Australian Government

Land & Water Australia

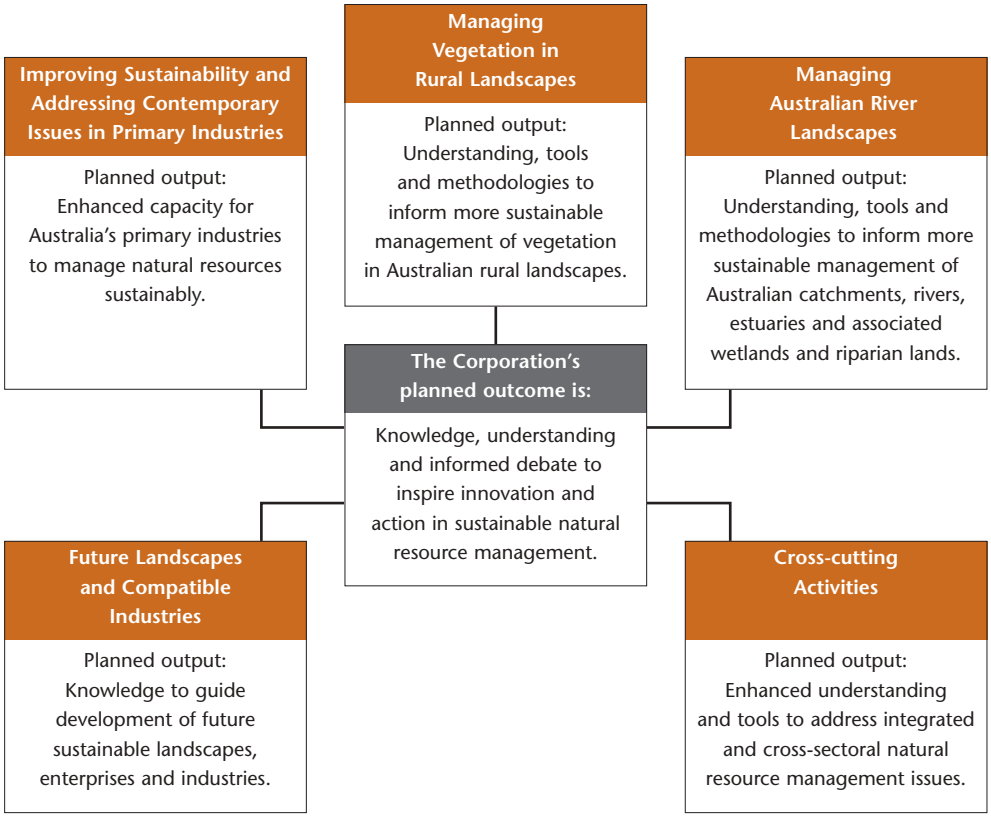
ANNUAL REPORT 2003–04

Land & Water Australia

Since 1990, Land & Water Australia (formerly known by its legal title, the Land and Water Resources Research and Development Corporation) has invested in research and development for the productive and sustainable management of Australia's land, water and vegetation resources.

This year, Land & Water Australia directed much of its Australian Government appropriation of $12.2 million to generate $20.9 million in research and development investments through 13 R&D programs involving 29 co-investing partners. Complementing its research investments, Land & Water Australia is the host and managing agency of the National Land & Water Resources Audit.

These investments underpin the sustainability of dryland cropping, horticulture, sugar, cotton, rice, dairy and grazing industries, whose gross value of production was worth $39 billion in 2001–02. Irrigation produces some $7 billion of annual agricultural output before value-adding. Of even greater value are the natural resources on which these industries and the whole nation depend. Land & Water Australia seeks to invest in high-quality science to improve the knowledge base for managing these resources sustainably.



These five 'R&D arenas', with the planned outputs shown, presently encompass 13 national R&D programs supported by Land & Water Australia and partner organisations. A diagram of the R&D program structure within the arenas is on page 24.

Australian Government
Land & Water Australia

24 September 2004

Senator the Hon. Judith Troeth
Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry
Parliament House
CANBERRA ACT 2600

Dear Minister,

Land & Water Australia
Annual Report 2003–04

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 2003–04. The report has been prepared in accordance with the PIERD Act, the *Commonwealth Authorities and Companies Act 1997* and the Commonwealth Authorities and Companies (Report of Operations) Orders 2002.

Yours faithfully,

Roberta Brazil
Chairperson

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Cover image

An exquisite and thought-provoking mural by Annie Franklin, signifying the many relationships Australians have with the continent's diverse environments. The large mural is on display at Land & Water Australia reception.

Land & Water Australia Annual Report, 2003–04

An electronic version is at www.lwa.gov.au/annual reports

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LAND & WATER AUSTRALIA

Annual Report 2003–04

Land & Water Australia's mission is to provide national leadership in generating knowledge, informing debate and inspiring innovation and action in sustainable natural resource management.

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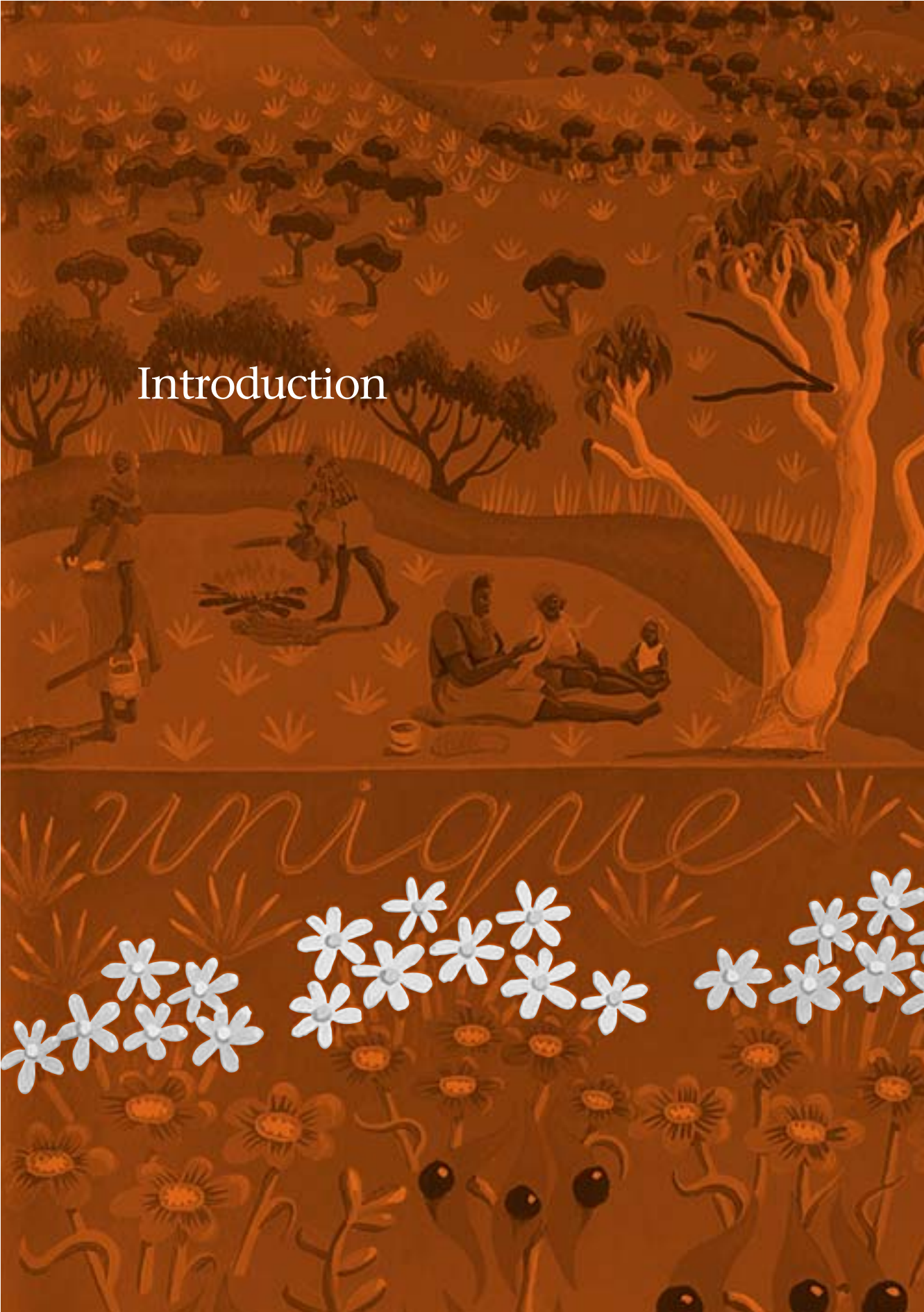

Introduction

Photo: Lyn Brazil.

At home with the Chair Roberta Brazil.

From the Chair

At a time when the management of our natural resources, especially water, has risen to the top of the national agenda, Land & Water Australia has continued to play a critical role in building the knowledge base for sound decisions.

It has been a very important year in the development of the Corporation. The Board has overseen important decisions to improve our corporate management capacity and to better manage risk. For the first time, we have seen significant staff turnover as we have sought to get appropriate skills in appropriate roles for the future needs of the Corporation. We have moved into new premises with better security, amenity, flexibility and potential for growth.

Our core business of investing in and managing collaborative R&D programs has continued apace, with very good results. We have initiated major new programs with our industry partners that are now starting to deliver, and we have developed excellent synthesis products from concluding programs, notably in dryland salinity. We have worked very closely with other R&D Corporations, and have contributed actively to joint efforts to improve collaboration and communication across RDCs on natural resource management issues.

The Board led the development of a new Strategic R&D Plan, which we will submit to the Minister in early 2005. This new plan refines our strategic directions to better fit the Australian Government's National Research Priorities, the subsidiary priority areas for rural R&D, and the directions given to us by Senator Judith Troeth.

Photo: Land & Water Australia.

With Industry Partnerships Program scholarship recipient Bernice Kelly (fourth from right), Land & Water Australia directors inspect a streamflow measurement device at Virginia Park in the Burdekin catchment, south-west of Townsville. From left: Charles Willcocks, Andrew Campbell, Tim Fisher, Bobbie Brazil, Mike Logan, Dave Pannell and John Childs.

We are placing greater emphasis on ensuring that our research is both adoptable and adopted. We are also determined to take up the challenge of meeting the knowledge needs of the regional delivery arrangements for the Natural Heritage Trust, the National Action Plan for Salinity and Water Quality, and the National Water Initiative.

The Board places a very high priority on achieving the highest standards of corporate governance. I was pleased to see that an external review of Board performance found an overall improvement in the rating of Board performance from an already high rating two years ago.

The Board appreciates that the staff of the Corporation have worked extremely hard during a year of considerable internal change. We value their dedication, commitment and talents very highly.

As ever, the coming year promises to be full of challenge and opportunity. I was pleased to accept a second term as Chair of Land & Water Australia. It is a wonderful opportunity to contribute to a more sustainable Australia.

Roberta Brazil
Chairperson

Highlights of 2003–04

diverse

It has been a busy and exciting year for Land & Water Australia, with significant contributions made to the national knowledge base for sustainable natural resource management. Strategic investments in generating new knowledge, synthesising knowledge into forms suitable for broad and targeted uptake, building capacity, and collaborating with industry have been extremely fruitful. Some of the most significant outputs and outcomes from these approaches are outlined in this section.

Generating new knowledge

Investing in world-leading, robust methods has resulted in a range of research achievements. In the critical area of water resources, recent highlights include:

- design of a workable system of water property titles that contributed to new national and state-level water policy (the work was initiated by the Australian Property Institute (NSW branch) with strong support from the Deputy Prime Minister and funded jointly by the Australian Government Department of Agriculture, Fisheries and Forestry)
- national agreement on methods for the protection of rivers of high conservation value
- a practical, scientifically rigorous method for determining the ecological risk of irrigation schemes at catchment scale
- new understanding of the lethal effects on aquatic organisms of removing riparian shade and increasing stream salinity
- new techniques that relate changes in catchment land use to regional water quality targets being set in the National Action Plan for Salinity and Water Quality and Natural Heritage Trust.

A major new phase of investment in climate research was launched based on the acknowledged contributions of the earlier phase:

- improved methods for monitoring drought and predicting national farm performance
- demonstrations and case studies showing how seasonal climate forecasts could be used in managing water resources, tree establishment and cropping patterns in southern Australia
- analyses of climate change impacts on cropping and grazing productivity in Australian agriculture.

Outstanding research results have been achieved in the areas of vegetation management and biodiversity:

- new understanding of the relative importance of vegetation cover (percentage cover) and vegetation patterns (how is it distributed) in the conservation of biodiversity in agricultural landscapes
- new methods for determining critical regional-scale habitat fragmentation thresholds for declining bird species — in the Western Australian wheatbelt these are being used for planning strategically located revegetation to increase the size, connectedness and resilience of habitats for declining bird species
- more scientifically rigorous seed collection guidelines for revegetation, based on genetic and population studies of remnant vegetation

- an efficient, reliable technique for large-scale census of scattered trees, using digital analysis of aerial photography, to determine rates of paddock tree loss in agricultural regions
- a national overview of critical success factors for effective integration of biodiversity values in regional planning, funded by the Australian Government Department of the Environment and Heritage.

Knowledge to underpin the next generation of resource management and primary industry innovations has been developed:

- a comprehensive analysis of patterns, trends and potential drivers of future change in Australian landscapes and their management
- detailed analysis of the 2001 population census to examine existing and potential future structural changes in Australian agriculture
- a new methodology to map the best geographical fit of communities of shared interest (social catchments) with ecological landscapes — the NSW Government has contracted the University of New England research team to prepare eco-civic regional maps for all rural areas of New South Wales, building on the Land & Water Australia-funded research
- development of visualisation tools using virtual reality technology that could help community groups and catchment bodies to "imagine" future landscapes and explore alternative scenarios
- facilitation of two-way learning with Aboriginal people of the lower Ord catchment, revealing previously undocumented data on Aboriginal utilisation of natural resources in the region, and Aboriginal perspectives on environmental change and aspirations for management of country
- an innovative experiment developing a common property resource management institution across four farms in the New England region, demonstrating more sustainable grazing, a threefold improvement in water quality, reduced labour and other input costs, increased drought resilience and improved financial returns
- development of genetic markers within soil bacteria that could be used as indicators of soil health.

Synthesis

During the past 10 years, Australia's National Dryland Salinity Program (NDSP) has managed about 50 major research projects valued at almost $25 million. Some 300 researchers, technical assistants, consultants and policy-makers have contributed to the program, significantly enhancing our understanding of dryland salinity and our knowledge of what might be done to manage it. In 2003–04 the NDSP concentrated on integrating the information generated over the previous 10 years into a suite of products that were launched by Senator Judith Troeth in early July:

- Managing Dryland Salinity in Australia (a full resource kit and CD–ROM)
- Breaking Ground: Salinity Key Findings and Research Outcomes (a guide for policy makers)
- Dryland Salinity and Catchment Management (a guide for catchment managers)
- Dryland Salinity: On-farm Decisions and Catchment Outcomes (a guide for leading farmers and their advisers).

Left to right: Senator Judith Troeth, Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry launched the National Dryland Salinity Program (NDSP) synthesis communication products; with Kevin Goss, NDSP Chair; Dr Richard Price, then NDSP national manager; Bobbie Brazil, Land & Water Australia Chair; Andrew Campbell, Land & Water Australia Executive Director and Christine Forster, Chair, Victorian Catchment Council.

Demand for these products has been intense, with most of the 5,000 initial production run taken up.

A Data Audit for the new Tropical Rivers R&D program (funded by the Australian Government Department of the Environment and Heritage) produced a comprehensive analysis of existing datasets and knowledge relevant to Australia's tropical river systems and their associated catchments, floodplains and wetlands. This very attractive compendium is in effect a new 'Atlas of the North'.

Other highlights of our synthesis efforts were:

- a review of the economic contribution of irrigated agriculture to the Australian economy
- a new field technique for rapid appraisal of riparian condition based on research into riparian functions (available on the web and in hard copy)
- a common set of terms and definitions to describe and understand irrigation water use, and their acceptance nationally
- *Trees and biodiversity: an Australian guide to farm forestry* (through the Joint Venture Agroforestry Program managed by RIRDC)
- 'Bunker Briefings', which targeted Australian Government policy-makers with lunchtime seminars on policy-relevant outputs from our research portfolio.

Building capacity

Land & Water Australia has an important role in building capacity in all sectors for sustainable NRM. The latest achievements are:

- twenty-three community fellowships, funded by a private philanthropist, to assist non-scientists with valuable knowledge and insights gained through their personal experiences in natural resource management to share their stories and learnings with a wider audience
- commencement of a new Graduate Certificate in River Restoration and Management at Charles Sturt University in Wagga Wagga — a river managers' training and education program initiated and supported by the National Rivers Consortium
- four recipients of Land & Water Australia's PhD scholarships awarded their doctorates this year and six new recipients commencing their studies in fields related to NRM
- fifteen fellowships for travelling and visiting researchers to help Australian researchers to tap into leading international work either by travelling overseas or assisting leading international scientists to spend time in Australia.

Photo: Andrew Campbell.

ABOVE: Land & Water Australia community fellow, John Ive of 'Talaheni' with his paddock poster illustrating 13 years of weekly piezometer data showing how he has lowered groundwater tables and recovered land from dryland salinity. The poster is regularly used at on- and off-property activities, with more than 1000 people having attended more than 40 on-farm events in recent years.

Photo: Amy Jansen, Charles Sturt University.

Landcare coordinators are typical of the students studying rapid appraisal of riparian condition at the postgraduate certificate course in River Restoration and Management offered at Charles Sturt University, Wagga Wagga, with the support of Land & Water Australia.

Land & Water Australia also had an important role in the creation and design of the new AANRO (Australian Agricultural and Natural Resources On-line) database (www.aanro.net). This world-class knowledge resource incorporates three former national research databases including Streamline, Australian Rural Research in Progress and the Australian Bibliography of Agriculture, and enables easy searching of research literature across all R&D corporations, state agencies and national research bodies in Australia.

Working with the regions and industry

Land & Water Australia works closely with industry and regional communities to produce credible scientific knowledge in high demand. Recent accomplishments included the following:

- More than 1,300 woolgrowers were directly involved through Land, Water & Wool in 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.
- A further 5,800 woolgrowers participated in surveys, attended a field day or sought information from Land, Water & Wool during 2003–04. This participation included 1,000 pastoral producers seeking information on new seasonal forecasting tools.
- The new Grain & Graze program successfully negotiated partnerships between four R&D corporations, eleven catchment management agencies and producer groups in eight regions to achieve widespread adoption of mixed farming systems.
- The new RAINMAN version was distributed nationally through 3,000 trial copies of a CD–ROM, giving users free access for one year to tools enabling them to better understand the climate in their district.

Much of the current knowledge and experience in managing saltland pastures has been captured in the second edition of 'Saltland Pastures in Australia — A Practical Guide'. Participating at the book's launch in late 2003 were (from left) Land, Water & Wool Sustainable Grazing on Saline Lands national coordinator Dr Warren Mason, principal author of the book Dr Ed Barrett-Lennard, Prof. Mike Ewing representing the CRC for Plant-based Management of Dryland Salinity and Dr Richard Price, then NDSP national manager. Australian Wool Innovation and Land & Water Australia supported the publishing of the book through the Land, Water & Wool initiative. Photo: Jo Curkpatrick, NDSP Communication Coordinator (Victoria).

Part 1: The directors' review of operations and future prospects

Part 2, describing operational and financial results, starts on page 23.

Part 3, describing corporate governance matters, starts on page 63.

Part 4, describing other corporate management matters, starts on page 77.

Certificate concerning the report of operations

The directors of the Land and Water Resources Research and Development Corporation* 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 10 September 2004.

The date of the report is 24 September 2004.

Roberta Brazil
Chairperson

Andrew Campbell
Exectuve Director

* Land and Water Resources Research and Development Corporation is the legislated title of Land & Water Australia

The directors' review of operations and future prospects

Land & Water Australia performed extremely well during 2003–04 in relation to its statutory objects and functions, the Strategic R&D Plan 2001–2006, and its principal outputs as set out in the annual operational plan.

Furthermore, 2003–04 was a pivotal and successful year for the Corporation in terms of reviewing and rethinking internal functions, systems and structures, and recruiting new senior staff capable of meeting the future needs of the Corporation. The Board commissioned a Business Functions Review that led to a substantial overhaul of financial management and reporting systems that is now well advanced. The Board also instigated an IT Security Review that led to comprehensive changes in the Corporation's systems, processes, assets and staffing associated with managing IT and in particular the associated security and business continuity risks. Implementation of a new IT Security environment has been assisted to a very large degree by relocation of the Corporation's offices to new premises at 86 Northbourne Avenue, Canberra. The costs of implementing the Business Functions Review, including staff redundancies, and of relocation and the fit-out of the new premises, placed additional pressure on the Corporation's budget in 2003–04. This required some tightening of expenditure to maintain equity at satisfactory levels.

Three new senior managers were recruited during 2003–04: a Chief Finance Officer (Iris Carter), a Knowledge and Adoption Manager (Kate Andrews), and an Industries Manager (Anwen Lovett). These new management positions were complemented by new accounting and IT positions. The Board is very pleased with the way new staff have settled in to their roles, and with the overall balance and capacities of the management team. The new team, and the additional flexibility and potential for growth conferred by the new premises, positions the Corporation well to respond quickly and competently in what promises to be a dynamic operating environment over the coming year.

The overall outcome the Corporation is working towards is encapsulated in the mission statement: to provide national leadership in generating knowledge, informing debate and inspiring innovation and action for sustainable NRM. The strategic directions that the Corporation is taking towards that outcome are set out in the Strategic R&D Plan 2001–2006. They include: active development of partnerships with the major rural industries utilising land and water resources; work to bridge the gap between NRM research and policy; more emphasis within the R&D portfolio on work at a landscape scale; a more integrated approach to research investment and management across its social, economic and biophysical dimensions; managing knowledge and information generated by the Corporation's whole portfolio of investments over the last thirteen years, not just current contracts under management; and continual improvement in our effort to encourage the adoption of our research outputs.

The 2003–04 year saw substantial progress in all of these strategies.

Land & Water Australia's new offices were filled to the seams with more than 120 visitors including staff from Australian Government departments (Agriculture, Fisheries and Forestry; the Environment and Heritage; Transport and Regional Services; Education, Science and Training) and other research organisations, to name a few, for the Land & Water Australia Open Day and 'The Challenges Ahead' seminar presented by Prof. Peter Cullen, Land & Water Australia director and the Chief Scientist, Dr Robin Batterham. Photos: Sarah Vandermark and Glenn Conroy, Land & Water Australia.




mla









Better

Australia







Major new research initiatives in Sustainable Irrigation, Grain and Graze, and Managing Climate Variability have all initiated their first suite of research projects. These new initiatives, along with the Land, Water & Wool program and the National Dryland Salinity Program, consolidate our partnerships with the major broadacre industries in Australia, which are now major investors in NRM R&D.

A particular highlight in 2003–04 was the undertaking of an Enhanced Communication Year as the eleventh year of the National Dryland Salinity Program (NDSP). After ten years generating information, the Corporation and our partners invested in a final year to synthesise this knowledge into forms targeted to key audiences at farm, catchment and policy levels. The resulting resource directories and supporting CD–ROM make several hundred research reports easily searchable and interrogable through clear menus and a few mouse clicks. In the Board's view the NDSP synthesis products, launched by Senator Troeth in Melbourne, set a new benchmark for this type of product.

Land & Water Australia managed a number of strategic 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. It is also very heartening to see the impacts of previous Board decisions to enhance the Corporation's communication capacity and effort reflected in continued increases in demand for R&D outputs from our established programs.

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 *Primary Industries and Energy Research and Development Act 1989* (PIERD Act). In accord with s.28 of the PIERD Act and s.516 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), we are required to report on Land & Water Australia's contribution to ecologically sustainable development (ESD). 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 32–51) 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 consistent with ESD principles.

The report of effectiveness in relation to the Corporation's planned outcome, as set out in the annual operational plan, is tabulated on pages 20–22. It reveals that more than 95% of the planned outputs for 2003–04 were achieved across the R&D portfolio. Some highlights have already been listed.

Land & Water Australia is playing a leading role in delivering the science needed to manage Australian landscapes more sustainably. In addition to our existing portfolio of more than 1,500 completed R&D projects, as at July 2004 we have a significant research portfolio of 238 projects (excluding the National Land & Water Resources Audit) already in train in 13 programs involving 29 partners. A new R&D initiative in Environmental Water Allocation is just commencing, and three further initiatives are in the advanced stages of scoping. The tropical rivers initiative will provide crucial knowledge that is essential to inform the inevitable debates about development of water resources in Australia's north. New applied research on social and institutional issues in NRM will underpin the continuing reform agenda in water and vegetation management and in regional arrangements for NRM. New research on native vegetation and biodiversity management at a landscape scale will fill a chronically under-funded gap in knowledge of one of the main levers of landscape change. This is especially in mid-low rainfall zones and northern Australia on the vast majority of the continent outside the reserves system.

The large number of partnerships that the Corporation manages, and the fact that more than half of our total expenditure is third-party funds, indicates that Land & Water Australia is playing a valuable brokering and coordination role in NRM R&D. Importantly, the Corporation is adding value to this impressive research effort with a strategic, focused communication effort aimed at improving adoption of research outputs; leading-edge web-based tools to help 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 on pages 5–10.

Financial performance

The financial performance of Land & Water Australia in 2003–04 was sound. The Corporation's revenue for the year was $25.5 million, an increase of $3 million on the previous year and exceeding the five-year target set in the 2001–2006 Strategic R&D Plan, two years ahead of schedule. This is a significant level of financial leverage on an appropriation from the Australian Government through the Agriculture, Fisheries and Forestry portfolio of $12.2 million. More than 139 new research projects were contracted, attracting $12.8 million of partner co-investment in cash and significantly more in-kind from research providers. Research expenditure of $20.9 million increased $1.2 million over the previous year and exceeded $20 million for the first time in the Corporation's history.

The overall financial result for 2003–04 was an operating loss of $0.16 million, compared with an operating loss of $0.86 million in 2002–03. The operating loss was forecast and the Australian Government Department of Finance was advised accordingly. The actual loss came in below the forecast $0.75 million due to expenditure savings approved by the Board. In recent years the Corporation has been deliberately reducing equity, and the Board is now comfortable with the Corporation's equity position at around $1.54 million, consistent with its policy to maintain equity above $1.3 million.

