



Australian Government
**Cotton Research and
Development Corporation**

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ANNUAL OPERATING PLAN 2005 – 2006





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Cover photograph, 'Cotton Angel': Emma-Lea Yarrow, photographed by her mother, Rhonda Yarrow

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EXECUTIVE SUMMARY

The Annual Operating Plan 2005-06 is the third devised under the Cotton Research and Development Corporation (CRDC) Strategic Plan 2003-2008, which set in place triple bottom line accountability. CRDC must deliver clearly defined and measurable environmental, economic and social benefits to the cotton industry and the wider community.

Drought-related income constraints continue to limit CRDC's research budget and CRDC Directors and staff have put a great deal of effort into doing more with less. CRDC is placing increased emphasis on seeking co-investments with a wide range of organisations so as to engineer greater value from its research budget.

The single greatest challenge – and exciting opportunity – for CRDC in the coming year is setting into place a high quality research relationship with the Cotton Catchment Communities CRC, which commences operation on 1 July 2005. CRDC expects the new CRC to enhance the overall cotton research effort, both in quantity and scope. As the largest single investor in the CRC, CRDC proposes an annual commitment of \$4 million to the CRC, of which \$3.9 million is tied to specific research investments and \$100,000 is a cash grant.

All research projects funded, co-funded or commissioned through the CRC must address both organisations' strategic objectives. As its name implies, the new CRC will bring a wider focus to cotton research than its predecessor, the Australian Cotton CRC, and will be significantly larger. Its new focus on catchments and communities opens opportunities for CRDC to further address its triple bottom line objectives through CRC-related investments.

The national cotton extension, education and training effort has been managed by the Australian Cotton CRC and, in the large part, funded by CRDC. Management will pass to the new CRC in July. CRDC and the Australian Cotton CRC commissioned a review of these areas in early 2005, conducted by four international and Australian experts.

Implementation of the review recommendations will begin in the coming year and bring an increased focus and new energy to improving both the nature and delivery of information.

CRDC will commission the development of a range of measures to assess future training and skills development needs and will seek co-investment with the new CRC to fully assess decision support system needs and ensure the science is meeting the needs of the consumers. Both organisations will seek to improve coordination between extension activities, including environmental extension provided by five environmental specialists appointed by the Australian Cotton CRC in the past year, which will pass to the Cotton Catchment Communities CRC.

The cotton industry has embraced cotton varieties containing Bollgard®II technology with two genes of resistance to cotton's major pest, *Helicoverpa*, Bollgard II varieties completely replaced INGARD® varieties (with a single gene of resistance) in the 2004-05 season and comprised 70 per cent of plantings. The new varieties have proved outstandingly successful in reducing the use of insecticides in the industry, which, consequently, has also reduced the need for the same level of research into *Helicoverpa*; however, the emphasis on monitoring and managing resistance in Bollgard II crops will continue so as to ensure the continuing effectiveness of the technology.

The coming year will see a continuing focus on achieving high quality fibre that would ensure that Australian cotton continues to sell at the premium end of the international market in the face of increasing competition. Research investments to achieve this aim will range from field to fabric: from further biotechnology to address fibre quality issues in cotton plants, through farming systems that improve or maintain quality to the range of strategies under Program Six: Value Chain. This program will receive increased funding to allow fibre quality issues to be addressed in post-farmgate processing.

Investment in Farming Systems research will increase in the coming year, with an emphasis on the environmental areas of water use efficiency, and deep drainage of water beyond the root zone and its implications for salinity. There will also be a systematic focus on the overall coordination of farming systems research and extension.

In addition to valuable contributions such as assessing all project applications and making recommendations on behalf of the industry, the

legislated industry body, the Australian Cotton Growers' Research Association (ACGRA), provided valuable input to a review of the five-year strategic plan in late 2004, which helped to determine updated priorities in setting the program for the coming year.

For the first time, the CRDC Board has agreed to pay up to \$25,000 to ACGRA during 2005–06 as reimbursement for expenses incurred to enable consultations with CRDC in relation to the pursuit of CRDC's legislated objectives.

COMMERCIAL COTTON GROWING REGIONS IN AUSTRALIA



ABOUT CRDC

VISION

A globally competitive and responsible cotton industry

MISSION

To invest and provide leadership in research, innovation, knowledge creation and transfer

OUTCOME

A more sustainable, profitable and competitive cotton industry, providing increased environmental, economic and social benefits to regional communities and the nation

BOARD OF DIRECTORS

Chair
Bridget Jackson

Vice-Chair
Richard Browne

Government Director
Simon Smalley

Executive Director
Bruce Finney

Kathryn Adams

Jeff Bidstrup

Dr Neil Forrester

Dr TJ Higgins

Adam Kay

BACKGROUND

The Cotton Research and Development Corporation (CRDC) was established in 1990 under the Primary Industries and Energy Research and Development Act 1989 (PIERD Act), which outlines its accountability to the Australian Government and to the cotton industry through the Australian Cotton Growers' Research Association (ACGRA). CRDC is accountable to the Australian Government through the Minister for Agriculture, Fisheries and Forestry the Hon. Warren Truss MP and the Parliamentary Secretary to the Minister, Senator the Hon. Richard Colbeck.

To fulfil its legislated charter, CRDC:

- ‡ Invests in and manages a broad-ranging portfolio of research, development and extension projects that seek to enhance the ecological, social and economic values associated with cotton production systems and to increase benefit to cotton industry participants, regional communities and the Australian people.
- ‡ Funds and coordinates the development of technical and non-technical documents, guides and other information tools and coordinates workshops, seminars and field days for a range of purposes, including research review and progression, information sharing or technology transfer to industry.
- ‡ Produces a range of publications about corporate activities and operations and to disseminate research outcomes. It acts as a formal and informal information source for stakeholders and client groups through general industry media activities as well as through its website, www.crdc.com.au.

CORPORATE STANDARDS

Under the CRDC Statement of Principles, the directors and staff:

- ‡ Are committed to excellence and productivity
- ‡ Are committed to providing the highest levels of accountability to stakeholders
- ‡ Will act legally, ethically, professionally and responsibly in the performance of their duties
- ‡ Strive to maximise return on investment of industry and public funds invested through our corporation
- ‡ Strive to make a difference in improving the knowledge base for sustainable cotton production in Australia

- ‡ Value strategic, collaborative partnerships with research providers, other research and development bodies, industry organisations, stakeholders and clients, for mutual industry and public benefits, including cooperation with kindred organisations to address matters of national priority
- ‡ Value the contribution, knowledge and expertise of the people within our organisation and that of our contractual consultants, external program coordinators and research providers
- ‡ Promote active, honest and effective communication
- ‡ Are committed to the future of rural and regional Australia
- ‡ Comply with and promote best practice in corporate governance
- ‡ Are committed to meeting all statutory obligations and accountability requirements in a comprehensive and timely manner.

COLLABORATION

The corporation was a core participant in the Australian Cotton Cooperative Research Centre, and represented on its Board and Management Committee. On 1st July 2005, that CRC will be replaced by the significantly larger Cotton Catchment

Communities CRC. CRDC was integrally involved in the successful bid for the new CRC and, as a member of the CRC, will invest or co-invest in a wide range of CRC-conducted projects and collaborative activities.

CRDC is also involved in joint or collaborative research efforts with a range of other organisations, including Grains Research & Development Corporation, Land and Water Australia, Horticulture Australia, Rural Industries Research & Development Corporation, the Murray-Darling Basin Commission and the Cooperative Research Centres for Weeds, Greenhouse Accounting and Fresh Water Ecology.

