Cotton Research and Development Corporation

Annual Report 1999 - 2000

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Certification

COTTON RESEARCH AND DEVELOPMENT CORPORATION

CRDC
AUSTRALIA

4 October 2000

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

Dear Senator Troeth,

It is with pleasure I submit the Corporation's Annual Report 1999-2000, prepared in accordance with the provisions of section 28 of the *Primary Industries and Energy Research and Development Act 1989*, and of part 1, section 4 of the *Commonwealth Authorities and Companies Act 1997*.

Under section 9 of the *Commonwealth Authorities and Companies Act 1997* the Directors of the CRDC are responsible for the preparation and content of the Annual Report being made in accordance with the Finance Minister's orders. The report of operations has been prepared in accordance with the resolution of the directors.

At the request of the presiding Member of the Cotton Research and Development Corporation Selection Committee, the report of the Committee's operation for the financial year has been included on page 71.

Yours Sincerely

Bridget Jackson
Chair

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Chair's/Executive Director's Report 1999-2000

The past year has been a challenging one for the Cotton R&D Corporation. The appointment of five new Directors and a new Chair in November was possibly the most significant change the Corporation has seen since being established in October 1990. Despite this, and thanks to the efforts of Corporation staff and all directors new, continuing and retiring, the transition has been smooth. The Board is now looking forward to continuing to build the research program on the strong foundation developed during the past 10 years.

The changes to the Board membership and advice from the Federal Government in December regarding revised priorities for rural Research and Development Corporations gave the Corporation an opportunity to revisit its major planning document, the Strategic Plan 1998-2003. Extensive consultation with industry has shown that the content of the Plan is sound and will deliver genuine benefits to the Australian cotton industry. In order to meet its obligations to all stakeholders, the Corporation has revised the structure of the Plan into a more clearly defined Outcome/Outputs framework. The revised framework will allow the Corporation to improve and simplify its planning and reporting.

Australia's cotton industry supports many thousands of people in rural and regional areas and directly contributes more than $1.5 billion to the national economy. Our role is to enable the industry to continue to be strong and profitable for the long-term, by addressing issues of natural resource management for sustainability, issues of production for profitability and issues of positive and negative off-farm impacts for the community.

The Corporation remains focussed on reducing dependence on traditional pesticides, continuing the development of Integrated Pest Management principles, improving water use efficiency and developing of sustainable farming systems.

During the year the industry demonstrated a commitment to the principles of Best Management Practice by reducing to almost zero the number of beef cattle contamination incidents from the use of the pesticide endosulfan. This was a dramatic improvement on the previous season where contamination incidents where recorded throughout cotton-growing valleys. The Corporation worked closely with the National Registration Authority and other industry organisations to develop new label conditions on the application of the chemical, which included the use of Spray and Drift Management Plans (renamed Pesticide Application Management Plans for the 2000-2001 season). Given the success of the program, the industry was disappointed in June 2000 when the Registration Authority further restricted the use of Ultra Low Volume formulations of the chemical. We are sure that the further development and adoption of Best Management Practices will assist the industry in avoiding problems in the future. A robust audit process for the Best Management Practices program has been developed by the Corporation and is now ready for widespread use. The audit system allows growers to continuously improve their farming practices and have their progress recognised.

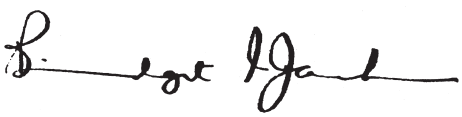
We are looking to increase support for the development of research infrastructure in the processing sectors of the industry so fibre quality, a key factor in determining price, can be measured and improved through research. We expect to increase direct research and development aimed at delivering benefits to the community.

The Corporation has been involved in the biotechnology debate through a written submission to, and appearance before, the House of Representatives Inquiry into Primary Producer Access to Gene Technology. We also assist, as appropriate, regulatory bodies such as the National Registration Authority and the Interim Office of the Gene Technology Regulator during their inquiries and deliberations on the release of new biotechnology products. The Corporation believes that the Australian cotton industry should have reasonable access to technologies that are being made available to producers in competing nations, but that the release and management requirements must be strongly based in science. Accordingly, we see a role for the Corporation in developing and supporting research projects to build essential knowledge in and related to biotechnology.

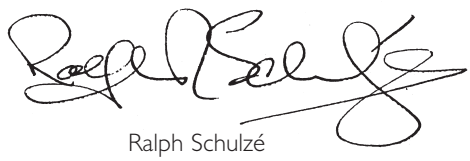
Water reform, particularly in the Murray/Darling Basin, has highlighted the need to better understand the Water Balance and to standardise terminology. In the northern cotton growing areas of the Basin, and in the Fitzroy Basin of Queensland, the Corporation has identified the need to improve our understanding of deep drainage. Together with the Cotton CRC, we are working towards developing suitable projects in conjunction with other relevant R & D corporations.

The Corporation views with concern the spread Fusarium Wilt during the past season – despite the application of industry-wide farm hygiene programs. A three-pronged, concerted research program is addressing this major soil-borne disease. The components of the program include the development of management systems to reduce any further spread, the exploration of novel control techniques including biocontrol, and in the longer term addressing the problem through plant breeding and biotechnology.

One of the developing areas of potential research is Area Wide Management of pests. This concept can only be developed by regional co-operation across a number of rural industries. We look forward to this being one of the most exciting challenges of the years ahead.



Bridget Jackson
Chair



Ralph Schulzé
Executive Director

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Overview

Overview

Summary

Corporate Vision: A sustainable and environmentally responsible cotton industry.

Corporate Mission: To enhance the contribution that research and development makes to the cotton industry for the benefit of the Australian community.

WHO: The Cotton Research and Development Corporation, a partnership between the Australian cotton industry and the Commonwealth Government, established under Federal legislation. We are accountable to the Parliament and the industry. *For more information about the accountability structures, go to 'Stakeholders' page 4.*

WHAT: We are investors in cotton research, development and extension to advance the domestic cotton industry for the good of the nation. The Corporation encourages and assists funded researchers to inform the industry directly about research results. We also provide financial and technical assistance to the National Cotton Extension Team to aid the practical transfer of new technology and information. *For more information about our research program see 'Year in Review' page 25.*

WHERE: The Corporation's office is in Narrabri, North West New South Wales. Research projects are being conducted in every major cotton-growing valley in Australia, in new experimental areas, at the CSIRO laboratories in Canberra and at a number of universities across the country. *For more information about our research partners see 'Research Expenditure by Funded Organisations' page 19, and The Research Program page 103.*

WHY: To achieve a more sustainable, competitive and profitable cotton industry providing increased economic, environmental and social benefits to regional communities and the nation. (CRDC Outcome statement, February 2000) *For more information about the Corporation's Outcome, see 'Planning Frameworks', page 14.*

HOW: By investing more than $11 million directly into research projects and related research and development activities. We are funded through a levy on cotton production (per bale), a matching Commonwealth contribution, royalties on the seed sales of CSIRO-bred varieties and from interest earned on invested reserves. *For more information about the Corporation's funding arrangements, go to 'Corporate Revenue' page 17.*

Stakeholders

The Corporation is accountable to the Australian people through the Federal Government, a major stakeholder; it is accountable to the industry through a second major stakeholder, the Australian Cotton Growers' Research Association.

In August 1998 the Corporation became subject to the *Commonwealth Authorities and Companies (CAC) Act 1997* which placed new levels of accountability for reporting its operations. As a result the Corporation's Board revised the research program into an Outcomes/Outputs framework, and this framework continues to be revised and refined.

The Corporation's stakeholders set broad objectives which are addressed through its research and development program. The CRDC was advised of the Federal Government's revised priorities in 1997 by the then Minister for Primary Industries and Energy the Hon. John Anderson MP, and again in December 1999 by the Minister for Agriculture, Fisheries and Forestry the Hon. Warren Truss MP.

To ensure a continual focus on these priorities, the Corporation wrote them into its Outcome statements. As listed in the Corporation's submission to the Agriculture, Fisheries and Forestry – Australia *Portfolio Budget Statements 1999-2000,* the Outcome statements are:

- To enhance the contribution by research and development to a viable and sustainable cotton industry for the benefit of the Australian community.
- To increase the economic, environmental and social benefits to growers and others in the cotton industry and the broader community and to achieve sustainable use and management of natural resources and to make more efficient use of the resources and skills available for cotton research and to improve accountability for its research and development spending.

It is now the opinion of the Corporation that these two statements should not be addressed individually but are two parts of a single Outcome.

A review of the Outcomes/Outputs framework used by the Corporation highlighted this anomaly and subsequently the Corporation's Outcome was rewritten and simplified. The current Outcome, as reported in the *Portfolio Budget Statement 2000-2001* is:

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

For the purposes of the *Annual Report 1999-2000* mention of the Corporation's Outcome will refer to the revised version unless otherwise specified.

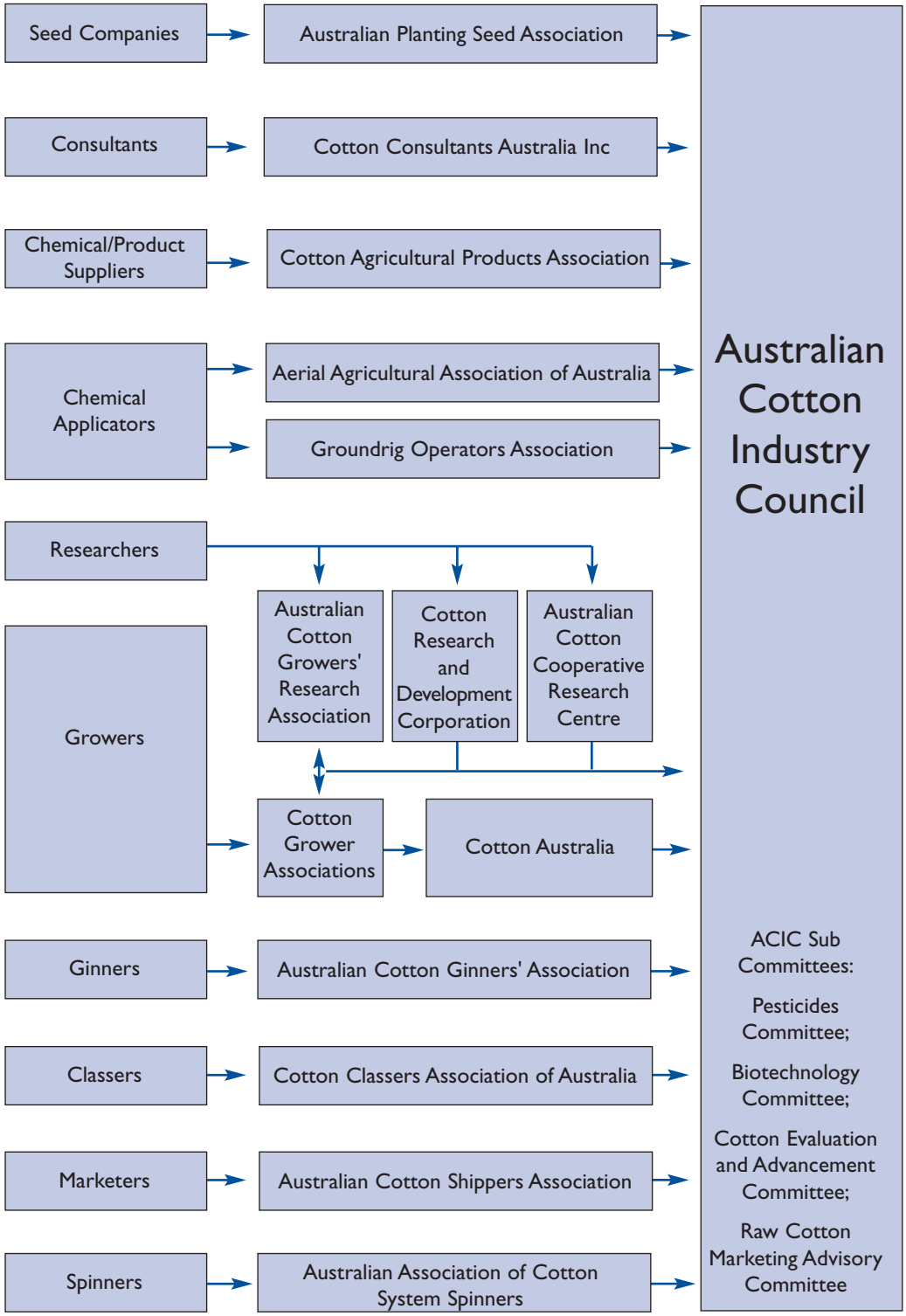
The Corporation has also revised and simplified its planning framework from 4 goals and 11 objectives, to 3 major Outputs. The framework has been fundamentally changed to recognise that each research program may, and in many cases does, contribute to the achievement of more than one Output. The three Ouputs have been drawn directly from our Outcome statement. 'Sustainability' directs us to the path of continuous improvement of resource and environmental management. 'Profitability and Competitiveness' focuses on reducing costs of production and improving fibre quality characteristics, while 'People and Communities' recognises the importance of human resources within the industry and of the rural and regional communities which support and are supported by the cotton industry. For more detailed information about the Corporation's revised

planning structure, please see the Cotton Research and Development Corporation *Annual Operating Plan 2000-2001*, or our website www.crdc.org.au. This Report will use the structure and performance information as outlined in the Portfolio Budget Statements 1999-2000.

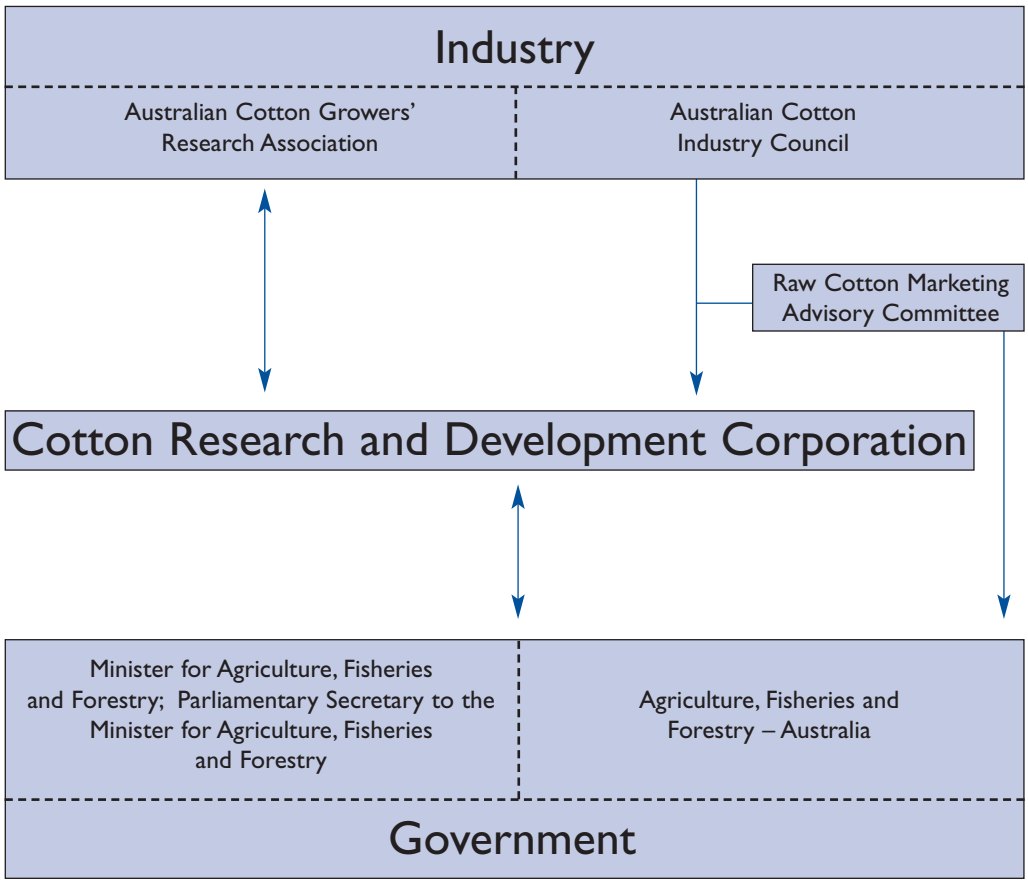
The CRDC takes a co-ordinating role within the cotton industry to oversee research efforts, to ensure important areas of research are adequately covered and to facilitate the extension of research outcomes to the industry. Frequent and detailed communication with industry and research organisations helps to identify gaps or overlaps in the research program and develop strategies to gain maximum benefit for each dollar invested.

Based in the heart of one of Australia's major cotton growing areas, the Corporation is unique among the 14 rural Research and Development Corporations as it is located in a rural area rather than in a capital city. Our location in Narrabri, North West New South Wales, is close to one of the industry's key research facilities, the Australian Cotton Research Institute. The Institute is a collaborative research site and is headquarters of the Australian Cotton Cooperative Research Centre, of which the CRDC is a core partner. The Corporation's positioning means it can keep in close contact with the cotton growers, researchers, processors and communities.

Organisations within the Cotton Industry



Linking Industry and Government



NB: Lines with an arrow at each end denote accountability linkages. Lines with a single arrow denote information/co-ordination links.

The Australian Cotton Industry Council is the peak body of the cotton industry and the CRDC is a member. The Industry Council is not a stakeholder in the Corporation.

Legislation

The Cotton Research and Development Corporation began operations on October 1, 1990 by way of a regulation made under Section 8 of the *Primary Industries and Energy Research and Development (PIERD) Act 1989*.

The setting and collection of levies on the industry is enabled by the *Cotton Levy Act 1982* and the *Primary Industries Levies and Charges Collection Act 1991*.

Accountability and reporting requirements are set out in the *Commonwealth Authorities and Companies (CAC) Act 1997*.

Functions

As set out in Section 11 of the *PIERD Act* the legislative functions of the Corporation include:

- investigate and evaluate the cotton industry's requirements for research and development, and prepare, review and revise an R&D Plan on that basis;
- prepare an Annual Operational Plan for each financial year;
- co-ordinate and fund R&D activities consistent with the current planning documents;
- monitor, evaluate and report to Parliament, the Minister for Agriculture, Fisheries and Forestry and to industry on R&D activities co-ordinated or funded by the Corporation; and,
- facilitate the dissemination, adoption and commercialisation of research and development results in relation to the cotton industry.

Powers

The powers of the Corporation are described in Section 12 of the *PIERD Act*. Subject to the Act, the CRDC has the power to do all things necessary and convenient to be done for, and in connection with, the performance of its functions including (but not restricted to):

- entering into agreements for the carrying out of R&D activities;
- applying for patents, either solely or jointly;
- charging for work done, services rendered, and goods and information supplied;
- acquiring, holding and disposing of real and personal property; and,
- anything incidental to any of its powers.

Statutory Objectives

Section 3 of the *PIERD Act* defines four objectives for the Corporation.

Object (to make provision for the funding and administration of research and development relating to the cotton industry with a view to:)	CRDC Linkages
a) increasing the economic, environmental and social benefits to the cotton industry and the community in general by improving the production, processing, storage, transport or marketing of cotton	*Portfolio Budget Statement 1999-2000 and Annual Operating Plan 1999-2000:* Object written into the Outcome statements. Addressed by research programs aiming to: reduce dependence on traditional pesticides; improve the quality of soil, water and the riverine environment; achieve Best Management Practice; ensure the delivery of benefits to the community; develop improved cotton varieties; improve cotton handling and processing systems; support efficient marketing and develop new market opportunities; encourage and support technology transfer and adoption; consult widely regarding research opportunities; and strengthen human and capital research and industry resources. *Framework revision March 2000:* Ideals of the Object written into the Outcome statement with contributions from each of the three major Outputs, and addressed by the projects throughout the research program.
b) achieving sustainable use and sustainable management of natural resources	*Portfolio Budget Statement 1999-2000 and Annual Operating Plan 1999-2000:* Object written into the Outcome statements. Addressed by research programs aiming to: reduce use of traditional pesticides; improve the quality of soil, water and the riverine environment; achieve Best Management Practice; ensure delivery of social and environmental benefits to the community; and, encourage and support technology transfer and adoption. *Framework revision March 2000:* Ideals of the Object written into the Outcome statement with contribution from the 'Sustainability' Output, and addressed by projects throughout the research program.
c) making more effective use of the resources and skills of the community in general and the scientific community in particular	*Portfolio Budget Statement 1999-2000 and Annual Operating Plan 1999-2000:* Object written into the Outcome statements. Addressed by overall investment in, and on-going review of, research and development as well as through specific research programs aiming to: ensure the delivery of benefits to the community; encourage technology transfer; consult widely regarding research priorities; and, strengthen human and capital research and industry resources. *Framework revision March 2000:* Ideals of the Object written into the Outcome statement with contributions from the 'People and Communities' Output. Addressed by overall investment in, and ongoing review of, research and development, as well as specific projects throughout the research program.

d) improving accountability for expenditure upon research and development activities in relation to the cotton industry	*Portfolio Budget Statement 1999-2000 and Annual Operating Plan 1999-2000:* Object written into the Outcome statements. Addressed through compliance with legislative reporting and accountability requirements and underlying ideal of the Board and staff to continually improve practices and efficiencies. Framework revision March 2000: Addressed through compliance with legislative reporting and accountability requirements and underlying ideal of the Board and staff to continually improve practices and efficiencies.

