Australian Government

Cotton Research and Development Corporation

ANNUAL OPERATING PLAN 2012-13

The quest for sustainable competitive advantage

In this Annual Operating Plan

- **The final year of investment under the 2008-13 Strategic R&D Plan**
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Cotton Research & Development Corporation

A new CRDC Board was appointed by the Minister in 2011.

Responsible Minister

The Hon. Joe Ludwig, Minister for Agriculture, Fisheries and Forestry

CRDC Board

Chair	Mike Logan
Vice Chair	Mary Corbett
Executive Director	Bruce Finney
Non-executive Directors	
	Mary Corbett
	Richard Haire
	Hamish Millar
	Michael Robinson
	Cleave Rogan
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General Manager Business and Finance	Graeme Tolson
Manager – Communication	Rohan Boehm
Manager – Farming Systems Investment	Tracey Leven
Manager – Value Chain Investment	Dallas Gibb
Manager – NRM	Jane Trindall
Project Administration Manager	Fiona Mead
Executive Assistant	Dianne Purcell
Trainee Accountant	Elizabeth Morrissey

The Quest for Sustainable Competitive Advantage

Cotton Research & Development Corporation

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April 2012

The Hon. Joe Ludwig,
Minister for Agriculture, Fisheries and Forestry
Parliament House
CANBERRA ACT 2600

Dear Minister

I am pleased to submit for your consideration and approval the Annual Operating Plan of the Cotton Research and Development Corporation for the 2012-13 year as required under sections 25 and 26 of the *Primary Industries and Energy Research and Development* (PIERD) *Act 1989.* This represents the final year of operation under the Corporation's existing five-year Strategic Plan 2008–2013.

As in previous years, the Australian Government National Research Priorities and Rural Research and Development Priorities are central to CRDC planning and execution.

In addition to the guidance provided by the Australian Government, our industry stakeholder, Cotton Australia, has been closely consulted in formulating the plan to ensure that it also addresses the Australian cotton industry's R&D priorities.

CRDC seeks to formulate its strategic plan, annual operating plans and annual reports in a manner that allows a clear and measurable accountability framework. This process has evolved and strengthened with input and assistance from our stakeholders and this Annual Operating Plan continues that evolution.

We look forward to implementing this plan and informing you of the benefits it has delivered to the Australian people, the Australian cotton industry and the regional communities within which it operates.

Yours sincerely

Mike Logan
Chair

"The Plan that addresses national and rural R&D priorities"

CRDC works in close collaboration with growers, researchers and the commercial sector.

FOREWORD

The Cotton Research and Development Corporation (CRDC) in collaboration with growers, researchers and the commercial sector strive to achieve sustainable competitive advantage for Australian cotton.
2012–2013 marks the final year of operation under the 5-year Strategic R&D Plan 2008–2013.

Review

An annual review of the Strategic R&D Plan was conducted in early 2012 with the assistance of its Australian Government and cotton industry stakeholders. The review was also a starting point for considering the future strategic direction for the CRDC. The review highlighted that the current planning assumptions and goals remain highly relevant. Further the importance of the quest for competitive advantage continues to increase within the context of the strategic challenges and opportunities arising for the Australian cotton industry and agriculture in general.

Cotton CRC closure

In a substantive change to the operating environment for cotton industry research the Cotton CRC will cease operations on 30 June 2012. The cotton industry and its collaboration in research have been well served by 3 consecutive CRC's over two decades. The challenge is to build upon the legacy created by these CRCs.

Investment

CRDC plans to invest $19.69 million in 2012–13 to support further industry performance improvements in productivity, market competitiveness, resilience, improved energy and water use efficiency. Complementary improvements to environmental performance will be accompanied by a stronger focus on education as well as CRDC taking a direct role in the management of development and delivery for the adoption of best practices and technologies across the cotton industry. Achievement of these goals will be supported by CRDC's commitment to collaborate broadly for greater R&D impact and gains in efficiency.
It is notable that CRDC is able to accomplish this level of investment in 2012-13 against sharply contrasting economic and climatic conditions that existed in 2008-09 and in the early years of investment under the current Plan. At that time, a seemingly unstoppable drought severely impacted cotton's ability to invest strategically to support productivity growth and competitive advantage.

A growing industry

The 2011-12 season saw ongoing growth in the number of enterprises growing cotton and notably many new producers in southern NSW. In a significant commitment to cotton production in southern NSW a cotton gin is being built by local growers.
Industry growth is occurring on the back of above average cotton prices, favourable water availability, economic advantage over alternate crops and technological developments such as genetically modified cotton traits for pest management and new round module picking equipment that much simplifies production.
The Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) forecasts Australian cotton production to be 1,080,000 tonnes (some 4.7 million bales) in 2011–12 (ABARES Australian Commodities, March quarter 2012).

Record crops

This result would supersede the record crop achieved last year for the Australian industry.
Within the industry there is strong optimism for above average production for the next 3 years.

Improving cotton performance

Cotton operates in an environment where there is an

"CRDC plans to invest $19.69 million in 2012–13 ."

The Cotton CRC will cease operations on 30 June 2012. Its closure will result in substantive changes to the operating environment for cotton industry research.

ever-increasing demand for land, water, food, energy and labour. Productivity in terms of yield per hectare has risen over the past decade at four percent per year. These productivity gains have allowed the industry to make better use of scarce resources, improve its resilience to climatic challenges and remain competitive in global markets. Maintaining productivity growth with concurrent improvements in environmental performance remains crucial to sustaining cotton farming as well as improved routes to market for differentiated and premium Australian cotton products.

Environment

A third Cotton Industry Environmental Review will be completed in 2011-12 and the results will provide a valuable benchmarking and planning framework for ongoing CRDC R&D investments in improvements to industry environmental performance since the audits commenced in 1990. CRDC's investments in 2012–13 shall seek to sustain the growth in productivity growth for irrigated and dryland farming systems, as well as improve and modify routes to market for a differentiated and premium Australian cotton. A series of new investments will focus on the quality of fibre produced. Across a wide range of projects that involve the application of new science that describes the unique qualities of Australian cotton fibre, while other work will focus on extending 'an Australian cotton fibre story that will be implemented as communication infiltrates through the value chain for the purpose of ensuring continued competitive advantage for a differentiated product. Ongoing investigation continues in research projects that focus on opportunities for Australian cotton in the highly-competitive textile marketplace.

Human capacity

In 2012-13 the CRDC will seek to better link initiatives with the education system for the supply of capable people with the workforce demands of industry and the research community. CRDC will broadly support collaboration in human capacity development with RDCs and rural industry. Further the importance of the capacity of people has been central to the resilience of the industry in managing through two consecutive seasons of significant floods. CRDC will continue to develop best practices and technologies that can assist growers improve risk management and flexibility of farming systems to prepare for and recover from climate change and natural disasters.

CRDC will invest in the University of New England Cotton Production Course, the Field to Fabric training course, the Cotton and Grains Irrigation Management course and Vocational Education Training in Schools (Certificates II to IV). CRDC will also invest in travel and training opportunities for researchers and support a cotton industry scholarship in the Future Cotton Leaders Program and in the Australian Rural Leadership Program. With encouragement from CRDC, women continue to take up many of these opportunities. A schools-based traineeship program developed by CRDC with the support of the Aboriginal Employment Strategy and the Cotton CRC will continue, with a new student undertaking paid work experience at the Corporation in 2012-13.

Energy and carbon

R&D investments in 2012-13 continue to focus on improving energy and nitrogen use as well as reducing carbon pollution. Additional research is planned for equipping growers to better understand and manage soil carbon.

Water management

In 2012-13 CRDC will continue to invest in water R&D and the adoption of more efficient irrigation technology and management practices. Water use is a key sustainability factor that CRDC will continue to tackle through R&D investment. Water use efficiency

Consultants are surveying growers about environmental practices of industry.

The Cotton Industry Environmental Review will provide a framework for R&D investments

Continued investment in water R&D and the adoption of more efficient irrigation technology and management practices remains a priority of CRDC and the cotton industry.

The cotton industry's water use efficiency has improved by approximately five percent per annum over 10 years.

"Additional research is planned for equipping growers to better understand and manage soil carbon."

Continued investment in prevention of exotic pest and disease incursions remains a strong priority.

has improved consistently over the past decade as a result of improved yields and the adoption of more efficient irrigation technology and management practices. Continued improvement to the industry's Irrigation Water Use Index (IWUI represents bales per megalitre of irrigation water extracted) is based on national cotton crop irrigation water use and crop production data. The IWUI provides a measure of how effectively irrigation water is converted into cotton lint and the trend indicates that improvement since 2000-01 in water use efficiency has exceeded five percent per annum.

Biosecurity threats

CRDC will continue with a program of research that equips the industry to build its preparedness, undertake surveillance and respond to major exotic threats such as silver leaf whitefly, Helicoverpa and viruses. In 2012-13 further research conducted on management options for exotic threats and advancing biosecurity preparedness industry-wide.

