Land & Water Australia

2005–2006 annual report

knowledge for managing Australian landscapes

12 October 2006

The Hon. Sussan Ley MP

Parliamentary Secretary to the Minister for Agriculture,

Fisheries and Forestry

Parliament House

CANBERRA ACT 2600

Dear Parliamentary Secretary,

Re: Land & Water Australia Annual Report 2005–06

In accordance with section 28 of the *Primary Industries and Energy Research and Development Act 1989* (PIERD Act), I have pleasure in presenting to you the annual report of Land & Water Australia for 2005–06.

The report has been prepared in accordance with the *Primary Industries and Energy Research and Development Act 1989*, the *Commonwealth Authorities and Companies Act 1997* (CAC Act) and the Commonwealth Authorities and Companies (Report of Operations) Orders 2005.

Yours faithfully,

Roberta Brazil

Chairman

Land & Water Australia Annual Report, 2005–06

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The Land & Water Australia Board pictured at the September 2005 meeting. Back row from the left: Charles Wilcocks, Ted Lefroy, Tim Fisher, Jack Speirs, Andrew Campbell, Dianne Bentley. Front row from left: Peter Cullen, Bobbie Brazil (Chairman), John Childs.

Photo: Geoff Comfort

FROM THE CHAIR

In Australia today, the management of the land and water resource base is no longer seen as just being about fixing problems such as land degradation. Rather, it has graduated to the level of the most important strategic challenge facing the nation.

The Prime Minister, the State Premiers and senior Ministers in all jurisdictions are focused on strategic questions around how Australia can best meet its growing needs for water, food, fibre and energy in the face of a changing climate, while securing long term export earnings and the productive capacity of our unique natural resource base.

Against this background, the research investments of Land & Water Australia assume a greater importance than ever. As an Australian Government agency specialising in collaborative research investment and knowledge management on natural resource management and sustainable agriculture, the Corporation is very well placed to contribute to the knowledge base the country will need in order to navigate these big strategic challenges.

On behalf of the Board of Land & Water Australia, I am pleased to note that our *2005-2010 Strategic R&D Plan* approved by the Minister in June 2005 sets out an excellent framework for generating and managing relevant new knowledge consistent with the Australian Government's National Research Priorities and the priorities for rural R&D. Moreover, it places a strong emphasis on increasing the adoption of research outputs among farmers, rural industries and governments.

As the first year of this Strategic R&D Plan, 2005-06 was an important year for the Corporation, and an extremely successful one.

Our core business of investing in and managing collaborative R&D programs has continued apace, with very good results. Our revenue from partnership programs and our overall level of R&D investment have both increased to record levels. New activities with our industry partners are performing strongly. We continue to work closely with other RDCs to improve collaboration and collective reporting on NRM issues.

As a member of the executive of the Council for Chairs of Rural Research & Development Corporations it is very pleasing for me to see the level of cooperation across the corporations, highlighted by the magnificent *World's Best Food and Fibre* dinner at Parliament House in September 2005.

I reported last year that the Board has overseen new initiatives to improve our internal corporate performance, to better manage risk, and to better meet wider accountability requirements. These initiatives were substantially implemented during 2005-06, placing the Corporation on a very sound footing in terms of corporate governance, financial management and reporting, risk management and compliance – all points endorsed by the ANAO in its external audit report.

Land & Water Australia is working very hard to ensure that our research is both adoptable and adopted. We have instigated some innovative new initiatives to meet the knowledge needs of the regional delivery arrangements for the Natural Heritage Trust, the National Action Plan for Salinity and Water Quality, the National Landcare Program, and the National Water Initiative. These are now bearing fruit, and I am confident that over coming years they will have a big impact, especially in helping new regional and catchment management bodies to find and make better use of research results.

As outlined further in the Directors' Review, the Corporation established six new R&D programs during 2005-06. The Board appreciates that this represents a huge effort on the part of the staff of the Corporation, who have continued to perform

The Minister for Agriculture, Fisheries and Forestry, the Hon. Peter McGauran, MP and Land & Water Australia Chairman Bobbie Brazil at the launch of Healthy Soils for Sustainable Farms Program, held in October 2005 in Launceston, Tasmania.

exceptionally well. We value their dedication, commitment and talents very highly.

This has been the first year on the Board for Ms Dianne Bentley, Dr Ted Lefroy and Mr Jack Speirs, who commenced duties as directors on 1 July 2005. After a comprehensive induction process, they have settled in to their roles very well and I am heartened with the cohesion and energy around the Board table. We enjoyed very informative field visits looking at irrigation issues in the Goulburn Valley and peri-urban issues in south-east Queensland and north-east New South Wales, in conjunction with our regional Board meetings.

As ever, the coming year promises to be full of challenge and reward. It is a wonderful opportunity to contribute to a more sustainable Australia.

Roberta Brazil

Chairman

STRATEGIC REPORTING FRAMEWORK

This Annual Report is prepared by the Land & Water Australia Board of Directors to meet the requirements of Section 9 of the CAC Act 1997 in accordance with the Report of Operations Schedule of that Act for the 2005-06 financial year; and the requirements of Section 28 of the PIERD Act 1989.

At the highest strategic level the report describes the performance of Land & Water Australia in achieving the Australian Government's National Research Priorities. We have a particularly important role in the first national research priority 'An environmentally sustainable Australia'. At the next level we report against the Australian Government's Rural Research and Development Priorities. These were announced before the National Research Priorities, and where there are areas of overlap we report against the combined priorities (see highlights section).

Land & Water Australia is also required to report against the four objects of the PIERD Act. The four PIERD Act objects are listed in Table 1, where we also outline the broad way in which Land & Water Australia responds to them. More details are provided in later sections.

Table 1: Objects of the PIERD Act (1989)

Object (PIERD Act section 3)	Corresponding Land & Water Australia activity
(a) Increasing the economic, environmental or social benefits to members of primary industries and to the community in general by improving the production, processing, storage, transport or marketing of the products of primary industries.	The Corporation works with primary industries (particularly through fellow R&D corporations) to increase the sustainable use of natural resources and the profitability of farming systems. We evaluate the return on our investments annually in economic, environmental and social terms.
(b) Achieving the sustainable use and sustainable management of natural resources.	This object encompasses the entire spectrum of the Corporation's business, as evidenced by the Corporation's mission: To invest in knowledge, partnerships, innovation and adoption to underpin sustainable NRM.
(c) Making more effective use of the resources and skills of the community in general and the scientific community in particular.	The Corporation makes use of its extensive networks in the general and scientific communities to help in the design, development and implementation of its R&D programs and projects. The Corporation's Knowledge and Adoption Strategy has a specific objective to equip present and future land managers, policy makers, educators and others with the knowledge and tools to expand their capabilities in achieving sustainable NRM.
(d) Improving accountability for expenditure on R&D activities in relation to primary industries.	The Corporation's accountability activities are directed to meeting all statutory obligations and accountability requirements in a comprehensive, timely and transparent manner.

Our most detailed level of reporting is against our *2005-2010 Strategic R&D Plan*, with particular attention paid to describing achievements of planned outputs listed in the Annual Operational Plan 2005-06. The performance of all Land & Water Australia's R&D programs, corporate functions and the National Land & Water Resources Audit is presented in the Report of Operations. These contribute to achieving our outcome:

'Knowledge, understanding and informed debate to inspire innovation and action in sustainable natural resource management.'

The Australian Government's National Research Priorities and Rural Research and Development Priorities provide a framework and focus for all of its research agencies. Land & Water Australia is very well placed to contribute to these priorities.

NATIONAL RESEARCH PRIORITY: AN ENVIRONMENTALLY SUSTAINABLE AUSTRALIA

RURAL RESEARCH AND DEVELOPMENT PRIORITY: SUSTAINABLE NATURAL RESOURCE MANAGEMENT

→ The **Environmental Toolkit** was developed as a part of a project called *Integrating paddock and catchment planning: a woolgrower driven approach to sustainable landscape management* funded under Land, Water & Wool-a collaboration between Land & Water Australia and Australian Wool Innovation Limited. The project was a collaboration between Land, Water & Wool, the Traprock Woolgrowers Association, the University of Southern Queensland (USQ) and the Queensland Murray-Darling Association and was led by the University's Dr Geoff Cockfield. The Toolkit was launched by the Hon. Sussan Ley, MP, Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry, who was introduced by Bobbie Brazil in her dual roles as Chairman of Land & Water Australia and Chancellor of the University of Southern Queensland. The project undertook monitoring of native pasture and woodland condition, developed case studies of the economics of changing grazing and vegetation management, examined social demographics through the use of the photo-voice technique and developed an on-line monitoring framework that forms part of the Traprock Integrated Management System.

Sandy Sharman from University of Southern Queensland and the Hon. Sussan Ley, MP, Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry, at the launch of the Environmental Toolkit for Traprock Woolgrowers at Terrica Woolshed near Stanthorpe Queensland on 21 April 2006.

Lake Argyle.

- **Grazing can promote biodiversity** - skilled management of livestock grazing can increase production and native biodiversity in grasslands. That has been one of the findings from several Land, Water & Wool research projects. Grazing trials in the mid-north of South Australia have found that strategic, rotational grazing according to plant growth rates promotes healthier native perennial plants, reduces bare ground and improves water infiltration while at the same time allowing stocking rates to double from 2.5 DSE per hectare to 5 DSE per hectare on some sites. Similarly, in Tasmania's Midlands, research has shown that sheep grazing on the native 'run' country is necessary to maintain biodiversity by reducing the biomass of the dominant native grasses, and controlling exotic herbs and grasses. Maintaining a diverse set of management practices at the landscape scale is essential to maximising biodiversity across catchments.

- With an outlook of fifty years plus, the **Northern Australia Irrigation Futures** project (a part of the National Program for Sustainable Irrigation) is attempting to develop a framework for decision making about irrigation in northern Australia for communities and governments. This work is not only challenging scientifically but often evokes passionate responses. For some, it is a much needed opportunity to consider the futures available to northern Australia; for others it raises concerns about increased pressure for irrigation in northern Australia; and for others it raises the question of who should determine the future of the region. In recognition of these perspectives, the Irrigation Futures Steering Committee recently clarified that the project is not about deciding whether new irrigation developments should or should not occur in northern Australia, but it is about assisting those who will need to make such decisions by improving the knowledge, tools and processes available to them.

- **Waterlogging compounds salinity – but help is at hand!** Salt-affected land is highly variable across Australia because of the interaction of the amount of salt with the extent of waterlogging and soil type; highly salty and waterlogged clay soils are the most difficult to

manage. Within this huge variation, productive options have been identified for approximately half of the salt-affected land in Australia. Land, Water & Wool projects have identified that the returns and benefits from salt-land pastures vary greatly from farm to farm, but they usually comprise a mixture of the direct amount of feed produced and the fact that the additional feed is often 'out of season', when other pastures are scarce, which gives it a much greater value. The reduced erosion and increased biodiversity associated with good ground cover are other benefits.

→ One of the early projects to get going under the Environmental Water Allocation Program **Natural Resource Buybacks and their Use to Secure Environmental Flows** is already starting to deliver tangible benefits. The project, led by Michelle Scoccimarro and Drew Collins of BDA Group, is playing an influential role by exploring the use of market-based measures to inform Murray-Darling Basin Commission deliberations on how to meet environmental flow targets in the River Murray. Buyback instruments, provided they are well designed, could potentially provide benefits to both irrigators and the environment in a more efficient manner.

→ **Veg Futures 2006: the conference in the field** - more than 500 people from all over Australia attended *Veg Futures 2006: the conference in the field* in Albury in March 2006. The conference was convened by Land & Water Australia and Greening Australia and provided an ideal venue to confront some of the difficult questions about managing native vegetation in rural and production landscapes. Questions such as 'what is the role and value of native vegetation in regional landscapes?', 'who pays for native vegetation management?' and 'how do we balance conservation and production?' challenged delegates. A highlight of the conference was the field trips which helped people to improve their knowledge of practical, on-ground management of native vegetation. More than 90% of survey respondents judged the conference a resounding success.

Dr Brad Pusey of Griffith University, left, and Sebastian Lee, right, from Wagiman (Guwardugan) Rangers, Pine Creek NT, sampling the Daly River with an electrofisher for the Daly River Fish and Flows Project.

Photo courtesy of Sue Jackson, CSIRO

A significant development during 2005-06 was the **Tropical Rivers and Coastal Knowledge** (TRACK) research hub which attracted $8 million in funds over 2006-07 to 2009-10 from the Commonwealth Environment Research Facilities Program administered by the Australian Government Department of the Environment and Heritage and another $5 million from the Australian Government's Raising National Water Standards program over the same period. The TRACK research hub brings together Australia's leading tropical river and coastal scientists and managers to focus applied research on the extraordinary coastlines, rivers and floodplains of northern Australia. TRACK builds on the excellent work and collaboration forged through the Tropical Rivers Program and will be managed by Land & Water Australia. It involves a consortium including Griffith University, Charles Darwin University, CSIRO Land and Water, University of Western Australia, and the North Australian Indigenous Land and Sea Management Alliance (NAILSMA).

While there are undoubtedly complex hydrological and other technical issues involved in delivering the National Water Initiative, it is arguable that the social, economic and institutional challenges in reforming water use and management in Australia are even more critical. Moreover, these challenges need to be understood by, and informed by, the major water using industries. A **ten-point research agenda** *Water Perspectives* was published, disseminated widely and discussed with potential partners including the National Water Commission, identifying the contribution of social sciences in support of implementation of the National Water Initiative.

Horticulturists seeking to introduce the use of recycled water on their properties now have guidelines and a new field tool thanks to research funded by the National Program for Sustainable Irrigation.

Photo courtesy of ARRIS Pty. Ltd. - carrot crop in Virginia, South Australia.

NATIONAL RESEARCH PRIORITY: **PROMOTING AND MAINTAINING GOOD HEALTH**

RURAL RESEARCH AND DEVELOPMENT PRIORITY: **IMPROVING COMPETITIVENESS THROUGH A WHOLE OF INDUSTRY APPROACH**

RURAL RESEARCH AND DEVELOPMENT PRIORITY: **MAINTAINING AND IMPROVING CONFIDENCE IN THE INTEGRITY OF AUSTRALIAN AGRICULTURAL, FOOD, FISH AND FORESTRY PRODUCTS**

RURAL RESEARCH AND DEVELOPMENT PRIORITY: **IMPROVED TRADE AND MARKET ACCESS**

→ **Effluent put to good use** - drought and concerns over the sustainability of some water sources have heightened interest amongst irrigators and urban communities in recycling water. The National Program for Sustainable Irrigation has investigated the use of treated effluent for vegetable production near Melbourne and Adelaide. While recycling has immediate appeal to all, it is not without its challenges - is it safe for growers and consumers? Are there potential environmental impacts, as the water is often high in salinity and nutrients such as phosphorus? The research work has proven that produce grown with recycled water is as good as any other produce grown with traditional sources. It has also shown that to avoid salinity, recycled water needs to be 'shandied' with better quality water and irrigators need to adopt the highest standards of irrigation management.

To help irrigators, researchers and growers have drafted a set of best management practice guidelines and produced a practical 'salinity wheel' to show growers the salt tolerance of different crops and how to convert between different units used to measure salinity. This practical research is finding a sustainable and profitable solution that generates healthy local produce and reduces the environmental impacts that can arise from alternative means of effluent disposal – while of course saving water.

Rowan Reid (University of Melbourne) of the Australian Master TreeGrowers Program supported by JVAP.

Photo courtesy of Shaun Quayle, DPI Victoria.

→ The **Master TreeGrowers program** (led by Rowan Reid from the University of Melbourne and supported by the Joint Venture Agroforestry Program since 1996) assists a 'tree change' – working with farmers to diagnose, design and evaluate the role of trees on their farms and to make better decisions. The seventy-five courses held between 1996 and 2005 have been attended by over 1350 participants. These leading regional practitioners have planted farm forests, advised local government and planners, and acted as advisors and mentors for new industry participants.

→ **Knowledge for Regional NRM Program** – connecting researchers and practitioners. Funded through the Natural Heritage Trust, this program has been working with Australia's regional NRM organisations and knowledge providers to create a better link between research and practice. The program has been in place for eighteen months and has been investigating and testing ways to simplify access to information and improve information exchange between regional bodies and research/information providers. The options cover three fundamental areas – improving capacity to manage NRM knowledge, creating information tools and knowledge brokering processes. Each helps people to search for, access and share knowledge. To achieve this, the program has been working closely with regions and has established pilots for the development of knowledge strategies, region to region mentoring and the collection of local knowledge. It has also worked with regions to develop and deliver a number of workshops and forums including the first national monitoring and evaluation symposium, a North Australian Forum and a socio-economic workshop that brought together practitioners and regional officers. The program has developed an innovative web-based 'NRM Toolbar' to provide a highly intuitive way to find and use search tools and knowledge sources. Testing of the concept design of the NRM Toolbar with regions and facilitators has been extremely positive.

Land & Water Australia Director Dianne Bentley during a break from the June 2006 Board meeting in northern New South Wales focussing on peri-urban issues.

→ **Peri-urban** areas are neither urban nor rural, but a dynamic interface and transitional zone, characterised by a diverse range of land use, communities and environments. The intrusion of urban land uses and subdivisions on previously rural land uses results in progressive fragmentation and a multiplicity of often competing land uses and interests in land. Significantly, there is a clear lack of integration between the policy and planning measures that do exist and NRM goals and initiatives. Building on a significant Land & Water Australia funded project led by Professor Michael Buxton from RMIT, an expert research scoping workshop was held in May 2006. Workshop participants encompassed a wide range of expertise from urban planning, human dimensions of NRM, landscape ecology, catchment management, demography, specific industry expertise, and government policy, including state and local government participants. A six point research agenda was produced.

→ Under major Australian Government funded programs, fifty-six NRM regions covering all of Australia have developed their own catchment-based plans to manage natural resources at a regional landscape scale. They have also developed accompanying regional investment strategies to appropriately direct investment to generate resource condition change by effecting practice change among landholders. A major new project jointly funded with the Natural Heritage Trust commenced in May 2006 to work over the next four years with ten regional NRM groups around the country to examine and develop improved processes for **making successful investments in NRM practice change**. The project is working with regions on: improving the ability to track change; developing improved business systems; enhancing social learning capacity; developing partnerships for multiple benefits; and improving the levels of trust between key investors and partners. Nearly thirty-five regions expressed interest in participating in this action learning project, which will strengthen the adaptive management capacities of regional NRM bodies.

Cloud formation over Crackenback during the Land & Water Australia staff workshop in April 2006.

→ Understanding Australia's changing climate is essential if we are to be more profitable in our farming, grazing and NRM. If we are to accurately predict seasonal climate variability in the context of a changing climate we must know more about the components – wind, rainfall, evaporation and temperature. Equally importantly, we must store these data sets in a readily accessible form – so that all can use them. **SILO is a warehouse of climate data** upon which the Managing Climate Variability program is building a range of farmer, agribusiness and natural resource manager decision support tools. Improving the data sets stored on SILO is a fundamental component of the business of Managing Climate Variability – quality data in and useful knowledge out.

→ Dr Michael Roderick and Professor Graham Farquhar of the CRC for Greenhouse Accounting have been working to unpack **rainfall and evaporation trends for Australia.** Evaporative demand is measured using evaporation pans. In Australia, like many other parts of the world, it has been found that average evaporation from these pans has been steadily declining. Analysing records going back to 1975 for sixty-six evaporation pans around Australia, the researchers found declining wind speeds have caused most of the decrease in evaporation. So, despite warming, over the past 30 years our climate has on average nationally become calmer. Why the wind speed is reducing in Australia is a question that awaits further research.

→ The Managing Climate Variability team have found that 'cut-off lows' (portions of low pressure systems separated from the bulk of the front) deliver the most soaking rain

Testing the Integrated Wood Processing demonstration plant at Narrogin, Western Australia. The plant has used oil mallee crops to produce activated carbon, eucalyptus oil, charcoal and renewable energy.

Photo courtesy of Verve Energy

over north-west Victoria, and not passing low pressure fronts. Peter McIntosh, principal research scientist with CSIRO's marine and atmospheric research division, found that the most valuable rains during the growing season came from cut-off lows, as opposed to fronts. However, he cautioned that a system accurate enough to be relied upon was some way off yet. This research under Managing Climate Variability aims to define climate patterns and, from that, determine the key components that require research so we can better **forecast seasonal climate**. The project is already challenging conventional wisdom on what drives weather in the Wimmera/Mallee region. Not only are cut-off lows the key for good rainfall events in April-June and September-October, but the Indian Ocean has a bigger role in the weather patterns of north-west Victoria than previously thought, while Pacific Ocean events such as El Nino and La Nina may not be as influential as they have been credited with. Large scale global weather patterns can also have an influence on north-west Victoria. For example, the southern annular mode pattern around the Antarctic is being suggested as a possible reason why fronts are passing further south than usual.

→ **Oil mallee developments** - testing of the pilot $20 million integrated wood processing plant at Narrogin has been completed and successfully produced activated carbon from trees, as well as eucalyptus oil, renewable energy and charcoal. In order to invite commercial investment, Verve Energy is currently analysing the test results (to be completed at the end of 2006) prior to preparing an Information Memorandum presenting economic and operational feasibility. The Western Australian Minister for Energy, Science and Technology has made a commitment to fully explore the commercialisation prospects for this innovative renewable energy technology. There are more than 10,000 hectares of oil mallees planted to support expanded production, which also provide considerable benefits for wheatbelt farmers in lowering saline watertables and slowing the advance of salinity, especially in the productive lower parts of the landscape. The Joint Venture

Agroforestry Program supported the early scoping study for the plant and oil mallee research.

→ ***Stock and Waterways* publication** – Rivers and creeks are the arteries of the landscape, and the land close to them (riparian areas) is crucial for landscape health. In vast areas of Australia, the need to provide access to streams for grazing stock is a major barrier to efforts to protect and restore riparian areas. This fantastic book brings together results from hundreds of research projects on managing riparian areas and tailors it for the people who make most management decisions on riparian land. The guide helps farmers to identify their riparian land and to understand the role it plays in maintaining a healthy waterway. It offers practical advice on how to manage riparian land both productively and sustainably using a number of case studies from farmers throughout Australia, with great photos and clear diagrams.

A Land & Water Australia guide to help farmers identify their riparian land and understand the role it plays in maintaining a healthy waterway.

NATIONAL RESEARCH PRIORITY: **FRONTIER TECHNOLOGIES FOR BUILDING AND TRANSFORMING AUSTRALIAN INDUSTRIES**

RURAL RESEARCH AND DEVELOPMENT PRIORITY: **USE OF FRONTIER TECHNOLOGIES**

RURAL RESEARCH AND DEVELOPMENT PRIORITY: **CREATING AN INNOVATIVE CULTURE**

→ A new emerging field of NRM science is **Landscape Biotechnology** - the application of biotechnological ingenuity to our interaction with the landscape, natural resources, and ecology. According to Ben Gilna, who completed a PhD on the topic, Australia is currently a leader in many of the innovations within Landscape Biotechnology but needs to develop a conceptual basis and capacity to handle the ethical, legal and social implications of these technologies. Interventional Landscape Biotechnology includes genetically modified viruses and nematodes to control pest animals or vaccinate threatened populations from disease, and species-specific toxins. Informational Landscape Biotechnology includes moves to real-time assays of soil microflora metabolism, applications of genomics to breeding histories, and the assay of functional genetic information from the landscape. These new technological capacities are developing very fast and yet they are rarely discussed or considered part of an integrated phenomenon.

→ **Molecular environmental diagnostics for sustainable land management** - cutting edge science in the field of functional gene technology has developed a novel approach to examine the effects of land and water management practices and major perturbation events such as pollution, eutrophication and acidification on soil and sediment-based ecosystems. The quantitative molecular approach enables an understanding of the key biogeochemical reactions in elemental cycles that are essential for the integrity of ecosystems. The technology has been successfully applied to freshwater, terrestrial and marine ecosystems in production and natural landscapes. Functional gene technology involves measurement of genes that code for enzymes. Measurement of these functional genes has the advantage of specificity and relates directly to both process rates and microbial population density. By using primers for conserved regions of each gene of interest, the majority of the relevant part of the microbial community can be sampled, without the need for identification of species. Dr Matt Colloff of CSIRO has been instrumental in applying this exciting technology to assessing natural and agro-ecological functioning, global warming, farming systems and pollution monitoring.

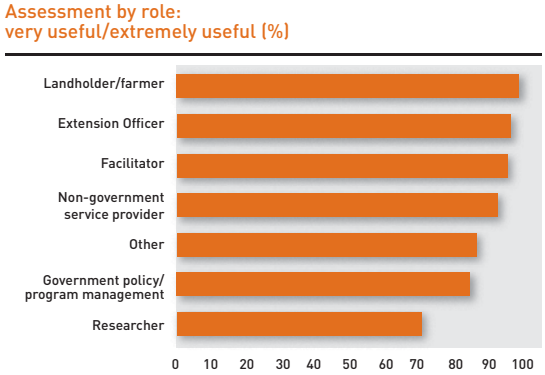
→ How do we learn things and what helps us make decisions? Researchers in Land, Water & Wool wanted to make sure they provided information in ways that would help farmers make decisions on their properties. They came up with the **'Five P Framework' – Profit, Proof, People, Place and Promise**. Applying this approach has generated a diverse mix of information products and innovative ways to engage producers and NRM workers across Australia. It has good parallels with the program's Sustainable Grazing on Saline Land projects which have emphasised the importance of promoting pride amongst woolgrowers in how they manage saline land.

"It was just a black saline area and would not grow anything. To see the comparison is just unbelievable. It's above my wildest dreams." Alan 'Bluey' Smith, wool grower, Mt Mercer, Victoria, commenting on the Sustainable Grazing on Saline Land demonstration site on his property, after the establishment of a salt-tolerant pasture.

→ Land & Water Australia is developing a practical understanding of how to assess sustainability through a number of projects. Examples of **making 'sustainable agriculture' more tangible and measurable** from this year's portfolio include:

- SAGE Farmers, a group of farmers from a range of agricultural enterprises working together on a 'farm sustainability dashboard'
- Traprock Wool Association's Environmental Management Kit (including a web-based sustainability monitor)
- Indicators developed in the Northern Australia Irrigation Futures project.

→ Land & Water Australia's National Riparian Lands R&D Program ran nine workshops across Australia between November 2005 and March 2006. The workshops were designed to bring together the knowledge gained from research investment over thirteen years of the program. They looked at **how riparian areas function, how they can be better managed** and how to engage local communities in protecting, maintaining and rehabilitating these important parts of the landscape. They were very popular with participants, attracting about 250 natural resource planners and advisers from government NRM agencies and regional catchment management authorities. In addition, a tailor made workshop was delivered to Greening Australia as part of its national training program and to the Gippsland Dairy industry. The workshops featured researchers Ian Rutherfurd, Peter Davies, Amy Jansen, Andrew Brooks, Don Thomson, Phil Price, Stuart Bunn and Siwan Lovett presenting their research findings to participants and providing an opportunity for face to face interaction. These workshops were well received as evidenced by the results of post-workshop evaluations shown in the graphs below.



Participants' rating of national riparian workshops.

→ Knowing about the environment in which you live and work is essential for identifying problems or potential benefits. This means keeping a finger on the pulse of global and Australian NRM and drivers of change. A **trends analysis of global NRM issues** was completed under Land & Water Australia's Strategy 2 (Collaboration and Strategic Analysis). This covered the 2005-2006 period and tackled areas under the headings of socio-economic, environment, science and technology, and industries. An Australian trends report has recently been completed to complement the global analyses.

→ **Land & Water Australia's new website** went live in June 2006. The content management

system delivers an even more functional, informative, and easy to use web interface that works much more efficiently for keeping all parts of the site up to date and decentralising content management across the Corporation, while maintaining quality control and managing risk. With the site's improved usability and search capacity we expect increased traffic over 2006-07 - exceeding the 766 visits per day and 150,000 downloads annually that we achieved in 2005-06.

→ In recognition of the importance of **sharing knowledge and encouraging adoption of research outcomes** a very popular edition of *RipRap* focused on NRM knowledge management issues.