Ministers

The Corporation is accountable to Parliament through the Minister for Agriculture, Fisheries and Forestry. The Hon. Warren Truss MP was appointed to the position on July 21, replacing the Hon. Mark Vaile MP. The Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry Senator the Hon. Judith Troeth has continued to have responsibility for Rural Research and Development Corporations.

The Minister's powers and responsibilities, as outlined under various sections of the *PIERD Act,* include:

- appointing the Corporation's Chair and Directors;
- the option to terminate the appointment of the Chair or any Director under certain conditions;
- approving the Corporation's research and development plans and any variations;
- approving the Corporation's annual operating plans and any variations;
- appointing a person as Presiding Member of the Corporation's Selection Committee, and other members of that Committee; and,
- transferring to the Corporation any assets held by the Commonwealth that the Minister considers appropriate and which would assist the performance and function of the Corporation.

The Corporation has always enjoyed a robust working relationship with the Federal Government, including Minister Truss and previous Ministers, Parliamentary Secretary Senator Troeth and the officers of Agriculture, Fisheries and Forestry – Australia. Our dual accountability to Government and industry does not create any difficulties or conflicts because our stakeholders share the same objectives – to ensure the economic and ecological sustainability of the Australian cotton industry.

On December 14, 1999, the Minister for Agriculture, Fisheries and Forestry the Hon. Warren Truss MP wrote to the Corporation to outline the Federal Government's revised priorities for rural research and development. These priorities updated advice in 1997 from the then Minister for Primary Industries and Energy the Hon. John Anderson MP.

The most recent priorities included research and development in:

- sustainable natural resources management;
- a whole-of-industry approach to production, processing and marketing;
- developing biotechnology;
- improving trade and market access;
- maintaining and enhancing Australia's clean and green image;
- addressing the food safety concerns of consumers; and,
- cultivating creativity and innovation among the industry's human resources.

The Corporation has reviewed the Strategic (Five Year) Plan in the light of these objectives and has used them to build on and enhance the research program where necessary and appropriate.

Addressing the Priorities

R&D Priority	CRDC Framework and Activities
Sustainable Natural Resource Management	The Corporation has written industry sustainability into its Outcome and made sustainability a major Output under the revised framework. The development and adoption of sustainable field production systems has been a key target for the CRDC. These systems incorporate improved management of natural resources and the minimisation of any negative impacts on neighbours or neighbouring environments.
Whole-of-Industry Approach	The Australian cotton industry has operated in a free market environment without government intervention for many years. This environment means producers receive clear signals from processors and consumers regarding quality, price and other issues. The Corporation is able to keep abreast of issues across the industry through its involvement in the Australian Cotton Industry Council. The CRDC's role as secretariat to the Raw Cotton Marketing Advisory Committee allows it to keep in close contact with Australian cotton processing, shipping and marketing organisations. The Corporation has also identified a need to develop research infrastructure and lift research funding in downstream processing sectors. Strategies have been developed to accomplish this.
Biotechnology	Cotton was the first agricultural industry in Australia to see the commercial release of genetically modified crop varieties. The Corporation continues to assist the development of new conventional and transgenic varieties through direct funding for the CSIRO cotton breeding program and related projects.
Trade and Market Access	Trade barriers are increasingly non-tariff based. The Corporation believes that the ongoing development, implementation and auditing of the industry-wide Best Management Practices program will be a significant factor in demonstrating to international markets the industry's adherence to world's-best practice and our commitment to sustainable production methods. The Corporation is also a strong supporter of the Australian regulatory systems for genetically-modified organisms and agricultural chemicals which helps give confidence in the safety and efficacy of new technologies and products.
Clean and Green	The cotton industry is committed to the industry-wide adoption of best management practices. The Corporation has been given the ongoing task of developing and revising the Best Management Practices program as well as establishing a rigorous audit system to gauge the efforts and progress of growers. The CRDC has also given support and assistance for the development and implementation of Pesticide Application Management Plans to minimise the risk of cotton operations having a negative impact on neighbouring agricultural pursuits.
Food Safety	Cotton seed oil is used in a variety of food applications including margarines, blended vegetable cooking oils and oil for commercial deep-fryers. The Corporation keeps informed of developments in the oilseed market through ginning organisations and the Australian Cotton Industry Council. The Corporation will also work through the Industry Council on any matters regarding consumer confidence about the safety of cotton oil products.

Human Resources	The Corporation has written its commitment to rural and regional communities into the Outcome statement and has made People and Communities a major Output group. The Corporation's activities focus on providing benefits to rural and regional communities through the flow-on effects of a dynamic and successful rural industry providing increased opportunities for employment, and through direct training opportunities for people already in and looking to enter the industry.

Research Program

The Corporation revised its planning framework during the 1999-2000 year to simplify its planning structure and more clearly demonstrate the links between funded research and anticipated Outputs. The revised framework has been adopted for the Corporation's 2000-2001 planning and reporting documents, including the Portfolio Budget Statement and the Annual Operating Plan. The original framework formed the basis for the 1999-2000 planning documents. Both frameworks are included in order to show the relationship between them and assist readers to track Corporate performance during the transition to full Outcome/Output framework compliance.

Planning Frameworks

Strategic (Five Year) Plan/Portfolio Budget Statement 1999-2000

Vision/ Mission

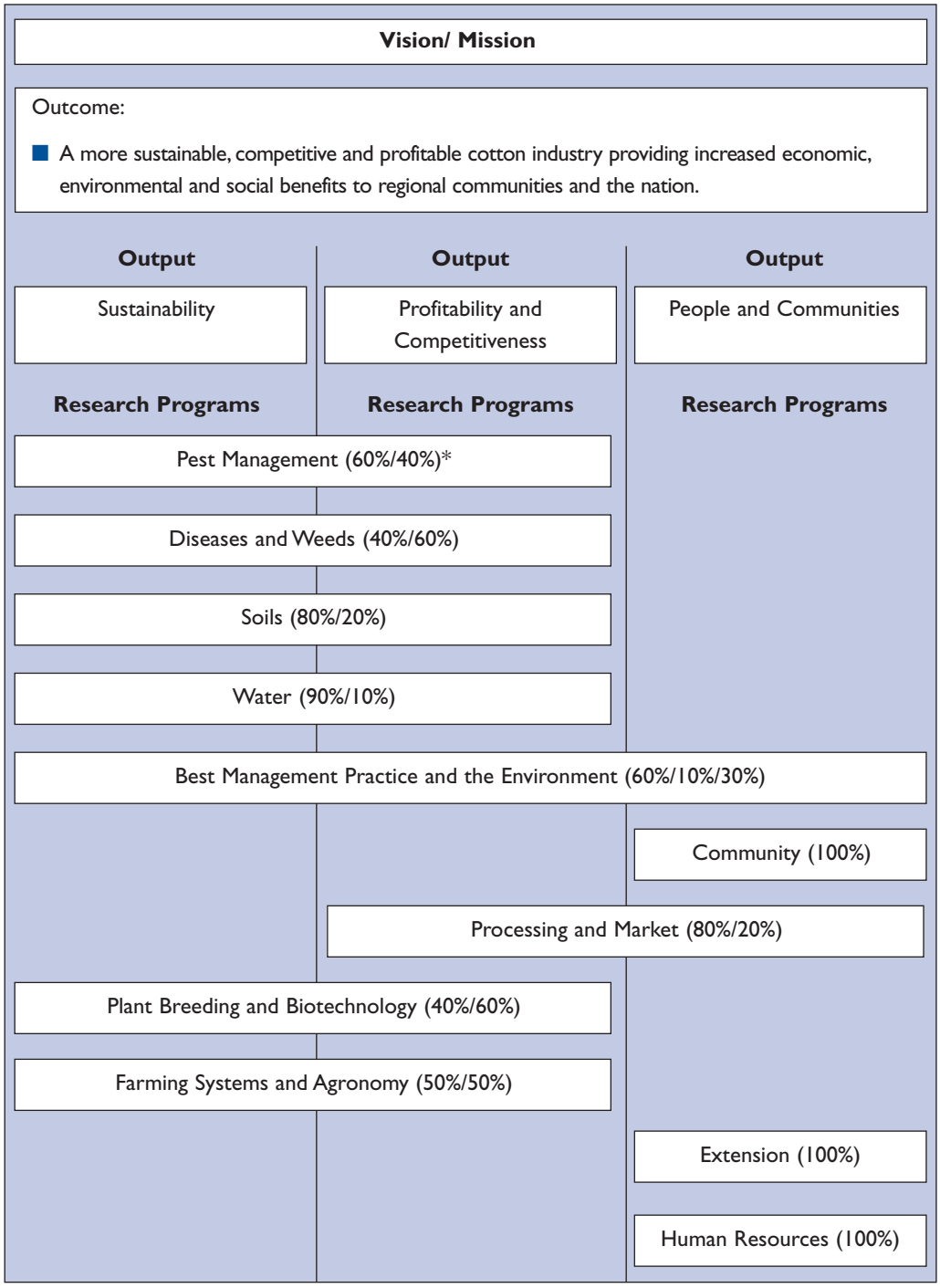
Outcome:

- A more sustainable, competitive and profitable cotton industry providing increased economic, environmental and social benefits to regional communities and the nation. *(Originally) To enhance the contribution by research and development to a viable and sustainable cotton industry for the benefit of the Australian cotton industry. To increase the economic, environmental and social benefits to growers and others in the cotton industry and the broader community and to achieve sustainable use and management of natural resources and to make more efficient use of the resources and skills available for cotton research and to improve accountability for its research and development spending.*

PRODUCTION GOAL	COMMUNITY GOAL	INDUSTRY GOAL	MANAGEMENT GOAL
Efficient, Sustainable Field Production Systems	Viable Regional Communities in a Healthy Environment	Commercially Viable Industry Sectors Meeting Market Needs	Efficient, Responsive R&D Management and Delivery
Objective 1: Reduce dependence on traditional pesticides **Outcome (Target):** 40% reduction in traditional pesticide use **Output:** Research to enable non-chemical pest control **Objective 2:** Improve management and protection of natural resources **Outcome (Target):** Quality improvements for soils, water and the riverine environment **Output:** Research to enable improved quality of soils, water and the riverine environment **Objective 3:** Achieve Best Management Practice **Outcome (Target):** 100% grower adoption and auditability over three years **Output:** Implementation program for transfer to industry	**Objective 4:** Ensure production and processing systems deliver identifiable social and environmental benefits to the regional and broader communities **Outcome (Target):** Identifiable social and environmental benefits become part of the evaluation **Output:** Benefits and externalities defined and listed **Objective 5:** Ensure the industry delivers economic and commercial benefits to the regional and national communities **Outcome (Target):** Internal and external stakeholders are aware of the economic benefits the cotton industry brings to regional communities and the nation **Output:** Economic benefits defined	**Objective 6:** Develop varieties with improved fibre quality and agronomic characteristics **Outcome (Target):** New varieties exhibit efficient use of resources **Output:** Research to enable new or improved varieties **Objective 7:** Improve handling and processing systems **Outcome (Target):** Processors implement improved systems **Output:** Research to improved handling and processing **Objective 8:** Support efficient marketing and develop new market opportunities **Outcome (Target):** Additional post-farm value-adding opportunities for fibre, seed and by-products **Output:** Research identifying value-adding opportunities	**Objective 9:** Promote and support interactive transfer and adoption of new technology **Outcome (Target):** Active participation in the industry's development **Output:** Extension personnel funded where necessary **Objective 10:** Consult widely regarding research priorities **Outcome (Target):** Efficient collaboration and communication with key organisations **Output:** Comprehensive R&D program **Objective 11:** Strengthen human and capital resources and soundly manage the R&D effort **Outcome (Target):** Transparent project management processes **Output:** Research program takes account of stakeholder priorities

More information, page 33. *More information, page 40.* *More information, page 43.* *More information, page 48.*

Strategic (Five Year) Plan (Revised 2000)/Portfolio Budget Statement 2000-2001



* The percentages represent the estimated respective contribution of each research program to Output groups. For example, 60% of the research effort for Pest Management assists progress towards Sustainability, while 40% is contributing to Profitability and Competiveness.

Linking Planning with Action

To avoid confusion and allow Corporate progress to be tracked from year to year, the Corporation has elected to use the revised research program with funding divisions along research discipline areas in this report, which is consistent with the 1999-2000 Portfolio Budget Statement. The relationships between, and allocation of research objectives and programs to Outputs are as follows.

Objective	Major Contributing Research Programs	2000-2001 Output Group
PRODUCTION OBJECTIVE		
1. To reduce dependence on traditional pesticides	Pest Management Diseases and Weeds Farming Systems and Agronomy Plant Breeding and Biotechnology	Sustainability
2. To protect natural resources	Soils Water Best Management Practices and the Environment Farming Systems and Agronomy	
3. To achieve Best Management Practice	Best Management Practice and the Environment Farming Systems and Agronomy	
COMMUNITY OBJECTIVE*		
4. To ensure the delivery of social and environmental benefits	Research contributing to 'Sustainability' Output Research contributing to 'People and Communities' Output	Sustainability People and Communities
5. To ensure the delivery of economic benefits	Research contributing to 'Profitability and Competitiveness' Output Research contributing to 'People and Communities' Output	Profitability and Competitiveness People and Communities
INDUSTRY OBJECTIVE		
6. To develop improved varieties	Plant Breeding and Biotechnology Pest Management Diseases and Weeds	Profitability and Competitiveness
7. To improve handling and processing	Processing and Market	
8. To support marketing and develop new market opportunities	Processing and Market	
MANAGEMENT OBJECTIVE		
9. To enhance technology transfer and adoption	Extension	People and Communities
10. To consult and collaborate widely	(Corporate policy)**	
11. To strengthen human resources and soundly manage the R&D effort	Human Resources	

* The Corporation's Community Objective is an area which all other areas of the research program feed into. The Corporation indirectly increases social, environmental and economic benefits to rural and the broader community by supporting research to improve the environmental and economic performance of the industry. The benefits of these improvements should then flow through to the community.

** It is Corporation policy to consult widely with stakeholders and other relevant organisations regarding current and potential research. The Corporation now believes that this is an area which does not need a research focus as it forms part of management strategy.

Corporate Revenue

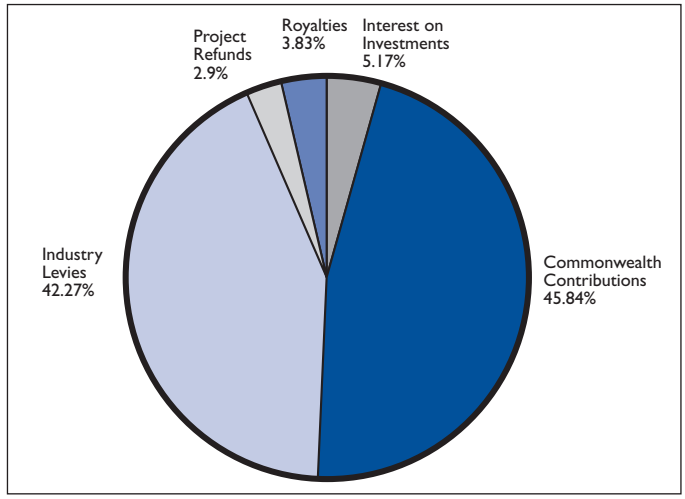
The Corporation is the major funding body for cotton-related research and development in Australia and manages an integrated and comprehensive research and development program of more than 180 projects. Corporate revenue comes from a number of sources, including:

- an industry contribution through a levy on production, currently $1.75 per 227Kg (500 pound) bale ex gin. The setting and collection of the industry levy is enabled by the *Cotton Levy Act 1982* and the *Primary Industries and Energy Research and Development Act 1989;*
- a contribution from the Commonwealth which matches the industry contribution, up to a maximum value of 0.5 per cent of the gross value of production;
- royalties on the domestic and international sale of planting seed from varieties developed through the CSIRO breeding program; and,
- interest on invested reserves.

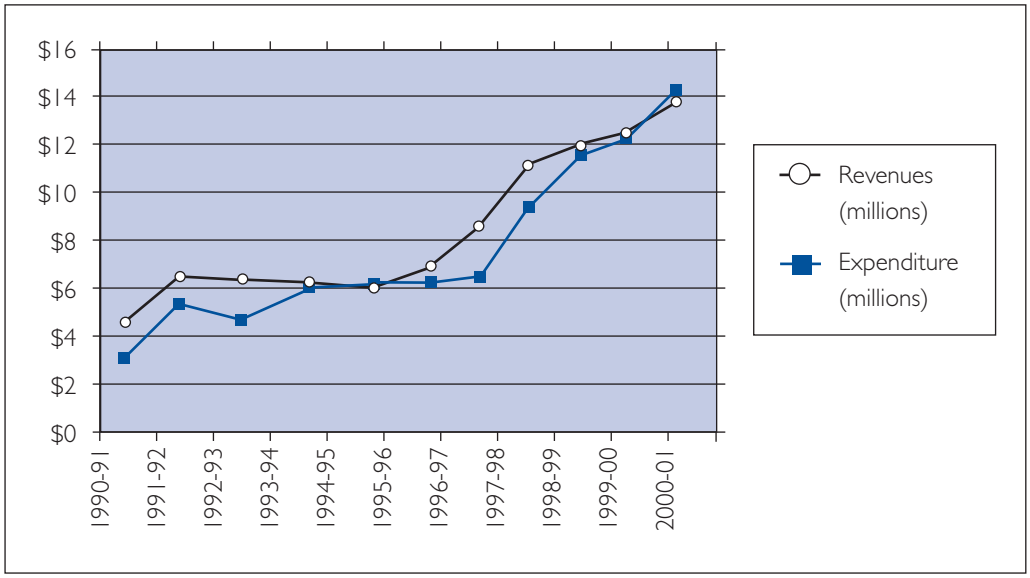
Corporation financial policy has been to carry invested reserves equal to the approximate value of one year's research and development expenditure. The strategy for these reserves is to utilise a range of short, medium and long-term investments, and the interest earned contributes significantly to the Corporation's accounts. The reserves are used to supplement the CRDC's income as necessary. The Corporation will call on its reserves during the 2000-2001 financial year following the Board's decision to increase research and development spending beyond the estimated income for the year.

Income from royalties is also a significant revenue stream for the CRDC. CSIRO-bred Australian varieties maximise yield and fibre quality and have been bred to suit Australian growing conditions. The focussed and successful breeding program has gained the approval of growers, and CSIRO-bred varieties account for between 85 and 90 per cent of cotton grown in Australia. These varieties are commercialised exclusively in Australia by the not-for-profit industry-owned company, Cotton Seed Distributors Ltd. The Corporation has a royalty sharing agreement with the CSIRO.

At just over $12.6 million, revenue for the 1999-2000 reporting year was more than $700,000 above the income anticipated in the budget. Through the increased revenue the Corporation had an operating surplus of $535,000, rather than an expected deficit of $284,000. The Corporation received additional income from interest on investments, royalties and unbudgeted project refunds.

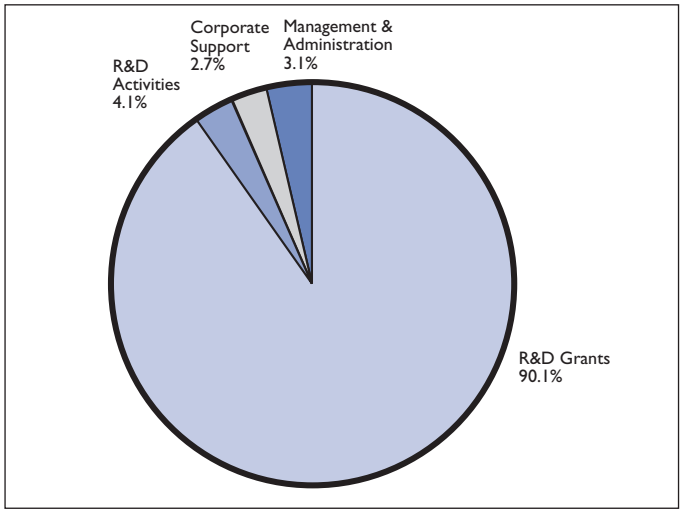


Graph: CRDC Revenue by Source, 1999-2000



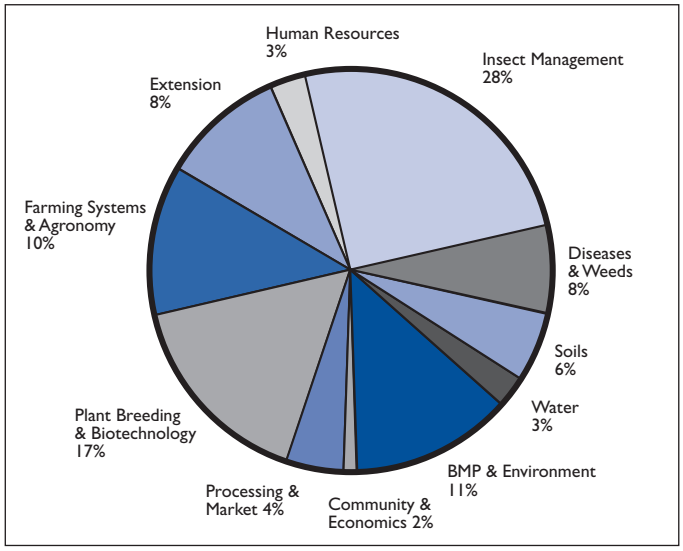
Graph: CRDC Revenue and Expenditure June 1990 – June 2001

Corporate Expenditure



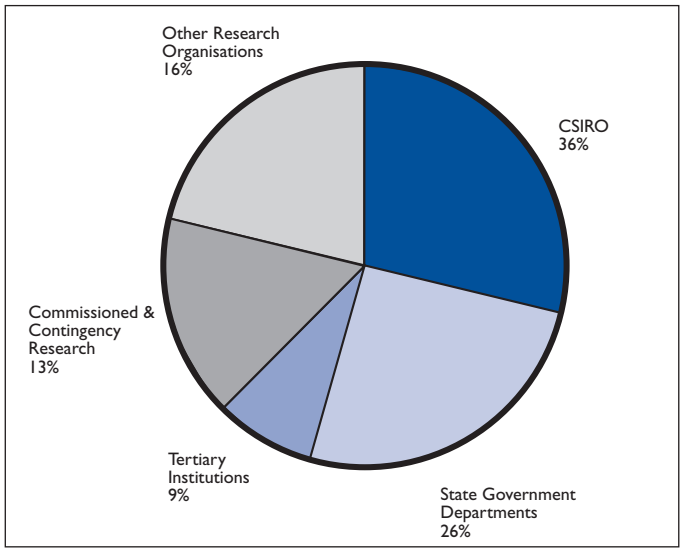
Graph: Corporate Expenditure by Expense 1999-2000

Expenditure for the reporting year was $12.1 million, a less than 1 per cent variance on the budget detailed in the 1999-2000 Annual Operating Plan.