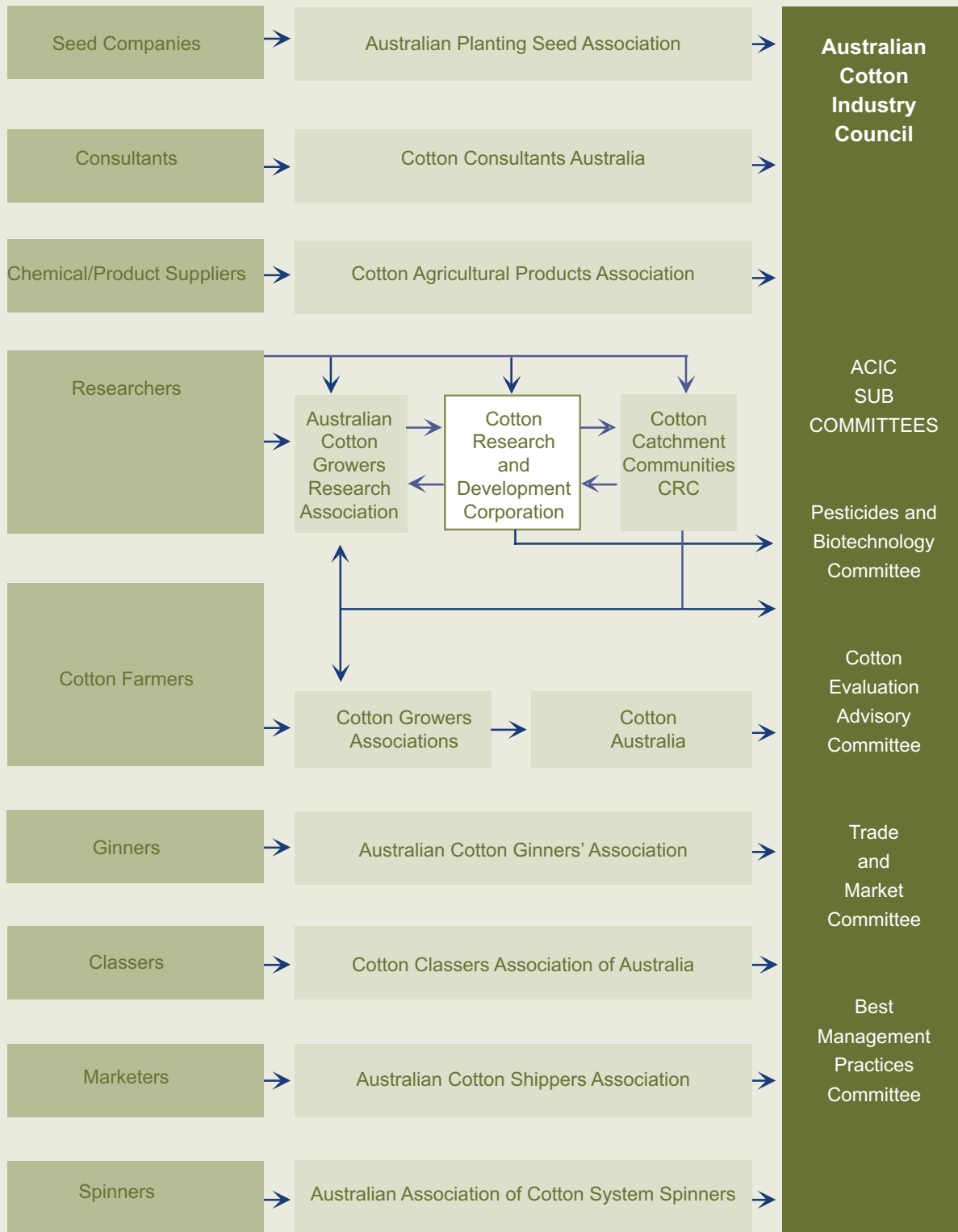
KEY RESEARCH PROVIDERS

- ‡ Cotton Catchment Communities CRC
- ‡ Australian and state government agencies
- ‡ CSIRO Divisions of Plant Industry, Entomology and Textile and Fibre Technology
- ‡ Universities
- ‡ Other Rural Research and Development Corporations
- ‡ Cooperative Research Centres
- ‡ Cotton Consultants Association
- ‡ Agribusinesses

STRUCTURE



COTTON INDUSTRY STRUCTURE



ACHIEVING THE OUTCOME

R&D INVESTMENT PROCESS

CRDC calls for research applications nationwide, with applications closing in late January. Directors allocate research funding at the annual budget meeting in March on the basis of a review of applications for new projects and reports from continuing projects. Where necessary, the Board will also commission research to fill gaps identified in the research program and to meet priority needs. The Board also sets aside an amount for contingencies, so that urgent research and development projects can proceed without undue delay.

The Program Team was restructured in late 2004, culminating in the appointment of an additional Research Program Manager in early 2005. The new structure was designed to allow a more proactive approach to seeking co-investments and strategic alliances with a wider range of organisations. Collaboration such as this helps to bring a more holistic and integrated approach to rural research and development and also allows CRDC to devise and manage a more comprehensive R&D program than resources would otherwise permit.

ENSURING QUALITY

All projects are assessed and performance reviewed by CRDC's industry stakeholder, the Australian Cotton Growers' Research Association, who also make recommendations on new applications on behalf of the industry. Independent peer reviews of projects and programs are commissioned when it is deemed necessary. For example, a review of cotton extension, education and training was conducted in early 2005 and a review of CRDC's plant breeding and biotechnology program in 2004.

The Cotton Catchment Communities CRC commences operations on 1 July 2005, with CRDC as its major contributing industry partner. CRDC anticipates working with the CRC to develop a program of comparative analysis of cotton production and natural resource management for the whole industry by monitoring and evaluation.

Other evaluation activities will include participation in a qualitative survey of cotton consultants and farmers and an evaluation, continuing from 2004-05, of geographic information systems (GIS), focusing on CRDC-sponsored research at Emerald in Queensland. The Australian Cotton Extension Team will conduct at least five regionally and/or nationally-based adoption evaluations. An annual review of the performance of genetically modified cotton in the field is undertaken, as well as an annual economic comparative analysis of farm management strategies.

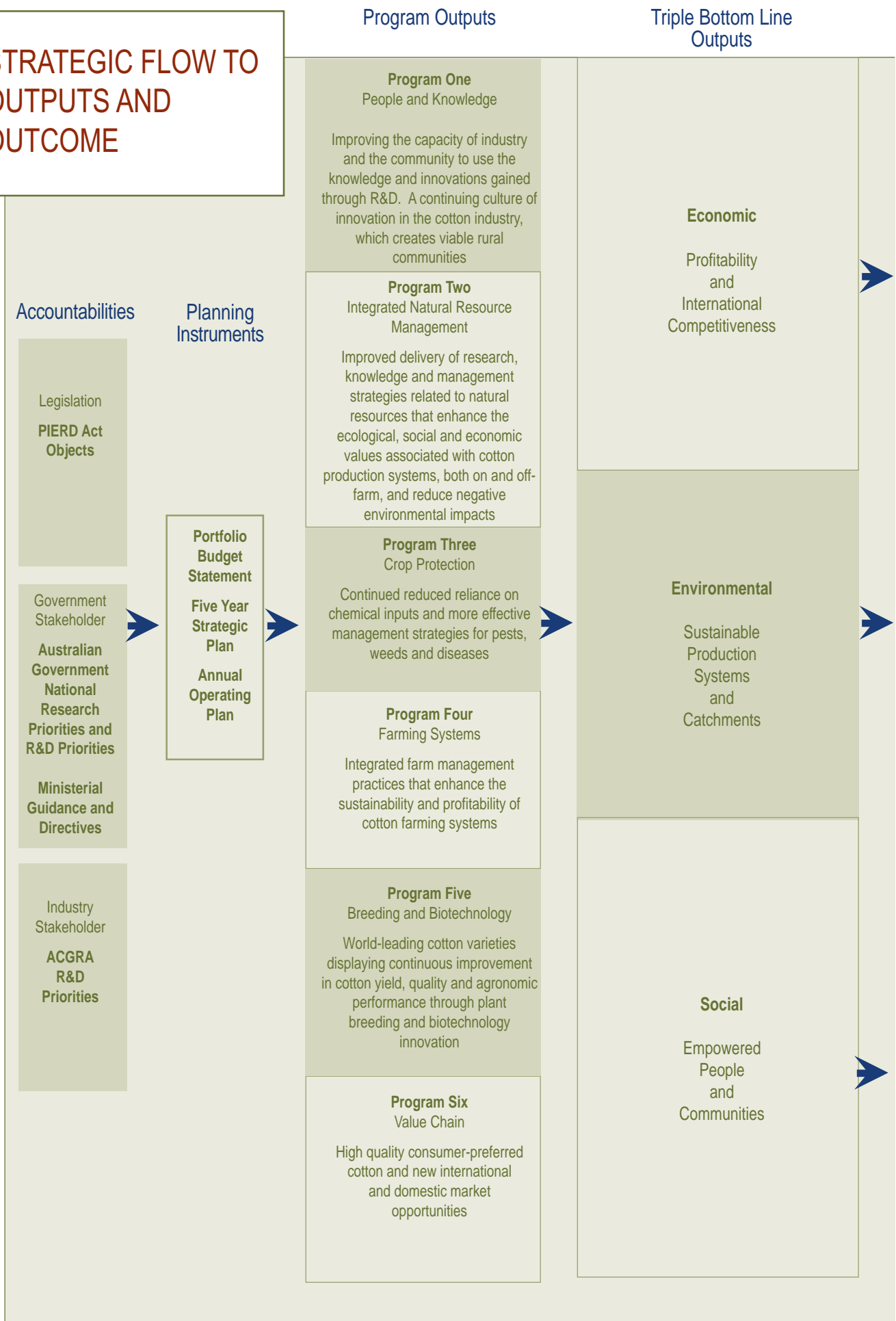
TRIPLE BOTTOM LINE REPORTING

The CRDC Strategic Plan 2003-2008 and Annual Operating Plans are formulated to implement the corporation's objectives and outcome using a triple bottom line framework for planning, implementation and reporting. They deliver one integrated outcome via three outputs:

Economic	Profitability and International Competitiveness
Environmental	Sustainable Production Systems and Catchments
Social	Empowered People and Communities

In addition to the targets listed under each research program, CRDC has developed targets that address its environmental, economic and social outputs. These can be found in the chart on pages 10 and 11. Unless specified otherwise, these targets extend to the end of the five-year strategic plan in 2008. In each case, proportionate improvements are expected in 2005-06, building on significant progress achieved in 2003-04 and 2004-05.