NATIONAL RESEARCH PRIORITY: **SAFEGUARDING AUSTRALIA**

RURAL RESEARCH AND DEVELOPMENT PRIORITY: **PROTECTING AUSTRALIA FROM INVASIVE DISEASES AND PESTS**

→ Land & Water Australia entered into an agreement with the Australian Government Department of Agriculture, Fisheries and Forestry to manage a $5.4 million, three year, R&D component of the **Defeating the Weed Menace program** with the aim of generating new knowledge to prevent the development of new weed problems, reduce the impact of existing weeds of national priority, and build capacity for the management of weeds into the future. An initial call for research occurred in June 2006.

knowledge for managing Australian landscapes

REPORT OF OPERATIONS

CERTIFICATE CONCERNING THE REPORT OF OPERATIONS

The Directors of the Land and Water Resources Research and Development Corporation (legislated title of Land & Water Australia) are responsible under section 9 of the CAC Act for preparation of the following Report of Operations in accordance with the CAC Orders.

This Report of Operations is made in accordance with a resolution of the Directors at their meeting of 8 September 2006.

Roberta Brazil
Chairman

Andrew Campbell
Executive Director

DIRECTORS' REVIEW OF OPERATIONS AND FUTURE PROSPECTS

Land & Water Australia had an outstanding year during 2005-06 in relation to its statutory objects and functions, the *2005-2010 Strategic R&D Plan*, and its principal outputs as set out in the 2005-06 Annual Operational Plan. The 2005-06 year was the first under the new Strategic R&D Plan approved by the Minister in early 2005.

The report against outputs as set out in the Annual Operating Plan is tabulated in detail on pages 34-86. It reveals that more than 90% of the planned outputs for 2005-06 were achieved across the R&D portfolio. Some highlights have already been listed (pages 9-21).

Land & Water Australia is playing a leading role in delivering the science needed to manage Australian landscapes and natural resources more sustainably. We have a significant research portfolio of fifteen national research programs involving thirty-one different program partners. In addition we have a high innovation arena which includes R&D projects, scholarships and fellowships. Excluding the National Land & Water Resources Audit, we actively manage 258 current projects and the knowledge assets of completed projects back to 1990.

The large number of partnerships that the Corporation manages, and the fact that around 60% of our total expenditure is third party funds, indicates that Land & Water Australia is playing a critical brokering and coordination role in NRM R&D. Importantly, the Corporation is adding value to this impressive research effort with: a strategic and focused communication effort aimed at improving adoption of research outputs; leading edge web-based tools to assist people to interrogate the entire

research portfolio; and catalytic investments to build long term innovation capacity in NRM.

The breadth and balance of the Corporation's research portfolio is illustrated by the achievements listed in the highlights (pages 9-21).

Major collaborative research initiatives in Sustainable Irrigation, Grain & Graze, and Managing Climate Variability are now fully operational, with significant research activity during 2005-06. These new initiatives, along with the mature Land, Water & Wool program, cement our partnerships with the big broadacre industries in Australia, which are now key investors in NRM R&D.

The Corporation's staff managed a huge effort during 2005-06 in establishing new partnerships and commissioning and contracting new research in six new programs: Healthy Soils, Defeating the Weeds Menace, Tropical Rivers, Native Vegetation and Biodiversity, Environmental Water Allocation, and Social and Institutional Research. All of these programs met their targets in organising contestable procurement processes, negotiating contracts and investing Land & Water Australia and partner funds, which is a considerable achievement. The 26% increase in research investment over the previous year was a tremendous result.

Land & Water Australia managed a number of applied policy-related research projects for the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust on behalf of the Australian Government Department of Agriculture, Fisheries and Forestry and the Australian Government Department of the Environment and Heritage. It is pleasing to see better engagement between science and policy through such projects.

The sustainability of the resource base on which Australia's primary industries depend is at the core of the Land & Water Australia mandate under the PIERD Act 1989 and the National Research Priorities. In accord with section 28 of the PIERD Act and section 516A of the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999*, we are required to report on Land & Water Australia's contribution to ecologically sustainable development. The vast majority of our research portfolio is directed towards improving the knowledge base for sustainable management of natural resources, in particular land, water and vegetation, so it is difficult to itemise individual contributions. The detailed report on the research portfolio (pages 34-83) outlines how the Corporation is investing in research that will help to: minimise or reverse degradation of natural resources; develop more sustainable land use systems; identify priorities for resource protection; and improve management techniques for long term resource conservation. Our research portfolio is directed to support both better management of natural resources and better policies and institutional arrangements more consistent with ecologically sustainable development principles.

FINANCIAL PERFORMANCE

This is the first year that Land & Water Australia's financial statements have been prepared under Australian Equivalents to International Financial Reporting Standards. The effects of adopting AEIFRS are more fully explained in Note 2 to the Financial Statements (page 120).

The financial performance of Land & Water Australia in 2005-06 was extremely pleasing. The Corporation's revenue for the year was $31.2 million. This is a significant level of financial leverage on an appropriation from the Commonwealth through the Department of Agriculture, Fisheries and Forestry portfolio of $12.5 million. More than 191 new research projects were contracted, which together

with ongoing projects attracted $17.74 million of partner co-investment in cash and significantly more in-kind from research providers. Research expenditure of $27.1 million increased $5.6 million (26%) over the previous year, continuing a strong pattern of growth. Expenditure on knowledge and adoption at a corporate level increased by $0.73 million (38%) and expenditure on administration as a proportion of total expenditure decreased from 9.7% to 8.5%.

The overall financial result for 2005-06 was an operating deficit of $1.4 million, compared with an operating surplus of $5.4 million in 2004-05. This deficit was in line with the budget approved by the Board and as advised to the Department of Finance. The Board was conscious of the need to ensure that new R&D programs were able to get underway with considerable momentum, and deliberately chose to reduce the Corporation's cash reserves accordingly. The Corporation's equity position of around $13.3 million includes $12.4 million set aside for program or project expenditure either as a result of formal agreements with external funding bodies or Board decisions. A further $0.2 million is set aside in the asset revaluation reserve leaving $0.7 million in unallocated reserves.

KNOWLEDGE AND ADOPTION PERFORMANCE

Land & Water Australia has improved its knowledge and adoption performance during 2005-06 on several fronts:

- Establishing new organisational systems, for example the implementation of a new web content management system
- Introducing better internal processes to manage knowledge, for example knowledge and adoption planning with new programs and projects, and a knowledge harvest across the portfolio
- Providing more support for the R&D team and researchers through allocating knowledge and adoption officers across the portfolio
- Trialling new or better methods to get research results out to farmers.

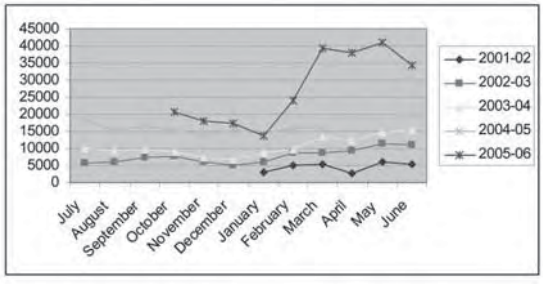
During 2005-06 Land & Water Australia distributed 88,137 products to various stakeholders around Australia through the CanPrint direct order service or from displays at events around the country (a quarter of the total). Demand for hard copy products increased by 5% compared to 2004-05. This year Land & Water Australia produced twenty-four corporate publications and 157 products across our R&D programs. Highlights included Andrew Campbell's Occasional Paper *The Australian Natural Resource Management Knowledge System* and a detailed brochure *Knowledge for Regional NRM: connecting researchers and practitioners* from the Knowledge for Regional NRM program.

Land & Water Australia sponsored twelve significant corporate events in 2004-05, in addition to dozens of program-level events, throughout Australia. Bobbie Brazil and Siwan Lovett were keynote speakers at the Queensland Landcare conference in Barcaldine which was a huge success. Andrew Campbell presented a keynote at the WA State NRM conference in Denmark, as did Kate Andrews at the Australasian Pacific Extension Network international conference in Beechworth. We also continued our successful involvement in the OUTLOOK conference organised by ABARE and ran a well-attended session highlighting examples of collaboration across rural R&D Corporations.

The Corporation's performance in disseminating its R&D outputs continues to improve. The Land & Water Australia website is the key means by which

increased distribution has been achieved. Visits to the site have increased to an average of 766 visits per day compared to an average of 506 visits per day during 2004-05. During the year, visitors downloaded more than 150,000 electronic versions of Land & Water Australia publications and research outputs. To print and distribute these by non-electronic means would require a significant increase of the Corporation's printing and delivery budget.

Figure 1:
Visits to Land & Water Australia Website 2002-06



Despite a strong record of growth in web usage over recent years, the Corporation recognises the need for continuous improvements in our web interface as standards across the industry evolve, technologies improve and consumers become more discriminating. During 2004-05 we developed a new 'e-business' strategy that was implemented in 2005-06. This saw an overhaul of our corporate and program websites and the content management systems that support them.

Our new website went live in June 2006. It is an even more functional, informative, easy to use web interface that works much more efficiently in keeping all parts of the site up to date and decentralising content management across the Corporation, while maintaining control of quality and risk.

Land & Water Australia is in the knowledge business. We are not just concerned with funding and organising research to generate new knowledge, we are also concerned with managing existing knowledge. The Australian NRM and sustainable agriculture sector has expanded very rapidly over the past twenty-five years, but it is arguable that our systems for managing the knowledge base have not kept up.

To explore this issue in depth, the Board granted the Executive Director Andrew Campbell a short sabbatical during 2005-06 to analyse the NRM knowledge system in Australia. He concluded that there are three compelling reasons for public investment in NRM knowledge:

- To help make better decisions in the management of Australia's unique natural resource base
- To support innovation to develop more sustainable and profitable systems, practices and technologies
- To make better use of existing knowledge so that we learn as we go along, rather than repeating past mistakes and failing to share the lessons from current and past experience.

This sabbatical produced an Occasional Paper - *The Australian Natural Resource Management Knowledge System* http://www.lwa.gov.au/downloads/publications_pdf/PR061081.pdf that outlined a range of measures that could improve the purposefulness, cohesion and performance of the NRM knowledge system in Australia.

This study complemented the work of the Knowledge for Regional NRM project funded generously by the Natural Heritage Trust, which focused specifically on

the knowledge needs of the fifty-six regional bodies established under the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality. This exciting project involved a large number of people from regional bodies in teasing out knowledge needs and developing ideas to tackle them. It is described further on page 81.

These initiatives and our strategic analysis and evaluation work are giving the Corporation important insights into ways of assisting the system as a whole to work better in meeting the needs of its clients: Australian farmers and other managers of natural resources and the people who advise them, policy makers at all levels, and the wider Australian community.

RISKS AND OPPORTUNITIES

The task of investing in NRM research and development on behalf of the taxpayer in the national interest is one of great responsibility. We need to anticipate the knowledge that the Australian community will require in the future, ideally some years in advance of that need being widely perceived. We have worked closely with the Australian Government in aligning our research investments to both the National Research Priorities and major policy and program investments through the National Action Plan for Salinity and Water Quality, the Natural Heritage Trust and the National Landcare Program. We are also discussing joint investment opportunities with the National Water Commission.

Getting the investment mix right is a balancing act. We have a modest appropriation and a huge mandate. We have to weigh up speculative research on issues that are on or over the horizon for which there is limited current demand against more applied research designed to fill immediate knowledge gaps for which there are pressing demands and audiences hungry for information. Obviously it is much easier to find co-investors on the latter types of issues, and adoption of R&D outputs should be more assured for such issues. But the public benefit over the long-term will be best served if Land & Water Australia takes a long-term view across its whole R&D portfolio.

During the year the Board commissioned an independent external review of the Corporation's performance and strategic direction. The review was carried out by Dr Andy Pearce, who established and was for thirteen years CEO of Landcare Research New Zealand, among a number of important roles in agricultural and environmental research management in Australia and New Zealand. Dr Pearce consulted our key stakeholders and found that Land & Water Australia is a high performance agency with considerable strengths in identifying research needs, brokering the partnerships needed to tackle them effectively, managing R&D programs, promoting research results, managing knowledge assets and evaluating impact. He questioned whether the Corporation may be 'spread too thin' in terms of the breadth of issues across the portfolio, and suggested that the main opportunity for improving performance lies in the Board considering a more tightly targeted approach on a handful of priorities with clearly measurable deliverables.

The Board is exploring the issues raised by Dr Pearce in consultation with the Australian Government and other key stakeholders.

The *2005-2010 Strategic R&D* Plan sets out three core strategies for the Corporation: research investment; collaboration and strategic analysis; and knowledge into practice. This is a crucial departure for the Corporation. In the past, research investment could reasonably have been considered the core and only strategy for the Corporation, with all other activities subsidiary to that.

Research investment remains pivotal, and will continue to attract most funding. However the new plan recognises that the Corporation's collaboration, coordination and strategic analysis functions within the NRM knowledge system are important and distinct activities in their own right. Further, the task of managing knowledge for adoption – not just the current R&D programs but the Corporation's entire portfolio, past and present – is a further key priority. These three strategies are designed to help us to maintain an appropriate balance between: generating new knowledge (and within that, between current and future knowledge needs); promoting the adoption of current knowledge into practice; and developing partnerships that will assist both these aims as well as assisting in overall coordination of the national NRM research and development effort.

Land & Water Australia has had an excellent year in delivering a wide-reaching research portfolio and meeting ambitious investment targets, while substantially improving our capacity to manage existing knowledge. Those achievements have been possible only through the goodwill and support of our partners including the Australian Government, and the dedication and commitment of our staff. The Directors of the Corporation are deeply appreciative of the contributions of both our partners and our staff, and look forward to an equally productive year in 2006-07.

THE CORPORATION'S OPERATIONAL RESULTS

OPERATING ENVIRONMENT

The management of Australia's rich and unique endowment of natural resources has never been higher on the national agenda. Water resources – both surface water and groundwater – are under extreme pressure as the majority of the Australian population experiences water restrictions and irrigators face severely reduced allocations.

Australia has long had to deal with extreme climate variability, but it is now becoming clear that each drought is hotter and drier than the last, and we seem to be in a more profound drying cycle, especially in south-western and south-eastern Australia. Climate is a fundamental driver of ecological processes and a major shaper of production possibilities for Australia's primary producers.

Australia is one of the most biologically diverse countries on the planet, and most of our native species exist in no other country, which means that responsibility for their management and future prospects rests with us. The management of vegetation, both pastures and trees, is critical in achieving an appropriate hydrological balance, in managing carbon emissions, in minimising further losses of biodiversity and in sustaining many of our grazing systems.

Invasive species, both plants and animals, continue to impose significant costs on agricultural production, and fierce competition and predation pressures on native species. Australian soils are the engine room of agricultural productivity. Soil management remains an important development opportunity for more sustainable production systems.

The uniqueness of Australia's landscapes, climates, soils and biota means that in the main we cannot import knowledge about management of our natural resources. We have to develop our own solutions for our own problems. Our agricultural production systems have to be smarter and more sophisticated to achieve comparable levels of profitability with our international competitors who enjoy younger, richer, more forgiving soils with more reliable climates.

Community expectations of agricultural and pastoral landscapes continue to change. Consumers demand healthy rivers and estuaries and viable populations of native animals and plants, in addition to cheap and clean food, fibre and water. Increasingly, the community wants a wider range of services from the countryside, which is becoming a place of consumption (of vistas, tourist, cultural and heritage experiences and lifestyle opportunities) alongside the traditional production of food and fibre outputs. Demographic change, especially along the eastern seaboard, will intensify competition for rural land and water and place pressure on the resource base, while opening up new opportunities through the influx of new capital and a wider range of people.

In response to the challenge of balancing the often competing demands on rural landscapes, governments across Australia have fostered the development of new organisations at catchment and regional scales. These new catchment bodies and regional organisations are charged with important planning responsibilities and often with the demanding task of prioritising and allocating public funding through large national funding programs such as the Natural Heritage Trust, the National Action Plan for Salinity and Water Quality and complementary programs at state and territory level. These organisations are becoming important players in the NRM knowledge system and critical clients for NRM research outputs.

Against this background, there is a continuing need for carefully targeted and well-managed research: to generate the uniquely Australian knowledge needed to improve Australian farming systems and consequent profitability; to manage our natural resources more sustainably; to inform large public investments in natural capital; and to help governments balance competing demands on natural resources and rural landscapes.

REVENUE AND EXPENDITURE TARGETS

REVENUE

The 2005-06 audited financial statements on pages 104-136 show that Land & Water Australia received revenues totalling $31.2 million, of which third party contributions totalled $17.7 million or 56.8% of total revenue (2004-05 $18.5 million or 58.3% of total revenue) and monies from Government totalled $12.5 million or 40.1% of total revenue (2004-05 $12.5 million or 39.5% of total revenue). Interest and other income totalled $0.98 million or 3.1% of total revenue (2004-05 $0.70 million or 2.2% of total revenue). Figure 2 provides a break-up of Land & Water Australia revenue for 2005-06.

EXPENDITURE

During 2005-06 fiscal year Land & Water Australia's expenses totalled $32.7 million of which $27.1 million (83%) was invested in R&D. Communication and adoption investment at the corporate level totalled $2.6 million (8%) while Portfolio Management expenditure including strategic planning and evaluation activities accounted for $0.2 million or 0.6% of expenditure. Administrative expenditure totalled $2.8 million or 8.5% of total expenditure. Figures 3-5 show the break-up of Land & Water Australia expenditure by activity, function and R&D programs.

Figure 2:
Revenue 2005-2006

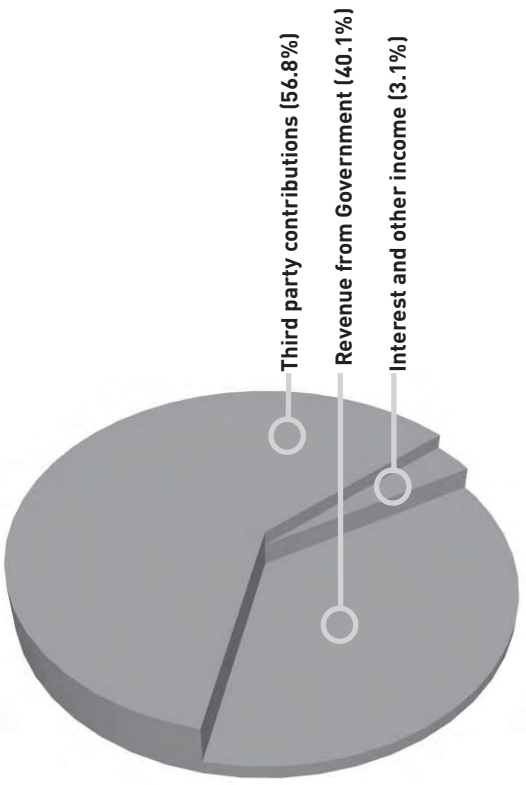


Figure 3:
Expenditure 2005-2006

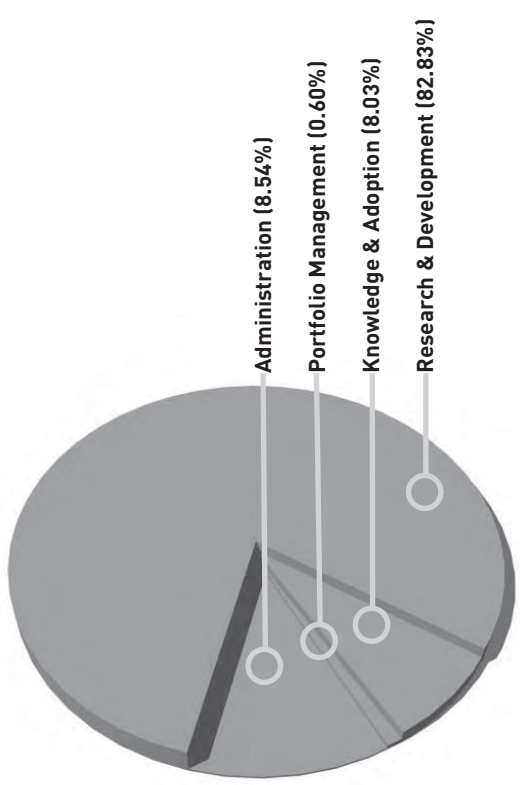


Figure 4:
Expenditure on R&D Programs 2005-06

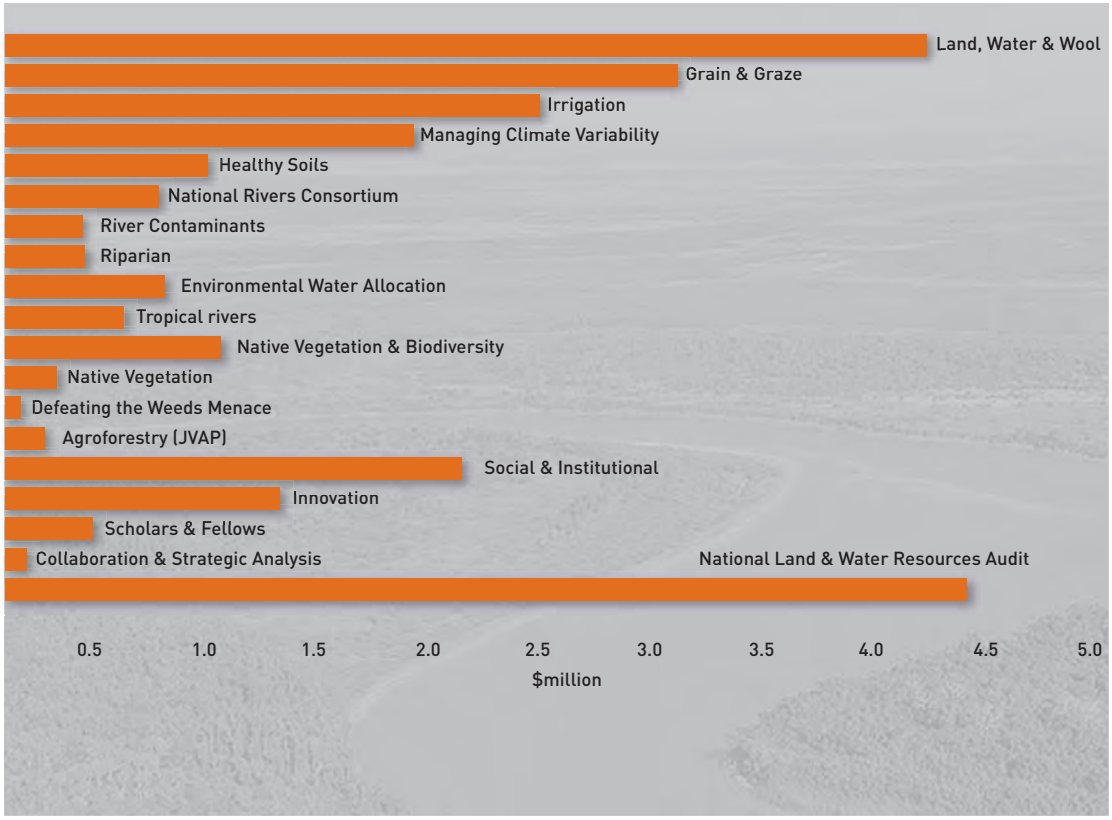
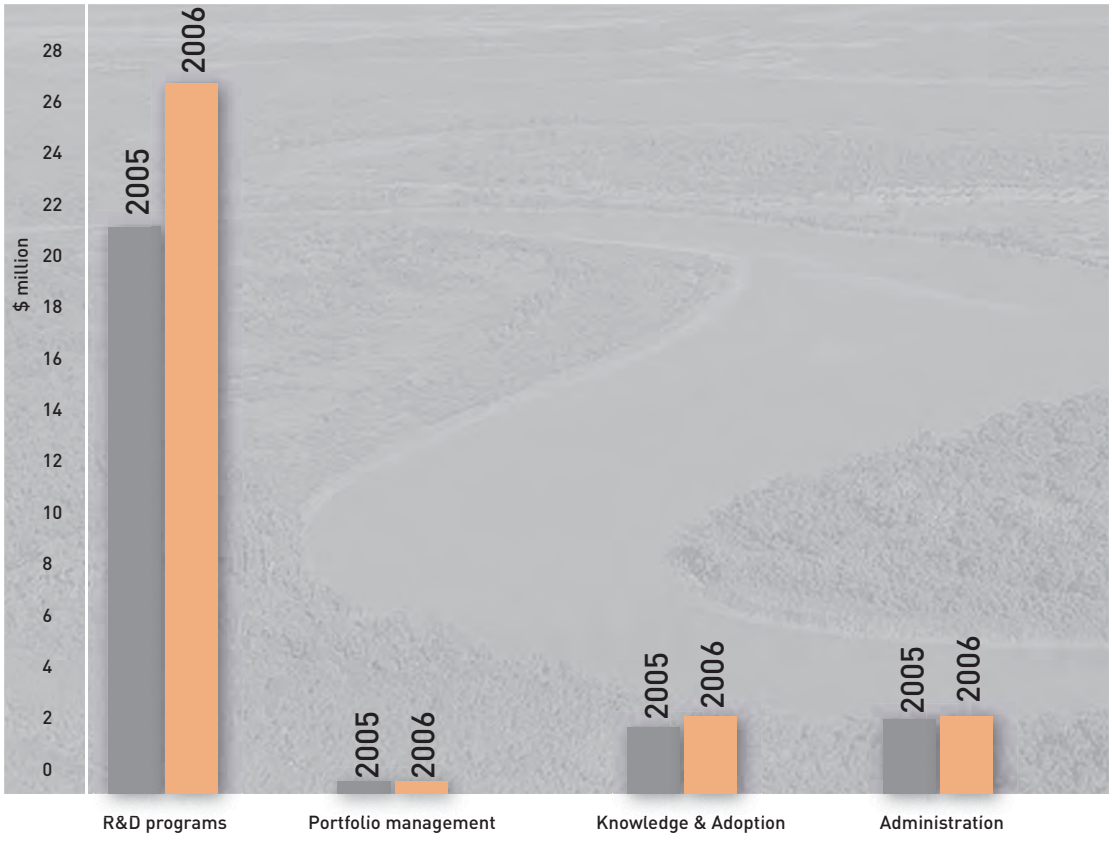


Figure 5:
Expenditure Comparison
2004-05 and 2005-06



OPERATIONAL REPORTING FOR RESEARCH INVESTMENT AND COLLABORATION

Most (83%) of expenditure in 2005-06 ($27m) was directed to R&D activities. This section describes how Strategy 1 (Research Investment) and Strategy 2 (Collaboration & Strategic Analysis) have performed in achieving the planned outputs in our Annual Operational Plan.
The results are presented for individual R&D arenas and programs as follows.

STRATEGY 1: RESEARCH AND INVESTMENT REPORTING

Arena:	Industries
Programs:	Land, Water & Wool
	Grain & Graze
	National Program for Sustainable Irrigation
	Managing Climate Variability
	Healthy Soils for Sustainable Farms
Arena:	Landscapes
Programs:	National Rivers Consortium
	National River Contaminants
	National Riparian Lands R&D
	Environmental Water Allocation
	Tropical Rivers
	Native Vegetation
	Native Vegetation & Biodiversity
	Defeating the Weed Menace
	Joint Venture Agroforestry
Arena:	People
Programs:	Social and Institutional Research
Arena:	Innovation
Programs:	Innovation Call
	Scholarships
	Fellowships

R&D ARENA: INDUSTRIES

'Last financial year (2004-05) the Australian Government supported R&D through funding of $204 million. This investment has resulted in real on-farm productivity improvements that have kept Australia's farm sector in front of declining terms of trade. This has improved Australian agriculture's productivity, giving it a competitive edge in what is a fiercely competitive global economy. This innovation is paving the way for the future of Australia's agricultural sector.'
The Hon. Sussan Ley, MP, Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry.

Statements like that above set the context for the Industries Arena, which strives to help industries and producers develop more sustainable modes of operation. The Arena is often a portal between industries and the work of other Land & Water Australia Arenas. It has an emphasis on production systems (that are sustainable at the farm and landscape scale), on water resources, climate variability and change, biodiversity within farming systems, the drivers of commercial success and the capacity of producers and industries. It looks at the sustainability of whole farms and landscapes, and includes the management of natural resources and native areas within that.

Industries Arena projects typically involve:

- Collaboration with farmers - projects are driven by the needs of farmers and make use of their vast knowledge and experience.
- Informed farmers - an emphasis on collectively developing a deeper understanding of interactions and alternative responses, and supporting producers as they then make decisions appropriate to them.
- Multi-skilled research teams - many of the NRM questions we face are complex and answering them involves a systems approach with multi-disciplinary teams.
- Operating between scales - another part of the solution often comes from being able to work between scales and disciplines. For example, ranging from global climate to the national economy, to regional or catchment health and farm profitability.
- Linking farm to catchment - understanding the interaction between farm scale and catchment scale is critical to sustainable outcomes.
- Community involvement - because of the social, economic and environmental linkages between what happens on a farm and the local district or region, many projects benefit from involvement by community representatives.
- Investor collaboration - the nature of these projects attracts investors from different industries and interests. Land & Water Australia prides itself on being able to help build productive collaborations, often on behalf of rural industries or the Australian Government.
- Triple bottom line in an uncertain world - projects that address social, economic and production issues and which accept they are operating in a dynamic, uncertain world are more likely to produce a deep understanding and outputs resilient enough to be of practical use in the 'real world'.