Cotton sector strategy

The Primary Industry Standing Committee (PISC) Cotton Sector Research, Development & Extension Strategy provides a timely and positive platform for fostering ongoing industry research collaboration.

CRDC is working with industry and research organisations to ensure that important research and research capacity is sustained. That this change will occur during a period of resurgence in cotton production and CRDC's investment capacity is opportune.

The PISC Cotton Sector R,D&E Strategy was approved and its implementation commenced in 2011-12. The Strategy identifies five common goals:

1. Better plant varieties
2. Improved farming systems
3. People businesses & communities
4. Product & market development
5. Development and delivery

A Cotton Innovation Network has been formed with responsibility for the strategic oversight, coordination and communication of the five goals. The Network aims to improve cotton RD&E through prioritisation and enhanced collaboration on four interdependent functions; strategy and investment; R&D, capability management and development and delivery. The CRDC will continue to provide support for the implementation of the cotton sector plan and more broadly for the National Primary Industries RD&E Framework.

Industry vision

Since the launch of the Australian Cotton Industry's Vision 2029 in August 2010, the leaders have adopted the top-level goals in repositioning the industry for a demanding global marketplace. It is well recognised that the Australian product must exhibit superior industry performance underpinned by science, technology and the passion and innovative nature of people within the industry.

The Vision 2029 statement describes Australian cotton performing well in a strongly competitive global marketplace.

The Vision 2029 has begun to involve every link in the industry from seed and chemical distributors, growers, consultants, researchers, pickers, truckers, ginners, classers, merchants, spinners and brand owners in a single and shared vision in the past two years.

Vision 2029 identifies our future challenges and describes the places where opportunities will be created for the cotton industry, particularly around the thinking and improvements in our planning and enables collective outputs.

Towards 2029, the Australian cotton industry will be:

• Differentiated - world leading supplier of an elite quality cotton that is highly sought in premium market segments

• Responsible - producer and supplier of the most environmentally and socially responsible cotton on the globe

• Tough - resilient and

equipped for future challenges
• Successful - exciting new levels of performance that transform productivity and profitability of every sector of the industry
• Respected - an industry recognised and valued by the wider community for its contribution to fibre and food needs of the world
• Capable - an industry that retains, attracts and develops highly capable people.

Major collaborative activities

CRDC will engage and foster collaboration across the rural R&D system to deliver its strategic outcomes and efficiency gains. The Corporation will also continue its collaborations internationally on important Value Chain research with the peak body for cotton R&D in the USA and selected spinning mills in China, India and Indonesia.

Development and Delivery

Following the cessation of the Cotton CRC, a new Development and Delivery (D&D) partnership will be formed between CRDC and the industry peak-body, and CRDC stakeholder, Cotton Australia. The need to undertake an extended D&D role will require additional staff and new projects commencing in 2012-13.
CRDC is working with the Cotton CRC to create a whole of industry knowl-

Collaborative research activity takes CRDC research to USA and key cotton processing countries predominantly in Asia.

Vision2029

Australian Cotton • Carefully Grown • Naturally World's Best

Vision
A globally competitive and responsible cotton industry
Mission
The quest for sustainable competitive advantage
Purpose
Enhancing the performance of the Australian cotton industry and community through investing in research and development, and its application.
Outcome
A more sustainable, profitable and competitive cotton industry, providing increased environmental, economic and social benefits to regional communities and the nation.

Towards 2029, the Australian cotton industry will be:

• **Differentiated** - world leading supplier of an elite quality cotton that is highly sought in premium market segments
• **Responsible** - producer and supplier of the most environmentally and socially responsible cotton on the globe
• **Tough** - resilient and equipped for future challenges
• **Successful** - exciting new levels of performance that transform productivity and profitability of every sector of the industry
• **Respected** - an industry recognised and valued by the wider community for its contribution to fibre and food needs of the world
• **Capable** - an industry that retains, attracts and develops highly capable people.

"An extended D&D role will require additional staff and new projects commencing in 2012-13."

New branding elements underpin marketing and communications underpin campaigns executed under Development and Delivery

CRDC shall maintain the legacy important irrigation R&D knowledge beyond 2011-12.

CRDC acts as a formal and informal information source for stakeholders and client groups.

edge repository for all former CRC R&D reports and to support the Cotton CRC website beyond its closure date.

CRDC intends to progressively integrate the industry's R&D knowledge systems during 2012-13 and beyond.

Sustainable irrigation

CRDC took on the role of managing agent for the National Program for Sustainable Irrigation (NPSI) in 2009 following closure of Land and Water Australia. This collaboration formally ceases on 30 June 2012 and its closure marks 14 years of joint investment by a broad range of investors drawn from rural R&D Corporations, government agencies and water companies. CRDC shall maintain the legacy of this entire body of important R&D knowledge beyond 2011-12 in line with its long-term commitment to irrigation R&D that services not only the cotton industry, but importantly, the broad needs of irrigated agriculture as an issue of national significance. CRDC will be proactively supporting the PISC Water Use in Agriculture cross-sectoral strategy as the basis for future irrigation R&D collaboration.

Our background

CRDC was established in 1990 under the Primary Industries and Energy Research and Development (PIERD) Act 1989, which outlines its accountability to the Australian Government and to the cotton industry, through Cotton Australia. CRDC is regionally based in Narrabri, NSW, and the centre of one of Australia's major cotton growing regions. CRDC is a small agency with 10 fulltime equivalent employees.

CRDC's purpose is to enhance the performance of the Australian cotton industry and community through investing in research and development, and its application. Cotton is the major agricultural crop grown in many rural and remote regions of QLD and NSW. It is a major employer and contributor to the local, state and national economy with annual exports worth in excess of $2.0 billion.

CRDC 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.

CRDC 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 (facilitated by its location in a major cotton growing centre), through general industry media activities and the Corporation's website, www.crdc.com.au.

CRDC is actively involved in the dissemination of research results, working through a range of mechanisms but principally the CRDC-supported Australian Cotton Industry Development & Delivery Team.

Our Corporate standards

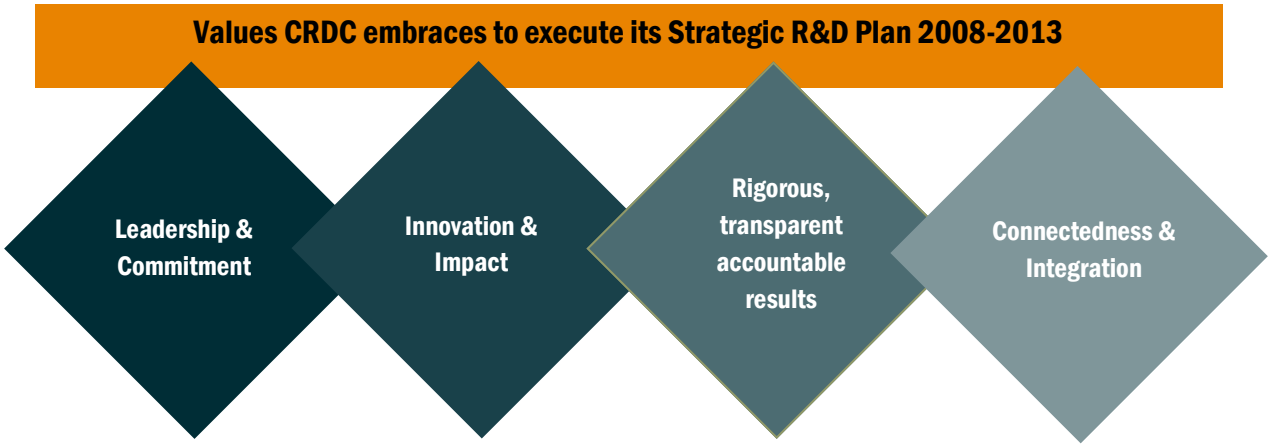
In carrying out the functions of the Corporation, Directors and staff members are required to:
Commit to excellence and productivity
Accountability to stakeholders
Act legally, ethically, professionally and responsibly in the performance of duties
Strive to maximise return on investment of industry and 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
Commit to the future of rural and regional Australia
Comply with and promote best practice in corporate governance
Commit to meeting all statutory obligations and accountability requirements in a comprehensive and timely manner.

CRDC priorities addressed in this Plan

CRDC has identified the following strategic goals to be addressed during the term of this Annual Operating Plan. These are:

1. Add value to the Australian Cotton industry with premium products operating in improved routes to market
2. Cotton in a highly productive farming system with improved environmental performance
3. A culture of innovation and learning

Within this document, CRDC has assessed the linkages between National and Rural Research Priorities and its Goals, and shall focus on achieving these in its mission. Through this pursuit, CRDC expects to achieve its corporate outcome of: A more sustainable, profitable and competitive cotton industry providing increased environmental, economic, and social benefits to regional communities and the nation.



Our underlying principles

To implement our objectives and outcomes using a triple bottom line framework for planning, implementation and reporting.