Significant one-off expenditures in 2003–04 were associated with implementing the Business Functions Review, and relocation and the fit-out of the new premises. Consequently, administration expenditure exceeded budget by $0.97 million, amounting to 10% of total expenditure, substantially exceeding the Board's 7% target. Directors are satisfied that the changes to personnel and financial systems delivered a significant improvement in the Corporation's financial reporting performance in 2003–04. However, some changes can only be implemented at year-end, so we will not see the full impact until the 2004–05 year, when we expect to see further improvements in financial reporting and more accurate forecasting.

The Board will be working with management to ensure that the efficiencies sought through substantial changes to staffing, financial and IT systems are captured during 2004–05, reducing administrative expenditure to a more satisfactory sustainable level while continuing to improve performance and minimise risk.

Communication performance

Subscriptions to periodicals published by Land & Water Australia continue to increase steadily. Again, our website is an important tool in servicing this increase as 75% of stakeholders now use our online subscription service to join the subscriber lists for these publications.

During the year, visitors downloaded more than 45,000 electronic versions of Land & Water Australia publications and research outputs.

The Corporation's research portfolio and NRM research outputs more generally are easier to search. The enhanced search function on the website and improvements to our online 'Research Portfolio' make it easier for stakeholders to find the information they need. There is a general trend for website visitors to use search tools as a means of quickly locating information. Visitors to the website conducted 14,000 advanced searches during 2003–04 and in the same period more than 15,000 visitors linked through to our online databases, hosted by Infoscan.

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 sorts of 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 and the Natural Heritage Trust.

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 (the 2010 equivalent of where salinity was in 1992) 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.

Senator Troeth is explicit that Land & Water Australia is expected to play a leadership, integration and coordination role on NRM issues across R&D corporations. Land & Water Australia is well placed to take a more proactive leadership and coordination role in NRM research and development at the national level.

The Australian Government expects Land & Water Australia to play a leadership, integration and coordination role on NRM issues across R&D corporations.

We are currently consulting key stakeholders in finalising the new Strategic R&D Plan 2005–2010. The draft plan sets out three core strategies for the Corporation: research investment, collaboration through partnerships, and converting knowledge into practice. These 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 R&D effort.

In parallel with the new strategic plan, the Corporation has developed a new proposal for consideration by the Australian Government to deal with what we see as key risks in the current operating environment for NRM. The proposal outlines measures through which the Australian Government can achieve better value from (and reduce risks associated with) its existing investments in NRM for modest additional outlays.

The Board of Land & Water Australia is seeking to minimise risks for the Corporation and to maximise opportunities by gaining support from key stakeholders for our new Strategic R&D Plan, and attracting funding for the new initiatives. This will be a key priority over coming months.

With a strengthened management team in place, in new premises, embarking on new strategic directions, Land & Water Australia is very well positioned to make an even more important contribution to the knowledge base for sustainable management and development of Australia's natural resources.

The directors' assessment of the Corporation's performance, 2003–04

In relation to nominated outputs

The following assessment is against the R&D arena outputs nominated in figure 2 on page 7 of the 2003–04 annual operational plan.

Performance measures	Assessment
Key outputs for each R&D activity (as detailed at chapter 8 of the annual operational plan) are met at 30 June 2004.	Land & Water Australia, in a strong performance, met 95% of its key outputs.

In relation to the Corporation's planned outcome

The following assessments, under headings nominated in figure 1 on page 5 of the 2003–04 annual operational plan, demonstrate the overall effectiveness in achieving Land & Water Australia's planned outcome.

Effectiveness in relation to leadership

To be, and be seen to be, at the forefront of Australian thinking on sustainable NRM.

Performance measure	Assessment
Stakeholder feedback through surveys. The extent to which R&D funded by Land & Water Australia puts issues on the national agenda.	*Over all, Land & Water Australia is performing above expectation.* The Land & Water Australia stakeholder survey indicates that 44% of respondents perceive the Corporation is performing in the "good to excellent" range in leading thinking on NRM issues. 55% of stakeholders rate LWA as "good to excellent" in placing the most important issues on the national agenda. The Corporation is also meeting its expectations in processes developed to target critical NRM issues. Land & Water Australia is placing new issues on the national agenda, such as northern Australian rivers and integrated approaches to environmental water allocation. The Goal Attainment Scaling panel, which independently reviews the Corporation's performance[1], considered this was well above average performance.

1 Assessment of the Corporation's performance is against its five corporate objectives using the qualitative Goal Attainment Scaling (GAS) method. The GAS panel for 2003–04 comprised Prof Snow Barlow, Head of Agriculture, University of Melbourne and President of the Federation of Australian Scientific and Technological Societies; Prof. Gary Jones, Chief Executive, CRC for Freshwater Ecology; Zoltan Lukacs, Corporate Strategist, Grains R&D Corporation; and Dr Ian Prosser, Water and Rivers Manager, Land & Water Australia.

Effectiveness in relation to influence

To maximise the impact of the Corporation's investments, at on-ground, policy and institutional levels, in improving the sustainability of NRM.

Performance measures	Assessment
Adoption of R&D funded by Land & Water Australia, measured through analyses and surveys of adoption rates. The ratio of total R&D effort in Land & Water Australia's programs to the core Land & Water Australia investment.	*Over all, Land & Water Australia is meeting expectation.* There was a 150% increase in downloads of Land & Water Australia products as a result of systematic searches of the web-based research portfolio during 2003–04. Together with an increased demand for hard-copy products, this figure indicates that the Corporation is delivering knowledge in an increasingly effective manner to potential users. As would be expected, case studies indicate that there has been a wide range of adoption rates of the Corporation's leading innovations: from close to 100% of the target audience to a very modest proportion. The stakeholder survey found 57% of respondents rated the Corporation as "good to excellent" at generating knowledge and informing debate on NRM. During 2003–04, Land & Water Australia achieved a cash leverage of 155%, excluding in-kind contributions. That is, for every dollar invested by the Corporation other parties provided $1.55. This leverage ratio exceeds the Corporation's target.

Effectiveness in relation to relevance

To ensure that the Corporation targets investment to where it can make a real difference by meeting critical natural resource policy and management needs.

Performance measures	Assessment
The degree of alignment of Land & Water Australia-funded R&D effort with issues identified by key stakeholders and NRM experts as critical national priorities. Stakeholder feedback through surveys.	*Over all, Land & Water Australia is meeting expectation.* The current Land & Water Australia research portfolio addresses at least 80% of the goals identified under the Prime Minister's first national research priority: 'An Environmentally Sustainable Australia'. These include 'Water – a critical resource' (five current R&D programs), 'Transforming existing industries' (three current and one proposed R&D program), 'Overcoming soil loss, salinity and acidity' (two current programs), and 'Sustainable use of Australia's biodiversity' (one current and one scoped R&D program). In addition, the Sustainable Industries R&D arena is aligned with the third priority, 'Frontier Technologies for Building and Transforming Australian Industries.' Stakeholder feedback indicates that the Corporation is meeting expectation to help users to benefit from research results. Land & Water Australia performed a little under expectation in meeting the community's needs and expectations of research, though the Corporation's targets were considered extremely tough by the Goal Attainment Scaling panel.

Effectiveness in relation to return on investment

To maximise the return on public funding invested through the Corporation.

Performance measure	Assessment
The average benefit-cost ratio across the R&D and communication effort funded by the Corporation.	*Over all, Land & Water Australia is performing above expectation.* The aggregated return on investment for 17 leading in-market innovations (from about 250 projects evaluated in 2002–03 and 2003–04) was 4:1; the average return on investment was 10:1. Conservative assumptions have been made regarding the benefits generated and quantification of these benefits. Where possible, environmental and social benefits have been identified and documented in in-depth case studies. Land & Water Australia is developing a consistent, rigorous, transparent framework under which to examine and compare investments over time. In previous years, a need to develop environmental and social measurements has emerged as a priority since a large proportion of the returns on the Corporation's investments fall into this category. This aspect, the intrinsically "public good" nature of the research generated by Land & Water Australia, significant lag times associated with environmental change, and problems of attribution of change, have remained a challenge in this analysis.

Effectiveness in relation to accountability

To meet all statutory obligations and accountability requirements in a comprehensive, timely, transparent manner.

Performance measures	Assessment
Independent and internal audit reports; feedback from the Australian Government Department of Agriculture, Fisheries and Forestry and Australian National Audit Office; timeliness of compliance.	*Over all, Land & Water Australia improved its performance.* The July–August 2004 audit report by the Australian National Audit Office confirmed that the 2003–04 financial statements gave a true and fair view of the financial position of the Corporation. External auditors noted that the Corporation had implemented comprehensive measures to address the IT security and risk management issues identified in the 2002–03 external audit. They noted that the majority of their concerns had already been dealt with satisfactorily and that the remainder were in train. The Goal Attainment Scaling panel was unable to conduct a 2003–04 assessment because the Audit Committee Statutes Review had not been completed at the time of sitting. Land & Water Australia gained special mention in an internal R&D corporations benchmarking report of excellence in investment planning and evaluation. An independent review of Board performance conducted by Competitive Dynamics Pty Ltd found that the Board had sound corporate governance practices in place, and that Board performance had improved from an already high level two years ago.

Part 2: The Corporation's operational and financial results

The Corporation's principal reporting of operational results is within its five 'R&D arenas' — the core structure of its activities originating in the PIERD Act. This reporting starts overleaf.

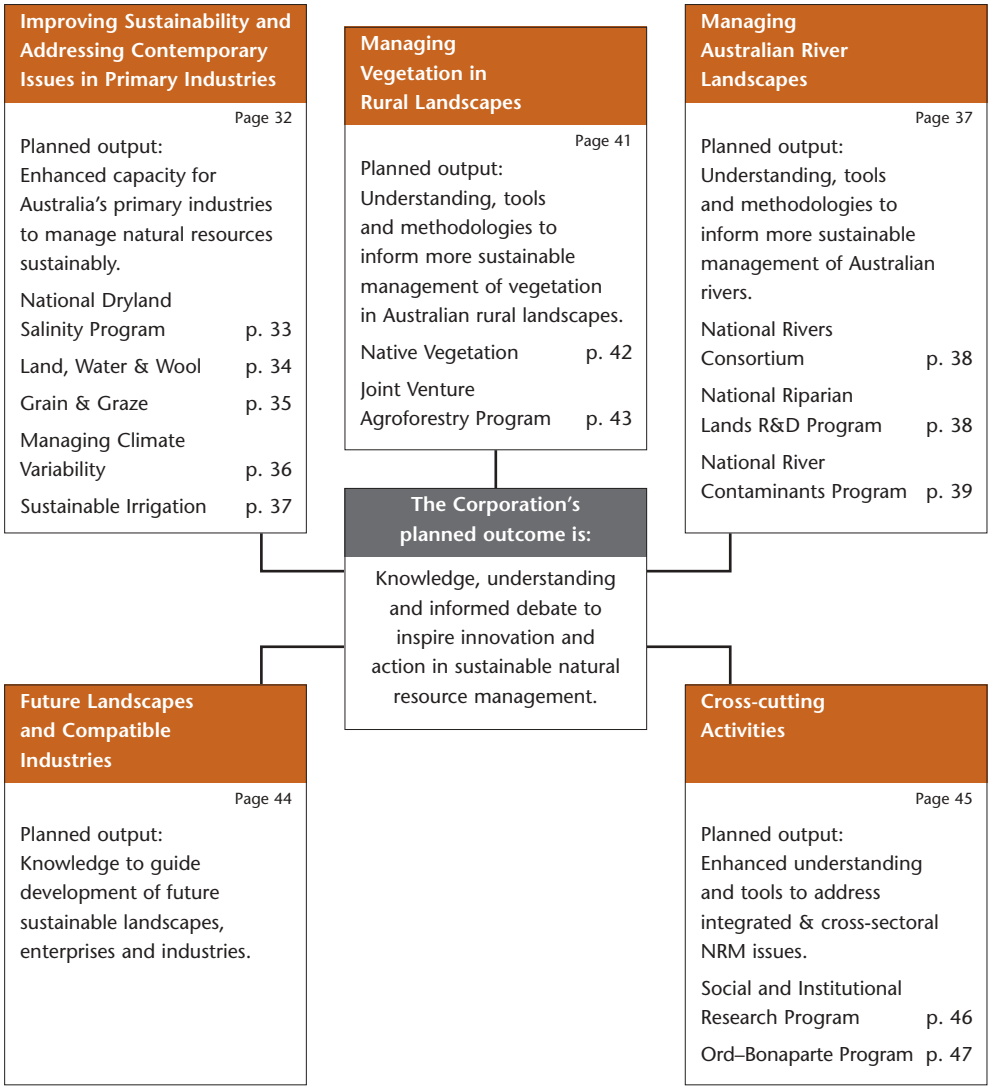
Operational results are also reported against the Australian Government's priorities: the national research priorities, starting on page 51, and the priorities for rural R&D, starting on page 55.

Part 3, describing corporate governance matters, starts on page 63.

Part 4, describing other corporate management matters, starts on page 77.

Programs within the R&D arenas

The five 'R&D arenas' presently encompass 13 national R&D programs supported by Land & Water Australia and partner organisations.



In addition:

- R&D conducted in response to a General Call is on page 48.
- Details of the National Land & Water Resources Audit are on pages 49–51.
- Corporate outputs are described on pages 56–62.

Details of the publicly available databases on which R&D funded by Land & Water Australia is described are on page 69.

The operating environment

The imperative for improved management of Australia's rich, unique endowment of natural resources has never been higher. Surface water and groundwater resources alike are under extreme pressure, evidenced by the majority of the Australian population experiencing water restrictions and irrigators facing severely reduced allocations. Climate, a fundamental driver of both ecological processes and rural production in Australia, shows signs of becoming increasingly variable, with each drought hotter and more intense than the last. The management of vegetation 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. Improving the health of soil, the "engine room" of our rural industries, remains an important development opportunity for more sustainable production systems.

In response to these challenges, the Australian Government, in collaboration with state and territory governments, has initiated major public investments in natural resource management exceeding $3 billion over the next five years. Chief among these are the National Action Plan for Salinity and Water Quality, the Natural Heritage Trust and more recently the National Water Initiative. These major government programs have drawn in part on research funded by Land & Water Australia to understand the nature and significance of resource degradation problems such as salinity and water quality.

The Natural Heritage Trust (NHT) has substantially boosted the level of on-ground work in environmental management. Land & Water Australia has worked during the first phase of the NHT to establish good links between the Corporation's R&D programs and those of the NHT. The aim is to make sure that research findings are available to on-ground managers in a readily accessible form, and that the information needs of those managers are being taken up and incorporated within R&D programs.

The aim is to make sure that research findings are available to on-ground managers in a readily accessible form, and that the information needs of those managers are being taken up and incorporated within R&D programs.

Under the National Action Plan for Salinity and Water Quality (NAP), there is an expectation that planning, implementation and monitoring of integrated natural resource management at the regional level will be underpinned by good science. The NAP provides opportunities for Land & Water Australia to target its priorities, research activities and communication effort towards regions where significant partnership investment can be focused. Land & Water Australia is well-placed to broker collaborative R&D programs within NAP regions with other R&D investors, and in particular with the commodity RDCs. The Corporation prepared a science and information strategy to support the National Action Plan in February 2003. As with the NHT, Land & Water

Australia will continue to investigate ways to forge stronger partnerships with the Australian Government Department of Agriculture, Fisheries and Forestry, the Australian Government Department of the Environment and Heritage, state agencies and regional bodies to generate and exchange new knowledge and information.

The Australian Government's national research priorities, announced by the Prime Minister in 2002 and refined in 2003, are the most recent policy instruments that shape Land & Water Australia's investment and are the basis for an important component of the Corporation's reporting (page 51). The four priorities are:

1. An environmentally sustainable Australia
2. Promoting and maintaining good health
3. Frontier technologies for building and transforming Australian industries
4. Safeguarding Australia.

The Australian Government has indicated its ongoing financial commitment to R&D and its recognition that the system of rural R&D corporations plays a critical role in "taking science into the paddock".

In 2003, Senator Troeth, Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry, wrote to all RDCs updating the Australian Government's priorities for rural R&D to increase the competitiveness of Australia's rural industries. The seven priorities (for which the Corporation's broad responses are given on page 55) are as follows:

1. Sustainable natural resource management
2. Improving competitiveness through a whole-of-industry approach
3. Maintaining and improving confidence in the integrity of Australian agricultural food, fish and forestry products
4. Improved trade and market access
5. Use of frontier technologies
6. Protecting Australia from invasive diseases and pests
7. Creating an innovative culture.

Of the many agencies involved in NRM R&D at the national level, Land & Water Australia is distinctive in several ways. Our interests are not constrained by any particular commodity, region, discipline or research provider. Our research investments range across the biophysical and social sciences. As the host agency for the National Land & Water Resources Audit, the Corporation is well placed to link the best available data and information to its research funding and management.

We have a very broad mandate, with a modest appropriation which has been stable at between $11 million and $12 million per year over the last decade. This demands a strategic approach to target our investments and to attract partnership funding to the most critical issues in ways that will maximise the influence and return on investment of our core funding. The key activities that comprise our strategic approach include:

- brokering partnerships between research providers and customers by converting knowledge needs into research questions, linking to appropriate research providers, managing research efficiently, evaluating impact and establishing effective adoption pathways
- funding highly innovative, inter-disciplinary and integrated research that meets Australia's primary NRM needs and creates new opportunities for future generations
- scanning and scoping future research priorities and opportunities, informed by analyses of trends and drivers of future change and the business environment
- communicating the national NRM R&D agenda to research providers, governments, primary industries and the general community.

The challenges ahead

Australia's landscapes, climates, soils and biota are unique. Therefore, we cannot directly 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, clean food, fibre and water. Increasingly, the community wants a wider range of services from the countryside which — alongside the traditional processes of food and fibre production — is becoming a place of consumption of vistas, tourist, cultural and heritage experiences and lifestyle opportunities. Demographic change, especially along the eastern seaboard, will intensify competition for rural land and will place pressure on the resource base while opening up new opportunities through the influx of new capital and a wider range of people.

The regional implementation of national programs is generating new questions related to prioritising investments, determining appropriate interventions and monitoring and evaluating progress. The challenge for Land & Water Australia is to develop effective means of engaging with the NAP and NHT initiatives, and in particular with the regional and catchment bodies through which most investment flows. We need to ensure that these major public programs are informed by our research portfolio and that our research investments are informed by their needs.

Major public programs must be informed by our research portfolio and our research investments must be informed by their needs.

Against this background, there is a greater need than ever 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 to balance competing demands on natural resources and rural landscapes.

The Corporation's operations

Land & Water Australia's mission is to provide national leadership in generating knowledge, informing debate and inspiring innovation and action in sustainable NRM.

The core funding that the Corporation receives to achieve its mission is an appropriation from the Australian Government of $12.2 million in 2003–04. Additional funds ($12.8 million in 2003–04) are sourced from external partnerships within collaborative programs and other activities. Land & Water Australia also derives minor income from sources such as investments, royalties and sales of products, information and services. A graphical financial summary is on the following four pages.

As detailed in the audited financial accounts, the Corporation has maintained a low surplus of accrued funds of about $1.5 million at 30 June 2004 (2002–03 amount: $1.7 million). The Corporation maintains a small prudential reserve to cover contingencies in its R&D portfolio. All surplus funds are invested on deposit in banks approved by the Australian Government. During the course of the reporting year, the Corporation met its debts and obligations as they fell due.

Land & Water Australia's corporate objectives, strategies and performance indicators, as set out in the 2003–04 portfolio budget statement and the Corporation's 2003–04 annual operational plan, are summarised on pages 20 to 22. These indicators were substantially revised in the 2001–2006 Strategic R&D Plan, and subsequently in the 2003–04 annual operational plan and portfolio budget statement.

The Corporation's R&D activities are in keeping with, among other things, the Australian Government's national research priorities and priorities for rural R&D, the Natural Heritage Trust and the Prime Minister's National Action Plan for Salinity and Water Quality, and the *Environment Protection and Biodiversity Conservation Act 1999* (see panel opposite).

The Corporation has developed a comprehensive, robust, consistent evaluation and monitoring strategy

The Corporation has developed a comprehensive, robust, consistent evaluation and monitoring strategy. The strategy enables performance and impacts to be tracked at corporate, program, project and systems levels. At a corporate level, the focus has been on the five corporate objectives (leadership, influence, relevance, return on investment and accountability) and their linkage to the 'quadruple bottom line' encompassing economic, environmental, social and accountability benefits. The 'public good' nature of Land & Water Australia's business and its role in encouraging sustainable NRM makes the evaluation task difficult. Environmental and social outcomes in particular are difficult to measure, and even more difficult to attribute to particular research investments. Although the Corporation has developed innovative methods and approaches to this challenge, they are still in their early phases of application.

The core business of the Corporation is management of national research programs. These programs, supported by partner organisations and linking with those organisations' programs, aim to bring together resource managers and researchers to jointly identify priorities and to ensure that research findings are adopted and implemented. The programs are aggregated into five key output 'R&D arenas'.

The Corporation's planned outcome

All of Land & Water Australia's activities are directed to achieving this planned outcome:

> Knowledge, understanding and informed debate to inspire innovation and action in sustainable NRM.

Complying with the EPBC Act

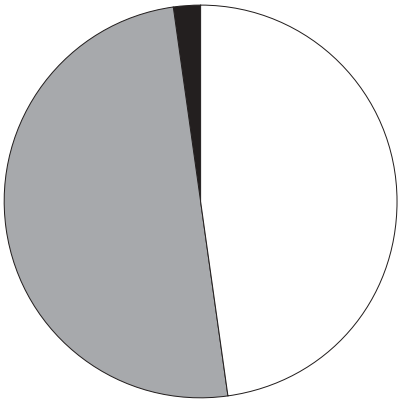
Land & Water Australia requires that sustainability of the natural resource base is the overriding objective when researchers and others are designing R&D projects and programs. Project contracts have specific clauses requiring providers to minimise negative environmental impacts. A significant number of projects across the R&D portfolio actively progress the intent of the *Environment Protection and Biodiversity Conservation Act 1999* by enhancing understanding of Australia's unique biodiversity, developing measures to limit or reverse threatening processes, and informing management of biodiversity and its habitat.

A key requirement of the EPBC legislation is to report on the extent to which the activities of Land & Water Australia accorded with the principles of Ecologically Sustainable Development (ESD). The mission and work of the Corporation advances the Government's principles of ESD.

Investment in R&D activities during 2003–04 was $20.9 million.

Revenue

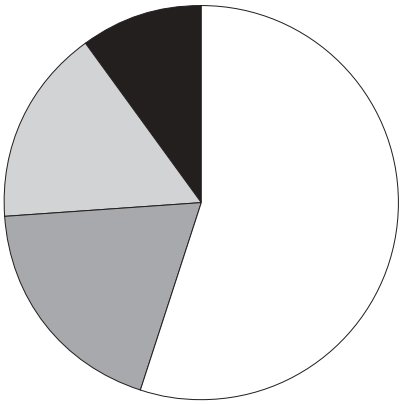
Revenue 2003–04



- Revenue from government (48%)
- Third party contributions (50%)
- Interest and other income (2%)

Expenditure

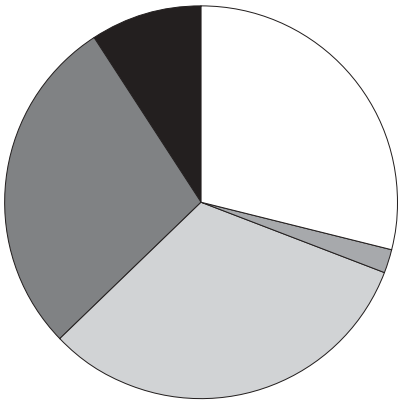
Expenditure by activity 2003–04



- Research knowledge generation ($14.3 m)
- Research and portfolio management ($4.8 m)
- Communication and adoption ($4.0 m)
- Corporate administration ($2.5 m)

Communication and adoption expenditure here also includes that which is incorporated in research and development programs, and which is shown as part of R&D programs' total expenditure elsewhere.