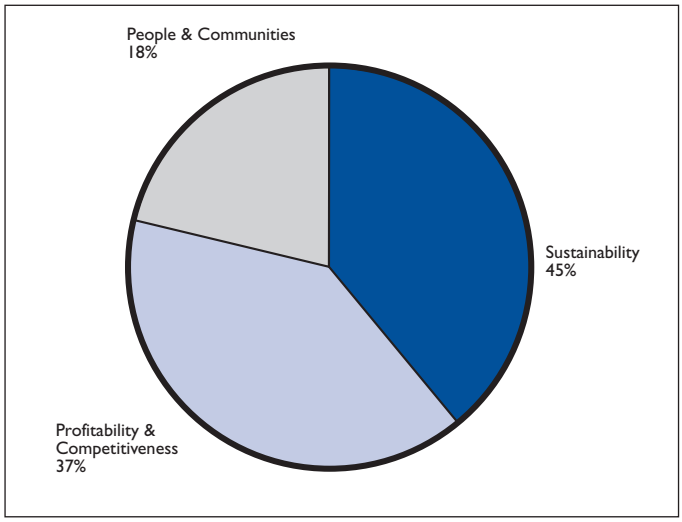
Graph: Research Expenditure by Funding Program 1999-2000

Expenditure on farm-production issues continues to account for the majority of the Corporation's budget expenditure. Expenditure on Best Management Practices, Community and Economics, Processing and Market and Plant Breeding and Biotechnology increased from the previous year.



Graph: CRDC Research Expenditure by Funded Organisations 1999-2000

The CRDC funds research undertaken by three divisions of the CSIRO, four State Government Departments, nine universities, two Cooperative Research Centres and a number of private research organisations. Laboratory and/or field trial work occurs in every Australian State and Territory, except Tasmania.

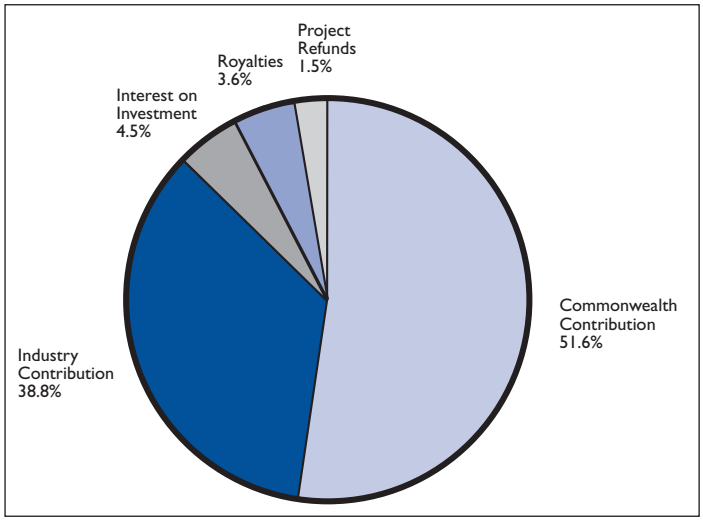


Graph: CRDC Research Expenditure Contribution to Outputs 1999-2000

During the reporting year the Corporation revised and simplified its planning framework. Recognising that much of the research program contributes to more than one Output, the Corporation now apportions a percentage of funding for each program to the Output groups.

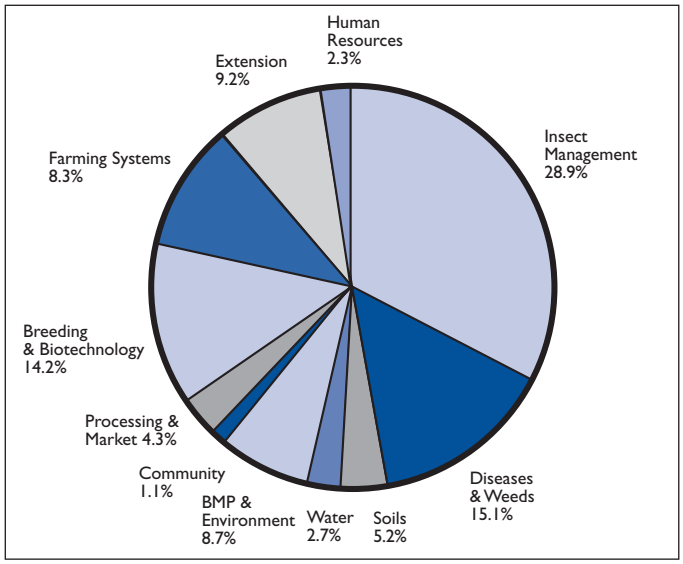
Looking Ahead

The current financial year will see the Corporation operate its largest budget since it was established in 1990.



Graph: Revenues by Source 2000-2001

Revenue is anticipated to increase 6.7 per cent to $13.5 million, while the Corporation has forecast a rise of 16.7 per cent in expenditure to almost $14.2 million.



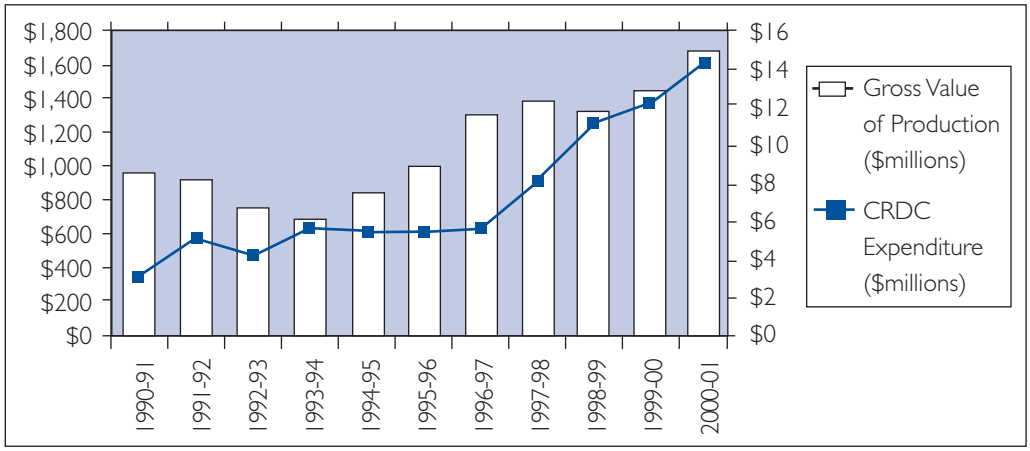
Graph: Expenditure by Funding Program 2000-2001

Spending on the research program will increase by more than 18.2 per cent to $13.4 million. The Board decided to lift the level of research and development expenditure due to a number of pressing issues within the cotton industry and the need to increase funding support for some sectors of the industry.

During the 2000-2001 financial year the Board will complete its revision of the Strategic (Five Year) Plan. The Corporation will also look forward to taking a more strategic approach to its staffing and resources issues, following an operational review held in May 2000. Management has already implemented some recommendations, and more significant elements will be introduced from February 2001 when the planning cycle for the coming financial year begins.

The Industry

A downturn in the world price of cotton prior to planting saw the area cultivated to cotton fall by more than 100,000 hectares. However total production during the 1999-2000 season remained relatively stable with approximately 3.2 million bales produced. There was a large reduction in the area sown to rain grown (dryland) crops which have significantly lower yields than irrigated cotton.



Graph: CRDC Expenditure vs Gross Value of Production

The Corporation's expenditure is closely linked to the production of the industry due to the levy of $1.75 per bale of cotton which is matched by the Commonwealth. Because of this the CRDC expenditure is also an approximation of the number of bales produced during a financial year. Currency fluctuations and market forces cause the price of raw cotton to move up and down which can account for some of the variations in the graph. However, there is no doubt that the Australian cotton industry has seen tremendous growth during the past 10 years. Research and development work to improve farm management practices, increase yield and lift fibre quality has been a key factor in the growth of the industry.

A weaker Australian dollar means favourable export prices for Australian cotton. Early estimates from the Raw Cotton Marketing Advisory Committee suggest production will increase in the coming season, with a record crop of an estimated 3.3 million bales expected to be picked. Approximately 95 per cent of the Australian crop is exported as raw cotton after initial processing.

Fusarium Wilt

While the pricing issues are looking very positive, Australian growers continue to face a number of challenges. The soil-borne disease Fusarium Wilt has been discovered in almost all cotton production valleys. Its impact continues to be felt most severely on the Darling Downs where some growers may be forced out of the industry until solutions can be found. The Corporation has dramatically increased funding on Fusarium-related research in its current budget and is looking at a number of approaches. Plant breeders continue to make steady progress on reducing cotton's susceptibility to the disease-causing *Fusarium oxysporom* fungus but a fully tolerant variety is likely to take several years of development. Advancements in biotechnology may hold some solutions, but the Corporation is also investigating alternatives such as using soil micro-organisms as biocontrol agents against fungal spores. The research effort is likely to hold a long-term solution, but improvements in farm hygiene appear to be the most successful short-term answer to the spread of this and other soil-borne diseases. With the help of the National Cotton Extension Team, growers are learning to apply the science of farm hygiene to their operations, to be conscious of the movement of vehicles, machinery and implements between fields, farms and valleys, and to ensure all equipment is thoroughly cleaned before entering the paddock.

Water

Water reform is an issue likely to have a major impact on cotton growers and the industry as a whole. The Corporation recognises the need to improve management of this resource for the long-term sustainability of our rivers as well as irrigated agriculture, but believes the issue must be handled sensibly and with sensitivity. The process of water reform is moving the industry towards a new set of benchmarks for water-use efficiency and irrigators will be looking for further ways to maximise the value of available water.

Research into water-use efficiency and the water balance has tended to be problem oriented, with the elements of the water balance being studied in isolation. In an effort to redress this the Corporation and the Cotton CRC have co-ordinated and hosted a workshop for scientists to focus on the water balance as a whole, and a meeting to promote greater collaboration between researchers and research providers, funding bodies and Governments. An outcome of this process

has been the identification of a number of sites in New South Wales and Queensland where joint work investigating the complete water balance can be undertaken.

Endosulfan

Following the endosulfan cattle contamination situation of the 1998-99 growing season, the Corporation worked with the National Registration Authority and other industry organisations to develop new label restrictions for the chemical. The CRDC was also involved, through funding and practical input, in the development of successful Spray and Drift Management Plans. The efforts of the Corporation, other cotton industry organisations and growers proved extremely successful as demonstrated by the dramatic reduction in contamination incidents. During the last season only one beast of almost 14,000 tested showed an endosulfan residue level above the Maximum Residue Level for export cattle. The structures established as part of the Best Management Practices program have allowed the cotton industry to argue and demonstrate that it is a highly responsible user of agricultural chemicals and is taking major steps to minimise all risks to other industries and the environment.

Year in Review

Year In Review

Introduction

During the reporting year the Corporation revised its Outcome/Outputs framework to more closely reflect the linkages between funding programs and the overall achievements of the research and development expenditure. There are also significant links between the researchers themselves and the work they are undertaking.

Corporation-funded research has been conducted by the Australian Cotton CRC, various divisions of the CSIRO, state departments of agriculture, a number of Australian universities and a range of private organisations. The CRDC also funded joint research programs with the Horticulture, Grains and Rural Industries Research and Development Corporations.

Major cotton research facilities are located at the Australian Cotton Research Institute (headquarters of the Australian Cotton CRC) at Myall Vale, Narrabri and at CSIRO laboratories, Black Mountain, Canberra. Field trial work is conducted in all major cotton growing areas, as well as in the Ord River Irrigation Area in Western Australia and at the Katherine Research Station, Northern Territory.

Research Program Highlights 1999-2000

Pest Management

Integrated Pest Management and Area-Wide Management, strategies which are being developed through CRDC funding and support, have gained momentum throughout the industry during the season. Many growers exploited the lighter pest pressures by applying a range of pest management principles including conserving beneficial insects and spiders, delaying or avoiding the use of broad spectrum sprays and selecting the least disruptive pesticides for use only when necessary. The year also saw increased planting of spring trap crops for Heliothis and neighbours co-ordinating to apply positive pest management principles across broader areas and regions. The results of some of these groups were impressive with conventional cotton crops sprayed for Heliothis just five times or fewer, and some INGARD® crops receiving no sprays for Heliothis.

A preliminary analysis of broad-spectrum ('hard' option) pest control versus more selective ('soft' option) control has identified a positive correlation between gross profit margins and softer pest management strategies.

Expenditure 1999-2000: $3,069,360	Expenditure 2000-2001: $3,858,225*
Number of Projects Funded: 44	Number of Projects Funded: 38

(includes an allocation for contingency and commissioned research, the Corporation's CRC commitment and other R&D activities)*

Diseases

With a cool start in many areas, the 1999/2000 season was the worst yet for the fungal disease Fusarium Wilt. The Corporation's and industry's resolve to fight this disease was heightened by its identification on previously uninfected farms in previously uninfected valleys. With the support of researchers, the extension team and the Cotton CRC's Fusarium working party, Cotton Growers' Associations have refined hygiene protocols for on-farm and contractors' vehicles and machinery to minimise the risk of spreading the disease.

The Corporation is also supporting NSW Agriculture's application to the National Registration Authority for a permit to conduct large-scale trials with a promising biocontrol agent.

Weeds

Several years ago the Corporation and the Cotton CRC recognised the need to bolster the research effort into weeds and weed management. As a result there are now four scientists involved in the weeds management program. The Corporation is funding a NSW Agriculture weeds agronomist and a new post-doctoral researcher who started work on bladder ketmia, anoda weed and velvet leaf in January 2000. The Cotton CRC is funding two positions, a Farming Systems scientist and a new weeds agronomist.

Expenditure 1999-2000: $862,750	Expenditure 2000-2001: $2,016,052*
Number of Projects Funded: 12	Number of Projects Funded: 13

(Diseases and Weeds is a single Funding Program) *(* includes an allocation for contingency and commissioned research, the Corporation's CRC commitment and other R&D activities)*

Soils

To support the third edition of the SOILpak manual, the Corporation commissioned NSW Agriculture to produce a companion video. This will help growers and consultants who may not have attended a SOILpak training course to gain maximum benefit from the new manual. The video was released at the Cotton Conference in Brisbane.

An important Soil Research Workshop, supported by the CRDC and Cotton CRC, was held in June 2000. This workshop looked at specific soil research topics including an examination of existing knowledge and the identification of any gaps in this knowledge base and opportunities for the future. It also analysed the links between the various research groups and how to improve communication between them.

Expenditure 1999-2000: $645,970	Expenditure 2000-2001: $699,388*
Number of Projects Funded: 10	Number of Projects Funded: 6

(includes an allocation for contingency and commissioned research, the Corporation's CRC commitment and other R&D activities)*

Water

With both Federal and State Government policy driving potentially significant changes in water allocation and management, the cotton industry is under pressure to maximise water use efficiency. To this end the Corporation is focussing attention on projects that will provide cotton growers with improved methods to measure water use and to integrate knowledge and technology on usage and management to improve efficiency. New tools such as simple methods to measure whole farm water use will be capable of integration with improved support and record keeping for water management in CottonLOGIC, a computerised decision-support tool.

The Corporation and the Cotton CRC are working together to try to build a better picture of the overall water balance in cotton-growing valleys, and hosted a meeting on this topic in Sydney during May. Representatives of research organisations, funding bodies and government departments attended. A major outcome of this meeting will be the establishment of a number of sites in NSW and Queensland where joint work investigating the complete water balance can be undertaken.

Expenditure 1999-2000: $326,093	Expenditure 2000-2001: $363,879*
Number of Projects Funded: 9	Number of Projects Funded: 3

(includes an allocation for contingency and commissioned research, the Corporation's CRC commitment and other R&D activities)*

Best Management Practices and the Environment

The past season was a major test for the cotton industry and Best Management Practices. Following the difficult 1998/99 season which saw a significant increase in endosulfan residue in beef cattle from cotton-growing areas, the industry mobilised to bring in Spray and Drift Management Plans as part of BMP. The effect of this effort combined with lower pest pressures saw an extraordinary turn-around. Only one beast out of 14,000 tested exceeded the export Maximum Residue Level. This clearly demonstrated the value of the industry having a well-structured risk management program for pesticide use – Best Management Practice.

The Corporation has played a major role in the development of the Best Management Practice program Manual and a second edition will be available in October 2000. CRDC has also established an audit program that has been tested and, with Corporation support, will be established as a fully-operational program available to all growers during the coming season.

Expenditure 1999-2000: $1,273,854	Expenditure 2000-2001: $1,164,766*
Number of Projects Funded: 26	Number of Projects Funded: 10

(includes an allocation for contingency and commissioned research, the Corporation's CRC commitment and other R&D activities)*

Community

The increased focus on environmental sustainability for the cotton industry will have direct flow-on benefits to farms and communities in cotton-growing districts, in the form of lower environmental stresses. Similarly a profitable and economically viable industry in the long-term creates a range of flow-on benefits for the community. The economic strength of the cotton industry is visible in rural and regional centres in and near production areas, and is reflected in the number and range of employment opportunities and general investment in business within these communities. The CRDC has adopted a holistic approach to its community goal. This means that while there are not many specific projects that fall directly under this goal many more certainly support it, and it underlies the decisions taken by the Board on a range of other issues. Additionally many aspects of CRDC funded research such as Best Management Practice and Area Wide Pest Management have demonstration effects on producers of other crops with a concomitant community benefit.

Expenditure 1999-2000: $178,818	Expenditure 2000-2001: $141,341*
Number of Projects Funded: 4	Number of Projects Funded: 1

(includes an allocation for contingency and commissioned research, the Corporation's CRC commitment and other R&D activities)*

Processing and Market

A combined CRDC, Cotton CRC workshop on the needs of the industry beyond the farm gate was held in March. More than 50 people attended the workshop at the Australian Cotton Research Institute, including representatives from the research and ginning, classing, spinning, marketing and shipping organisations. The aim of the Fibre Plus workshop was to identify the research capabilities available in the processing sectors, highlight gaps which needed to be filled and focus on the best way to co-ordinate an effective research effort. The Corporation has since appointed Melbourne-based textile consultant Heather Ball to act as program co-ordinator for the Processing and Market area.

Expenditure 1999-2000: $479,664	Expenditure 2000-2001: $574,292*
Number of Project Funded: 6	Number of Project Funded: 5

(includes an allocation for contingency and commissioned research, the Corporation's CRC commitment and other R&D activities)*

Plant Breeding and Biotechnology

The core CSIRO plant breeding and biotechnology programs are ongoing commitments for the Corporation. Through an arrangement with CSIRO and Cotton Seed Distributors, the Corporation receives royalty income from the sale of commercialised varieties and this income is used to fund more research. It is rare that a season passes now without the commercial introduction of new varieties. This year has seen the release of three new INGARD® varieties, Sicala V-3i, Siokra V-16i and Sicot 289i, and two new conventional varieties, Sicot 70 and Sicot 72. Regulatory approval has been given for the first limited commercial release of varieties containing Monsanto's Roundup Ready gene.

The Corporation is also investing in a broad range of biotechnology projects, including novel areas such as identifying new genes from native cottons for Fusarium resistance. Work to identify and understand the genes which control fibre length and development, oil production and disease tolerance is also being supported.