Economic	Environmental	Social
Profitability and international competitiveness	Sustainable production systems and catchments	Empowered people and communities

Stakeholder R&D priorities

Objects of the PIERD Act 1989 are to:

- Increase economic, environmental and social benefits
- Achieve sustainable use and management of natural resources
- Make more effective use of human resources and skills

National Research Priorities

Australian Government
December 2002

An Environmentally Sustainable Australia
Transforming the way we utilise our land, water, mineral and energy resources through a better understanding of human and environmental systems and the use of new technologies

Promoting and Maintaining Good Health
Promoting good health and well being for all Australians

Frontier Technologies for Building and Transforming Australian Industries
Stimulating the growth of world-class Australian industries using innovative technologies developed from cutting-edge research

Safeguarding Australia
Safeguarding Australia from terrorism, crime, invasive diseases and pests, strengthening our understanding of Australia's place in the region and the world, and securing our infrastructure, particularly with respect to our digital systems

Rural R&D Priorities

Australian Government
May 2007

Productivity and Adding Value
Improve the productivity and profitability of existing industries and support the development of viable new industries

Supply Chain and Markets
Better understand and respond to domestic and international market and consumer requirements and improve the flow of such information through the whole supply chain, including to consumers

Natural Resource Management
Support effective management of Australia's natural resources to ensure primary industries are both economically and environmentally sustainable.

Climate Variability and Climate Change
Build resilience to climate variability and adapt to and mitigate the effects of climate change

Biosecurity
Protect Australia's community, primary industries and environment from biosecurity threats.

Innovation Skills & Technologies
Improve the skills to undertake research and apply its findings. Promote the development of new and existing technologies

Cotton Industry Priorities

Cotton Australia

Invest in the skills, knowledge 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

Australian Government
Cotton Research and Development Corporation

Strategic R&D Plan 2008–2013
Annual Operating Plan 2012-2013
Annual Report 2012-2013

Incorporation of Stakeholder Priorities 2012-2013

Not all National Research Priorities (NRPs) associated goals are applicable to the work of the Corporation.
The associated goals listed below are relevant to our R&D program and are addressed in this plan as follows.

National Research Priorities and associated goals

A An environmentally sustainable Australia
A1 Water – a critical resource
A2 Transforming existing industries
A3 Overcoming soil loss, salinity and acidity
A4 Reducing and capturing emissions in transport and energy generation
A5 Sustainable use of Australia's biodiversity
A7 Responding to climate change and variability

B Promoting and maintaining good health
B3 Preventive healthcare

C Frontier technologies for building and transforming Australian industries
C1 Breakthrough science
C2 Frontier technologies
C3 Advanced materials
C4 Smart information use
C5 Promoting an innovation culture and economy

D Safeguarding Australia
D3Protecting Australia from invasive diseases and pests

CRDC priorities addressed in this Plan

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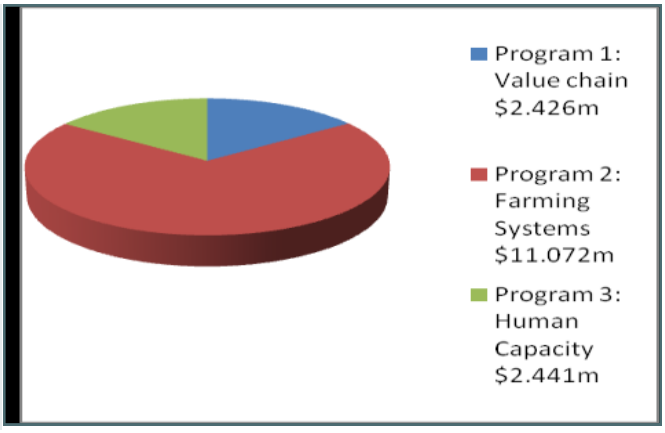
Program key performance indicators

Key performance indicators	2011-12	2012-13
Coverage of Best Management Practice systems across the Australian cotton industry	40	60
Industry productivity growth per hectare per annum	3%	3%
PISC Cotton Sector RD&E plan implemented	Yes	Yes
Market opportunities for Australian cotton clearly defined and understood within industry	-	Report
Industry human resource plan developed	-	Report

This table represents the Investment by Program, and as a proportion of total R&D investments 2012-2013.



CRDC R&D focus 2012-2013			
Applicable NRPs & goals *(see above)*	**Rural R&D Priorities**	**Australian Cotton Industry R&D Priorities**	**CRDC R&D Focus 2012-2013**
B4	**Productivity and Adding Value** Improve the productivity and profitability of existing industries and support the development of viable new industries	**Improve the profitability of the cotton industry** **Create and support a strong, focused and committed research program**	Support ongoing R&D cross-sectors partnerships addressing climate change, natural resource management, irrigation, farm health & safety and encouraging the development of future scientists. Consolidate new collaborations with Grains RDC addressing productivity and climate change preparedness in cotton & grains farming systems including weeds. Extension of R&D to farmers of farming systems innovation for improved production efficiencies with focus on resource management (soils, water, fertiliser, energy, carbon) and environmental performance. Further testing and commercialisation of novel bio-pesticides for key cotton and grain pests Enhancement of the best management practices system to integrate planning, risk management and benchmarking with development of skills, knowledge and adoption of research outputs throughout the value chain.
B4	**Supply Chain and Markets** Better understand and respond to domestic and international market and consumer requirements and improve the flow of such information through the whole supply chain, including to consumers.	**Improve the profitability of the cotton industry** **Create and support a strong, focused and committed research program**	Improved industry awareness and preparedness for major biosecurity threats, particularly silver leaf whitefly, Solenopsis mealybug, *Helicoverpa* spp., aphid, mites and viruses. Continue to improve market intelligence and customer feedback on Australian cotton's competitive advantage. Facilitation of post-farm gate best-practices for harvest, classing, ginning, transport, storage and handling. Enhancement of the best management practices system to integrate planning, risk management and benchmarking with development of skills, knowledge and adoption of research outputs throughout the value chain. Continue the development of collaborative R&D partnerships with Australian cotton shippers and overseas cotton spinning mills and domestic brand owners to facilitate opportunities for using newly developed Australian premium-quality cotton, innovations in objective fibre measurement and textile processing knowledge.
A1; A2; A3; A5; A7	**Natural Resource Management** Support effective management of Australia's natural resources to ensure primary industries are both economically and environmentally sustainable	**Improve the sustainability of the cotton industry and its catchments** **Create and support a strong, focused and committed research program**	Support ongoing R&D cross-sectors partnerships addressing climate change, natural resource management, irrigation, biodiversity and encouraging the development of future scientists. Enhancement of the best management practices system to integrate planning, risk management and benchmarking with development of skills, knowledge and adoption of research outputs for improved natural resource management.

A7	**Climate Variability and Climate Change** Build resilience to climate variability and adapt to and mitigate the effects of climate change	**Improve the sustainability of the cotton industry and its catchments** **Create and support a strong, focused and committed research program**	R&D investments in biosecurity as well as cropping systems for improved nitrogen, energy & water use efficiency that will increase farm business' climate change preparedness and reduce greenhouse gas emissions Extension of R&D to farmers of farming systems innovation for improved production efficiencies with focus on resource management (soils, water, fertiliser, energy, carbon) and environmental performance. Consolidate new collaborations with Grains RDC addressing productivity and climate change preparedness in cotton & grains farming systems. Scope the potential impacts of climate change on textile production and markets Support ongoing R&D cross-sectors partnerships addressing climate change, natural resource management, irrigation, biodiversity and encouraging the development of future scientists.
D3	**Biosecurity** Protect Australia's community, primary industries and environment from biosecurity threats	**Create and support a strong, focused and committed research program**	Improved industry awareness and preparedness for major biosecurity threats, particularly silver leaf whitefly, Solenopsis mealybug, *Helicoverpa* spp., aphid, mites and viruses. Further testing and commercialisation of novel bio-pesticides for key cotton and grain pests Continue surveying for the incidence of endemic diseases and pests and surveillance for the presence of exotic diseases and pests in all cotton growing districts R&D investments and activities to underpin the stewardship of biotechnologies and chemicals. Enhancement of the best management practices system to integrate planning, risk management and benchmarking with development of skills, knowledge and adoption of research outputs for biosecurity.
Supporting the Rural R&D Priorities			
C5	**Improve the skills to undertake research and apply its findings**	**Invest in the skills, knowledge and occupational health and safety of the human resources in the cotton industry and its communities**	Support ongoing R&D cross-sectors partnerships addressing climate change, irrigation, farm health & safety and encouraging the development of future scientists. Support schools level, undergraduate level programs, Undergraduate Studentship Program and other scholarship systems, Post-graduate scholarships (PhD and Masters), Leadership programs for a broadly-based response to industry's future capacity Supporting and activating broader engagements based on the "Sustaining Rural Communities Initiative". Supporting and enhancing networks and collaborations with education providers to activate a supply-chain approach for industry's future R&D human capacity. Enhancement of the best management practices system to integrate planning, risk management and benchmarking with development of skills, knowledge and adoption of research outputs.
C2; C4	**Promote the development of new and existing technologies**	**Create and support a strong, focused and committed research program**	Enhancement of the best management practices system to integrate planning, risk management and benchmarking with development of skills, knowledge and adoption of research outputs on-farm and in the value chain.