Some of the SAGE farmer participants on the banks of the Huon River in Tasmania in February 2006.

From left to right, Mark Wootton, Russell Pattinson, Ian McClelland, Tony Sharley, Bruce Maynard, Wesley Hazell, Andrew Campbell (Executive Director of Land & Water Australia), Mike Logan and Tony York.

(Wendy Erhart, Yvonne Postlethwaite and Greg Ludvigsen were unable to make this field trip)

SAGE Farmers

What does sustainable agriculture actually mean to profitable farm businesses? And is it consistent across different Australian farming enterprises or highly variable?

This has been the challenge put to the SAGE Farmer Group.

In 2005-06, Land & Water Australia supported a unique project examining the similarities and differences between numerous Australian agricultural enterprises, especially in regard to how Australian farmers view and measure the broad term of a 'sustainable agricultural enterprise'.

This project has brought together twelve leading farmers from a diverse range of agricultural enterprises. A key element of the project is to examine how farmers assess 'sustainability' (or how they would like to) and whether the concept of a 'dashboard' of sustainability indicators is feasible.

The group met twice in 2005-06, are scheduled to meet in September 2006 and, following a comprehensive global search of similar systems, are working on a trial to see if a prototype 'sustainability dashboard' can be developed that meets their diverse needs.

PROGRAM PERFORMANCE: LAND, WATER & WOOL

Land, Water & Wool is a national research, development and extension program providing wool growers with practical tools for the sustainable and profitable management of natural resources.

Over 1,300 wool growers are directly involved in the Land, Water & Wool program. They are trialling productive options for the management of saline land; investigating how productive management of native vegetation can deliver profit and biodiversity goals; and using innovative techniques to manage riparian paddocks for production, enhanced water quality and river health outcomes.

Land, Water & Wool's strong partnership and collaborative approach has attracted considerable co-investment from universities, research organisations, government agencies and wool grower groups. Land, Water & Wool is working closely with other Land & Water Australia and Australian Wool Innovation Limited programs. This approach will significantly increase the value and longevity of Land, Water & Wool program outputs and outcomes beyond its five-year life.

2005-06 has been a busy year for the program with many of the research projects coming to an end. Product development, evaluation and extension are taking over from research as the main activities. The program is due for completion in December 2006.

Land, Water & Wool: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Final reports from wool industry field-based research projects on riparian and native vegetation management, sustainable use of saline land and pastoral country management, including synthesis across research sites.	Final reports have been received for most pastoral, climate and some native vegetation projects. Riparian management research relevant to the wool industry has been collated into a series of guides. Research on new technologies for germination and establishment of salt tolerant species has been completed. Land, Water & Wool projects were presented at the Australasia-Pacific Extension Network (Inc) and NRM Facilitators conferences and the Australian Wool Innovation Limited/Meat & Livestock Australia Grower forum at Broken Hill. A Land, Water & Wool Snapshot of key findings to date was developed for the tour for National Media (December 2005). A consultancy was undertaken to ensure the availability of relevant data for conducting a program Benefit Cost Analysis.
Sustainable Grazing on Saline Land Grower Network in WA, SA, NSW and Vic. supporting over 120 grower groups.	Achieved. Many of the grower network sites have now had several seasons of data collection with results being made available through local extension activities.
Future Woolscapes Scenarios published.	Final publications have been submitted to Australia Wool Innovation Limited and Land & Water Australia. Scenarios have been communicated via presentations to: • State Managers of Australian Wool Innovation Limited Extension Networks • Three presentations to Australian Wool Innovation Limited EYRE Network in Vic, NSW and WA • Bestwool Group, Hamilton • Veg Futures Conference, Albury • Australian Wool Innovation Limited's Young Woolgrowers Forum • Australian Wool Innovation Limited/Meat & Livestock Australia Forum, Broken Hill

Collaborations

Program Level Partners

Australian Wool Innovation Limited
Land & Water Australia

Major Sub-program level partners include:

CRC for Plant-Based Management of Dryland Salinity
Meat and Livestock Australia

knowledge
for managing
Australian landscapes

Environmental 'Health Check' for wool growers

Wool growers in south-east Queensland can now perform an on-line 'health check' of their natural resources using a new internet-based environmental management toolkit designed to compare the ecological status of wool properties.

Wool growers from the Traprock Wool Association have worked with researchers to develop the new resource, which aims to capitalise on the significant economic, ecological and social research undertaken in the region over the last two years.

The information will help wool growers to collectively or individually monitor their farm's environmental performance, recording aspects of environmental management such as pasture and habitat condition and compare their property against regional benchmarks with the intention of better informing regional catchment planning processes and improving the on-farm environment.

The aim of the toolkit is to highlight trends - especially where land condition improves as a result of changes in management - and improve wool grower capacity to assess land use and link production to integrated farm management.

Federal Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry, the Hon Sussan Ley MP, officially launched the toolkit at the Terrica woolshed in the Traprock district, with Land & Water Australia Chairman Bobbie Brazil as the guest speaker at the launch.

"It is wonderful to see the Traprock Wool Association building partnerships and working with researchers and regional planners to better integrate conservation and production. I would like to commend the vision of the Traprock Wool Association and its commitment to achieving sustainable and profitable businesses," said Ms Ley.

Ms Ley also presented wool growers from the Association who had been involved in the development of the environmental management toolkit with their 2006 reports, which are an outcome of the Traprock Information Management System (TIMS), an existing and voluntary quality assurance system.

Land, Water & Wool, a partnership between Australian Wool Innovation Limited and Land & Water Australia, funded the development of the toolkit, which saw the Association work with researchers from the University of Southern Queensland and land use planners from the Queensland Murray-Darling Committee.

REPORT OF OPERATIONS

knowledge for managing Australian landscapes

Bruce and Judy Wilson run *Murdeduke*, a 4,300 hectare mixed farm near Winchelsea in Victoria. Bruce, a participant in the Grain & Graze program, says that to have a successful mixed farming system, the various enterprises must work well together. On *Murdeduke* this happens in a number of ways, demonstrating many benefits of mixed farming systems:

- Cropping stubble provides grazing for cattle and sheep.
- Improved soil structure and drainage from raised bed cropping allows growth of lucerne for stock grazing and finishing.
- Growing lucerne for grazing improves soil structure, which improves barley and canola growth by allowing better root development along the paths made by lucerne tap roots.
- Sheep and cattle are used for weed control, lowering herbicide costs.
- Alternating between sheep and cattle provides a break in the availability of hosts for parasitic worms, and therefore more worm control.
- Crop areas provide somewhere to put cattle, allowing a spell for autumn pastures.
- The piggery provides high levels of nutrients such as nitrogen for crop production.

GRAIN & GRAZE

Grain & Graze has three targets:

- A 10% increase in mixed farm profitability, driven by a 5% increase in grain yields and a 10% increase in livestock production.
- Improved condition of natural resources on mixed farms in line with regional or catchment targets.
- Confident and knowledgeable mixed farmers making decisions and using tools that sustain production and promote biodiversity.

During 2005-06, the program reached greater numbers of producers, increasing significantly from 1,000 producers at the end of the previous year to over 2,500 by the end of December 2005. The program also expanded to reach into a ninth region, the Maranoa-Balonne in Queensland, giving it nearly 80% coverage of all mixed farming enterprises across Australia.

The final pieces of the Grain & Graze investment strategy were put into place with investments made into four national projects. These projects deal with biodiversity, whole-farm economics, the social dimensions of mixed-farming and modelling feedbase supply and demand at the property scale.

The budget of the program is $22.9 million over its life, comprising $14.4 million in partner funds and $8.5 million in third party funds.

Grain & Graze: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Forty case studies across eight Grain & Graze regions which analyse farm businesses considered to be 'best practice mixed farming' for the region.	Forty case studies were analysed, involving farms from across eight of the regions involved in the program. The studies concluded that mixed farming is adding to the resilience of farms through income diversification. Soil health was also recognised as the primary NRM concern of most of the producers involved. Importantly, however, the case studies showed that even some of our best mixed farmers can further, and significantly, increase their profitability and sustainability by making decisions that better deal with the inter-relationships between crops, pastures and animals.
Grain & Graze mid-program review (Dec 2005) able to identify significant progress toward target of 15,000 mixed farmers aware of opportunities to enhance resource condition and productivity, with 6,800 changing on farm practices.	A mid-term review of the program was completed in November 2005 and acted as the basis for providing the Board of Land & Water Australia with the confidence to commit to the program in its remaining two years (2006-07 and 2007-08). Solutions Marketing surveys suggest that producer awareness of the program reached 19,000 by December 2005. Much more significantly, participation in the program increased from 1,000 in July 2005 to over 2,500 in December 2005, representing a rapid trend that is expected to continue.

Collaborations

Program partners

Grains Research and Development Corporation
Meat and Livestock Australia
Australian Wool Innovation Limited
Land & Water Australia

Project Partners

Grain & Graze partnerships grew to involve over 65 partners in 2005-06. This includes thirteen catchment management groups, each of which is contributing to on-ground activities to demonstrate sustainable mixed-farming practice, identify biodiversity benefits of mixed farming and enhance adoption of Grain & Graze recommended practices beyond the immediate producer group participants. Some examples of those partners are:

CSIRO Plant Industry, Charles Sturt University, University of Adelaide, NSW Department of Primary Industries, Department of Agriculture and Food WA, Department of Primary Industries & Resources SA, SA Research & Development Institute, Murrumbidgee Catchment Management Authority, Northern Agricultural Catchments Council, Farmlink Research Limited, Evergreen Farming, Liebe Group, Mingenew-Irwin Group, Victoria Plains Landcare Management Committee, Eyre Peninsula Agricultural Research Foundation, Queensland Murray-Darling Committee Inc.

NATIONAL PROGRAM FOR SUSTAINABLE IRRIGATION

The National Program for Sustainable Irrigation focuses research on the development and adoption of sustainable irrigation practices in Australian agriculture. The program aims to address critical emerging environmental management issues, while generating long-term economic and social benefits that ensure irrigation has a viable future.

Over the life of the National Program for Sustainable Irrigation there is a planned total investment of $13.5 million, comprising $7.9 million cash and third party contributions of $5.6 million. Since 2002, the program has invested $11.8 million in irrigation research.

It currently has fourteen public and private sector partners, including irrigators, water authorities, research agencies, State and Australian Government Departments as well as commodity groups. Land & Water Australia is the managing partner.

The program aims to: improve the irrigation technology that is available; provide information to help develop irrigation policy; improve the assessment of ecological risks in the design of irrigation systems; and share knowledge across program partners.

The program is valued by its investors for its ability to:

- focus R&D by aligning the R&D needs of end users and investors
- increase investment in irrigation R&D, particularly on strategic issues
- provide continuity and a national approach for R&D to enhance effectiveness and efficiency, making it easier to get R&D projects up
- increase the uptake/adoption of R&D results.

National Program for Sustainable Irrigation:Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
A draft Irrigation Sustainability Framework for Northern Australia developed comprising three main tools: visioning, planning and assessment, and monitoring and reporting.	Four main reports have been produced: • A summary of current knowledge of sustainability indicators, and particularly sustainability indicator frameworks, which is being used to shape the Northern Australian Irrigation Futures Sustainability Framework. • All legislation and current policies and initiatives relating to water for Western Australia, Northern Territory, Queensland and the Commonwealth are documented with reference to the irrigation industry. • A report on the development of the sustainability framework. • A bulletin comparing three complementary approaches that have been developed by investigations under the National Program for Sustainable Irrigation: Narrative methods, Ecological Risk Assessment and Sustainability Indicators.
Reports on: • Delivering Irrigation Sustainability through Risk Management • Use of Reclaimed Effluent Water in Australian Horticulture	• The final report from the Ecological Risk Assessment work has been received. • Growers seeking to use recycled water on their properties now have guidelines and a new field tool to help them make the most of this water resource. The guidelines and a 'salinity unit converter' were launched at the Irrigation Association of Australia conference in Brisbane in May. The guidelines use checklists that assist growers in effective management of recycled water, while the salinity unit converter ('salt wheel') has been designed for use in the field. The salinity wheel is designed to help growers understand salinity measurements and the relative salt tolerances for fruit and vegetable crops. The 'wheels' have proven extremely popular and continue to be in high demand.

Planned outputs	Achieved outputs
• Coordinating Deep Drainage Research in the Northern Darling Basin	• To stay open to innovation sometimes requires revisiting what is already known, and bringing people together to share knowledge. A workshop was held at Narrabri to coordinate research effort and strategic direction in the northern Darling Basin so that research to date could be collected and shared by researchers, policy makers, investors and NRM planners. A comprehensive document covering research being undertaken into deep drainage and associated issues, *Coordinating Deep Drainage Research in the Northern Darling Basin* (CRD1), was produced from the workshop. The project also provided input to assist researchers of various disciplines in using the Weighing Lysimeter at Narrabri as a system for testing other ways to measure deep drainage.
An irrigation knowledge exchange and training system operating across Northern NSW and Queensland.	A serious illness delayed the early stages of this work and outputs will now be available in 2006-07.
A Grains - Cotton waterpak produced and promoted for use in NSW and Queensland.	A serious illness delayed the early stages of this work and outputs will now be available in 2006-07.
Knowledge system for end-users to access ten years of irrigation research online.	The program's 'Knowledge Base' reviews and makes available hundreds of papers and reports relevant to the sustainability of irrigation. Searchable by interest area (eg 'horticulture – efficiency & profit') or by key word or author, the Knowledge Base provides terrific insight into research undertaken over the past ten years. The Knowledge Base is updated regularly - see **http://www.npsi.gov.au/knowledge.asp.** A CD of the knowledge base is produced annually.

Collaborations

Department of Agriculture, Fisheries and Forestry (Natural Heritage Trust); Department of Natural Resources and Water, Queensland; Department of Primary Industries and Resources, South Australia; Department of Environment and Conservation, Western Australia; Department of Agriculture and Food, Western Australia; Cotton Research and Development Corporation; Horticulture Australia Ltd; Goulburn-Murray Water, Victoria; Harvey Water, Western Australia; Lower Murray Urban and Rural Water Authority, Victoria; SunWater, Queensland; GWM (Grampians Wimmera Mallee) Water, Victoria; Ord Irrigation Cooperative, Western Australia

In addition, many of the research projects commissioned by the program have attracted project-level funding. For example, the Goulburn-Broken Irrigation Futures Project, a substantial four year 'scenario planning' research project underway in Victoria, has project-level funding partners that include the Goulburn Broken Catchment Management Authority, Goulburn-Murray Water, Victorian Department of Primary Industries, and the Victorian Department of Sustainability and Environment.

MANAGING CLIMATE VARIABILITY

Managing Climate Variability brings together the combined expertise of farmers, agribusiness and researchers to improve seasonal forecasts and apply these forecasts to more profitably farm, graze and manage Australian landscapes.

The program aims to deliver improved climate risk management to farmers and natural resource managers through R&D and outputs which lead to:

- increased adoption in regions and industries
- increased adoption in water and NRM
- improved accuracy of forecasts at longer lead times.

Managing Climate Variability: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Enhanced forecasting of farm financial performance integrating seasonal climate forecasting with crop and pasture models.	The forecasting tools Yield Prophet and Whopper Cropper are increasingly used to assess farm financial performance. Work continues to make these tools locally relevant across Australia's regions.
Targeted climate forecasts for the sugar industry.	Work has been completed and is providing insights into various profitability and sustainability opportunities for the sugar industry.
Innovative weather and climate risk management using derivative trading.	Use of the Southern Oscillation Index as an indicator upon which to base trading has been well demonstrated for much of south-eastern Australia. Financial markets, farmers and insurers are becoming increasingly interested in the opportunities that derivative trading might provide.
Incorporating climate change in catchment management strategies.	This work is in progress, with the knowledge on climate change and seasonal forecasting yet to be fully applied. A reference group from Australia's fifty-six NRM regions will grapple with this issue in 2006-07.
Agro-ecological implications of changes in the terrestrial water balance.	The work is completed and has demonstrated the importance of considering all the components of climate, including declining wind speeds, which lead to reduced evaporation.
Increased adoption of Aussie Grass in the NT through improving understanding of its value to the pastoral industry and government.	Aussie Grass is now a key tool for the Northern Territory Pastoral Board; it assesses and aids management of overall leasehold land condition.
Masters of climate revisited - innovative farmers coming through drought, case study series.	The case studies followed farmers and their businesses through the past five years of increasing knowledge about climate change, the complexities of risk management, profitability and sustainability.

Collaborations

Grains Research and Development Corporation; Australian Government Department of Agriculture, Fisheries and Forestry (Natural Heritage Trust); Sugar Research and Development Corporation; Rural Industries Research and Development Corporation; Dairy Australia; Meat and Livestock Australia; Australian Wool Innovation Limited; National Farmers' Federation and Land & Water Australia.

HEALTHY SOILS FOR SUSTAINABLE FARMS

Healthy Soils for Sustainable Farms is a new program that aims to 'establish, promote and implement the links between soil health, rainfall management, agricultural production and water catchment management'.

Through research, pilot and demonstration projects, it will provide:

- agricultural management options based on soil health processes
- tools to help producers record and assess production and the management and health of their soils
- opportunities for industry-based best practice accreditation.

Ten major projects have been contracted and are now commencing.

Healthy Soils: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Projects contracted.	Ten projects have been contracted and are underway.

Collaborations

Australian Government Department of Agriculture, Fisheries and Forestry
Grains Research and Development Corporation

knowledge for managing Australian landscapes

Healthy Soils in the ute glovebox

Australian vegetable growers now hold the key to soil health in their utes.

AUSVEG's *Soil Interpretation Ute Guide*, developed in partnership with Healthy Soils for Sustainable Farms, can travel in the tractor, truck or ute and help vegetable growers to make soil-management decisions based on scientific evaluation rather than trial and error.

The free guide is a pictorial reference for Australian vegetable growers, allowing them to interpret, manage and monitor the health of their soil. It was developed to overcome gaps in information and lack of resources for soil interpretation and management. It is also available as a CD to be listened to in the ute; a real aid to growers for whom English is not their first language.

The guide is also an opener for a nationwide educational campaign which links into the vegetable industry's Enviroveg program. According to vegetable grower Jeff McSpedden: "There hasn't been a handy reference guide or course currently available that provides vegetable growers with an understanding of soil type, health and management like this guide does."

The guide is one of the first outputs from the new Healthy Soils program, which Land & Water Australia is managing for the Australian Government Department of Agriculture, Fisheries and Forestry (funded by the Natural Heritage Trust).

'Females in the Field' was a field day for women in the Mallee region of northern Victoria. It was funded through the Invergowrie Foundation and run by Birchip Cropping Group (a participant in the Healthy Soils for Sustainable Farms program) at the end of 2005. More than 100 women attended and studied soil profiles. It sparked ongoing interest and now a women's agronomy group involving about 45 attendees meets bimonthly.

R&D ARENA: LANDSCAPES

During 2005-06, in line with the Strategic R&D Plan, the Landscapes Arena was formed to encompass the previous rivers and vegetation arenas. Investments in this Arena focus on understanding ecological functions and processes at the landscape scale to improve the management of water and vegetation in production landscapes. In partnership with catchment and regional bodies, advisors, industries and governments, Land & Water Australia's R&D priorities in this Arena include:

- sustainable management of water resources in tropical Australia
- demonstrated and improved benefits from environmental water allocation
- native vegetation and biodiversity management in production landscapes
- strategic research to underpin more effective management of weeds
- knowledge assets and capacity to meet the needs of regional management
- linking regional and farm-scale outcomes for land and water management.

During 2005-06, projects under the National Rivers Consortium, National Rivers Contaminants and Native Vegetation Programs were largely concluded with the focus shifting to planning to manage the program legacies and synthesise and communicate the knowledge generated through the research.

Three new programs commenced in 2005-06: Tropical Rivers; Native Vegetation & Biodiversity; and the Defeating the Weed Menace R&D Plan, a component of the Australian Government Defeating the Weed Menace Program.

The Environmental Water Allocation Program continued to invest in research to evaluate the benefit of environmental water flows and commenced new projects to investigate aspects of groundwater dependent ecosystem management.

On TRACK to provide the science for sustainable management of tropical rivers and coasts

Fundamental to the vision for sustainable development in northern Australia is the wise management of its rivers, floodplains and coasts.

Against this background, Executive Director of Land & Water Australia, Andrew Campbell, welcomed the success of the Tropical Rivers and Coastal Knowledge (TRACK) research hub consortium in attracting $8 million in funding from the Commonwealth Environmental Research Facilities program and another $5 million from the Australian Government's Raising National Water Standards program.

TRACK is a collaboration that involves the NT, Queensland and WA governments and will bring together over fifty leading tropical river and coastal researchers and managers from ten agencies across Australia to better understand rivers, catchments, estuaries and coastlines from Cape York to Broome.

Mr Campbell said "TRACK is about doing the science that the Australian community needs to make better decisions as more pressure comes on the resources of the north."

"It is our chance to make sure that in tropical Australia we develop a sound knowledge base and a much stronger scientific capacity with the specialist expertise needed for the unique conditions of the region. That knowledge base can then underpin both development and conservation opportunities, according to the priorities of governments, industries and communities," he said.

An Executive Committee met in August 2006 to guide initial planning of the research hub and develop its plan for the next four years. The committee comprises the seven people who had primary responsibility for the development of the TRACK proposal, namely Stuart Bunn from Griffith University, Michael Douglas and Stephen Garnett from Charles Darwin University, Peter Davies from the University of WA, Joe Morrison from the North Australia Indigenous Land and Sea Management Alliance, Jon Olley from CSIRO and Jim Donaldson from Land & Water Australia. Brendan Edgar, coordinator of the Land & Water Australia's Tropical Rivers Program, will support the committee as Executive Officer.

background
The lower reaches of the Daly River in the Northern Territory.

knowledge for managing Australian landscapes

Watershed Torbay project wins River*prize*

The Torbay Catchment Group is the winner of the prestigious 2006 Thiess National River*prize*, announced at the International Riversymposium in Brisbane on 5 September 2006. The River*prize* of $75,000 is presented to outstanding Australian river management projects.

The 'Watershed Torbay' project was initiated in June 2001 as an integrated whole of catchment waterways restoration project located on the South Coast of Western Australia near Albany.

Chairman of Land & Water Australia, Bobbie Brazil, said the project was set up as part of Land & Water Australia's efforts to ensure research outcomes are put into practice rather than remaining academic. The project emphasises the importance of community involvement in NRM.

"Awareness about issues such as land and water degradation does not necessarily translate into action, even if the benefits are clear," Mrs Brazil said.

"One of the keys to the success of the project was a series of workshops for landholders and other stakeholders in the catchment.

"This provided opportunities to share monitoring information on the need for change, come up with a shared vision, and develop a catchment management plan and list of actions.

"The Torbay project is a good example of how well partnerships can work between scientists, the community and government agencies and I'm pleased that has been recognised," Mrs Brazil said.

Land & Water Australia invested in the project through the National Rivers Consortium with state funding contributions from the WA Department of Water, WA Department of Agriculture and Food and by the WA Water Corporation.

Naomi Arrowsmith, Regional Manager, South Coast Region Department of Water with Andrew Marshall, Torbay Catchment Group receiving the Thiess National River*prize*.

Land & Water Australia is now looking at how to translate the outcomes of the projects like the Torbay into a model that brings together research, local knowledge, community values and the interests of all stakeholders, to be used in other catchments across the country.

NATIONAL RIVERS CONSORTIUM

The National Rivers Consortium program formally concluded in June 2006. The consortium was a strategic collaboration between policy makers, river managers and scientists that aimed to:

- protect rivers with retained natural values
- restore degraded rivers
- train river managers
- turn research into practical river management solutions
- undertake regional and catchment demonstration projects.

In 2005-06 the NRC invested $0.8 million of which $0.165 million comprised Land & Water Australia funds.

National Rivers Consortium: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Co-operative demonstration projects to develop and test practical methods in river restoration and management.	Final reports were received for National Rivers Consortium projects, with the program concluding in June 2006. The program funded forty projects over five years across a diverse range of areas including: developing practical tools for river restoration; policy and institutional issues; education and training; and catchment demonstration projects. Key project outputs for 2005-06 included: • A new framework developed and trialled for assessing the environmental water requirements of Groundwater Dependent Ecosystems. • New methods and indicators developed and trialled for assessing the health of ephemeral rivers and streams in drier catchments. • Documentation and transfer of learnings from the Watershed Torbay Catchment Restoration Plan (Southwest WA) to other catchment groups.

Collaborations

Land & Water Australia
CSIRO Land and Water
Murray-Darling Basin Commission
WA Department of Environment and Conservation
NSW Department of Natural Resources
SA Catchment Water Management Boards
Australian Government Department of the Environment and Heritage

NATIONAL RIVER CONTAMINANTS PROGRAM

Fifteen projects over four years were funded by the National River Contaminants Program. Final reports have been received for these projects. The program is providing information to reduce the ecological impact of land-sourced river contaminants on river health, with a focus on the role of sediment, nutrients and salt.

The program has provided technical information to directly support river management at the national and catchment scales, focussing particularly on the impacts of contaminants on ecosystem processes.

In 2005-06, the program invested $0.452 million of which $0.380 million was by Land & Water Australia. Over the life of the program there was a total cash investment of $3 million, shared equally between Land & Water Australia and the Murray-Darling Basin Commission.

National River Contaminants: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
New knowledge on the sources, pathways and transformations of specific river contaminants.	New knowledge was generated about the role of riparian vegetation in reducing nitrogen inputs to streams in a range of farming situations and catchments. This has led to a new project in south-west WA examining the catchment-scale impacts of nitrogen loss on dairy farms.
Solutions and tools for integrated management approaches to reduce ecological impacts from contaminants.	The program has a whole-of-ecosystem approach which focuses on the combined impacts of major riverine contaminants, and seeks to develop integrated management approaches for catchment managers and planners developing end of valley targets. Key project outputs in 2005-06 included: • Risk assessment methodology developed to assist catchment management authorities to manage a range of contaminants in catchments. • New knowledge and data about the interactions between contaminants, ecological processes and flow regime produced, based on a Murrumbidgee River case study. • Tools to inform better fertiliser decisions, including a new 'Farm Nutrient Loss Index' to assist farmers reduce nutrient losses from dairy, beef and sheep farms and impacts on rivers.

Collaborations

Land & Water Australia
Murray-Darling Basin Commission

NATIONAL RIPARIAN LANDS PROGRAM

The National Riparian Lands Program aims to assist communities to implement, monitor and evaluate better practices for managing riparian lands.

Building on thirteen years of world class research into the functionality of riparian areas, improved management methods and how to engage local communities in protecting, maintaining and rehabilitating riparian lands, the program's current focus is on communicating the outcomes and encouraging adoption of this research.

In 2005-06, Land & Water Australia invested $0.451 million in this program.

National Riparian Lands: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
A range of accessible tools and techniques that allow ready development and testing of management principles.	The production of *Stock and Waterways: A Manager's Guide,* practical advice to help farmers manage riparian land productively and sustainably.
Practical and easy-to-use protocols for monitoring and evaluation of changes in riparian land practice.	• Revision of the technical guideline for the *Rapid Appraisal of Riparian Condition* and adaptation of this guideline to cover *Tropical Rapid Appraisal of Riparian Condition* and for the wool industry in mid-north South Australia. • Three riparian fact sheets adapted for use by the fertiliser industry.
Guidelines, fact sheets, web-based information, oral history and 'researchers on a riverbank' workshops in regions across Australia.	• Production of a technical guideline on *Controlling Willows along Australian rivers*. • Production and dissemination of two editions of the RipRap magazine to over 3,800 subscribers. • Capacity Assessment tool for Riparian Restoration available on the **www.rivers.gov.au** • Conversion of training course for River Managers for use via the rivers website. • Nine regional workshops attracting over 250 participants from government NRM departments, catchment management authorities were delivered across every state and territory in Australia between November 2005 and March 2006. Researchers delivered training sessions on key findings and tools developed by the program.

ENVIRONMENTAL WATER ALLOCATION PROGRAM

The Environmental Water Allocation program commenced in July 2004 and has now funded eleven research projects under the following research themes:

- demonstrating, monitoring and evaluating the benefits of environmental allocations to be made for the River Murray
- research into the needs and management of environmental water allocation in poorly understood aquatic ecosystems across Australia
- research into the economic, social and institutional aspects of water reform aimed at more sustainable use of water in rural Australia in the future.