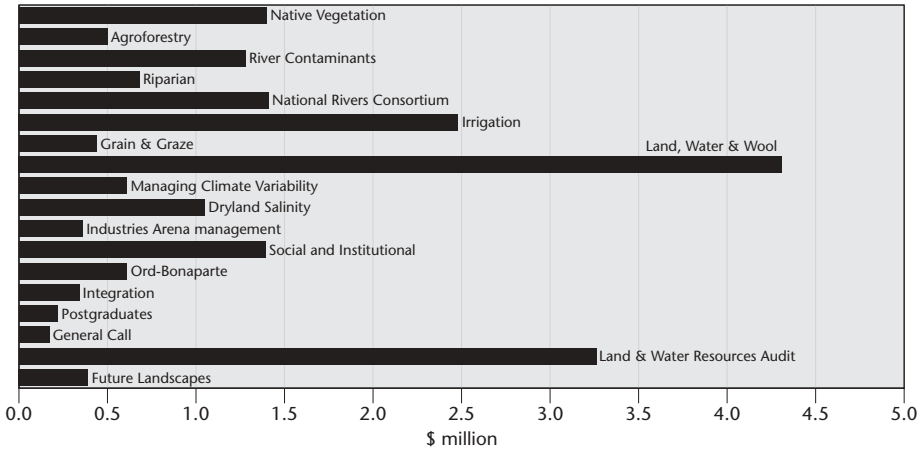
LWA and third party expenditure across R&D arenas 2003–04



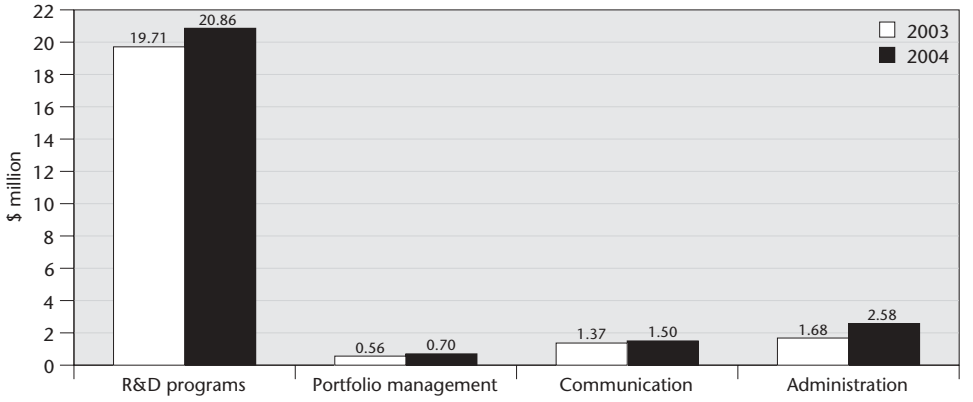
- Cross-cutting, including Audit (29%)
- Future landscapes (2%)
- Sustainable industries (32%)
- Rivers (28%)
- Vegetation (9%)

Expenditure

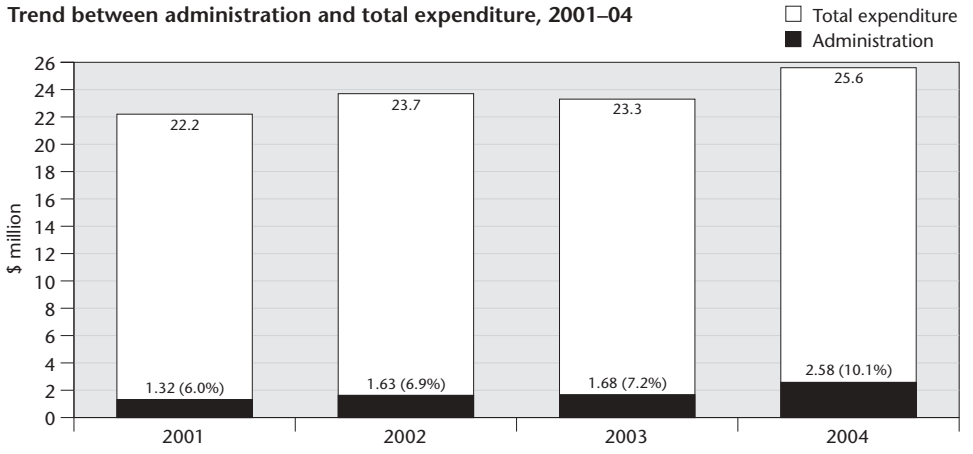
Expenditure on R&D programs, 2003–04



Comparison between 2002–03 and 2003–04 expenditure



Trend between administration and total expenditure, 2001–04



Operational reporting against the R&D arenas

R&D arena: Improving Sustainability and Addressing Contemporary Issues in Primary Industries

More than 60% of the Australian continent is managed by farming and grazing industries. Land & Water Australia works with the primary industries to find ways to ensure that natural resources are used sustainably while supporting profitable farm businesses and thriving rural communities. This involves partnerships between Land & Water Australia and industry, primarily through the commodity R&D corporations, to ensure that R&D is relevant to and 'owned by' industry, and to take advantage of existing industry-based delivery mechanisms for promoting R&D outputs. Work through this arena focuses on research that addresses the fundamental causes of unsustainability as well as managing their symptoms.

Murray Grey heifers grazing under Casuarinas in an agroforestry paddock on the 'Lyndfield Park' property, near Gunning NSW, of Land & Water Australia Community Fellow, John Weatherstone. Visit www.lwa.gov.au/downloads/PK030494.pdf to download the free booklet 'Lyndfield Park – looking back, moving forward' with John's story on the property's recovery since the drought of 1982–83. Photo: Andrew Campbell.

Investment in this arena during 2003–04 was $6.7 million (comprising $1.1 million from Land & Water Australia and $5.6 million from third parties).

Planned output for this R&D arena

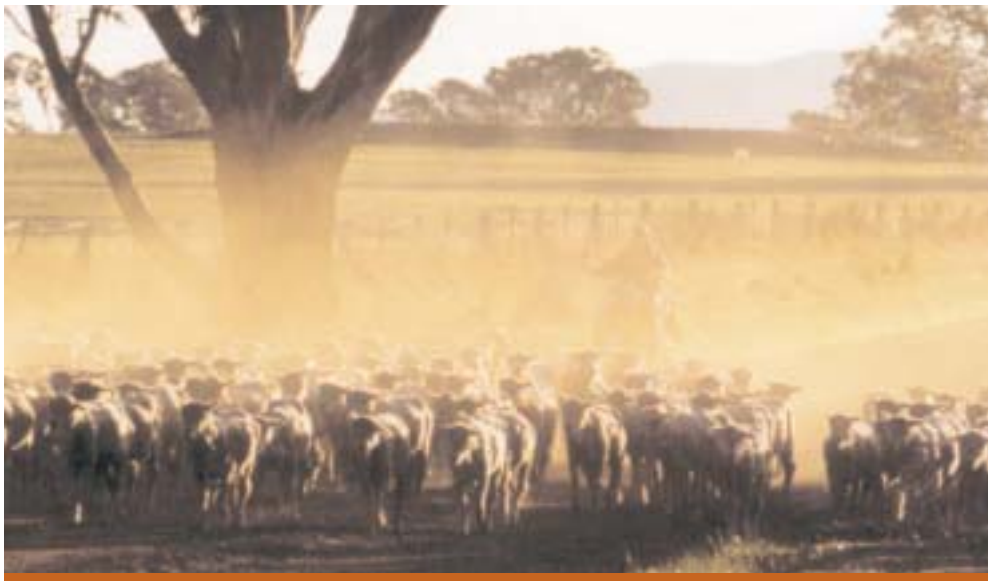
Enhanced capacity for Australia's primary industries to manage natural resources sustainably.

Program performance

Program	Partners	Key outputs
National Dryland Salinity Program 2003–04 investment: $1.0 million, of which $0.6 million was by LWA www.ndsp.gov.au	Land & Water Australia Murray-Darling Basin Commission Meat and Livestock Australia Rural Industries R&D Corporation Grains R&D Corporation CSIRO Australian Government Department of Agriculture, Fisheries and Forestry State governments — WA, SA, Queensland, NSW, Victoria and Tasmania	During the past 10 years, Australia's National Dryland Salinity Program (NDSP) has managed about 50 major research projects valued at almost $25 million. The second phase of the program, which started in 1998, has supported 30 projects valued at about $15 million. During this time, some 300 researchers, technical assistants, consultants and policy-makers have contributed to the program, significantly enhancing our understanding of dryland salinity and our knowledge of what might be done to manage it. The NDSP has delivered: • Increased awareness of the impact of dryland salinity. • Better understanding of the costs of salinity to a range of stakeholders — agricultural and non-agricultural. • Knowledge of the extent of dryland salinity. • R&D in non-agricultural areas such as environment and biodiversity, social impacts and infrastructure. In 2003–04 the NDSP, as part of its final year, has concentrated on integrating the information learnt and gained over the past 10 years and has focused on four key areas: Key Findings, On-farm Production, Catchment Management and Networks as part of an accelerated communication and regional consultation process. Products and services emanating from the program have synthesised and promoted the latest salinity management systems, data, technology and knowledge drawn from a decade of national research and development through a focused campaign of communication, knowledge transfer, and building and supporting networks. Major products delivered during 2003–04 include: Managing Dryland Salinity in Australia (full resource kit and CD–ROM); Breaking Ground: Salinity Key Findings and Research Outcomes; Dryland Salinity and Catchment Management; and Dryland Salinity: On-farm Decisions and Catchment Outcomes.

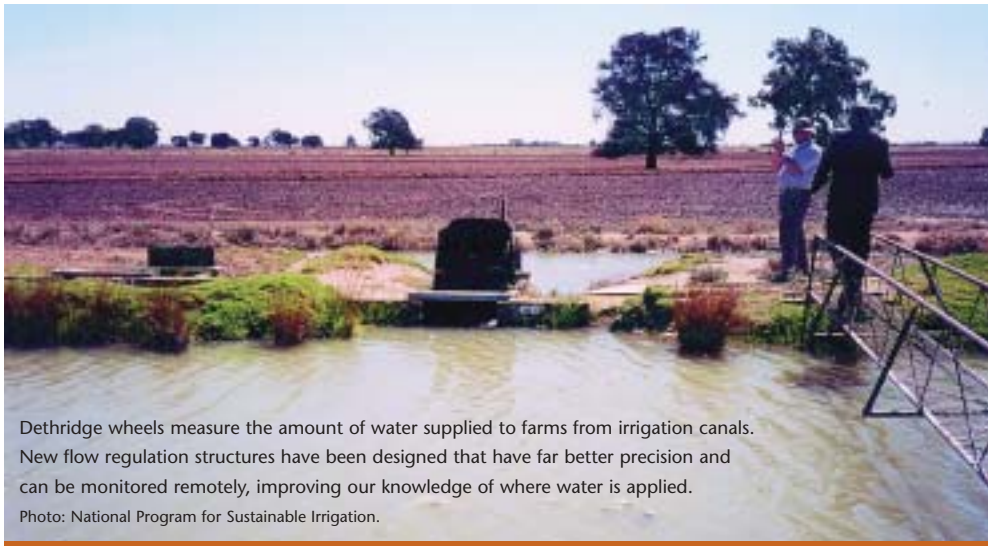
The National Dryland Salinity Program-sponsored television documentary 'The Silent Flood', narrated by David Wenham, proved a ratings winner for ABC Television. The documentary has since been adapted into an educational series book for schools by ABC Books. You can link to The Silent Flood website from www.ndsp.gov.au. Photo: ABC-TV.

Program	Partners	Key outputs
Land, Water & Wool 2003–04 investment: $4.3 million by Australian Wool Innovation Ltd and third parties www.landwaterwool.gov.au	Australian Wool Innovation Ltd Land & Water Australia *Sub-program and project-level partners include:* CRC for Plant Based Management of Dryland Salinity Meat and Livestock Australia CSIRO Animal Industries CSIRO Land and Water Department of Agriculture, WA SARDI and PIRSA, SA Department of Sustainability and Environment, Victoria NSW Agriculture NSW Department of Land and Water Conservation (now DIPNR) Department of Primary Industries, Water and Environment, Tasmania University of New England Southern New England Landcare Coordinating Committee Qld Department of Primary Industries Mid-North Grassland Group SA Traprock Wool Association University of Southern Qld Inglewood Shire and Granite Borders Landcare Groups Qld Murray Darling Committee Inc. Burra Landcare Group, SA Department of Water, Land and Biodiversity Conservation, SA Department of Environment and Heritage, SA	1,311 woolgrowers are directly involved in the Land, Water & Wool program. They are trialling productive options for the management of saline and; 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. A further 5,806 woolgrowers participated in LWW surveys, attended a field day or sought LWW information which is directly relevant to them. This includes 1,000 pastoral producers who have requested newsletters on new climate tools which are under development in LWW. A dynamic and far-reaching program of research is in place into productive management of saline lands, native vegetation and biodiversity, rivers and water quality, climate variability and pastoral country. The Future Woolscapes project will run through to late 2004. This project is exploring scenarios for the wool industry of the future. Land, Water & Wool's strong partnership and collaborative approach has attracted considerable co-investment from universities, research organisations, government agencies and woolgrower groups. Land, Water & Wool is working closely with LWA and AWI Programs. This approach significantly increases the value and longevity of program outputs and outcomes beyond its five-year life. The program has forged strong links with extension programs including Bestwool 2010 (Vic), 8x5 (Tas), Look at Wool (SA) and Bestprac. LWW is also working with a number of Landcare and regionally based wool grower groups. Outcomes from Land, Water & Wool were: • Government and industry recognition that the wool industry (and AWI with LWA) is seriously addressing its NRM responsibilities. • Enhanced awareness of NRM as a key industry issue by woolgrowers and advisers. • Engagement of woolgrowers in developing practical and profitable solutions to NRM farm management practices. • New/improved knowledge base of how growers can productively address NRM issues based on initial outcomes of Land, Water & Wool research. • Increased recognition by woolgrowers of the activities of LWA.



Program	Partners	Key outputs
Grain & Graze 2003–04 investment: $0.4 million, of which $0.08 million was by LWA www.grainandgraze.com.au	Grains R&D Corporation Meat and Livestock Australia Land & Water Australia Australian Wool Innovation Ltd	• Commencement of research, extension and communication activities in six regions across Australia. • Completion of an evaluation and monitoring plan and a comprehensive benchmarking study providing baseline information against which to monitor the program's progress and achievements. • Completion of a program communication plan, establishment of a program newsletter and launch of program website. • Completion of a change-on-farm strategy aimed at achieving targets of 24,000 producers aware of Grain & Graze, 15,000 producers participating in Grain & Graze activities, and at least 6,800 adopting new practices by 2008. The program has successfully negotiated partnerships between four R&D corporations, 11 catchment management agencies and producer groups in eight regions to achieve widespread adoption of mixed farming systems, producing: • a 10% increase in mixed farm productivity driven by a 5% increase in grain yields and a 10% increase in livestock production; • improved, or at least stable, condition for the natural resources on mixed farms, in line with regional or catchment targets; and • more confident and knowledgeable mixed farmers.

Program	Partners	Key outputs
Managing Climate Variability 2003–04 investment: $0.6 million, of which $0.04 million was by LWA www.managingclimate.gov.au	Grains R&D Corporation Australian Government Department of Agriculture, Fisheries and Forestry Land & Water Australia Sugar R&D Corporation Rural Industries R&D Corporation Dairy Australia Meat and Livestock Australia Australian Wool Innovation Ltd National Farmers' Federation	The program built on 12 short-term scoping projects from an NHT contribution in 2002. Outputs included: • improved methods for monitoring drought, and predicting farm performance at the national scale; • demonstrations and case studies showing how seasonal climate forecasts could be used in managing water resources, tree establishment and cropping patterns in southern Australia; • analyses demonstrating how the extent of climate change in the last few decades is affecting management of cropping and grazing; and • promotion of the new RAINMAN version by national distribution of 3,000 trial copies of a CD–ROM giving users access for one year. The partners launched a major new phase of the program by funding 16 projects addressing three key priorities relating to seasonal climate forecast applications and development. An investment of $5.1 million during the next three years will 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, and • improved accuracy of forecasts at longer lead times.



Dethridge wheels measure the amount of water supplied to farms from irrigation canals. New flow regulation structures have been designed that have far better precision and can be monitored remotely, improving our knowledge of where water is applied.
Photo: National Program for Sustainable Irrigation.

Program	Partners	Key outputs
Sustainable Irrigation 2003–04 investment: $2.5 million, of which $0.6 million was by LWA www.npsi.gov.au	Land & Water Australia Australian Government Department of Agriculture, Fisheries and Forestry Department of Natural Resources and Mines (Queensland) SunWater (Qld) Goulburn-Murray Water (Vic) Sunraysia Rural Water Authority (Vic) Wimmera-Mallee Water Authority (Vic) Dept of Land, Water and Conservation (SA) Dept of Environment (WA) Horticulture Australia Ltd Cotton R&D Corporation	A practical, scientifically rigorous method of determining the actual ecological risk of irrigation schemes at catchment scale (rather than the possible/theoretical risks). The economic contribution of irrigated agriculture to the Australian economy. The value of irrigation to the Goulburn-Broken economy in northern Victoria and a process to design the future for the industry in the region. A water decision support framework to minimise water use and maximise productivity with permanent horticulture plantings. A common set of terms and definitions to describe and understand water use efficiency, and their acceptance nationally.

R&D arena: Managing Australian River Landscapes

The vision that guides and inspires this arena is continual improvement in the management of Australia's rivers. Its six objectives are to:

- inform improved practice in policy development, river protection, restoration and health;
- raise awareness of the benefits, costs and trade-offs of protecting and restoring Australian rivers;
- broker new river research programs and activities, particularly integrating knowledge and skills across disciplines and organisations, and establishing strategic links between scientists and managers;
- establish capacity building and training activities that will assist development of successful strategies and methods in river rehabilitation and protection;
- be a source of information on river management and a provider of knowledge exchange services to members; and
- be a leader in development and implementation of large-scale R&D protection and restoration methodologies.

Investment in this arena during 2003–04 was $5.8 million (comprising $2.8 million from Land & Water Australia and $3.0 million from third parties).

Planned output for this R&D arena

Understanding, tools and methodologies to inform more sustainable management of Australian catchments, rivers, estuaries and associated wetlands and riparian lands.

Program performance

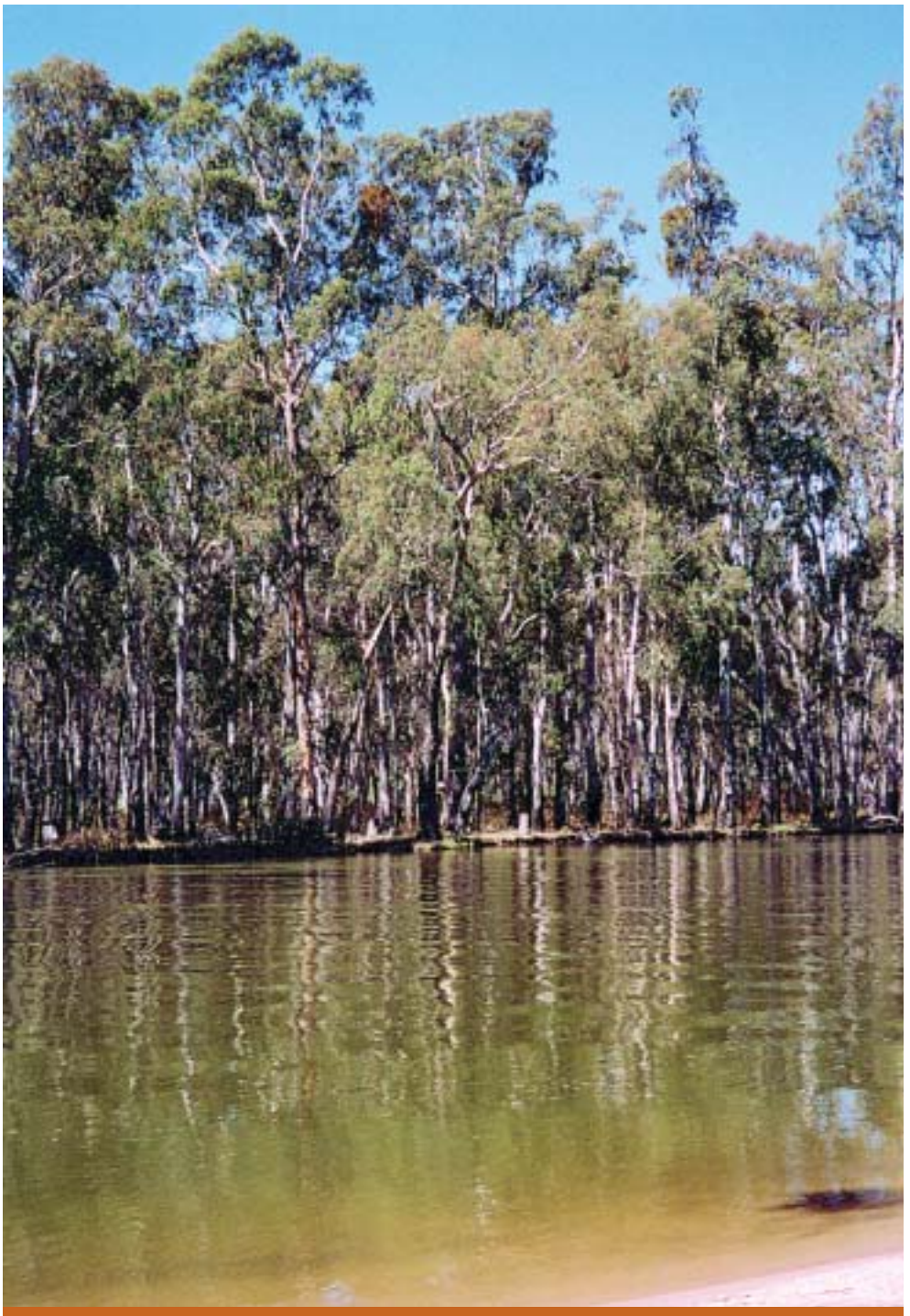
Program	Partners	Key outputs
National Rivers Consortium 2003–04 investment: $1.3 million, of which $0.6 million was by LWA www.rivers.gov.au	Land & Water Australia CSIRO Land and Water Murray-Darling Basin Commission Dept of Environment (WA) NSW Department of Infrastructure, Planning and Natural Resources SA Catchment and Water Management Boards	Three tertiary level courses established to train professionals in river management. Assessment and management techniques completed for whole-catchment waterways restoration in WA. Project established with private landholder support to improve the management of wetlands on the Murrumbidgee River floodplain. Catchment assessment techniques developed in three pilot regions to help determine priorities in river restoration. Methods developed to assess the health of Lake Eyre Basin rivers. New methods developed to evaluate the health of ephemeral rivers, based on field studies in the Mount Lofty Ranges, SA. National agreement on a range of approaches for the protection of rivers of high conservation value.

Program	Agency	Key outputs
National Riparian Lands R&D Program 2003–04 investment: $0.7 million (all by LWA) www.rivers.gov.au	Land & Water Australia	Translating complex science into innovative, relevant and useful products for people to apply on-farm and in-the-river. During 2003–04 the Program produced the following outputs designed to assist landholders better manage their riparian areas: • Assessing community capacity to undertake riparian restoration tool available on the web, hard copy and CD–ROM. • Tool for rapid appraisal of riparian condition assessment available on the web and in hard copy. • Understanding River Landscapes, a synthesis that draws together ten years of research and allows people to explore an interactive model of river and riparian functions available at www.rivers.gov.au • 'Managing wood in streams' guideline for river managers. • 'Managing Riparian Lands in the Cotton Industry' guideline (joint project with Cotton Research and Development Corporation). • Stream temperature guidelines for river restoration projects, providing advice on how to optimise restoration efforts for in-stream health. • Joint workshop with Dairy Australia on riparian health.

Photo: Jenny Sullivan.

These dairy farmers showing off their River Landscapes T-shirts (from left: Bruce Knee, Peter Snape, Helen Snape, Carol Bradshaw and Rae Knee) are involved in the Gippsland dairy riparian project, which is restoring riparian areas on-farm within the context of a commercial dairy operation. The dairy farmers talk about their relationship with their rivers and what is motivating them to better manage these parts of their farm on the oral history CD–ROM *Dairy Farmers Going with the Flow*. This CD–ROM has proved popular, with all of the initial production run having been distributed.

Program	Partners	Key outputs
National River Contaminants Program 2003–04 investment: $1.3 million, of which $0.8 million was by LWA www.rivers.gov.au	Land & Water Australia Murray-Darling Basin Commission	Established research initiatives continue to add to Australia's knowledge base on river contaminants through projects covering: • understanding in-stream and riparian zone nitrogen dynamics; • understanding impacts of contaminants and flow on riverine ecosystem production; • predicting salinity-induced loss of biodiversity; • developing risk-based approaches for managing contaminants in catchments; • modelling contaminant budgets sources, pathways and transformations within catchments; • innovative techniques for managing multiple threats to high-value aquatic systems; • understanding the dynamics of colloidal material in turbid tropical rivers; • developing a framework for making improved fertiliser decisions for grazed pastures; and • testing the concept of alternative stable states (clear water dominated by macrophytes versus turbid water dominated by phytoplankton) to saline rivers and wetlands in south-western Australia.



Water resource development has produced considerable wealth for Australia but it has changed river flow patterns. In places such as the pictured Barmah-Millewa forest on the Murray River, regulation reduces spring flooding and careful management is required to prevent ecologically damaging summer flooding. New solutions are required to get environmental and economic benefits from our limited water. Photo: Land & Water Australia.

R&D arena: Managing Vegetation in Rural Landscapes

Native vegetation performs an essential role in delivering ecosystems services that underpin the productivity and sustainability of rural industries. It is also one of the key management 'levers' for intervening in natural ecosystems to achieve specific objectives such as managing salinity, restoring riparian environments, reducing net greenhouse gas emissions and protecting endangered species.

In many rural landscapes, native vegetation is under pressure from clearing, fragmentation, weed invasion and altered hydrological regimes. Research in this arena is generating knowledge to better understand and manage native vegetation in these landscapes. This research is addressing questions such as:

- Which are the priority vegetation areas to retain?
- Where should we put native vegetation back?
- What size, shape or locations should re-plantings be?
- How can we assess the condition of remnant vegetation?

Native Vegetation is one of the key management 'levers' for intervening in natural ecosystems to achieve specific objectives such as managing salinity, restoring riparian environments, reducing net greenhouse gas emissions and protecting endangered species

The key strategies employed through this arena include:

- research to determine the functional values and ecosystem services provided by native vegetation over different scales;
- development and active promotion of practical guidelines, tools and methodologies to improve vegetation management at a landscape scale; and
- development of better tools and processes to measure, monitor and report on the condition of native vegetation, consistent with the National Vegetation Information System.

From left: Jim Radford, Deakin University; John Childs, director, Land & Water Australia and Rod Fensham, Queensland Herbarium, at the 2003 Native Vegetation R&D Program annual coordination meeting. Photo: Trudi Ryan, Land & Water Australia.

Investment in this arena during 2003–04 was $1.9 million (comprising $1.3 million from Land & Water Australia and $0.6 million from third parties).

Planned output for this R&D arena

Understanding, tools and methodologies to inform more sustainable management of vegetation in Australian rural landscapes.

Program performance

Program	Partners	Key outputs
Native Vegetation 2003–04 investment: $1.4 million, of which $0.8 million was by LWA www.lwa.gov.au/native vegetation	Land & Water Australia CSIRO Sustainable Ecosystems CSIRO Plant Industries Murray–Darling Basin Commission	New understanding of the relative importance of vegetation cover (percentage cover) and vegetation patterns (how is it distributed) in the conservation of biodiversity in agricultural landscape. New methods for determining critical regional-scale habitat fragmentation thresholds for declining bird species. In the Western Australian wheatbelt this is being used for planning strategically located revegetation which significantly increases the size, connectedness and resilience of birds' habitats. New 'experimental' designs for understanding vegetation–fauna interactions in agricultural landscapes. Two 'natural experiments' are using 45 intensively surveyed 10-kilometre-square sites in the Murray–Darling Basin selected for their varying patterns of remnant vegetation and revegetation. Early results indicate that combining revegetation with remnant vegetation is the most effective way of increasing the number of bird species. Guidelines for the management of variegated grassy woodlands. A more rigorous scientific basis to seed collection guidelines for revegetation activities based on genetic and population studies. Publication of comprehensive review of the status and value of paddock trees in Australia. An efficient, reliable technique for large-scale census of scattered trees using digital analysis of aerial photography. This can be used to determine rates of scattered tree loss in agricultural regions. A comprehensive report based on analysis of a wide range of programs developed to encourage incorporation of native vegetation within farming systems, including various incentives, property management planning etc. The third edition of *Thinking Bush* devoted to integrating native vegetation into production systems.