Expenditure 1999-2000: $1,957,231	Expenditure 2000-2001: $1,896,712*
Number of Projects Funded: 24	Number of Projects Funded: 16=

(includes an allocation for contingency and commissioned research, the Corporation's CRC commitment and other R&D activities) = Some additional projects included in other disciplines, such as pest management, also have a significant biotechnology component.*

Farming Systems and Agronomy

The appointment of another computer programmer at the Australian Cotton Research Institute to work on decision support systems has helped get projects back on schedule. The industry continues to provide feedback which is helping to identify new directions for these packages. Meanwhile work is continuing with irrigator grower groups to develop the new irrigation model. This technology holds many possibilities and should help growers throughout the industry to improve water use efficiency. Corporation-funded research in the Ord is delivering some very exciting results with savings of up to 50 per cent recorded on water use with no reduction (and in some cases improvements) in yield. Savings in the application of Phosphorus have also been noted.

Expenditure 1999-2000: $1,165,188	Expenditure 2000-2001: $1,114,462*
Number of Projects Funded: 16	Number of Projects Funded: 11

(includes an allocation for contingency and commissioned research, the Corporation's CRC commitment and other R&D activities)*

Extension

The Corporation continues to provide considerable direct funding and in-kind support for the delivery of research information to the industry. The industry's extension effort is co-ordinated by the Cotton CRC and includes the national cotton extension team and the Technology Resource Centre at the Australian Cotton Research Institute. The CRDC contributes to the extension team by funding Industry Development Officers in Warren, Bourke (in combination with National Heritage Trust funds), Gunnedah, Goondiwindi, St George/Dirranbandi and Emerald. The currently vacant position of National Cotton Extension Co-ordinator will be filled during the 2000-2001 financial year, along with a trainee extension agronomist at Narrabri and a development officer position in the southern Riverina cotton area.

The Corporation continues to support the timely production of publications such as the Insecticide Resistance Management Strategy charts and in 2000/01 will produce a second edition of SPRAYpak and an Insect Management Pocket Guide.

Expenditure 1999-2000: $893,400	Expenditure 2000-2001: $1,226,902*
Number of Project Funded: 14	Number of Project Funded:12

(includes an allocation for contingency and commissioned research, the Corporation's CRC commitment and other R&D activities)*

Human Resources

The Corporation has funded a number of industry and community members as participants at the Cotton Conference in August 2000. Funding of up to $2000 was made available to each Cotton Grower Association to assist women involved in the industry, and members of the community who would benefit from the experience, to attend the Brisbane conference. More than 20 people attended the August conference under this scheme, including journalists, teachers, a community health nurse and officers of several community Food and Fibre organisations.

The Corporation also makes a significant investment in human resources through its Post Graduate Awards, and 16 post graduates were funded this year. Many of these are accounted for under other funding programs. The Post Graduate Award scheme means the industry is helping to train young researchers and this promotes a strong sense of loyalty to the industry within the research community. As usual, several travel awards were made during the year.

Expenditure 1999-2000: $298,589	Expenditure 2000-2001: $303,778*
Number of Project Funded: 16	Number of Project Funded: 14

(includes an allocation for contingency and commissioned research, the Corporation's CRC commitment and other R&D activities)*

Working towards our Outcome

(linking our performance with the Portfolio Budget Statement)

Production Goal

Major Objective: Efficient, Sustainable Field Production Systems

Improving performance on farm, through reducing pesticide use, improving the management of natural resources and continuing the development and implementation of Best Management Practices forms the backbone of the Corporation's progress towards a sustainable and profitable cotton industry. During 1999-2000, the CRDC has contributed to the achievement of our Outcome by 2003, by investing in research which is aimed at achieving our targets of reduced use of traditional pesticides and improved quality in natural resources, as reported below.

Research Objective 1:	To reduce the industry's dependence on traditional pesticides
Five Year Target (1998-2003):	A 40 per cent reduction in pesticide use
	A 30 per cent reduction in residual herbicide use
1999-2000 Output:	Research Outcomes that enable non-chemical methods of insect control
Contributes to:	Statutory Objective (a), improving production methods to increase benefits
	Output Groups 'Sustainability' and 'Profitability and Competitiveness'
Contributing Research:	Pest Management Diseases and Weeds Plant Breeding Farming Systems and Agronomy

Pest Management

More than a quarter of the Corporation's overall research budget is devoted to examining issues surrounding pest management. This is the Corporation's largest area of research investment and reflects the plant's susceptibility to damage from pests, particularly insects. Chemical sprays are some of the highest ongoing costs for growers, and they are also the one of the highest risk areas of environmental or neighbour contamination. Reducing the overall chemical 'load' has the potential to improve profit margins while also decreasing the risks and level of any environmental contamination.

The past season saw more growers adopting Integrated Pest Management and Area Wide Management Strategies. Insect pest pressures were generally lower during the season which allow growers some latitude to trial alternative pest management approaches. Many techniques and concepts being considered under Integrated Pest Management rely on using insects and spiders that feed on or otherwise destroy pest insects as natural control agents. Populations of beneficial species are enhanced through the use of food sprays and selective insecticides. Broad-spectrum insecticides that affect the populations of all insects and spiders in the field are used as late in the season as

possible and only when absolutely necessary. Preliminary analysis of data compiled by scientists at the Australian Cotton CRC has shown Integrated Pest Management and 'soft' chemical strategies demonstrate higher profitability and lower risk of resistance.

Non-chemical methods of control are central to Integrated Pest Management. These methods include planting other crops alongside or within the cotton to act as 'traps' for pest insects or nurseries for beneficials. Trap crops are destroyed during the season to reduce pest populations. Cultivation to destroy *Helicoverpa* larvae in the soil during winter has gained wide acceptance across the industry. This 'pupae-busting' is a key part of the compulsory resistance management strategy for growers of transgenic INGARD® cotton and is central to the resistance management strategies for many traditional chemical pesticides.

The Corporation believes Integrated Pest Management is vital to the long-term sustainability of the cotton industry and continues to push into the areas of traditional, biotechnological and novel control techniques. Part of the strategy to transfer this information to growers and encourage the adoption of improved farming principles has been the inclusion of an entire section on Integrated Pest Management in the Best Management Practices Manual.

Area Wide Management involves taking Integrated Pest Management principles and applying them in a co-ordinated way across several properties and different crops. Research results from the Darling Downs and the Boggabilla areas have been positive.

Weeds

The focus of weed control has shifted from looking for solutions to particular weed problems to how to integrate weed control into the overall farming systems. The introduction of those transgenic varieties which give plants a degree of herbicide resistance will provide growers with new strategies to manage weeds and potentially reduce the usage of residual herbicides and lower weed control costs.

Cotton growers use a variety of methods to control weeds. Weeds compete with the crop for nutrients. Row cropping allows a degree of flexibility and cultivation, manual 'chipping' and herbicide sprays are used during the season. The Corporation is continuing to fund research into sustainable weeds management.

Plant Breeding and Biotechnology

Four years after the first transgenic cottons were commercially planted in Australia the technology has demonstrated that it can have a significant effect on the amount of pesticides used during cotton production. Farmers have recorded an average reduction in pesticide use of 38 per cent over the four years when growing INGARD® cotton. INGARD cotton contains a Monsanto-owned *Bacillus thuringiensis* (Bt) gene that produces a highly specific natural insecticide, making the cotton plant resistant to its major insect pest, the *Helicoverpa* caterpillar. The INGARD gene is present in a range of cotton varieties, including five produced by CSIRO. Transgenic cotton accounted for approximately 25 per cent of the Australian cotton plantings during the last season. The area allowed for INGARD cotton in the coming season is 30 per cent. Cotton producers spend about $200 million on insect control every year (source: Cotton CRC). As the economic results of growing INGARD tend to be unpredictable, the major beneficiary from its introduction has been the environment through reduced pesticide use. INGARD cotton varieties allow for greater control of *Helicoverpa* larvae

without impacting on beneficial insects. They provide a foundation for Integrated Pest Management systems which significantly enhance the long-term sustainability of cotton production in Australia.

Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry Senator the Hon. Judith Troeth officially released three new INGARD® varieties during a visit to the Namoi Valley in May.

The next generation of Bt cottons will include two insecticidal genes. Two-gene cottons will be an important biotechnological advancement for Australia because they significantly reduce the risk of resistance forming within the populations of the target pest, *Helicoverpa*. The introduction of two-gene cottons will enable the expansion of transgenic plantings beyond current area restrictions. Unfortunately the commercial release of two-gene cotton has been delayed by a number of years due to a decision by gene-owners Monsanto to discontinue access and testing on the most advanced gene combination, citing an unacceptable yield reduction. Although Australian plant breeders expected to be able to overcome the problem, industry efforts to get a local exemption on the global decision were unsuccessful. The decision to withdraw access to the second gene, which was being incorporated into existing INGARD® varieties will also impact on the Corporation's target of a 40 per cent reduction in traditional pesticide use. The Corporation had anticipated the commercial introduction of two-gene varieties, and a subsequent reduction in chemical sprays, before the end of its current Strategic (Five Year) Plan in 2003. Widespread commercial use of two-gene cotton is now unlikely before the 2004 season.

The commercial introduction of herbicide-tolerant varieties will give farmers the opportunity to reduce the amount of residual herbicide they use. Often farmers have applied residual chemicals over entire cropping areas just as an insurance against weeds. But with the herbicide-tolerant cotton, knockdown herbicides (such as Roundup®) can be used over the top of the crop in the event of weed growth. This reduces the risk of environmental contamination by residual herbicides which are more persistent than knockdown sprays which tend to break down quickly.

In September 2000 the Minister for Health approved the commercial release of Roundup Ready® cotton following extensive trial work, detailed scientific analysis by the Genetic Manipulation Advisory Committee and a public consultation process led by the Office of the Gene Technology. The Corporation is supportive of the process and contributes funding, in-kind and practical support wherever appropriate. Corporation funding for the CSIRO's Core Biotechnology and Core Breeding programs has assisted the development of adapted varieties which will be available for the coming season. A non-regulatory restriction of a maximum of 17,500 hectares planted to Roundup Ready® cotton will apply. The gene which gives the cotton a degree of tolerance to the herbicide Roundup® is owned by Monsanto and licensed to seed companies.

The Corporation has set a target of a 30 per cent reduction in residual herbicides used in the cotton industry by the end of its current Strategic Plan, and is looking forward to the results of this limited commercial release of the first transgenic herbicide-tolerant varieties.

Farming Systems and Agronomy

The incorporation of management strategies such as pupae control and Integrated Pest Management in farming systems are helping to reduce the overall pesticide load of the cotton industry. Farming Systems is an area of the research program into which other funding programs feed for application

on a practical scale. The program combines the issue-oriented results and incorporates them into overall management systems. Improved farming systems have also had a significant influence on increasing yields and improving sustainability.

Research Objective 2:	To improve management and protection of soil and water resources
Five Year Target (1998-2003):	Improved quality in cotton soils, water and the riverine environment
1999-2000 Output:	Research Outcomes that enable an improvement in quality of natural resources
Contributes to:	Statutory Objective (b), achieving sustainable use and management of natural resources Output Groups 'Sustainability' and 'People and Communities'
Contributing Research:	Soils Water Best Management Practice and the Environment Farming Systems

Soils

The Corporation has funded 10 projects under the Soils funding program at a total cost of $645,970. These projects covered the range of soil-related issues, including nutrition, the threat of salinity, rotation cropping and the long-term effect of cotton rotations on soils. This area focuses on ensuring the long-term sustainability of the industry.

SOILpak, a manual for cotton growers and consultants on best practices for soil management, is now in its third edition. Updates to the manual are published on the Cotton CRC website. The Corporation has continued to support the usage of the manual in the industry through training workshops in key centres as well as the production of a companion video. The video has been produced by NSW Agriculture and will assist users to gain maximum benefit from the manual.

In June the Corporation and the Cotton CRC supported and participated in an important Soil Research Workshop. This workshop looked at specific soil research topics and included an examination of existing knowledge. The critical review of this knowledge to identify any gaps and opportunities for the future was a critical undertaking for the gathering. The group also analysed the links between various research groups and ways to improve communication between them.

Water

Federal and State Governments are driving water reform policies which are likely to significantly change water allocation and management. In order to improve water use efficiency and maximise benefit from available irrigation water the Corporation has been pursuing improved methods of measuring water use and the best ways to integrate that knowledge and technology into management practices. These new tools, such as simple methods to measure whole-farm water use, will also be capable of integration with improved computerised support and record-keeping.

Once again the Corporation and the Cotton CRC have worked together to try to build a better picture of the overall water balance. In October 1999 they co-ordinated and co-hosted a cotton

industry water balance workshop in Toowoomba which examined significant issues in the water balance, including deep drainage, run-off and crop water requirements. A key outcome of this workshop was the identification of key priorities for research and development in the future.

A second meeting was held in Sydney in May 2000, this time involving key organisations in agricultural water research and development. The aim of the meeting was to promote collaboration between researchers and standardisation of methodology and terms of analysis. Participants represented research organisations including CSIRO Plant Industries and CSIRO Land and Water, funding bodies such as the CRDC, Grains RDC and the National Heritage Trust, and government departments, particularly Agriculture, Fisheries and Forestry – Australia, NSW Agriculture and the Queensland Department of Natural Resources. This meeting resolved to identify a number of research sites in NSW and Queensland where joint work investigating the complete water balance can be undertaken.

Best Management Practices and the Environment

The aim of BMP Cotton, the cotton industry's Best Management Practice program, is to minimise the risks of negative environmental impacts from farming practices. The program which encompasses all farm operations is designed to enable individual cotton growers to implement the right solutions for their particular situations. In terms of improving natural resources management, the BMP Cotton program provides growers with the tools to identify and manage environmental risks. The program includes a focus on pesticide application to reduce and prevent off-target movement of chemical spray, and on farm design and management to minimise erosion, control water on-farm and minimise pesticides transport off-farm.

The Corporation has continued to support the development and implementation of the BMP Cotton program. The past year has seen further revision of the BMP Cotton Manual with the second edition due to be released in October 2000. The revised Manual includes updated and expanded information and has been designed to be more easily used by farmers.

Auditing of farm operations to the BMP Cotton Manual is the process through which growers and the industry will be able demonstrate due diligence, environmental performance and continuous improvement. The reporting year saw the end of the Corporation's pilot audit study which investigated the feasibility and practicality of BMP Cotton audits. Following the study the Board decided to pursue the establishment of an independent 'audit office' for the industry which will be run on a self-sustaining basis. Work during the year has concentrated on developing a suitable management structure and plan for the audit office in preparation for its transfer to full-industry ownership next year. Meanwhile, Best Management Practices audits have continued to be conducted throughout the year as farmers from across the industry reach an auditable level. More than 100 cotton growing properties have now been audited.

Farming Systems and Agronomy

Like many other industries technology is playing an increasing role in agriculture. The introduction and uptake Precision Agriculture techniques, using global positioning systems, are taking the guess work out of field layout as well as nutrient and pesticide application. This in turn has helped promote strategies for the prevention of a range of resource-related issues. One example is the increasing use of controlled traffic and permanent plant beds in-field to reduce soil compaction problems. The Corporation has supported a number of precision agriculture related projects during the reporting year.

Research Objective 3:	To achieve Best Management Practice
Five Year Target (1998-2003):	100 per cent of growers to adopt and be auditable under the BMP Cotton program
1999-2000 Output:	Support for the continued implementation and development of the BMP Cotton program, preparations for transfer of program to self-sustainability and full industry ownership
Contributes to:	Statutory Objective (a), improving production methods to increase benefits
	Statutory Objective (b), achieving sustainable use and management of natural resources
	Output Groups 'Sustainability', 'Profitability and Competitiveness' and 'People and Communities'
Contributing Research:	Best Management Practice and the Environment
	Farming Systems and Agronomy

Best Management Practices and the Environment

The Corporation and the cotton industry has been moving in a focussed way towards the full implementation of Best Management Practices program for about five years. The development of the program became part of the Corporation's core activities when the Strategic Plan 1997-2002 came into force. The Plan was revised and updated to become the Corporation's current Strategic Plan 1998-2003, but Best Management Practices remained a core responsibility.

The industry has tasked the Corporation with the development of the BMP Cotton program, while Cotton Australia was given responsibility for the implementation program. Both organisations are represented on the Best Management Practices Management Committee which is a sub-committee of the Australian Cotton Industry Council. The role of the Management Committee is to ensure the program's development and implementation are being conducted in a focussed and balanced way.

A draft Best Management Practices manual was released to representatives of government departments and the industry in October 1997, with the feedback integrated into the program. The first edition of the Manual was launched and made available to the industry in January 1998. Following the launch, the Corporation began conducting workshops in all cotton-growing valleys to train growers in using the Manual and implementing best practices on farm. The implementation program was transferred to Cotton Australia in mid-1998. Implementation aspects of the program are continuing, with Cotton Australia Growers' Services Managers working with groups and individuals as required. The Corporation continued to assist the implementation process by jointly-funding the Cotton Australia position of BMP Co-ordinator.

Almost from the start of the implementation phase it became clear that growers wanted an audit component to make the process more credible and meaningful. In late 1998 the Corporation commissioned a pilot study to investigate the issues surrounding auditing best management practices and cotton growers. Thirty-four growers representing all cotton-growing valleys and a broad range of farming operations were included in the study. A review meeting with the participating growers was

held in November 1999 to conclude the study. All the objectives of the study were achieved, including determining requirements for auditing growers, determining the feasibility of auditing farm practices and developing a specific accreditation framework. The pilot study also lead to significant modification of the audit system which was initially proposed to more clearly reflect the needs and objectives of the industry.

The philosophy underpinning the BMP Cotton program is continual improvement. As growers work within the framework and have their audit conducted, the improvement of their farm practices and environmental management becomes more apparent over time.

Following review and modification of the audit system, the BMP Cotton audit program began full operation in January 2000. By mid-September 2000, 86 initial audits and 33 secondary certification audits had been conducted. A secondary audit must be conducted within 14 months of the initial audit. Between 20 and 30 additional audits were expected to be conducted by mid-October but demand for audits is expected to decline during the October to March growing season.

Estimates mid-September indicate that 23 per cent of growers are now auditable, well below the industry target of 60 per cent (approximately 850 growers) by January 1, 2001. However, it must be remembered that this is a voluntary scheme with few external incentives in place as yet. The Corporation is supportive of industry efforts to develop positive external incentives for growers.

The Corporation does not believe that the continued day-to-day co-ordination of the audit scheme lies within its charter. Consequently the Corporation has conducted significant background work to establish an independent audit office which is planned to begin operations in late 2000. The CRDC will retain overall stewardship of and a significant intellectual property stake in the BMP Cotton program, including the review and further development of the Manual and Audit Program.

Farming Systems and Agronomy

As with other research programs relating to farm production, the Farming Systems research program plays an integral role in trialing and evaluating farming practices. Several projects in this field involve crop modelling to measure and predict responses given a range of influences. The combination of these models into decision-support software systems is assisting growers throughout the industry to improve their management decisions and environmental performance.

Community Goal

Major Objective: Viable Regional Communities in a Healthy Environment

As discussed previously and below, direct research under the objective is limited but this objective is also served by activities under other funding programs. The Corporation and industry has seen a general shift in attitude over time, from a farm-focussed viewpoint to one which is more aware and cognisant of the external impacts and effects of the industry. The reduction of negative impacts of cotton farming is a significant benefit for the environment and community and these benefits will increase as the industry follows the path of continual improvement under the Best Management Practices program. Increased sustainability and profitability of the industry should deliver long-term economic stability for producers and downstream processors, and increased job security for people employed within the cotton and service industries. During 1999-2000, the CRDC has contributed to the achievement of our Outcome by 2003, by using flow-on benefits as project evaluation criteria and investing in research which aims at achieving improved environmental and economic performance, as reported below.

Research Objective 4:	To ensure cotton production and processing systems deliver identifiable social and environmental benefits to the community
Five Year Target (1998-2003):	Social and environmental benefits become project evaluation criteria
1999-2000 Output:	Benefits and externalities defined and listed
Contributes to:	Statutory Objective (a), improving production methods to increase benefits
	Output Groups 'Sustainability' and 'People and Communities'
Contributing Research:	All research identified as contributing to these Output groups

The Corporation is well aware of cotton's role in rural communities and of both the positive and negative impacts that are associated with the industry.· A great deal of consideration and work by a number of industry bodies goes into ensuring that cotton fulfils the role of the good neighbour in local communities.

The Corporation is actively involved in supporting rural communities in a broad way. Many projects funded by the CRDC, including a program designed to encourage women to become more involved in industry activities and sponsoring places in the Australian Rural Leadership Program, deliver direct benefit to the community.

The increased focus on environmental sustainability for the cotton industry will have direct flow-on benefits to farms and communities in cotton-growing districts, in the form of lower environmental stresses. The cotton industry is justifiably proud that its profitability directly benefits local rural communities, generating jobs in support industries and retail outlets alike.

The CRDC has adopted a holistic approach to its community goal. Considerations of social, environmental and economic benefit underlie the decisions taken by the Board on a range of issues. Many programs deliver indirect benefits by helping the industry become more sustainable and profitable. As is often the case, these projects fall under other sections of the research program. For

this reason the Corporation has made 'People and Communities' a major Output Group which will help us demonstrate more clearly the contribution our research program is making to rural and regional Australia.