In 2005-06, the Environmental Water Allocation program invested $0.840 million of which $0.756 million comprised Land & Water Australia funds.

Environmental Water Allocation: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Research projects underway with the potential to deliver the objectives and outputs of the program.	Key developments in 2005-06 included: • All nine projects selected from the initial call for proposals in October 2004 have now commenced. • Two projects into groundwater-dependent ecosystems commenced in January 2006. • The 'Natural Resource BuyBacks and their Use to Secure Environmental Flows' project has been completed and has contributed significantly to Murray-Darling Basin Commission deliberations on how to meet flow targets in the River Murray. • A program brochure was produced for distribution to water resource managers and R&D organisations. • Production of an edition of RipRap on the theme of Environmental Water Allocation and highlighting research from the program.
Program funded projects and linkages as a basis for further investment by other agencies or new partners.	Linkages with other agencies included: • Completion of a joint consultancy and workshop with the Fisheries R&D Corporation identifying R&D priorities for freshwater flows into estuaries. • Co-investment by Murray-Darling Basin Commission in two projects in the Basin. • Discussions held to scope linkages between the program and the National Water Commission's Raising National Water Standards program.

Collaboration

Land & Water Australia
Murray-Darling Basin Commission
Australian Government Department of Agriculture, Fisheries and Forestry
Australian Government Department of the Environment and Heritage
Fisheries Research and Development Corporation

TROPICAL RIVERS PROGRAM

The Tropical Rivers Program aims to undertake research and knowledge exchange to support the sustainable use, protection and management of Australia's tropical rivers. A joint call for projects was made in conjunction with the Native Vegetation and Biodiversity and Social and Institutional Research programs in September 2005.

Projects are funded under four R&D themes:

- assess river assets and threats
- support regional planning frameworks
- assess social, cultural and economic values and opportunities
- understand river ecosystems.

Three projects are funded jointly with the Social and Institutional Research Program.

In 2005-06, the Tropical Rivers Program invested $0.636 million.

Tropical Rivers: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Research projects underway with the potential to deliver the objectives and outputs of the program.	New research projects commenced in 2005-06: • Development and trial of a methodology for total water resource assessment in tropical Australia. • Development of a remote sensing approach to map and classify riparian gully erosion in tropical Australia.

Planned outputs	Achieved outputs
	• Analysis of the impacts of freshwater flows on estuarine finfish fisheries of the Gulf of Carpentaria. • Development of methods to value the ecosystem services of tropical rivers and options for management. • Development of institutional arrangements for Indigenous participation in the National Water Initiative. Three projects were completed: • Freshwater flow requirements of estuarine-dependent fisheries: data review and research needs. • Addressing Indigenous cultural requirements in water allocation planning. • Social and economic review of northern Australia.
Description of Tropical Rivers Program funded projects and linkages as a basis for further investment by other agencies or new partners.	Funding of $8 million under the Commonwealth Environment Research Facilities Program for the Tropical Rivers and Coastal Knowledge research hub was announced by the Australian Minister for the Environment and Heritage, Senator Ian Campbell, in June 2006. Additional funding of $5 million from the Raising National Water Standards Program was announced by the Prime Minister on 21 September 2006. The research hub, which will be managed by Land & Water Australia, brings together Australia's leading tropical river and coastal scientists and managers to: • identify important natural assets and ecosystem services and how they are maintained or delivered; • assess the social, economic and environmental impact and viability of proposed developments in the region; and • identify opportunities to develop genuinely sustainable enterprises.

Collaborations

Land & Water Australia
Australian Government Department of Agriculture, Fisheries and Forestry
Australian Government Department of the Environment and Heritage
The Myer Foundation

Practical experiences in managing vegetation on farms exposed to practitioners

The opportunities to discuss the complexities and the challenges of integrating native vegetation management into production systems are usually limited, especially in national forums.

For this reason, Land & Water Australia, in partnership with Greening Australia, hosted 'Veg Futures: the conference in the field'. Held in Albury - Wodonga in March 2006, the conference attracted over 500 delegates from around the nation.

Conference organiser Dave Carr from Greening Australia's national office said "the conference was specifically aimed at regional audiences and landholders. A conscious effort was made to ensure sessions were presented by landholders and regional staff who were able to present their experiences in managing native vegetation – both positive and negative.

"Focusing on the negative as well as the positive aspects can be challenging but it provides important learning opportunities and helps raise the awareness of the difficulties in integrating native vegetation management into farming practices," he said. "These messages can then assist in developing appropriate tools, research and incentive schemes to help farmers and other land managers to manage land more sustainably."

The practical focus of the conference was reflected in over 50% of the conference delegates coming from the landholder, industry and community sectors. The conference also attracted several local government staff and councillors who play an instrumental role in managing rural landscapes.

Feedback received from conference attendees has been overwhelmingly positive, with over 90% rating it as either good or great. They indicated it was valuable in creating and reinforcing partnerships and in providing opportunities to learn from each other. Land & Water Australia and Greening Australia are now considering how to follow up on the Veg Futures conference and build on the momentum it has generated.

NATIVE VEGETATION PROGRAM

Final research reports for the Native Vegetation Program were delivered in 2005-06. Management of program legacy and communication activities will be incorporated into the new Native Vegetation and Biodiversity Program. The program aimed to assist government agencies, community groups and landholders to better manage and conserve native vegetation and its associated biodiversity in rural landscapes. It supported three key areas of R&D:

- developing methods to assess native vegetation status, viability and thresholds for significant change
- testing different landscape design methods and principles
- developing methods for biodiversity conservation and incorporating native vegetation management into agricultural production systems.

In 2005-06 several activities were undertaken to communicate research results in an accessible form relevant to farmers, policy advisers, regional NRM groups and the research community. In partnership with Greening Australia's Exchange: the national vegetation knowledge service, the program managed a small incentives fund to assist regional practitioners increase their access to current knowledge and research on native vegetation.

In 2005-06 the program invested $0.331 million comprising $0.223 million in Land & Water Australia funds.

Riverbank stabilisation techniques on a Murray River anabranch include revegetation, snag replacement, energy dissipation and signage to inform boat users.

Native Vegetation Program: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Synthesised outputs from the Native Vegetation R&D Program (1999 – 2005)	• Land & Water Australia co-convened 'Veg Futures 2006: the conference in the field' with Greening Australia in Albury in March 2006. The conference attracted over 500 participants and extended the program's research on better managing vegetation in production landscapes through the various conference streams and workshops. • Workshop hosted by Professors David Lindenmayer and Richard Hobbs with thirty-four leading national and international scientists to synthesise current Australian understanding of vegetation management principles to be produced into a book and a complementary set of plain English guidelines on how to put the principles into practice. • Production of the fourth edition of the 'Thinking Bush' publication, which summarises research results from the program, commenced. • An international literature review on the focal species approach was commissioned. • Research results continued to be made available through Greening Australia's 'Exchange' online publications: Bushtracks; and the Native Vegetation and Property Management and Regional Management Guides.

Collaborations

Land & Water Australia
CSIRO Sustainable Ecosystems
CSIRO Plant Industry
Murray–Darling Basin Commission
Greening Australia

NATIVE VEGETATION AND BIODIVERSITY PROGRAM

Commencing in 2005-06, this program aims to build resilient landscapes by investing in R&D to improve the use and management of vegetation and biodiversity to deliver ecosystems goods and services, especially in northern Australia. The research will focus on:

- understanding and valuing landscape processes, including the role and function of biodiversity in the delivery of ecosystem services
- understanding risks and threatening processes in order to develop effective responses
- understanding ecosystem processes, condition and dynamics
- informing policy and management developing Australia's capacity to effectively manage vegetation and biodiversity
- enhancing national R&D capacity in native vegetation, ecosystem services and biodiversity
- effective communication and adoption.

In 2005-06, the program invested $1.061 million comprising $0.717 million in Land & Water Australia funds.

Native Vegetation and Biodiversity: Performance against planned outputs 2005-06

Planned outputs	Achieved outputs
Research projects underway with the potential to deliver the objectives and outputs of the program.	Thirteen new research projects were contracted in 2005-06 to meet the program objectives, including projects covering the role of fire, water point management, value of regrowth for biodiversity, landscapes design, genetics and farmer extension activities.
Native Vegetation and Biodiversity Program funding projects and linkages as a basis for further investment by other agencies or new partners.	CSIRO is a partner in the program and all projects have leveraged cash and in-kind contributions from proponents and third parties. Linkages are being developed with other organisations to improve coordination of national knowledge exchange activities, including CSIRO Sustainable Ecosystems, Greening Australia and the Joint Venture Agroforestry Program. The main focus of this activity will be regional NRM bodies. Planning is underway with the Joint Venture Agroforestry Program to develop a 'markets for ecosystems services' knowledge exchange project.

Collaborations

Land & Water Australia
CSIRO Sustainable Ecosystems

DEFEATING THE WEED MENACE R&D PLAN

In May 2006, Land & Water Australia entered into an agreement with the Australian Government Department of Agriculture, Fisheries and Forestry to manage a three year R&D component of the Defeating the Weed Menace program.

The aim of the Defeating the Weed Menace R&D Plan is to generate new knowledge to prevent the development of new weeds problems, to reduce the impact of existing weeds of national priority, and to build capacity for their management into the future. Research will focus on three main themes:

- reducing the rate of emergence of new weed problems
- reducing the impact of existing weed problems of national priority
- supporting national frameworks and capacity for sustainable weed management.

In 2005-06 the R&D component invested $0.094 million of partner funds.

Defeating the Weed Menace R&D Plan: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Commissioning of new research projects to meet program's goal.	Draft Defeating the Weed Menace R&D Plan developed. Call for research in four priority areas occurred in June 2006: • Assessing the risks of different sources and pathways of weed ingress into and within Australia under changing trade patterns and environmental conditions; • Analysis of the impacts of productive land use change and peri-urban development on weed incursion in Australia; • Collaboration with industries to develop approaches to help weed sectors reduce their risk; • Identification of new biological control agents for agreed national priority weeds in a landscape context.

Collaborations

Australian Government Department of Agriculture, Fisheries and Forestry
Australian Government Department of the Environment and Heritage

JOINT VENTURE AGROFORESTRY PROGRAM

The Joint Venture Agroforestry Program seeks to diversify and increase farm income in more sustainable ways through the development of new land use systems based on woody perennials. The program has produced an impressive list of agroforestry guidelines which are in high demand.

In 2005-06, the program invested a total of $1.8 million, of which $0.3 million was provided by Land & Water Australia.

Joint Venture Agroforestry Program: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Evaluation of hydrological impacts and future research directions for oil mallee planting.	Research on phase farming (alternate high density tree plantings in rotation with grain crops or grazing) showed that tree belts can lower saline soil water down to 4-6.5m within three years, depending on tree species, planting density and landscape position. Impediments to adoption were identified. Research will continue on these issues, with a direct seeding project currently in development.
A review of issues in developing markets for ecosystem services and analysis of several case studies.	A comprehensive three-year project used a series of case studies to assess regional impediments to establishing market based instruments (MBIs) for ecosystem services. Case studies included incentives for tree planting to reduce salt damage to roads, local government requirements for vegetation retention with peri-urban subdivision, saline land management in the Wimmera and vegetation corridors in central Queensland. Guidelines were produced for regions to provide general principles and issues to consider in designing a MBI. Using this research, Wimmera Catchment Management Authority and Desert Uplands are initiating markets for vegetation ecosystem services.

Planned outputs	Achieved outputs
Evaluation of wood quality and sawing characteristics of African mahogany and several native low rainfall tree species.	Sawing studies showed the species is suitable for high value featurewood. A range of other low rainfall species is being tested for durability and termite resistance. The research will assist growers and processors to identify low rainfall timber species and tree ages for naturally durable heartwood for the market place.
Reports on the role of farm trees and plantations in enhancing biodiversity.	Earlier research in three to twenty-five year old mixed-species plantings in the Albury-Wodonga region showed their importance as biodiversity stepping stones in the agricultural landscape. Current research is evaluating the use by vertebrates and invertebrates of young plantations, and plantations with interspersed blocks or lines of shrubs. Plantations are used by many, but not all, mammals and forest birds. The value of plantations for all fauna could be improved by judicious location (e.g. near remnant forest or water) and by planting more shrubs and rough-barked eucalypts (for insect-foraging birds and beneficial parasitic insects).
Model for sustainable production of salt-tolerant eucalypt hybrids on saline discharge sites.	Detailed monitoring of four trial sites spanning a range of salinities, over several years, was used to inform modelling of long term outcomes from plantations on saline sites. The study found that eucalypts specifically bred for salt-tolerance and fast growth can be sustainable, and in certain situations, management intervention can promote salt re-distribution down the soil profile.

Collaborations

Rural Industries Research and Development Corporation (managing agent)
Land & Water Australia
Forest and Wood Products Research and Development Corporation

R&D ARENA: PEOPLE

The People Arena incorporates the Social and Institutional Research Program (SIRP) and a range of cross-organisation program and project integration activities.

PROGRAM PERFORMANCE: SOCIAL & INSTITUTIONAL RESEARCH PROGRAM

The new Social and Institutional Research Program became operational in 2005-06. The program strategy has three themes:

- institutions and governance arrangements
- policy instrument choice and mix
- landscapes, lifestyles and livelihoods.

Nine new R&D projects were contracted during 2005-06, targeting four priority issues:

- regional NRM groups' governance
- National Water Initiative institutional and governance arrangements
- market based instruments
- regulatory approaches to native vegetation management.

The program called for projects jointly with the Native Vegetation & Biodiversity and Tropical Rivers programs with a view to enhanced integration of social and institutional with biophysical research across the portfolio.

Three of the larger new projects were jointly funded as integrated projects and the learning experience is informing development of the approach to the next round of funding.

The Arena commenced a continuous monitoring and evaluation strategy and also undertook a wide range of other activities to promote improved integration within and across Land & Water Australia projects and programs. These activities included:

- nine 'integration' seminars
- scoping workshops on possible future research needs on peri-urban issues
- support for the implementation of the National Water Initiative
- future research on indigenous NRM.

Investment in the Social & Institutional Research Program during 2005-06 was $2.138 million, made up of $1.915 million from Land & Water Australia and $0.223 million from collaborating partners.

Social and Institutional Research Program: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Lessons in and tools for effective stakeholder engagement and practice change in regional NRM organisations.	An initial scoping project was completed with four participating regions, which drew together a number of important lessons in regard to processes for effective engagement of stakeholders; the drivers and impediments to achieving landholder practice change; and strengths and weaknesses in institutional roles and responsibilities. The report is due for release in October 2006. A three year follow-up project involving ten regional bodies across Australia has commenced.
Identification of the social and economic value of tropical rivers and tools for integration in NRM.	A number of longer term projects are nearing completion. These will provide insights into market and non-market values and how such information assists with the management of tropical rivers for conservation, indigenous and economic use.
Alternative planning and land titling approaches to sub division of large agricultural properties in coastal areas of NSW.	The focus of this output was broadened to peri-urban issues impacting on agriculture and natural resources. A major reference document reviewing the literature in Australia, the UK and North America has been completed and is about to be published. Work on trends and scenario analysis of two case study peri-urban regions (south-east Queensland and the corridor north of Melbourne) and the implications for NRM and agriculture is well underway.
Case studies and methodologies for integration of indigenous values and aspirations in NRM research, especially in northern Australia.	A number of projects are nearing completion (eg on integrating indigenous values and cattle enterprises into rangelands management) while two new projects are focused on linkages to implementation of the National Water Initiative.

Collaborations

Australian Government Department of the Environment and Heritage
Australian Government Department of Agriculture, Fisheries and Forestry
Australian Farm Institute

knowledge for managing Australian landscapes

Water Perspectives

The National Water Initiative sets the broad parameters for water policy and management in Australia over the coming decade and establishes a range of specific policy and management tasks for public, private and community interests in the water sector. While the National Water Initiative is the outcome of a detailed and negotiated process, it is widely acknowledged that there remain significant uncertainties, knowledge needs and challenges in its implementation.

The Land & Water Australia booklet *Water perspectives: scoping social and institutional research questions in support of the implementation of the National Water Initiative* published in 2006 summarises discussions at a one-day workshop of invited social science experts convened by Land & Water Australia's Social and Institutional Research Program.

Ten key areas of opportunity were identified for social and institutional research and synthesis:

- **Integrated assessment of impacts** of policy and water allocation changes across social, economic and environmental dimensions.
- **Water plans and accreditation** in regard to content requirements and processes.
- **Linkages between rural and urban water systems**, including in peri-urban areas.
- **Indigenous perspectives** in water management, reforms and implementation.
- **New frameworks for law and regulation**, and current settings as enablers or constraints on reform implementation.
- **Values** attached to water and their shaping of understanding and communication of reform objectives and implementation.
- **Auditing and review** of policy and water plans for effectiveness, and appropriate performance measures for impact detection and management.
- **Water markets, pricing, trading** and transaction costs, and their establishment and functioning.
- **Environmental water allocations** and their governance.
- **Institutional roles, responsibilities and capacities** in reform implementation.

This research agenda is being taken forward as the framework for a national conference *Delivering the NWI: Understanding the social and industry dimensions* to be held in December 2006 at Parliament House, Canberra.

R&D ARENA: INNOVATION

Innovation Call

During 2005-06 Land & Water Australia undertook its second Call for high innovations projects from the Australian R&D community (known as the 'Innovation Call'). This Call explicitly seeks projects 'actively pursuing genuine new ideas, concepts, technologies, processes and/or creative ways of utilising existing knowledge and generating new knowledge and/or innovative technologies to improve the sustainability of Australia's rural landscapes and industries' including:

- drawing out the most innovative ideas from the R&D community
- responding to new and emerging issues and opportunities
- 'blue sky' and fundamental research
- lateral and out-of-the-box concepts
- testing proof-of-concept ideas and feasibility studies.

In 2005-06 the Innovation Call selected nine high innovation projects for funding and invested $1.199 million provided by Land & Water Australia.

Innovation Call: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
New technology for assessing soil health using molecular methods.	Technology fully tested and successful across a wide range of ecosystems (see highlights)
A review of biotechnologies for landscape-scale ecological and industrial applications.	High quality review completed and dissemination strategy in progress (see highlights)

The Minister for Agriculture, Fisheries and Forestry, the Hon. Peter McGauran, MP (extreme left), and Bobbie Brazil (centre) Chairman of the Board, Land & Water Australia, with 2006 Senior Research Fellows (from left) Dr Mark Stafford-Smith, Dr David Freebairn and Mr Gary Stoneham.

SCHOLARSHIPS & FELLOWSHIPS

Masters and PhD scholarships and Travelling (Australian researchers going overseas) and Visiting (international researchers visiting Australia) Fellowships are designed to build skills and research capacity in NRM. A significant new approach to R&D funding was commenced in 2004-05 via the establishment of the Senior Research Fellows program. The first seminal works from these fellowships will be published in 2006-07.

In 2005-06 Land & Water Australia invested $0.508 million in its Scholarships and Fellowships programs.

Scholarships & Fellowships: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Provision of post-graduate scholarships, travelling and visiting fellowships and community fellowships, and national R&D capacity enhanced through new young scientists in NRM.	Four post-graduate PhD scholarships funded. Two Travelling and Visiting Fellowships funded. Three Senior Research Fellowships funded.

Senior Research Fellows 2005

The Land & Water Australia Senior Research Fellowships are designed to build knowledge assets that advance the way Australians think about, interact with and manage our natural resources.

Each of the Fellows will produce a major thought-provoking and challenging work outlining their thinking, findings and recommendations.

In 2005-06 Fellowships were awarded to Dr Mark Stafford Smith, Mr Gary Stoneham and Dr David Freebairn.

Mark Stafford-Smith is a world leading rangeland scientist. He will use the Fellowship to look at how decisions about natural resources are made in rangelands and examine the alignment of environmental variability and local and traditional ecological understanding of the land.

Gary Stoneham has played a leading role in developing the use of market-based instruments for allocating resources in NRM. Through the Fellowship Gary will review the Australian experience with market based instruments and the role of new developments in experimental economics in the design of instruments.

David Freebairn has worked on NRM issues for 30 years and has a deep understanding of environmental and production issues faced by land managers. The Fellowship will enable David to review catchment and planning data and models developed over the past twenty to twenty-five years. David will assess the implications of a number of studies in Queensland, exploring hydrologic and water quality responses to land types and management.

Australasian Joint Agency Scanning Network

Land & Water Australia currently hosts the Australasian Joint Agency Scanning Network. The AJASN is an environmental scanning group consisting of members from a number of Australian and New Zealand government agencies. Participant organisations all contribute scans to a mutual database. Scans are discussed at quarterly meetings during which issues and trends are identified. These issues and trends are then written as articles by members and presented in a quarterly report, the Horizon Watch Report. Annual reports are also produced to summarise the year's findings. In addition to this the facilitator, Kate Delaney of Delaney & Associates Pty Ltd provides a seminar to member agency staff on environmental scanning and strategic thinking.

Member agencies all have mission statements concerned with the natural environment, whether it is environmental science, NRM, heritage conservation or environmental security. This gives the group a focus in a mutual area and provides a specific focus for scanning efforts.

Engaging with other agencies gives the network a synergistic effect by including people with a range of experience, and exposure to different information. This results in all member agencies having access to strategic information that would be otherwise precluded from their knowledge bases. A range of points of views reduces the risks of subjective interpretations of data. It is also an opportunity to forge strategic relationships across organisations and to increase information flow between government departments.

STRATEGY 2: COLLABORATION & STRATEGIC ANALYSIS

Strategy 2 is about establishing productive partnerships and other collaborations and promoting, integrating and reporting NRM R&D priorities, activities and capacity at a national level. A number of key collaborative partnerships have been established with industry and government bodies. These partnerships bolster the research effort by minimising duplication, maximising research investment on key priorities and providing a great platform for increasing adoption. Strategy 2 has also conducted a number of strategic analyses on NRM priorities, activities, and research capacity available. These analyses also benefit the research effort by providing key information on priority issues, current and planned research activities, and the capacity of the research community to engage in research in priority areas.

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RDC NRM Working Group

The NRM research managers from all rural RDCs meet periodically with representatives from the Department of Agriculture, Fisheries and Forestry, as the Research and Development Corporation's NRM Working Group.

The Working Group was initiated by the Council of Rural RDC Chairs and is chaired by Anwen Lovett, Industries Manager of Land & Water Australia. It aims to:

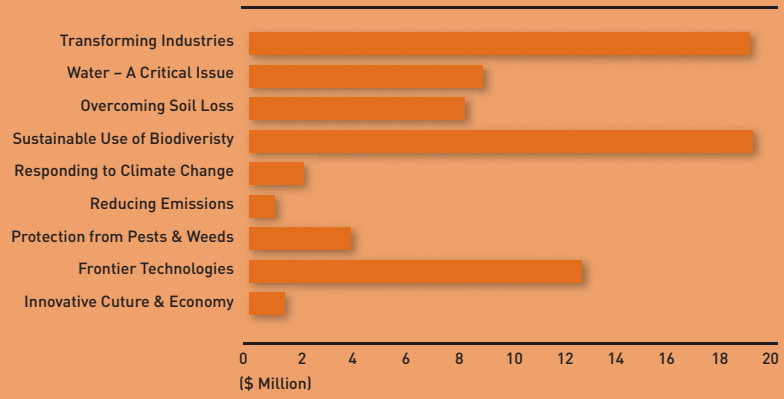
- optimise the effectiveness of investments through collaboration, sharing ideas and approaches, and collectively engaging with other partners
- imporve stakeholder appreciation of RDC NRM investments through communication about their activities and investments – and the benefits they deliver to a range of interests, including the environment.

The Working Group developed a common reporting framework for NRM investments that meets the needs of all RDCs and aligns with national research priorities and those set down for the rural RDCs. Its first report applying the framework was released to the RDC Chairs in September 2005, revealing that over 20% of RDC research investments explored NRM issues, totalling $78.5 million in 2004-05.

The main activities currently on the Working Group's agenda centre on preparing for a second RDC NRM Investment Report (to be released in late 2007) and organising their contribution to a major regional NRM conference in late 2006. The theme for their input will be better engagement between industry and the Government's regional delivery model for NRM programs.

Land & Water Australia provides administrative and coordination services to the Working Group.

Figure 6:
RDC Investment against National R&D Priorities



Strategy 2: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Grain & Graze collaborative research program supported by Meat and Livestock Australia, Grains Research and Development Corporation, Australian Wool Innovation Limited and Land & Water Australia	Grain & Graze is now in full flight with over sixty-five partners in 2005-06. This includes thirteen catchment management groups, each of which is contributing to on-ground activities to demonstrate sustainable mixed-farming practice, identify biodiversity benefits of mixed farming and enhance adoption of Grain & Graze recommended practices beyond the immediate producer group participants.
An NRM strategy for Australian Wool Innovation Limited which reflects the influence of Land & Water Australia and Australian Wool Innovation Limited strategic investment in Land, Water & Wool.	Development and completion of the Australian Wool Innovation Limited NRM strategy has been heavily influenced by both the Land, Water & Wool management team and Sustainable Wool Advisory Group. The strategy includes finalisation of Land, Water & Wool, additional research based on priorities identified under Land, Water & Wool and provision for extension of results of Land, Water & Wool research.
Report by RDCs NRM Working Group on NRM investments and collaboration, based on a common reporting framework.	The RDC NRM Working Group developed a standard reporting framework and applied it to produce the *Natural Resource Management Research & Development Report*, which records their collective investment against the national and rural R&D priorities (see page 73).
NRM Forum hosted by RDCs.	The RDC NRM Working Group is planning a significant contribution to a conference being organised by regional NRM bodies, to be held in November 2006.
Promoting collaboration in NRM.	Land & Water Australia sponsored a session at ABARE's Outlook conference presenting an overview of successful collaboration in NRM and the results that can be achieved. Two case studies were used to demonstrate that collaborative efforts do not have to stop at the agency level, and how new ways of engaging and interacting with stakeholders are being explored. The session was chaired by Land & Water Australia's Chairman Bobbie Brazil.

Planned outputs	Achieved outputs
Collaboration across Land & Water Australia programs.	Land & Water Australia ran an integrated call for projects under the Tropical Rivers and Native Vegetation & Biodiversity Programs in partnership with the Social & Institutional Research Program. As a result, nineteen new research projects were contracted in 2005-06 to improve the sustainable management of water resources and native vegetation across Australia, with a focus on northern Australia.
Succinct articulation of NRM R&D priorities for Australia from a national perspective.	Global analysis of NRM trends and drivers completed with implications for Australian NRM articulated. Australian NRM trends and drivers report is currently being synthesised.
A preliminary report on Australia's NRM R&D science capacity across the priority issues and other categories.	A preliminary report on Science Capacity in Australian NRM is due to be completed by September 2006.
A strategic analysis of NRM R&D activity in Australia to complement existing databases. The first report will be completed by June 2006.	An analysis of NRM R&D activities in Biotechnology has been completed. Currently an analysis is underway looking at other NRM fields. AANRO is being improved to accommodate the data on R&D activities.
Establishment of partnerships in the new Environmental Water Allocation and Tropical Rivers Programs, potentially involving national and state government agencies, catchment management organisations, industries and research institutions.	A consortium involving Griffith University, Charles Darwin University, CSIRO Land and Water, University of Western Australia, North Australian Indigenous Land and Sea Management Alliance and Land & Water Australia was successful in developing the Tropical Rivers and Coastal Knowledge research hub. This attracted $8 million in funds from the Commonwealth Environment Research Facilities Program and another $5 million from the Australian Government's Raising National Water Standards program.The research hub will be hosted by Land & Water Australia and builds on the Tropical Rivers Program. The Australian Government Department of the Environment and Heritage invested $250,000 in the Environmental Water Allocation Program to support research into groundwater dependent ecosystems.

The Minister for Agriculture, Fisheries and Forestry, the Hon. Peter McGauran, MP, with Chairman of the National Land & Water Resources Audit Advisory Council, Geoff Gorrie, launching the National Vegetation Information System in Albury, March 2006.

OPERATIONAL REPORTING FOR THE NATIONAL LAND & WATER RESOURCES AUDIT

The Audit provides data, information and nationwide assessments of Australia's land, water and biological resources to support sustainable development. It is an initiative of the Natural Heritage Trust.

The Audit has been established to:

- assist in the identification of NRM priorities
- allow the progress of NRM investments to be assessed through the development and maintenance of accurate, cost-effective and timely data and information on the nation's natural resources.