The 'Talaheni' property in the Yass Valley between Murrumbateman and Gundaroo, of Land & Water Australia community fellow, John Ive, who values paddock trees in the landscape. Photo: John Ive.

Program	Partners	Key outputs
Joint Venture Agroforestry Program 2003–04 investment: $1.8 million, of which $1.3 million was by RIRDC and $0.5 million by LWA www.rirdc.gov.au/programs/aft.html	*Core partners*: Rural Industries R&D Corporation (managing agency) Land & Water Australia Forest and Wood Products R&D Corporation Murray–Darling Basin Commission *Other contributors*: Natural Heritage Trust Australian Greenhouse Office Grains R&D Corporation	Systematic evaluation of financially viable species and provenances for agroforestry systems and products — in particular for low–medium rainfall areas. Species matching for a range of site types, and species and hybrid selection for saline areas. Release of: • *AcaciaSearch — evaluation of Acacia as a woody crop option for southern Australia*. • *Trees for saline landscapes*. • Australian Low Rainfall Tree Improvement Group hardwood and softwood breeding strategies, for key low rainfall plantation species. • *Wood and fibre properties of dryland conifers*. Research into potential new Australian species and products for low rainfall areas, including support for the FloraSearch project. Research products will allow landholders to consider sustainable planting and harvesting of woody species for diversification of their farm business, and to manage dryland salinity. Release of *Trees and biodiversity: an Australian guide to farm forestry*. The agroforestry guidelines outline the decisions involved in designing and managing farm forestry for both commercial and other outcomes. Research for integration of woody plant production into agricultural systems — for example, phase farming or oil mallee production on farms. Release of: • the Bioenergy Atlas Update and Biofuel Database websites, • *Agroforestry Workboot*, • *Introduction to tropical agroforestry for indigenous communities*, • *Farm Forestry and Agroforestry Reference Library* database and report, • *Biomass energy production in Australia: status, costs and opportunities for major technologies*, and • *Mallee Cropping Code of Practice*. Three reviews of research priorities for agroforestry and farm forestry in Australia. Technical advice on species–site matching and requirements for tree breeding for low–medium rainfall areas, to be incorporated into the next generation of catchment and regional plans.

Eucalypt-fired power stations could be used to provide renewable energy, while also having potential for increasing farm incomes and contributing to the fight against dryland salinity, according to a new report 'Biomass energy production in Australia: Status, costs and opportunities for major technologies'. The report is published by the Joint Venture Agroforestry Program.

R&D arena: Future Landscapes and Compatible Industries

This arena seeks to enhance Australia's understanding of, and potential for, long-term sustainability of rural landscapes — with a timeframe of ten to one hundred years. All landscape attributes are explored. Quantum leaps in sustainability are sought, rather than just incremental change.

This arena invests in research on:

- current and future drivers of landscape change and their implications for sustainable NRM;
- critical uncertainties and difficult choices facing NRM now and in the future;
- human and organisational perspectives, values and world-views;
- scenarios for future landscape evolution and their implications;
- production systems and other land uses compatible with the Australian environment;
- concepts of sustainability applicable to evolving landscapes; and
- tools and methods to assess the sustainability of alternative landscape options.

Investment in this arena during 2003–04 was $0.40 million, all by from Land & Water Australia.

Planned output for this R&D arena

Knowledge, tools and processes to guide development of future sustainable landscapes, enterprises and industries.

Program performance

Program	Agency	Key outputs
Future Landscapes 2003–04 investment: $0.3 million, all by LWA www.lwa.gov.au/ arenas.asp?section=27	Land & Water Australia	A detailed analysis of patterns, trends and potential drivers of future change in Australian landscapes and their management. Eight scenarios about the future of sustainability of Australia. Key lessons from the Redesigning Australian Agricultural Landscapes program. Research exploring the visualisation of landscape change, biofuels as an alternative energy source, and water and nitrogen balances in the Australian wet tropics. New R&D projects on endocrine disrupting chemicals in waterways, links between land management and the health of indigenous people, the future of voluntarism in NRM, landscape impacts of biotechnology, and acidification of waterways.

R&D arena: Cross-cutting Activities

The need for integration of environmental, social and economic considerations in research, policy and management and for integration of community interests is widely recognised.

The arena incorporates two major R&D programs — the Social and Institutional Research Program and the Ord–Bonaparte Program — and a suite of cross-cutting activities under the title 'Integration Initiative'. This initiative supports processes and outputs that help people to share information and work in a genuinely integrated way across program and issue boundaries. This year we have focused on implementing best-practice arrangements for improved data access and management, in partnership with ANZLIC — the Spatial Information Council — and holding an 'Integration Symposium'. The symposium is an unprecedented step towards consolidation and communication of approaches to integrated research, policy and management of natural resources.

Investment in this arena during 2003–04 was $2.4 million (comprising $2.0 million from Land & Water Australia and $0.3 million from third parties).

Planned output for this R&D arena

Enhanced understanding and tools to address integrated and cross-sectoral NRM issues.

Program performance

Program	Agency	Key outputs
Social and Institutional Research Program 2003–04 investment: $1.4 million, of which $1.3 million was by LWA www.lwa.gov.au/sirp	Land & Water Australia *The Australian Government Department of Agriculture, Fisheries and Forestry and the Australian Government Department of the Environment and Heritage were funding partners in several key projects managed through SIRP.*	The program continued to address social, economic and legal aspects of NRM and to develop strategies so that research can provide an evidence base for ecologically sustainable NRM policies and programs. Achievements during the year included completion of a research investment plan for 2004–2010 and a new partnership with MDBC and the Audit to build capacity in local government. The program delivered and communicated the following knowledge and tools: • a workable system of water property titles (project funded jointly by SIRP and DAFF) • monitoring structural change in agriculture using the 2001 Census round • principles to ensure that incentives will maximise the links between regional NRM targets and local action • a national overview of critical success factors for effective integration of biodiversity values in regional planning (funded by DEH and managed in SIRP) • improved resource planning and integration across four property titles, leading to more sustainable grazing, reduced labour and other input costs, increased drought resilience and improved financial returns • maps of the best geographical fit of communities of shared interest (social catchments) with ecological landscapes (the NSW Government has now contracted the research team to prepare eco-civic regional maps for all rural areas of NSW) • international publishing of *Learning from Institutional Change for Sustainable Development* • strengthened collaborative relationships in the policy, science and industry communities.

Program	Partners	Key outputs
Ord–Bonaparte Program 2003–04 investment: $0.6 million, of which $0.4 million was by LWA www.lwa.gov.au/obp	Land & Water Australia CSIRO WA Department of Agriculture WA Department of Environment Australian Government Department of Agriculture, Fisheries and Forestry WA Department of Conservation and Land Management Kimberley Land Council Ord Land and Water	During this year, the program's partners agreed to finalise the current research portfolio and the program and seek alternative ways of investing in the issue of integrated NRM in the East Kimberley region of north-western Australia. The program has delivered knowledge and tools relevant to key NRM issues in the region; many will be relevant to other regions across Australia, especially the north: • Assessment of current biodiversity data as a precursor to a regional conservation plan • A tested methodology for mapping land units which has lower costs than traditional field-based methods • Interactive software, VegMachine, to monitor rangeland condition using remote sensing • Previously undocumented data on Aboriginal utilisation of natural resources in the region, and Aboriginal perspectives on environmental change and aspirations for management of country • Facilitation of capacity-building and two-way learning for Miriuwung–Gajerrong and Balangarra people in the lower Ord catchment • Improved understanding and models of the circulation, turbidity, nutrient cycling and productivity in the lower Ord River and estuary • Risk assessment for commonly used pesticides in the Ord River Irrigation Area • Strategies for on-farm management of pesticides to minimise off-site impact on surface and groundwater • Improved monitoring system for ground and surface water movement and interaction in the Ord River Irrigation Area • Development of the Kimberley Regional Integrated Database — a computer-based system which brings together major NRM-relevant datasets, and facilitates analysis of scenarios.

General Call

Investment during 2003–04 was $0.95 million, all by Land & Water Australia.

Objectives

The majority of the Corporation's R&D investment is through commissioned research programs. Although the commissioning process provides substantial benefit in achieving desired outcomes, the Corporation accepts that it is also a process that locks longer-term investment into tightly defined priorities. An annual call ensures that the Corporation can respond to emerging issues, and provides an opportunity for researchers to propose new or untried approaches to understanding and managing land, water or vegetation resources.

A General Call ensures that Land & Water Australia can respond to emerging issues and that researchers can propose new or untried approaches to land, water or vegetation issues

In 2003–04, Land & Water Australia called for projects to start 1 July 2004. The key research priorities included:

- highly innovative research on new and emerging issues in NRM,
- opportunities and risks of biotechnology application to NRM,
- indigenous management of Australian landscapes, and
- management of fire for NRM outcomes.

Partners

Most General Call projects included third-party support from a wide range of agencies and groups. Some projects, especially those testing novel concepts, are funded solely by Land & Water Australia.

Achievements

The projects selected from the 150 applications for the 2003–04 General Call were as follows:

Project	Principal investigator
Transport of groundwater contaminants in heterogenous aquifers	Dr Craig Simmons, Flinders University
Recognition of indigenous values and rights in water management procedures	Dr Naomi Rea, Charles Darwin University
Development of indigenous knowledge capacity across North Australia	Mr Joe Morrison, CRC Tropical Savannas Management
Dynamics of sediment and nutrient fluxes from burnt, forested catchments	Dr Patrick Lane, Department of Sustainability and Environment, Victoria

Future directions and opportunities

For the 2004-05 call Land & Water Australia is seeking highly innovative R&D proposals. The change of emphasis is reflected in a change of name from the General Call to the Innovation Call. A total of $1.5m funding is available over three years for R&D to commence 1 July 2005. Land & Water Australia is actively pursuing genuine new ideas, concepts, processes and/or creative ways of utilising new and existing knowledge to improve the sustainability of Australia's rural landscapes and industries including:

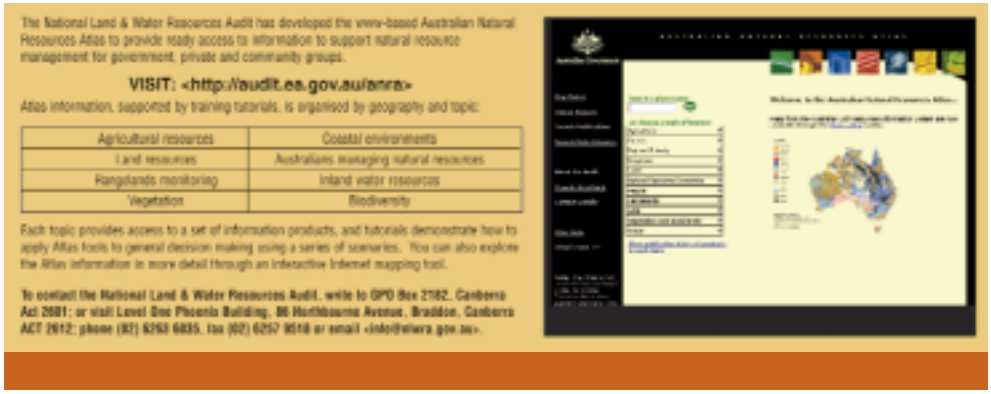
- 'blue sky', high-risk, high-innovation projects;
- testing proof-of-concept ideas;
- responding to new emerging issues; and
- drawing out the most innovative ideas from the R&D community.

Land & Water Australia is actively pursuing new ideas, concepts, processes and/or creative ways of utilising new and existing knowledge to improve the sustainability of Australia's rural landscapes and industries.

Further information: www.lwa.gov.au/funding

National Land & Water Resources Audit

Investment during 2003–04 was $3.2 million.



Objectives

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

Blair Wood – Executive Director of the National Land & Water Resources Audit (centre) with Charles Willcocks (right) from the Australian Government Department of Agriculture, Fisheries and Forestry and also a Land & Water Australia director, pictured with Brian Scarsbrick, CEO of Landcare Australia Ltd at the NRM Expo organised by the Australian Government Bureau of Rural Sciences. Photo: Glenn Conroy, Land & Water Australia.

The Natural Heritage Trust Board continued to approve Audit activity with the following focus:

- coordinate and foster the collection and collation of data and information as a basis for reporting on national NRM indicators;
- promote the development of linked NRM data and information systems;
- facilitate the on-going collection, collation, integration and management of data and information that will inform NRM decision making; and
- develop partnerships and linkages across government, industry and regional organisations to improve the knowledge of the impact of the productive use of natural resources on the environmental, social and economic aspects of the Australian landscape.

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

Partners

The Audit Advisory Council has representatives of the Australian Government, all states and the Northern Territory, CSIRO, the Australian Bureau of Statistics and ANZLIC — the Spatial Information Council. Land & Water Australia has observer status at Council meetings.

Activity and achievements

Audit activity for 2003–04 included:

- reporting to the Australian Government on issues associated with the regional uptake of the National Monitoring and Evaluation Framework;
- developing a set of initial social and economic indicators for NRM change, and establishing a process for further refinement and additional collection of information;
- facilitating Australian Bureau of Statistics providing targeted social and economic information to three trial NRM regions to test regional planning needs (another seven regions were targeted);
- establishing agreement for national reporting of natural resource information linked to the National Monitoring and Evaluation Framework, and the *State of the Environment* report;
- an on-going resource development path for the Australian Natural Resource Atlas and the Australian Natural Resource Data Library — the main repositories for national information collated by the Audit (www.environment.gov.au/atlas);
- continuing development of the Australian Soil Resource Information System, the ongoing development of guidelines for national vegetation mapping and assessment, and further development of a mapping system for land use change and land use management; and
- developing key areas for integrated resource condition reporting.

The Audit Advisory Council met four times during the year.

Further information: www.environment.gov.au/atlas

Operational reporting against the National Research Priorities

The context for these priorities in the Corporation's operating environment is shown under the heading 'The operating environment' on page 25.

The Australian Government's national research priorities originated in the document 'Developing National Research Priorities, an Issues Paper' (Australian Government Department of Education, Science and Training, May 2002). The objectives of the national research priorities were:

- to identify and address areas of strength, opportunity or need where an increase in research effort — including collaboration, coordination or investment — would make a significant contribution to national wealth and/or wellbeing; and
- to determine what shift in research effort is needed, what new or improved research activities are required, and how the targeting of research effort can best be achieved.

The framework for national priority setting maintains the existing priority setting approaches of research institutions and funding bodies. It has, however, added a new dimension: the recognition that thematic priorities are multi-disciplinary and require a mix of science, engineering, technology, social science and humanities research. This dimension is already well embraced by Land & Water Australia, which is a national leader in social and institution research and holistic, integrated approaches to NRM. In addition, Land & Water Australia has led the field in achieving national collaboration between researchers, policy developers, resource managers and resource users, and has emphasised the critical importance of effectively communicating research outputs in forms appropriate to different target audiences. Land & Water Australia has added futures analysis to its priority setting, recognising that ways of comprehending emerging trends, issues and opportunities, both locally and globally, are increasingly critical to achieving a more sustainable Australia.

Stemming from the Australian Government Department of Education, Science and Training's issues paper, the nation's first research priorities were announced by the Prime Minister in 2002. The four priorities, under which are a combined total of 17 subordinate "priority goals" (refined in 2003), are:

1. An environmentally sustainable Australia.
2. Promoting and maintaining good health.
3. Frontier technologies for building and transforming Australian industries.
4. Safeguarding Australia.

Although all four national research priorities are important to the Land & Water Australia's strategic thinking and investment analyses, the Corporation's charter coincides with the first priority and consequently this reporting is in terms of that priority, under the five priority goals relevant to the Corporation:

- *Water — a critical resource*: Ways of using less water in agriculture and related industries, providing increased protection of rivers and groundwater and the re-use of urban and industrial waste waters.
- *Transforming existing industries*: New technologies for resource-based industries to deliver substantial increases in national wealth by reducing environmental impacts on land and sea.
- *Overcoming soil loss, salinity and acidity*: Identifying causes and solutions to land degradation using a multi-disciplinary approach (e.g. incorporating hydrology, geology, biology and climatology) to restore land surfaces.
- *Sustainable use of Australia's biodiversity*: Managing and protecting Australia's terrestrial and marine biodiversity to develop long-term use of ecosystem goods and services ranging from fisheries to ecotourism.
- *Responding to climate change and variability*: Increasing our understanding of the impact of climate change and variability at the regional level across Australia, and addressing the consequences of these factors on the environment and on communities.

These priority goals are delineated in the following table against Land & Water Australia's R&D programs, with page references to the more detailed reporting under the Corporation's R&D arena structure.

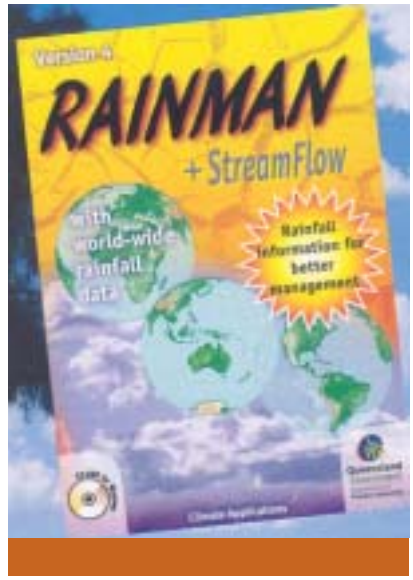
Land & Water Australia's programs and the priority goals they address under the first national research priority

LWA program	Reporting by program is on page …	Priority goal addressed				
		Water	Industries	Soil	Biodiversity	Climate
National Dryland Salinity Program	33	✔	✔	✔	✔	
Land, Water & Wool	34	✔	✔	✔	✔	✔
Grain & Graze	35	✔	✔	✔	✔	
Managing Climate Variability	36	✔	✔			✔
National Program for Sustainable Irrigation	37	✔	✔	✔		✔
National Riparian Lands Program	38	✔	✔	✔	✔	
National Rivers Consortium	38	✔	✔		✔	
National River Contaminants Program	39	✔		✔		
Native Vegetation R&D Program	42		✔	✔	✔	✔
Joint Venture Agroforestry Program	43	✔	✔	✔	✔	
Future Landscapes	44	✔	✔	✔	✔	✔
Social and Institutional Research Program	46	✔	✔	✔	✔	✔
National Land & Water Resources Audit	49	✔	✔	✔		
Environmental Water Allocation	n/a – new program	✔			✔	
Tropical Rivers Program	n/a – new program	✔			✔	

To aid the process of incorporating the national research priorities into its R&D strategies, the Corporation has prepared a National R&D Priorities Implementation Plan. Some of the outputs achieved in implementing the plan during the year were:

- synthesising of 10 years of R&D on dryland salinity into three resource documents tailored for farm, catchment and policy audiences respectively, supported by a state-of-the-art, user-friendly, searchable CD–ROM that provides targeted access to over 400 research reports, books, maps, consultancies and websites — together represent the world's most comprehensive, up-to-date salinity science resource;

- a method of assessing the ecological risk of irrigation schemes at the catchment scale, which has been tested at three locations across Australia;
- a synthesis of 10 years of research ('Understanding river landscapes') that allows people to interactively explore river and riparian behaviour;
- a detailed analysis of patterns, trends and drivers of future change in Australian landscapes;
- new understanding of the importance of native vegetation cover, patterns and thresholds in the conservation of biodiversity and landscape function;
- distribution of 3,000 new RAINMAN CD–ROMs to help farmers and resource managers to anticipate climatic extremes and manage associated risks; and



- a high-profile report on a workable system of water property titles in Australia.

Reporting specifically addressing the national research priorities is in 'Implementation of national R&D priorities — progress report', dated 25 June 2004, available from Land & Water Australia (www.lwa.gov.au/about.asp?section=229).

Building capacity to respond to national research priorities

To maximise its return on investment, the Corporation has aggressively pursued collaborative partnerships and has enhanced its performance capability as an attractive investment vehicle for applied R&D. In the last two years this strategy has proven successful, with the Corporation achieving its five-year leverage target in the first year of its R&D plan. The Corporation is also increasing its strategic intelligence capability to ensure optimal targeting of scarce resources. Strategically, the Corporation is moving towards a stronger role in leading NRM thinking, national coordination of R&D activity, enhanced communication and adoption, and development of a national knowledge management capability. The Corporation now has a higher capacity to undertake these national roles than at any previous time.

Land & Water Australia also recognises that R&D is not in itself a solution to the nation's NRM issues. Strong policy positions need to be developed and supported through high-quality science. Accordingly, the Corporation has led the development of a Social and Institutional Research Program targeting important policy dimensions and needs.

Operational reporting against the Australian Government's priorities for rural R&D

The context for these priorities in the Corporation's operating environment is shown under the heading 'The operating environment' on page 25.

The Australian Government's priorities for rural R&D, and Land & Water Australia's overall responses to them, are as follows:

1. *Sustainable natural resource management*
   This is the Corporation's core business and relates to all its R&D activities.

2. *Improving competitiveness through a whole-of-industry approach*
   This is achieved principally in collaboration with other RDCs, related to the Corporation's Primary Industries Arena and the Land, Water & Wool; Grain & Graze; and Managing Climate Variability R&D programs.

3. *Maintaining and improving confidence in the integrity of Australian agricultural food, fish and forestry products*
   The Corporation has an indirect role in this priority through its partnerships with the other RDCs.

4. *Improved trade and market access*
   The Corporation has an indirect role in this priority through its partnerships with the other RDCs.

5. *Use of frontier technologies*
   Frontier technologies have been identified as a major potential driver for landscape change, both in terms of production systems and in addressing sustainability issues. It is a key priority for the 2004–05 General Call. The Corporation also has an indirect role in this priority area through its partnerships with the other RDCs.

6. *Protecting Australia from invasive diseases and pests*
   The Corporation's role in this priority is through its partnerships with the other RDCs.

7. *Creating an innovative culture*
   Land & Water Australia continually fosters an innovative culture in the context of sustainability by building innovation capacity by means of a wide range of scholarships and fellowships and through significant end-user involvement in R&D programs.

Corporate outputs

Portfolio management

Objective

To ensure strategic investment, evaluated outcomes and scientific excellence.

Achievements

Strategic planning

Development of a new Strategic R&D Plan 2005–2010 commenced in July 2003. The planning project was conducted largely in-house with full staff involvement. A consultation draft of the plan was approved by the Board shortly after its June 2004 meeting in Townsville.

Three areas of potential new research investment have been scoped: native vegetation / biodiversity, social and institutional research, and tropical rivers. Standardised scoping guidelines have been prepared and program plans for the three new initiatives will be presented to the Board in December 2004 for consideration.

Evaluation

A national workshop on the economic value of biodiversity was held in conjunction with the Australian Government Department of the Environment and Heritage and the CRC Tourism. The workshop examined the current status of research and identified ways forward for incorporating biodiversity and economic values in the policy decision making process. An output of this workshop will be a plain English booklet for lay audiences highlighting current issues around biodiversity valuation in Australia.

A non-market valuation workshop was organised for RDCs following a comprehensive review of world best practice. Technical and lay documents on practical non-market valuation methods are in preparation and future directions have been identified.

A comprehensive corporate performance report was produced in September 2003 for the 2002–03 fiscal year. This report examined corporate performance against LWA objectives and strategies; program reviews; LWA leverage and return on investment. It has been a useful input to the strategic planning process.

To build a more in-depth view of the outputs, adoption and lessons learned over time across the R&D portfolio, eight evaluation case studies were completed on leading LWA innovations during 2003–04. These case studies have provided a solid basis for portfolio wide Return on Investment analysis, and communicating adoption lessons from the portfolio.

An update of the Innovations Database (accessible through www.lwa.gov.au) has been completed. Current innovations have been refreshed to include new adoption or development material and new innovations have been added.

Science leadership

Preliminary agreement has been reached with the Australian Research Council on joint funding of a project to assess national science capacity in the NRM and environment arenas.

An international ecological risk assessment workshop reviewing the state of the science and future directions was funded.

Implementation of the enhanced data and information management strategy began during 2003–04, moving LWA towards best practice in data and information storage and access across the portfolio. This project will enable searching and reporting across the portfolio of projects on a spatial basis and ensure that data sets produced by projects are current, complete, affordable, accessible and integrated within the organisation and across research organisations.

An international review of environmental water allocation knowledge has been completed. A summary document has been published and a detailed technical document is in preparation.

Presentations have been given to national and international audiences on a wide range of topics including hydrologically-based landscape disturbance, Australian water futures and holistic environmental water allocation.

Communication

Objective

The Communications strategy in 2003–04 had six key components: relationships, delivery, promotion, education, monitoring and evaluation, and resources and systems support. The overall objective was:

> to develop and deliver information and decision support materials and activities which assist our target audiences in their decision-making, and facilitate adoption on-ground, inform and influence policy, and consolidate the knowledge that supports sustainable natural resource management.

Achievements

Land & Water Australia is well placed to deliver better uptake of research results among users of land and water resources and policy makers at all levels.

During 2003–04, the Corporation improved its strategic alliances and networks with:

- fellow R&D corporations and their farmer shareholders;
- Australian Government agencies, in particular the Department of Agriculture, Fisheries and Forestry, the Department of the Environment and Heritage and the Murray–Darling Basin Commission;

- the regional bodies that form the key delivery vehicle for the National Action Plan for Salinity and Water Quality (NAP) and the Natural Heritage Trust (NHT), and the facilitator network that supports these programs; and
- the National Land & Water Resources Audit.

The Corporation is placing greater emphasis on ensuring that our research is both adoptable and adopted. We are working hard on the challenge of meeting the knowledge needs of the regional delivery arrangements for the Natural Heritage Trust, the NAP and the National Water Initiative.