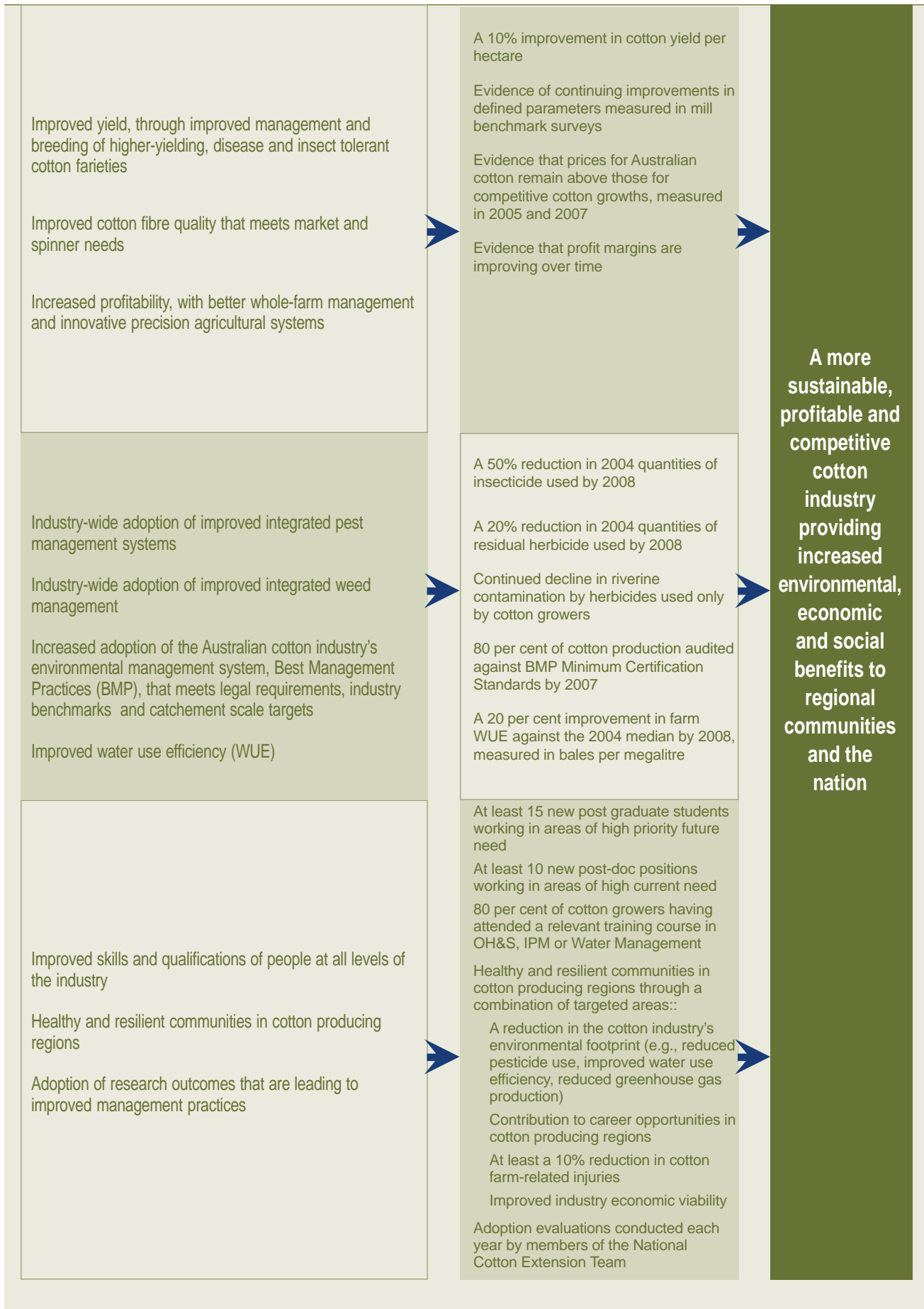
STRATEGIC FLOW TO OUTPUTS AND OUTCOME



Triple Bottom Line Objectives

Key Targets

OUTCOME



STAKEHOLDER R&D PRIORITIES

As stakeholders, the Australian Government and the ACGRA set broad R&D objectives, which CRDC addresses through its five-year strategic plan and annual operating plans

AUSTRALIAN GOVERNMENT

OBJECTS OF THE PIERD ACT 1989

- a) Increase economic, environmental and social benefits
- b) Achieve sustainable use and management of natural resources
- c) Make more effective use of human resources and skills
- d) Improve accountability for expenditure

NATIONAL RESEARCH PRIORITIES

An Environmentally Sustainable Australia
 Promoting and Maintaining Good Health
 Frontier Technologies for Building and Transforming Australian Industries
 Safeguarding Australia

Released by the Prime Minister in December 2002

RURAL R&D PRIORITIES

Sustainable Natural Resource Management
 Use of Frontier Technologies
 Creating an Innovative Culture
 Improving Competitiveness through a Whole of Industry Approach
 Maintaining and Improving Confidence in the Integrity of Australian Agricultural, Food, Fish and Forestry Products
 Improved Trade and Market Access
 Protecting Australia from Invasive Diseases and Pests

Conveyed to CRDC in March 2003 by the Parliamentary Secretary to the Minister for Fisheries, Forestry and Agriculture

AUSTRALIAN COTTON INDUSTRY

AUSTRALIAN COTTON GROWERS RESEARCH ASSOCIATION (ACGRA)

Invest in the skills, strengths and occupational health and safety of the human resources in the cotton industry and its communities

Improve the sustainability of the cotton industry and its catchments

Improve the profitability of the cotton industry

Create and support a strong, focused and committed research program

The CRDC Board of Directors has agreed to pay up to \$25,000 to ACGRA during 2005-06 as reimbursement for expenses incurred to enable consultations with CRDC in relation to the pursuit of CRDC's legislated objectives.

CRDC RESEARCH, DEVELOPMENT AND EXTENSION PROGRAM

ADDRESSING GOVERNMENT RESEARCH PRIORITIES

NATIONAL RESEARCH PRIORITY

An Environmentally Sustainable Australia

RURAL RESEARCH AND DEVELOPMENT PRIORITY

Sustainable Natural Resource Management

NATIONAL RESEARCH PRIORITY

Frontier Technologies for Building and Transforming Australian Industries

RURAL RESEARCH AND DEVELOPMENT PRIORITY

Use of Frontier Technologies

NEW CRDC INVESTMENTS

CRDC will actively seek opportunities to co-invest and work collaboratively on a range of environmental issues with organisations such as the Cotton Catchment Communities CRC and Catchment Management Authorities.

A comprehensive review of the cotton industry's environmental management system, Best Management Practices (BMP) manual, will:

- ‡ Include technical information on better managing energy use and greenhouse emissions, gained from current CRDC-funded research
- ‡ Reduce the information overlap between BMP modules,
- ‡ Investigate the viability of including Occupational Health and Safety in BMP
- ‡ Investigate the feasibility of linking of BMP to other industry environmental management system and quality assurance programs and catchment management targets

CRDC will also seek to improve monitoring of environmental performance indicators linked to the new BMP Land and Water Management module; further investigate the impact of climate change on cotton production; seek to commission further research in areas such as deep drainage, water use efficiency, water allocations in relation to environmental flows, biodiversity and riparian land management; and continue to monitor the environmental performance of Bollgard®II transgenic cotton varieties

NEW CRDC INVESTMENTS

The cotton industry remains the only major Australian agricultural industry to have successfully introduced the widespread use of biotechnology for both environmental and economic gains, largely thanks to the CRDC-supported CSIRO plant breeding and biotechnology core programs.

New measures will include:

- ‡ Addressing the quality problem of short fibres by silencing fuzz fibre development
- ‡ New research to develop and refine enabling technology, such as double haploids, that will allow molecular geneticists and breeders to manipulate complex traits such as disease resistance, fibre quality and waterlogging tolerance more easily
- ‡ Funding for development of a business case for genetically modified cottonseed oil characteristics, including a review of market acceptance

RURAL RESEARCH AND DEVELOPMENT PRIORITY

Creating an Innovative Culture

NEW CRDC INVESTMENTS

The Australian cotton industry has a reputation for early adoption of research outcomes and CRDC's focus in 2005-06 will be on extending and refining the provision of information and knowledge tools.

The creation of the Cotton Catchment Communities CRC and recommendations arising from a CRDC-funded review of extension, education and training programs have provided the means to improve much of Program One: People and Knowledge.

The focus will be on improved access to information for cotton farmers; a better relationship between science and consumer needs in the development of innovative decision support tools and improved coordination of training courses. The overall aim in the coming year is excellence in regionally targeted and strategic national extension of research-generated knowledge and products.