Total Investment – Composition of Government Research Priorities attributed to each R&D Program

2012-13 R&D Expenditure estimates across National and Rural Research Priority Goals*

National Research Priorities (NRPs)	An Environmentally Sustainable Australia ($m)							Promoting and maintaining good health ($m)				Frontier Technologies for Building and Transforming Australian Industries ($m)					Safeguarding Australia ($m)					Total ($m)
	A1	A2	A3	A4	A5	A6	A7	B1	B2	B3	B4	C1	C2	C3	C4	C5	D1	D2	D3	D4	D5	
Program 1: Value Chain				0.038							1.801		0.394	0.070	0.078	0.045						2.426
Program 2: Farming Systems	0.566		0.431		0.518		1.292				2.985		0.060	0.012	0.727	0.449			4.034			11.073
Program 3: Human Capacity	0.113		0.050		0.047		0.136				0.443				0.027	1.583			0.041			2.441
Total	0.679		0.481	0.038	0.565		1.429				5.230		0.454	0.082	0.832	2.077			4.075			15.939

Note *
A budgeted amount of $320,000 for items such as general and post-graduate contingencies is not included in these tables as an accurate attribution to NRPs and RRPs cannot be made until funding is allocated during the 2012-13 year

Total Investment – Composition of Government Research Priorities attributed to each R&D Program

Rural Research Priorities (RRPs)	Productivity and Adding Value	Supply Chains and Markets	Natural Resource Management	Climate Change and Climate Variability	Biosecurity	Supporting the Priorities		Total
						Innovation Skills	Technology	
	$m	$m	$m	$m	$m	$m	$m	($m)
Program 1: Value Chain	0.882	0.889	0.038				0.617	2.426
Program 2: Farming Systems	2.878	0.107	1.553	1.253	3.994	0.429	0.857	11.073
Program 3: Human Capacity	0.347	0.106	0.220	0.126	0.031	1.583	0.027	2.440
Total	4.107	1.103	1.811	1.379	4.026	2.012	1.502	15.939

Program 1 Value Chain

Strategic Goal

Add value to the Australian cotton industry with premium products in improved routes to market

Objective 1: Develop contemporary knowledge and intelligence about products, markets and supply

Key tactics 2008–2013	R&D Investments 2012-2013	Measures of Success
1.1 Researching existing market and supply chains for Australian cotton products	A continuing project to research value chain sustainability and competitive advantage for Australian cotton	Initial definition of key sustainability measures for Australian cotton.
1.2 Communicating market intelligence and knowledge to the Australian industry	Communication and discussion of mill survey results with the industry.	A more knowledgeable and competitive industry.
1.3 Facilitating new engagement mechanisms with industry and end-users to enable a common understanding of the competitive advantages of Australian cotton products	A continuation of the Premium Cotton Initiative (PCI), including spinning trials.	Outcomes of mills trials provided to Australian Cotton Shippers and the fibre properties for any new premium cotton class finalised.
	Further trial market developments with Mills and Brand owners to evaluate the competitive advantages of Australian cotton.	Australian premium cotton products and BMP cotton tested in Australian and International markets.
	A new commissioned project to develop "The Australian Premium Cotton Story" for promotion with existing and potential customers.	Promotion of the "Story" to potential buyers of Australian premium cotton. Innovation in traceability of cotton across the value chain investigated.

Objective 2: Develop improvements in current products		
2.1 Identifying opportunities for improvements in fibre quality and cotton seed properties.	Development of low twist fine count yarns and fabrics from Australian long staple upland cotton.	Low twist, fine count yarns tested and evaluated.
	A new commissioned project to "Access fibre elongation across Australian Cotton".	Competitive advantage and opportunities for improving fibre elongation clearly defined.
	Commercial opportunities of improving cotton seed oil investigated	Business case for development of genetic improvements in cotton seed oil reviewed
2.2 Developing pathways for exploiting the competitive advantage of current premium products	Ongoing evaluation of spinning software for predicting yarn quality.	Cottonspec evaluated in international mills and finalised for commercial release.
	Continued study of agronomic management to optimise textile performance with a focus in improving fibre quality traits.	Updated best practice guidelines in agronomic management to maintain high quality fibre with a focus on fibre fineness and reducing neps and short fibre content.
	A continuation of the Premium Cotton Initiative including spinning trials.	Spinning limits for premium Australian Long Staple (ALS) cotton determined. New fibre classification system developed for ALS cotton.
	Further trial market developments with Mills and Brand owners to evaluate the competitive advantages of Australian cotton	Trial cotton and cotton/wool blend products tested in Australian and International markets, promotion of Australian BMP to mills and brand owners.
Objective 3: Facilitate the development of novel products		
3.1 Reviewing market intelligence and knowledge to identify needs and opportunities	Communication and discussion of mill survey results with the industry.	Gaps and opportunities discovered for further investigation.
3.2 Creating and fostering initiatives that uncover innovative and novel products	Continued investigation of cotton and cotton/wool blend fabrics.	Thermal rating system for fabric blends finalised and trial cotton and cotton/wool blend products tested in Australian and International markets.
	A new commissioned project to investigate "Innovations in Spinning Yarn and fabric Development".	Report provided on innovations in fabrics design and related implications and opportunity for use of premium Australian cotton.
3.3 Fostering the formation of partnerships to develop novel products	The commissioned project anticipated (above under 1.3.2) may create opportunities with novel products to partner.	Opportunity for new partnerships identified

Objective 4: Advance cotton product processing

Key tactics 2008–2013	R&D Investments 2012-2013	Measures of Success
4.1 Scanning and evaluating ginning, spinning and textile innovations	Review ginning R&D for future investment opportunities.	Review conducted and new investment plan for ginning R&D established.
	A new commissioned project to investigate "Innovations in Spinning Yarn and fabric Development".	New innovations in cotton spinning technology reported and related implications and opportunity for use of premium Australian cotton
	Ginning efficiency improvement developed by assessment of the gin stand and monitoring of cotton grade and contamination.	Opportunities for improving ginning efficiency evaluated through innovation in design of the gin stand, and leaf grade and contamination sensors.
	Gin trash management improved.	Scoping study on use of gin trash as a feedstock for bioethanol completed.
4.2 Improving fibre moisture measurement and management	Business plan established for commercial development of moisture sensors. and contamination sensors	Commercial partners developed for novel moisture sensors.
4.3 Supporting the development of Best Management Practices (BMPs) with the post-farm gate sector to assure the quality of Australian cotton products	Implementation of Ginning Best Management Practices (BMPs).	Facility audits demonstrating increased adoption of ginning BMPs in Australian cotton gins
	Ongoing support for the adoption of BMPs for the Classification of Cotton.	Industry support of audits to demonstrate standards of Australian Classing facilities are maintained at the highest level.

Objective 5. Develop objective measurement of Australian cotton fibre

5.1 Determining appropriate methods and tools that more effectively describe the textile qualities and their values of Australian cotton fibre	Several investments will contribute to this key tactic area e.g. Premium Cotton Initiative and the validation of 'Cottonspec'.	An improved capacity to integrate several tools and methods to better demonstrate the textile qualities and values of Australian cotton fibre.
	Options for improving dyeing efficiency developed.	Key fibre factors affecting dye uptake determined.
	Accuracy of HVI fibre strength evaluated.	Fibre length assessed for its impact of fibre strength measurements.
5.2 Fostering partnerships with the post-farm-gate sector and end-users to support the evaluation, creation of and uptake of advancements in objective measurement	Integrated promotion of technologies that help differentiated Australian cotton.	Business case for fibre measurement and spinning software technologies refined for promotion to merchants and mills.
	Commercialization of 'Cottonscope'; an instrument combining the instruments 'Cottonscan' and 'SiroMat'.	Commercialisation pathway for the instruments is reviewed.