The Natural Heritage Ministerial Board continues to approve Audit activity.

A particular focus of Audit activity is the collation of information underpinning the monitoring and evaluation needs of the Natural Resource Management Ministerial Council.

The Audit is co-located with Land & Water Australia, which continues to provide administrative support to the Audit Management Unit. Co-location promotes interaction between the Audit and the Corporation's R&D programs.

Revenue received during 2005–06 was $5.794 million including specific contract funding. Investment in 2005-06 was $4.409 million.

Partners

The Audit Advisory Council has representation from the Australian Government, all states, ACT and the Northern Territory, CSIRO, the Australian Bureau of Statistics and ANZLIC – the Spatial Information Council. Land & Water Australia and the State of Environment 2006 have observer status at Council meetings.

Activity and Achievements

Integrated Reporting

- Intensive Land Use Zone
  - Documentation of existing examples of integrated catchment condition assessments.
  - A scoping study for a national catchment condition assessment.
  - The reporting concept was piloted in two regions (Far North Queensland, Hunter Region of NSW).
- Rangelands
  - Australian Collaborative Rangeland Information System Management Committee produced a capacity to report statement built on input from regional studies conducted by the States. The Audit contributed social and economic information via a contract with the Australian Bureau of Statistics. Scoping of the report on the rangelands commenced.
- Australian Agriculture – *Signposts for Australian Agriculture*
  - Progressed the framework and electronic content management system for reporting on the contribution of agriculture to economic, community and environmental issues – it now includes information on the level of adoption of management practices and external drivers which impact on agriculture's contributions.

Leveraged investment by other agencies to further advance the Signposts project:

Bureau of Rural Sciences used the Signposts framework as the basis for the grains industry profile, released as part of grains week: **www.brs.gov.au/signposts-grains**.

Australian Department of Agriculture, Fisheries and Forestry – Rural Policy & Innovation Division and Food & Agriculture Division - commissioned the Audit to identify relevant business management practices and explore options for assessing the contributions of the supply chain to environmental sustainability – using case studies from the confectionary and bread industries for inclusion in the Signposts framework.

Australian Department of Agriculture, Fisheries and Forestry commissioned the Audit to hold a workshop with representatives from Meat and Livestock Australia, Grains Research and Development Corporation, Dairy Australia, Horticulture Australia, the Tasmanian and Queensland governments, Australian Department of Agriculture, Fisheries and Forestry, Australian Bureau of Agriculture and Resource Economics, and the Australian Bureau of Statistics to comment on the structure of the framework and future strategies for engaging R&D corporations and industry.

State of Environment (SoE) Reporting

Links with Australian Government State of the Environment Reporting and Audit activity were reinforced by the inclusion of the Chair of the Audit Advisory Council on the SoE Advisory Committee, and the continuing membership of the Chair of the SoE Committee on the Audit Advisory Council. The Audit became a member of a joint NRM Data and Information Review Committee – aligning and recommending data and information reporting needs e.g. linking NRM and SoE initiatives.

Data and Information Management

Partnership with the Australian and New Zealand Land Information Council - the Audit continued discussions on possible efficiencies for government-to-government data access and licensing arrangements for key data and information products.

A report was drafted on the Status of the Australian Natural Resource Information Infrastructure.

Nationally linked data and information systems - the Audit continued to develop the Australia's Resources Online reporting mechanism—built the initial Australia's Resources Online web application. Initial application schemas for water quality and vegetation extent were completed.

The Atlas and Library continued to be developed and managed under contract with Australian Government Department of Agriculture, Fisheries and Forestry and the Australian Government Department of the Environment and Heritage.

Natural Resource Information Collection Standards

The Audit participated in most National Coordination Committee activities to ensure that information needs were being addressed by the committees.

Workplans and contractual arrangements are in place for on-going development of the information needs for the following Matters for Target: soil condition; native vegetation

(vegetation mapping standards); social and economic indicator development including land use mapping and land management practice; invasive species (weeds and vertebrate pests); land salinity.

Data and information workplan development commenced (and contractual arrangements partially in place) for the following three Matters for Target: river health; wetlands; estuarine, coastal and marine.

Institutional arrangements were put in place for the on-going development of water resource information through participation in the National Water Commission Baseline Assessment and through the workplan of the National Coordination Committee for Water Resources (also known as the Executive Steering Committee for Australian Water Resources Information).

Direction, Planning and Administration

Audit Advisory Council

Audit Advisory Council met four times to advise and endorse Audit activity. The Council took a leadership role with respect to identifying information needs and associated resources. Individual members were identified to attend, where possible, National Coordination Committee meetings and to reinforce the importance of the tasks and to bring issues to the Council meetings.

Partnerships with states and the Northern Territory progressed with contracted projects and the Audit facilitated workshops and meetings to assist in developing on-going efficient information collection.

Roles and responsibilities:

The Audit maintained a high presence with all jurisdictions and assisted in clarifying roles and responsibilities. This included meeting with Joint Steering Committees around the country.

The Audit also initiated and participated in seminars, meetings and workshops promoting efficient collection and collation of NRM information. This included: playing a major role in the National Monitoring and Evaluation Symposium in Hobart in 2005 which brought together representatives from most regional NRM bodies from around Australia; coordinating a national workshop in February 2006 to reach national agreement of a core set of estuarine, coastal and marine indicators of resource condition; and hosting a workshop to bring together rangelands regional NRM groups and state agency representatives from Australian Collaborative Rangelands Information System to discuss data management.

Communication

A full time communication officer was employed to revise and implement the Communication Plan, taking into consideration the mid-term review of Audit activity.

The Audit's website was reviewed and updated to reflect the Audit's activities, and a suite of fact sheets about the Audit's activities was produced. Approximately 1,400 publications were mailed out to stakeholders, in addition to information materials provided through avenues such as workshops and launches.

The Audit progressively brought Audit activity to the attention of key stakeholders through events/functions/symposia: Australian Collaborative Land Use Mapping Program, National Monitoring and Evaluation Symposium, Australian Collaborative Land Evaluation Program, Soils Online information product (Australian Soil Resource Information System), updated vegetation mapping and the National Vegetation Information System at the Veg Futures Conference.

Direction

The Natural Heritage Ministerial Board approved an additional year of activity and agreed to the Audit preparing a business case of additional Audit activity post 2007-08.

Mid-term Review of Audit activity and subsequent Audit Advisory Council recommendations resulted in: increased focus on communication; more Audit Advisory Council involvement in the activity of the National Coordination Committees; and an increased investment in Matters For Target where the Australian Government Department of the Environment and Heritage is the national sponsor.

National Land & Water Resources Audit: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Work with national coordinating committees on each of the Audit's ten themes (including water, vegetation, biodiversity and salinity) to finalise agreed national indicators for each theme.	Workplans agreed by committees and investment frameworks in place to develop indicators, test methodologies and develop a set of agreed reports suited to regional state and national reporting.
Monitoring and Evaluation projects underway in each jurisdiction.	Trials are underway to test indicators methods and outputs for most Matters for Target.
Production and refinement of an on-line reporting mechanism for the Australian Natural Resources Atlas.	Australia's Resources Online is now beyond the proof of concept stage and will commence being populated with vegetation information. Web-based transfer standards are being developed for water information.

CORPORATE ENABLING FUNCTIONS

Knowledge and Adoption

This has been a significant year for the Corporation with further substantial implementation of the Knowledge into Practice strategy of the *2005-2010 Strategic R&D Plan.* Key elements include fundamental changes to our organisational systems, building capacity within our organisation, and developing stronger links with stakeholders.

In the previous year a comprehensive review of the Corporation's websites led to a new 'e-business' strategy. We have now implemented the proposed new content management system and with this have developed a new corporate website and, in a first for the organisation, an intranet. The program websites will be rolled into this system in the first half of 2006-07. The content management system delivers an even more functional, informative, easy to use web interface that works much more efficiently for us in keeping all parts of the site up to date and decentralising content management across the Corporation, while maintaining quality control and managing risk. With the site's improved usability and searching capacity we expect increased traffic over 2006-07.

The year has seen the team, and Corporation, work more closely with:

- the fifty-six regional NRM bodies
- fellow R&D corporations and knowledge providers (both national and state), including the National Land & Water Resources Audit
- Australian Government agencies, particularly the Australian Government Department of Agriculture, Fisheries and Forestry and the Australian Government Department of the Environment and Heritage
- industry stakeholders including the private agriculture sector.

knowledge for managing Australian landscapes

Knowledge for Regional NRM Program – connecting researchers and practitioners

Linking Australia's regional NRM organisations with research and knowledge providers is the focus of the Knowledge for Regional NRM Program. The program works closely with regions and since February 2005 has been investigating and testing ways to improve knowledge connections, exchange and adoption.

A series of options to optimise access to information and improve information exchange between regional bodies and research/information providers have been investigated and presented. The suggested options address three fundamental areas: improving capacity to manage NRM knowledge, the creation of information tools and of knowledge brokering to help with searching, accessing and sharing knowledge.

A cutting edge internet based NRM Toolbar is being proposed that would provide regions with useful search tools, databases of regional knowledge needs and access to research and development programs. The Toolbar will act as a first point of call for regional staff searching for knowledge and will facilitate knowledge sharing between regions and information providers. Testing of the NRM Toolbar concept design with regions and facilitators has seen it very positively received.

Knowledge for Regional NRM Program workshop participants

Regional collaboration with the Knowledge for Regional NRM Program has led to pilot projects to develop knowledge strategies, region to region mentoring and the collection of local knowledge. A number of workshops and forums have been held to bring together NRM practitioners and regional officers, including the first national Monitoring and Evaluation symposium, a North Australian Natural Resource Management Forum and the Socio-Economic Information for Regional NRM workshop.

The Knowledge for Regional NRM Program is funded through the Natural Heritage Trust.

Knowledge and Adoption: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Evaluated trials of knowledge adoption in NRM.	Through a series of adoption trials we have tested some new adoption pathways to share our research outcomes from across our portfolio. These trials with regional groups, private agricultural advisors, non-government organisations and primary industry groups have helped guide new ways of putting knowledge into practice. They also improve the two-way sharing of knowledge and the packaging of new knowledge for efficient and effective use. We are also learning from trials undertaken by other RDCs and CRCs who are working with private sector and agri-business.
Feasibility analysis of 'First Stop Knowledge Shop'.	Beginning with the concept of a 'First Stop Knowledge Shop' the Knowledge for Regional NRM program has completed a feasibility study of what is now called the NRM Toolbar. Current components of the proposed toolbar include: NRM search engine; My library; Librarian support service; Regional knowledge needs database; This Worked Here! Local examples of success; An R&D directory; and decision support tool reviews. The concept design has been discussed with regional staff in focus groups and had received very positive responses. The proposed components have been presented to the Australian Government.
'Knowledge for adoption' toolkit for researchers.	Planning templates and examples have been developed through an iterative process with researchers and coordinators for the toolkit. A range of 'How to' tools for communication activities such as preparing a presentation or tailoring writing styles has also been developed for the toolkit. These are being embedded into an interactive web interface for staff, coordinators and researchers to guide and assist their knowledge and adoption planning and implementation. Workshops were held with R&D coordinators, researchers, PhD students and the R&D programs.

Planned outputs	Achieved outputs
Rejuvenated website to reflect new strategic plan.	New content management system installed with new Corporate website live. Structure and shell for intranet also developed. This has improved the useability and searchability of the website plus allowing for distributed authorship and embedded quality assurance and risk management.
Products, tools and activities at corporate and program level to enhance adoption including synthesis products designed around the needs of specific target audiences and technical guidelines on key NRM issues.	Hundreds of products were developed and activities undertaken at the corporate and program level to encourage adoption, for example *Stock and Waterways: A Manager's Guide*. An extensive knowledge harvest was undertaken across Land & Water Australia to provide foundation material for synthesis products and processes including tailored workshops. Several workshops were held with program coordinators and project leaders to develop knowledge and adoption plans.
Knowledge base of how to engage with organisations who are in a position to influence farmer behaviour.	Analysis and learning from the adoption trials, the Regional Knowledge for NRM Program, collaborative industry programs such as Grain & Graze, and other activities across the portfolio, including evaluation of the rivers workshops, have built our understanding of how to engage with intermediary or extension networks, whether non-government, public sector or private sector.

PORTFOLIO MANAGEMENT

Strategic Planning

The main activities in 2005-06 were preparing for the biennial R&D investment planning process, and launching six new R&D programs.

Land & Water Australia has a sophisticated biennial investment planning process to identify and rank emerging issues and opportunities alongside current and planned investments. To inform this process we have been instrumental in establishing and now host the Australasian Joint Agencies Scanning Group (seven agencies in Australia and New Zealand) which monitors and reports on emerging national and international trends. This information is combined with strategic NRM analyses, stakeholder consultations and feedback from the current portfolio to form a comprehensive list of potential R&D investments. These investment opportunities are then scored and ranked against feasibility and attractiveness criteria to form a short-list of prospective future investments. In 2005-06 a short-list of twenty R&D opportunities were selected by the Board for more detailed investment analysis.

Strategic Planning: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Land & Water Australia has its five-year Strategic R&D Plan in place.	Minister approved the Land & Water Australia 2005-2010 Strategic R&D Plan in June 2005. No amendments were requested during the year.
Land & Water Australia has a clear process for identifying and prioritising R&D investments.	Land & Water Australia has a clear biennial process. Methods updated and being applied in 2006 investment planning process.

Science Management

Science management is concerned with science quality, links to broader science policy, trends in NRM and related science areas and the innovation process. Land & Water Australia has transparent and robust processes for project selection and assessment to ensure science quality. In 2005-06 we continued concerted efforts to link better with the national science agencies and have had discussions with the Australian Research Council, the Australian Government Department of Education, Science and Training, the Chief Scientist and the Federation of Australian Scientific and Technological Societies on areas of potential collaboration. A specific collaboration has emerged with the Australian Academy of Sciences. We also continue to document our best innovations on the Innovations Database located on our website.

Science management: Performance against planned outputs in 2005-06

Planned outputs	Achieved outputs
Land & Water Australia has science quality processes in place.	Land & Water Australia uses both external and internal technical expertise to ensure scientific quality.
Land & Water Australia is responsive to Government science initiatives.	Land & Water Australia is aligned to and reports against the National Research Priorities. Land & Water Australia responds to relevant government inquiries. Land & Water Australia is active in NRM science policy.

Evaluation

Land & Water Australia has a comprehensive corporate evaluation strategy to assess progress of its Strategic R&D Plan. A new evaluation strategy was approved in 2005-06 to complement the new *2005-2010 Strategic R&D Plan*. The Corporation has a suite of monitoring methods in place to assess current performance of its investments. It has also established a sophisticated triple bottom line benefit-cost analysis methodology to evaluate the impacts and returns from past investments. Over 400 projects have been evaluated in this way and written up as twenty-eight thematic evaluation case studies.

Evaluation: Performance against planned outputs in 2005-06

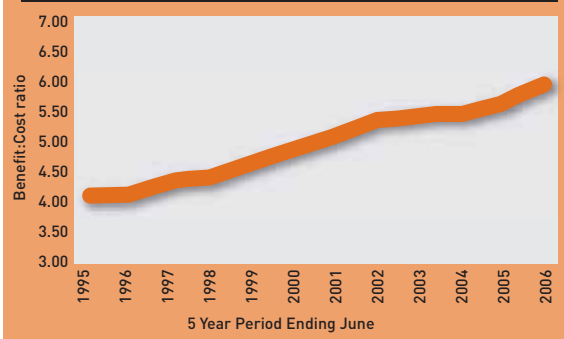
Planned outputs	Achieved outputs
Evaluation Strategy approved by Land & Water Australia Board.	Board approved Evaluation Strategy in December 2005.
Land & Water Australia annually updates its portfolio Return On Investment.	Land & Water Australia's Return On Investment was published in late 2005 along with twenty-eight evaluation case studies.
Land & Water Australia meets government reporting requirements.	All government reports completed on time and accepted.

LWA measures its research impact

Over the past four years Land & Water Australia has developed a triple bottom line benefit-cost-analysis methodology to measure the impact of its R&D since it was established in 1990. The approach is robust, transparent and conservative in its assumptions and allows for continuous improvement. Whilst the Return On Investment is measured in economic terms, each innovation is reported in a consistent and communicative format. This methodology both allows individual evaluations to be aggregated into a portfolio evaluation and for the portfolio to be updated annually.

Twenty-eight detailed case studies incorporating 416 projects have now been evaluated. The results show a $2.4 billion return from $430 million of R&D expenditure by Land & Water Australia and its partners. This converts to a 4.7 to 1 benefit to cost ratio and an internal rate of return of 23%. From these analyses we can now calculate Land & Water Australia's Return On Investment performance over time:

Figure 7: Land & Water Australia's Return On Investment over time



CORPORATE GOVERNANCE & MANAGEMENT

This section describes the processes by which Land & Water Australia is directed and controlled to ensure sound strategic direction, high level performance, effective accountability and appropriate standards of risk management.

CORPORATE STATUS AND CORPORATE GOVERNANCE PRINCIPLES

Land & Water Australia is a Rural RDC within the Australian Government's Agriculture, Fisheries and Forestry portfolio. Its legislated title is Land and Water Resources Research and Development Corporation. It was established on 3 July 1990 under the PIERD Act 1989, which provides a foundation for its accountability to Parliament and to natural resource users and managers across Australia.

Land & Water Australia also operates under the provisions of the CAC Act, which applies high standards of accountability while providing for the independence required by the Corporation's focus on national R&D programs.

The Rural R&D Corporations model

- The Rural RDCs take a leading national role in planning, investing in and managing R&D for their respective industries.
- RDCs are not research 'grant' agencies. Their enabling legislation requires them to treat R&D as an investment in economic, environmental and social benefits to their industries and to the people of Australia.
- Rather than focusing mainly on generating new knowledge for its own sake, RDCs strive to deliver high rates of return on R&D investment by influencing the full range of interactions along the innovation chain.
- Striving for high returns on investment also leads RDCs to apply significant resources to translating research outputs into practical outcomes.
- RDCs are required to conduct their activities in accordance with strategic R&D plans and annual operational plans that take account of the R&D needs of end-users and other stakeholders. The plans are approved at ministerial level.
- Although RDCs fund basic research, a high proportion of activity is applied R&D — both short-term and long-term.
- RDCs are accountable to their major stakeholders and to the wider community.

Corporate governance principles

The Board is committed to the highest standards of corporate governance, in accordance with required statutes and principles. The Board provides strategic direction to the Corporation and oversees the implementation of Board decisions and directions by the Corporation's managers.

The Board places a very high priority on achieving the highest standards of corporate governance and was pleased to see that Land & Water Australia had been given a clean bill of health in internal and external audits.

The Board relies on a range of measures to ensure that the Corporation is operating according to the accountability provisions of the CAC Act, including:

- induction training and continuing training for directors
- compliance checks and internal and external audits
- a due diligence check and code of conduct for directors
- effective processes for disclosure and management of (or perceptions of) conflicts of interest
- a risk identification and management framework
- effective systems for monitoring performance and ensuring that the Corporation can meet its debts and other obligations as they fall due.

The Corporation has a framework for evaluating Board performance in accordance with corporate governance principles and the Board's charter.

This annual report includes a comprehensive summary of corporate governance matters, including a description of how strategic directions, policies and processes have been applied during the year. The Board continually reviews policies and processes concerning all major areas of Board operations. A number of Board committees (including Finance, Audit and Communication), and other committees of the Board as deemed necessary from time to time, act on the Board's behalf.

Appropriate R&D Program Management Committees are also established to oversee program design and management, ensuring that desired program outputs are being met and that partnership and government funds are spent wisely.

IMPLEMENTATION OF PIERD ACT OBJECTS AND ACCOUNTABILITY TO PARLIAMENT

The paramount authority for Land & Water Australia's activities is section three of Land & Water Australia's enabling legislation (the PIERD Act), which specifies the legislative objects of R&D corporations. The objects are essentially to fund and administer research and development with a view to carrying out:

- development of primary industries
- sustainable use and sustainable management of natural resources
- more effective use of the resources and skills of the community
- improved accountability for expenditure.

A tabular presentation in Table 1 lists the four objects and outlines the way in which the strategies described in the R&D plan address them.

The web address for the PIERD Act is: **www.austlii.edu.au/au/legis/cth/consol_act/piaerada1989531/**

The Corporation is accountable to the Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry – and, through her, to Parliament.

The Minister is empowered by the PIERD Act to:

- approve the Corporation's five-year Strategic R&D plan, annual operational plan and variations to both of these plans, assessed against the objects set out in the Act
- select and appoint the Chairperson and Government Director to the Board, and appoint the Presiding Member and other members to the Selection Committee for nominated Board positions
- approve the nominees for membership on the Board
- transfer contracts, agreements and assets held in the name of the Australian Government to the Corporation.

Under the CAC Act, the Minister must table the Corporation's annual report in Parliament.

The Minister is responsible for the Corporation's enabling legislation and in turn is answerable to Parliament. The Minister also has other discretionary powers (provided through section 143 of the PIERD Act) to give written directions to the Corporation as to the performance of its functions and the exercise of its powers. The Corporation is also obliged to ensure compliance with any policies of the Australian Government of which it is notified by the Minister under section 28 of the CAC Act.

Responsible ministers

Throughout the year the responsible ministers were:

- current Minister - Minister for Agriculture, Fisheries and Forestry, the Hon. Peter McGauran, MP
- current Parliamentary Secretary - the Hon. Sussan Ley, MP, Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry

Compliance with Australian Government statutes and policies

The Corporation's compliance with statutes and policies of the Australian Government is detailed in Appendix 2.

Notifications of Government general policies and administrative matters by the Minister for Agriculture, Fisheries and Forestry or the Parliamentary Secretary in previous years had continuing effect. The Minister for Agriculture, Fisheries and Forestry issued a notification on 14 April 2003 in respect of cost recovery policy and on 21 August 2002 in respect of the requirement that portfolio agencies adopt the Australian Government Fraud Control Guidelines.

Important Australian Government rural policy frameworks

Five policy frameworks are particularly significant to Land & Water Australia:

- Australian Government National Research Priorities

- Australian Government Rural Research and Development Priorities
- the Australian Government's Natural Heritage Trust
- the Prime Minister's National Action Plan for Salinity and Water Quality
- the National Water Initiative.

Accountability to representative organisations

Land & Water Australia is accountable to two representative organisations, with memberships comprising key natural resource users and managers. They are:

- The National Farmers' Federation, PO Box E10, Kingston ACT 2604
- The Australian Conservation Foundation, 1st floor, 60 Leicester Street, Carlton VIC 3053.

Funding for representative organisations

The Corporation provided the Australian Conservation Foundation with $24,000 in 2005-06 for a research project undertaken by Dr Rosemary Hill titled: Investigation of a Conservation Economy Model for Indigenous Northern Australia.

Transparency of research project information

Details of all projects funded by Land & Water Australia during the year are entered on to the publicly available online database (www.aanro.net) as part of the Australian Agriculture and Natural Resources Online information service. Details such as project title, principal investigator, objectives, contact numbers and amounts of funding provided are listed in this database. Abstracts of all final reports received by Land & Water Australia are also entered on the database. Further information is available from Infoscan Pty Ltd (telephone: 02 6236 6267; fax: 02 6236 6440; e-mail: infoscan@acslink.aone.net.au).

RISK MANAGEMENT

Land & Water Australia's risk management policy is integrated into its quality management system and internal audit program. The policy seeks to protect the Corporation's public and commercial position and its employees, information and property. A risk register identifies each risk, describes its probability, likely consequences and mitigation strategy, and records the status of the mitigation strategy.

The risk management policy also incorporates a fraud control framework in accordance with the Fraud Control Policy of the Commonwealth — Best Practice Guide for Fraud Control (ANAO Audit Report No. 39 of 1996–97), which seeks to minimise the likelihood and impact of fraud. The policy is reviewed regularly by the Board's Audit Committee to ensure that it remains relevant to the Corporation's business. Internal audits, an important component of the risk management framework, are managed by the Audit Committee.

The Risk Management Plan and the Fraud Control Plan were both substantially overhauled and rewritten during 2004-05.

No incidence of fraud was detected during 2005-06.

Indemnities and insurance premiums for officers

The Corporation has comprehensive insurance cover with the Australian Government insurer Comcover

for its directors and officers. In accordance with the contract of insurance with Comcover, the Corporation is prohibited from disclosing details of insurance.

SUSTAINABILITY REPORTING

Sustainability is the core objective of Land & Water Australia. Our stakeholders have asked the question 'Do we practise what we preach?' That is, while encouraging sustainable practices in the wider Australian community, do we practise sustainability within the operating standards of our organisation?

Showing our commitment to sustainable practices has a number of layers. It includes showing a net positive effect from our funded research, and consideration of the impacts of our corporate activities. For an organisation whose core business is sustainability, it is important to demonstrate our commitment to this principle at all levels.

During 2005-06, Land & Water Australia developed a sustainability reporting framework with input from a consultant, extensive involvement of staff and reference to the Global Reporting Initiative. We have initiated measurement of selected variables for fiscal year 2006-07.

Sustainability reporting will be incorporated in Land & Water Australia's annual operational plan. The annual report already contains economic data as required by legislation, and some key social data. The presentation of these will be changed to a Triple Bottom Line format and the environmental footprint of the Land & Water Australia office will be added.

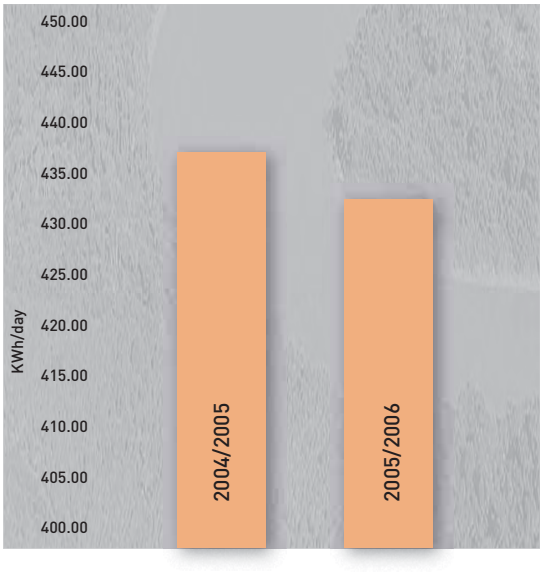
The impact of research funded by Land & Water Australia in a social, economic and environmental context is presented in the Return On Investment report. Some social parameters are already presented in the annual report, such as staff size and composition; training and development; life balance; health and safety; and staff wellbeing. The main gap at present is environmental factors.

Data is already being collected for net paper consumption and electricity use for 2005-06 and some data for back years is available for electricity use. The sustainability report in 2006-07 will include the environmental footprint of the Land & Water Australia office and variables measured will include direct electricity use of Land & Water Australia offices; greenhouse gas emissions (electricity use and air miles); paper use and recycling; and staff profile (environmental variables presented as usage per average staff member).