As mentioned in the Highlights section (page 5), Land & Water Australia and our partners synthesised the knowledge from the completed 10-year National Dryland Salinity Program into resource directories and a supporting CD–ROM targeted to the needs of key audiences at farm, catchment and policy levels. These communication products set a new benchmark in synthesis products by making several hundred research reports easily searchable and interrogable through clear menus and a few mouse clicks.

Australia's longest drought in more than a century continued in many regions across the nation throughout 2003–04. To help landholders to manage the risks of climate variability, the Corporation distributed a promotional version of the new *Rainman–Streamflow* CD–ROM, giving 3,000 users free access for one year to this state-of-the-art resource. *Rainman–Streamflow* helps people to understand their own climate and the probabilities of particular seasonal outlooks at a given time.

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 345 visits per day from an average of 254 visits per day during 2002–03. During the year, visitors downloaded more than 45,000 electronic versions of Land & Water Australia publications and research outputs. To print and distribute these by non-electronic means would require a doubling of the Corporation's printing and delivery budget.

With minimal advertising, demand for hard copy products increased by 20% compared to 2002–03 and by 80% compared to 2001–02. The investment made in developing our web-based catalogue and ordering service in the second half of 2001–02 has supported our ability to service the increase in demand, with almost half our customers choosing to place their orders online, compared to 20% in 2002–03 and less than 5% in 2001–02.

Land & Water Australia and other sponsors, in partnership with Rural Press Limited, established the *Australian Landcare* magazine in April 1998. The Corporation's pages in this magazine generally feature research results. The magazine's May 2004 survey showed that 96% of its 81,250 readers found the information provided in the magazine of use to them; and 48% have implemented some *Australian Landcare* magazine information in natural resource management on their own properties or in community group activities.

Groundwater pumping to manage saline watertables is supporting the trialling of a new farming industry in Victoria's Wimmera region — seaweed. Under the guidance of Victorian Department of Primary Industries salinity officer, Susie Kelm, farmers in the Jeparit district are trialling the farming of seaweed — hundreds of kilometres from the sea — in special storage ponds using saline groundwater pumped from a windmill. Seaweed is used for emulsifying products and to feed farmed abalone. This story was one of the dozens of motivational and positive salinity management stories published in the National Dryland Salinity Program's *SALT* magazine during 2003–04. Photo: Jo Curkpatrick, NDSP Communication Coordinator (Victoria)

Other communication products published by Land & Water Australia include:

- self-published magazines including *RipRap* (rivers research), *SALT* (dryland salinity), *Thinking Bush* (native vegetation), *Climag* (climate variability) and *Irrigation Update*;
- the Rivers Research reports CD–ROM with tools and resources, and photographic images, to assist extension officers;
- the *Tropical Rivers Data Audit* report and the prospectus for the Tropical Rivers and Environmental Water Allocation programs;
- fact sheets on river and riparian management;
- research stories for inclusion in the joint rural R&D corporations' *Innovate Australia* electronic magazine at www.innovateaustralia.com;
- Land, Water & Wool information for woolgrowers on managing climate variability, and a booklet on productive resource management and managing native vegetation and biodiversity; and
- *Research Meets Policy — improving the uptake of research*, a booklet for researchers.

Land & Water Australia has an important role in building capacity in all sectors for sustainable NRM. The latest achievements are:

- commencement of a new Graduate Certificate in River Restoration and Management at Charles Sturt University in Wagga Wagga — a river managers' training and education program initiated and supported by the National Rivers Consortium;
- awarding of doctorates to four recipients of Land & Water Australia's PhD scholarships and commencement of studies by six new recipients in fields related to NRM; and
- awarding of 15 fellowships for travelling and visiting researchers, helping Australian researchers to tap into leading international work either by travelling overseas or assisting leading international scientists to spend time in Australia.

In addition to the above scholarships and fellowships, Land & Water Australia, in partnership with a private philanthropist, offers fellowships of between $5,000 and $15,000 to assist non-scientists with important NRM experience and knowledge to share their stories and the lessons therein with a wider audience. Twenty-seven people have been awarded fellowships since the program began in 2001. A major highlight of the year was our first Community Fellows Forum held in Dunkeld, Victoria, which brought together many of these inspiring people in a fascinating workshop to share their passion and insights about the wiser management of Australia's natural resources.

Land & Water Australia Community Fellows, such as John Ive (centre), spend countless hours showing people around their properties demonstrating the value of improved natural resource management. Photo: Andrew Campbell.

It is no longer sufficient for the Corporation to merely do a good job disseminating its research outputs. We must also understand the nature of adoption in NRM; we must set adoption targets; and we must measure adoption outcomes to get a proper picture of the impacts of our research investments.

To build a more in-depth view of the outputs, adoption and lessons learned over time across the Corporation's R&D portfolio, eight evaluation case studies were completed on leading Land & Water Australia innovations during 2003–04. A further eight will be completed during 2004. These case studies have provided a solid basis for portfolio-wide analysis of return on investment, and communicating adoption lessons from the portfolio.

The average return on investment was 10:1. An independent evaluation showed a 4:1 average benefit-cost ratio across the R&D and communication effort funded by the Corporation.

In March 2004 we appointed a new Knowledge and Adoption Manager, Ms Kate Andrews, who is currently overseeing the development of a new knowledge and adoption strategy to replace the communications strategy. The change in emphasis from communication to a focus on knowledge and its adoption is deliberate and strategic. It is no longer sufficient for the Corporation to merely do a good job disseminating its research outputs. We must also understand the nature of adoption in NRM; we must set adoption targets; and we must measure adoption outcomes to get a proper picture of the impacts of our research investments.

Business management

Objective

To run the business operations of the Corporation in an efficient and effective manner so that R&D funds are invested well, and to meet all statutory obligations and accountability requirements in a comprehensive, timely and transparent manner.

Achievements

Land & Water Australia targeted system and information technology (IT) security during 2003–04. A significant upgrade to IT security hardware and software was implemented as part of the Corporation's relocation to larger, more appropriate accommodation in May 2004. The upgrade is the first step in ensuring appropriate systems to manage communication, operations and R&D business.

The Corporation remained certified to standard AS/NZS ISO 9001:2000 and maintained its commitment to continual improvement and the highest level of client service and accountability. (More information on quality management is at page 75.)

The Corporation remained certified to quality management standard AS/NZS ISO 9001:2000

Two administrative reviews were undertaken during 2003–04: a review of business functions and the IT security review already mentioned. The resulting changes included the appointment of a number of specialists, including a Chief Finance Officer and an IT Support Officer. The reviews also highlighted opportunities to upgrade the Corporation's policy and procedures across a range of areas including finance, human resources and information technology. The implementation of these upgrades is planned for 2004–05.

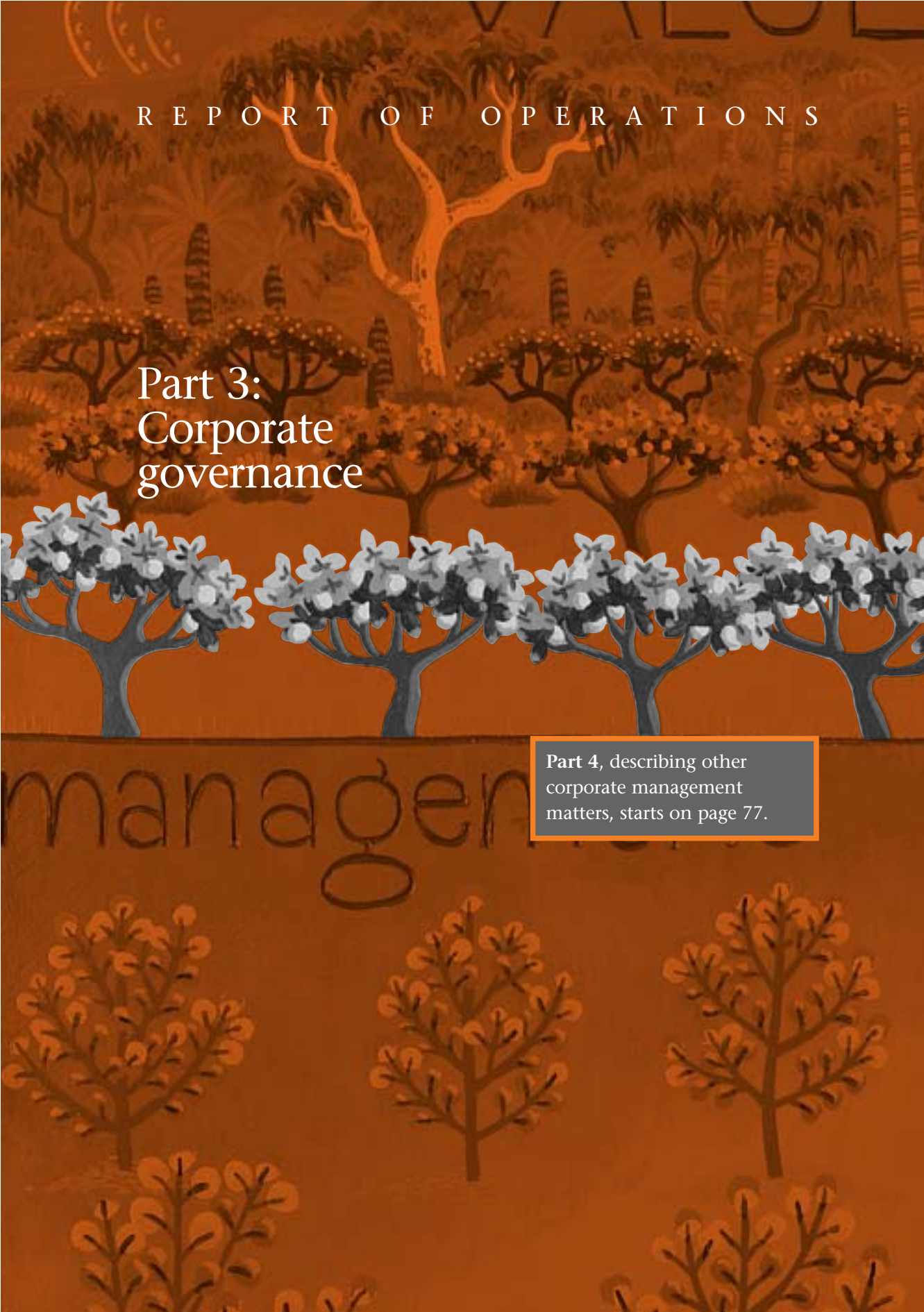
Administration expenditure for 2003–04 exceeded budget at year-end, mainly due to the Corporation's relocation, the outcomes of the business functions review and the implementation of new IT security arrangements.

Future directions and opportunities

Business management within Land & Water Australia will continue to reflect the highest standards of accountability and corporate governance. Priorities for 2004–05 are:

- to significantly improve financial forecasting and reporting systems;
- to enhance a number of the Corporation's information systems, including effective document management, implementation of electronic contract management and enhanced portfolio analysis and reporting;
- to review risk management strategies in the light of changes to privacy laws and policy relating to intellectual property, indemnity and insurability, and to fully incorporate strategies into R&D management; and
- to develop a human resource strategic plan that will build on the Corporation's existing performance culture, succession planning and leadership development.

Part 3: Corporate governance



Part 4, describing other corporate management matters, starts on page 77.

This section describes the processes by which Land & Water Australia is directed and controlled in support of effective accountability for good performance outcomes.

Corporate status

Land & Water Australia is a rural R&D corporation 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 *Primary Industries and Energy Research and Development 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 *Commonwealth Authorities and Companies Act 1997*, 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 on which Land & Water Australia is based

- The rural R&D corporations (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 has been given a clean bill of health in internal and external audits and through the external corporate governance review

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; and effective systems for monitoring performance and ensuring that the Corporation can meet its debts and other obligations as they fall due. The Corporation has in place 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

The paramount authority for Land & Water Australia's activities is section 3 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, and
- improved accountability for expenditure.

A tabular presentation in appendix 3 (page 124) lists the four objects and outlines the way in which the strategies described in the R&D plan address them.

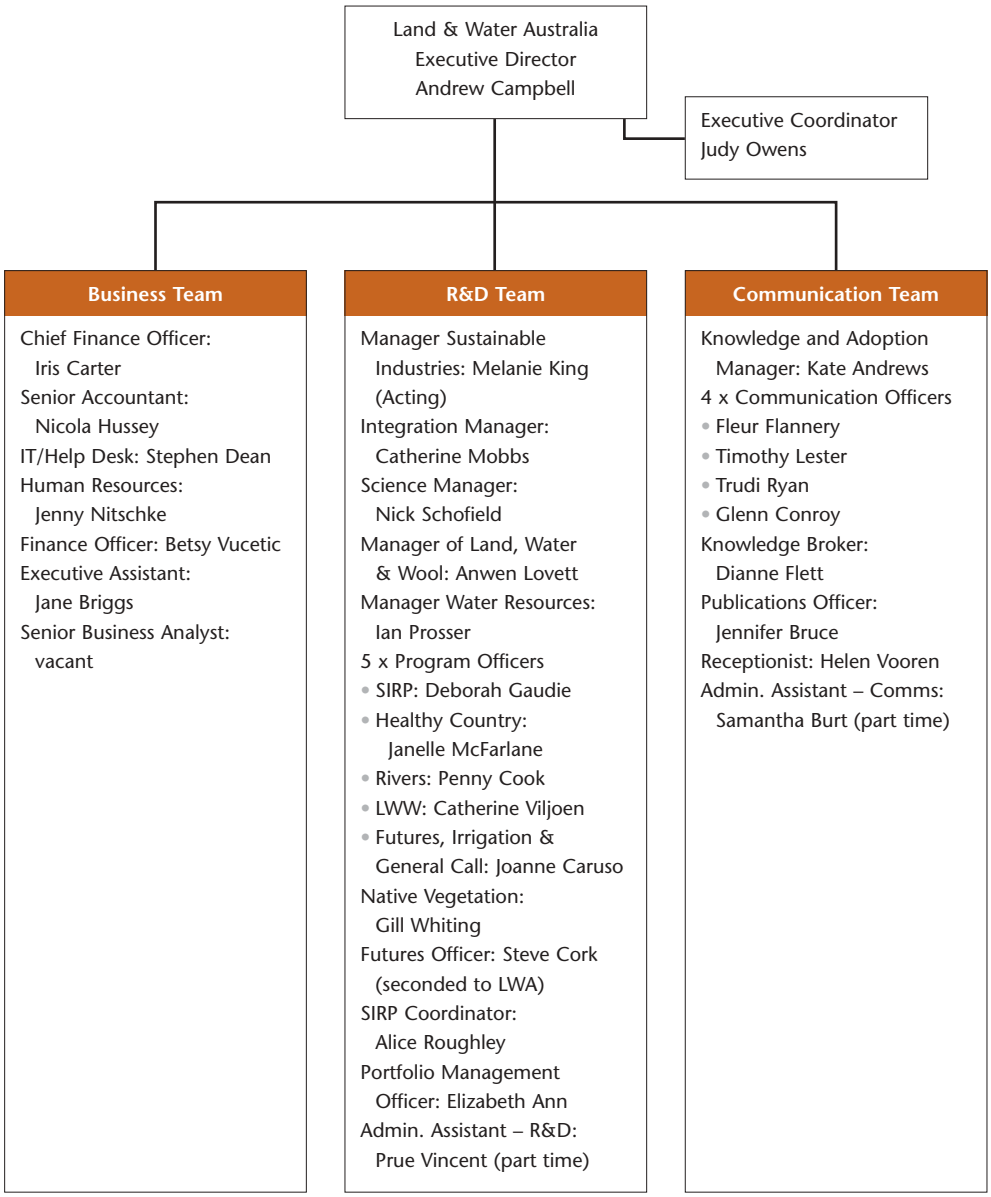
[The URL for the PIERD Act is: www.austlii.edu.au/au/legis/cth/consol_act/piaerada1989531/]

Functions and powers

The functions and powers of Land & Water Australia are listed in appendix 3 (page 125).

Organisation

Land & Water Australia's organisation is as follows.



Accountability to Parliament

The Corporation is accountable to the Minister for Agriculture, Fisheries and Forestry and to the Parliamentary Secretary to the Minister — and, through them, to the Parliament of Australia.

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; and
- 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:

- the Hon. Warren Truss, MP, Minister for Agriculture, Fisheries and Forestry; and
- Senator the Hon. Judith Troeth, Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry.

Senator Judith Troeth (right) and Bobbie Brazil, Chair of Land & Water Australia.

Compliance with Australian Government statutes and policies

The Corporation's compliance with statutes and policies of the Australian Government is detailed in appendix 2 (page 121).

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

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

- Australian Government national research priorities,
- Australian Government priorities for rural research and development,
- the Australian Government's Natural Heritage Trust, and
- the Prime Minister's National Action Plan for Salinity and Water Quality.

Activities in relation to these frameworks are described throughout this annual report.

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

Don Henry – Executive Director of the Australian Conservation Foundation, at left, receives the Corporation's 2002–03 annual report from Andrew Campbell – Executive Director of Land & Water Australia.
Photo: Land & Water 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 AANRO (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 to AANRO. Further information is available from Infoscan Pty Ltd (telephone: 02 6236 6267; fax: 02 6236 6440; e-mail: pamela@infoscan.com.au).

Stakeholders

Land & Water Australia sees its stakeholders as:

- the Australian Government and other governments and their agencies that provide collaborative support within commissioned R&D Programs;
- the two representative organisations;
- landholders, community groups and state and local government organisations involved in conservation and management of Australia's land, water and vegetation resources;
- research organisations, researchers, consultants and advisers who provide advice and direction and new knowledge on improved management of Australia's land, water and vegetation resources; and
- the general community, as owners and beneficiaries of natural resources and as taxpayers who fund the Corporation.

Collaborating organisations within commissioned R&D Programs are listed in the R&D Programs summaries starting on page 32. The organisations listed are the co-investing partners at research program level; there are many more at the level of individual research projects. At any one time, the Corporation is usually funding more than fifty different research providers.

The Board

In accordance with section 16 of the PIERD Act, the Board comprises a Chairperson 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 Chairperson 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.

The directors. Left to right, standing: Charles Willcocks, Andrew Campbell, Mike Logan, John Childs, David Pannell. Seated: Peter Cullen, Warwick Watkins, Roberta Brazil,Tim Fisher. This photo and individual photos: David Coward Photography.

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

Note: Directors' memberships of Board committees are shown on page 74.

Roberta Brazil
Chair (non-executive)

Appointed as Chair from 1 July 2001 to 30 June 2004; reappointed in 2004 to 30 June 2007.
Member of the Audit Committee and Communication Committee.
BA, LLB., LLM. (UQ), 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 natural resource management and industry bodies. She is the Queensland community representative member on the Australian Landcare Council; the Chair of the Land Use Studies Centre Advisory Committee, University of Southern Queensland; a board member of the Condamine Alliance Regional Body under the National Action Plan for Salinity and Water Quality; a director of Heritage Building Society Limited; and a member of the Queensland Great Artesian Basin Ministerial Advisory Committee.

Warwick Watkins
Deputy Chair (non-executive)

Appointed from 1 July 1996, re-appointed 2002 until 30 June 2005.
Deputy Chair of the Board.
Chair of the Audit Committee.
AMP:ISMP (Harv.); B.Nat.Res. (UNE); Dip.Sci.Agr. (UNE); HDA (Hons).

Warwick Watkins is Director-General of the NSW Department of Lands and is Surveyor General and Registrar General of New South Wales. He is also Chair of the ANZLIC — the Spatial Information Council; Pro Chancellor of the University of Technology, Sydney; Director of the Cooperative Research Centre for Spatial Information; Deputy Chair, Healthy Country Advisory Council; and a member of the National Land & Water Resources Audit Advisory Council. Formerly Commissioner of Soil Conservation for NSW, Warwick has particular skills and experience in natural resource management, land and spatial information and organisational management.

Andrew Campbell
Executive Director

Appointed from 1 March 2000 until 30 June 2005.
Member of the Finance Committee and Communication Committee, observer of the Audit Committee.
MSc (Wageningen), B.ForSc (Hons) (Melb), Dip.For (Creswick), FAICD.

Andrew Campbell has been Executive Director of the Corporation since March 2000. He 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.

John Childs:
Director (non-executive)

Appointed from 1 July 2002 until 30 June 2005.
Member 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 and a member of the Northern Territory Pastoral Land Board and the Australian Rangelands Society. He has a broad range of skills and experience in natural resource management, adult education and communication, with a special understanding of the situation in northern Australia through his role as the 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.

Peter Cullen, AO: Director (non-executive)

Appointed from 1 July 2002 until 30 June 2005.
Chair of the Communication Committee.
M.Agr.Sc. (Melb), B.Agr.Sc. (Melb), Dip.Ed. (Melb).

Professor Peter Cullen recently retired as Chief Executive of the CRC for Freshwater Ecology and Professor of Resource and Environmental Science at the University of Canberra. He has worked for more than 30 years in the water quality and catchment management fields.

Peter is a director of Landcare Australia Limited and the CRC for Irrigation Futures. He has served on many committees and boards, and has been an adviser to state and federal governments, including: Chair, Water Trust Advisory Council of Victoria; member, Natural Heritage Trust Advisory Council; and Chair, Scientific Advisory Panel to the Lake Eyre Basin Ministerial Forum. Peter is a fellow of the Australian Academy of Technological Sciences and Engineering; a life member of the Australian Society of Limnology; and a member of the Ecology Institute, the American Water Resource Association, the Ecological Society of America, the Environmental Institute of Australia and the International Water Academy. He is a leading member of the Wentworth Group of Concerned Scientists.

In 2004, Peter was appointed as an Officer of the Order of Australia (AO) for service to freshwater ecology, particularly in the areas of policy development, implementation and sustainability in relation to water and natural resource management, and to education. In 2001 he was awarded the Prime Minister's Prize for Environmentalist of the Year for his work on the National Action Plan for Salinity and Water Quality.

Tim Fisher: Director (non-executive)

Appointed from 1 July 2002 until 30 June 2005.
Member of the Audit Committee.
BA (Monash).

Tim has spent the past 14 years with the Australian Conservation Foundation, most recently as coordinator of its Land and Water Ecosystems Program. He is a member of the Community Reference Panel for the "Living Murray" process and of the Myer Foundation's Water and Environment Committee. He is a director of Water Keepers Australia. Tim 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.

Mike Logan
Director (non-executive)

Appointed from 1 July 1999, re-appointed 2002 until 30 June 2005
Chair of the Finance Committee.
B.Bus (Kuring-gai CAE), FAICD.

Mike Logan is a cotton, cereal and beef producer from Narrabri, NSW. He is a board member of the CRC for Irrigation Futures. He was instrumental in introducing an environmental best management practice program into the cotton industry and is probably the first commercial farmer in Australia to have achieved ISO 14001 certification of the environmental management system for his farm.

David Pannell:
Director (non-executive)

Appointed from 1 July 2002 until 30 June 2005.
Member of the Communication Committee.
PhD (UWA), B.Ec. (UWA), B.Sc.Agric. (Hons) (UWA).

David is Professor in Agricultural and Resource Economics at the University of Western Australia and leader of the People, Land and Water Program of the CRC for Plant-Based Management of Dryland Salinity. He has expertise in resource economics, farmer adoption of land conservation practices, technology transfer, communication, policy evaluation, risk management and the economics of science. David has a broad understanding of Australia's rural industries and brings a multi-disciplinary approach to sustainability issues. He was a member of the WA Government's Salinity Taskforce in 2001, and is a past President of the Australian Agricultural and Resource Economics Society.

David won the 2003–04 W.E. Wood Award for Excellence in Dryland Salinity Research.

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, Landcare and Sustainable Industries, Natural Resource Management Division, in the Australian Government Department of Agriculture, Fisheries and Forestry.

Committees of the Board

In 2003–04, committees to deal with the matters affecting the Board were:

- the Audit Committee, comprising four non-executive directors and the Chief Finance Officer (with the Executive Director as an observer), 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 Finance Officer, which considers financial matters affecting the Corporation; and
- the Communication Committee, comprising three non-executive directors, the Executive Director and the Knowledge and Adoption Manager, which develops a communication strategy and oversees its longer-term 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 numbers of Board meetings and Board committee meetings attended by directors and officers during 2003–04 were as follows:

	Board meetings	Audit Committee meetings	Finance Committee meetings	Communication Committee meetings
No. of meetings held →	4	4	10	2
Roberta Brazil	4	3		2
Andrew Campbell	4	1	10	2
John Childs	4		8	
Peter Cullen [note 1]	4			2
Tim Fisher	4	4		
Mike Logan [note 2]	3		9	
David Pannell	4			2
Warwick Watkins [note 3]	4	4		
Charles Willcocks	4	4		
Christine Ellis [note 4]				1
Kate Andrews [note 5]				1
Sandy Lolicato [note 6]		1	2	
Andrew Naef [note 7]		1	2	
Iris Carter [note 8]		2	6	

Notes for Board and committee membership and attendance table:

1. Chair of Communication Committee.
2. Chair of Finance Committee.
3. Chair of Audit Committee.
4. Communication Manager to December 2003.
5. Knowledge and Adoption Manager from March 2004.
6. Business Manager to September 2003.
7. Mr Naef was a contractor who carried out the duties of the Chief Finance Officer from September 2003 to November 2003.
8. Chief Finance Officer from December 2003.

Directors' interests policy

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

Quality management system

Land & Water Australia has built on its ISO 9000 quality management certification, achieved in 1996, through to AS/NZS ISO 9001:2000 achieved in July 2001. These achievements indicate the Corporation's commitment to continual improvement and the highest level of client service and accountability. The Corporation's total quality management commitment underpins many factors that are critical to the highest standards of corporate governance and risk management.

The Corporation's quality management systems were audited in 2003–04 by SGS International Certification Services Pty Ltd.

Service charter

To promote a greater focus on its stakeholders, Land & Water Australia has developed a service charter as part of its quality management system. The principles of the service charter are that:

- the Corporation shall verify that the requirements of stakeholders are identified and satisfied in a competent and professional manner;
- Land & Water Australia products and processes shall be reviewed and aligned to reflect the needs of its stakeholders — achieved through close consultation and feedback with key stakeholders; and
- any variances to stakeholder requirements shall be dealt with in a timely manner, in accordance with the quality system.