Measures include:

- ‡ Implementation of the recommendations of the review of extension, education and training
- ‡ Funding scientist travel scholarships and international scientific exchange opportunities
- ‡ Assessing the industry's future needs in decision support systems, training and skills development
- ‡ Providing BMP program modules in a fully-searchable electronic format
- ‡ Better integrating the revised BMP manual with existing information packages such as WATERpak, SPRAYpak and NUTRIpak

NATIONAL RESEARCH PRIORITY

Promoting and Maintaining Good Health

RURAL RESEARCH AND DEVELOPMENT PRIORITY

Maintaining and Improving confidence in the integrity of Australian Agricultural, Food, Fish and Forestry Products

NEW CRDC INVESTMENTS

Cotton is a fibre crop, with oil as the only by-product for human consumption. The relatively low value of oil compared with the production of cotton lint means it is not a high funding priority. However, CRDC-funded research has developed plants with higher oleic and stearic acid content. Consumer acceptance of oil from modified plants will be tested as part of the development of a business case for commercialising this outcome,

The CRDC-funded development and subsequent commercialisation of insect and herbicide-tolerant varieties of cotton has led to major reductions in the use of insecticides and residual herbicides. The 2005-06 focus will be on monitoring and managing resistance in Bollgard®II crops, to maintain the efficacy of the technology

CRDC contributes to the joint venture Farm Health and Safety R&D program, managed by the Rural Industries Research and Development Corporation. In addition, a comprehensive review of the BMP manual will investigate the viability of including Occupational Health and Safety in BMP

RURAL RESEARCH AND DEVELOPMENT PRIORITIES

Improving Competitiveness through a Whole of Industry Approach
Improved Trade and Market Access

NATIONAL RESEARCH PRIORITY

Safeguarding Australia

RURAL RESEARCH AND DEVELOPMENT PRIORITY

Protecting Australia from Invasive Diseases and Pests

NEW CRDC INVESTMENTS

CRDC is fortunate to serve an industry that has a closely integrated structure that facilitates industry-wide decision making through the peak body, the Australian Cotton Industry Council. A current industry focus is on improving fibre quality through the processing chain, both to maintain Australian cotton at the premium end of the market and to differentiate it even within that sector. 2005-06 will see:

- ‡ A commissioned scoping study into new gin technology opportunities
- ‡ Continued research looking at agronomic management and on-farm harvesting practices and their influence on fibre quality
- ‡ Development of the Australian Government-funded Pathways to Industry EMS-funded project to expand the BMP program beyond the farm gate, opening the way to explore 'clean, green' niche marketing opportunities.
- ‡ CSIRO Textile and Fibre Technology commissioned to assess textile processing properties of elite CSIRO-bred varieties

NEW CRDC INVESTMENTS

The threat posed by cotton's major insect pest, *Helicoverpa*, has diminished with the use of biotechnology to provide plant tolerance. CRDC will invest in resistance monitoring and management to ensure the effectiveness of the technology is maintained. Research will continue to investigate a range of sucking pest such as aphids, jassids and mirids.

Silverleaf Whitefly is thought to have been introduced into Australia some 12 years ago. In addition to continued monitoring of resistance to insecticides:

- ‡ Invest in monitoring the release of a new parasitoid approved for the control of Silverleaf Whitefly

Two soil-borne diseases, Fusarium wilt and Black Root Rot, remain particular threats in cotton. In addition to maintaining the research effort on the prevention, diagnosis and management of Fusarium wilt, CRDC will:

- ‡ Increase the level of research on agronomic management strategies for Black Root Rot
- ‡ Seek co-investment in a dryland weed management program with the Cotton Catchment Communities CRC and CRC for Australian Weed Management
- ‡ Seek co-investment with the Grains Research and Development Corporation to improve herbicide management in cotton/grains environments

THE COMING YEAR

INDUSTRY OUTLOOK

Cotton faces ever-growing competition from synthetic fabrics, which have more even fibres that can be easier to process than those provided by nature. Continuing consumer demand sustains natural fibres such as cotton; nevertheless, market share is falling and improved fibre quality (length, strength and fineness) is an important priority for cotton research in Australia.

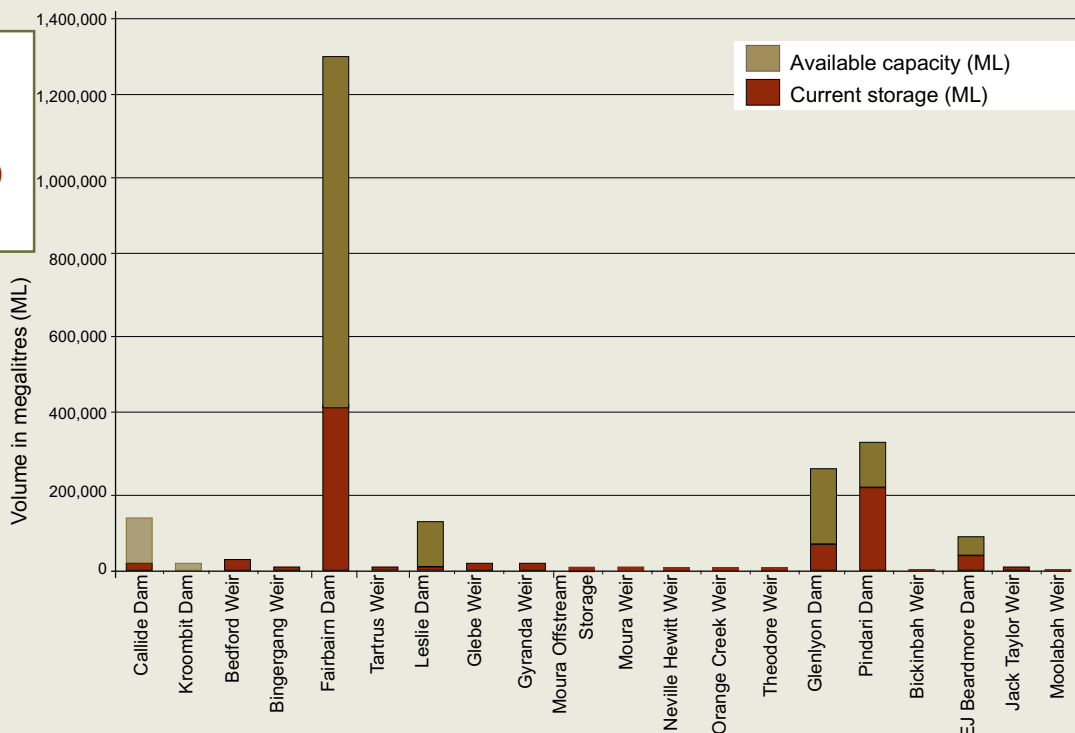
The Australian cotton industry has faced difficult drought-affected conditions in recent seasons, leading to lower production; however, indications are that quality and yields are high for the current harvest (March to May 2005). CRDC is estimating a yield of 2.5 million bales; however some cotton shippers are predicting that yield may reach as much as 2.7 million bales.

Although the drought has eased in some cotton-growing valleys, a lack of water in major catchments, combined with international prices below the historical average, will continue to have a significant impact on

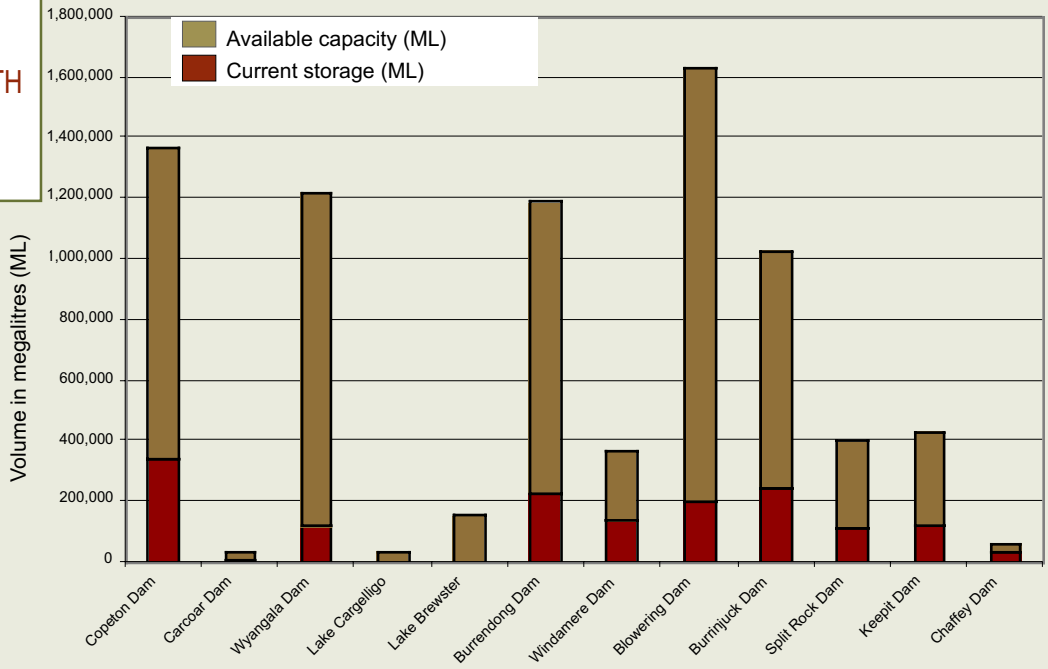
cotton production. The forecast production of two million bales for the 2005-06 crop remains well below the pre-drought five-year average of 3.2 million bales. The return to a two million-bale prediction is based on the continuing shortage of stored water and low world cotton prices. ABARE reports that improved water availability prior to planting of the 2004-05 cotton crop led to a 59 per cent increase in the area planted to cotton, compared to the severely drought-affected 2003-04 season.

Water availability will continue to be a constraint on plantings in the 2005-06 season. Cotton growing areas in northern New South Wales and southern Queensland will be subject to the cap on water extractions within the Murray Darling Basin as well as new rules on the allocation of water between extractive and non-extractive uses contained in statutory water plans. (Source: Australian Bureau of Agricultural and Resource Economics. Australian commodities, vol. 12, no. 1., March quarter 2005.)