Program 2 Farming Systems

Strategic Goal:
Cotton in a highly productive farming system with improved environmental performance

Objective 1. Build industry's understanding of climate and natural resource challenges

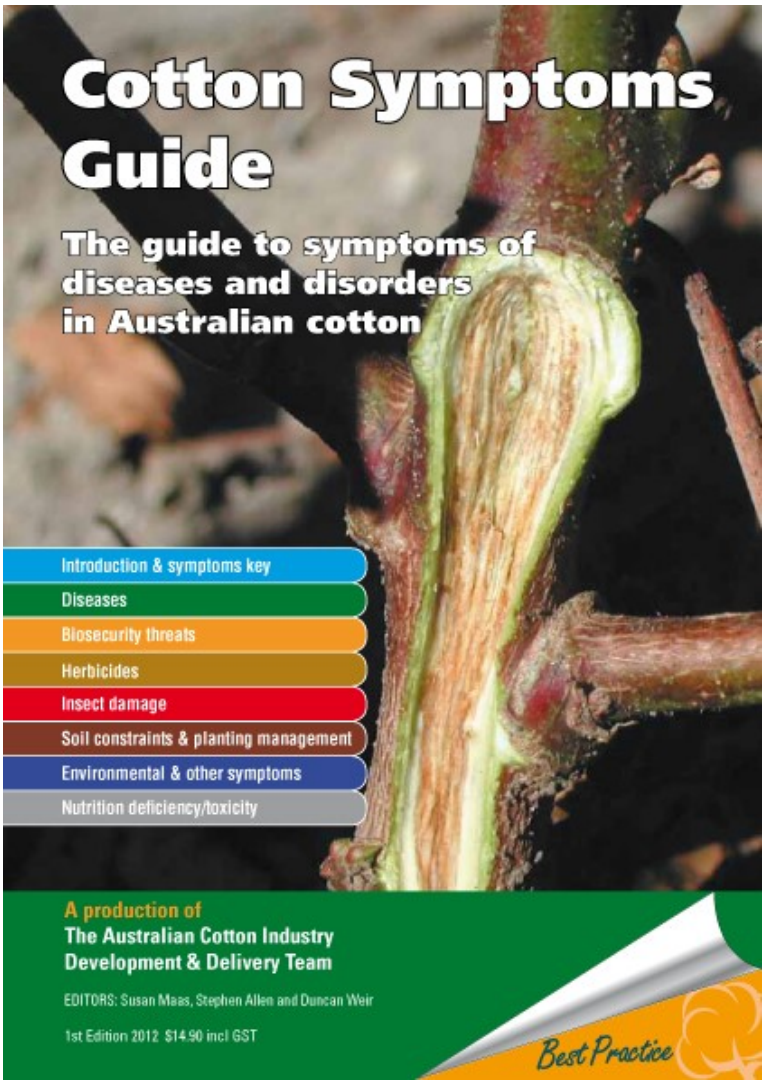
Key tactics 2008–2013	R&D Investments 2012-2013	Measures of Success
1.1 Researching jointly, the implications of climate change and natural resource management policy for farming systems	Continued support for work under the Climate Change Research Strategy for Primary Industries (CCRSPI) A continuing PhD project to investigate the next generation of rural landscape governance in Australia	CCRSPI continues to provide strategic direction and coordination of this cross-sectoral issue Key issues for a cotton case study are identified
1.2 Investigating the potential impacts of future climates to cotton production and the capacity of the industry to adapt to, and mitigate, its impacts	A continuing investigation to improve prediction of cotton growth and production in a changing climate Two new projects to assess the impact of climate change on cotton industry capacity to adapt as well as to plan and respond for extreme events	Student reports presenting satisfactory progress Reports documenting potential impacts of climate change and extreme weather events and working towards understanding the industry's adaptive capacity.
1.3 Researching the implications of a future carbon economy on cotton production	A continuing project to improve capacity to assess greenhouse gas emissions from broadacre irrigated cropping systems. An ongoing project developing a Protocol for Assessing On Farm Energy Use and Associated Greenhouse Gas Emissions and a new project to study alternative energy sources on cotton farms. (Also 2.2.4)	Progress reports identifying the scale of greenhouse gas emissions associated with cotton farming rotations. On farm energy use documented at case study sites and options for alternative energy identified. (Also 2.2.4)
	A continuing post-doctoral project to study how cotton farmers can take advantage of potential future ecosystems markets.	Progress reports identifying ecosystems services potentially eligible for future markets.
	New projects leading to enhanced capability to focus on extension of carbon farming and ecosystem services.	Extension of carbon farming and ecosystem services knowledge in addition to demonstration of opportunities for cotton production systems in the Cotton Farming Initiative.

Objective 2: Enhance capacity of industry to adopt resilient and adaptive farming systems		
2.1 Developing conceptual systemthinking to synthesise knowledge		
2.2 Benchmarking existing production efficiencies and environmental performances	A continuing project that populates a social, economic and environmental performance information repository coupled with a reporting framework developed for cotton industry use.	Key performance data sources identified and collected.
	Ongoing and new work that benchmarks cotton water use and energy efficiencies under a wide range of current irrigation practices. A water irrigation demonstration site maintained for LCA and other benchmarking analysis.	Reports benchmarking water use efficiencies and development of data. Water LCA report completed. Irrigation system comparisons promoted to growers and advisors to promote uptake.
	Continuation of the Crop Consultants Association Post Season Survey Series together with a new project that establishes more interactive grower surveys and workshops.	Survey and workshop results analysed and reported to industry.
	New projects to measure soil structural impacts as well as extend best practice for new cotton harvesters.	Reports showing soil impacts and new management advice and knowledge products developed and delivered.
	Finalisation of the Third Environmental Assessment of the cotton industry.	Assessment report delivered to industry and other stakeholders. Action plan to address deficiencies developed in response to findings.
2.3 Delivering innovative solutions to major farming management constraints and future climate-driven challenges	A new project to investigate cotton diversification in Northern Queensland and other tropical areas of Australia.	Reports highlighting cotton performance in NQ and other tropical area cropping systems.
	A project to investigate applying plant based measurements for irrigation in water limited environments.	Project established with co-investment from US collaborators, post-doc identified, project established with reports showing potential for water management improvement in water-limiting conditions.
	A continuing project to investigate optimal irrigation of cotton via real-time adaptive control.	Project progress reports demonstrating application of real-time adaptive control systems.
	A new project to test a commercial prototype to automate furrow irrigation systems.	Results of prototype testing analysed and reported.
	A continuing project to investigate management of carbon in cotton-based farming systems.	Progress reports demonstrating the opportunities for improved management and sequestration of carbon in cotton farming systems.
	New research into the development of irrigation strategies for limited water environments.	Reports showing potential for water management improvements in water-limiting conditions.

2.4 Researching optimisation of farming inputs, processes and capacities with environmental benefits	An ongoing project developing a Protocol for Assessing On Farm Energy Use and Associated Greenhouse Gas Emissions and a new project to study alternative energy sources on cotton farms.	On farm energy use documented at case study sites, tools for energy optimisation decisions developed and taken up. Options for alternative energy sources and energy management identified and communicated via new tools and engagements.
	Ongoing research, development and delivery to advance knowledge and best practice of critical soil nutrient concentrations in soils supporting irrigated cotton in Northern NSW & Qld. Continuing and new projects to encourage cotton systems that are nutrient-efficient and promote healthy soil.	A final report identifying the range of critical soil nutrient concentrations in cotton growing soils. Evidence that knowledge for improving cotton nutrition is being developed and best practice is being adopted.
	Building cotton and grain industry capacity for continual improvement of pesticide application and drift management. Student engaged to research and create new knowledge concerning cotton plant root growth.	Evidence that pesticide application management is improving and drift damage incidents are declining through uptake of best practices and use of tools and information sources.
2.5 Supporting a best-practice framework as the primary integrated planning, risk management, benchmarking, knowledge development and extension delivery system	Development and packaging of information derived from R&D. Ongoing development, support and enabling of the links with research, extension and myBMP facilitation. A continuing project to facilitate linkages between research, extension and the industry's myBMP system.	New knowledge resources developed for delivery via myBMP system. Evidence that myBMP is a primary delivery channel for R&D knowledge acquisition and production advice for growers and their advisors Improved resources and delivery campaigns to support the adoption and myBMP frameworks established.
	New extension focussed projects to manage and deliver knowledge to encourage best management practice.	New relationships and engagements with agribusinesses and services which provide more efficient delivery channels for industry's adoptable R&D.

Strategic Objective 3: Protect industry from biosecurity threats

Key tactics 2008–2013	R&D Investments 2012-2013	Measures of Success
3.1 Identifying and communicating major biosecurity threats	Continuing and new projects to increase surveillance and preparedness for endemic and exotic diseases of cotton, assess biosecurity risks of feral cotton.	Progress reports identifying risks from viral diseases.
3.2 Supporting the industry's preparedness to deal with bio security threats	Continuing research projects for improving management of cotton diseases and disease surveillance. Ongoing biosecurity training for growers and agronomy consultants.	Reports on annual disease survey results communicated to industry. New knowledge of IPM integrated into best practice advice and information resources. Evidence of networks established and prepared for biosecurity incursion.
3.3 Researching the management of established, invasive and endemic insect pests, weeds and diseases	A continuing project to investigate IPM for Silverleaf whitefly and emerging pests in central regions.	Progress reports providing evidence that silverleaf whitefly management is improving in central cotton regions
	A continuing research project to improve the management of mirids, stinkbugs and mealybugs in Bollgard II.	Progress reports with recommendations for improved management of mirids, stinkbugs and mealybugs.
	A continuing project to provide Helicoverpa spp., whitefly, mirids, aphids and Two Spotted Mite insecticide resistance monitoring.	Reports with resistance results provided to industry and integrated into the annual insecticide Resistance Management Strategy.
	A continuing project to support the commercialisation and develop new applications for Fungal insecticides against cotton pests	Progress reports demonstrating commercial potential for fungal bio-pesticides
	A commissioned project to investigate the establishment of a "Biopesticides Centre".	Business case developed to inform the development of a proposed Biopesticides Centre.
	Continuing and new weeds research projects to improved weed management and minimise weed resistance to key herbicides.	Improved weed and herbicide resistance management systems.
	A new project to investigate the role of endosymbionants in the regulation of silverleaf whitefly populations.	Progress reports providing evidence of effective cataloguing of endosymbionts associated with silverleaf whitefly in Australia.
	New projects researching weed ecology, weed thresholds for cotton systems and the impacts of herbicides on cotton growth and development.	PhD reports demonstrating satisfactory progress. New knowledge of IWM and new weed identification resources integrated into best practice information and advisory systems.