Research Objective 5:	To ensure cotton production and processing systems deliver identifiable economic and commercial benefits to the community
Five Year Target (1998-2003):	Stakeholders are aware of benefits the industry brings to regional communities and the nation
1999-2000 Output:	Economic benefits defined
Contributes to:	Statutory Objective (a), improving production methods to increase benefits
	Output Groups 'Profitability and Competitiveness' and People and Communities'
Contributing Research:	All research identified as contributing to these Output groups

Research shows that the cotton industry provides substantial support to local and regional communities in cotton production areas of NSW and Queensland. The industry generates employment on-farm and in support industries and the impact is felt throughout the national economy.

During the year the Corporation commissioned the Bureau of Rural Sciences to conduct a preliminary analysis of the industry's impact on rural communities and is planning to expand research funding in this area. The following data is obtained from the Bureau's work and from other CRDC studies.

Regional Economic Impact

Australia produced some 3.2 million bales (726,000 tonnes) of cotton in 1999-2000. although this figure is still to be finalised, it appears that production and gross values are virtually the same as the previous year. The gross value of production, including fibre and seed, was some $1.5 billion – just over $1 billion in New South Wales and just under $0.5 billion in Queensland. Cotton production accounts for about 27 per cent of the gross value of all crops produced in New South Wales and about 13 per cent in Queensland.

The value of cotton production in New South Wales and Queensland is approximately equal to that of wheat. Compared to wool, the value of cotton was 30 per cent higher in New South Wales and 65 per cent higher in Queensland.

When compared to other sources, the contribution of cotton-related income on a regional level is even more significant, given the limited geographic distribution of the cotton industry. For example, in 1997 the statistical local area of Narrabri reported 23 per cent of all its agricultural establishments grew some cotton or cotton only, Moree Plains 20 per cent, Gunnedah 15 per cent, and Warren 12 per cent. In Queensland, statistical area of Emerald reported 22 per cent of all agricultural establishments growing some cotton or cotton only.

Other Research and Development Impacts

Last year the Corporation flagged the need to refine and develop monitoring indicators to allow it

to track its objective of delivering economic and social benefits. This complex task was commenced during the year and it is anticipated that key indicators will be available next year.

Examples of studies undertaken by the Corporation have shown that the cotton industry has continued to lead other large-scale industries in its performance and economic impact:

- Australia's cotton industry has invested, on average, seven times more capital per farm than the national average. Research has shown that a significant portion of this expenditure occurs locally.
- Average income from the average cotton farm is about six times the average of all agriculture.
- Cotton farms require only $3.20 in capital assets to produce $1 in turnover; this is less than 60% of the average requirement of all of agriculture
- In terms of value added, cotton requires only $8 of assets to produce $1 of value added, compared with $12 for all agricultural enterprises.
- The yield efficiency of water use of Australian cotton has increased by around 89% in the last 30 years. This has occurred at the same time as yields have doubled.

Employment in the Cotton Industry

As at March 31, 1999, there were 625 cotton-growing establishments in New South Wales and 607 in Queensland. This is an 11 per cent increase since 1998. While the number of cotton establishments has increased in recent years this has not reflected in positive population growth in all towns. One of the causes of population loss is scientific and mechanical inputs being increasingly substituted for manual labour, and the great increases in output per worker. However, while not able to reverse these trends the cotton industry has a positive effect on rural employment because of its significant production and support requirements. For example, it is estimated that each hectare of cotton requires around twenty times the amount of on-farm labour for each hectare of rainfed wheat.

The placing of the Corporation in a cotton-growing region, at Narrabri, has a significant direct employment effect in that community. The indirect effect is that the Corporation is in continual contact with the industry, and is therefore more in tune with its needs and its effect on the community.

It should also be recognised that the demonstration effects of the Best Management Practice program, Area Wide Management and Insect Resistance Management have been significant on other production industries such as grains and oilseeds. These effects on the rest of the community are difficult to measure.

Industry Goal

Major Objective: Commercially Viable Industry Sectors Meeting Market Needs

The driving force in this objective is the need to produce the fibre quality desired by buyers and consumers, and maintain that quality throughout the production chain. Enabling the delivery of a consistent and reliable product will assist the industry attract international buyers and secure market share. During 1999-2000, the CRDC has contributed to the achievement of our Outcome by 2003, by investing in research which is aimed at improving varieties, improving processing and identifying value-adding opportunities as reported below.

Research Objective 6:	To develop new varieties with improved characteristics
Five Year Target (1998-2003):	New and improved varieties which exhibit improved fibre quality and agronomic characteristics are commercially released
1999-2000 Output:	Research outcomes to enable the commercial release of new and improved varieties
Contributes to:	Statutory Objective (a), improving production methods to increase benefits Output Groups 'Sustainability' and 'Profitability and Competitiveness'
Contributing Research:	Pest Management Diseases and Weeds Plant Breeding and Biotechnology Pest Management

Understanding the how, what and why of pest and beneficial insect activity on cotton plants plays a crucial role in developing new varieties that are able to tolerate or resist negative impacts. The Corporation has supported a number of projects which are designed to deliver basic scientific knowledge to improve varieties and crop management. Pest insects can cause problems with fibre quality by disrupting plant and or fruit development, or through negative consequence such as sticky residue on the fibre.

The other role Pest Management plays in the development of new varieties is through testing and appraising existing and potential varieties. Developing an understanding of mechanisms of crop response assists plant breeders identify important traits in conventional and transgenic varieties. Approximately 22 per cent of the research projects undertaken under this research program directly assist the development of new varieties.

Diseases and Weeds

Similarly to insect and pest management, the identification of various crop responses to the influence of diseases assists plant breeders and biotechnologists to develop disease tolerant varieties. During the year the soil-borne disease Fusarium Wilt was detected on a much larger and wider scale than before. The Corporation has responded to this by increasing support for Fusarium research in the 2000-2001 year by about $500,000, not including new breeding and biotechnology research. Work in the reporting year included testing a known resistance gene for ability to confer Fusarium resistance to cotton, and the continued development of management strategies for the disease.

Plant Breeding and Biotechnology are likely to hold any long-term solution to this disease problem through the development of tolerant varieties. A comparable issue has been the commercial introduction of varieties with tolerance to the disease Verticillium Wilt. Through the plant breeding program the industry has been able to tackle this disease and grow cotton effectively in spite of its presence in the soil. Some farmers are facing dramatic reductions in areas that can be planted because of high-levels Fusarium oxysporum, the fungus that causes the disease. The industry has ranked Fusarium as one of its highest priorities.

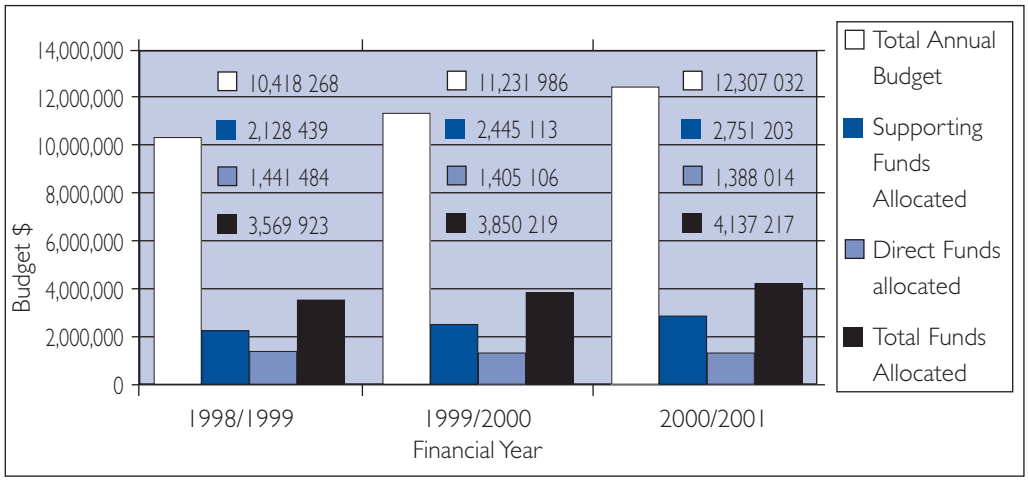
Plant Breeding and Biotechnology

This was the Corporation's second largest area of research expenditure during 1999-2000 with almost $2 million going directly into the development of new varieties. The Australian breeding program, led by CSIRO Plant Industries, has been extremely successful. Yields have been increasing by almost two per cent per year on average for the last decade. The breeding program has delivered varieties offering increased choice and adaptation for growing regions stretching from Emerald in central Queensland to the Hay Plains in southern New South Wales. The Australian industry has access to varieties with different season lengths, substantially improved fibre quality combining length, strength and fibre maturity, and greatly increased disease resistance.

Varieties bred in the Corporation-supported CSIRO-breeding program are commercialised domestically and internationally under an exclusive arrangement with the industry-owned not-for-profit company Cotton Seed Distributors. CSIRO-bred varieties currently account for between 85 and 90 per cent of the Australian industry's production. The Corporation has a royalty share arrangement with the CSIRO. Royalties on seed sales represents a significant income stream for the Corporation and to date have prevented any need to increase the levy on production since January 1992.

The reporting year has seen a number of new varieties released to the industry. In May the Parliamentary Secretary for Agriculture, Fisheries and Forestry the Hon. Senator Judith Troeth officially launched three new INGARD® varieties. Later in the year two new conventional varieties were released. Seed stocks of Roundup Ready® cotton, a new Roundup® (herbicide) tolerant transgenic variety, will be available for planting following regulatory approval for commercial plantings of this genetically-modified crop.

Biotechnology Funding as a Portion of Total Budget



Research Objective 7:	To improve handling and production systems
Five Year Target (1998-2003):	Improved, innovative and efficient handling and processing systems are implemented by processors
1999-2000 Output:	Research outcomes to enable improved systems to be implemented
Contributes to:	Statutory Objective (a), improving production methods to increase benefits
	Output Groups 'Profitability and Competitiveness'
Contributing Research:	Processing and Market

Processing and Market

Market forces have driven the development of the processing sectors of the cotton industry, with necessary research generally conducted by the commercial parties involved.

The Corporation and the Cotton CRC held a major combined workshop on the research needs of the processing sectors industry during March. Bringing together more than 50 people, including researchers, ginners, spinners, marketers and shippers, the Fibre Plus workshop provided a critical review of the post-farm gate elements of the production chain.

A major outcome of the workshop has been the development of standardised protocols for testing and assuring fibre quality at any part of the 'field-to-fabric' chain. Research proposals developed as a result of this meeting were considered by the Corporation Board at its budget meeting in April and four new projects were approved for funding in 2000-2001. The Corporation has also appointed Melbourne-based textile consultant Heather Ball as a research program co-ordinator to ensure the focussed development of this area of research.

Given the commercial nature of the processing sectors, the development of public research infrastructure has been limited. Once of the Corporation's goals for this area is to assist the building

of that infrastructure to allow effective and reliable research to take place. Several years ago the industry identified the need to strengthen technological and resource support for this area. To address the needs of ginners a research program was initiated at the University of Southern Queensland's National Centre for Engineering in Agriculture. The focus of this program has been maintaining quality during ginning, the initial processing stage where the fibre is removed from the seed. Ginning can have a major impact on the final quality of the fibre and impact on later processing such as dyeing. Increasing reliability of gin output in terms of fibre quality increases options for sellers of cotton and reduces risks for buyers. This is likely to be a significant factor in improving the Australian industry's international competitiveness.

Further down the production chain, CSIRO Textile and Fibre Technology has been funded to investigate improvements in measuring fibre maturity, one characteristic in overall fibre quality. This work has opened up other opportunities and the Geelong-based group is now a core partner in the Australian Cotton CRC. With expertise in the last stages of fibre processing, spinning, dyeing and weaving, the Corporation is looking forward to the results of a range of research projects being undertaken by this centre.

Research Objective 8:	To support efficient marketing and encourage new market opportunities
Five Year Target (1998-2003):	New post-farm-gate opportunities exist for adding value to fibre, cotton seed and any by-products
1999-2000 Output:	Research outcomes offering opportunities for adding value to fibre, cotton seed and by-products
Contributes to:	Statutory Objective (a), improving production methods to increase benefits
	Output Groups 'Profitability and Competitiveness'
Contributing Research:	Processing and Market

Processing and Market

The marketing of cotton has developed and is undertaken by independent commercial sectors of the industry. Approximately 95 per cent of the Australian crop is exported, with international buyers recognising the inherent quality characteristics of Australian fibre. The Australian industry is also assisted by producing in the opposite season to Northern hemisphere growers where the bulk of the world's cotton is produced.

The independent nature of the post-farm gate sectors and lack of intervention from Government means there are no price distortions for Australian growers. In this climate the Australian industry have developed the ability to respond quickly to the changing requirements of international buyers and consumers.

The Corporation has taken an arm's length policy towards the marketing of cotton, preferring to concentrate on research into production activities and breeding new varieties which will ultimately give Australian growers a competitive edge in the global marketplace. However it maintains links with

this area through the Raw Cotton Marketing Advisory Committee, the Australian Cotton Industry Council and the International Cotton Advisory Committee.

During the reporting year the Corporation was involved in a partnership project to evaluate four Australian cotton varieties in terms of their value to spinning mills and the end user. The varieties, representing the bulk of the Australian raw cotton production, were grown and ginned by Auscott Ltd, Narrabri, within the framework of a Cotton Seed Distributors variety trial. The bales were then shipped to Europe for testing on a laboratory scale by two German manufacturers of mill preparatory equipment and open-end spinning frames, Truetzschler GmbH & Co. and Schlafhorst Autocoro GmbH & Co. The study concluded that the Australian cottons exhibited 'outstanding' fibre properties, were most desirable for high-speed spinning and could be approved as high-quality raw materials for present mill fibre quality needs and upscale textile products. The evaluation report encouraged the Australian industry "to continue focussing on and striving for further fibre quality improvements to adjust to the future and perhaps even more challenging demands of their customers".

The Cotton Evaluation and Advancement Committee, a sub-committee of the Australian Cotton Industry Council, is charged with developing evaluation systems to more closely reflect value differences in Australian cotton. Classing is currently conducted against US standards, but Australian cotton exhibits different whiteness, brightness and fibre quality characteristics to American varieties. The Corporation is represented on the Evaluation Committee by the Executive Director.

Management Goal

Major Objective: Efficient, Responsive R&D Management and Delivery

The Corporation believes providing adequate capital and human resources is essential to the delivery of quality research outcomes. By supporting the human resources of the industry, the Corporation also looks to enable the delivery of its major Outputs and ultimately achieve the Outcome. During 1999-2000, the CRDC has contributed to the achievement of our Outcome by 2003, by continuing to invest in research and development which is aimed at improving the transfer of technology, build capital infrastructure and encourage the development of personnel.

Research Objective 9:	To promote and support transfer of new technologies
Five Year Target (1998-2003):	Active participation in industry development and implementation of new technologies and processes
1999-2000 Output:	Extension personnel funded to fill identified gaps
Contributes to:	Statutory Objective (a), improving production methods to increase benefits
	Statutory Objective (c), making effective use of resources and skills available
	Output Groups 'People and Communities'
Contributing Research:	Extension

Extension

The delivery of research outcomes as practical information which farmers can use is a challenging but essential task. For the cotton industry the most effective and successful method of technology transfer has been through the efforts of personnel on the ground. For this reason the Corporation encourages researchers to be actively involved in the industry and regularly interact with growers at field days and workshops. The CRDC also supports, with full or partial funding, Industry Development Officers for the Macquarie Valley, Bourke, Gunnedah, Hillston, Goondiwindi, St George/Dirranbandi and Emerald. These officers form part of the National Cotton Extension Team, which also includes a CRC-funded development officer in Moree and a Queensland Department of Primary Industries development officer for the Darling Downs. The efforts of the extension team are supplemented by district agronomists employed by the state agricultural departments. The activities of the national extension team are co-ordinated by the Australian Cotton CRC, with the Corporation now fully-funding the position of National Extension Co-ordinator.

Development officers provide a firm link between the industry in their region and the wider research effort. They act as a conduit for information about general issues while being able to address the concerns affecting the growers in their areas. Officers also conduct field trials and adapt research from other areas. Where the industry is expanding the development officers are able to encourage possibly inexperienced growers to implement sustainable development and farming practices. They ensure access to the latest management strategies and the technical information to use as part of Best Management Practices.

The extension team plays a central role in the co-ordination and facilitation of grower groups for integrated pest management, area wide management and best management. These groups are highly effective at enabling the implementation of new technologies as growers and consultants learn from each other.

While personal contact is the most effective technique for technology transfer, it is by no means the only avenue being utilised by the Corporation. During the year the CRDC funded the production and promotion of a companion video for the SOILpak Manual to particularly assist growers and consultants who may not have had the chance to attend a training workshop. The Corporation also supports the production of the Australian Cotton Video which is distributed to the industry and is a different mechanism for delivering important research news and developments.

Research Objective 10:	To consult widely with stakeholders and other relevant organisations regarding research priorities
Five Year Target (1998-2003):	Efficient collaboration with all relevant organisations
1999-2000 Output:	Development of a Research Plan which addresses the priorities of stakeholders
Contributes to:	Statutory Objective (c), making effective use of resources and skills available
	Statutory Objective (d), improving accountability of research and development spending
Contributing Policy:	Australian Cotton Growers' Research Association to review and make recommendations on new project applications and continuing project reports

Keeping Focussed

The Corporation has identified the need to maintain strong communication with a wide range of cotton industry organisations, as well as with Government, research providers and other research funding bodies, particularly the Rural Research and Development Corporations.

Each year the Corporation's industry stakeholder, the Australian Cotton Growers' Research Association, reviews and makes recommendations on new project applications and continuing project reports. This process allows the Board of the Corporation to judge how well the research program is addressing the needs of the industry and what changes, if any, should be made to refocus individual projects and programs. It allows the Corporation to identify any gaps within the research program which need to be filled and the urgency of any action that should be taken. The members of the Board have an extremely strong background in cotton research, production, and processing, are well-known within the industry and keep involved and informed regarding significant issues.

Industry Involvement

The CRDC is a member of the Australian Cotton Industry Council, the peak body for the cotton industry. It is through the Council that the Corporation maintains formal links with a wide range of organisations within the cotton industry, including seed companies, chemical applicators, consultants, product suppliers and the grower-representative body Cotton Australia. The Chair Ms Bridget Jackson and Executive Director Mr Ralph Schulzé represent the Corporation at Council meetings.

The Corporation also provides the secretariat to the Raw Cotton Marketing Advisory Committee which is a sub-committee of the Industry Council. The Marketing Advisory Committee is made up of representatives of the processing sectors of the industry, including ginners, spinners, classers and shippers. The committee also has a Government representative. Through this committee the Corporation is able to keep up with the major issues facing post-farm gate sectors of the industry. The Business Manager Mrs Robin Logan acts as secretary to the Committee while the Executive Director represents the Corporation at meetings.

The Best Management Practices Management Committee is another sub-committee of the Industry Council, and involves the Research and Extension Manager Mr Bruce Pyke, Research Program Co-ordinator (BMP) Ms Peta Slack-Smith and the Communications Manager Mr Tim Lester. Research Program Co-ordinator (Farming Systems) Mrs Helen Dugdale acts as secretary to the Committee, and CRDC Director responsible for Best Management Practice Mrs Roberta Brazil has a standing invitation to attend meetings. The Best Management Practices Management Committee involves representatives of Cotton Australia, Cotton Consultants Australia, Cotton Grower Associations, and the National Cotton Extension Team.

Being a core partner of the Australian Cotton Co-operative Research Centre means the Corporation has another point of contact for many research providers and participating industry partners. The Chair represents the Corporation on the Board of the Corporation, while the Executive Director sits on the Management Committee. The immediate past Chairman of the Corporation Mr John Blood has held the position of Chairman of the Cotton CRC for the past year. Immediate past CRDC Director Mr Evan Cleland has been elected to succeed Mr Blood in the position. CRDC Director Mrs Roberta Brazil is also a Director of the Cotton CRC as is immediate past CRDC Director Mr David Hamilton. The Corporation and the Cotton CRC have fostered a close working relationship and collaborate on a number of activities including workshops and publications.

Research and Extension Manager Mr Bruce Pyke is a member of the Transgenic and Insecticide Management Strategy committee which is tasked with developing and promoting resistance management strategies. The aim is to minimise the likelihood of resistance developing to transgenic or chemical insecticides.

The Corporation participates in a number of other committees as is deemed appropriate. These include the North West Pesticides Committee which meets to discuss activities and issues surrounding the use of chemical pesticides and the environmental impacts of those in the North West of NSW.

Joint Activities

The CRDC is an active participant in the joint Rural Research and Development Corporations Committee. The Chair, Executive Director, Business Manager and Communications Manager regularly attend relevant joint meetings and contribute to joint activities. The Corporation held the position of Chair of Chairs for the joint Committee until September 1999.

During the reporting year the Corporation funded joint projects with the Grains, Horticulture and Rural Industries Research and Development Corporation.

A combined Cotton and Grains RDCs Farming Systems seminar held at Dalby on the Darling Downs in August 1998 identified five areas for joint action and continued collaboration.