AVAILABLE WATER IN QUEENSLAND (March 2005)



AVAILABLE WATER IN NEW SOUTH WALES
(March 2005)



FINANCIAL OUTLOOK

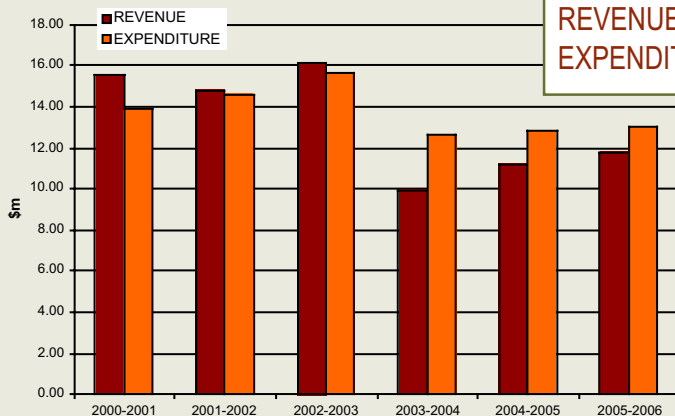
CRDC is jointly funded by an industry levy of \$2.25 per bale (227 kilograms ex-gin) and a matching contribution from the Australian Government, which is provided up to a maximum of 0.5 per cent of the gross value of production, or up to 50 per cent of expenditure, or not exceeding the contribution from grower levies. Royalties from the sale of domestic and international planting seed and interest on investments make up the balance of CRDC's income.

The 2004-05 crop, harvested from March to May 2005, is expected to produce some 2.5 million bales, which is 0.5 million bales higher than the pre-season forecast. While this will significantly boost bale levy receipts for both 2004-05 and 2005-06, continuing low international cotton prices will have a negative impact on the Gross Value of Production (GVP). CRDC expects that this will activate a PIERD Act legislative trigger limiting Australian Government contributions as outlined in the paragraph above.

The severe and prolonged drought and its continuing impact have forced CRDC to reduce its expenditure in recent years. As an illustration, expenditure for 2002-03 was \$15.62 million, expenditure is estimated at \$12.82 million for 2004-05 and forecast at \$13.0 million for 2005-06.

The current strategy is to maintain expenditure at approximately \$12.5 to \$13.0 million per annum and fund any resulting budget deficits from the reserves CRDC maintains to buffer the impact of droughts and other exceptional circumstances. This expenditure strategy will be monitored closely to ensure that it remains appropriate.

CRDC has forecast an operating deficit of \$1.212 million for 2005-06, based on the estimate of two million bales for the 2005-06 crop, which reflects the continuing impact of the drought on water storage levels throughout cotton growing regions. Low cotton prices may also see some dryland (non-irrigation) and irrigation farmers choosing alternative crops.



HISTORICAL REVENUE AND EXPENDITURE

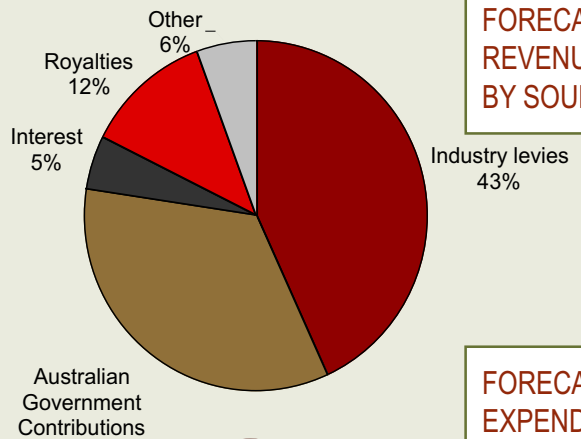
FORECAST REVENUE

Total revenue for the 2005-06 year is forecast to be \$11.788, comprising:

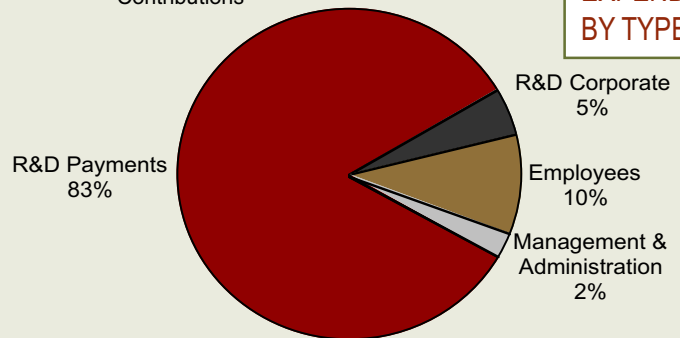
- ‡ \$5.063 million from industry levies
- ‡ \$4.065 million from Australian Government contributions
- ‡ \$2.660 million from other sources, including royalties and interest on investments

FORECAST EXPENDITURE

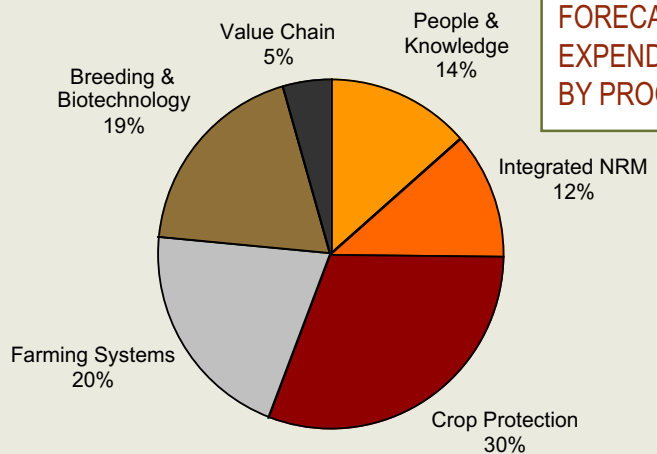
Total budgeted expenditure is \$13 million. Research program expenditure is budgeted at \$10.3 million, including \$1.14 million allocated for commissioned research and a cash grant of \$0.1 million to the Cotton Catchment Communities CRC.



FORECAST REVENUE BY SOURCE



FORECAST EXPENDITURE BY TYPE



FORECAST EXPENDITURE BY PROGRAM

FINANCIAL COMMITMENT TO THE OUTCOME AND OUTPUTS

Outcome

A more sustainable, profitable and competitive cotton industry providing increased environmental, economic and social benefits to regional communities and the nation

Total Revenue: \$11.788 million*

Total Cost of Outputs: \$13.00 million*

Output 1 Economic

Profitability and International Competitiveness

Total Cost: \$6.002 million

Output 2 Environmental

Sustainable Production Systems and Catchments

Total Cost: \$4.202 million

Output 3 Social

Empowered People and Communities

Total Cost: \$2.796 million

*Total cost, rather than total price, is shown as CRDC is primarily funded through industry levies rather than on the basis of its Outputs. CRDC will use its accumulated reserves to fund the difference between total revenue and the cost of outputs

PLANNED R&D INVESTMENTS

BACKGROUND

In early 2005 CRDC Directors, senior staff and the Executive of CRDC's industry stakeholder, ACGRA, reviewed spending priorities outlined in the current five-year strategic plan. As a consequence of evolving needs, some adjustments were made and used indicatively for formulating this research program. The need to integrate continuing and new research projects means these targets may not completely be reached in this planning year.

\$1,144,000 has been allocated for commissioned research in 2005-06 and any intention to commission research is reported under each program. The Board has also set aside an amount for contingencies to allow urgent research and development projects to proceed without undue delay.

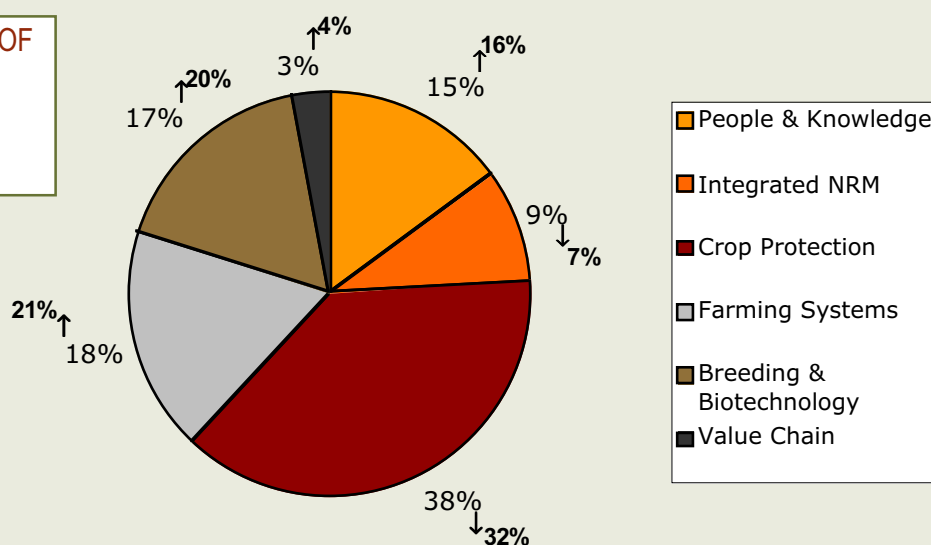
The single greatest challenge for CRDC in the coming year is formulating an optimal research relationship with the Cotton Catchment Communities CRC, which commences operation on 1 July 2005. As its name implies, the new CRC will bring a wider focus to cotton research than its predecessor, the Australian Cotton CRC, and will be significantly larger.

The Cotton Catchment Communities CRC, unlike its predecessor, will be managed through an incorporated company with liability limited by guarantee. CRDC is a member of the CRC company and the largest single investor, having committed a total of \$4 million dollars per annum. All but \$100,000 of that will be tied to specific research projects and programs that must address CRDC's strategic plan.