During the year, the Corporation demonstrated effective conformance to these principles through ongoing ISO certification and positive feedback from a stakeholder survey.

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 severity 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 a standing item at each Board meeting and 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.

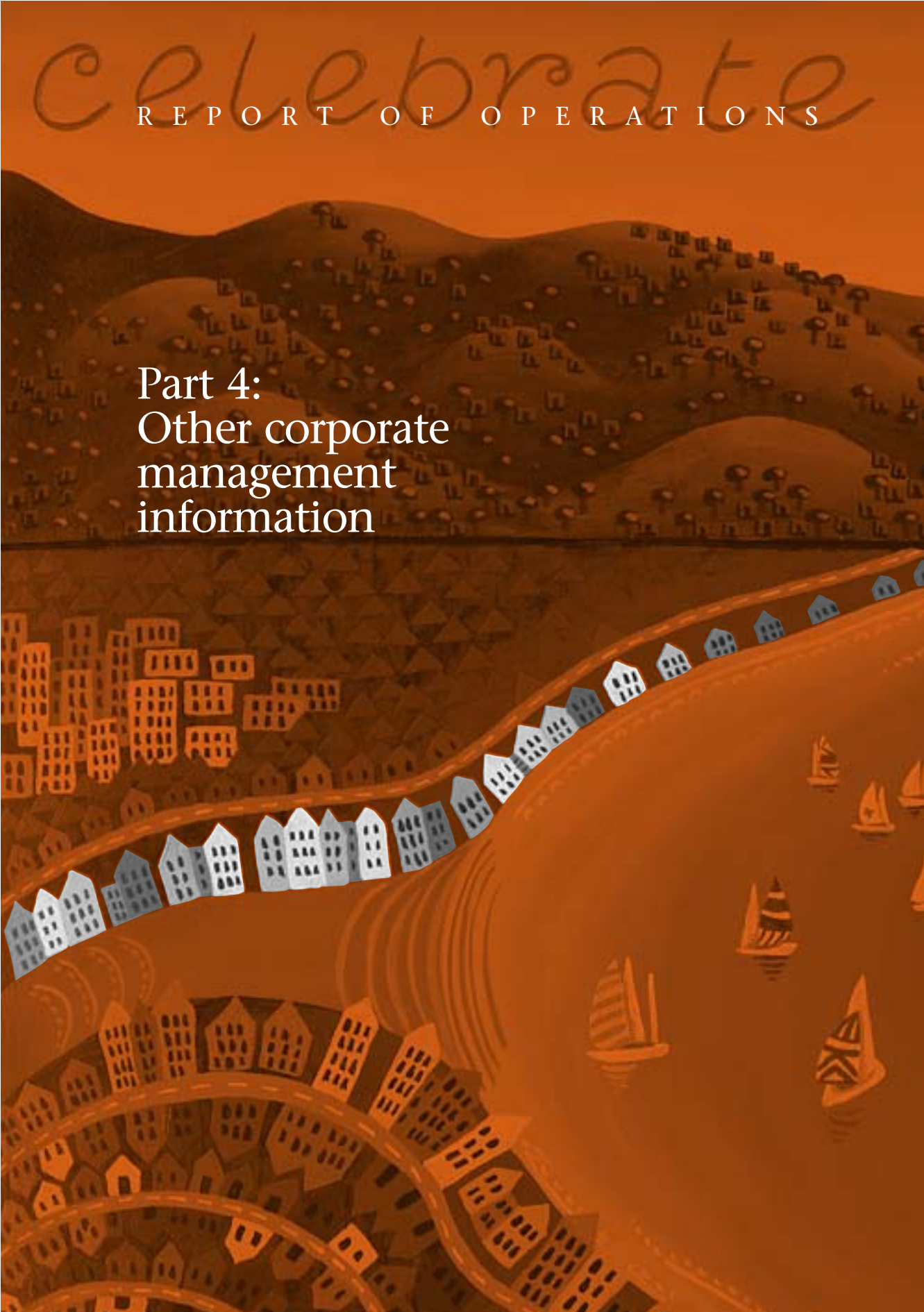
The 2002–03 external audit identified significant risks in information technology (IT) security for Land & Water Australia. In response to the audit report, the Corporation commissioned a comprehensive review of IT security in September 2003. The majority of its recommendations were implemented immediately. Others, concerning a dedicated server room with independent air-conditioning, uninterruptible power supply and digital deadlocks, were implemented in conjunction with the Corporation's relocation to new premises in April 2004. The final implementation steps were under way when this report was approved for printing. The ANAO, in its external audit report for 2003–04, noted the Corporation's comprehensive response to the concerns raised in 2002–03 and commended the Corporation for it.

No incidence of fraud was detected during 2003–04.

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.

Part 4: Other corporate management information



Location of the Corporation's major activities and facilities

Land & Water Australia's office is in Canberra. Location and contact details are on the reverse of the first page of this report.

People management

Land & Water Australia staff support the establishment and management of R&D programs including effective business and communication support. Staff are employed on terms and conditions determined by the Corporation. During 2003–04, 36 full time equivalent staff were employed. Staffing as at 30 June 2004 was as follows:

Executive Director	Andrew Campbell
Chief Finance Officer	Iris Carter
Integration Manager	Catherine Mobbs
Science Manager	Nick Schofield
Rivers Manager	Ian Prosser
Knowledge & Adoption Manager	Kate Andrews
Industries Manager	Anwen Lovett
Manager, National Dryland Salinity Program	Melanie King
Executive Coordinator	Judy Owens
Communication Officer	Glenn Conroy
Communication Officer	Trudi Ryan
Communication Officer	Tim Lester
Communication Officer (part-time)	Fleur Flanery
Knowledge Broker (part-time)	Dianne Flett
Receptionist	Helen Vooren
Publication Officer	Jennifer Bruce
Administration Assistant — Communication (part-time)	Samantha Burt
Group Accountant	Nicola Hussey
IT/Systems Help Desk	Stephen Dean
Human Resources Officer	Jenny Nitschke
Finance Officer	Betsy Vucetic
Business Support Officer	Jane Briggs
Social and Institutional Research Program Coordinator	Alice Roughley
Futures Officer — seconded from CSIRO	Steve Cork

Portfolio Management Officer	Elizabeth Ann
Program Officer, Research and Development	Joanne Caruso
Program Officer, Research and Development	Penny Cook
Program Officer, Research and Development	Catherine Viljoen
Program Officer, Research and Development	Gill Whiting
Administrative Assistant, Research and Development (part-time)	Prue Vincent

Four full-time persons, excluding the Audit's Executive Director, were employed by the National Land & Water Resources Audit Management Unit:

[Executive Director is employed by DAFF]	[Blair Wood]
Technical Coordinator	Rob Thorman
Data and Information Coordinator	Peter Wilson
Project Officer	Alana Innes
Executive Assistant	Michelle de Plater

Pictured in the new Land & Water Australia office is (back row left to right) Joanne Caruso, Penny Cook, Steve Cork, Glenn Conroy, Stephen Dean, Nick Schofield, Andrew Lawson, Sarah Vandermark, Tim Lester, Diane Cibiras; (front row left to right) Alice Roughley, Prue Vincent, Elizabeth Ann, Jenny Nitschke, Helen Vooren, Nicola Hussey, Andrew Campbell, Iris Carter, Jennifer Bruce, Anwen Lovett, Joanna Pinkas, Catherine Viljoen, Trudi Ryan and Jane Briggs. Not pictured: Betsy Vucetic, Charmaine Murfet, Dianne Flett, Fleur Flanery, Gillian Whiting, Ian Prosser, Judy Owens, Kate Andrews, Ken Rampling and Samantha Burt. Photo: Dean Golja.

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. Any increase in staff remuneration after a position has been placed within a band is based on performance and developing competency. 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.

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. Although the Corporation's portfolio of 1500 or so projects during the last decade represents a considerable asset, 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 high proportion of staff who are undertaking further study as part of their training and development plans.

	PhD	Master's degree	Bachelor's degree	Graduate diploma or certificate
Completed	6	7	19	16
In progress		2	4	4

Training and development opportunities are not limited to formal qualification, but may also include short courses 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. The Corporation is currently reviewing the induction process for incoming staff.

Photo: Glenn Conroy, Land & Water Australia.

Gill Whiting (left) and Elizabeth Ann, along with 10 others in the Land & Water Australia team, completed a total of 386 laps in the Relay for Life fundraising event for the ACT Cancer Council, raising more than $1,600 for cancer research.

Organisational health

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

- development of human resource policies and guidelines;
- contribution to a positive work environment by the Social Committee; and
- a staff workshop, which incorporated 'Celebrating Achievements, Valuing Skills, and Capturing Opportunities', was held in Phoenix House before the move, giving staff an opportunity to become familiar with the new environment.

Compliance with human resource statutes

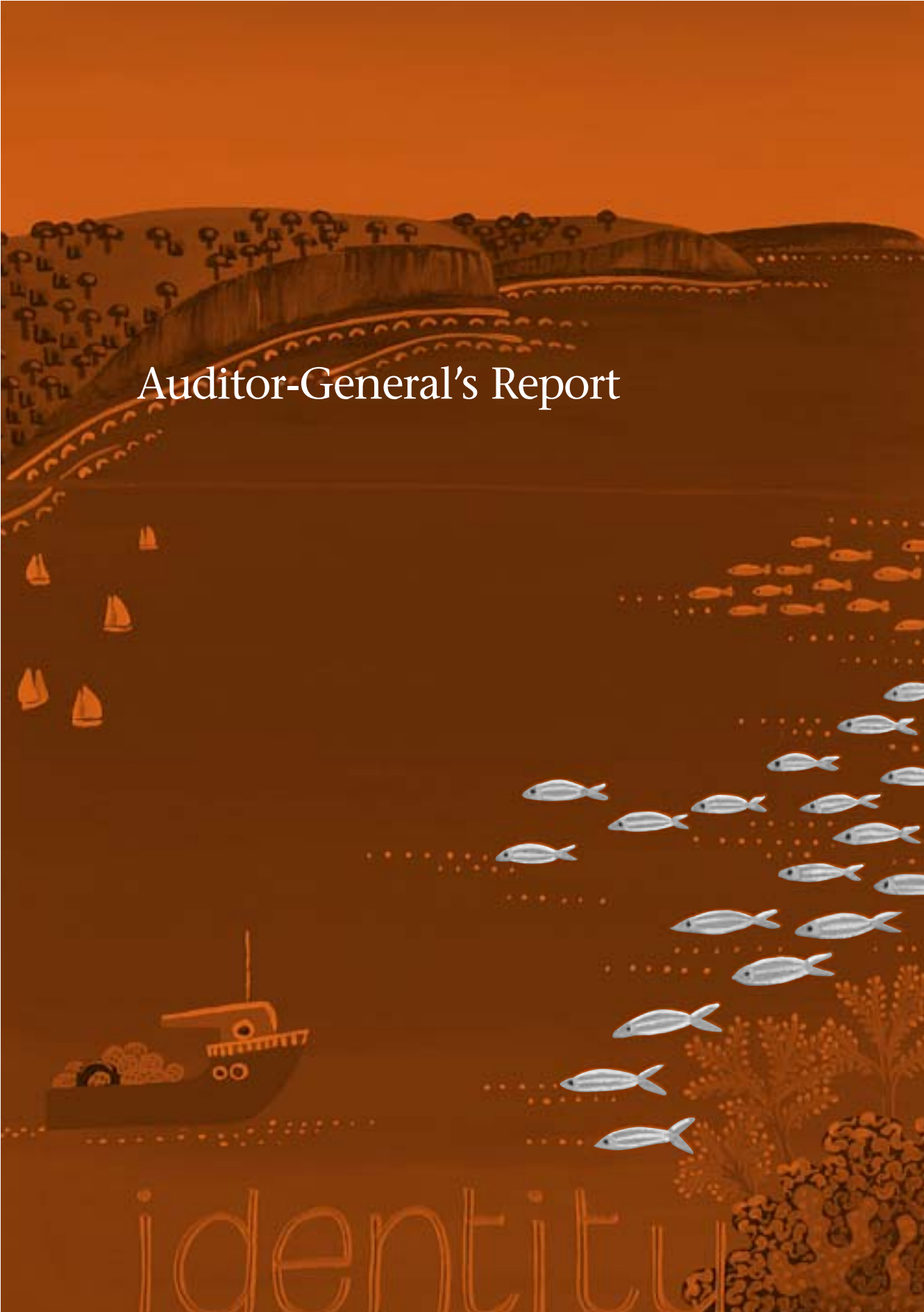
An independent review of the Land & Water Australia compliance requirements concluded that the Corporation has demonstrated compliance across a range of statues. Further details are in appendix 2 (page 121).

Occupational health and safety

Land & Water Australia is obliged to comply with the *Occupational Health and Safety (Commonwealth Employment) Act 1991* (the '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 recently conducted a further OH&S review of the office to inform future accommodation changes.

There have been no reports of accidents or dangerous incidents during the year that arose out of the conduct or undertakings of Land & Water Australia and that required notice to be given under section 68 of the OH&S Act. No investigations were conducted during the year.

Auditor-General's Report



Australian National
Audit Office

INDEPENDENT AUDIT REPORT

To the Minister for Agriculture, Fisheries and Forestry

Scope

The financial statements comprise:

- Statement by Directors;
- Statements of Financial Performance, Financial Position and Cash Flows;
- Schedules of Commitments and Contingencies; 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 2004.

The Directors of the Land and Water Resources Research and Development Corporation are responsible for the preparation and true and fair presentation of the financial statements in accordance with the Finance Minister's Orders. This includes responsibility 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 report is 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.

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

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BARTON ACT
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financial position, and of its performance as represented by the statements of 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 report; and
- assessing the appropriateness of the accounting policies and disclosures used, and the reasonableness of significant accounting estimates made by the Board of the Land and Water Resources Research and Development Corporation.

Independence

In conducting the audit, I have followed the independence requirements of the ANAO, which incorporate Australian professional ethical pronouncements.

Audit Opinion

In my opinion, the financial statements:

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

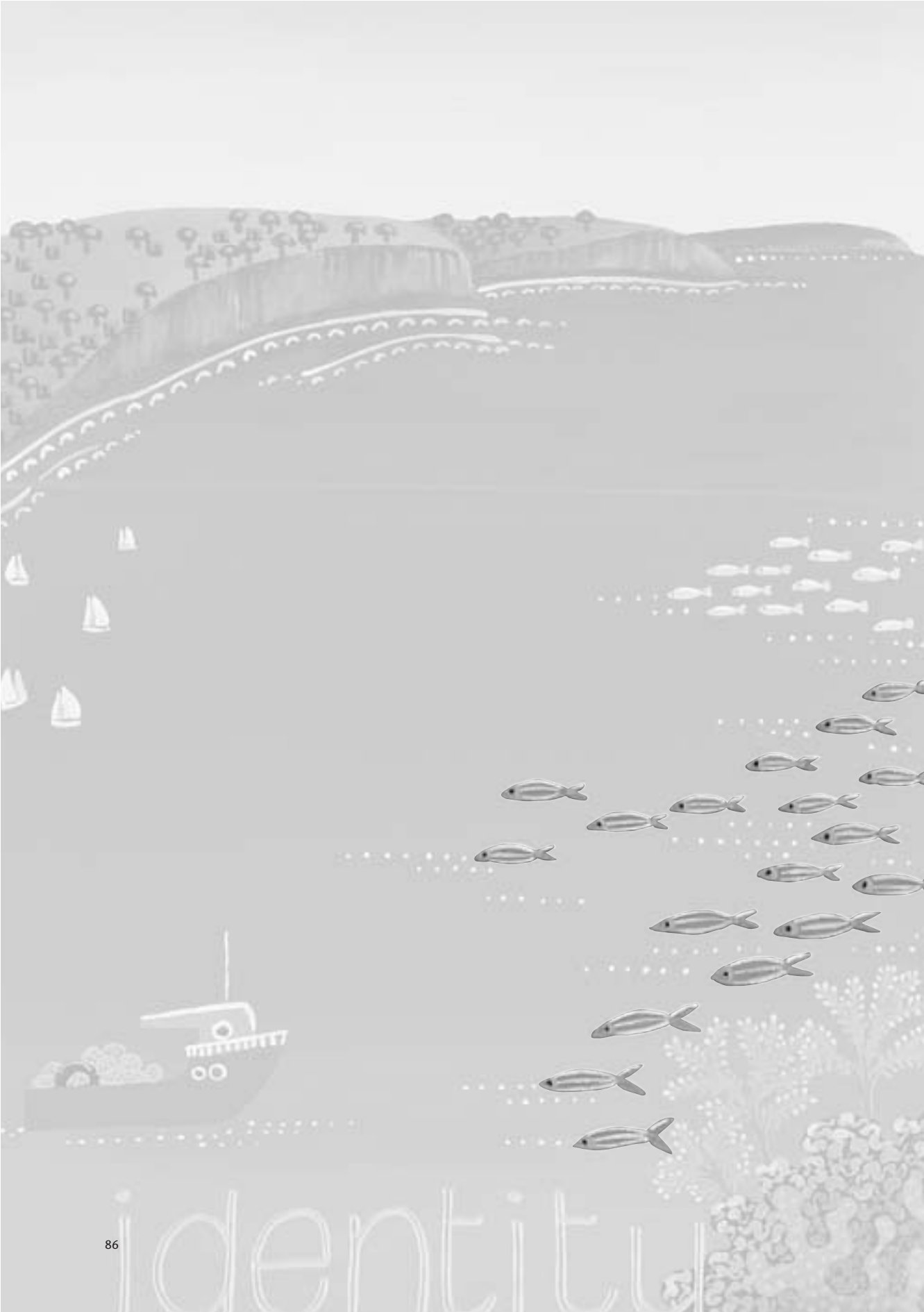
(ii) give a true and fair view, of the matters required by applicable Accounting Standards and other mandatory professional reporting requirements in Australia, and the Finance Minister's Orders, of the financial position of the Land and Water Resources Research and Development Corporation as at 30 June 2004, and its financial performance and cash flows for the year then ended.

Australian National Audit Office

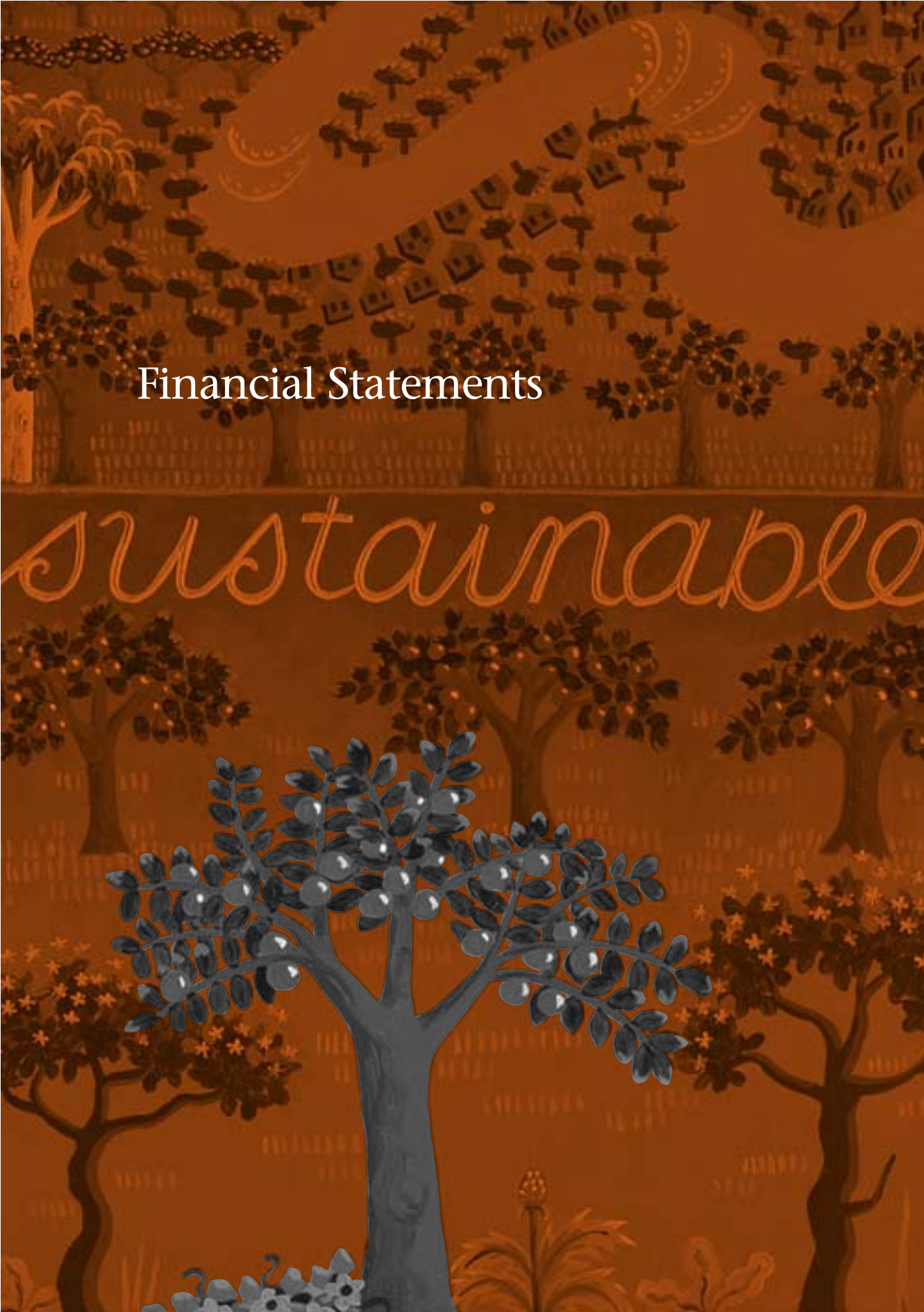
Ian P. Goodwin
Executive Director

Delegate of the Auditor-General
CANBERRA

17 August 2004



Financial Statements



LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION

Statement by directors

In our opinion, the attached financial statements for the year ended 30 June 2004 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*.

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
Chairperson
17th August 2004

Andrew Campbell
Executive Director
17 August 2004

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION
STATEMENT OF FINANCIAL PERFORMANCE
For the year ended 30 June 2004

	Notes	2004 $	2003 $
REVENUE			
Revenues from ordinary activities			
Revenue from Government	6A	12,241,000	11,875,000
Third party contributions utilised	5	12,756,182	10,203,942
Interest income	6B	327,278	341,170
Revenue from sale of assets	6C	25,454	910
Other income	6D	136,764	46,804
Revenues from ordinary activities		25,486,678	22,467,826
EXPENSE			
Expenses from ordinary activities			
Employees	7A	3,519,837	3,486,078
Suppliers	7B	5,127,571	3,535,806
Research and Development	8	16,568,075	15,995,319
Depreciation and amortisation	7C	256,650	260,157
Write down of assets	7D	147,332	47,516
Value of assets sold	6C	24,924	1,090
Expenses from ordinary activities	9	25,644,389	23,325,966
Operating surplus/(deficit) from ordinary activities		(157,711)	($858,140)
Net surplus /(deficit)		(157,711)	($858,140)
Total revenues, expenses and valuation adjustments recognised directly in equity		-	-
Total changes in equity other than those resulting from transactions with owners as owners		(157,711)	($858,140)

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

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION
STATEMENT OF FINANCIAL POSITION
As at 30 June 2004

	Notes	2004 $	2003 $
ASSETS			
Financial assets			
Cash	15B	8,016,995	4,346,448
Receivables	10A	2,942,431	1,550,528
Investments	10B	655,226	1,136,135
Total Financial assets		11,614,652	7,033,111
Non-financial assets			
Infrastructure, plant and equipment	11A	705,972	372,930
Intangibles	11B	38,565	109,266
Other	11D	76,527	7,970
Total non-financial assets		821,064	490,166
Total assets		12,435,716	7,523,277
LIABILITIES			
Provisions			
Employees	12A	655,049	781,242
Suppliers	12B	156,502	-
Research and Development	12C	86,182	591,838
Total provisions		897,733	1,373,080
Payables			
Suppliers	13A	1,197,647	283,326
Research and Development	13B	8,798,269	4,167,093
Total Payables		9,995,916	4,450,419
Total liabilities		10,893,649	5,823,499
NET ASSETS		1,542,067	1,699,778
EQUITY			
Parent entity interest			
Reserves	14	115,254	115,254
Accumulated surplus	14	1,426,813	1,584,524
Total parent entity interests		1,542,067	1,699,778
Total Equity		1,542,067	1,699,778
Current assets		11,691,179	7,041,081
Non-current assets		744,537	482,196
Current liabilities		10,625,632	5,689,611
Non-current liabilities		268,017	133,888

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

LAND AND WATER RESOURCES RESEARCH & DEVELOPMENT CORPORATION
STATEMENT OF CASH FLOWS
For the year ended 30 June 2004

	Notes	2004 $	2003 $
Operating Activities			
Cash Received			
Sale of goods and services		**329,489**	51,484
Revenue from Government		**12,241,000**	11,875,000
Interest		**301,389**	358,878
Third party contributions		**12,802,332**	12,388,379
GST received from ATO		**771,349**	624,876
Total cash received		**26,445,559**	25,298,617
Cash used			
Employees		**(3,646,028)**	(3,474,669)
Suppliers		**(4,706,730)**	(3,780,376)
Research and Development		**(14,240,024)**	(18,351,557)
Total cash used		**(22,592,782)**	(25,606,602)
Net cash from/(used by) operating activities	15	**3,852,777**	(307,985)
Investing Activities			
Cash Received			
Proceeds from sales of infrastructure, plant and equipment		**25,454**	910
Proceeds from sale of financial instruments		**480,909**	590,102
Total cash received		**506,363**	591,012
Cash used			
Purchase of infrastructure, plant and equipment		**(688,593)**	(124,970)
Purchase of financial instruments		**-**	(1,136,135)
Total cash used		**(688,593)**	(1,261,105)
Net cash from/(used by) investing activities		**(182,230)**	(670,093)
Net Increase/(decrease) in cash held		**3,670,547**	(978,078)
Cash at the beginning of the reporting period		**4,346,448**	5,324,526
Cash at the end of the reporting period	15	**8,016,995**	4,346,448

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

LAND AND WATER RESOURCES RESEARCH & DEVELOPMENT CORPORATION
SCHEDULE OF COMMITMENTS
As at 30 June 2004

	2004 $	2003 $
By Type		
Other commitments		
Operating lease [1]	**3,656,948**	537,084
Other commitments [2]	**24,313,857**	19,955,084
Total other commitments	**27,970,805**	20,492,168
Commitments receivable	**(2,542,801)**	(1,862,922)
Net commitments	**25,428,004**	18,629,246
By Maturity		
Operating lease commitments		
One year or less	**503,926**	306,904
From one to five years	**2,796,868**	230,180
Over five years	**356,154**	-
	3,656,948	537,084

N.B. Commitments are GST inclusive where relevant.