1. Area Wide Management
2. Spray Application
3. Modelling/Farming Systems
4. Minimum Tillage/Controlled Traffic/Precision Agriculture
5. Best Management Practice and Quality Assurance

Research Objective 11:	To co-ordinate and soundly manage the R&D effort and to strengthen human resources and research facilities
Five Year Target (1998-2003):	Transparent project management processes, Corporation spending is accountable and cost-effective
1999-2000 Output:	All accountability requirements met and human and capital resources needs supported
Contributes to:	Statutory Objective (c), making effective use of resources and skills available
	Statutory Objective (d), improving accountability of research and development spending
	Output Groups 'People and Communities'
Contributing Research:	Human Resources

Human Resources

To maintain a strong, innovative and committed research effort the people involved must be encouraged, supported and properly trained. The Corporation continues to support a policy of assisting young scientists enter the industry through its post-graduate scholarship program. The program has meant that in effect the industry is providing training for its young researchers and has helped to develop a strong loyalty to Australian cotton. Support was provided for 16 postgraduate scholars during the reporting year. The Corporation also funds an undergraduate scholarship for an Agricultural Sciences student at the University of Sydney. The scholarship is currently awarded for the three-year term of the student's undergraduate degree. The Corporation is looking at expanding the scheme during the 2000-2001 financial year.

Travel

Scientific exchange travel, both domestically and internationally, gives our researchers new ideas, new contacts and an appreciation of different approaches to similar problems. The Corporation believes that appropriate travel opportunities are an important tool in professional development. Researchers are encouraged to find the best in the world, keep up with it and improve upon it.

Accountability

The key accountability tasks for the Corporation are the Annual Report and the Portfolio Budget Statement, both tabled in Federal Parliament, and the Annual Operating Plan which is submitted to and approved by the Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry Senator the Hon. Judith Troeth. All three documents were submitted on time and approved. The Corporation requested, and was granted, an extension on submission of the Annual Operating Plan due to the Board budget meeting being delayed.

Part of the Corporation's ongoing Operational Review will be the redevelopment of key performance indicators to measure the operational effectiveness of CRDC staff and activities.

Review of Operations

Review of Operations

This year has seen the Corporation continue to make steady progress towards its Outcome, a more sustainable, competitive and profitable cotton industry providing increased economic, environmental and social benefits to regional communities and the nation. The 1999-2000 year saw the Corporation operate its largest budget and manage more projects than ever before.

Key issues

A New Tax System

On May 29 the Corporation's Chair wrote to Minister Truss regarding preparations for the introduction of the New Tax System. At that stage the Corporation had finished preparations, which included:

- reviewing the impact of the Goods and Services Tax on revenues and expenditure and subsequent impact on cashflows;
- reviewing and implementing necessary changes to existing and future contractual arrangements;
- notifying suppliers (research providers and contractors) of procedural changes after July 1, 2000;
- applying for and obtaining an Australian Business Number (71 054 238 316) and registering for the GST;
- upgrading and testing the Corporation's computerised financial management system (MYOB);
- rewriting the Corporation's Accounting and Administration Policy and Procedures Manual to incorporate changes brought about by the New Tax System; and,
- training key staff.

This progress was reported in the fifth questionnaire (Implementation) from the Department of Finance and Administration regarding the transition to A New Tax System. The questionnaire was submitted on May 15, 2000.

Year 2000 Problem

As reported in the Corporation's Annual Report 1998-99, the Corporation finished formal preparations for the Year 2000 computer problem in April 1999. The Corporation has had no expenditure on Year 2000 related issues during the reporting year. The Corporation did not experience any problems during or after the date rollover to January 1, 2000, nor on February 29, 2000. CRDC has a fully Macintosh computer system which has no inherent Year 2000 problems, and the business premises have no critical systems dependent on embedded computer chips.

Intellectual Property

The Board reviewed and amended the Corporation's Intellectual Property policy at its June 2000 meeting. Key points of the policy include that:

- no Intellectual Property arising from Corporation-funded research may be commercialised without CRDC approval;
- the Corporation has the right to determine, in consultation with the researcher/research provider, which form of commercialisation is most appropriate on a case-by-case basis, or that Intellectual Property protection/commercialisation is less appropriate than releasing the information directly to the industry and community;
- unless otherwise determined the Corporation does not generally seek to own or co-own Intellectual Property during commercialisation, because of the possible financial and other liability which may be associated with ownership. The Corporation's preferred position is to negotiate an acceptable share of the benefits arising from the commercialisation of the Intellectual Property such as royalties; and,
- the principles of the Corporation's policy extend to all forms of Intellectual Property, to all countries, and to all forms of commercialisation including patents, licensed designs, product registration, plant breeders rights and copyright.

Full details of the Corporation's Intellectual Property policy are available from the CRDC office in Narrabri.

The Corporation did not directly undertake any activities relating to applying for Intellectual Property protection, such as patents, other than by placing copyright on Corporate publications. Several projects. particularly in the biotechnology area, include investigations of Intellectual Property protection. Under Corporate policy, the CRDC negotiates with research providers to examine whether formal protection is the most appropriate solution.

Corporate Planning and Reporting

In accordance with the *Primary Industries and Energy Research and Development Act 1989* and the *Commonwealth Authorities and Companies Act 1997*, the Corporation prepares a Strategic (Five Year) Plan as well as Annual Operating Plans.

In April 1998 the Corporation presented the then Minister for Primary Industries and Energy with the Corporate Plan for the period from July 1998 to June 2003. In August 1998 the Corporation became subject to the *Commonwealth Authorities and Companies Act 1997.* On the advice of the Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry the Corporation revised the Strategic Plan to ensure it was compliant with the legislation and would meet the requirements of the Report of Operations. The plan itself did not change.

In November 1999 five new Directors and a new Chair were appointed to the Corporation Board. On December 14, 1999 the Minister for Agriculture, Fisheries and Forestry wrote to the Corporation to outline the Federal Government's priorities for rural Research and Development. Given these significant events and that a number of difficulties with the Corporation's Strategic Plan had been exposed during the first planning and reporting cycle under the new Outcomes/Outputs framework, the Board deemed it appropriate to review the Plan again. As a result, the Corporation's

planning structure has been simplified to a single Outcome and three main Output groups. The simplified plan will allow the Corporation to more clearly demonstrate the links between the statutory and industry objectives and the Outcome and Outputs.

On May 17, 2000 the Corporation submitted the Annual Operating Plan 2000-2001 to the Parliamentary Secretary to the Minister for approval. Written advice of that approval was received on June 8, 2000.

Operational Review

During the last few years the Corporation has seen rapid and dramatic growth in staff numbers, budget and projects under management. To identify areas of weaknesses and to ensure the Corporation continues to deliver sound and efficent management of its research and development program, an Operational Review was undertaken earlier this year. Conducted by MacArthur Agribusiness, Brisbane, the review highlighted a number of areas of improvement. Recommendations are being implemented by management and staff as necessary, appropriate and possible.

Business Plan

In January 1998 the Corporation's Business Manager completed an internal business plan to guide the CRDC through the period of the Strategic (Five Year) Plan 1998-2003. The Business Plan includes procedures for fraud analysis and risk management, as well as existing and 'to be implemented' controls for the management and administration of the research program and the Corporation in general.

Communications Strategy

In general the Corporation has a very narrow and specific communications strategy. The focus of this strategy is largely a result of the CRDC's position within the structure of the cotton industry and its role in relation to industry organisations. The Corporation's main objective is to ensure that other sectors of the industry, particularly growers, become aware of research outcomes that may alter or improve existing practices.

The Corporation does not answer to the media on behalf of the industry as a whole. That role is filled by the Australian Cotton Industry Council. The Corporation also believes it is a role and function of research providers to publicise particular projects and results, but does expect to have its role in funding those projects properly acknowledged.

Publications

The following titles were published by, or with the support of, the Cotton Research and Development Corporation.

- Annual Report 1998-99
- Annual Operating Plan 2000-2001
- Researcher's Handbook 2000-2001: A Guide to Applicants
- Occasional Paper: The Performance of Ingard® Cotton in Australia in the 1998-99 Season
- Occasional Paper: Why Insects are Attracted to Cotton
- Spray Application Guide for Groundrig Operators

- Insect Management in Cotton Pocket Book (Developmental Draft)
- Growing Trees on Cotton Farms
- Proceedings of the Water Balance Workshop, October 1999

Industry Initiatives

- Development of ChemCert ground-rig operators course
- Seed funding for the establishment of the Australian Groundrig Operators Association
- Continued development of the Best Management Practices Audit program
- Continuation of the Women in Cotton initiative
- Pre-season spray aircraft application check-up program

Capital Investment

- High clearance spray applicator
- Assistance for the establishment of a weather station network, Darling Downs
- Specially designed trailer for the movement of the specialty cotton picker (harvester) used as part of the Cotton Breeding Program
- Contribution to a new plant breeding/fibre quality laboratory at the Australian Cotton Research Institute
- Contribution towards Australian Cotton Exhibition Centre industry showcase

Workshops

- Water Balance
- Water Use Efficiency
- Soils and Farming Systems
- Extension
- Fibre Plus

Travel

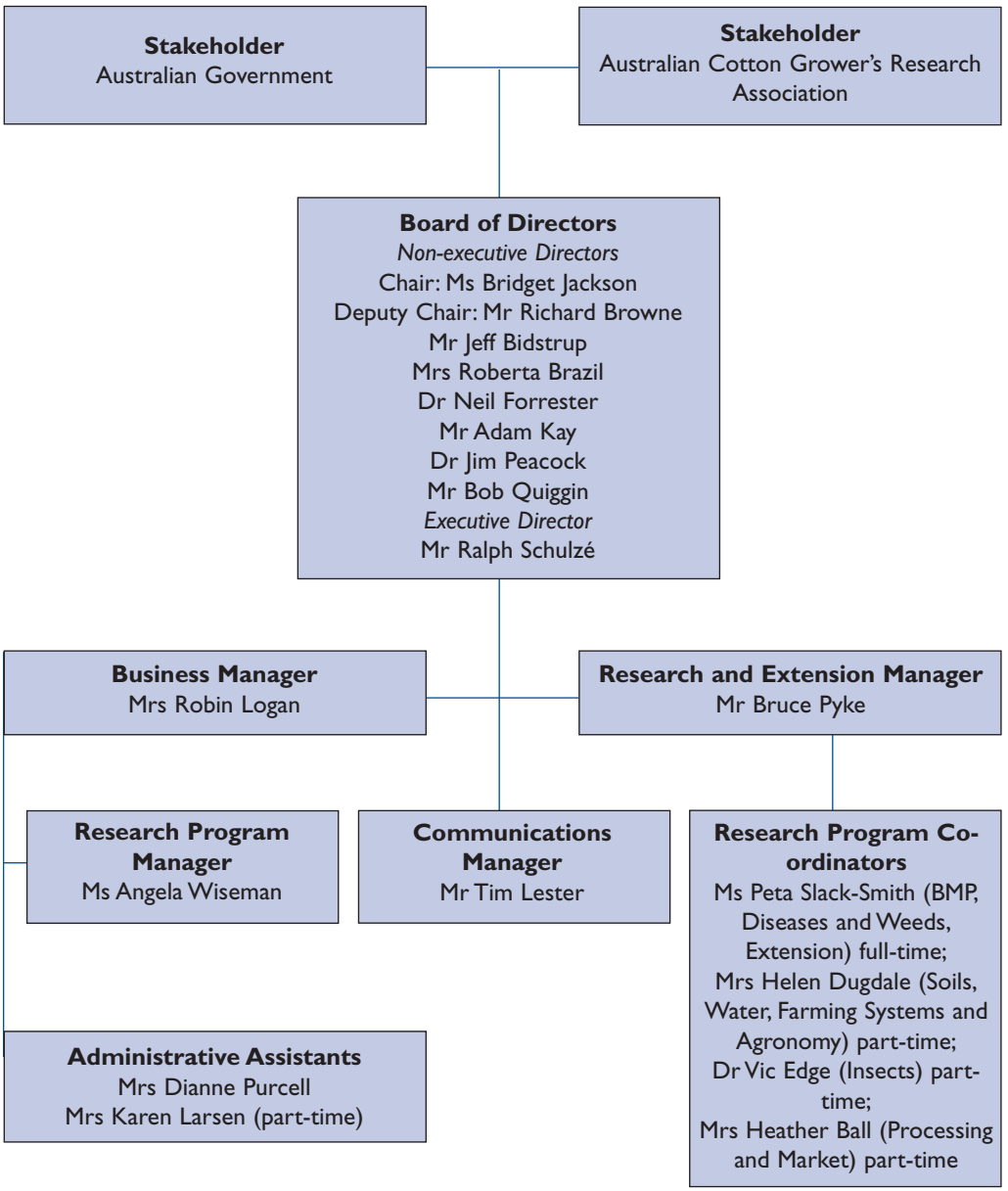
- Support for researcher to Fusarium Biocontrol workshop in France
- Several researchers to International Congress of Entomology, Igassu Falls, Brazil
- Support for researchers to Australian Cotton Conference, Brisbane (August 2000)
- Support for researcher to Multifunctional Character of Land Conference, Netherlands

Human Resources

- 16 postgraduate students
- Sydney University Undergraduate Scholarship (one student full-time)
- Australian Rural Leadership Program (one participant)

The Organisation

Organisational Structure



Location of Offices

The Corporation has one office and it is located at 2 Lloyd Street, Narrabri, NSW, 2390.

Several Directors completed their terms with the Corporation on September 30, 1999. The Board to that date was, from left to right: Mr Evan Cleland, Mr David Hamilton, Dr Vic Edge, Mr Bob Quiggin, Chairman Mr John Blood, Professor Terry De Lacy, Mr David Hamilton, front, Dr Jim Peacock, Executive Director Ralph Schulzé.

The Corporation's Board as at June 30, 2000 includes from back left, Dr Neil Forrester, Mr Bob Quiggin, Mr Adam Kay, Mr Richard Browne, Mr Jeff Bidstrup, front, Dr Jim Peacock, Chair Ms Bridget Jackson, Mrs Roberta Brazil and Executive Director Mr Ralph Schulzé.

Board of Directors

The Corporation has a nine-member Board, of which six are nominated by an independent Selection Committee established by legislation. Appointment to the Board is subject to Ministerial approval. The Minister nominates and appoints the Chair and the Government Director. The Board selects the Executive Director who becomes its ninth member. The Selection Committee's report can be found on page 71

Appointment

Directors are appointed for a term not exceeding three years. Five new Directors and a new Chair were appointed in November 1999. The Chair has been appointed for two years. The Government Member holds office at the Minister's pleasure and the Executive Director during the Corporation's pleasure.

Expertise

Directors are selected from across the industry business and research communities and together they bring expertise in cotton production, processing, marketing, science, research and development, business management, technology transfer, conservation and management of natural resources, economics and environmental and ecological matters.

Committees

During 1999-2000 the Board operated two formal committees – the Audit Committee and the Remuneration Committee.

Audit Committee

Established under section 89 of the *Primary Industries and Energy Research and Development Act 1989* and section 32 of the *Commonwealth Authorities and Companies Act 1997* the Audit Committee's primary role is to ensure the Corporation's financial reporting is a true and fair reflection of our financial transactions. The committee also provides " a forum for communication between the directors, the senior managers of the authority and the internal and external auditors of the authority."

Membership of the committee includes the Chair, a non-executive Director, the Executive Director and the Business Manager. The new Board (appointed November 1999) has opted to have an alternate for the non-executive Director member. The Audit Committee met three times during the year. Prior to September 30 the committee members included Mr John Blood, Mr Dave Anthony, Mr Ralph Schulzé and then Business Manager Ms Kym Orman. At the Board's November meeting Ms Bridget Jackson, Mr Ralph Schulzé, Dr Neil Forrester (or Mr Richard Browne) and Business Manager Mrs Robin Logan were appointed to the committee, with Mr Schulzé and Mrs Logan being non-voting members.

Remuneration Committee

This committee consists of the Chair, Deputy Chair, and one other non-executive Director. The Remuneration Committee advises the Board on the Executive Director's remuneration and staff remuneration adjustments. The Committee met once during the reporting year. Prior to September 30 the Committee's membership was Mr John Blood, Mr Dave Anthony and Dr Jim Peacock. At the November meeting of the Board, Ms Bridget Jackson, Mr Richard Browne and Dr Jim Peacock were appointed to the committee.

Directors' Responsibilities

The Board keeps in close contact with the senior management of the Corporation and takes a hands-on approach to ensure research projects are properly focussed and meet contractual requirements. The Directors are responsible for ensuring that the affairs of the Corporation are properly managed and for setting the strategic directions for the Corporation to follow.

The Board's function include:

- Establishing strategic directions and targets;
- Monitoring and evaluating the research and development needs of the industry and ensuring the Corporation's research program is effective in meeting those needs;

- Approving policies, plans, performance information and budgets;
- Monitoring policies, procedures and internal controls to manage business and financial risk; and,
- Ensuring compliance with statutory and legal obligations and corporate governance standards.

Responsibility for the day-to-day management of the Corporation lies with the Executive Director and the senior management team. The close links between the Board and management have assisted the development of a sense of mutual confidence, trust, teamwork and of a common purpose. Senior management attend and participate in Board meetings, with other staff invited to contribute whenever appropriate.

Conflicts of Interest

In accordance with Section 131 of the *Primary Industries and Energy Research and Development Act 1989*, Directors are appointed on the basis of their expertise and do not represent any particular organisation or interest group. The Board recognises that a Director's connection with any particular organisation or interest group does not necessarily imply a conflict of interests, and that it may wish to avail itself of Directors' individual skills and make use of their expertise.

At its November meeting the Board resolved to follow section 54 of the *PIERD Act* and section 21 of the *Commonwealth Authorities and Companies Act 1997* regarding disclosure of interests. A Director who considers that they have a direct or indirect pecuniary or non-pecuniary interest in a matter to be discussed by the Board must disclose the existence and nature of the interest before the discussion. The Board has a standing notice of Director's interests which was renewed at the meeting in November, and is updated as necessary. Corporation policy is to treat each disclosure of a potential conflict of interest on a case-by case basis, with the Board to resolve what action, if any, to take regarding the potential conflict before the matter involving the conflict is discussed.

Indemnities

The Board has taken the necessary steps to ensure adequate insurance cover is in place for Directors and Officers of the Corporation. The Corporation's insurance cover is provided through Comcover. The insurance contract prohibits the CRDC from disclosing the nature or limit of the liabilities covered, or the amounts of premiums paid.

Meetings

Board policy is to hold meetings away from the Corporation's office in Narrabri whenever it is appropriate and practical. The Board uses the opportunities presented by meetings to tour cotton-production areas, meet local growers and researchers and be updated on the varying research requirements throughout the industry. Meetings also present opportunities for Director training and education regarding specific issues of relevance and to meet with representatives of the Corporation's stakeholders.

Directors as at June 30, 2000

Non-Executive Directors

Chair

Bridget Jackson, appointed November 1999
BScAg, MBus

Member of the Audit and Remuneration Committees
Director, Cameron Agriculture Pty Ltd, Sydney, NSW.

Ms Jackson is an agricultural consultant with extensive experience in irrigated agriculture and the management of private farmer-group projects. Ms Jackson represents CRDC on the Board of the Australian Cotton CRC and as a director of the Australian Cotton Industry Council. Director Responsible for Human Resources and Support Director for Best Management Practice and the Environment and Community and Economics.

Deputy Chair

Richard Browne, appointed November 1999
WDA

Member of the Audit Committee
Regional General Manager, Auscott, Moree, NSW.

Mr Browne has been working in the cotton industry for 35 years, most of that at a senior management level in corporate agriculture involving production and processing of cotton. His main interest has been promoting research and development for the benefit of the industry. He was Chair of the CRC for Sustainable Cotton Production for the life of the organisation and was Chair of the Australian Cotton Growers' Research Association for three terms. Previously a member for the Cotton Research Council, the forerunner of the CRDC. Director responsible for Water and Supporting Director for Soils and Farming Systems and Agronomy.

Jeff Bidstrup, appointed November 1999
Cotton and Grain Farmer, "Prospect", Warra, Qld.

Mr Bidstrup operates a cotton and grain property with a strong emphasis on sustainability and Integrated Pest Management issues. He also has some experience in downstream processing and marketing. Director Responsible for Farming Systems and Agronomy and Supporting Director for Pest Management, Processing and Market, and Plant Breeding and Biotechnology.

Roberta Brazil, appointed November 1999
BA, LLB, LLM, Grad DipLeg.Prac.

Resource Consultant, Director Best Rural Pty. Ltd., Brookstead, Qld.

Mrs Brazil is a qualified solicitor with a special interest in environmental and natural resource law and co-proprietor of Brazil Enterprises producing cotton, grain and cattle on the Darling Downs, at Goondiwindi in Queensland and at Larrimah in the Northern Territory. Mrs Brazil is currently Deputy Chancellor at the University of Southern Qld, independent director (environment) Australian

Cotton CRC and independent director (community) Catchment Hydrology CRC. Other appointments include Queensland representative on both the Australian Landcare Council and the National Farmers' Federation Environment Committee. Ms Brazil is also chair of the Condamine Catchment Management Association. She is the Director with primary responsibility for Best Management Practice and Environment and Supporting Director for Water.

Neil Forrester, appointed November 1999
BScAg. (Hons), PhD

Member of the Audit Committee
Vice President Entomology, Deltapine International, Narrabri, NSW.

Dr Forrester has extensive field and laboratory research and extension experience with Pest Management and Resistance Management issues in a broad range of field crops, specialising in cotton for the last 18 years. He is the Director with primary responsibility for Pest Management issues and is the Supporting Director for Diseases and Weeds.