Land & Water Australia office energy use 2005-06

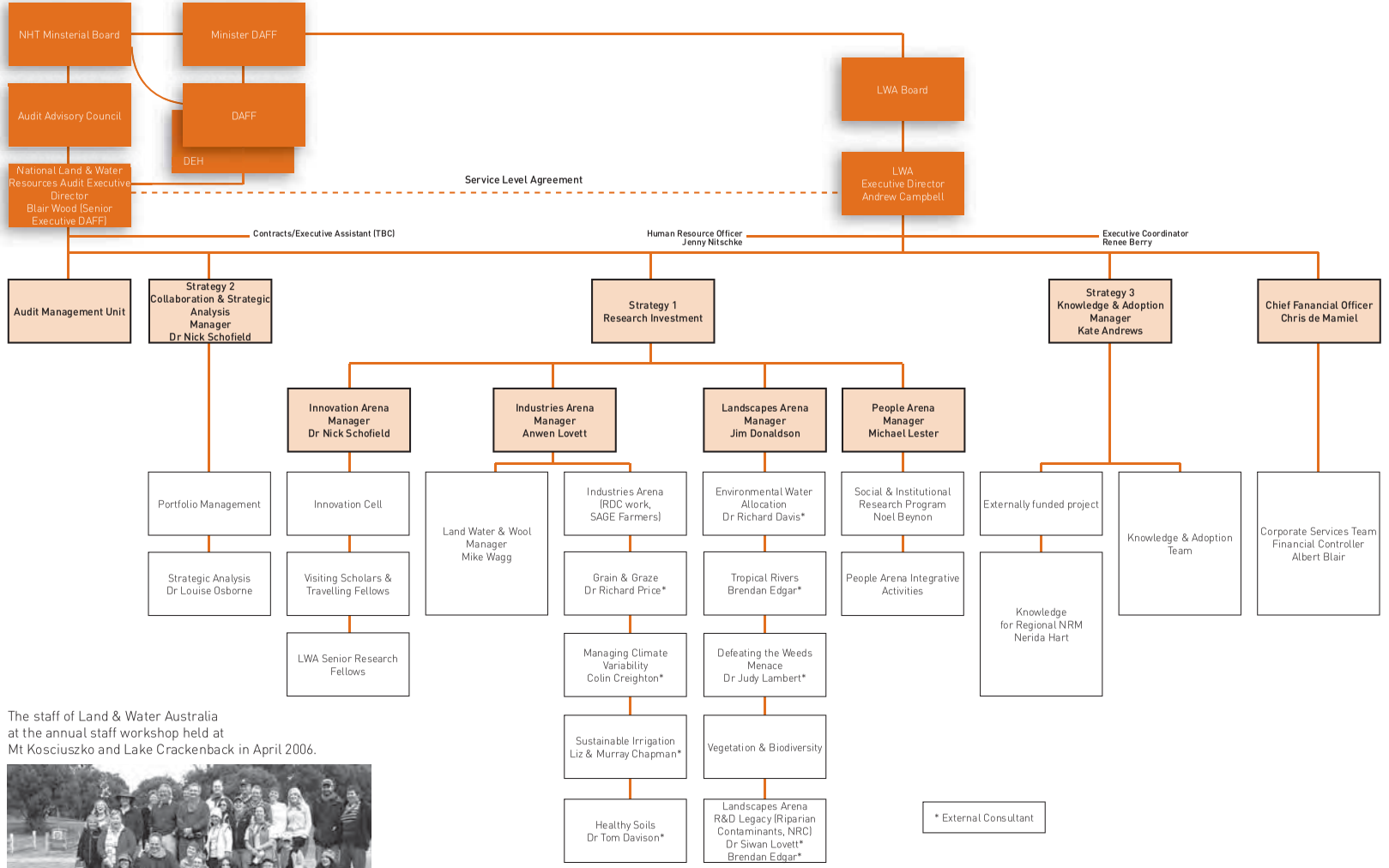
Total annual energy use: 192,167 kWh

Average daily energy use: 432 kWh



OUR ORGANISATION

Land & Water Australia's organisational structure is as follows.



The staff of Land & Water Australia at the annual staff workshop held at Mt Kosciuszko and Lake Crackenback in April 2006.

BOARD MEMBERSHIP AND PROCESSES

In accordance with section 16 of the PIERD Act, the Board comprises a Chairman and a Government Director selected and appointed by the Minister, six non-executive Directors nominated by an independent selection committee and appointed by the Minister, and an Executive Director appointed by the Land & Water Australia Board.

The Chairman and other Directors (except for the Government Director and Executive Director) are appointed for a term not exceeding three years and are eligible for re-appointment. The Government Director holds office during the Minister's pleasure and the Executive Director holds office during the Board's pleasure.

Directors are selected to reflect a balance of expertise in appropriate areas specified in section 131 of the PIERD Act. They are not appointed as representatives of the organisations or sectors with which they are associated.

Directors can be contacted through the office of Land & Water Australia, GPO Box 2182, Canberra ACT 2601 or by e-mail (land&wateraustralia@lwa.gov.au).

Directors' biographies

Roberta Brazil
Chairman
(non-executive)

Appointed as Chair from 1 July 2001 to 30 June 2004; reappointed in 2004 to 30 June 2007

Member of the Audit and Communication Committees

LLM. (UQ), LLB., BA, Grad. Dip.L.P. (QUT)

Roberta (Bobbie) Brazil is a former lawyer and a partner with her husband in large-scale mixed farming and pastoral businesses on Queensland's Darling Downs and in the Northern Territory. Bobbie brings to the Board an excellent understanding of catchment management and extensive experience in a range of NRM and industry bodies. She is Chair of the Australian Landcare Council; Chancellor of the University of Southern Queensland; Director of Brazil Enterprises (farming and pastoral interests in Queensland and the Northern Territory); a member of Agforce; a member of the Condamine River Basin Irrigators Association; a member of Northern Territory Cattlemen's Association and Northern Territory Irrigation; a member of Grain & Fodder Producers Association; levy payer to Cotton Australia; and a member of Darling Downs Cotton Growers Association.

John Childs
Deputy Chairman
(non-executive)

Appointed from 1 July 2002 until 30 June 2005, reappointed until 30 June 2008

Chair of the Finance Committee

M.Agr.Sc (Melb), B.Rural Science (UNE), Dip.Ag.Econ (UNE)

John is a director of Queensland-based Bush Business Consulting Pty Ltd; Chair of the Daly River Management Advisory Committee; and a Member of the Northern Territory Pastoral Land Board. John has a broad range of skills and experience in NRM, adult education and communication, with a special understanding of the situation in northern Australia through his role as Chair of the Daly River Management Advisory Committee and as former Director of the Tropical Savannas Cooperative Research Centre. John also has significant experience working with Aboriginal communities and the sheep and cattle grazing industries.

Dianne Bentley
Director
(non-executive)

Appointed from 1 July 2005 until 30 June 2008

Member of the Finance Committee

BSc (Agric), M.A.I.C.D.

Dianne Bentley is an agricultural research and management consultant with extensive experience in NRM, particularly in integrated catchment management. She is Assistant Commissioner of the Natural Resources Commission of New South Wales, and chaired the Liverpool Plains Land Management Committee. She is Deputy Chair of the Northern Regional Panel of the Grains Research and Development Corporation and Director of the Cotton Catchment Communities Cooperative Research Centre.

Andrew Campbell
Executive Director

Appointed from 1 March 2000 until 31 December 2006

Member of the Finance and Communication Committees and an observer at the Audit Committee

MSc (Wageningen), B.ForSc (Hons) (Melb), Dip.For (Creswick), FAICD

Andrew Campbell has a farming, forestry and extension background and was previously a senior executive in the Australian Government. He was instrumental in the development of Landcare in Australia through his role as Australia's first National Landcare Facilitator from 1989-92 and as Manager of the Potter Farmland Plan initiative from 1984-88. His family has been farming in western Victoria since the 1860s and he still manages his family property near Cavendish, producing farm forestry, wool and prime lambs. He is a member of the Editorial Board, *Ecological Management and Restoration*; Honorary Advisor, Future Environment Fund, Glenelg-Hopkins Catchment Management Authority; and a member of the Commonwealth Environment Research Facilities Program Reference Panel.

Peter Cullen, AO
Director
(non-executive)

Appointed from 1 July 2002 until 30 June 2005, reappointed until 30 June 2008

Chair of the Communication Committee

M.Agr.Sc. (Melb), B.Agr.Sc. (Melb), Dip.Ed. (Melb)

Professor Peter Cullen, AO, FTSE is a Commissioner of the National Water Commission; Chair of the Scientific Advisory Panel to the Lake Eyre Basin Ministerial Forum; a member of the Natural Heritage Trust Advisory Committee; a member of the Wentworth Group and a member of the Board of the CRC for Irrigation Futures.

He spent ten years as the founding Chief Executive of the CRC for Freshwater Ecology at the University of Canberra. He is a Visiting Fellow at CSIRO Land and Water. Professor Cullen was appointed an Officer of the Order of Australia in 2004 for service to freshwater ecology, particularly in the areas of policy development, implementation and sustainability in relation to water and NRM, and to education. Professor Cullen is a graduate in Agricultural Science from the University of Melbourne; a Fellow of the Australian Academy of Technological Sciences and Engineering; and a Member of the International Water Academy and the International Ecology Institute.

Tim Fisher
Director
(non-executive)

Appointed from 1 July 2002 until 30 June 2005, reappointed until 30 June 2008

Chair of the Audit Committee

BA (Monash)

Tim Fisher is the Manager of the Water and Catchment Unit at the Victorian Environmental Protection Authority. Prior to this he spent fourteen years with the Australian Conservation Foundation. He has comprehensive experience with the Murray-Darling Initiative, has worked extensively with farmers and farmer organisations, and has considerable experience on issues as diverse as river health and water resource management, biodiversity conservation and natural resource management policy and funding.

In 2002 Mr Fisher was awarded a centenary medal for contributions to water conservation and salinity management.

Professor Ted Lefroy
Director
(non-executive)

Appointed from 1 July 2005 until 30 June 2008

Member of the Communications Committee

PhD, BSc(Agric) (UWA)

Professor Ted Lefroy is Director of the Centre for Environment at the University of Tasmania; a member of the Reference Panel for the Commonwealth Environment Research Facilities Program; a member of the Tasmanian Natural Resource Management Council; and the Principal Investigator of the National Biodiversity Project, Grain & Graze Program.

Professor Lefroy has thirty years' experience in rural extension and research in Australia and overseas, having worked for departments of primary industries in Queensland, Papua New Guinea, Western Australia and CSIRO. He has also been a member of the CRC for Legumes in Mediterranean Agriculture and the CRC for Plant-Based Management of Dryland Salinity where he was leader of the biodiversity program. His research interests are in perennial farming systems, agroforestry and the management of biodiversity in production landscapes. In 2004 he was awarded the Grains Research and Development Corporation Eureka Prize for research into the environmental sustainability of grain production.

Jack Speirs
Director
(non-executive)

Appointed from 1 July 2005 until 30 June 2008

Member of the Audit Committee

DipFM

Jack Speirs is a farmer from Casterton, Victoria, who has pioneered sustainable farming practices on his property Satimer. He is a Director of Diamond Beef, a fully integrated paddock to household beef company; a member of the Australian Government's Industry Environmental Management Systems Advisory Group; Chair of Victoria's Best Wool Best Lamb program; and a Board Member of the Glenelg-Hopkins Catchment Management Authority.

Jack's extensive experience in NRM issues sees him travelling across Australia talking with land managers on issues from ground cover and grazing systems to soil and river health. He is a graduate of the Australian Rural Leadership Program and in 2004 was awarded the prestigious McKell Medal for excellence in NRM.

Charles Willcocks
Government Director
(non-executive)

Member of the Audit Committee

Appointed from 1 July 1997; holds office during the Minister's pleasure

B.Rural Science (Hons) (UNE), Dip. Economic Development (Glasgow)

Charles is the General Manager, Australian Biosecurity System Taskforce, Corporate Policy, Department of Agriculture, Fisheries and Forestry, and a Member of Rangelands Australia Advisory Council.

Committees of the Board

In 2005–06, committees to deal with the matters affecting the Board were:

- the Audit Committee, comprising four non-executive directors, internal and external auditors (and the Chief Financial Officer and Executive Director as observers), which monitors the financial systems, operations and accounts of the Corporation
- the Finance Committee, comprising two non-executive directors, the Executive Director and the Chief Financial Officer, which considers financial matters affecting the Corporation
- the Communication Committee, comprising three non-executive directors, the Executive Director and the Knowledge and Adoption Manager, which develops the knowledge and adoption strategy and oversees its implementation.

The Board has also set up other committees to assist in the management of specific R&D Programs.

Board and Committee membership and attendance

The number of Board meetings and Board committee meetings attended by directors and officers during 2005–06 were as follows:

	Board meetings	Audit Committee meetings	Finance Committee meetings	Communication Committee meetings
No. of meetings held →	4	4	10	4
Roberta Brazil	4	4		4
Andrew Campbell	4		10	4
John ChildsΔ	4		10	1
Peter Cullen ‡	3			4
Tim Fisher•	4	4		
Ted Lefroy	4			3
Dianne Bentley	4		9	
Jack Speirs	4	4		
Charles Willcocks	4	3		
Kate Andrews (Knowledge and Adoption Manager)				3
Tim Lester (Communication Officer)				1
Chris de Mamiel (Chief Financial Officer)		4	10	

‡ Chair of Communication Committee
Δ Chair of Finance Committee
• Chair of Audit Committee

Directors' interests policy

In accordance with the CAC Act, the Board has a process to manage all direct and indirect conflicts of interest, including directors' formal declarations of their interests at each Board meeting, documented in the minutes of the meeting. This policy extends to all committees of Land & Water Australia.

Board charter

The Board has developed and agreed a charter under which it operates.

Board evaluation

Periodic, independent evaluations of Board performance are conducted – usually twice in the life of each Board. The most recent evaluation was conducted by an external consultancy firm (Competitive Dynamics from Brisbane) in June 2004.

STAFF MEMBERSHIP AND PROCESSES

Land & Water Australia staff support the establishment, management, adoption and evaluation of R&D projects. They also provide corporate services. Staff are employed on terms and conditions determined by the Corporation. As at 1 August 2006, 42.6 full time equivalent staff were employed.

Corporate

Executive Director	Andrew Campbell
Executive Coordinator	Renee Berry
Human Resources Officer	Jenny Nitschke
Project Officer – Project Management Information Systems	Camille McMahon (P/T)

Research & Development Team

Manager Landscapes	Jim Donaldson
Manager People	Michael Lester
Manager Industries	Anwen Lovett
Science Manager	Dr Nick Schofield
Manager Land, Water & Wool	Mike Wagg
Program Coordinator	Noel Beynon
Administration Officer	Natalie Blood
Program Officer	Ben Bryant
Administration Officer	Amelia Forsyth-Smith
Program Officer	Andrew Lawson
Strategic Analyst	Dr Louise Osborne
Program Officer	Joanna Pinkas
Administration Officer	Michelle Smith
Grain & Graze Extension Coordinator	Gill Stewart
Senior Program Officer	Catherine Viljoen
Program Officer	Prue Vincent (P/T)
Administration Officer	Inela Weeks
Senior Program Officer	Gill Whiting

Knowledge and Adoption Team

Manager Knowledge and Adoption	Kate Andrews
Communication Officer	Tim Lester
Communications Officer/Events	Sandy Brogan
E-Business Officer	Jennifer Bruce
Program Officer - Knowledge and Adoption	Samantha Burt
Receptionist/Clarity Implementation	Carmel Ewing
Knowledge and Adoption Officer	Stacey Fraser
Senior Knowledge Broker	Dr Stuart Pearson
Knowledge and Adoption Officer	Nadeem Samnakay
Knowledge and Adoption Officer	Lynne Sealie
Knowledge and Adoption Officer	Merryn West
Administration Assistant	Helen Vooren
Receptionist	Brianna Walsh
Leader, Knowledge for Regional NRM Program	Nerida Hart
Knowledge Broker	Belinda Lovell
Knowledge and Access Coordinator	Mathew Silver

Corporate Services Team

Chief Financial Officer	Chris de Mamiel
Financial Controller	Albert Blair
Procurement and Contracts Officer	Jane Briggs
Finance Officer	Liz Kooymans
Assistant Accountant	Andrew Martin
Corporate Services Administration Officer	Ken Rampling
Corporate Services Officer	Laura Varsanyi

National Land & Water Resources Audit

Seven full-time persons, excluding the Audit's Executive Director, were employed by Land & Water Australia as part of the National Land & Water Resources Audit Management Unit, phase 2.

Executive Director – (Employed by DAFF)	Blair Wood
Technical Coordinator	Rob Thorman
Data and Information Coordinator	Peter Wilson
Project Officer	Alana Innes
Project Officer, Thematic Data Delivery	Vivienne Bordas
Project Officer	Martine Franco
Executive Assistant	vacant
Administration Assistant	Toni Latta

Remuneration policy

Land & Water Australia's salary banding structure is based on four broad salary bands. Work value indicators are used to evaluate the level of a position and its place in the appropriate band. Land & Water Australia has a comprehensive performance management system, which includes annual and mid-term reviews of performance. The General Terms and Conditions of Employment detail employee remuneration benefits and performance obligations.

The Land & Water Australia staff at one of the staff workshop team building exercises.

Staff development

Land & Water Australia is in the knowledge business — investing in, brokering and managing R&D. In the process the Corporation generates, transforms, utilises and works with knowledge — some of it formal, but much of it tacit, informal, experiential and intangible. The Corporation's portfolio of more than 1700 projects during the past fifteen years represents a considerable knowledge bank. However the talents, experience, skills and know-how of staff represent probably the Corporation's greatest knowledge asset. Accordingly, the Corporation places priority on recruiting, developing and retaining people of high quality, commensurate with its national leadership role and very challenging mandate. The table below shows the formal qualifications of the Corporation's staff and, importantly, the significant number of staff who are undertaking further study as part of their training and development plans.

	PhD	Masters degree	Bachelor degree	Graduate diploma or certificate
Completed	4	5	38	23
In progress	3	5	1	8

Training and development opportunities are not limited to formal qualifications, but may also include short courses, secondments and development opportunities that are not represented in the table above.

Each staff member's performance management agreement incorporates a training and development plan in which areas for development and activities or training are nominated.

One of the four teams at the staff workshop. In the picture are Jennifer Bruce, Chris de Mamiel, Amelia Forsyth-Smith, Martine Franco, Louise Osborne, Nadeem Samnakay and Inela Weeks.

Organisational health

Land & Water Australia constantly strives to promote a friendly, supportive and continual learning environment for staff members. Activities during the year that contributed to promoting the health and morale of the organisation included:

- the development of a Human Resources Strategic Plan
- Corporation-sponsored influenza vaccinations
- a fitness and healthy living allowance for all staff
- an active and enthusiastic Social Committee
- an off-site staff workshop which incorporated team building activities, building trust and internal relationships.

A team building exercise during the staff workshop at Crackenback Resort. In the picture are: Jennifer Bruce, Chris de Mamiel, Louise Osborne, Stuart Pearson, Ken Rampling and Nadeem Samnakay.

Compliance with human resource statutes

An independent review of the Land & Water Australia compliance requirements concluded that the Corporation has demonstrated compliance across the relevant statutes.

Occupational health and safety

Land & Water Australia is obliged to comply with the *Occupational Health and Safety (Commonwealth Employment) Act 1991* (OH&S Act) and the ACT *Occupational Health and Safety Act 1989*. The Corporation's occupational health and safety (OH&S) policy sets out staff obligations with respect to OH&S and establishes an OH&S Officer. The Corporation conducts OH&S reviews of workstations on a regular basis.

There have been no reports of any accidents or dangerous incidents during the past year that required notice to be given under section 68 of the OH&S Act. No investigations were conducted during the year.

FINANCIAL STATEMENTS FOR THE YEAR ENDED 30 JUNE 2006

Australian National Audit Office

INDEPENDENT AUDIT REPORT

To the Minister for Agriculture, Fisheries and Forestry

Scope

The financial statements and Directors' responsibility

The financial statements comprise:

- Statement by Directors and Chief Executive;
- Income Statement, Balance Sheet and Statement of Cash Flows;
- Statement of Changes in Equity;
- Schedule of Commitments; and
- Notes to and forming part of the Financial Statements

of the Land and Water Resources Research and Development Corporation for the year ended 30 June 2006.

The Directors of the Land and Water Resources Research and Development Corporation are responsible for preparing the financial statements that give a true and fair view of the financial position and performance of the Land and Water Resources Research and Development Corporation, and that comply with the Finance Minister's Orders made under the *Commonwealth Authorities and Companies Act 1997*, Accounting Standards and mandatory financial reporting requirements in Australia. The Directors of the Land and Water Resources Research and Development Corporation are also responsible for the maintenance of adequate accounting records and internal controls that are designed to prevent and detect fraud and error, and for the accounting policies and accounting estimates inherent in the financial statements.

Audit Approach

I have conducted an independent audit of the financial statements in order to express an opinion on them to you. My audit has been conducted in accordance with the Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing and Assurance Standards, in order to provide reasonable assurance as to whether the financial statements are free of material misstatement. The nature of an audit is influenced by factors such as the use of professional judgement, selective testing, the inherent limitations of internal control, and the availability of persuasive, rather than conclusive, evidence. Therefore, an audit cannot guarantee that all material misstatements have been detected.

While the effectiveness of management's internal controls over financial reporting was considered when determining the nature and extent of audit procedures, the audit was not designed to provide assurance on internal controls.

GPO Box707 CANBERRA ACT 2601
Centenary House 19 National Circuit
BARTON ACT
Phone (02) 6203 7300 Fax (02) 6203 7777

I have performed procedures to assess whether, in all material respects, the financial statements present fairly, in accordance with the Finance Minister's Orders made under the *Commonwealth Authorities and Companies Act 1997*, Accounting Standards and other mandatory financial reporting requirements in Australia, a view which is consistent with my understanding of the Land and Water Resources Research and Development Corporation's financial position, and of its financial performance and cash flows.

The audit opinion is formed on the basis of these procedures, which included:

- examining, on a test basis, information to provide evidence supporting the amounts and disclosures in the financial statements; and
- assessing the appropriateness of the accounting policies and disclosures used, and the reasonableness of significant accounting estimates made by the Directors.

Independence

In conducting the audit, I have followed the independence requirements of the Australian National Audit Office, which incorporate the ethical requirements of the Australian accounting profession.

Audit Opinion

In my opinion, the financial statements of the Land and Water Resources Research and Development Corporation:

(a) have been prepared in accordance with the Finance Minister's Orders made under the *Commonwealth Authorities and Companies Act 1997;* and

(b) give a true and fair view of the Land and Water Resources Research and Development Corporation financial position as at 30 June 2006 and of its performance and cash flows for the year then ended, in accordance with:

(i) the matters required by the Finance Minister's Orders; and

(ii) applicable Accounting Standards and other mandatory financial reporting requirements in Australia.

Australian National Audit Office

Puspa Dash

Puspa Dash
Senior Director

Delegate of the Auditor-General

Canberra

18 August 2006

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION
STATEMENT BY DIRECTORS AND CHIEF EXECUTIVE

In our opinion, the attached financial statements for the year ended 30 June 2006 are based on properly maintained financial records and give a true and fair view of the matters required by the Finance Minister's Orders made under the *Commonwealth Authorities and Companies Act 1997* as amended.

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 become due and payable.

This Statement is made in accordance with a resolution of the directors.

Roberta Brazil
Chairman

18.8.06
Date of signing

Andrew Campbell
Executive Director

18 August 2006
Date of signing

Chris de Mamiel
Chief Financial Officer

18 August 2006
Date of signing

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION
INCOME STATEMENT

for the year ended 30 June 2006

	Notes	2006 $	2005 $
INCOME			
Revenue			
Revenues from Government	5A	**12,513,000**	12,501,000
External contributions	5B	**17,737,888**	18,459,128
Interest	5C	**949,933**	588,293
Other	5D	**29,817**	108,104
Total revenue		**31,230,638**	31,656,525
Gains			
Reversal of previous asset write-downs	5E	**4,224**	-
TOTAL INCOME		**31,234,862**	31,656,525
EXPENSES			
Employees	6A	**4,109,028**	3,605,696
Suppliers	6B	**6,227,893**	4,286,618
Depreciation and amortisation	6C	**220,160**	224,109
Write-down and impairment of assets		-	1,570
Net losses from disposal of assets	6D	**11,854**	6,374
Research and development	6E	**22,112,856**	18,153,525
TOTAL EXPENSES	7	**32,681,791**	26,277,892
OPERATING RESULT		**(1,446,929)**	5,378,633

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

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION
BALANCE SHEET

as at 30 June 2006

	Notes	2006 $	2005 $
ASSETS			
Financial assets			
Cash and cash equivalents	8A	6,357,418	4,863,282
Receivables	8B	1,135,216	1,961,262
Investments under s18 of the CAC Act	8C	11,027,001	11,944,759
Total financial assets		18,519,635	18,769,303
Non-financial assets			
Land and buildings	9A,C	680,786	648,183
Infrastructure, plant and equipment	9B,C	163,588	164,469
Intangibles	9D	199,854	23,769
Other non-financial assets	9E	109,385	48,874
Total non-financial assets		1,153,613	885,295
TOTAL ASSETS		19,673,248	19,654,598
LIABILITIES			
Payables			
Suppliers	10A	550,371	1,661,484
Other payables	10B	4,865,625	2,546,826
Total payables		5,415,996	4,208,310
Provisions			
Employee provisions	11A	851,353	634,040
Other provisions	11B	150,000	140,000
Total provisions		1,001,353	774,040
TOTAL LIABILITIES		6,417,349	4,982,350
NET ASSETS		13,255,899	14,672,248
EQUITY			
Reserves		198,667	168,087
Retained surpluses		13,057,232	14,504,161
TOTAL EQUITY		13,255,899	14,672,248
Current assets		18,629,020	18,818,177
Non-current assets		1,044,228	836,421
Current liabilities		6,016,968	4,608,869
Non-current liabilities		400,381	373,481

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

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION STATEMENT OF CASH FLOWS

for the year ended 30 June 2006

	Notes	2006 $	2005 $
OPERATING ACTIVITIES			
Cash received			
Revenue from Government		**12,513,000**	12,501,000
External contributions		**20,476,488**	17,563,349
Interest		**929,103**	588,445
Net GST received from the Australian Taxation Office		**549,491**	211,357
Research and development refunds		**132,455**	116,573
Other		**30,058**	92,277
Total cash received		**34,630,595**	31,073,001
Cash used			
Employees		**3,891,720**	3,648,019
Suppliers		**8,063,042**	3,888,901
Research and development		**21,700,214**	15,263,685
Total cash used		**33,654,976**	22,800,605
Net cash from / (used by) operating activities	**12**	**975,619**	8,272,396
INVESTING ACTIVITIES			
Cash received			
Proceeds from sale of property, plant and equipment		**2,160**	9,657
Investments - s18 CAC Act		**917,758**	-
Total cash received		**919,918**	9,657
Cash used			
Purchase of property, plant and equipment		**401,401**	146,233
Investments - s18 CAC Act		**-**	11,289,533
Total cash used		**401,401**	11,435,766
Net cash from / (used by) investing activities		**518,517**	(11,426,109)
Net increase / (decrease) in cash held		**1,494,136**	(3,153,713)
Cash at the beginning of the reporting period		**4,863,282**	8,016,995
Cash at the end of the reporting period	**8A**	**6,357,418**	4,863,282

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

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION
STATEMENT OF CHANGES IN EQUITY

for the year ended 30 June 2006

Item	Accumulated Results		Asset Revaluation Reserve		TOTAL EQUITY	
	2006 $	2005 $	**2006 $**	2005 $	**2006 $**	2005 $
Opening balance	**14,504,161**	9,125,528	**168,087**	188,087	**14,672,248**	9,313,615
Income and expense						
Revaluation adjustment (Note9B)	**n/a**	n/a	**30,580**	(20,000)	**30,580**	(20,000)
Subtotal income and expenses recognised directly in equity			**30,580**	(20,000)	**30,580**	(20,000)
Net operating result	**(1,446,929)**	5,378,633	**n/a**	n/a	**(1,446,929)**	5,378,633
Closing balance as at 30 June	**13,057,232**	14,504,161	**198,667**	168,087	**13,255,899**	**14,672,248**

The accumulated surplus includes $12,354,549 (2005: $13,757,842) which has been set aside for programmes or projects, either as a result of formal agreements with external funding bodies or of Board decisions. Available reserves thus total $702,683 (2005: $746,319).

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

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION SCHEDULE OF COMMITMENTS

as at 30 June 2006

	2006 $	2005 $
BY TYPE		
Capital commitments		
Infrastructure, plant and equipment[1]	**89,513**	-
Other commitments		
Operating lease[2]	**2,631,458**	3,153,022
Goods and services contracts[3]	**69,355**	-
Research and development[4]	**29,876,227**	26,330,497
Total other commitments	**32,577,040**	29,483,519
Commitments receivable	**(2,969,687)**	(2,680,320)
Net commitments by type	**29,696,866**	26,803,199
BY MATURITY		
Capital commitments		
One year or less	**89,513**	-
Operating lease commitments		
One year or less	**539,818**	521,564
From one to five years	**2,091,640**	2,275,304
Over five years	**-**	356,154
Total operating lease commitments	**2,631,458**	3,153,022
Other commitments		
One year or less	**16,541,304**	14,914,637
From one to five years	**13,382,278**	11,371,586
Over five years	**22,000**	44,274
Total other commitments	**29,945,582**	26,330,497
Total commitments receivable	**(2,969,687)**	(2,680,320)
Net commitments by maturity	**29,696,866**	26,803,199

NB: Commitments are GST inclusive where relevant.

1 Infrastructure, plant and equipment commitments are primarily contracts for the implementation of a new project management system and for purchases of IT equipment.

2 Operating lease is an effectively non-cancellable rental lease for office accomodation to January 2011 with annual increases in rent of 3.5%.

3 Goods and services commitments relate to outsourced IT and payroll processing activities.

4 Research and development commitments comprise amounts payable under research and development agreements in respect of which the recipient is yet to perform the services required.