1. Operating lease is exclusively in relation to office accommodation for a rental lease to January 2011 with annual increases of 3.5%.

2. As at 30 June 2004 other commitments comprise future commitments to research organisations and for jointly funded projects and programs managed by other funding agencies in respect of which the recipient is yet to either perform the services required or meet eligibility conditions.

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

Note 1: Summary of Significant Accounting Policies

1.1 Basis of Accounting

The Land and Water Resources Research and Development Corporation (the 'Corporation'), trading as Land & Water Australia, is required by Section 20 of *the Commonwealth Authorities and Companies Act 1977* to provide 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 1977* and are a general purpose financial report.

The Statements have been prepared in accordance with:

- Finance Minister's Orders (being the *Commonwealth Authorities and Companies Orders (Financial Statements for reporting periods ending on or after 30 June 2004)*);
- Australian Accounting Standards and Accounting Interpretations issues by the Australian Accounting Standards Board; and
- Consensus Views of the Urgent Issues Group.

The Corporation's Statements of Financial Performance and Financial Position have been prepared on an accrual basis and are in accordance with historical cost convention, except for certain assets, which as noted, are at valuation. Except where stated, no allowance is made for the effect of changing prices on the results or the financial position.

Assets and liabilities are recognised in the Statement of Financial Position 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. Assets and liabilities arising under agreements equally proportionately unperformed are however 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.

Revenues and expenses are recognised in the Statement of Financial Performance when and only when the flow or consumption or loss of economic benefits has occurred and can be reliable measured.

1.2 Changes in Accounting Policy

The accounting policies used in the preparation of these financial statements are consistent with those used in 2002-03.

1.3 Revenue

The revenues described in this Note are revenues relating to the core operating activities of the Corporation.

Interest revenue is recognised on a proportional basis taking into account the interest rates applicable to the financial assets.

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

Revenue from the rendering of a service is recognised by reference to the stage of completion of contracts or other agreements to provide services to other bodies. The stage of completion is determined according to the proportion that costs incurred to date bear to the estimated total costs of the transactions.

The Corporation received revenue from third parties for the management of collaborative programs and projects.

Revenues from Government – Funding for Outputs

The full amount of the funding from the Department of Agriculture, Fisheries and Forestry from Appropriation Acts 1 and 2 for the Corporation's outputs for the year, is recognised as revenue.

Resources received Free of Charge

There were no resources received free of charge during 2003-04 (2003: nil).

1.4 Employee Benefits

Benefits

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

Liabilities for wages and salaries (including non-monetary benefits), annual leave and sick leave are measured at their nominal amounts. Other employee benefits expected to be settled within 12 months of their reporting date are also 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 entitlements 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 for the Corporation is estimated to be less than an 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.

The non-current portion of 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 2004.

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

Separation and Redundancy

Provision is made for separation and redundancy payments in circumstances where the Corporation has formally identified positions as excess to requirements and a reliable estimate of the amount of the payments can be determined.

Superannuation

Employees are members of the Commonwealth Superannuation and Public Service Superannuation Schemes, or other selected scheme in accordance with the Superannuation Guarantee levy.

The liability for superannuation recognised as at 30 June 2004 represents outstanding contributions for the final fortnight of the year.

1.5 Leases

Operating lease payments are expensed on a basis which is representative of the pattern of benefits derived from the leased assets. The net present value of future net outlays in respect of surplus space under non-cancellable lease agreements is expensed in the period in which the space becomes surplus.

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.

1.6 Research & Development expenses

Research & 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 & Development monies are paid in advance of performance or eligibility, a prepayment is recognised. Where the research and development agreement has been executed by the Corporation but not yet by the grantee, a provision for any initial payment to be made on execution is recorded.

1.7 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. Interest is credited to revenue as it accrues.

1.8 Acquisition of assets

Assets are recorded at cost on acquisition. The cost of acquisition includes the fair value of assets transferred in exchange and liabilities undertaken.

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

1.9 Infrastructure, Plant and Equipment

Asset Recognition Threshold

Purchase of infrastructure, plant and equipment are recognised initially at cost in the Statement of Financial Position, except for purchases costing less than $2,000, which are expensed in the year of acquisition (other than where they form part of a group of similar items which are significant in total). Assets purchased from project funds which are greater than the threshold of $5,000, may revert to the Corporation at the end of the project period. As at 30 June 2004, no reversions took place. All sundry equipment transferred from the Commonwealth has been written off.

Revaluations

Infrastructure, plant and equipment are carried at valuation. Revaluations undertaken up to 30 June 2002 were done on a deprival basis at three year intervals for all assets. Under Australian Accounting Standard ASB 1041 *Revaluation of Non-Current Assets*, the Corporation has applied the transitional provisions for progressive revaluations and will conduct the next revaluation at 30 June 2005 on a fair value basis. As a result there is no financial effect of the new fair value basis in 2003-04.

Deprival values for each class of assets are determined as shown below:

Asset Class	Deprival Value Measured at:
Leasehold improvements	Depreciated replacement cost
Plant & Equipment	Market selling price

Under deprival value, assets which are surplus are measured at their net realisable value.
At 30 June 2004 the Corporation held no surplus assets: (30 June 2003: nil)

Frequency

Infrastructure, plant and equipment are each revalued progressively on a three year cycle. The current cycle commenced in 2001-02. Assets in each class acquired after the commencement of a revaluation cycle are not captured by the progressive revaluation then in progress.

The Finance Minister's Orders require that all property, plant and equipment assets be measured at up-to-date fair values from 30 June 2005 onwards. The 2001-02 year is therefore the last year in which the Corporation will undertake progressive revaluations.

Conduct

All valuations are conducted by an independent qualified valuer.

Depreciation and Amortisation

Depreciable infrastructure, 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 amortised on a straight line basis over the lesser of the estimated useful life of the improvements or the unexpired period of the lease.

Depreciation/amortisation rates (useful lives) and methods are reviewed at each balance date and necessary adjustments are recognised in the current, or current and future reporting periods, as appropriate. Residual values are re-estimated for a change in prices only when assets are revalued.

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

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

	2004	2003
Leasehold improvements	lease term	lease term
Plant and equipment	3-8 years	3-8 years

The aggregate amount of depreciation and amortisation allocated for each class of asset during the reporting period is disclosed in Note 7C.

1.10 Intangibles

The Corporation's intangibles comprise externally acquired and internally developed software. The assets are carried at cost.

Software is amortised on a straight line basis over the anticipated useful life.

Useful lives are:

	2004	2003
Externally acquired software	3-4 years	3-4 years
Internally developed software	3-4 years	3-4 years

1.11 Impairment of assets

All non-current assets including software assets were assessed for impairment as at 1 July 2004 and were found to be fully operational and meeting the needs of the Corporation. None were found to be impaired.

1.12 Taxation

The Corporation is liable to pay payroll tax, fringe benefits tax, stamp duty and the goods and services tax. The Corporation is exempt from the payment of income tax under clause 46(1) of the *Primary Industries and Energy Research and Development Act 1989 (PIERD Act)*.

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.

1.13 Insurance

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

1.14 Comparative figures

Where necessary, comparative figures have been reclassified to conform with the current financial year's presentation

Note 2: Adoption of AASB Equivalents to International financial Reporting Standards from 2005-06.

The Australian Accounting Standards Board has issued replacement Australian Accounting Standards to apply from 2005-06. The new standards are the AASB Equivalents to International Financial Reporting Standards (IFRSs), which are issued by the International Accounting Standards Board. The new standards cannot be adopted early. The standards being replaced are to be withdrawn with effect from 2005-06, but continue to apply in the meantime.

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

The purpose of issuing AASB Equivalents to IFRSs is to enable Australian entities to be able to prepare their financial reports according to accounting standards more widely used overseas.

It is expected that the Finance Minister will continue to require compliance with the Accounting Standards issued by the AASB, including the AASB Equivalents to IFRSs, in his Orders for the Preparation of Agency financial statements for 2005-06 and beyond.

The AASB Equivalents contain certain additional provisions, which will apply to not-for-profit entities, including Australian Government agencies.

Existing AASB standards that have no IFRS equivalent will continue to apply, including in particular AAS 29 *Financial Reporting by Government Departments*.

Accounting Standard AASB 1047 Disclosing the impact of Adopting Australian Equivalents to IFRSs requires that the financial statements for 2003-04 disclose:

- an explanation of how the transition to the AASB Equivalents is being managed, and
- a narrative explanation of the key differences in accounting policies arising from the transition.

The purpose of this Note is to make these disclosures.

Management of the transition to AASB Equivalents to IFRSs

LWA has taken the following steps for the preparation towards the implementation of AASB Equivalents:

- The Corporation's Audit Committee is tasked with oversight of the transition to and implementation of the AASB Equivalents to IFRSs. The Chief Finance Officer is formally responsible for the project. Reports to the Audit Committee on progress toward the implementation will be provided to the Committee.
- The implementation plan requires key steps to be undertaken and sets deadlines for their achievement:
    - Identification of all major accounting policy differences between current AASB standards and the AASB Equivalents to IFRSs progressively to 30 June 2004.
    - Identification of systems changes necessary to be able to report under the AASB Equivalents, including those necessary to enable capture of data under both sets of rules for 2004-05, and the testing and implementation of those changes.
    - Preparation of a transitional balance sheet as at 1 July 2004, under AASB Equivalents, within two months of 30 June 2004.
    - Preparation of an AASB Equivalent balance sheet at the same time as the 30 June 2005 statements are prepared.
    - Meeting reporting deadlines set by Finance for 2005-06 balance sheet under AASB Equivalent Standards.

To date, all major accounting and disclosure differences have been identified. Identification of system changes necessary is in progress and testing and implementation of these changes are expected to be implemented by 31 December 2004.

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

Notes to and Forming Part of the Financial Statements

Major changes in accounting policy

Changes in accounting policies under AASB Equivalents are applied retrospectively i.e. as if the new policy had always applied. This rule means that a balance sheet prepared under the AASB Equivalents must be made as at 1 July 2004, except as permitted in particular circumstances by AASB 1 *First-time Adoption of Australian Equivalents to International Financial Reporting Standards*. This will enable the 2005-06 financial statements to report comparatives under the AASB Equivalents also.

Changes to major accounting policies are discussed in the following paragraphs.

Property plant and equipment

It is expected that the Finance Minister's Orders will require property plant and equipment assets carried at valuation in 2003-04 to be measured at up-to-date fair value from 2005-06. This differs from the accounting policies currently in place for these assets which, up to and including 2003-04, have been revalued progressively over a 3-year cycle and which currently include assets at cost (for purchases since the commencement of a cycle) and at deprival value (which will differ from their fair value to the extent that they have been measured at depreciated replacement cost when a relevant market selling price is available).

The Finance Minister requires these assets to be measured at up-to-date fair values as at 30 June 2005. Further, the transitional provisions in AASB 1 will mean that the values at which assets are carried as at 30 June 2004 under existing standards will stand in the transitional balance sheet as at 1 July 2004.

Intangible Assets

LWA currently recognises internally-developed software assets on the cost basis. The carrying amounts include amounts that were originally measured at deprival valuation and subsequently deemed to be cost under transitional provisions available on the introduction of AAS 38 *Revaluation of Non-current Assets* in 2000-01 and AASB 1041 of the same title in 2001-02.

The Australian Equivalent on Intangibles does not permit intangibles to be measured at valuation unless there is an active market for the intangible. LWA's internally developed software is specific to the needs to the Corporation and is not traded. Accordingly, LWA will derecognise the valuation component of the carrying amount of these assets on adoption of the Australian Equivalent.

Impairment of Non-Current Assets

LWA's policy on impairment of non-current assets is at Note 1.11. Under the new AASB Equivalent Standard, these assets will be subject to assessment for impairment and, if there are indications of impairment, measurement of any impairment. The impairment test is that the carrying amount of an asset must not exceed the greater of (a) its fair value less costs to sell and (b) its value in use. 'Value in use' is the net present value of net cash inflows for for-profit assets of the Corporation and depreciated replacement cost for other assets which would be replaced if LWA were deprived of them.

The most significant change is that, for the Corporation's assets carried at up-to-date fair value, if costs to sell are significant, the assets may be required to be written down.

Employee Benefits

The provision for long service leave is measured at the present value of estimated future cash outflows using market yields as at the reporting date on national government bonds. Under the new AASB Equivalent standard, the same discount rate will be used.

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

Financial Instruments

Cash and receivables are expected to continue to be measured at cost.

Financial assets, except those classified as 'held at fair value through profit and loss', will be subject to impairment testing.

Note 3: Economic Dependency

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

The Corporation is dependent on funding from Appropriation Acts 1 and 2 from the Parliament of the Commonwealth for its continued existence and ability to carry out its normal activities.

Note 4: Events Occurring After Reporting Date

Since balance date, the Corporation is not aware of any events that have occurred which will affect the amounts disclosed in the 2003-04 Financial Statements.

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

Note 5: Third Party Contributions

Third party contributions were received for the following programs and projects in which the Corporation was a participant and managed the activity on behalf of other funding agencies:

ACTIVITY	Utilised 2004	Utilised 2003	Not yet Utilised 2004	Not yet Utilised 2003
	$	$	$	$
Land, water & wool	**4,273,777**	3,749,208	**2,568,114**	281,890
National dryland salinity R&D	**439,622**	306,145	**36,552**	32,079
Social & institutional R&D	**127,067**	126,553	**75,516**	82,083
Ord-Bonaparte program	**177,029**	844,755	**57,062**	134,091
NRM climate variability	**572,678**	285,620	**749,103**	214,380
Sustainable grain and graze	**357,129**	77,521	**846,438**	-
Irrigation R&D	**1,845,801**	520,906	**793,952**	445,935
River contaminants	**417,550**	394,639	**170,658**	258,208
National rivers consortium	**759,795**	630,871	**634,054**	699,662
Riparian lands	-	47,600	-	-
Native vegetation R&D	**575,708**	624,930	**70,999**	46,707
National land and water resources audit	**3,223,027**	2,289,384	**1,700,957**	1,849,402
Other research and development projects	**(13,801)**	305,810	-	-
Total	**12,756,182**	10,203,942	**7,703,405**	4,024,437

Of the third party contributions received, $12,756,182 has been recognised as income at balance date (2003: $10,203,942).

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

Notes to and Forming Part of the Financial Statements

Note 6: Operating Revenues

	2004 $	2003 $
6A: Revenue from Government		
Funding from the Department of Agriculture, Fisheries and Forestry under Appropriation Acts 1 and 2	**12,241,000**	11,875,000
Total revenue from Government	**12,241,000**	11,875,000
6B: Interest Revenue		
Deposits	**327,278**	341,170
Total interest revenue	**327,278**	341,170
6C: Net Gain from Sale of Assets		
Infrastructure, plant and equipment:		
Proceeds from disposal	**25,454**	910
Net book value of assets disposed	**(24,924)**	(1,090)
Write offs (note 7D)	**(144,678)**	(4,633)
Net gain/(loss) from disposal of infrastructure, plant and equipment	***(144,148)***	***(4,813)***
6D: Other Revenue		
Publication sales	**17,646**	7,286
Other revenue	**119,118**	39,518
Total other revenue	**136,764**	46,804

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

Notes to and Forming Part of the Financial Statements

Note 7: Operating Expenses

	2004 $	2003 $
7A: Employee Expenses		
Wages and Salaries	**2,961,521**	3,066,816
Superannuation	**362,331**	328,886
Leave and other entitlements	**106,881**	5,773
Other employee benefits	**72,197**	68,500
Total employee benefits expenses	**3,502,930**	3,469,975
Workers compensation premiums	**16,907**	16,103
Total employee expenses	**3,519,837**	3,486,078
7B: Supplier Expenses		
Goods from external entities	**167,167**	815,368
Services from related entities	**57,368**	85,554
Services from external parties	**4,296,777**	2,318,926
Operating lease rentals	**606,259**	315,958
Total supplier expenses	**5,127,571**	3,535,806
7C: Depreciation and Amortisation		
Depreciation of property, plant and equipment	**118,286**	98,984
Amortisation of infrastructure	**56,314**	43,849
Amortisation of computer software	**82,050**	117,324
Total depreciation and amortisation	**256,650**	260,157
7D: Write-Down of Assets		
Bad and doubtful debts expense	**2,654**	42,883
Plant & equipment – write off on disposal	**144,678**	4,633
Total write-down of assets	**147,332**	47,516

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

Notes to and Forming Part of the Financial Statements

Note 8: Operating Expenses - Research & Development Expenses

	2004 $	2003 $
Research & Development expenses to non-profit institutions	**11,858,878**	12,122,518
Research & Development expenses to commercial entities	**4,709,197**	3,872,801
Total	**16,568,075**	15,995,319

Note 9: Total Operating Expenses

Total operating expenses are classified by functional type as follows:

Administration	**2,578,783**	1,683,370
Research & Development related activities	**20,862,547**	19,711,670
Portfolio Management	**703,224**	561,507
Communication	**1,499,835**	1,369,419
Total	**25,644,389**	23,325,966

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

Notes to and Forming Part of the Financial Statements

Note 10: Financial Assets

	2004 $	2003 $
10A: Receivables		
Goods and services	**2,715,199**	1,023,937
Less: Provision for doubtful debts	**(2,654)**	-
	2,712,545	1,023,937
Interest receivable	**30,681**	4,793
GST receivable	**195,673**	521,798
Other receivables	**3,532**	-
Total receivables (net, current)	**2,942,431**	1,550,528
Receivables (gross) which are aged as follows:		
Not overdue	**2,144,237**	906,311
Overdue by:		
Less than 30 days	**781,367**	443,368
30 to 60 days	**-**	-
60 to 90 days	**18,346**	-
More than 90 days	**1,135**	200,849
	800,848	644,217
Total receivables (gross)	**2,945,085**	1,550,528

Receivables for goods and services
Credit terms are net 30 days.

10B: Investments		
Term deposits	**655,226**	1,136,135
Total investments (current)	**655,226**	1,136,135

Accrued Interest
The interest rates range from 4.73% to 5.22% (2003 4.45% to 5.7%) and the frequency of payments range from monthly to quarterly.

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

Notes to and Forming Part of the Financial Statements

Note 11: Non-Financial Assets

	2004 $	2003 $
11A: Infrastructure, plant and equipment		
Office equipment		
- at cost	**203,604**	88,726
- Accumulated depreciation	**(51,022)**	(21,334)
	152,582	67,392
- 30 June 2002 valuation (deprival)	**97,500**	252,485
- Accumulated depreciation	**(57,838)**	(70,702)
	39,662	181,783
Total office equipment	**192,244**	249,175
Furniture and fittings		
- at cost	**5,336**	2,169
- Accumulated depreciation	**(66)**	(208)
	5,270	1,961
- 30 June 2002 valuation (deprival)	**10,200**	51,774
- Accumulated depreciation	**(2,652)**	(6,731)
	7,548	45,043
Total furniture and fittings	**12,818**	47,004
Leasehold improvements		
- at cost	**513,374**	-
- Accumulated amortisation	**(12,464)**	-
	500,910	-
- 30 June 2002 valuation (deprival)	**-**	120,600
- Accumulated amortisation	**-**	(43,849)
	-	76,751
Total leasehold improvements	**500,910**	76,751
Total Infrastructure, Plant and Equipment (non-current)	**705,972**	372,930

The revaluations were in accordance with the revaluation policy stated at note 1.11 and were completed by an independent valuer (Australian Valuation Office).

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

	2004 $	2003 $
11B: Intangibles		
Computer software		
Externally acquired – at cost	**90,186**	89,458
Accumulated amortisation	**(69,583)**	(48,958)
	20,603	40,500
Internally developed – at cost	**329,035**	329,623
Accumulated amortisation	**(311,073)**	(260,857)
	17,962	68,766
Total intangibles	**38,565**	109,266

11C: Analysis of Infrastructure, Plant, Equipment and Intangibles

TABLE A1 - Reconciliation of the opening and closing balances of infrastructure, plant and equipment and intangibles

Item	Office equipment $	Furniture and fittings $	Leasehold Improvement $	Computer Software $	TOTAL $
As at 1 July 2003					
Gross book value	341,211	53,943	120,600	419,081	934,835
Accumulated depreciation / amortisation	(92,035)	(6,939)	(43,850)	(309,815)	(452,639)
Net book value	**249,176**	**47,004**	**76,750**	**109,266**	**482,196**
Additions: by purchase	150,874	5,336	513,374	19,009	688,593
Depreciation/amortisation expense	(111,214)	(7,072)	(56,314)	(82,050)	(256,650)
Disposals: other disposals – sale of assets	(24,770)	(154)	-	-	(24,924)
Disposals: other disposals – assets written off	(71,822)	(32,296)	(32,900)	(7,660)	(144,678)
As at 30 June 2004					
Gross book value	301,104	15,536	513,374	419,221	1,249,235
Accumulated depreciation / amortisation	(108,860)	(2,718)	(12,464)	(380,656)	(504,698)
Net book value	**192,244**	**12,818**	**500,910**	**38,565**	**744,537**

Table B – Assets at valuation

Item	Office Equipment $	Furniture and fittings $	Leasehold Improvement $	Computer software $	TOTAL $
As at 30 June 2004					
Gross value	97,500	10,200	-	-	107,700
Accumulated depreciation/amortisation	(57,838)	(2,652)	-	-	(60,490)
Net book value	**39,662**	**7,548**	-	-	**47,210**
As at 30 June 2003					
Gross value	252,485	51,774	120,600	-	424,859
Accumulated depreciation/amortisation	(70,702)	(6,731)	(43,849)	-	(121,282)
Net book value	**181,783**	**45,043**	**76,751**	-	**303,577**

11D: Other Non-Financial Assets

	2004 $	2003 $
Prepayments	**76,527**	7,970
Total other non-financial assets (current)	**76,527**	7,970

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

Notes to and Forming Part of the Financial Statements

Note 12: Provisions

	2004 $	2003 $
12A: Employee Provisions		
Salaries and wages	**315,325**	326,101
Annual leave	**191,456**	150,977
Long service leave	**148,268**	304,164
Aggregate employee benefit liability and related on costs	**655,049**	781,242
Employee provisions are categorised as follows:		
Current	**552,546**	647,354
Non-current	**102,503**	133,888
Aggregate employee benefit liability and related on costs	**655,049**	781,242
12B: Suppliers		
Provision for rent and make-good at leased premises no longer occupied	**156,502**	-
Total provision for suppliers (current)	**156,502**	-
12C: Research and Development		
Provision for Research and Development contract payments	**86,182**	591,838
Total provision for Research and Development (current)	**86,182**	591,838

Note 13: Payables

13A: Supplier Payables		
Trade creditors	**1,197,647**	283,326
Total supplier payables	**1,197,647**	283,326
Supplier payables are categorised as follows:		
Current	**1,032,132**	283,326
Non-current	**165,515**	-
Total supplier payables	**1,197,647**	283,326
Current supplier payables: Payment usually made net 30 days, except for the lease incentive, which is amortised over the life of the lease.		
13B: Research & Development Payables		
Non-profit institutions – accrued Research and Development expenses	**769,865**	142,656
Contributions not yet utilised – Research and Development programs (see Note 5)	**7,703,405**	4,024,437
Contributions not yet utilised – other	**149,999**	-
Contributions in advance	**175,000**	-
Total research and development payable (current)	**8,798,269**	4,167,093

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

Notes to and Forming Part of the Financial Statements

Note 14: Equity

14: Analysis of Equity

Item	Accumulated results		Asset revaluation reserve		TOTAL EQUITY	
	2004 $	2003 $	2004 $	2003 $	2004 $	2003 $
Opening balance 1 July	**1,584,524**	2,442,664	**115,254**	115,254	**1,699,778**	2,557,918
Net surplus/deficit	**(157,711)**	(858,140)	**-**	-	**(157,711)**	(858,140)
Closing balance as at 30 June	**1,426,813**	1,584,524	**115,254**	115,254	**1,542,067**	1,699,778
Total equity attributable to the Commonwealth	**1,426,813**	1,584,524	**115,254**	115,254	**1,542,067**	1,699,778

Note 15: Cash Flow Reconciliation

	2004 $	2003 $
15A: Reconciliation of Operating Surplus to Net Cash from Operating Activities		
Reconciliation of operating surplus to net cash from operating activities		
Operating surplus/(deficit)	**(157,711)**	(858,140)
Non-Cash Items		
Depreciation and amortisation	**256,650**	260,157
(Gain) / loss on disposal of assets	**144,148**	180
Net write down of non-current assets	**-**	4,633
Changes in Assets and Liabilities		
(Increase)/decrease in receivables	**(1,391,903)**	845,453
(Increase)/decrease in prepayments	**(68,557)**	(3,770)
Increase/(decrease) in employee provisions	**(126,193)**	(120,481)
Increase/(decrease) in provision for grants	**-**	591,838
Increase/(decrease) in employee payables	**-**	131,890
Increase/(decrease) in supplier payables	**1,070,823**	79,176
Increase/(decrease) in research & development expenses payable	**4,125,520**	(1,238,921)
Net cash from/(used by) operating activities	**3,852,777**	(307,985)

	2004 $	2003 $
15B: Reconciliation of Cash		
Cash balance comprises:		
Cash on hand	**635**	878
Deposits at call	**8,016,360**	4,345,570
Total cash	**8,016,995**	4,346,448
Balance of cash as at 30 June shown in the Statement of Cash Flows	**8,016,995**	4,346,448

Note 16: Contingent Liabilities & Assets

As at the 30 June 2004 there are no contingent liabilities and assets (2003: Nil)

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

Note 17: Director Remuneration

	2004	2003
The number of directors of the Corporation included in these figures are shown below in the relevant remuneration bands:		
$ Nil - $9,999	1	1
$ 10,000 - $19,999	-	-
$ 20,000 - $29,999	6	6
$ 30,000 - $39,999	1	1
$130,000 - $139,999	-	-
$180,000 - $189,999	-	1
$190,000 - $199,999	1	-
Total number of directors of the Corporation	9	9
	$	$
Aggregate amount of superannuation payments in connection with the retirement of directors	-	30,150
Other remuneration received or due and receivable by directors of the Corporation	373,910	325,000
Total remuneration received or due and receivable by directors of the Corporation	373,910	355,150

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.

