queensland Department of Primary Industries and Fisheries. Absent: Phil Haines, Department of Primary Industries VIC.



*Pegasis<sup>®</sup>, a new lucerne variety bred for short-term lucerne rotations. Trials have shown that it is more persistent than other winter-active varieties.*

- Pegasis<sup>®</sup>, a new lucerne variety developed exclusively for short-term lucerne rotations and sustainable cropping systems, by the New South Wales Department of Primary Industries, was launched.
- Researchers in the Cereal Functional Genomics Program identified the genes which produce beta-glucans, a form of dietary fibre, in barley. Beta-glucans help prevent and treat human health conditions such as colorectal cancer, obesity, non-insulin dependent diabetes and cardiovascular disease.
- A free-air carbon experiment to evaluate the impact of elevated carbon dioxide on cereal crop performance was established at Horsham (Victoria), through a partnership between the GRDC and the Australian Greenhouse Office.
- A blueprint for doubling sorghum production was developed.
- Approaches to better integrate livestock into cropping systems were developed and extended to growers through the Grain and Graze program.
- Effective integrated pest management approaches, such as broadacre control of the etiella moth in lentils and mirid populations in soybeans, were developed to reduce grower costs and provide environmental benefits.
- A diverse range of integrated weed management options were delivered to agronomists and consultants to improve weed control options in conservation farming.
- The GRDC, CSIRO and Groupe Limagrain signed an agreement to form the joint venture Arista Cereal Technologies Pty Ltd, to deliver high-amylose wheat.
- The acquisition of the genome sequence of the blackleg fungus through an Australian–French collaborative project led to the prediction of the longevity and effectiveness of particular blackleg resistance sources in canola.
- Continued improvement of the alignment between GRDC activities and the objectives of our key customer groups—Australian grain growers and the Australian Government—and other stakeholders.
- The GRDC’s Annual Report 2005–06 received a silver award at the Australasian Reporting Awards Fifty-seventh Annual Awards.

## Significant events

One of the GRDC's reporting requirements under the CAC Act is to notify the responsible Minister of proposed significant events as set out under section 15. The following table lists significant events which the GRDC notified the Minister of during 2006–07, as well as the dates on which the Minister made announcements or decisions of particular significance to the GRDC.



Gavin Whiteley, Executive Manager Corporate Services, Noelia Freitas, Compliance Officer and Geoff Budd, General Counsel at the Australasian Reporting Awards Fifty-seventh Annual Awards.

**Table 2** Significant events, 2006–07

Date	Event
<b>21 June 2006</b>	The Hon. Sussan Ley, MP, Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry, wrote to the GRDC Chair to formally approve the GRDC's Annual Operational Plan 2006–07.
<b>30 October 2006</b>	The Parliamentary Secretary wrote to the GRDC Chair to formally approve the GRDC's Annual Report 2005–06 for tabling. The report was tabled in parliament on 2 November 2006.
<b>18 January 2007</b>	The GRDC informed the Parliamentary Secretary that it would continue to fund the Australian Centre for Plant Functional Genomics Pty Ltd for five years, from 2008 to 2012. The GRDC informed the Parliamentary Secretary that the GRDC, CSIRO and Groupe Limagrain had commenced negotiations to form an unincorporated joint venture to undertake the development and commercialisation of a non-genetically modified high-amylose wheat. The GRDC informed the Parliamentary Secretary that the GRDC and the Department of Agriculture and Food, Western Australia (DAFWA), were negotiating to incorporate DAFWA's wheat-breeding program, with DAFWA and the GRDC to own the company.
<b>1 March 2007</b>	The Parliamentary Secretary wrote to the GRDC Chair to formally provide the GRDC with a public Statement of Expectations as required under the Australian Government's implementation of recommendations of the Review of the Corporate Governance of Statutory Authorities and Office Holders (the Uhrig Review).
<b>30 March 2007</b>	The GRDC provided the Parliamentary Secretary with a formal response to the Statement of expectations, in a Statement of Intent detailing how the GRDC will fulfil the Minister's expectations during 2007.
<b>8 May 2007</b>	The Hon. Peter McGauran, MP, Minister for Agriculture, Fisheries and Forestry, formally announced revised rural R&D priorities.
<b>29 May 2007</b>	The Parliamentary Secretary wrote to the GRDC Chair to formally notify the GRDC of amendments to the <i>Primary Industries and Energy Research and Development Act 1989</i> , in particular the removal of the Government Director position from rural R&D corporation boards.
<b>26 June 2007</b>	The GRDC provided the Parliamentary Secretary with an update on the progress of negotiations to incorporate DAFWA's wheat-breeding program.
<b>7 July 2007</b>	The Parliamentary Secretary wrote to the GRDC Chair to formally approve <i>Prosperity through Innovation</i> , the GRDC Strategic R&D Plan 2007–12.
<b>9 July 2007</b>	The Parliamentary Secretary wrote to the GRDC Chair to formally approve the GRDC Annual Operational Plan 2007–08.