CRDC anticipates that the CRC's final structure, including election of the Chair and directors, will be in place before 1 July. In the lead-up to the formulation of this Annual Operating Plan, CRDC has had preliminary discussions with the CRC's interim Chair, David Anthony, and interim CEO, Guy Roth, on the nature of planned CRDC-funded and collaborative research, development and extension projects and programs. The final shape of these arrangements will be finalised when the CRC structure is in place and the many references to the CRC in the following program description should be seen in that light.

The strategies listed under each program were defined in the CRDC Strategic Plan 2003-2008

CRDC/ACGRA REVIEW OF 2003-2008 STRATEGIC PLAN INVESTMENT PRIORITIES



PROGRAM 1

PEOPLE AND KNOWLEDGE

INPUT 2005–06

\$1,407,440

Represents 14 per cent of total research expenditure

PROGRAM OUTPUT

Improving the capacity of industry and the community to use the knowledge and innovations gained through research and development. A continuing culture of innovation in the cotton industry, which creates viable rural communities

OUTCOME

Innovative people in the cotton industry and community, creating a sustainable industry and viable regional communities

PLANNED OUTPUTS

In February 2005, CRDC funded a review of extension, education and training programs, including the aims and activities of the National Cotton Extension Team. This, together with the creation of the new Cotton Catchment Communities CRC, has provided an impetus and a means to improve much of Program One.

The focus will be on improved access to information for cotton farmers; a better relationship between science and consumer needs in the development of decision support tools and improved coordination of training courses. The overall aim for 2005-06 is increased excellence in regionally targeted and strategic national extension.

STRATEGY

Support and coordinate a highly trained, efficient and effective cotton extension team

Working jointly with the Cotton Catchment Communities CRC, CRDC will:

- ‡ Implement the recommendations of the extension, education and training review, including the establishment of national strategic cotton extension projects.
- ‡ Improve coordination with other extension activities, including environmental extension services that are being provided through the recent creation of five CRC environmental extension specialists.

STRATEGIES

Foster the professional development of innovative and highly trained researchers, extension and technical officer, administrators, consultants and growers

A continually improving culture of innovation and increased skill level in scientists, advisers and growers

- ‡ Continue to fund a cotton training coordinator
- ‡ Provide funding towards a cotton industry scholarship in the Australian Rural Leadership Program
- ‡ Fund travel scholarships and international scientific exchange opportunities

- ‡ Fund new post-graduate and post-doctoral positions and provide opportunities for new and existing scholarship holders to upgrade their skills in areas such as writing, communications and intellectual property management
- ‡ Commission an assessment of future training and skills development needs within the industry

STRATEGY

Foster the development of opportunities for women in the cotton industry

- ‡ Continue financial support to Women in Cotton Inc (Wincott), and provide additional in-kind support and assistance
- ‡ Facilitate the involvement of Wincott in processes occurring within the industry that are particularly relevant to women and to skills enhancement
- ‡ Encourage groups within the cotton industry, including local Cotton Grower Associations, to access Industry Development Grant funding for projects relating particularly to women
- ‡ Sponsor a cotton industry participant in the Australian Government Department of Agriculture, Fisheries and Forestry Industry Partnerships – Corporate Governance program

STRATEGY

Continue to develop a variety of effective decision support systems that support the implementation of research and extension outcomes and shorten the time to adoption

- ‡ Maintain existing funding levels for the development of decision support systems
- ‡ Seek co-investment with the Cotton Catchment Communities CRC to fully assess future needs for decision support and revise the program accordingly to provide improved adoption and commercial outcomes

STRATEGY

Support the on-going development of information packages and tools that consolidate and disseminate research outcomes

Given the increasingly complex amount of information that cotton farmers are expected to absorb and synthesise:

- ‡ Seek to provide Best Management Practices (BMP) program modules in a fully-searchable electronic format
- ‡ Begin revision of the BMP manual, including enhancement of integration and linkages with existing information packages such as WATERpak, SPRAYpak and NUTRIpak.

MEASURES OF SUCCESS

- ‡ Evaluation of outcomes of activities conducted by the extension team
- ‡ Evidence of improved skills and qualifications of researchers, extension and technical personnel, administrators, consultants and growers
- ‡ Women in key industry roles
- ‡ Evidence that the use of decision support systems is leading to the adoption of research outcomes and improved practices
- ‡ Evidence that the use of information packages and tools is leading to the adoption of research outcomes and improved practices
- ‡ The OH&S performance of industry workplaces is improving
- ‡ Implementation of outcomes in partnership with a variety of research and development providers

PROGRAM 2

INTEGRATED NATURAL RESOURCE MANAGEMENT

INPUT 2005–06

\$1,212,475

Includes \$240,000 from the Australian Government Pathways to Industry EMS Program

Represents 12 per cent of total research expenditure

PROGRAM OUTPUT

Improved delivery of research, knowledge and management strategies related to natural resources that enhance the ecological, social and economic values associated with cotton production systems, both on and off-farm, and reduce negative environmental impacts

OUTCOME

Increased ecosystem health, community wellbeing and economic wealth of cotton growing regions and a reduction in the negative environmental impacts of cotton production systems

PLANNED OUTPUTS

Existing research and development will continue in this important program. CRDC has committed to relatively few stand-alone projects for 2005-06 but will actively seek opportunities to commission new research through co-investment and collaborative programs on a range of environmental issues with organisations such as the Cotton Catchment Communities CRC and Catchment Management Authorities.

STRATEGIES

Investigate and evaluate environmental management systems as an industry-led approach to improved natural resource management

Incorporate a broader range of environmental issues in the Cotton BMP program and facilitate their adoption

- ‡ A comprehensive review of the BMP manual will:
 - Include technical information on better managing energy use and greenhouse emissions, gained from current CRDC-funded research
 - Reduce the information overlap between BMP modules
 - Investigate the viability of including Occupational Health and Safety in BMP
 - Investigate the feasibility of linking of BMP to other industry environmental management system and quality assurance programs and catchment management targets
- ‡ Enhance access to existing CRDC and Australian Cotton CRC-funded technical information packages and ensure their compatibility
- ‡ With the Cotton Catchment Communities CRC, seek to improve monitoring of environmental performance indicators linked to the new CRDC-developed BMP Land and Water Management module, which will be implemented by Cotton Australia.

STRATEGY

Investigate the potential impact of climate change on cotton production, benchmark the industry's contribution to greenhouse emissions and develop integrated management strategies to reduce emissions

- ‡ In conjunction with CCC CRC, further investigate the impact of climate change on cotton production.

STRATEGY

Support multi-disciplinary approaches to developing farm management strategies that complement catchment and landscape outcomes in relation to salinity, water quality and quantity, and biodiversity

- ‡ Seek to use commissioned research funds for co-investment in areas such as:
 - Deep drainage (beyond the cotton plant root zone) and its implications for soil salinity
 - Water use efficiency
 - Water allocations in relation to environmental flows
 - Biodiversity and riparian land management.

STRATEGY

Facilitate the necessary environmental impact research for any new transgenic traits introduced into cotton varieties

- ‡ Continue to monitor the environmental performance of Bollgard®II cotton varieties
- ‡ Prepare for the anticipated introduction of Roundup Ready Flex®, an improved version of Roundup Ready glyphosate-tolerant cotton varieties that are anticipated to have a broader window for application.

MEASURES OF SUCCESS

- ‡ Increased adoption and broader environmental coverage of the Cotton BMP program
- ‡ An evaluation of environmental management systems as a farm and natural resource management tool
- ‡ Improved trends in landscape and catchment indicators such as salinity, water quality and biodiversity. Project and funding links with other catchment and landscape programs related to biophysical targets and sustainability. Improved community perception of cotton production
- ‡ Publication in scientific journals of refereed environmental research related to new transgenic traits
- ‡ Benchmarked greenhouse gas emissions, energy use and potential climate change impacts

PROGRAM 3

CROP PROTECTION

INPUT 2005–06

\$3,148,547

Represents 30 per cent of total research expenditure

PROGRAM OUTPUT

Improved integrated management of major pests, weeds and diseases, reflected by continued reductions in chemical insecticide and residual herbicide inputs to crops and responsible management of transgenic technology

PROGRAM OUTCOME

Continued reduced reliance on chemical inputs and more effective management strategies for pests, weeds and diseases

PLANNED OUTPUTS

The proportion of the cotton crop planted to Bollgard®II cotton varieties, containing two genes of resistance to *Helicoverpa* spp., rose from 32 per cent (plus 16 per cent of single-resistance gene INGARD® in its last year of use) to 70 per cent in 2004-05 and has greatly reduced the amount of insecticide used to control *Helicoverpa*.

This means investment in resistance monitoring and management for conventional insecticides will decline in line with the proportion of the crop planted to conventionally bred cotton. It also means there is a decrease in the overall funding level for research on *Helicoverpa* in 2005-06. *Helicoverpa* resistance management and monitoring in Bollgard II crops is crucial if the efficacy of this biotechnology is to be maintained and CRDC will maintain its existing research focus in that area.