3.4 Assuring industry capacity to manage the stewardship of biotechnologies and crop protection products	Continuing and new projects to provide resistance monitoring of Helicoverpa spp. to Bt cotton. Improved resistance management systems for current and developing Bt cotton technologies. Ongoing research into the flight characteristics of Helicoverpa spp in relation to the efficacy of transgenic cotton refuges.	Resistance results reported regularly and implications discussed with industry. New resistance management and modelling systems developed. PhD student reports demonstrating satisfactory progress
	Continuing and new research projects for managing weeds and herbicides in a genetically modified cotton farming system	Improved management opportunities for weeds in GM systems identified, promoted and adopted.
	A continuing project to revisit ecology of Helicoverpa punctigera in relation to migration, overwintering and implications for Bt resistance	PhD student identified, project established
	A continuing project to examine ways to improve management of cotton refuges within the BMP framework	
	A new project to profile beneficial microorganisms and their manipulation in cotton growing soils to improve cotton growth.	Progress reports showing evidence of soil microorganisms surveys from cotton growing regions.

Program 3 Human Capacity

Strategic Goal:

A culture of innovation and learning

Objective 1:

Identify, understand and plan for future industry capacity needs

Key tactics 2008–2013	R&D Investments 2012-2013	Measures of Success
1.1 Scoping and determining future human resource needs	A continuing project supporting the ongoing activities of the Professional Development Officer (Cotton).	New skills delivery systems and tools identified, tested and implemented.
	A new commissioned project to assist in the gathering of improved industry skills and workforce needs.	Survey or other data collection systems to monitor industry skills and workforce needs developed. Data available for improving industry planning and advice for government supported initiatives.
1.2 Investigating best practice for attracting, developing and retaining people	A continuing project to establish a workforce development plan for the cotton industry for sustained competitive advantage.	Project steering committee established and interim results reported and interpreted.
	New initiatives to encourage and develop young professionals for the cotton industry.	PICSE Activity Centre established and integrated with other industry school initiatives and undergraduate scholarship, mentoring and work experience programs.
1.3 Researching jointly the implications of demographic changes for the supply of human resources to agriculture and cotton		
1.4 Encouraging and assisting development of rural and cotton industry action plans	A continuing project to establish a workforce development plan for the cotton industry for sustained competitive advantage.	Project steering committee established and interim results reported and interpreted.
1.5 Investigating alternative methods for research and development	A continuing project to develop an on -farm environmental resources survey.	Survey results reported to the industry.

Objective 2: Improve human resource development and capacity

2.1 Supporting initiatives which encourage adaptiveness to change	A continuing project to benchmark cotton water use efficiencies and energy efficiencies for a range of irrigation systems.	Reports benchmarking water use efficiencies and development of energy use data for different irrigation systems.
2.2 Targeting investments in human capacity to meet future needs	A project to review and update cotton farm safety resources and potential links to the myBMP system.	Project established and existing resources reviewed.
	New training projects for ginning and managing cotton for highest quality as well as ongoing tertiary professional development course delivery.	Ginning course establishment, ongoing delivery of Field to Fabric courses and further development and delivery of the UNE Cotton Production Course.
2.3 Leveraging industry development	An ongoing program for capacity building projects with local Cotton Grower Associations (CGAs).	New projects established with all willing CGAs.
2.4 Establishing and nurturing strategic partnerships	Ongoing support for the cooperative partnership for farming and fishing occupational health and safety.	Progress against the partnership strategic plan reported.
	Establishment of a new collaborative project in the cotton/Northern Grain growing Zone to manage resistance to Group L, M and I herbicides.	Collaborative project with GRDC and commercial partners established and working with cotton and grain growers.
2.5 Funding participatory R&D	An ongoing program for capacity building projects with local Cotton Grower Associations (CGAs).	New projects established with all willing CGAs.

Objective 3: Enhance capacity to innovate

3.1 Developing best practice in communication and adoption	Implementation of campaign based initiatives within the Development and Delivery (D&D) Team to deliver on key target areas for R&D adoption.	Campaigns established to meet all key target areas of the D&D Team.
	Facilitation of linkages between research, extension and the industry's myBMP system.	Best practice modules of *my*BMP reviewed as required with content processed and continually updated.
	A new project to comprehensively document and communicate best practice cotton production techniques using video and audio formats.	Documentaries planned, prioritised and delivered through multiple channels and integrated into D&D Team delivery systems. Results and impacts measured and evaluated on an ongoing basis.
3.2 Developing industry capacity to adopt outputs of research	New and existing projects and providing resources for development and delivery of research results.	Improved resources and delivery campaigns to support the adoption and myBMP frameworks established. New relationships and engagements with agribusinesses and services which provide more efficient delivery channels for industry's adoptable R&D.
3.3 Establishing and empowering creative forums and initiatives	A new project to identify and promote adoptable R&D at the 16th Australian Cotton Conference 2012	Evaluation of conference showing a high level of satisfaction from growers and advisors.
3.**4** Recognising and rewarding innovation	Development of a new format for the "Cotton Big Day Out" field day to highlight grower led innovation.	Cotton Big Day Out field day held; highlights documented and delivered through multiple channels. Strong grower participation and positive feedback received.

Financial outlook 2012-2013

The current forecast is for a second year of record cotton production in 2011-12 (4.5m bales) and forward estimates by industry and ABARES of above average levels of cotton production for 2012-13 and 2013-14. These high levels of production will provide a substantial increase in revenue, which aligns with the Corporations decision to increase investment in research activities. A significant component of future expenditure will be CRDC's additional investment in development, delivery and extension of research outputs after the closure of the Cotton Catchment Communities CRC.

Rebuilding R&D Capacity
The Corporation has budgeted for revenue of $24.33 million in 2012-13 and expenditure of $19.70 million, providing for a surplus budget of $4.63 million. CRDC has focused on rebuilding research capacity since the previous period of extended drought. R&D project funding is forecast to increase from $7.16m in 2010/11 to $16.25m in 2012/13, a 127% increase in 2 years. Concurrently the reserves are forecast to increase from $10.53m at 30th June 2010 to $31.60m at 30th June 2013 to support research in future years.

The Australian Government general matching of industry contributions is expected to be limited by either the value of levies collected or 0.5 per cent of the cotton industry's three year average Gross Value of Production (GVP). Which trigger will apply depends on the price of cotton, timing of the harvest and ginning, and the variability of the crop size.

REVENUE SOURCES OF CRDC

CRDC's revenue is drawn from two main sources:
Cotton farmers pay a levy of $2.25 for each 227 kilogram bale of cotton. Cotton levy revenue is collected at the point of ginning, that is, when cotton has been picked and delivered to cotton gins which the separate the cotton lint from the seed. This occurs from March to September of each calendar year, so cotton levy revenue in any financial year is drawn from two consecutive cotton crops.
The Australian Government matches expenditure of levies on eligible R&D, capped at 0.5 per cent of the three year average gross value of production or the cumulative levy receipts, whichever is the lesser. The setting and collection of the industry levy is enabled by the Primary Industries Levies and Charges Collection Act 1991 and the Primary Industries (Excise) Levies Act 1999.
Royalties from the sale of domestic and international planting seed, interest on investments, external grant revenue and research project refunds make up the balance of Corporation income.

PAYMENT TO REPRESENTATIVE BODIES

The Corporation's industry representative body in 2012-13 is Cotton Australia. The role of the industry representative body involves.
Participation in the development and review of the five-year Strategic R&D Plan. This ensures CRDC's strategic planning continues to address evolving industry R&D needs.
A meeting to receive and discuss the CRDC Annual Report for the preceding year. This enables the industry representative body to assess whether CRDC's activities for that year have met its strategic objectives, and to question senior staff on many matters of interest and concern.
Other R&D related activities which vary from year to year.
While CRDC does not pay a fee for service to the industry representative body it may fund discrete R&D projects and contribute to the expenses incurred as authorised by s.15 of the PIERD Act.
In 2012-13, CRDC has budgeted $15,000 for the following activities involving Cotton Australia.