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

Notes to and Forming Part of the Financial Statements

Note 18: Related Party Disclosures

Directors of the Corporation

The Directors of the Corporation during the year were:

Mrs R Brazil	Chairperson
Mr A Campbell	Executive Director
Mr J Childs	Director
Prof. P Cullen	Director
Mr T Fisher	Director
Mr M Logan	Director
Prof D Pannell	Director
Mr W Watkins	Director and Deputy Chair
Mr C Willcocks	Government Director

The aggregate remuneration of Directors is disclosed in Note 17.

Loans to Directors and Director related entities

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

Other transactions with Directors or Director related entities

Research & development expenses were made to the following Director related entities. The Directors involved took no part in the relevant decisions of the board.

Mrs R Brazil	Chair, Land Use Research Centre Advisory Committee, University of Southern Queensland; Member, Agforce.
Prof Peter Cullen	Visiting Fellow, CSIRO Land and Water
Mr C Willcocks	General Manager, Landcare and Regional Capacity, Natural Resource Management, Agriculture, Fisheries and Forestry Australia; Member, Advisory Committee, Centre for Resource and Environmental Studies, Australian National University.
Prof D Pannell	Professor, School of Agriculture and Resource Economics, Faculty of Natural and Agriculture Sciences, University of Western Australia; Member, Technical Advisory Committee, Water Resource Recovery Catchments, Water and Rivers Commission, WA.

The Corporation provided research funding to the above agencies. These transactions occurred within the normal terms and conditions of research and development expenses.

Research & development expenses were provided to Director related entities as follows:

	2004 $	2003 $
Australian National University	**196,301**	**332,150**
Dept Agriculture, Forestry and Fisheries	**103,991**	-
Agforce	**5,500**	
University of Southern Queensland	**883**	-
Water and Rivers Commission, WA	**91,818**	-
Bureau of Rural Sciences	-	**397,045**
CSIRO Land & Water	**871,573**	**1,249,327**
University of Western Australia	**1,090,486**	**966,871**
Total	**2,360,552**	**2,945,393**

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

The Corporation has also received contributions from director related entities to jointly funded projects with the Natural Heritage Trust, Agriculture, Fisheries and Forestry Australia. These transactions occurred within the normal terms and conditions of research and development agreements.

Note 19: Remuneration of Officers

	2004	2003
The number of officers who received or were due to receive total remuneration of $100,000 or more:		
$100,000 - $109,999	**-**	1
$110,000 - $119,999	**1**	-
$120,000 - $129,999	**-**	4
$130,000 - $139,999	**-**	2
$140,000 - $149,999	**1**	1
$150,000 - $159,999	**2**	-
Total	**4**	8
	$	$
The aggregate amount of total remuneration of officers shown is:	**575,425**	1,013,500

The officer remuneration includes all officers concerned with or taking part in the management of the Corporation during 2002-03, except the Executive Director. Details in relation to the Executive Director have been incorporated in Note 17: Director Remuneration.

Note 20: Remuneration of Auditors

	2004	2003
	$	$
Amounts Received or due and receivable by the Australian National Audit Office (ANAO) as auditors of the Corporation.	**19,000**	18,000

PricewaterhouseCoopers has been contracted by the ANAO to provide audit services on the ANAO's behalf. Fees for these services are included above.

No other services were provided by the ANAO during the reporting period.

Note 21: Average Staffing Levels

	2004	2003
The average staffing levels for the Corporation during the year were:	**37**	32

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

Notes to and Forming Part of the Financial Statements

Note 22: Financial Instruments

22A: Interest Rate Risk

Financial instrument	Notes	Floating Interest Rate		Fixed Interest Rate		Non-Interest Bearing		Total		Weighted Average Effective Interest Rate	
		2004 $	2003 $	2004 $	2003 $	2004 $	2003 $	2004 $	2003 $	2004 %	2003 %
Financial Assets											
Cash on hand	15B	-	-	-	-	**635**	878	**635**	878	-	1.05
Deposits at call	15B	**8,016,360**	4,345,570	-	-	-	-	**8,016,360**	4,345,570	**4.82**	4.00
Receivables for goods and services	10A	-	-	-	-	**2,942,431**	1,550,528	**2,942,431**	1,550,528	**N/A**	N/A
Term deposits	10B	-	-	**655,226**	1,136,135	-	-	**655,226**	1,136,135	**5.15**	5.38
Total		**8,016,360**	4,345,570	**655,226**	1,136,135	**2,943,066**	1,551,406	**11,614,652**	7,033,111		
Total Assets								**12,435,716**	7,523,277		

Financial Liabilities											
Trade creditors	13A	-	-	-	-	**1,002,503**	283,326	**1,197,647**	283,326	**N/A**	N/A
Research & development payables: non-profit institutions	13B	-	-	-	-	**769,865**	142,656	**769,865**	142,656	**N/A**	N/A
Contributions not yet utilised and in advance	13B	-	-	-	-	**8,028,404**	4,024,437	**8,028,404**	4,024,437	**N/A**	N/A
Total		-	-	-	-	**9,800,772**	4,450,419	**9,995,916**	4,450,419		
Total Liabilities								**10,893,649**	5,823,499		

Notes to and Forming Part of the Financial Statements

22B: Net 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 contributions not yet utilised and in advance, trade creditors and research & development payables equal their carrying amounts and none are readily traded in organised markets in a standard form.

22C: Credit Risk Exposures

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

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

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

Note 23: Revenue from Government

Particulars	Corporation's Outputs		Total	
	2004 $	2003 $	**2004 $**	2003 $
Year ended 30 June 2004				
Funding from the Department of Agriculture, Fisheries and Forestry under Appropriation Acts 1 and 2	**12,241,000**	11,875,000	**12,241,000**	11,875,000

Note 24: Reporting of Outcomes

24A: 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.

Five outputs are identified for this outcome. These are:

Output 1: Sustainable primary industries
Output 2: River landscapes
Output 3: Vegetation
Output 4: Future landscapes & compatible industries
Output 5: Cross-cutting activities

24B: Net Cost of Outcome Delivery

	Outcome 1		Total	
	2004 $	2003 $	**2004 $**	2003 $
Administered expenses	-	-	-	-
Departmental expenses	**25,644,389**	23,325,966	**25,644,389**	23,325,966
Total expenses	**25,644,389**	23,325,966	**25,644,389**	23,325,966
Costs recovered from provision of goods And services to the non-government sector				
Departmental expenses	-	-	-	-
Total costs recovered	-	-	-	-
Other external revenues				
Departmental				
Interest	**327,278**	341,170	**327,278**	341,170
Revenue from sale of assets	**25,454**	910	**25,454**	910
Industry contributions	**12,756,182**	5,260,383	**12,756,182**	5,260,383
Other	**136,764**	46,804	**136,764**	46,804
Total Departmental	**13,245,678**	5,649,267	**13,245,678**	5,649,267
Total other external revenues	**13,245,678**	5,649,267	**13,245,678**	5,649,267
Net cost/(contribution) of outcome	**12,398,711**	17,676,699	**12,398,711**	17,676,699

Notes to and Forming Part of the Financial Statements

24C: Revenues and Expenses by Output Groups and Outputs

	Output 1		Output 2		Output 3		Output 4		Output 5		Non attributable		Total	
	2004 $	2003 $	**2004 $**	2003 $	**2004 $**	2003 $	**2004 $**	2003 $	**2004 $**	2003 $	**2004 $**	2003 $	**2004 $**	2003 $
Operating expenses														
Employees	**322,629**	475,125	**257,253**	258,064	**80,322**	49,886	**57,739**	80,223	**315,147**	688,750	**2,586,737**	1,954,030	**3,519,857**	3,486,078
Suppliers	**723,393**	619,836	**675,885**	601,955	**78,806**	84,838	**233,080**	139,872	**800,308**	1,074,005	**2,620,973**	1,015,300	**5,132,427**	3,535,806
Grants	**5,717,171**	5,077,619	**4,911,867**	3,906,104	**1,741,370**	2,327,669	**119,413**	392,336	**1,235,983**	3,955,385	**2,843,151**	536,204	**16,568,075**	15,995,319
Depreciation & amortisation	-	-	-	-	-	-	-	-	-	-	**251,566**	260,157	**251,566**	260,157
Write down of assets	-	-	-	-	-	-	-	-	-	-	**172,484**	48,606	**172,484**	48,606
Total operating expenses	**6,763,193**	6,172,580	**5,844,205**	4,746,123	**1,900,498**	2,462,393	**390,232**	612,431	**2,351,350**	5,718,140	**8,394,911**	3,614,299	**25,644,389**	23,325,966
Funded by:														
Revenues from Government	**1,201,000**	1,633,468	**2,449,000**	3,654,029	**1,301,000**	1,795,427	**410,000**	502,336	**2,363,000**	2,185,333	**4,517,000**	2,104,407	**12,241,000**	11,875,000
Industry contributions	**5,643,206**	4,418,495	**3,023,146**	1,594,016	**575,708**	624,930	-	-	**304,096**	3,586,501	**3,210,026**	-	**12,756,182**	10,203,942
Other non-taxation revenues	**85,677**	92,306	**97,125**	82,612	**26,715**	26,061	**7,632**	-	**46,482**	59,697	**245,865**	128,208	**489,496**	388,884
Total operating revenues	**6,909,883**	6,144,269	**5,569,271**	5,330,657	**1,903,423**	2,446,418	**417,632**	502,336	**2,713,578**	5,811,531	**7,972,891**	2,232,615	**25,486,678**	22,467,826


RESPECT

APPENDIX 1: Planning and evaluation

Mechanisms for identifying research priorities

Land & Water Australia is required under the PIERD Act to develop Strategic R&D Plans on a five-yearly basis. In the past this planning has been conducted through wide consultation with clients and stakeholders and the use of specialist consultants. In the future, strategic planning will be more of a continuous process, embedding principles of strategic navigation within the five-year Strategic R&D Plan. This involves: more regular assessment of strategic directions and priorities; more sophisticated environmental scanning; active use of futures methods to improve foresight; robust and regular evaluation; increased flexibility to meet emerging demands (as opposed to locking in too much investment for too long a period); and active listening to stakeholder needs.

Land & Water Australia conducts a biennial *investment planning* process that sits within the broader Strategic R&D Plan. The process has several key steps:

- *Scanning*: an ongoing process of scanning the business environment by all staff and Board members, with particular emphasis on new and emerging issues and opportunities. All potential R&D investments are collated and submitted to the Land & Water Australia Board each September. In 2003–04, the Corporation completed a comprehensive futures analysis and participated in an inter-governmental scanning group which is expanding the breadth and depth of the scanning process.
- *Scoring*: a process in which the Board evaluates around 20 selected critical issues/opportunities and shortlists these to around four for more detailed scoping. The assessment currently employs a process of scoring each issue/opportunity against 10 criteria on attractiveness and feasibility dimensions. Two-page critical issue sheets are prepared by subject experts for each topic, against the criteria. The scoring, undertaken in December, informs a robust Board debate from which the priorities are selected.
- *Scoping*: this is the detailed investigation of the issue/opportunity according to a specified template. The template covers: a detailed description of the investment opportunity (answering a range of questions); issue and key player analysis; solution or opportunity development analysis; designing the investment strategy; strategy testing; summary & recommendations. Scoping is conducted from December to June.
- *Program planning*: this phase focuses on the development of partnerships and the construction of a detailed, sound program plan. The plan is submitted to the Boards of Land & Water Australia and partners around December for funding approval.

Evaluation

Land & Water Australia's evaluation framework aims to assess the Corporation's performance against its Strategic R&D Plan 2001–2006. It is designed with the dual purpose of demonstrating and tracking the overall impact of its R&D (at a project, program and corporate level) and providing linkages with the performance reporting strategies of other R&D corporations. An annual performance report is presented to the Board.

Corporate evaluation includes an independent assessment of performance against the five corporate objectives, a description of lessons learnt from program and project evaluations, and quantification of the planned outputs achieved. The five corporate objectives are assessed using qualitative goal attainment scaling. Incorporated within these assessments are quantitative cost-benefit analyses of major innovations and various portfolio analyses, including leverage and funding trends.

A major evaluation component is an in-depth analysis of return on investment. This involves detailed evaluation case studies of the Corporation's major innovations. Each case study presents the nature and context of the innovation; the social, economic and environmental benefits generated; the outputs and their adoption levels; and the impact of the adoption of new practices and/or uptake of new knowledge and technologies. Once sufficient case studies have been completed, a portfolio-level assessment of the Corporation's entire R&D investment since 1990 will be able to be estimated.

Many of the outputs from our R&D investments are of an environmental and social (non-market) nature, which are inherently difficult to measure. As a result we are taking active measures to improve techniques for valuing non-market benefits and to promote world's best practice. In the interim, our independently evaluated returns on investment are highly conservative.

APPENDIX 2: Compliance with Australian Government statutes and policies

The following table provides a summary of Land & Water Australia's compliance with specific statutes and government policies. A compliance index, showing the numbers of the pages on which information is provided in response Australian Government legislation and policies, is on page 133.

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 pages 32–48.
PIERD Act section 143	Ministerial directions	No Ministerial direction has been issued to the Corporation.
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.
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. In accordance with the contract of insurance with Comcover, the Corporation is prohibited from disclosing details of insurance.
Environment Protection and Biodiversity Conservation Act 1999	Reporting obligations as specified at Section 516A	Compliant; see page 29.

Statute/Government policy	Obligation	Compliance (see note 1)
Freedom of Information Act 1982		See appendix 4 (page 126).
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; see page 82.
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.
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 rural research		See pages 51–55.
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 guidelines call for improved energy efficiency in relation to vehicles, equipment and building design. The Corporation leases offices as part of a large office complex and does not own large, energy-consuming equipment or commercial vehicles.

Statute/Government policy	Obligation	Compliance (see note 1)
Fraud control	Preparation of fraud risk assessments and fraud control plans	Compliant. Comprehensive fraud risk and control plans are under way, to be 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 the Corporation	Compliant.
Commonwealth Disability Strategy		Land & Water Australia implemented the strategy to an extent appropriate to the functions and size of the Corporation.
		The Corporation implements the strategy on two levels: as a provider of services resulting from R&D and as an employer.
		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: The Corporation's legislative foundation

Enabling legislation

Land & Water Australia was established on 2 July 1991 under the *Primary Industries and Energy Research and Development Act 1989* (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.

This table lists the four PIERD Act objects and outlines the way in which Land & Water Australia addresses them.

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 planned output for the first of the Corporation's five R&D arenas — 'Enhanced capacity for Australia's primary industries to manage natural resources sustainably' — encompasses this object. The Corporation works with primary industries (particularly through kindred R&D corporations) towards increasingly sustainable use of natural resources through profitable farming systems.
(b) Achieving the sustainable use and sustainable management of natural resources.	This object underpins the entire spectrum of the Corporation's business, as evidenced by the Corporation's mission ('to provide national leadership in generating knowledge, informing debate and inspiring innovation and action in sustainable natural resource management') and the planned outputs of the five R&D arenas.
(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 communication 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.

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 natural resource management 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; and
- 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; and
- do anything incidental to any of its powers.

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

APPENDIX 4: 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.

Category	Nature	Customarily made available	Not customarily made available*
Strategic research and development plan 2001–2006	Files Publication	 ✔	✔
Annual operational plan	Files Publication	 ✔	✔
Annual report	Files Publication	 ✔	✔
Other planning documents	Files		✔
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 reports and occasional papers	Files Publications	 ✔	✔
Staff administration and personnel	Files		✔

* For privacy or commercial-in-confidence reasons

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 Finance 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 2004.

APPENDIX 5: Membership of Program Management Committees

Membership is as at 30 June 2004.
Placement of committees in R&D programs reflects the 2003–04 program structure.
* denotes Chair of the committee in 2003–04.
A list of abbreviations is on page 131.

Improving Sustainability and Addressing Contemporary Issues in Primary Industries

Program	Name	Organisation
National Dryland Salinity Program	C. Allan	MLA
	R. Brazil	Land & Water Australia
	T. Byrne	RIRDC
	J. Harvey	GRDC
	C. McRae	Vic DSE
	K. Goss *	MDBC
	R. Nulsen	WA Agriculture
Land, Water & Wool (Sustainable Wool Advisory Group)	P. Day	Land & Water Australia consultant
	T. Dunbabin *	Wool producer
	M. Lloyd	Wool producer
	J. Street	Wool producer
	R. Weatherly	Wool producer
Grain & Graze	K. Baldry	MLA
	R. Banks	MLA
	I. Blayney	GRDC
	M. Blumenthal	GRDC
	I. Donges *	Independent Chair
	M. Logan	Land & Water Australia
	I. Rogan	Australian Wool Innovation
Sustainable Irrigation	M. Logan *	Land & Water Australia
	A. McCrea	WA WRC
	S. Mills	Irrigator & ANCID
	E. Gardner	Qld DNRM
	G. Sadler	Qld SunWater
	R. Dalton	Australian Government Department of Agriculture, Fisheries and Forestry

Managing Australian River Landscapes

Program	Name	Organisation
National Rivers Consortium *Note: The NRC board also oversees the Riparian Lands, River Contaminants and Environmental Water Allocation R&D programs*	S. Keyworth P. Cullen * L. Boully G. Fishburn V. Klemm K. Bowmer K. Good	MDBC Land & Water Australia Independent NSW DIPNR WA WRC CSIRO Land and Water Northern Adelaide & Barossa Catchment Water Management Board

Managing Vegetation in Rural Landscapes

Program	Name	Organisation
Native Vegetation	J. Childs* J. Burdon A. Kearns S. Datis N. Schofield	Land & Water Australia CSIRO Plant Industry CSIRO Sustainable Ecosystems MDBC Land & Water Australia
Joint Venture Agroforestry Program (managed by RIRDC)	A. Campbell * S. Davis G. Kile S. Hearn R. Clark M. Dadswell S. Barlow D. Laing W. Ragg D. Pannell	Land & Water Australia MDBC FWPRDC RIRDC RIRDC Australian Government Department of Agriculture, Fisheries and Forestry University of Melbourne Australian Government Department of the Environment and Heritage Australian Forest Growers Land & Water Australia
	Observers: A. Campbell P. Byrne	 CRC for Plant Based Management of Dryland Salinity National Farm Forestry Coordinator

Future Landscapes and Compatible Industries

Program	Name	Organisation
Future Landscapes	T. Fisher *	Land & Water Australia
	A. Campbell	Land & Water Australia
	C. Mobbs	Land & Water Australia

Cross-cutting Activities

Program	Name	Organisation
Social and Institutional Research	J. Gordon	Centre for International Economics
	C. Mobbs	Land & Water Australia
	D. Pannell *	Land & Water Australia
Ord–Bonaparte (until the program concluded in December 2003)	J. Butters	Community rep; no organisational affiliation
	J. Childs	Land & Water Australia
	B. Prince	CEO
	R. Dalton	Australian Government Department of Agriculture, Fisheries and Forestry
	R. Edmondson *	Independent; no organisational affiliation
	J. Gooding	Community rep; no organisational affiliation
	D. Hartley	Department of Agriculture Western Australia
	F. Bolten	Community rep; no organisational affiliation
	M. Middap	Community rep; no organisational affiliation
	S. Morton	CSIRO Sustainable Ecosystems
	S. Worley	WA WRC

Other

Program	Name	Organisation
General Call	D. Clarke	EFECT Pty Ltd
	C. Ellis	Land & Water Australia
	N. Schofield *	Land & Water Australia
	R. Shaw	CRC for Coastal Zone, Estuary and Waterway Management
Scholarships and Fellowships	D. Flett	Land & Water Australia
	S. Dovers	Australian National University
	I. Prosser	Land & Water Australia
	A. Roughley	Land & Water Australia
National Land & Water Resources Audit Advisory Council	P. Harper	Australian Bureau of Statistics
	G. Gorrie *	Independent; no organisational affiliation
	P. Sutherland	NSW Department of Infrastructure, Planning and Natural Resources
	J. Gilmour	Northern Territory Department of Infrastructure, Planning & Environment
	B. Nulsen	Department of Agriculture Western Australia
	C. O'Connell	Australian Government Department of the Environment and Heritage
	C. Robson	Department of Natural Resources and Mines, Queensland
	A. Schaap	Tasmania Department of Primary Industry, Water & Environment
	C. McRae	Victorian Department of Sustainability and Environment
	R. Wickes	South Australia Department of Water, Land & Biodiversity Conservation
	J. Olley	CSIRO Land and Water
	W. Watkins	ANZLIC — the Spatial Information Council
	B. Wonder	Australian Government Department of Agriculture, Fisheries and Forestry
	A. Campbell	Observer (Land & Water Australia)

List of abbreviations

ANAO	Australian National Audit Office
ANU	Australian National University
ANZLIC	ANZLIC — the Spatial Information Council (formerly known as the Australian and New Zealand Land Information Council)
ARRIP	Australian Rural Research in Progress
Audit	National Land & Water Resources Audit
CAC Act	*Commonwealth Authorities and Companies Act 1997*
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
DIPE	Department of Infrastructure, Planning and Environment (Northern Territory)
DIPNR	Department of Infrastructure, Planning and Natural Resources (NSW)
DME	Department of Mines and Energy (SA)
DNRM	Department of Natural Resources and Mines (Queensland)
DPIF	Department of Primary Industries and Fisheries (Queensland)
DPI	Department of Primary Industries (Victoria)
DPIWE	Department of Primary Industries, Water and Environment (Tasmania)
DSE	Department of Sustainability and Environment (Victoria)
DWLBC	Department of Water, Land and Biodiversity Conservation (SA)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
ESD	ecologically sustainable development
FWPRDC	Forest and Wood Products Research and Development Corporation
GRDC	Grains Research and Development Corporation
ISO	International Standards Organization
JVAP	Joint Venture Agroforestry R&D 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

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	National Rivers Consortium
NRM	natural resource management
NR&M	[Department of] Natural Resources and Mines (Queensland)
PIERD Act	*Primary Industries and Energy Research & Development Act 1989*
PIRSA	Primary Industry and Resources South Australia
R&D	research and development
RDC	research and development corporation
RIRDC	Rural Industries Research and Development Corporation
SIRP	Social and Institutional Research Program
SRDC	Sugar Research and Development Corporation
WRC	Water and Rivers Commission (WA)
www	World Wide Web

Compliance index

This index shows the numbers of the pages on which information is provided in response to 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 page 121.

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.

PIERD Act

CAC Act

CAC Orders for the Report of Operations

Other reporting requirements

Alphabetical index

R

S

T

W

An exquisite and thought-provoking mural by Annie Franklin, signifying the many relationships Australians have with the continent's diverse environments. The large mural is on display at Land & Water Australia reception.

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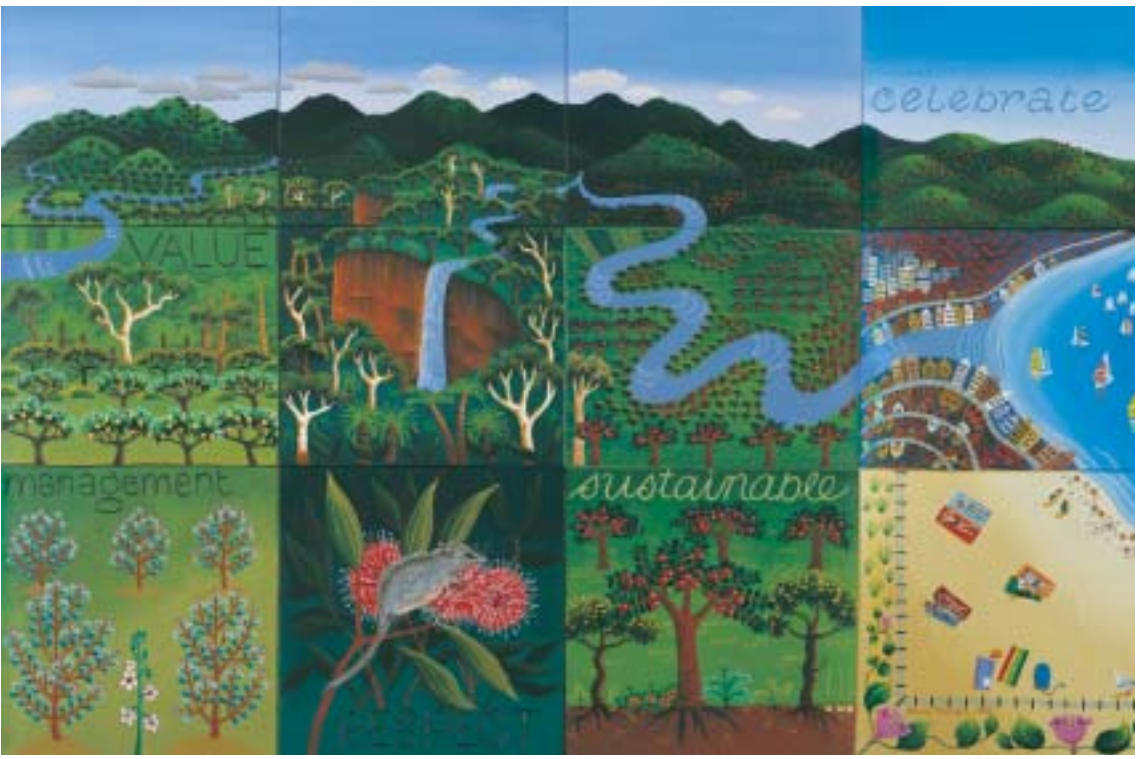

Land & Water Australia is a statutory authority within the Australian Government's Agriculture, Fisheries and Forestry portfolio.