Adam Kay, appointed November 1999
BScAg, DipEd., Grad Cert Rural Science (Cotton Production)

Executive Manager, Cotton Seed Distributors, Wee Waa, NSW.

Mr Kay is an experienced extension agronomist previously based in the Macquarie Valley. Mr Kay is a graduate of the Australian Rural Leadership Program (Course 2) and during the early 1990s he was awarded a Churchill Scholarship. He has particular responsibility for the Soils and Extension research programs.

Jim Peacock, appointed October 1990
AC PhD

Chief, CSIRO Plant Industry, Canberra, ACT.

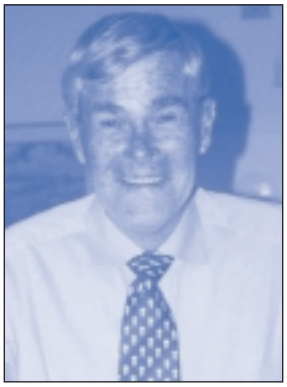
Recognised internationally in the field of plant molecular biology and its application in agriculture, Dr Peacock has been a Director of the CRDC since its inception and was previously a Director of the Cotton Research Council. He is also a Director of Gene Shears Pty Ltd. Dr Peacock has special responsibility for the areas of Plant Breeding and Biotechnology and Diseases and Weeds.

Government Member

Bob Quiggin, appointed November 1997
B.A., B.Ec., Grad.Dip.Sc., M.Sc.

Manager, International Agricultural Cooperation, Agriculture, Fisheries and Forestry - Australia (AFFA), Canberra, ACT.

Mr Quiggin is responsible for the CRDC's Community and Economics program, and advises the Corporation on government policy processes, public administration issues and strategic management.



Executive Director
Ralph Schulzé, appointed October 1990
HDA (Hons)

Member of the Audit Committee

Prior to his appointment at the Corporation Mr Schulzé was an agronomist based in Narrabri with a background in vertically integrated cotton production and a Director of the Cotton Research Council. Currently a Director of Cotton Seed Distributors Ltd and a member of the management committee of the Australian Cotton CRC. With Chair Ms Jackson, Mr Schulzé represents the Corporation on the Australian Cotton Industry Council.

Director responsible for Processing and Market, and Supporting Director for Human Resources.

Other Directors during the reporting year

Non-Executive Directors

Chairman
John Blood, appointed October 1990*

Member of the Audit Committee

Company Director and textile and garment consultant, Melbourne, VIC.

Mr Blood has considerable managerial experience in several high profile companies and almost four decades of experience in the Australian textile and apparel industries. Director of Bruck Textiles, Dowd Corporation, Gazal Corporation, LWR Industries (NZ), Tascot Templeton Carpets, Maggie-T Corporation and TCC Corporation. During the reporting year Mr Blood was Chair of the Australian Cotton CRC and the CSIRO Textile, Clothing and Footwear Advisory Committee. Director Responsible for the Post Farm Gate research program.

Deputy-Chairman
Dave Anthony, appointed October 1990*
B.Sc.Agr (Hons 1)

Chairman of the Audit Committee
Managing Director, Auscott Limited, Sydney, NSW.
Grower director until September 1999. Formerly General

Manager of Auscott's farming, cotton processing and marketing operations in the Namoi Valley. Mr Anthony has held many senior positions in industry organisations and has strong interests in cotton processing, soil and farming systems management, environmental management and best management practices. Currently Mr Anthony is a member of the CSIRO sector advisory committee on Clothing, Textiles and Footwear and the Australian Cotton Industry Council's Biotechnology Working Group. Mr Anthony was the Director responsible for Soils and Best Management Practice.

Evan Cleland, appointed September 1996*
Director and Partner, Rogate Farms, Boggabilla, NSW

Mr Cleland has a career in senior management in both tropical and temperate agriculture with particular experience in cotton growing and associated industry issues. Operator, Managing Director and partner of an irrigated cotton enterprise at Boggabilla NSW until February 2000. Chairman-elect of the Australian Cotton CRC, member of the Australian Cotton Growers' Research Association and chairman of its Diseases and Weeds committee, member of the Cotton CRC Fusarium Wilt Research Co-ordination Committee, delegate to Border Rivers Food and Fibre Inc, member Border Rivers Community Reference Panel. Director responsible for Diseases and Weeds.

Terry De Lacy, appointed September 1996*
PhD, B.Sc., Dip.Ed.

Professor of Environmental Policy, Chief Executive Officer, CRC for Sustainable Tourism, Gold Coast, Qld.

An environmental policy analyst specialising in ecologically sustainable development.
Director responsible for Extension.

Vic Edge, appointed October 1990*
PhD, B.Sc. (Hons).

Pesticides and Pest Management Consultant, Sydney, NSW.

Dr Edge has extensive experience in R&D management and expertise in pest management and the environmental effects of pesticides. A Director on the Board of the National Registration Authority from March 1997 to March 2000. Before leaving NSW Agriculture in 1999 Dr Edge was Deputy Chief of the Division of Plant Industries. Dr Edge's area of special responsibility to the Board was Insect Management.

David Hamilton, appointed October 1993*
B.Ag.Sc., M.S. Agronomy

Director, Department of Primary Industries (Queensland) Farming Systems Institute, Agency for Food and Fibre Sciences, Toowoomba, Qld.

Mr Hamilton has extensive experience in the cotton and grains industries having worked as an Agronomist at Toowoomba, St George, Emerald and Rockhampton in Queensland. He has considerable experience in science leadership with management roles in the Queensland Department of Primary Industries, membership of Dalby and Emerald Agricultural College Boards and membership of the Grains Research and Development Corporation Northern Panel. He currently has roles as Board Member of the Australian Cotton CRC, the CRC for Tropical Plant Protection and is Chairman of the Board of the Agricultural Production Systems Research Unit.
Director responsible for Farming Systems and Agronomy, and Water.

(*Term ended September 30, 1999)

Directors' attendance at Board and Committee Meetings

During 1999-2000 the Board held five meetings, in Brisbane on August 24, 1999, Narrabri, November 24 and 25, 1999, Dalby, February 10, 2000, Narrabri, April 12 and 13, 2000, and Kununurra, June 9, 2000. The year saw a changeover of Board members. The three-year term of incumbent Directors appointed under the Selection Committee process ended on September 30, 1999. Senator Troeth announced the new appointments to the Board on November 5, 1999. Five new Directors and a new Chair were appointed.

Year Ended 30 June	Board		Audit		Remuneration	
Director	No. of Meeting Attended	No. of Meeting Eligible to Attend	No. of Meeting Attended	No. of Meeting Eligible to Attend	No. of Meeting Attended	No. of Meeting Eligible to Attend
Mr John Blood (Chair)*	1	1	1	1	1	1
Ms Bridget Jackson (Chair)	4	4	2	2		
Mr Dave Anthony*	1	1	1	1	1	1
Mr Jeff Bidstrup	4	4				
Mrs Roberta Brazil	4	4				
Mr Richard Browne	4	4	1	1		
Mr Evan Cleland*	0	1				
Prof Terry De Lacy*	1	1				
Dr Vic Edge*	1	1				
Dr Neil Forrester	4	4	1	1		
Mr David Hamilton*	1	1				
Mr Adam Kay	3	4				
Dr Jim Peacock	4	5			1	1
Mr Bob Quiggin	5	5				
Mr Ralph Schulzé	5	5	3	3		

* term ended September 30, 1999.

The Board also operates a number of informal committees which are convened on a needs basis. Directors also take a hands-on approach to overviewing and reviewing projects and wherever necessary discuss the progress and direction of particular research and development activities directly with researchers.

Staff

Staff are employed under Section 87 of the PIERD Act 1989, which provides that the terms and conditions of employment are to be determined by the Corporation. Including the Executive Director there were seven full-time employees and one part-time employee as at June 30, 2000. Two staff left the Corporation during the 1999-2000 year. Business Manager Ms Kym Orman resigned in September 1999 and was replaced by Mrs Robin Logan. Research program Manager Ms Jo Lane resigned in August 1999 and the position was filled by Ms Angela Wiseman. There have been no staff changes since the end of the reporting year.

Training

During the reporting year the Corporation spent $3,177.30 on staff training including $625 for Goods and Services Tax workshops and seminars. The amount spent on training does not include an amount spent on installation of new computer equipment and software which incorporated instruction on usage, nor does it include ongoing computer-system support. The Corporation is hampered in its training activities through the additional costs which are often involved due to travel and time requirements.

Contractors and Consultants

The Corporation employs consultants and contractors on a case-by-case needs basis, and after background checks to ensure proposed appointees have necessary skills and experience. During the reporting year the Corporation spent $146,378.26 to remunerate consultants and contractors. There was no expenditure during the reporting year on the Year 2000 issue.

Contractor/Consultant	Service
A. & A. Williams Pty Ltd	Editing and Revising the Best Management Practices Manual
Helen Dugdale	Research Program Co-ordination
Helen Zilm	Training, extension and communication to industry particularly regarding pesticide application issues
Vic Edge	Research Program Co-ordination
Brian Hearn	Research Program Co-ordination
North West Farm Consulting	Program Management
Cameron Agriculture	Industry analysis
Narrabri Office Support	Temporary Staff services
MacArthur Agribusiness	Corporate Operations Review
Australian National Audit Office	Financial auditing
J.W. & J.M. Baker Agricultural Services	Best Management Practices auditing
Farming Ahead	Best Management Practices auditing
Anco Agribusiness	Best Management Practices auditing
Brigalow Directions	Best Management Practices auditing
Guy Roth	Best Management Practices auditing

Equal Employment Opportunity

The Corporation is committed to a merit-based, non-disciminatory recruitment and promotion policy.

Occupational Health and Safety

The *Occupational Health and Safety (Commonwealth Employment) Act 1991* provides that an employer must take all reasonable, practical steps to protect the health and safety at work of the employer's employees.

No accidents were reported and no investigations were conducted during the year.

Freedom of Information

General enquiries regarding access to documents or other matters relating to Freedom of Information should be made to the Business Manager. No requests made under the ***Freedom of Information Act 1982*** were received by the Corporation during the reporting year. Facilities for access to the documents are available to the Corporation.

Procedures and Information Sources

Funding information on individual projects funded by the Corporation is available on request. Information about CRDC projects is also available through the Australian Rural Research in Progress (ARRIP) database which can be accessed through the Internet and through most Australian research and public libraries.

Categories of Documents Held

Category	Nature	Access C: Documents customarily made available D: Documents not customarily made available for reasons of privacy or commercial-in-confidence
Administration	Files	D
Annual Operational Plans	Files, Publications	D, C
Annual Reports	Files, Publications	D, C
Applications, Guidelines and Contracts	Files, Publications	D, C
Assets Register	Files	D
Financial Management	Files	D
Five Year Plans	Files, Publications	D, C
Project Lists	Files, Publications	D, C
Research Reports	Files, Publications	D, C
Workshop Reports	Files, Publications	D, C

Significant Events

Under section 15 of the *Commonwealth Authorities and Companies (CAC) Act 1997*, the Corporation is required to notify the Minister of 'significant events'. No such events, as defined in the legislation, occurred during the reporting year or to the date of this report.

Significant Changes in the State of Affairs

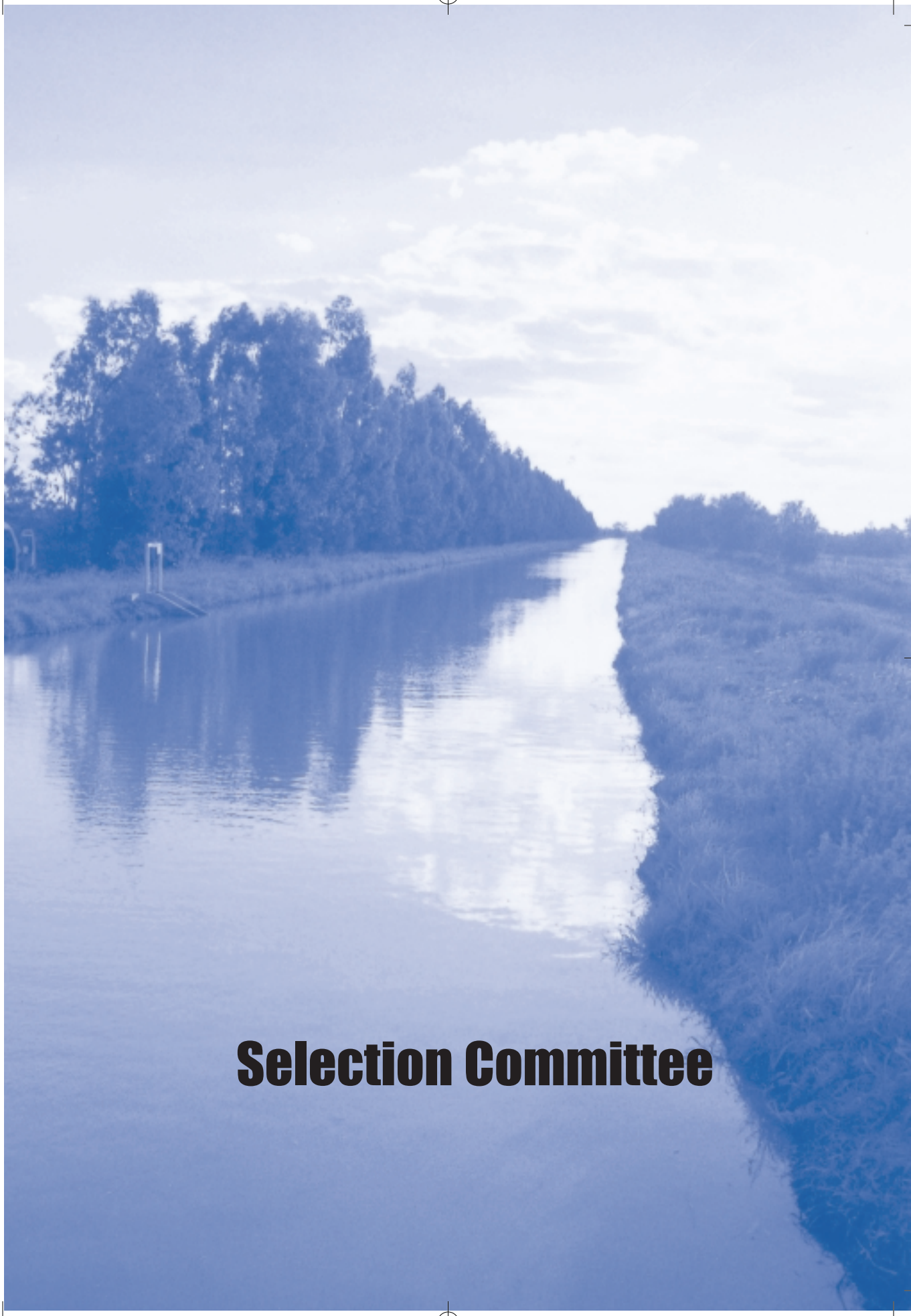
There have been no significant changes to the Corporation's state of affairs or principal activities during the reporting year or to the date of this report.

Political Disclosures

The Corporation did not engage the services of any advertising agency, market research organisation, polling organisation, direct mail organisation or media advertising organisation during the reporting year.

Payment to Representative Bodies

The Corporation's industry representative body is the Australian Cotton Grower's Research Association. The CRDC makes no payments to the Growers' Research Association except for the purposes of producing the proceedings of the biennial Australian Cotton Conference. The most recent Conference was held in Brisbane in August 2000.



Selection Committee

CRDC Selection Commitee
Anna Buduls Presiding Members
101 Louisa Road
BIRCHGROVE NSW 2041

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

Dear Senator,

I am pleased to submit the Annual Report of the Cotton Research and Development Corporation Selection Committee for the period ending 30 June 2000, pursuant to subsection 141 (1) of the *Primary Industries and Energy Research and Development Act 1989.*

Anna Buduls
Presiding Member

Selection Committee Report

On 12 August 1998, Senator Troeth (Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry) appointed Ms Anna Buduls as Presiding Member of the Selection Committee of the Cotton Research and Development Corporation (CRDC). Ms Buduls was appointed for a period until 30 May 2001, in accordance with subsection 122(1) of the *Primary Industries and Energy Research and Development (PIERD) Act 1989*.

On 2 February 1999 Senator Troeth requested the Presiding Member to establish a Selection Committee to nominate to her, by 2 August 1999, six Directors for appointment to the CRDC Board.

The members of the Selection Committee were nominated to the Senator on 14 April 1999 by the Australian Cotton Growers' Research Association, and appointed by the Sentator on 28 April 1999.

The Selection Committee comprised:

Presiding Member
Ms Anna Buduls

Members
Mr Glenn Fleischfresser
Mr Harley Bligh
Mr John Grellman
Professor Nancy Millis
Dr Vincent Mungomery

Selection Process

An advertisement seeking applications was placed in the national and regional press, and in addition representative organisations were contacted directly to identify possible nominations. The services of a professional search consultant were also engaged to assist in the process.

After detailed consideration of the 34 candidates who made themselves available for selection, 11 were short-listed for interview. Six were selected for nomination to Senator Troeth for appointment to the Board of the CRDC.

Nominations

The six nominees proposed on 20 July 1999 were considered by the Selection Committee to collectively possess expertise in all the fields of activity listed in subsection 131 (1) of the PIERD Act.

The nominations, which were accepted by the Senator on 10 November 1999, were

Mr Jeffery Bidstrup, Warra, QLD
Mr Bidstrup has considerable cotton production expertise.

Mrs Roberta Brazil, Brookstead, QLD
Mrs Brazil has production experience and a legal and administrative background.

Mr Richard Browne, Moree, NSW
Mr Browne is experienced in management of cotton processing facilities.

Dr Neil Forrester, Narrabri, NSW
Dr Forrester is an entomologist with considerable experience in insect control.

Mr Adam Kay, Narrabri, NSW
Mr Kay is an extension and development agronomist with considerable cotton industry experience.

Dr Jim Peacock, Canberra, NSW
Dr Peacock is a molecular biologist.

Summary of Expenditure

Expenditure by the Selection Committee for the year ending 30 June 2000 were:

Presiding Member	
Sitting fee, travel allowance and incidentals	3630.95
Selection Committee Members	
Airfares, vehicle allowance, accommodation and incidentals	3194.68
Consultant Costs	
Retainer	8000.00
Consultant and candidate airfares	4388.00
Incidentals	230.00
Secretariat	
Salary and administration costs, airfares, travel allowances and incidentals	2938.03
TOTAL	**22381.66**

Financial Statements

Australian National Audit Office

INDEPENDENT AUDIT REPORT

To the Minister for Agriculture, Fisheries and Forestry

Scope

I have audited the financial statements of the Cotton Research and Development Corporation for the year ended 30 June 2000. The financial statements comprise:

- Statement by Directors;
- Balance Sheet;
- Operating Statement;
- Statement of Cash Flows;
- Schedule of Commitments;
- Schedule of Contingencies; and
- Notes to and forming part of the Financial Statements.

The members of the Board are responsible for the preparation and presentation of the financial statements and the information they contain. I have conducted an independent audit of the financial statements in order to express an opinion on them to you.

The audit has been conducted in accordance with Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing Standards, to provide reasonable assurance as to whether the financial statements are free of material misstatement. Audit procedures included examination, on a test basis, of evidence supporting the amounts and other disclosures in the financial statements, and the evaluation of accounting policies and significant accounting estimates. These procedures have been undertaken to form an opinion as to whether, in all material respects, the financial statements are presented fairly in accordance with Australian Accounting Standards, other mandatory professional reporting requirements and statutory requirements in Australia so as to present a view of the entity which is consistent with my understanding of its financial position, the results of its operations and its cash flows.

The audit opinion expressed in this report has been formed on the above basis.

GPO Box 707 CANBERRA ACT 2601
Centenary House 19 National Circuit
BARTON ACT
Phone (02) 6203 7300 Fax (02) 6203 7777

Audit Opinion

In my opinion,

(i) the financial statements have been prepared in accordance with Schedule 2 of the Finance Minister's Orders; and

(ii) the financial statements give a true and fair view, in accordance with applicable Accounting Standards, other mandatory professional reporting requirements and Schedule 2 of the Finance Minister's Orders, of the financial position of the Cotton Research and Development Corporation as at 30 June 2000 and the results of its operations and its cash flows for the year then ended.

Australian National Audit Office

Willie Tan
Senior Director

Delegate of the Auditor-General

Canberra
30 August 2000

Statement by Directors

In our opinion, the attached financial statements give a true and fair view of the matters required by Schedule 2 to the Finance Minister's Orders made under the *Commonwealth Authorities and Companies Act 1997* for the year ended 30 June 2000.