- Review of CRDC strategies, research applications and reports.

Financial tables

Table 1.1: CAC Act Body Cotton Research and Development Corporation Resource Statement

Budget estimates for 2012-13 as at Budget May 2012.

Source	Estimate of prior year amounts available in 2012–13 $'000	Proposed at Budget 2012–13 $'000	Total estimate 2012–13 $'000	Actual available at appropriation 2011–12 $'000
Opening balance/Reserves at bank	**21,090**		**21,090**	**16,296**
REVENUE FROM GOVERNMENT				
Special appropriations[1] *(Department of Agriculture, Fisheries and Forestry)*				
Primary Industries and Energy Research and Development Act 1989 s.30(3) - Cotton R&D Corporation	-	24,437	24,437	15,104
Total special appropriations	**-**	**24,437**	**24,437**	**15,104**
Total funds from government	**-**	**24,437**	**24,437**	**15,104**
FUNDS FROM INDUSTRY SOURCES				
Levies[2]	-	10,936	10,936	8,836
less amounts paid to the CRF	-	(10,936)	(10,936)	(8,836)
Total	**-**	**-**	**-**	**-**
FUNDS FROM OTHER SOURCES				
Interest	-	1,257	1,257	1,163
Royalties	-	3,486	3,486	2,589
Other	-	452	452	984
Total	**-**	**5,195**	**5,195**	**4,736**
Total net resourcing for agency	**21,090**	**29,632**	**50,722**	**36,136**

All figures are GST inclusive.

CRF – Consolidated Revenue Fund

1 CRDC is not directly appropriated as it is a CAC Act body. Appropriations are made to the Department of Agriculture, Fisheries and Forestry, which are then paid to CRDC and are considered 'departmental' for all purposes.

2 The levy is imposed and collected under the following legislation: *Primary Industries and Energy Research and Development Act 1989, Primary Industries (Excise) Levies Act 1999, Primary Industries Levies and Charges Collection Act 1991* and associated legislation.

Table 2.1 Budgeted Expenses for Outcome 1 CAC

Outcome 1: Adoption of innovation that leads to increased productivity, competitiveness and environmental sustainability through investment in research and development that benefits the Australian cotton industry and the wider community.	2011–12 Estimated actual expenses $'000	2012–13 Estimated expenses $'000
Program 1.1: Cotton Research and Development Corporation		
Revenue from government		
Special appropriations	5,730	7,929
Special appropriations - Industry Levies	5,790	7,843
Revenues from other independent sources	3,079	3,928
Total for Program 1.1	14,599	19,700
Outcome 1 Totals by resource type		
Revenue from government		
Special appropriations	5,730	7,929
Special appropriations - Industry Levies	5,790	7,843
Revenues from other independent sources	3,079	3,928
Total expenses for Outcome 1	14,599	19,700

	2011–12	2012–13
Average Staffing Level (number)	9	12

Table 2.2 Program expenses

('000)	2011–12 Revised budget $'000	2012–13 Budget $'000	2013–14 Forward year 1 $'000	2014–15 Forward year 2 $'000	2015–16 Forward year 3 $'000
Annual departmental expenses:					
Cotton Research and Development Corporation	14,599	19,700	19,476	16,255	15,182
Total program expenses	**14,599**	**19,700**	**19,476**	**16,255**	**15,182**

Table 3.2.1 Comprehensive Income Statement (Showing Net Cost of Services)

for the period ended 30 June

	Estimated actual	Budget estimate	Forward estimate	Forward estimate	Forward estimate
	2011–12	2012–13	2013–14	2014–15	2015–16
	$'000	$'000	$'000	$'000	$'000
EXPENSES					
Employee benefits[3]	1,307	1,698	1,767	1,587	1,568
Supplier expenses[2,4]	477	528	548	517	520
Grants[5]	12,779	17,428	17,115	14,105	13,048
Depreciation and amortisation	36	46	46	46	46
Total expenses	**14,599**	**19,700**	**19,476**	**16,255**	**15,182**
LESS:					
OWN-SOURCE INCOME					
Own-source revenue					
Interest	1,250	1,250	1,250	1,250	1,250
Rental income	16	15	15	15	15
Royalties	2,589	3,486	1,817	1,136	779
Other	1,620	100	100	100	100
Total own-source revenue[6]	**5,475**	**4,851**	**3,182**	**2,501**	**2,144**
Net cost of (contribution by) services	**9,124**	**14,849**	**16,294**	**13,754**	**13,038**
Revenue from government[1]					
Commonwealth contribution	10,187	9,793	8,561	7,830	7,437
Industry contributions	10,294	9,686	8,561	7,830	7,437
Total revenue from government	**20,481**	**19,479**	**17,122**	**15,660**	**14,874**
Surplus (Deficit)	**11,357**	**4,630**	**828**	**1,906**	**1,836**
Surplus (Deficit) attributable to the Australian Government	**11,357**	**4,630**	**828**	**1,906**	**1,836**

1 Revenue from government includes a Commonwealth contribution under the PIERD Act 1989, and levies collected from industry by the
Department of Agriculture, Fisheries and Forestry for Research and Development activities.

2 Section 33(1)(e) expenses and liabilities incurred by the CRDC in the performance of its functions or the exercise of its powers.

3 Employee benefits includes estimates for Section 33(1)(c) remuneration of executive and non-executive directors 2011-12 $410,000, 2012-13 $421,000, 2013-14 $437,000, 2014-15 $455,000, 2015-16 $473,000.

4 Supplier expenses includes estimates for Section 33(1)(d) and 33(1)(da)Levy collection and management expenditure payable to the Commonwealth 2011-12 $6,000, 2012-13 $6,000, 2013-14 $6,000, 2014-15 $7,000, 2015-16 $7,000.

5 Grants expenditure includes Corporate R&D expenditure including estimates for Section 33(1)(d) and 33(2) Selection Committee expenditure 2011-12 $49,000, 2012-13 $nil, 2013-14 $nil, 2014-15 $50,000, 2015-16 $nil.

6 Total own-source revenue excludes Section 30 and 30A revenue.

Total expenditure estimates for Section 25(2)(c)(iii) including R&D activities, employment activities, supplier expenses and capital purchases total 2011-12 $14.687m, 2012-13 $19.714m, 2013-14 $19.490m, 2014-15 $16.269m, 2015-16 $15.196m.
Prepared on Australian Accounting Standards Basis

Table 3.2.2: Budgeted departmental balance sheet

as at 30 June

	Estimated actual	Budget estimate	Forward estimate	Forward estimate	Forward estimate
	2011–12	2012–13	2013–14	2014–15	2015–16
	$'000	$'000	$'000	$'000	$'000
ASSETS					
Financial assets					
Cash and cash equivalents	21,090	30,734	31,548	33,440	35,262
Trade and other receivables	7,400	2,370	2,370	2,370	2,370
Total financial assets	**28,490**	**33,104**	**33,918**	**35,810**	**37,632**
Non-financial assets					
Land and buildings	640	629	618	607	596
Property, plant and equipment	121	129	137	145	153
Intangibles	12	29	46	63	80
Other	8	10	10	10	10
Total non-financial assets	**781**	**797**	**811**	**825**	**839**
Total assets	**29,271**	**33,901**	**34,729**	**36,635**	**38,471**
LIABILITIES					
Payables					
Suppliers	30	30	30	30	30
Grants	2,000	2,000	2,000	2,000	2,000
Other	49	49	49	49	49
Total payables	**2,079**	**2,079**	**2,079**	**2,079**	**2,079**
Provisions					
Employee provisions	220	220	220	220	220
Total provisions	**220**	**220**	**220**	**220**	**220**
Total liabilities	**2,299**	**2,299**	**2,299**	**2,299**	**2,299**
Net assets	**26,972**	**31,602**	**32,430**	**34,336**	**36,172**
EQUITY*					
Reserves	280	280	280	280	280
Retained surplus	26,692	31,322	32,150	34,056	35,892
Total equity	**26,972**	**31,602**	**32,430**	**34,336**	**36,172**

* Equity is the residual interest in assets after deduction of liabilities.

Prepared on Australian Accounting Standards basis.