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

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION
NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS
for the year ended 30 June 2006

Notes to and forming part of the Financial Statements

Note 1: Summary of Significant Accounting Policies

1.1 Basis of Accounting

The Land and Water Resources Research and Development Corporation, trading as Land & Water Australia (the 'Corporation'), is required by Section 20 of the Commonwealth Authorities and Companies Act 1977 (CAC Act) to maintain proper accounts and records of the transactions and affairs of the Corporation in accordance with accounting principles generally applied in commercial practice.

The financial statements are required by clause 1(b) of schedule 1 to the Commonwealth Authorities and Companies Act 1997 and are a general purpose financial report.

The statements have been prepared in accordance with:

- Finance Minister's Orders (or FMOs, being the Commonwealth Authorities and Companies Orders (Financial Statements for reporting periods ending on or after 1 July 2005));
- Australian Accounting Standards issued by the Australian Accounting Standards Board that apply for the reporting period; and
- Interpretations issued by the AASB and UIG that apply for the reporting period.

These are the first financial statements to be prepared under Australian Equivalents to International Financial Reporting Standards (AEIFRS). The impacts of adopting AEIFRS are disclosed in Note 2.

The Income Statement, Balance Sheet and Statement of Changes in Equity have been prepared on an accrual basis and are in accordance with historical cost convention, except for certain assets and liabilities, which as noted, are 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.

Unless alternative treatment is specifically required by an accounting standard, assets and liabilities are recognised in the Balance Sheet when and only when it is probable that future economic benefits will flow and the amounts of the assets or liabilities can be reliably measured. However, assets and liabilities arising under agreements equally proportionately unperformed are not recognised unless required by an Accounting Standard. Liabilities and assets that are unrecognised are reported in the Schedule of Commitments and the Schedule of Contingencies (other than unquantifiable or remote contingencies, which are reported at Note 13).

Unless alternative treatment is specifically required by an accounting standard, revenues and expenses are recognised in the Income Statement when and only when the flow or consumption or loss of economic benefits has occurred and can be reliably measured.

1.2 Significant Accounting Judgement and Estimates

No accounting assumptions or estimates have been identified that have a significant risk of causing a material adjustment to carrying amounts of assets and liabilities within the next accounting period.

1.3 Statement of Compliance

The financial statements comply with Australian Accounting Standards, which include Australian Equivalents to International Financial Reporting Standards (AEIFRS).

Australian Accounting Standards require the Corporation to disclose Australian Accounting Standards that have not been applied, for standards that have been issued but are not yet effective.

The AASB has issued amendments to existing standards, these amendments are denoted by year and then number, for example 2005-1 indicates amendment 1 issued in 2005.

Notes to and forming part of the Financial Statements

The table below illustrates standards and amendments that will become effective for the Corporation in the future. The nature of the impending change within the table, has been out of necessity abbreviated and users should consult the full version available on the AASB's website to identify the full impact of the change. The expected impact on the financial statements of adoption of these standards is based on the Corporation's initial assessment at this date, but may change. The Corporation intends to adopt all of the standards upon their application date.

Title	Standard affected	Application date*	Nature of impending change	Impact expected on financial statements
2005-1	AASB 139	1 Jan 2006	Amends hedging requirements for foreign currency risk of a highly probable intra-group transaction.	No expected impact
2005-4	AASB 139, AASB 132, AASB 1, AASB 1023 and AASB 1038	1 Jan 2006	Amends AASB 139, AASB 1023 and AASB 1038 to restrict the option to fair value through profit or loss and makes consequential amendments to AASB 1 and AASB 132	No expected impact
2005-5	AASB 1 and AASB 139	1 Jan 2006	Amends AASB 1 to allow an entity to determine whether an arrangement is, or contains, a lease. Amends AASB 139 to scope out a contractual right to receive reimbursement (in accordance with AASB 137) in the form of cash.	No expected impact
2005-6	AASB3	1 Jan 2006	Amends the scope to exclude business combinations involving entities or businesses under common control.	No expected impact
2005-9	AASB 4, AASB 1023, AASB 139 and AASB 132	1 Jan 2006	Amended standards in regards to financial guarantee contracts.	No expected impact
2005-10	AASB 132, AASB 101, AASB 114, AASB 117, AASB 133, AASB 139, AASB 1, AASB 4, AASB 1023 and AASB 1038	1 Jan 2007	Amended requirements subsequent to the issuing of AASB 7.	No expected impact
2006-1	AASB 121	31 Dec 2006	Changes in requirements for net investments in foreign subsidiaries depending on denominated currency.	No expected impact
	AASB7 Financial Instruments: Disclosures	1 Jan 2007	Revise the disclosure requirements for financial instruments from AASB132 requirements.	No expected impact

* Application date is for annual reporting periods beginning on or after the date shown.

Notes to and forming part of the Financial Statements

1.4 Revenue

Revenues from Government

The full amount of funding from the Government, through the Department of Agriculture, Fisheries and Forestry, for the Corporation's outputs for the year is recognised as revenue at its nominal amount.

External contrbutions

External contributions comprise voluntary contributions from government, industry and other organisations to particular research programmes or projects. These contributions are recognised on receipt, or when receivable under contractual arrangements, in the period when the obligation is due.

Interest

Interest revenue is recognised using the effective interest method as set out in AASB 139 - Financial Instruments: Recognition and Measurement.

Other revenues

Revenue from the sale of goods is recognised when:

- The risks and rewards of ownership have been transferred to the buyer;
- The seller retains no managerial involvement nor effective control over the goods;
- The revenue and transaction costs incurred can be reliably measured; and
- It is probable that the economic benefits associated with the transaction will flow to the entity.

Royalties are recognised when the royalty is entitled to be received by the Corporation.

Receivables, which have 30 day terms, are recognised at the nominal amounts due less any provision for bad and doubtful debts. Collectability of debts is reviewed at balance date. Provisions are made when collectability of the debt is no longer probable.

1.5 Gains

Any gain from disposal of non-current assets is recognised when control of the asset has passed to the buyer.

1.6 Employee Benefits

As required by the Finance Minister’s Orders, the Corporation has early adopted AASB 119 Employee Benefits as issued in December 2004.

Liabilities for services rendered by employees are recognised at the reporting date to the extent that they have not been settled.

Liabilities for ‘short-term employee benefits’ (as defined in AASB 119) and termination benefits due within twelve months of balance date are measured at their nominal amounts.

The nominal amount is calculated with regard to the rates expected to be paid on settlement of the liability.

All other employee benefit liabilities are measured as the present value of the estimated future cash outflows to be made in respect of services provided by employees up to the reporting date.

Leave

The liability for employee benefits includes provision for annual leave and long service leave. No provision has been made for sick leave as all sick leave is non-vesting and the average sick leave taken in future years by employees of the Corporation is estimated to be less than the annual entitlement for sick leave.

The leave liabilities are calculated on the basis of employees' remuneration, 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.

In compliance with AASB101, the provision for annual leave is classifed as current to the extent that there is a legal right to payment within 12 months of the balance date.

The liability for long service leave is recognised and measured at the present value of the estimated future cash flows to be made in respect of all employees as at 30 June 2006. The estimate of the present value of the liability takes into account attrition rates and pay increases through promotion and inflation.

Superannuation

Staff of the Corporation contribute to the Commonwealth Superannuation Scheme (CSS), the Public Sector Superannuation Scheme (PSS), the PSS accumulation plan (PSSap) or an approved superannuation scheme of their choice.

The CSS and PSS are defined benefit schemes for the Commonwealth. The PSSap is a defined contribution scheme.

For CSS and PSS members, the Corporation makes contributions based on the rate determined by the Government Actuary, and for other approved superannuation schemes the employer contributes a minimum of 9% of superannuable salaries.

The liability for superannuation recognised as at 30 June represents outstanding contributions for the final two days of the year.

1.7 Leases

A distinction is made between finance leases and operating leases. Finance leases effectively transfer from the lessor to the lessee substantially all the risks and rewards incidental to ownership of leased non-current assets. An operating lease is a lease that is not a finance lease. In operating leases, the lessor effectively retains substantially all such risks and benefits.

The Corporation has no finance leases. Operating lease payments are expensed on a straight line basis which is representative of the pattern of benefits derived from the leased assets.

Lease incentives taking the form of 'free' leasehold improvements and rent holidays are recognised as liabilities. These liabilities are reduced by allocating lease payments between rental expense and reduction of the liability.

1.8 Research and Development Expenses

Research and development expenses are expensed as incurred.

The Corporation recognises research and development provisions and liabilities. Most research and development agreements require the grantee to perform services, provide facilities, or to meet eligibility criteria. In these cases, liabilities are recognised only to the extent that the services required have been performed or the performance eligibility criteria have been satisfied by the grantee. Where research and development monies are paid in advance of performance or eligibility, a prepayment is recognised.

1.9 Cash

Cash means notes and coins held and any deposits held at call with a bank or financial institution. Cash is recognised at its nominal amount.

Notes to and forming part of the Financial Statements

1.10 Financial Risk Management

The Corporation's activities expose it to normal commercial financial risk. As a result of the nature of the Corporation's business and internal and Australian Government policies, dealing with the management of financial risk, the Corporation's exposure to market, credit, liquidity and cash flow and fair value interest rate risk is considered to be low.

1.11 Impairment of Financial Assets

As prescribed in the Finance Minister's Orders, the Corporation has applied the option available under AASB 1 of adopting AASB 132 and 139 from 1 July 2005 rather than 1 July 2004.

Financial assets are assessed for impairment at each balance date.

Financial Assets held at Amortised Cost

If there is objective evidence that an impairment loss has been incurred for loans and receivables or held to maturity investments held at amortised cost, the amount of the loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows discounted at the asset's original effective interest rate. The carrying amount is reduced by way of an allowance account. The loss is recognised in the Income Statement.

Comparative Year

The above policies were not applied for the comparative year. For receivables, amounts were recognised and carried at original invoice amount less a provision for doubtful debts based on an estimate made when collection of the full amount was no longer probable. Bad debts were written off as incurred.

Other financial assets carried at cost which were not held to generate net cash inflows, were assessed for indicators of impairment. Where such indicators were found to exist, the recoverable amount of the assets was estimated and compared to the assets carrying amount and, if less, reduced to the carrying amount. The reduction was shown as an impairment loss.

1.12 Trade Creditors

Trade creditors and accruals are recognised at their nominal amounts, being the amounts at which the liabilities will be settled. Liabilities are recognised to the extent that the goods or services have been received (and irrespective of having been invoiced).

1.13 Contingent Liabilities and Contingent Assets

Contingent liabilities and assets are not recognised in the Balance Sheet but are discussed in the relevant schedules and notes. They may arise from uncertainty as to the existence of a liability or asset, or represent an existing liability or asset in respect of which settlement is not probable or the amount cannot be reliably measured. Remote contingencies are part of this disclosure. Where settlement becomes probable, a liability or asset is recognised. A liability or asset is recognised when its existence is confirmed by a future event, settlement becomes probable (virtually certain for assets) or reliable measurement becomes possible.

1.14 Acquisition of Assets

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. Financial assets are initially measured at their fair value plus transaction costs where appropriate.

1.15 Property (Land, Buildings and Infrastructure), Plant and Equipment

Asset Recognition Threshold

Purchases of property, plant and equipment are recognised initially at cost in the Balance Sheet, 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' taken up.

Revaluations

Basis

Land, buildings, and infrastructure plant and equipment are carried at valuation, being revalued with sufficient frequency such that the carrying amount of each asset class is not materially different, at reporting date, from its fair value. Valuations undertaken in each year are as at 30 June.

Fair values for each class of asset are determined as shown below.

Asset class	Fair value measured at:
Leasehold improvements	Depreciated replacement cost
Infrastructure, plant and equipment	Market Selling Price

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 reverses a previous revaluation decrement of the same asset class that was previously recognised through profit and loss. Revaluation decrements for a class of assets are recognised directly through profit and loss except to the extent that they reverse 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 restated to the revalued amount.

Depreciation

Depreciable property, plant and equipment assets are written-off to their estimated residual values over their estimated useful lives to the Corporation using, in all cases, the straight-line method of depreciation. Leasehold improvements are depreciated on a straight-line basis over the lesser of the estimated useful life of the improvements or the unexpired period of the lease.

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.

Notes to and forming part of the Financial Statements

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

	2006	2005
Leasehold improvements	**Lease term**	Lease term
Infrastructure, plant and equipment	**3 to 8 years**	3 to 8 years

The aggregate amount of depreciation allocated for each class of asset during the reporting period is disclosed in Note 6C.

Impairment of non-current assets

All non-current assets were assessed for indications of impairment at 30 June 2006. 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 its carrying amount.

The recoverable amount of an asset is the higher of its fair value less costs to sell 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.

No indicators of impairment were found for assets at fair value.

1.16 Intangibles

The Corporation's intangibles comprise externally acquired software assets and internally developed software assets for internal use. These assets are stated at cost less accumulated amortisation and impairment losses.

Software is amortised on a straight-line basis over its anticipated useful life. The useful lives of the Corporation's software assets are 3 to 4 years (2005: 3 to 5 years).

All software assets were assessed for indications of impairment as at 30 June 2006. No indicators of impairment were found.

1.17 Taxation

The Corporation is exempt from all forms of taxation except fringe benefits tax and the goods and services tax (GST).

Revenues, expenses and assets are recognised net of GST:

- except where the amount of GST incurred is not recoverable from the Australian Taxation Office; and
- except for receivables and payables.

1.18 Insurance

The Corporation has insured for risks through the Government's insurable risk managed fund, called 'Comcover'. Workers' compensation is insured through the Government's Comcare Australia.

1.19 Comparative Figures

Comparative figures have been adjusted to conform to changes in presentation in these financial statements where necessary.

Notes to and forming part of the Financial Statements

Note 2: The impact of the transition to AEIFRS from previous AGAAP

	2005 $	2004 $
Reconciliation of total equity as presented under previous AGAAP to that under AEIFRS		
Total equity under previous AGAAP	**3,208,953**	1,542,067
Adjustments to retained earnings:		
'Make-good' assets[1]	**(24,178)**	(7,042)
Employee benefits[2]	**2,631**	2,351
External contributions[3]	**11,504,842**	7,703,406
Adjustments to other reserves:		
Asset revaluation reserve[4]	**(20,000)**	72,833
Total Equity translated to AEIFRS	**14,672,248**	9,313,615
Reconciliation of profit or loss as presented under previous AGAAP to AEIFRS		
Prior year profit as previously reported	**1,594,053**	
Adjustments:		
Depreciation[5]	**(17,136)**	
Employee benefits[6]	**280**	
External contributions[7]	**3,801,436**	
Prior year profit translated to AEIFRS	**5,378,633**	

The cash flow statement presented under previous AGAAP is equivalent to that prepared under AEIFRS.

[1]AEIFRS requires the recording of assets reflecting future estimated restoration costs. An amount for 'Make-good' provision in the existing accomodation lease (operating) has been taken up accordingly.

[2]AEIFRS requires that annual leave that is not expected to be taken within 12 months of balance date be discounted to its present value. Employee benefits have been adjusted to reflect this requirement.

[3]AEIFRS requires the recording of contributions when all of the following conditions have been met:

- the entity obtains control of the contribution or the right to receive the contribution, and
- it is probable that the economic benefits comprising the contribution will flow to the entity, and
- the amount of the contribution can be measured reliably.

External contributions have been adjusted to reflect this requirement. Prior to AEIFRS adjustments these amounts were carried as unutilised contributions under research and development payables.

[4]The asset revaluation reserve has been adjusted in 2005 to reflect an increase in the value of the 'Make-good' provision and in 2004 to reflect an increase in asset values arising from the AEIFRS requirement to carry assets at fair value.

[5]The operating result has been adjusted due to additional depreciation on 'Make-good' assets.

[6]The operating result has been adjusted due to the discounting, to present value, of that portion of the annual leave provision not expected to be taken within 12 months of the balance date.

[7]The operating result has been adjusted to record additional external contributions.

Apart from the adjustment to research and development payables referred to above, there were no AEIFRS related changes to financial instruments. Payable comparatives were adjusted to reflect the change.

Notes to and forming part of the Financial Statements

Note 3: Economic Dependency

The Corporation was established under the provisions of the PIERD Act 1989 and is controlled by the Commonwealth of Australia.

The Corporation is dependent on funding from the Government through the Department of Agriculture, Fisheries and Forestry for its continued existence and ability to carry out its normal activities.

Note 4: Events after the Balance Sheet Date

The Corporation is not aware of any events that have occurred since the balance date which will affect the amounts disclosed in the financial statements.

	2006 $	2005 $
Note 5: Income		
Revenues		
Note 5A: Revenues from Government		
Funding through the Department of Agriculture, Fisheries and Forestry	**12,513,000**	12,501,000
Note 5B: External Contributions		
Related entities	**10,666,191**	9,284,018
External entities	**7,071,697**	9,175,110
Total external contributions	**17,737,888**	18,459,128
Note 5C: Interest		
Interest on deposits	**949,933**	588,293
Note 5D: Other		
Publications	**4,583**	7,454
Royalties	**1,873**	2,500
Other	**23,361**	98,150
Total other revenues	**29,817**	108,104
Gains		
Note 5E: Reversals of Previous Asset Write-Downs		
Financial assets		
Doubtful debts recovered	**4,224**	-

Notes to and forming part of the Financial Statements

	2006 $	2005 $
Note 6: Operating Expenses		
Note 6A: Employees		
Wages and salaries	**3,532,770**	3,080,961
Superannuation	**375,555**	362,760
Leave and other entitlements	**159,095**	90,829
Other employee expenses	**41,608**	71,146
Total employee expenses	**4,109,028**	3,605,696
Note 6B: Suppliers		
Provision of goods - external entities	**556,639**	126,743
Provision of services - related entities	**990,147**	325,776
Provision of services - external entities	**4,205,955**	3,425,592
Operating lease rentals*	**451,484**	384,844
Workers' compensation premiums	**23,668**	23,663
Total supplier expenses	**6,227,893**	4,286,618
* These comprise minimum lease payments only.		
Note 6C: Depreciation and Amortisation		
Depreciation		
Infrastructure, plant and equipment	**82,416**	71,622
Amortisation		
Intangibles - computer software	**28,391**	22,316
Leasehold improvements	**109,353**	130,171
Total depreciation and amortisation	**220,160**	224,109
Note 6D: Net Losses from Disposal of Assets		
Infrastructure, plant and equipment:		
Proceeds from disposal	**(2,160)**	(9,657)
Net book value of assets disposed	**14,014**	16,031
Total net loss from disposal of assets	**11,854**	6,374
Note 6E: Research and Development		
Services from related entities	**6,137,629**	5,552,592
Services from external parties	**15,975,227**	12,600,933
Total research and development	**22,112,856**	18,153,525
Note 7: Total Operating Expenses		
Total operating expenses are classified by functional type as follows:		
Administration	**2,791,022**	2,544,087
Research and Development related activities	**27,071,843**	21,538,267
Portfolio Management	**195,594**	302,892
Communication, Knowledge and Adoption	**2,623,332**	1,892,646
Total operating expenses	**32,681,791**	26,277,892

Notes to and forming part of the Financial Statements

	2006 $	2005 $
Note 8: Financial Assets		
Note 8A: Cash and Cash Equivalents		
Cash at bank	**6,357,168**	4,863,032
Cash on hand	**250**	250
Total cash and cash equivalents	**6,357,418**	4,863,282
All cash recognised is a current asset.		
Note 8B: Receivables		
Goods and services	**763,402**	1,636,355
Less: Allowance for doubtful debts	**-**	(4,224)
	763,402	1,632,131
GST receivable from the Australian Taxation Office	**310,769**	291,414
Interest receivable	**51,359**	30,529
Other receivables	**9,686**	7,188
Total receivables (net)	**1,135,216**	1,961,262

All receivables are current assets.

All receivables are with entities external to the Corporation. Credit terms are net 30 days (2005: net 30 days).

The interest rates on deposit accounts range from 5.25% to 5.82% (2005: 5.22% to 5.70%) and the frequency of payments ranges from monthly to quarterly.

Receivables (gross) are aged as follows:		
Current	**1,106,026**	684,431
Overdue by:		
Less than 30 days	**16,827**	1,088,162
30 to 60 days	**12,363**	2,527
61 to 90 days	-	165,000
More than 90 days	**-**	25,366
	29,190	1,281,055
Total receivables (gross)	**1,135,216**	1,965,486
The allowance for doubtful debts is aged as follows:		
Overdue by:		
More than 90 days	**-**	4,224
Note 8C: Investments under s18 of the CAC Act		
Term deposits	**11,027,001**	11,944,759

All investments are current assets.

Term deposits are with commerical banks, and earn an effective rate of interest of 5.62% to 5.82% (2005: 5.22% to 5.70%) payable monthly to quarterly.

	2006 $	2005 $
Note 9: Non-Financial Assets		
Note 9A: Land and Buildings		
Leasehold improvements		
- fair value	**722,100**	785,396
- accumulated amortisation	**(41,314)**	(137,213)
Total land and buildings (non-current)	**680,786**	648,183
Note 9B: Infrastructure, Plant and Equipment		
Infrastructure, plant and equipment		
- fair value	**278,041**	235,382
- accumulated depreciation	**(114,453)**	(70,913)
Total infrastructure, plant and equipment (non-current)	**163,588**	164,469

All revaluations are independent and are conducted in accordance with the revaluation policy stated in Note1. In 2005-06, an independent valuer (the Australian Valuation Office) conducted a revaluation of leasehold improvements.

Movement in asset revaluation reserve

Leasehold improvements	**40,580**	-
Adjustment to 'Make-good' provision	**(10,000)**	(20,000)
	30,580	(20,000)

Note 9C: Analysis of Property, Plant and Equipment

TABLE A - Reconciliation of the Opening and Closing Balances of Property, Plant and Equipment

Item	Buildings - Leasehold Improvements $	Infrastructure, Plant and Equipment $	TOTAL $
As at 1 July 2005			
Gross book value	785,396	235,382	**1,020,778**
Accumulated depreciation/amortisation	(137,213)	(70,913)	**(208,126)**
Opening net book value	648,183	164,469	**812,652**
Additions:			
By purchase	**101,376**	**95,549**	**196,925**
Net revaluation increment/(decrement)	**40,580**	-	**40,580**
Depreciation/amortisation expense	**(109,353)**	**(82,416)**	**(191,769)**
Disposals:			
Other disposals	-	**(14,014)**	**(14,014)**
As at 30 June 2006			
Gross book value	**722,100**	**278,041**	**1,000,141**
Accumulated depreciation/amortisation	**(41,314)**	**(114,453)**	**(155,767)**
Closing net book value	**680,786**	**163,588**	**844,374**

Notes to and forming part of the Financial Statements

	2006 $	2005 $
Note 9D: Intangibles		
Computer software:		
Internally developed - under construction	**150,936**	-
	150,936	-
Internally developed - in use	**329,035**	329,035
- accumulated amortisation	**(329,035)**	(322,362)
	-	6,673
Externally acquired - at cost	**151,246**	97,706
- accumulated amortisation	**(102,328)**	(80,610)
	48,918	17,096
Total intangibles (non-current)	**199,854**	23,769

Internally developed software - under construction comprises initial costs of a new project management information system to be commissioned in 2006-07.

TABLE A - Reconciliation of the Opening and Closing Balances of Intangibles

Item	Computer software internally developed $	Computer software purchased $	Intangibles - Total $
As at 1 July 2005			
Gross book value	329,035	97,706	**426,741**
Accumulated depreciation/amortisation	(322,362)	(80,610)	**(402,972)**
Opening net book value	6,673	17,096	**23,769**
Additions			
By purchase	-	**53,540**	**53,540**
Reclassifications	**(1,244)**	**1,244**	-
Depreciation/amortisation	**(5,429)**	**(22,962)**	**(28,391)**
As at 30 June 2006			
Gross book value	**329,035**	**151,246**	**480,281**
Accumulated depreciation/amortisation	**(329,035)**	**(102,328)**	**(431,363)**
Closing net book value	-	**48,918**	**48,918**

TABLE B - Intangibles under Construction

Item	Computer software internally developed $	Computer software purchased $	TOTAL $
Carrying amount at 30 June 2006	**150,936**	-	**150,936**
Carrying amount at 30 June 2005	-	-	-

Notes to and forming part of the Financial Statements

	2006 $	2005 $
Note 9E: Other Non-Financial Assets		
Prepayments	**109,385**	48,874

All other non-financial assets are current assets.

Note 10: Payables

Note 10A: Suppliers		
Trade creditors - general suppliers	**201,290**	478,351
Trade creditors - research and development suppliers	**349,081**	1,183,133
Total suppliers	**550,371**	1,661,484

All supplier payables are current liabilities.

Settlement is usually made net 30 days.

Note 10B: Other Payables		
Suppliers		
Accrued expenses	**242,780**	170,062
Operating lease incentive	**135,885**	165,514
	378,665	335,576
Research and development		
Accrued expenses	**4,424,687**	1,920,068
Revenue in advance	**62,273**	291,182
	4,486,960	2,211,250
Total other payables	**4,865,625**	2,546,826
Other payables are represented by:		
Current	**4,759,370**	2,410,942
Non-current	**106,255**	135,884
Total other payables	**4,865,625**	2,546,826

Note 11: Provisions

Note 11A: Employee Provisions		
Salaries and wages	**405,205**	260,601
Leave	**446,148**	373,439
Aggregate employee entitlement liability	**851,353**	634,040
Employee provisions are represented by:		
Current	**707,227**	533,812
Non-current	**144,126**	100,228
Aggregate employee entitlement liability	**851,353**	634,040

In compliance with AASB101, the full provision for annual leave is classifed as current as at 30 June 2006 as there is a legal right to payment within 12 months. As at 30 June 2005, $55,146 of the annual leave provision was classified as non-current as it was expected that the leave would not be taken within 12 months.

Notes to and forming part of the Financial Statements

	2006 $	2005 $
Note 11B: Other Provisions		
Provision for 'Make-good'	**150,000**	140,000

All other provisions are non-current liabilities.

	Provision for 'Make-good' $
Carrying amount at beginning of period	**140,000**
Unwinding of discounted amount arising from the passage of time	**10,000**
Amount owing at end of period	**150,000**

The Corporation currently has an agreement for the leasing of premises which has 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.

Note 12: Cash Flow Reconciliation

Reconciliation of cash per Balance Sheet to Statement of Cash Flows		
Cash at year end per Statement of Cash Flows	**6,357,418**	4,863,282
Balance Sheet items comprising above cash:		
'Financial asset - cash and cash equivalents'	**6,357,418**	4,863,282
Reconciliation of operating result to net cash from operating activities:		
Operating result	**(1,446,929)**	5,378,633
Depreciation and amortisation	**220,160**	224,109
Loss on disposal of assets	**11,854**	6,374
(Increase) / decrease in net receivables	**826,046**	981,169
(Increase) / decrease in prepayments	**(60,511)**	27,653
Increase / (decrease) in employee provisions	**217,313**	(18,658)
Increase / (decrease) in supplier payables	**(1,111,113)**	784,100
Increase / (decrease) in other payables	**2,318,799**	889,016
Net cash from operating activities	**975,619**	8,272,396

Note 13: Contingent Liabilities and Assets

As at 30 June 2006 there are no quantifiable, unquantifiable or remote contingencies (2005: $nil).

Notes to and forming part of the Financial Statements

Note 14: Director Remuneration

The number of Directors of the Corporation included in these figures are shown below in the relevant remuneration bands:

	2006	2005
$ Nil to $ 14 999	**1**	1
$ 15 000 to $ 29 999	**6**	6
$ 30 000 to $ 44 999	**1**	1
$195 000 to $209,999	**-**	1
$210 000 to $224 999	**1**	-
Total number of Directors of the Corporation	**9**	9
	$	$
Remuneration received or due and receivable by Directors of the Corporation	**426,123**	400,649

The part time Directors of the Corporation received remuneration and allowances as determined by the Remuneration Tribunal. In accordance with the PIERD Act, the part time Directors are appointed by a selection committee. The Executive Director is the only full time Director of the Corporation.

Note 15: Related Party Disclosures

Directors of the Corporation

The Directors of the Corporation during the year were:

Mrs R Brazil	Chairman
Mrs D Bentley	Director
Mr A Campbell	Executive Director
Mr J Childs	Director and Deputy Chairman
Prof P Cullen	Director
Mr T Fisher	Director
Prof T Lefroy	Director
Mr J Speirs	Director
Mr C Willcocks	Government Director

The aggregate remuneration of Directors is disclosed in Note 14.

Loans to Directors and Director related entities

There were no loans made to Directors or Director related entities.