STRATEGIES

Improve integrated non-chemical and chemical management of insect and mite insects

Ensure the development of resistance is minimised through the design and implementation of resistance management strategies for both insecticides and transgenic technologies

Ensure the benefits of transgenic crop technology are maximised through responsible management based on sound scientific risk assessment

- ‡ Continue investment in resistance monitoring and management for conventional insecticides, but at a reduced level over time
- ‡ Commission additional research on refuge management, which is an extremely important component for resistance management in Bollgard II cotton varieties
- ‡ Continue resistance monitoring of Silverleaf Whitefly
- ‡ Monitor the release of a new parasitoid approved for the control of Silverleaf Whitefly
- ‡ Continue funding projects looking at a range of sucking pests such as aphids, jassids and mirids

STRATEGY

Develop practices and technologies that reduce the spread and impact of cotton diseases

Two soil-borne diseases, Fusarium wilt and Black Root Rot, remain particular threats in cotton:

- ‡ Continue the existing level of support for research on the prevention, diagnosis and management of Fusarium wilt
- ‡ Increase the level of research on agronomic management strategies for Black Root Rot

STRATEGY

Improve integrated non-chemical and chemical management of weeds

- ‡ Seek co-investment in a dryland weed management program with the Cotton Catchment Communities CRC and CRC for Australian Weed Management
- ‡ Owing to an expansion of broadacre conservation farming systems and the anticipated increase in glyphosate use in cotton and grains, fund research on the impact of herbicide drift on cotton
- ‡ Seek co-investment with the Grains Research and Development Corporation in commissioned research to improve herbicide application management in cotton/grains environments.

MEASURES OF SUCCESS

- ‡ Evaluations of the adoption and outcomes of integrated practices, products and technologies that improve returns, use less chemicals, reduce on and off-site environmental impacts, as well as any social outcomes
- ‡ Reduced distribution, presence and impact of diseases
- ‡ Resistance levels monitored, with the aim of either avoiding resistance or keeping resistance levels in pests and weeds at manageable levels
- ‡ Transgenic crop surveys and reports on performance, management and risk assessment

PROGRAM 4

FARMING SYSTEMS

INPUT 2005–06

\$2,149,055

Represents 20 per cent of total research expenditure

PROGRAM OUTPUT

Integrated farm management practices that enhance the sustainability and profitability of cotton farming systems

PROGRAM OUTCOME

A more sustainable and profitable cotton farming system

PLANNED OUTPUTS 2005-06

The coming year will see increased investment in this program in the area of water use efficiency, deep drainage and its implications for soil salinity, farming systems research in central Queensland and a greater focus on overall farming systems coordination.

STRATEGY

Improve water use efficiency on farms using new and existing infrastructure, new tools and technologies

- ‡ Substantially increase investment in water use efficiency
- ‡ Seek opportunities to co-invest with the Cotton Catchment Communities CRC and CRC for Irrigation Futures

STRATEGY

Understand salinity, sodicity and deep drainage on farms and develop appropriate farm management strategies

- ‡ Commission research to further investigate deep drainage and its on-farm and wider impacts, working collaboratively with the Cotton Catchment Communities CRC and Catchment Management Authorities

STRATEGY

Strengthen our understand of soil health and improve crop nutrition management

- ‡ Scope the current use of commercial programs and products
- ‡ Review current research to determine future research needs in the area of soil health
- ‡ In conjunction with the Cotton Catchment Communities CRC, determine the industry needs for future nutrition research

STRATEGY

Continue fundamental research on cotton agronomy, growth and plant physiology for both conventional and transgenic varieties

- ‡ Continue to investigate agronomic requirements for Bollgard II cotton varieties, with particular reference to nutrition and water needs
- ‡ Commence research on physiological responses to differing plant densities and row configurations

STRATEGY

Increase profitability with better whole farm management strategies and innovative precision agricultural systems

In previous years, CRDC has organised a single Farming Systems Forum covering an area of current importance to cotton scientists and farmers across the industry. Cotton farmers and consultants have expressed a desire to have greater, locally specific involvement.

- ‡ Hold a number of regional Farming Systems Forums on subjects that cotton regions identify as being of particular importance to them
- ‡ Commence a new farming systems project in central Queensland to investigate opportunities to optimise yield using transgenic crops such as Bollgard II
- ‡ Establish and co-fund with the Cotton Catchment Communities CRC a position for a farming systems scientist who will provide overall coordination and knowledge management in this area

MEASURES OF SUCCESS

- ‡ Increased yield per hectare and per megalitre of water
- ‡ Improved economic returns to farmers
- ‡ Improved water use efficiency on farms
- ‡ Adoption of integrated management options for salinity and sodicity
- ‡ Benchmark of soil health characteristics and optimise crop nutrition management
- ‡ Data on changed farming practices including the economic, environmental or social benefits
- ‡ Publication of cotton research related to crop physiology and transfer of agronomic knowledge into other research and extension project outcomes

PROGRAM 5

PLANT BREEDING AND BIOTECHNOLOGY

INPUT 2005–06

\$1,937,639

Represents 19 per cent of total research expenditure

PROGRAM OUTPUT

World-leading cotton varieties displaying continuous improvement in cotton yield, quality and agronomic performance through plant breeding and biotechnology innovation

PROGRAM OUTCOME

Continually improving cotton varieties

PLANNED OUTPUTS 2005-2006

CRDC will continue to provide strong support for the world-leading CSIRO cotton breeding program. The coming year will also see the exploration of promising opportunities for co-investment with CSIRO Plant Industry and cotton industry partners (such as the grower seed cooperative, Cotton Seed Distributors Ltd) to further enhance the cotton breeding and biotechnology programs. The provision of operating funds for the CSIRO cotton plant breeding fibre laboratory, based at the Australian Cotton Research Institute, will also aid the breeding effort.

STRATEGY

Develop regionally adapted cotton varieties exhibiting improved yield, quality, insect and disease resistance and herbicide tolerance

- ‡ Fund new post-doctoral research on cotton fibre improvement by silencing fuzz fibre development, addressing the quality issue of short fibres
- ‡ Allocate funds for co-investment with CSIRO Plant Industry and industry partners in areas such as:
 - Improved waterlogging tolerance
 - New routes to Fusarium wilt resistance
 - Improvements to cotton breeding using double haploids (plants in which every trait in their genome has been fixed in a particular true breeding or homozygous genetic state)

STRATEGY

Targeted, innovative biotechnology focused on solving production and quality constraints confronting the Australian cotton industry

- ‡ Maintain existing support for the core CSIRO Plant Industry biotechnology program.
- ‡ Commissioned double haploid research mentioned under the previous strategy will involve innovative molecular biology, which also addresses this strategy

STRATEGY

Reduction in time required to introduce improved or novel genes into elite cotton varieties through the development of frontier technologies, without compromising scientific rigour

A new double haploid research project (mentioned above) will seek to develop and refine enabling technology that will allow molecular geneticists and breeders to manipulate complex traits such as disease resistance, fibre quality and waterlogging tolerance more efficiently

STRATEGY

Continuous monitoring of the signals from cotton textile and oilseed marketplace to ensure Australian varieties maintain a place at the high quality end of the market

New and continuing measures are reported in Program Six: Value Chain

MEASURES OF SUCCESS

- ‡ Evidence that new cotton varieties are increasing yields and potential returns to the industry
- ‡ Evidence that Australian cotton varieties are meeting the needs of our major textile and oilseed markets
- ‡ Evidence that new varieties can produce higher yields with lower inputs of chemicals and improved water use efficiency
- ‡ Evidence that CRDC's biotechnology investments are delivering industry or community benefits
- ‡ Evidence of the reduced time to introduce genes into cotton varieties
- ‡ Market reports on the demand for Australian cotton lint and seed

PROGRAM 6

VALUE CHAIN

INPUT 2005–06

\$467,020

Represents five per cent of total research expenditure

PROGRAM OUTPUT

Produce high quality consumer-preferred cotton and develop new international and domestic market opportunities

PROGRAM OUTCOME

High quality consumer-preferred Australian cotton in the world marketplace

PLANNED OUTPUTS 2005-2006

Increased funding for this program reflects the growing importance of improving and maintaining fibre quality throughout the fibre chain, both to ensure Australian cotton continues to sell at the premium end of the market and to differentiate it even within that sector of the market. CRDC anticipates that a scoping study on ginning and the development of fibre measurement technologies will lead to opportunities for co-investment with the Cotton Catchment Communities CRC.