Table 3.2.3: Budgeted departmental statement of cash flows

for the period ended 30 June

	Estimated actual	Budget estimate	Forward estimate	Forward estimate	Forward estimate
	2011–12	2012–13	2013–14	2014–15	2015–16
	$'000	$'000	$'000	$'000	$'000
OPERATING ACTIVITIES					
Cash received					
Industry contributions	8,836	10,936	8,561	7,830	7,437
Revenue from government	6,268	13,501	8,561	7,830	7,437
Interest	1,163	1,257	1,249	1,250	1,250
Net GST received	924	1,560	1,579	1,341	1,273
Other	3,573	3,938	2,157	1,408	1,013
Total cash received	**20,764**	**31,192**	**22,107**	**19,659**	**18,410**
Cash used					
Employees	1,286	1,698	1,766	1,587	1,568
Suppliers	583	589	610	574	577
Grants	13,947	19,171	18,827	15,516	14,353
Other	30	30	30	30	30
Total cash used	**15,846**	**21,488**	**21,233**	**17,707**	**16,528**
Net cash from (used by) operating activities	**4,918**	**9,704**	**874**	**1,952**	**1,882**
INVESTING ACTIVITIES					
Cash used					
Purchase of property, plant and equipment[1]	124	60	60	60	60
Total cash used	**124**	**60**	**60**	**60**	**60**
Net cash from (used by) investing activities	**(124)**	**(60)**	**(60)**	**(60)**	**(60)**
Net increase (decrease) in cash held	**4,794**	**9,644**	**814**	**1,892**	**1,822**
Cash and cash equivalents at the beginning of the reporting period	16,296	21,090	30,734	31,548	33,440
Cash and cash equivalents at the end of the reporting period	**21,090**	**30,734**	**31,548**	**33,440**	**35,262**

1 Section 33(1)(f) other payments for capital expenditure.

Prepared on Australian Accounting Standards Basis

Table 3.2.4: Departmental statement of changes in equity

summary of movement (Budget year 2012–13)

	Retained earnings	Asset revaluation reserve	Total equity
	$'000	$'000	$'000
Opening balance as at 1 July 2012			
Balance carried forward from previous period	26,692	280	26,972
Surplus (deficit) for the period	4,630	-	4,630
Total comprehensive income	4,630	-	4,630
Estimated closing balance as at 30 June 2013	31,322	280	31,602

Prepared on Australian Accounting Standards basis.

Table 3.2.5 Departmental Capital Budget Statement

	Estimated actual	Budget estimate	Forward estimate	Forward estimate	Forward estimate
	2011–12	2012–13	2013–14	2014–15	2015–16
	$'000	$'000	$'000	$'000	$'000
PURCHASE OF NON-FINANCIAL ASSETS					
Funded internally from departmental resources[1]	124	60	60	60	60
TOTAL	**124**	**60**	**60**	**60**	**60**
RECONCILIATION OF CASH USED TO ACQUIRE ASSETS TO ASSET MOVEMENT TABLE					
Total purchases	124	60	60	60	60
Total cash used to acquire assets	**124**	**60**	**60**	**60**	**60**

[1] Includes the following sources of funding:
- annual and prior year appropriations
- donations and contributions
- gifts
- internally developed assets
- proceeds from the sale of assets

Prepared on Australian Accounting Standards basis.

Table 3.2.6: Statement of Asset Movements (2012–13)

	Asset Category (as appropriate)				
	Land	Buildings	Other property, plant and equip-ment	Intangibles	Total
	$'000	$'000	$'000	$'000	$'000
As at 1 July 2012					
Gross book value	200	440	177	131	948
Accumulated depreciation/amortisation and impairment	-	-	(56)	(119)	(175)
Opening net book balance	**200**	**440**	**121**	**12**	**773**
CAPITAL ASSET ADDITIONS					
Estimated expenditure on new or replacement assets					
By purchase – other	-	-	40	20	60
Total additions	**-**	**-**	**40**	**20**	**60**
Other movements					
Depreciation/amortisation expense	-	(11)	(32)	(3)	(46)
As at 30 June 2013					
Gross book value	200	440	217	151	1,008
Accumulated depreciation/amortisation and impairment	-	(11)	(88)	(122)	(221)
Closing net book balance	**200**	**429**	**129**	**29**	**787**

Prepared on Australian Accounting Standards basis.

Acronyms and terminology of the Australian Cotton Industry

AACC	Australian Agricultural Colleges Corporation
AANRO	Australian Agricultural and Natural Resources Online Database
ABARE	Australian Bureau of Agricultural and Resource Economics (*now ABARES – see below)*
ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
ACEC	Australian Cotton Exhibition Centre
ACGRA	Australian Cotton Growers' Research Association (now merged with CottonAustralia)
ACIC	Australian Cotton Industry Council
ACIPA	Australian Centre for Intellectual Property in Agriculture
ACGRA	Australian Cotton Growers Research Association
ACRI	Australian Cotton Research Institute
ACSA	Australian Cotton Shippers Association
AES	Aboriginal Employment Strategy
ai/ha	Active ingredient per hectare
ANAO	Australian National Audit Office
ANCID	Australian National Committee on Irrigation and Drainage
APVMA	Australian Pesticides and Veterinary Medicines Authority
ARLP	Australian Rural Leadership Program
AWAF	Department of Agriculture and Food, Western Australia
AWM	Area Wide Management
Bollgard II ®	Cotton varieties contain two genes resistant to *Helicoverpa* spp.
BMP	Best Management Practices program
BRS	Bureau of Rural Sciences
Bt	Bacillus thuringiensis (crystal protein gene expressed in INGARD ® and Bollgard II ®cotton varieties
CA	Cotton Australia
CAC	Act Commonwealth Authorities and Companies Act 1997
CCA	Crop Consultants Australia Inc. (formerly Cotton Consultants Australia Inc.)
CCRSPI	National Climate Change Research Strategy for Primary Industries
CRC	Cotton Catchment Communities Cooperative Research Centre
CMA	Catchment Management Authority
CMSE	CSIRO Materials Science and Engineering
CPRS	Carbon Pollution Reduction Scheme
CRC	Cooperative Research Centre
CRDC	Cotton Research and Development Corporation
CRRDCC	Council of Rural Research & Development Corporations' Chairs
CSD	Cotton Seed Distributors Ltd (a grower-owned cooperative)
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CVCB	Cooperative Venture for Capacity Building
DAFF	Australian Government Department of Agriculture, Fisheries and Forestry
DECCW	NSW Department of Environment, Climate Change and Water
DEEDI	Queensland Department of Employment, Economic Development and Innovation
DERM	Queensland Department of Environment and Resource Management
DOFD	Australian Government Department of Finance and Deregulation
EIQ	Environmental Impact Quotient
e-Learning	On-line learning, training and education
EM	Electromagnetic conductivity
EPOI	Environmental Performance Indicator
ESD	Ecologically Sustainable Development
EPBC	Act Environmental Protection and Biodiversity Conservation Act 1999
FH&SJV	Farm Health & Safety Joint Venture
F Rank	Measure of Fusarium wilt resistance
FRDC	Fisheries Research and Development Corporation
GM	Genetically modified
GMAC	Genetic Manipulation Advisory Committee
GOA	Groundrig Operators Association
GRDC	Grains Research and Development Corporation
HAL	Horticulture Australia Ltd
ha.	Hectare
Helicoverpa spp.	Cotton's major insect pests (*H. armigera* and *H. punctigera*)
Heliothis	Insect pest, more properly known as *Helicoverpa* spp. (see above)
NSW DPI	NSW Department of Primary Industry
IBP	Industry Biosecurity Plan
ICAC	International Cotton Advisory Committee
IP	Intellectual Property

IDM	Integrated Disease Management
Irrigation deficit	Millimetres of plant-available soil water removed at the time of irrigation
IPM	Integrated Pest Management
IRMS	Insecticide Resistance Management Strategy
ISO	International Organisation for Standardisation
IWM	Integrated Weed Management
IWUI	Irrigation Water Use Index
KPI	Key Performance Indicator (measure of success)
LCA	Life Cycle Assessment
LWA	Land and Water Australia *(ceased operations in 2009)*
MLA	Meat and Livestock Australia
MP	Member of Parliament
NCEA	National Centre for Engineering in Agriculture, University of Southern Queensland
NFF	National Farmers' Federation
NHT	Natural Heritage Trust (Australian Government)
NIPI	National Insect Pest Initiative
NPSI	National Program for Sustainable Irrigation
NRM	Natural Resource Management
NSW DPI	NSW Department of Primary Industries *(formerly part of Industry & Investment NSW)*
NUEI	Nitrogen Use Efficiency Index
OGTR	Office of the Gene Technology Regulator
OHS	Occupational health and safety
PICSE	National Primary Industry Centre for Science Education
PISC	Primary Industries Standing Committee
PIERD Act	Primary Industries and Energy Research and Development Act 1989
Pima	cotton *Gossypium barbardense*. Related to Egyptian cotton, having extra long and fine staples.
QDEEDI	Queensland *Department of Employment, Economic Development and Innovation)*
QFF	Queensland Farmers ' Federation
QUT	Queensland University of Technology
RDC	Rural Research and Development Corporation
RIRDC	Rural Industries Research and Development Corporation
RMP	Resistance Management Plan
RRDCC	Rural Research and Development Chairs' Committee
SFF	Sustainable Farm Families
SJV	San Joaquin Valley (California): the industry benchmark in the international marketplace
SLW	Silverleaf whitefly spp. species
SRDC	Sugar Research and Development Corporation
TIMS	Transgenic and Insect Management Strategy Committee
'Upland'	cotton *Gossypium hirsutum*. Comprises the vast majority of the Australian cotton crop, with
Wincott	Women's Industry Network – Cotton
WUE	Water use efficiency

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