Notes to and forming part of the Financial Statements

Note 15: Related Party Disclosures (continued)

Other transactions with Directors or Director related entities

Research and development expenses were made to the following Director related entities. The Directors involved took no part in the relevant decisions of the board. In the interests of transparency, all transactions with Director-related entities are disclosed. These disclosures relate to involvement in honorary, part-time advisory roles with respect to the University of Southern Queensland and CSIRO. With respect to payments to other Director related entities, payments made to these entities were not associated with the areas of responsibility of the relevant Directors.

Mrs R Brazil	Chancellor, University of Southern Queensland.
Mr C Willcocks	General Manager, Landcare and Sustainable Industries Branch, Natural Resource Management Divison, Department of Agriculture, Fisheries and Forestry.
Mr J Childs	Program Coordinator, Resource Management, Meat & Livestock Australia Northern Beef Program.
Prof P Cullen	Visiting Fellow, CSIRO Land and Water; Member, Board of the CRC for Irrigation Futures; Deputy Chair, Science and Information Board, Department of Infrastructure, Planning and Natural Resources, NSW.
Prof T Lefroy	Director, Centre for Environment, University of Tasmania.
Mrs D Bentley	Director, Cotton Catchment Communities CRC.

	2006	2005
	$	$
Dept Agriculture, Fisheries and Forestry	**276,950**	151,687
University of Southern Queensland	**169,338**	129,700
Waters and Rivers Commission, WA	**-**	254,750
Department of Infrastructure, Planning and Resources, NSW	**88,000**	167,640
CSIRO Land & Water	**1,025,551**	1,018,324
University of Melbourne	**-**	80,445
University of Western Australia	**-**	857,351
Meat and Livestock Australia	**82,500**	-
CRC for Irrigation Futures	**398,200**	-
University of Tasmania	**209,315**	-
Cotton Catchment Communities CRC	**51,538**	-
Total	**2,301,392**	2,659,897

Notes to and forming part of the Financial Statements

	2006	2005

Note 16: Executive Remuneration

The number of senior executives who received or were due to receive total remuneration of $130,000 or more:

$130 000 to $144 999	**2**	2
$145 000 to $159 999	**2**	1
$160 000 to $174 999	**2**	-
Total	**6**	3

	$	$
The aggregate amount of total remuneration of executives shown above	**910,104**	432,037

The executive remuneration includes all senior executives concerned with or taking part in the management of the Corporation during 2005-06 except the Executive Director. Details in relation to the Executive Director have been incorporated into Note 14: Director Remuneration.

	2006	2005
	$	$

Note 17: Remuneration of Auditors

Remuneration to the Auditor-General for auditing the financial statements for the reporting period.

The fair value of audit services provided was:		
The Corporation	**27,000**	24,500
The fair value of other services provided was:		
Audit of individual Corporation programmes.	**10,000**	18,500

	2006	2005

Note 18: Average Staffing Levels

The average staffing levels for the Corporation during the year were:	**40**	33

Note 19: Financial Instruments

Note 19A: Interest Rate Risk

Financial Instrument	Notes	Floating Interest Rate		Fixed Interest Rate Maturing In						Non-Interest Bearing		Total		Weighted Average Effective Interest Rate	
				1 Year or Less		1 to 5 Years		> 5 Years							
		2006 $	2005 $	2006 $	2005 $	2006 $	2005 $	2006 $	2005 $	2006 $	2005 $	2006 $	2005 $	2006 %	2005 %
Financial Assets															
Deposits at call	8A	**6,357,168**	4,863,032	-	-	-	-	-	-	-	-	**6,357,168**	4,863,032	**5.31**	5.1
Cash on hand	8A	-	-	-	-	-	-	-	-	**250**	250	**250**	250	-	-
Receivables for goods and services (gross)	8B	-	-	-	-	-	-	-	-	**763,402**	1,636,355	**763,402**	1,636,355		
Other receivables (excluding GST)	8B	-	-	-	-	-	-	-	-	**61,045**	37,717	**61,045**	37,717	-	-
Investments - term deposits	8C	-	-	**11,027,001**	11,944,759	-	-	-	-	-	-	**11,027,001**	11,944,759	**5.65**	5.5
Total		**6,357,168**	4,863,032	**11,027,001**	11,944,759	-	-	-	-	**824,697**	1,674,322	**18,208,866**	18,482,113		
Total Assets												**19,673,248**	19,654,598		
Financial Liabilities															
Suppliers	10A	-	-	-	-	-	-	-	-	**550,371**	1,661,484	**550,371**	1,661,484	-	-
Other payables - revenue in advance	10B	-	-	-	-	-	-	-	-	**62,273**	291,182	**62,273**	291,182	-	-
Total		-	-	-	-	-	-	-	-	**612,644**	1,952,666	**612,644**	1,952,666		
Total Liabilities												**6,417,349**	4,982,350		

Note 19B: Fair Values of Financial Assets and Liabilities

Financial assets - The net fair values of cash, deposits on call, receivables for goods and services and term deposit equal their carrying amounts and none are readily traded in organised markets in a standard form.

Financial liabilities - The net fair values of revenue in advance and suplier payables equal their carrying values and none are readily traded in organised markets in a standard form.

Note 19C: Credit Risk Exposures

The Corporation's maximum exposures to credit risk at reporting date in relation to each class of recognised financial assets is the carrying amount of those assets as indicated in the Balance Sheet.

The Corporation has no significant exposures to any concentrations of credit risk.

All figures for credit risk referred to do not take into account the value of any collateral or other security.

Note 20: Reporting of Outcomes

Note 20A: Outcomes of the Corporation

The Corporation is structured to meet one outcome:

Knowledge, understanding and informed debate to inspire innovation and action in sustainable natural resource management.

Six outputs are identified for this outcome. These are:

Output 1:	Landscapes
Output 2:	People
Output 3:	Industries
Output 4:	Innovation
Output 5:	Collaborative and Strategic Analysis
Output 6:	Knowledge into Practice

Notes to and forming part of the Financial Statements

Note 20B: Net Cost of Outcome Delivery

	Outcome 1		Total	
	2006 $	2005 $	**2006 $**	2005 $
Expenses				
Administered expenses	-	-	-	-
Departmental expenses	**32,681,791**	26,277,892	**32,681,791**	26,277,892
Total expenses	**32,681,791**	26,277,892	**32,681,791**	26,277,892
Costs recovered from provision of goods and services to the non-government sector				
Administered	-	-	-	-
Departmental	-	-	-	-
Total costs recovered	-	-	-	-
Other external revenues				
External contributions	**17,737,888**	18,459,128	**17,737,888**	18,459,128
Interest	**949,933**	588,293	**949,933**	588,293
Other	**29,817**	108,104	**29,817**	108,104
Total Departmental	***18,717,638***	*19,155,525*	***18,717,638***	*19,155,525*
Total other external revenues	**18,717,638**	19,155,525	**18,717,638**	19,155,525
Net cost of outcome	**13,964,153**	7,122,367	**13,964,153**	7,122,367

Notes to and forming part of the Financial Statements

Note 20C: Departmental Income and Expenses by Output Groups and Outputs

Outcome 1	Output 1		Output 2		Output 3	
	2006 $	2005 $	**2006** $	2005 $	**2006** $	2005 $
Operating expenses						
Employees	**488,333**	333,823	**394,737**	435,415	**1,118,380**	968,169
Suppliers	**744,172**	636,154	**456,851**	210,569	**2,091,241**	1,537,726
Research and development	**4,180,867**	3,873,690	**1,750,853**	970,426	**11,169,945**	9,826,475
Depreciation and amortisation	**33,713**	36,880	**18,931**	22,963	**91,995**	95,788
Write-down of assets	**659**	1,574	**6,978**	529	**1,752**	4,007
Total operating expenses	**5,447,744**	4,882,121	**2,628,350**	1,639,902	**14,473,313**	12,432,165
Funded by:						
Revenue from government	**3,196,195**	3,862,427	**2,141,562**	1,838,771	**2,515,447**	2,944,252
External contributions	**1,877,091**	2,088,000	**280,000**	90,000	**11,311,638**	12,117,164
Interest	**148,469**	104,267	**-**	41,249	**668,352**	325,345
Other income	**7,571**	2,922	**6,589**	-	**15,657**	7,544
Gains	**447**	-	**67**	-	**2,694**	-
Total operating revenues	**5,229,773**	6,057,616	**2,428,218**	1,970,020	**14,513,788**	15,394,305

Outcome 1 (continued)	Output 4		Output 5		Output 6		Total	
	2006 $	2005 $	**2006** $	2005 $	**2006** $	2005 $	**2006** $	2005 $
Operating expenses								
Employees	**147,671**	88,906	**859,995**	841,156	**1,099,912**	938,227	**4,109,028**	3,605,696
Suppliers	**132,179**	106,306	**1,327,089**	935,528	**1,476,361**	860,335	**6,227,893**	4,286,618
Research and development	**1,718,995**	943,072	**3,018,283**	2,259,405	**273,913**	280,457	**22,112,856**	18,153,525
Depreciation and amortisation	**12,448**	8,667	**45,322**	43,982	**17,751**	15,829	**220,160**	224,109
Write-down of assets	**243**	370	**1,874**	789	**348**	675	**11,854**	7,944
Total operating expenses	**2,011,536**	1,147,321	**5,252,563**	4,080,860	**2,868,285**	2,095,523	**32,681,791**	26,277,892
Funded by:								
Revenue from government	**1,764,140**	1,138,022	**846,170**	842,560	**2,049,486**	1,874,968	**12,513,000**	12,501,000
External contributions	-	-	**3,838,659**	3,443,964	**430,500**	720,000	**17,737,888**	18,459,128
Interest	-	29,537	**122,113**	87,895	**10,999**	-	**949,933**	588,293
Other income	-	-	-	-	-	97,638	**29,817**	108,104
Gains	-	-	**913**	-	**103**	-	**4,224**	-
Total operating revenues	**1,764,140**	1,167,559	**4,807,855**	4,374,419	**2,491,088**	2,692,606	**31,234,862**	31,656,525

The Corporation's outcome and outputs are described at Note 20A

Administration income and expenditure has been allocated across outputs, proportionally, based on output income and expenditure. The net costs shown include intra-government costs that would be eliminated in calculating the actual Budget outcome.

APPENDICES

APPENDIX 1: THE CORPORATION'S LEGISLATION

ENABLING LEGISLATION

Land & Water Australia was established on 3 July 1990 under the PIERD Act.

Objects

The legislated objects of all R&D corporations are set out in section 3 of the PIERD Act. Sub-sections 3(a) to (c) respectively cover primary industry and community benefits, sustainability of natural resources, and social capital development — equating to the economic, environmental and social components of ecologically sustainable development to which the R&D corporations direct their efforts. Sub-section 3(d) encompasses accountability.

Table 2: the four PIERD Act objects

Object (PIERD Act section 3)	
(a)	Increasing the economic, environmental or social benefits to members of primary industries and to the community in general by improving the production, processing, storage, transport or marketing of the products of primary industries.
(b)	Achieving the sustainable use and sustainable management of natural resources.
(c)	Making more effective use of the resources and skills of the community in general and the scientific community in particular.
(d)	Improving accountability for expenditure on R&D activities in relation to primary industries.

Functions

The functions of Land & Water Australia, deriving from section 11 of the PIERD Act, are to:

- investigate and evaluate the requirements for research and development relevant to issues affecting the management of land, water and related vegetation resources and, on that basis, prepare a five-year R&D plan, review it annually and revise it if required
- prepare an annual operational plan for each financial year
- coordinate or fund the carrying out of research and development activities that are consistent with the annual operational plan
- monitor, evaluate and report on NRM research and development activities that are coordinated or funded, wholly or partly, by the Corporation to the Parliament, the Minister and its representative organisations
- facilitate the dissemination, adoption and commercialisation of the results of its research and development in relation to the activities in respect of which the Corporation was established
- such other functions as are conferred on the Corporation by the PIERD Act or any other Act.

Powers

Section 12 of the PIERD Act grants powers to Land & Water Australia to:

- enter into agreements for carrying out research and development activities
- make applications for and deal with patents vested in the Corporation
- charge for work or services rendered by the Corporation
- accept gifts, grants and bequests, and act as a trustee of money or property vested in the Corporation
- acquire, hold and dispose of real and personal property
- join in the formation of a company
- do anything incidental to any of its powers.

The web address for the PIERD Act is: **www.austlii.edu.au/au/legis/cth/consol_act/piaerada1989531/**

APPENDIX 2: COMPLIANCE WITH AUSTRALIAN GOVERNMENT STATUTES AND POLICIES

Table 3: a summary of Land & Water Australia's compliance with specific statutes and government policies.

Statute/Government policy	Obligation	Compliance (see note 1)
PIERD Act	Various	Fully compliant — demonstrated through completed compliance checklist
PIERD Act section (1)(a)(iii)	Revision of the R&D plan and annual operational plan.	No revisions during the year
PIERD Act section 28(1)(a)(v) to (viii)	Report if Land & Water Australia applied for or commercially exploited a patent or was granted a licence under a patented invention, had interests in a company or in forming a company, undertook activities to form a company, or transacted significant acquisitions or disposals of real property.	Nothing to report during the year
PIERD Act section 28(1)(a)(iv)	Details of Land & Water Australia research projects.	See Report of Operations
PIERD Act section 143	Ministerial directions	No Minister has notified the Corporation of a Ministerial direction
CAC Act and Auditor-General Act 1997	Various	Fully compliant — demonstrated through completed compliance checklist reviewed by the Corporation's legal advisers and Audit Committee
CAC Act section 15	Significant events	Nil reported during period
CAC Act subsection 47A(2)	Finance Minister 1 December 2004	Compliant

Statute/Government policy	Obligation	Compliance (see note 1)
Division 3 section 16 of the Commonwealth Authorities and Companies (Report of Operations) Orders 2002	Disclosure of insurance cover	The Corporation has comprehensive insurance cover with the Australian Government insurer, Comcover, for its directors and officers
Environment Protection and Biodiversity Conservation Act 1999	Reporting obligations as specified at section 516A.	Compliant - Land & Water Australia requires that sustainability of the natural resource base is the overriding objective when researchers and others are designing R&D projects and programs. Project contracts have specific clauses requiring providers to minimise negative environmental impacts. A significant number of projects across the R&D portfolio actively progress the intent of the *Environment Protection and Biodiversity Conservation Act 1999*. The mission and work of the Corporation advance the Government's principles of Ecologically Sustainable Development.
Freedom of Information Act 1982		See Appendix 3
A New Tax System (Goods and Services) Act 1999		Compliant
Occupational Health and Safety (Commonwealth Employment) Act 1991	Compliance with occupational health and safety policy.	Compliant
Archives Act 1983		Compliant
Parliamentary or administrative reviews		No judicial decisions or decisions of administrative tribunals during the reporting period that have had or may have a significant impact on the Corporation's operations. There were no reports from a Parliamentary committee or the Australian Government Ombudsman regarding the operations of the Corporation

Statute/Government policy	Obligation	Compliance (see note 1)
Equal Employment Opportunity Act 1987	The Corporation's terms and conditions of employment promote a work environment free from discrimination in employment matters, ensuring application of the principles of merit and equity. The Corporation also promotes the principles of industrial democracy and a participative work place.	Compliant
Government priorities for national and rural research		See Highlights of the Year.
Payments made to representative organisations related to consultation		No payments were made.
Energy efficiency statement		Land & Water Australia supports the Australian Government's enhanced Energy Management Program and energy management guidelines. The Corporation leases offices as part of a large office complex and does not own large, energy-consuming equipment or commercial vehicles.
Fraud control	Preparation of fraud risk assessments and fraud control plans.	Compliant. Comprehensive fraud risk and control plans were completed in 2004–05.
Management of frequent flyer points	All frequent flyer points accumulated by directors and staff on Land & Water Australia business must only be redeemed for the benefit of NRM.	Compliant

Statute/Government policy	Obligation	Compliance (see note 1)
Commonwealth Disability Strategy		Land & Water Australia implemented the strategy to an extent appropriate to the functions and size of the Corporation. The Corporation's premises have easy, safe access by people with special orientation and mobility requirements. The Corporation's recruitment and staff development practices seek to eliminate disadvantage that may be contributed for disabilities.
Legislation/regulations affecting Land & Water Australia business.	Land & Water Australia is required to comply with the Australian Government's requirements for regulatory best practice arrangements when proposing new regulation or amending existing regulation which impacts on business.	Land & Water Australia has not been involved in any regulatory proposals during the reporting period.

Note:

1. Where 'compliant' appears in this column, details of the actions or policy that constitutes compliance are available on request from the Corporation (land&wateraustralia@lwa.gov.au, facsimile 02 6263 6099 or telephone 02 6263 6000).

APPENDIX 3: FREEDOM OF INFORMATION STATEMENT

As an Australian Government statutory authority, the Corporation is subject to the *Freedom of Information Act 1982*.

Categories of documents

Documents relating to research and development activities funded by the Corporation are held at the office in Canberra, including the following.

Freedom of information statistics

Freedom of information requests received: nil
Internal review received: nil
Administrative Appeals Tribunal appeals: nil

Facilities and procedures for Freedom of Information access

Members of the public can examine documents at the Corporation's office in Canberra by contacting the Chief Financial Officer on 02 6263 6000. Office hours are Monday to Friday between 8.30 am and 5.00 pm. Access to the documents incurs a fee as prescribed under the Freedom of Information Act.

This statement is correct to 30 June 2006.

Category	Nature	Customarily made available	Not customarily made available*
Planning documents including R&D plan, annual operational plan and annual report	Files Publications	 *	*
Annual report	Files Publications	 *	*
Applications and agreements	Files and forms		*
Financial and project administration	Files and electronic data Publications	 *	*
Information relating to the commercialisation of research and development	Files		*
R&D plan	Files Publications	 *	*
R&D reports and occasional papers	Files Publications	 *	*
Staff administration and personnel	Files		*

*** For privacy or commercial-in-confidence reasons**

APPENDIX 4: PROGRAM MANAGEMENT COMMITTEES MEMBERSHIP

Membership is as at 30 June 2006.

Placement of committees in R&D programs reflects the 2005–06 committee structure.

* denotes Chair of the committee in 2005–06.

A list of abbreviations is on page 152

Industries Arena

Program	Name	Organisation
Land, Water & Wool (Sustainable Wool Advisory Group)	P. Day	LWA consultant
	T. Dunbabin*	Wool producer
	M. Goodacre	Wool producer
	L. Hogan	AWI
	M. Lloyd	Wool producer
	A. Lovett	LWA
	A. Southwell	Wool producer
	J. Street	Wool producer
	R. Weatherly	Wool producer
Grain & Graze	I. Donges*	Independent
	M. Blumenthal	Grains RDC
	G. Fraser	Grains RDC
	R. Banks	MLA
	K. Baldry	MLA
	I. Rogan	AWI
	J. Childs	LWA
	A. Lovett	LWA
National Program for Sustainable Irrigation	R. Brazil	Irrigator & LWA
	A. Lovett	LWA
	A. McCrea	WA WRC
	S. Mills	Irrigator & ANCID
	T. Gardner	Qld DNRW
	T. Vanderbyl	Qld SunWater
	B. Pyke	Cotton RDC
	P. Hayes	CRC Irrigation Futures
	C. Thompson	Horticulture Australia Ltd
	D. Flett*	Independent
	T. Busher	WA Consortium
	R. Dalton	DAFF
	G. Schrale	SA DWLBC

Program	Name	Organisation
Managing Climate Variability	D. Baker*	Grains RDC
	W. Hall	MLA
	D. Poulter	DAFF
	S. Henderson	Sugar RDC
	T. Davison	Dairy Australia
	G. Wilson	RIRDC
	P. Arkle	NFF
	L. Hogan	AWI
	C. Willcocks	LWA
	A. Lovett	LWA
	M. Blumenthal	Grains RDC (observer)
Healthy Soils for Sustainable Farms	W. Watkins*	Independent
	M. Blumenthal	Grains RDC
	S. Veitch	DAFF
	J. Spiers	LWA
	A. Lovett	LWA
	K. Andrews	LWA

Landscapes Arena

Program	Name	Organisation
National Rivers Consortium (concluding in 2005-06)	J. Olley	CSIRO Land and Water
	P. Cullen *	LWA
	G. Fishburn	NSW DIPNR
	V. Klemm	WA WRC
	C. Schweizer	DEH
	K. Good	SA Catchment Water Management Boards
National River Contaminants (concluding)	B. Lawrence	MDBC
	B. Edgar*	LWA
National Riparian Lands (concluding)	T. Fisher	LWA
	J. Donaldson	LWA

Program	Name	Organisation
Environmental Water Allocation	P. Cullen*	LWA
	C. Schweizer	DEH
	R. Dalton	DAFF
	J. Donaldson	LWA
Tropical Rivers	T. Fisher*	LWA
	C. Schweizer	DEH
	R. Dalton	DAFF
	J. Donaldson	LWA
Native Vegetation (concluding)	J. Childs*	LWA
	J. Burdon	CSIRO Plant Industry
	B. Keating	CSIRO Sustainable Ecosystems
	B. Dickens	Greening Australia
	T. Aldred	LWA
Native Vegetation and Biodiversity	J. Childs*	LWA
	J. Burdon	CSIRO Plant Industry
	B. Keating	CSIRO Sustainable Ecosystems
	D. Carr	Greening Australia
	T. Aldred	DAFF(until December 2005)
	J. Donaldson	LWA (from March 06)

Program	Name	Organisation
Defeating the Weeds Menace R&D Plan	J. Childs*	LWA
	S. Veitch	DAFF
	J. Muirhead	DEH
	R. McFadyen	NWAG
	J. Donaldson	LWA
Joint Venture Agroforestry (managed by RIRDC)	Andrew Campbell*	LWA
	T. Lefroy (from June 2006)	LWA
	S. Barlow	University of Melbourne
	S. Davis	MDBC
	G. Kile	FWPRDC
	C. Lemerle	RIRDC
	R. Clark	Tasmanian Institute of Agricultural research
	W. Ragg	Australian Forest Growers
	P. O'Brien	RIRDC
	A. Robinson	DAFF
	R. Lott	RIRDC
	B. Goody	DEH
	Observers: Alex Campbell	CRC for Plant Based Management of Dryland Salinity

People Arena

Program	Name	Organisation
Social and Institutional Research	T. Fisher*	EPA Victoria
	G. Bammer	ANU
	D. Bentley	LWA; NRC, NSW
	B. Brazil	LWA
	M. Buxton	RMIT
	P. Green	Southern Rivers CMA, NSW
	D. Peterson	Productivity Commission
	H. Tomlinson	DAFF
	M. Lester	LWA

Innovation Arena

Program	Name	Organisation
Innovation Call	N. Schofield	LWA
	M. Lester	LWA
	M. Wagg	LWA
	R. Fearon	Coastal CRC
Scholarships and Fellowships	A. Campbell	LWA
	S. Pearson	LWA
	A. Jakeman	ANU
	N. Schofield	LWA

Program	Name	Organisation
National Land & Water Resources Audit Advisory Council	G. Gorrie *	Independent Chair
	J. Foster	Environment ACT
	J. Gilmour	NT DPI
	P. Harper	Australian Bureau of Statistics
	C. McRae	DSE Victoria
	B. Nulsen	Department of Agriculture, WA
	T. Slatyer	DEH
	J. Olley	CSIRO Land and Water
	G. Pinkard	DPIW Tasmania
	C. Robson	DNRW Queensland
	P. Sutherland	DIPNR NSW
	W. Watkins	ANZLIC
	R. Wickes	DWLBC, South Australia
	B. Wonder	DAFF
	B. Beeton	University of Queensland (Observer)
	A. Campbell	LWA (Observer)
	J. Donaldson	DAFF (Support)
	A. Watt	DEH (Support)

APPENDIX 5: THE CORPORATION'S STAKEHOLDERS AND CLIENTS

The Australian Government, in particular:

- the Minister for Agriculture, Fisheries and Forestry
- the Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry
- the Minister for Transport and Regional Services
- the Minister for the Environment and Heritage
- the Minister for Science , Education and Training
- the Department of Agriculture, Fisheries & Forestry
- the Department of the Environment and Heritage
- the National Water Commission
- the Department of Transport and Regional Services
- the Department of Education, Science and Training
- the Chief Scientist

Land & Water Australia's Representative Organisations:

- the National Farmers' Federation
- the Australian Conservation Foundation

Australian Government NRM Initiatives:

- Natural Heritage Trust
- National Action Plan for Salinity and Water Quality
- National Landcare Program
- National Water Initiative

Funding agencies that provide collaborative support within commissioned R&D programs, in particular:

- other RDCs
- the National Water Commission
- the Murray-Darling Basin Commission
- State Government Departments

Key target audiences for Land & Water Australia's outputs, in particular:

- farmers and other land managers, and the people who advise them
- regional NRM bodies and catchment bodies
- industry organisations, NGOs and indigenous organisations
- state agencies and local government
- others involved in the use, management, regulation or conservation of Australia's land, water and vegetation resources.

The research and development community, in particular:

- Universities and CRCs
- CSIRO and other Australian Government research organisations
- state agencies and consultants

The public at large who have an interest in the sustainability of Australia's land, water and vegetation resources.

LIST OF ABBREVIATIONS

AANRO	Australian Agriculture and Natural Resources Online
AJASN	Australasian Joint Agency Scanning Network
ANAO	Australian National Audit Office
ANCID	Australian National Committee on Irrigation and Drainage
ANU	Australian National University
ANZLIC	Australian and New Zealand Land Information Council (the Spatial Information Council)
APEN	Australasia-Pacific Extension Network (Inc.)
ARRIP	Australian Rural Research in Progress
Audit	National Land & Water Resources Audit
AWI	Australian Wool Innovation Limited
CAC Act	*Commonwealth Authorities and Companies Act 1997*
CMA	Catchment Management Authority
COAG	Council of Australian Governments
CRC	Cooperative Research Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFF	Australian Government Department of Agriculture, Fisheries and Forestry
DEH	Australian Government Department of the Environment and Heritage
DIPNR	Department of Infrastructure, Planning & Natural Resources (New South Wales)
DME	Department of Mines and Energy (South Australia)
DNRW	Department of Natural Resources and Water (Queensland)
DPI	Department of Planning and Infrastructure (Northern Territory)
DPI	Department of Primary Industries (Victoria)
DPIF	Department of Primary Industries and Fisheries (Queensland)
DPIW	Department of Primary Industries and Water (Tasmania)
DSE	Department of Sustainability and Environment (Victoria)
DSE	dry sheep equivalent
DWLBC	Department of Water, Land and Biodiversity Conservation (South Australia)
EPA	Environment Protection Authority (Victoria)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
ESD	Ecologically Sustainable Development
FWPRDC	Forest and Wood Products Research and Development Corporation
GRDC	Grains Research and Development Corporation
ISO	International Standards Organisation
JVAP	Joint Venture Agroforestry Program
LWA	Land & Water Australia (legislated title: Land and Water Resources Research and Development Corporation)
LWW	Land, Water & Wool
MDBC	Murray–Darling Basin Commission

MLA	Meat and Livestock Australia
NAIF	Northern Australia Irrigation Futures Project
NAP	National Action Plan for Salinity and Water Quality
NDSP	National Dryland Salinity Program
NFF	National Farmers' Federation
NHT	Natural Heritage Trust
NPSI	National Program for Sustainable Irrigation
NRC	Natural Resources Commission (New South Wales)
NRM	natural resource management
PIERD Act	*Primary Industries and Energy Research & Development Act 1989*
PIRSA	Department of Primary Industries and Resources, South Australia
R&D	research and development
RDC	research and development corporation
RIRDC	Rural Industries Research and Development Corporation
RMIT	Royal Melbourne Institute of Technology
SIRP	Social and Institutional Research Program
SRDC	Sugar Research and Development Corporation
SoE	State of the Environment

Note: Program/me: A number of older programs funded by Land & Water Australia and its partners have names and logos spelled with a single 'm'. For the sake of consistency we were advised to keep that spelling throughout the Annual Report.

COMPLIANCE INDEX

This index shows the numbers for pages on which information is provided in response Australian Government legislation and policies. A table providing a summary of Land & Water Australia's compliance with specific statutes and government policies is at Appendix 2 on pages 139-143.

When this annual report has not addressed a compliance subject (usually because no activity occurred under that heading during the year), the subject entry is followed by '—' rather than by a page number.

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www.lwa.gov.au/annualreports

Land & Water Australia is a statutory authority of the Australian Government Department of Agriculture, Fisheries and Forestry. Its legislated title is Land and Water Resources Research and Development Corporation.