STRATEGIES

Ginning improvements resulting from research to reduce nep generation and to preserve desirable fibre qualities

The development of more accurate and repeatable technology of fibre measurement for neps, fineness, maturity and other fibre characteristics. Support changes to the traditional classing system which better identify and reward superior fibre characteristics

‡ Commission a scoping study into new gin technology opportunities, seeking co-investment with the Cotton Catchment Communities CRC

STRATEGIES

Promote agronomic and management practices, including the cotton BMP program, which preserve and protect optimal fibre quality characteristics

Support efforts to develop new markets and high premiums for Australian cotton as well as value adding cotton in Australia

- ‡ Continue research looking at agronomic management and on-farm harvesting practices and their influence on fibre quality
- ‡ Continue development of the Australian Government Pathways to Industry EMS-funded project to expand the Best Management Practices program beyond the farm gate
- ‡ Fund a new project to develop a business case for modified cottonseed oil characteristics and a review of market acceptance of cottonseed oil produced from genetically modified plants
- ‡ Commission CSIRO Textile and Fibre Technology to assess textile processing properties of elite CSIRO-bred varieties, building on mill survey research supported through the Australian Cotton CRC in 2004

MEASURES OF SUCCESS

- ‡ Release of varieties with appropriate fibre and seed characteristics
- ‡ Evidence of improved practices that preserve fibre quality. Extension of the Cotton BMP program to post-farmgate issues
- ‡ Improved ginning practices, measured by ginning data
- ‡ Proportion of the crop objectively measured by HVI increased. Release of new fibre measurement technology
- ‡ Number of unsold stocks accumulated and increased relative premium of Australian cotton compared to competitors. Demonstration of value added developments in Australia
- ‡ Market reports on the demand for Australian cotton lint and seed

FINANCIAL STATEMENTS

BUDGETED STATEMENT OF FINANCIAL PERFORMANCE FOR THE PERIOD ENDED 30 JUNE

	Estimated actual 2004–05 \$'000	Budget estimate 2005–06 \$'000	Forward estimate 2006–07 \$'000	Forward estimate 2007–08 \$'000	Forward estimate 2008–09 \$'000
Revenues from ordinary activities					
Grant Revenue from Related Entities	8,408	9,128	9,000	9,000	9,333
Sales of goods and services					
Interest	560	605	550	495	440
Proceeds from Sale of Assets					
Revenue from other sources	2,220	2,055	2,163	1,855	1,855
Total revenues from ordinary activities	11,188	11,788	11,713	11,350	11,628
Expenses from ordinary activities (excluding borrowing costs expense)					
Employees	1,068	1,286	1,325	1,364	1,406
Suppliers	248	273	274	285	295
Depreciation and amortisation	30	41	46	47	44
Net Write-down of assets					
Value of assets sold					
Other Goods and Services Expense					
Subsidies, Benefits and Grants Expense	11,470	11,400	11,145	10,858	10,171
Other					
Total expenses from ordinary activities (excluding borrowing costs expense)	12,816	13,000	12,790	12,554	11,916
Borrowing cost expense					
Operating result from ordinary activities	-1,628	-1,212	-1,077	-1,204	-288
Gain or loss on extraordinary items					
Operating Result	-1,628	-1,212	-1,077	-1,204	-288
Cash transfers to the OPA					
Transfer to/from reserves					
Other movements in Accum results					
Operating Result after Transfers	-1,628	-1,212	-1,077	-1,204	-288

BUDGETED STATEMENT OF FINANCIAL POSITION AS AT 30 JUNE

	Estimated actual 2004–05 \$'000	Budget estimate 2005–06 \$'000	Forward estimate 2006–07 \$'000	Forward estimate 2007–08 \$'000	Forward estimate 2008–09 \$'000
ASSETS					
Financial assets					
Cash	10,649	9,890	8,770	7,550	7,268
Appropriation Receivable					
Other Receivables	1,475	1,226	1,226	1,226	1,227
Investments					
Accrued revenues	516	250	250	250	250
Other					
Total financial assets	12,640	11,366	10,246	9,026	8,745
Non-financial assets					
Land and buildings	336	345	379	384	390
Infrastructure, plant and equipment	150	168	177	188	175
Inventories					
Intangibles					
Other					
Total non-financial assets	486	513	556	572	565
Total assets	13,126	11,879	10,802	9,598	9,310
LIABILITIES					
Debt					
Loans					
Leases					
Deposits					
Overdrafts					
Other					
Total debt	–	–	–	–	–
Provisions and payables					
Employees	110	110	110	110	110
Suppliers	35	35	35	35	35
Grants payable	1,035	1,000	1,000	1,000	1,000
Other Small Agency Provisions and Payables					
Total provisions and payables	1,180	1,145	1,145	1,145	1,145
Total liabilities	1,180	1,145	1,145	1,145	1,145
EQUITY					
Capital					
Reserves	27	27	27	27	27
Accumulated surpluses or deficits	11,919	10,707	9,630	8,426	8,138
Total equity	11,946	10,734	9,657	8,453	8,165
Total liabilities and equity	13,126	11,879	10,802	9,598	9,310
Current liabilities	1,150	1,115	1,115	1,115	1,115
Non-current liabilities	30	30	30	30	30
Current assets	12,640	11,366	10,246	9,026	8,745
Non-current assets	486	513	556	572	565

BUDGETED STATEMENT OF CASH FLOWS FOR THE PERIOD ENDED 30 JUNE

	Estimated actual 2004-05 \$'000	Budget estimate 2005-06 \$'000	Forward estimate 2006-07 \$'000	Forward estimate 2007-08 \$'000	Forward estimate 2008-09 \$'000
OPERATING ACTIVITIES					
Cash received					
Revenue from government	8,876	9,377	9,000	9,000	9,333
Sales of goods and services					
Interest	423	815	550	495	440
Other	3,466	3,240	3,295	2,976	2,967
Total cash received	12,765	13,432	12,845	12,471	12,740
Cash used					
Employees	1,078	1,286	1,325	1,365	1,405
Suppliers	362	273	274	285	296
Grants	10,494	11,435	11,145	10,857	10,172
Interest					
Other	1,089	1,130	1,132	1,121	1,112
Total cash used	13,023	14,124	13,876	13,628	12,985
Net cash from operating activities	-258	-692	-1,031	-1,157	-245
INVESTING ACTIVITIES					
Cash received					
Proceeds from sales of property, plant and equipment	-	-	-	-	-
Repayments of loans made					
Other					
Total cash received	-	-	-	-	-
Cash used					
Purchase of property, plant and equipment	33	67	89	63	37
Loans made					
Other					
Total cash used	33	67	89	63	37
Net cash from investing activities	-33	-67	-89	-63	-37
FINANCIAL ACTIVITIES					
Cash received					
Proceeds from issuing equity instruments					
Proceeds from debt					
Other					
Total cash received	-	-	-	-	-
Cash used					
Repayments of debt					
Capital use and dividends paid					
Other					
Total cash used	-	-	-	-	-
Net cash from financing activities	-	-	-	-	-ß
Net increase in cash held	-291	-759	-1,120	-1,220	-282
Cash at the beginning of the reporting period	10,940	10,649	9,890	8,770	7,550
Cash at the end of the reporting period	10,649	9,890	8,770	7,550	7,268

CAPITAL BUDGET STATEMENT FOR THE PERIOD ENDED 30 JUNE 2005

	Estimated actual 2004-05 \$'000	Budget estimate 2005-06 \$'000	Forward estimate 2006-07 \$'000	Forward estimate 2007-08 \$'000	Forward estimate 2008-09 \$'000
PURCHASE OF NON-FINANCIAL ASSETS					
Funded by capital appropriations	–	–	–	–	–
Funded internally by Departmental resources	33	67	89	63	37

NON-FINANCIAL ASSETS - SUMMARY OF MOVEMENT 2005-06

	Land \$'000	Buildings \$'000	Total land and buildings \$'000	Other infrastructure plant and equipment \$'000	Intangibles \$'000	Total \$'000
Carrying amount at the start of year	100	236	336	150	–	486
Additions		15	15	52		67
Disposals		–	–	–		–
Revaluation increments			–			–
Recoverable amount write-downs			–			–
Net transfers free of charge			–			–
Depreciation/amortisation expense		6	6	35		41
Write-off of assets			–			–
Carrying amount at the end of year	100	245	345	167	–	512
Total additions						
Self funded		15	15	52		67
Appropriations			–			–
Total	–	15	15	52	–	67

COTTON INDUSTRY ACRONYMS

AAAA	Aerial Agricultural Association of Australia
ABARE	Australian Bureau of Agricultural and Resource Economics
ACAHS	Australian Centre for Agricultural Health and Safety
ACIC	Australian Cotton Industry Council
ACRI	Australian Cotton Research Institute
ANAO	Australian National Audit Office
APVMA	Australian Pesticides and Veterinary Medicines Authority
ARLP	Australian Rural Leadership Program
ARRIP	Australian Agricultural Research in Progress database
AWA	Agriculture Western Australia
AWM	Area Wide Management
BMP	Best Management Practices
Bt	<i>Bacillus thuringiensis</i> (crystal protein expressed in INGARD® and Bollgard® cotton varieties)
CCA	Cotton Consultants Australia Inc
CGA	Cotton Growers' Association
CIE	Centre for International Economics
CCC CRC	Cotton Catchment Communities CRC
Cotton CRC	Australian Cotton Cooperative Research Centre
CRC	Cooperative Research Centre
CRDC	Cotton Research and Development Corporation
CSD	Cotton Seed Distributors Ltd
CSIRO	Commonwealth Scientific and Industry Research Organisation
DNRF	Queensland Department of Natural Resources and Fisheries
DPI	New South Wales Department of Primary Industries
EMS	Environmental Management System
EPA	New South Wales Environment Protection Authority
GRDC	Grains Research and Development Corporation
GROA	Groundrig Operators Association
<i>Helicoverpa</i>	Insect pests, <i>Helicoverpa armigera</i> and <i>Helicoverpa punctigera</i>
ICAC	International Cotton Advisory Committee

IPM	Integrated Pest Management
MDBC	Murray Darling Basin Commission
NSW Agriculture	<i>Now New South Wales Department of Primary Industries</i>
PHA	Plant Health Australia
OGTR	Office of the Gene Technology Regulator
QDPIF	Queensland Department of Primary Industries and Fisheries
R&D	Research and Development
RCMAC	Raw Cotton Marketing Advisory Committee
RRDC	Rural Research and Development Corporations
TIMS	Transgenic and Insect Management Strategy Committee
TRC	Technology Resource Centre (located at the ACRI)

‘ The Cotton Research and Development Corporation is a partnership between, and jointly funded by, Australian cotton farmers and the Australian Government ’

CRDC