Signed: B. Jackson
Chair

August 23, 2000

Signed: R.Schulze
Executive Director

August 23, 2000

Operating Statement

For the year ended 30 June 2000

	Notes	2000	1999
Operating revenues			
Revenues from government	5A	**11,166,275**	10,470,554
Interest	5C	**655,777**	558,950
Other	5B,D	**854,091**	929,356
Total operating revenues		**12,676,144**	11,958,860
Operating expenses			
Employees	6A	**522,820**	718,643
Suppliers	6B	**289,980**	158,616
Depreciation and amortisation	6C	**26,362**	90,738
Grants	7	**11,301,534**	10,651,772
Total operating expenses		**12,140,696**	11,619,769
Operating surplus before extraordinary items		**535,448**	339,091
Extraordinary items		**-**	-
Net surplus after extraordinary items		**535,448**	339,091
Accumulated surpluses or deficits at 1.7.1999		**13,248,056**	12,908,965
Total available for appropriation		**13,783,504**	13,248,056
Accumulated surpluses at end of reporting period		**13,783,504**	13,248,056

Balance Sheet

as at 30 June 2000

ASSETS	Notes	2000	1999
Financial assets			
Cash	8A	**1,198,513**	12,034,449
Deposits at Call	8A	**11,293,757**	
Receivables	8B	**1,328,928**	1,453,823
Total financial assets		**13,821,198**	13,488,272
Non-financial assets			
Infrastructure, plant and equipment	9	**87,898**	57,548
Total non-financial assets		**87,898**	57,548
Total Assets		**13,909,096**	13,545,820
LIABILITIES			
Provisions and payables			
Employees	10A	**100,552**	105,531
Suppliers	10B	**25,040**	192,233
Total provisions and payables		**125,592**	297,764
Total liabilities		**125,592**	297,764
EQUITY			
Accumulated surpluses	11	**13,783,504**	13,248,056
Total Equity		**13,783,504**	13,248,056
Total liabilities and equity		**13,909,096**	13,545,820
Current liabilities		**92,723**	264,452
Non-Current liabilities		**32,869**	33,312
Current Assets		**11,045,784**	7,916,201
Non-current Assets		**2,863,312**	5,629,619

Statement of Cash Flows

for the year ended 30 June 2000

	Notes	2000	1999
OPERATING ACTIVITIES			
Cash Received			
Appropriations		**11,768,364**	10,426,695
Sales of goods and services		**-**	-
Interest		**611,068**	692,405
Other		**1,418,566**	478,171
Total cash received		**13,797,998**	11,597,271
Cash used			
Grants		**(10,883,430)**	(10,421,985)
Employees		**(566,994)**	(445,776)
Suppliers		**(1,833,840)**	(748,822)
Total cash used		**(13,284,264)**	(11,616,583)
Net cash from operating activities	12	**513,734**	(19,312)
INVESTING ACTIVITIES			
Cash received		**-**	-
Cash used			
Purchase of property, plant and equipment		**(55,913)**	(82,223)
Total cash used		**(55,913)**	(82,223)
Net cash from investing activities		**(55,913)**	(82,223)
FINANCING ACTIVITIES			
Cash received		**-**	-
Cash used		**-**	-
Net cash from financing activities		**-**	-
Net increase in cash held		**457,821**	(101,535)
Cash at the beginning of the reporting period		**12,034,449**	12,135,984
Cash at the end of the reporting period	8A	**12,492,270**	12,034,449

Schedule of Commitments

as at 30 June 2000

BY TYPE	Notes	2000	1999
CAPITAL COMMITMENTS			
Computer Equipment		-	21,379
Total capital commitments		-	21,379
OTHER COMMITMENTS			
Operating leases		**83,578**	
Other commitments		**11,760,411**	
Total other commitments		**11,843,989**	
COMMITMENTS RECEIVABLE		**1,074,111**	
Net Commitments		**10,769,878**	
BY MATURITY			
All net commitments			
One year or less		10,739,180	
From one to two years		27,180	
From two to five years		3,518	
Over 5 years			
Net commitments		**10,769,878**	
Operating lease commitments			
One year or less		**47,897**	
From one year to five years		**30,698**	
Net operating lease commitments		**78,595**	

Schedule of Contingencies

as at 30 June 2000

	Notes	2000	1999

The Cotton R&D Corporation has no contingent liabilities of which it is aware.

Notes to and forming part of the Financial Statements

for the year ended 30 June 2000

Note	Description
1	Summary of Significant Accounting Policies
2	Reporting by segments and outcomes
3	Economic Dependency
4	Subsequent Events
5	Operating Revenues
6	Operating Expenses - Goods and Services
7	Operating Expenses - Grants
8	Financial Assets
9	Non-Financial Assets
10	Provisions and Payables
11	Equity
12	Cash Flow Reconciliation
13	Remote Contingencies
14	External Financing Arrangements
15	Remuneration of Directors
16	Related Party Disclosures
17	Remuneration of Auditors
18	Trust Money
19	Appropriations
20	Financial Instruments

1. Summary of Significant Accounting Policies

1.1 Basis of Accounting

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

The statements have been prepared in accordance with:

- *Requirements for the Preparation of Financial Statements of Commonwealth Agencies and Authorities* made by the Minister for Finance and Administration in August 1999 (Schedule 2 to the Commonwealth Authorities and Companies (CAC) Orders);
- Australian Accounting Standards;
- other authoritive pronouncements of the Australian Accounting Standards Board; and
- the Consensus Views of the Urgent Issues Group

The statements have been prepared having regard to:

- Statements of Accounting Concepts; and
- the Explanatory Notes to Schedule 2 issued by the Department of Finance and Administration.

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

1.2 Changes in Accounting Policy

Changes in accounting policy have been identified in this note under their appropriate headings.

1.3 Reporting by Outcomes

A comparison of Budget and Actual figures by outcome specified in the Appropriation Acts are relevant to the Corporation is presented in Note 2.

1.4 Appropriations

From July 1 1999, the Commonwealth Budget has been prepared under an accruals framework. Under this framework, Parliament appropriates moneys to the Corporation as revenue appropriations.

Revenue Appropriations

Revenues from government are revenues of the core operating activities of the Corporation.

Appropriations for outputs are recognised as revenue to the extent they have been received into the Corporartion's bank account or are entitled to be received by the Corporation at year end.

1.5 Other Revenue

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

Revenue from the sale of goods is recognised upon the delivery of goods to customers.

Administered revenue

Core operations

All material revenues described in this note are revenues relating to the core operating activities of the Corporation, whether in their own right or on behalf of the Commonwealth. Details or revenue amounts are given in Note 5.

1.6 Grants

The Corporation receives appropriations in the form of matching dollar Commonwealth contributions and industry levies for making payments, at the Corporation's discretion, of cotton related research and development grants.

1.7 Employee Entitlements

Leave

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

The liability for annual leave reflects the value of total annual leave entitlements of all employees at 30 June 2000 and is recognised at its nominal amount.

The non-current portion of the liability for long service leave is recognised and measured at the present value of the estimated future cash flows to be made in respect of all employees at 30 June 2000. In determining the present value of the liability, attrition rates and pay increases through promotion and inflation have been taken into account.

Superannuation

Employees contribute to the Public Sector Superannuation Scheme. Employer contributions amounting to $49,935 has been expensed in these financial statements.

No liability is shown for superannuation in the Balance Sheet as the employer contributions fully extinguish the accruing liability which is assumed by the Commonwealth.

Employee Superannuation Productivity Benefit contributions totalled $11,345 for the Corporation.

1.8 Leases

A distinction is made between finance leases which effectively transfer from the lessor to the lessee substantially all the risks and benefits incidental to ownership of leased non-current assets and operating leases under which the lessor effectively retains substantially all such risks and benefits.

Operating lease payments are expensed on a basis which is representative of the pattern of benefits derived from the leeased assets.

1.9 Borrowing costs

No borrowing costs were incurred by the Corporation during the year.

1.10 Cash

Cash includes notes and coins held and any deposits held with a bank or financial institution.

1.11 Financial Instruments

Accounting policies for financial instruments are stated at note 25.

1.12 Acquisition of Assets

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

Assets acquired at no cost, or for nominal consideration are initially recognised as assets and revenues at their fair value at the date of acquisition.

1.13 Property, plant and equipment

Asset recognition threshold

Purchases of property, plant and equipment are recognised initially at cost in the Balance Sheet, except for purchases costing less than $1,000, which are expensed in the year of acquisition.

Revaluations

Schedule 2 requires that buildings, infrastructure, plant and equipment be revalued progressively in accordance with the 'deprival' method of valuation in successive 3-year cycles.

The current cycle for all assets and leasehold improvements commenced in 1998-1999. All valuations are independent. Any assets which would not be replaced or are surplus to requirements are valued at net realisable value. At 30 June, 2000 the Corporation had no assets in this situation.

Recoverable amount test

The carrying amount of each item of non-current property, plant and equipment assets is reviewed to determine whether it is in excess of the asset's recoverable amount. If an excess exists as at the reporting date, the asset is written down to its recoverable amount immediately. In assessing recoverable amounts, the relevant cashflows, including the expected cash inflows from future appropriations by the Parliament, have been discounted to their present value.

In 1998-99, the non-current assets of the Corporation were subjected to the test. The application of the recoverable amount test to the not-for-profit departmental non-current assets of the Corporation is a change of accounting policy required by the Finance Minister's Orders in 1999-2000. No write down to recoverable amount has been made in 1999-2000 as a result of this change in policy.

Depreciation and Amortisation

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

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

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

	1999-00	1998-99
Leasehold improvements	**Lease term**	Lease term
Plant and equipment	**4 to 10 yrs**	4 to 10 yrs

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

1.14 Taxation

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

1.15 Comparative Figures

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

Comparatives are not presented in Notes dealing with the Reporting on Outcomes, due to 1999-2000 being the first year of the implementation of accrual budgeting.

1.16 Rounding

Amounts have been rounded to the nearest dollar.

2. Reporting by segments and outcomes

The Cotton Research & Development Corporation operates in a single industry and geographic provision of funding of research for the Australian cotton industry.

The Corporation is structured to meet the following outcome:

* *To enhance the contribution by research and development to a viable and sustainable cotton industry for the benefit of the Australian community.*
* *To increase the economic, environmental and social benefits to growers and others in the cotton industry and the broader community and to achieve sustainable use and management of natural resources and to make more efficient use of the resources and skills available for cotton research and to improve accountability for its research and development spending.*

Reporting by Outcomes for 1999-2000.

	Total for Outcome	
	Budget $000	**Actual $000**
Total net administered expenses	-	-
Add: Net cost of entity outputs	11,221	10,631
Outcome before abnormal/extraordinary items		
Abnormal/extraordinary items	-	-
Net Cost to Budget Outcome	11,221	10,631
Total assets deployed as at 30/6/00	9,624	13,909
Net assets deployed as at 30/6/00	9,480	13,783

Reporting by Outcomes by fundiung source for 1999-2000

Outcomes	Outputs $000					Total Appropriations $000	Total Expenses $000
	(Expenses against Revenue from Government Appropriations) (B)			Expense against Revenue from other sources (C)	Total Expenses against Outputs	(D) = (B)	
	Special Appropriation	Annual Appropriation	Total				
* Actual (1)	-	11,166	11,166	975	12,141	11,166	12,141
* Budget	-	11,974	11,974	198	12,172	11,974	11,974
				Appropriation Act 2 Capital			
				* Actual	55		
				* Budget	12		

(1) It is not possible to identify expenses incurred against specific funding sources in all cases.

3. Economic Dependency

The Corporation is dependent on appropriations from Parliament to carry out its normal activities.

4. Subsequent Events

No matters or circumstances have arisen since the end of the financial year which significantly affected or may affect the operations of the Cotton R&D Corporation, the results of these operations or the state of affairs of the Cotton R&D Corporation in subsequent years.

	2000	1999
5. Operating Revenues		
5A. Revenues from Government		
Commonwealth Contributions	**5,809,540**	5,668,875
Industry Levies	**5,356,735**	4,801,679
Appropriations	**11,166,275**	10,470,554
5B. Sales of goods and services		
Goods	**3,325**	-
Total		
5C. Interest		
Deposits	**655,777**	558,950
5D. Other revenues		
Royalties	**485,139**	793,724
Project refunds	**365,627**	135,632
Total	**850,766**	929,356
6. Operating Expenses - goods and services		
6A. Employee expenses		
Remuneration	**472,885**	718,643
Other employee expenses	**49,935**	
Total	**522,820**	718,643

The Corporation contributes to the Public Sector (PSS) Superannuation scheme which provides retirement, death and disability benefits to employees. Contributions to the schemes are at rates calculated to cover existing and emerging obligations. Current contributions rates are 10.1% of salary and an additional 3% is contributed for employer productivity benefits.

6B. Suppliers expenses		
Supply of goods and services	**227,211**	135,592
Operating lease rentals	**62,769**	23,025
Total	**289,980**	158,617

6C. Depreciation and amortisation

Depreciation of property, plant and equipment	**18,297**	73,184
Amortisation of leasehold improvements	**8,065**	17,554
	26,362	90,738

The aggregate amounts of depreciation or amortisation expensed during the reporting period for each class of depreciable asset are as follows:

- Office Equipment	**2,698**	14,446
- Computer Equipment	**10,545**	35,182
- Furniture and fittings	**5,054**	23,556
- Leasehold Improvements	**8,065**	17,554
Total allocated	**26,362**	90,738

7. Operating Expense - Grants

The Corporation makes grants to support the research and development of issues relating to thecotton industry.

Non-profit institutions		
Commonwealth organisations	**3,926,907**	3,955,602
State departments	**3,006,729**	2,867,540
Universities and colleges	**1,323,506**	1,808,000
Other research institutions	**1,897,319**	1,282,493
Corporate Activities	**669,327**	683,889
	10,823,788	10,597,524
Grants to commercial entities	**477,746**	54,248
	11,301,534	10,651,772

8. Financial Assets

8A. Cash

Cash at bank and on hand	**1,198,513**	309,410
Deposits at Call	**11,293,757**	11,725,039
	12,492,270	12,034,449
Balance of cash as at 30 June shown in the Statement of Cashflows	**12,492,270**	12,034,449

8B. Receivables

Goods and Services	**45,321**	143,741
Less: Provision for doubtful debts	**-**	-
Loans	**-**	-
Less: Provision for doubtful debts	**-**	-
Other Debtors	**1,283,607**	1,310,082
Total receivables	**1,328,928**	1,453,823

8C. Receivables (gross) which are overdue are aged as follows:

Not Overdue	**1,283,607**	1,302,168
Overdue by:		
- less than 30 days	**45,321**	151,655
- 30 to 60 days		
- 60 to 90 days		
- more than 90 days		
	1,328,928	1,453,823
Total receivables (gross)	**1,328,928**	1,453,823

9. Non-financial assets

Infrastructure, Plant & Equipment

Office Equipment- at cost	**43,246**	16,450
Less Accumulated Depreciation	**(8,649)**	(5,951)
	34,597	10,499
Computer Equipment - at cost	**48,662**	18,745
Less Accumulated Depreciation	**(16,438)**	(5,893)
	32,224	12,852
Fixtures & Fittings	**21,250**	21,250
Less Accumulated Depreciation	**(8,908)**	(3,854)
	12,342	17,396
Improvements - at cost	**34,355**	34,355
Less Accumulated Depreciation	**(25,619)**	(17,554)
	8,736	16,801
Total infrastructure, Plant and Equipment	**87,899**	57,548

TABLE A

Movement summary 1999-2000 for all assets irrespective of valuation basis

Item	Office Equipment	Computer Equipment	Fixtures & Fittings	Improvements	Total
Gross value as at 1 July 1999	16,450	18,745	21,250	34,355	90,800
Additions:	26,796	29,917	-	-	56,713
Revaluations:	-	-	-	-	-
Disposals:	-	-	-	-	-
Other movements	-	-	-	-	-
Gross value as at 30 June 2000	**43,246**	**48,662**	**21,250**	**34,355**	**147,513**
Accumulated Depreciation/amortisation as at 1 July 1999	5,951	5,893	3,854	17,554	33,253
Depreciation/amortisation charges for assets held 1 July 1999	2,077	5,435	5,054	8,065	20,631
Depreciation/amortisation charged for additions	621	5,110	-	-	5,731
Adjustment for revaluations	-	-	-	-	-
Adjustment for Disposals	-	-	-	-	-
Adjustment for Other movements	-	-	-	-	-
Accumulated Depreciation/ Amortisation as at 30 June 2000	**8,649**	**16,438**	**8,908**	**25,619**	**59,615**
Net book value as at 30 June 2000	34,597	32,224	12,342	8,736	87,899
Net book value as at 1 July 1999	10,499	12,852	17,396	16,802	57,548

10. Provisions and Payables

10A. Employees		
Salaries and Wages	**11,176**	4,545
Leave	**89,376**	100,985
	100,552	105,530
10B. Suppliers		
Trade Creditors	**25,040**	192,233
	25,040	192,233

11. Equity

Item	Capital		Accumulated results		Statutory Funds		Asset revaluation reserve		Total reserves		TOTAL EQUITY	
	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999	2000	1999
Balance 1 July 1999	-	-	13,248,056	12,908,965	-	-	-	-	-	-	13,248,056	12,908,965
Operating Results			535,448	339,091							535,448	339,091
Balance 30 June 2000			13,783,504	13,248,056							13,783,504	13,248,056

12. Cash Flow Reconciliation

Reconciliation of operating surplus to net cash provided by operating activities:

	2000	1999
Operating surplus (deficit) before extraordinary items	**535,448**	339,091
Extraordinary items	**-**	-
Operating Surplus/(Deficit)	**535,448**	339,091
Depreciation and amortisation of property, plant & equipment	**26,362**	90,738
Amortisation of intangibles		-
Resources received free of charge		-
Infrastructure, plant & equipment written off		-
Profit on disposal of property, plant & equipment		-
Interest from loans		-
Associated company - share of operating profit		-
Changes in assets and liabilities		
(Increase)/decrease in receivables	**124,895**	(642,616)
(Increase)/decrease in other assets	**(800)**	41,413
Increase/(decrease) in other liabilities	**-**	-
Increase in capital use charge	**-**	-
Increase/(decrease) in liability to suppliers	**(167,192)**	140,801
Increase/(decrease) in employee provisions	**(4,979)**	11,262
Increase/(decrease) in grants payable	**-**	-
Net Cash provided by operating activity	**513,734**	(19,311)

13. Remote Contingencies

The Cotton R&D Corporation has no contingent liabilities of which it is aware.

14. External Financing Arrangements

The Cotton R&D Corporation has no existing loan facility arrangements.

15. Remuneration of Directors

Aggregate amount of superannuation payments in connection with retirement of directors	**1,540**	-
Other remuneration received or due and receivable by directors of the Corporation	**193,725**	243,840
Total remuneration received or due and receivable by directors of the Corporation:	**195,265**	243,840

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

	Number	
* Nil - $10,000	**12**	3
* $10,000 - $20,000	**2**	5
* $110,000 - $120,000	**1**	1
	15	9

16. Related Party Disclosure

The Directors of the Corporation during the year were:

1st July 1999 - 30th September, 2000
Mr John Blood (Chairman)
Mr David Anthony (Deputy Chairman)
Mr Ralph Schulze (Executive Director)
Mr Evan Cleland
Dr Terry De Lacy
Dr Vic Edge
Mr David Hamilton
Dr Jim Peacock
Mr Bob Quiggin

10th November, 1999 - 30th June, 2000
Ms Bridget Jackson (Chair)
Mr Richard Browne (Deputy Chairman)
Mr Ralph Schulze (Executive Director)
Mr Jeff Bidstrup
Ms Roberta (Bobbie) Brazil
Dr Neil Forrester
Mr Adam Kay
Dr Jim Peacock
Mr Bob Quiggin

The aggregate remuneration of Directors is disclosed in Note 15.

Other transactions with Directors or Director related parties
The following grants were made to Director related entities. They were approved under the normal terms and conditions of the Corporation. Following full disclosure of their relevant interests, the Directors took part in the decisions of the Board.

	2000	1999
Grants made to Director related entities (CSIRO, NSW Agriculture & QLD Department of Primary Industries)	**$4,617,379**	$6,743,142

17. Remuneration of Auditors

Remuneration to the Auditor-General for auditing the financial statements for the reporting period (excluding GST)

2000	1999
6,396	8,100

No other services were provided by the Auditor-General during the reporting period.

18. Trust Money

No moneys were held under trust arrangements

19. Appropriations

The Corporation received the following appropriations during the year out of the Consolidated Revenue Fund.

	2000	1999
Commonwealth Contributions	**5,809,540**	5,668,875
Industry Levies	**5,356,735**	4,801,679
	11,166,275	10,470,554

20. Financial Instruments

a) Terms, conditions and accounting policies

Financial Instrument	Notes	Accounting Policies and Methods (including recognition criteria and measurement basis)	Nature of underlying instrument (including significant terms and conditions affecting the amount, timing and certainty of cashflows
Financial assets	8A	Financial assets are recognised when control over future economic benefits is established and the amount of the benefit can be reliably measured.	
Deposits at call	8A	Deposits are recognised at their nominal amounts. Interest is credited to revenue as it accrues.	Temporarily surplus funds are placed on deposit at call with the CR&D Corporation's banker. Interest is earned on the daily balance at the prevailing daily rate for money on call and is paid quarterly.
Term Deposits	8A	The deposit is recognised at cost. Interest is accrued as it is earned.	The deposits are held with Trust Bank Tasmania, Colonial State Bank and the Bank of Adelaide, maturing in 1999/00 & 2000/01, earning an effective rate of interest ranging from 5.35% to 7.25% payable on maturity.
Other debtors	8B	These debtors are recognised at the nominal amounts due.	Credit terms are net 14 days
Financial Liabilities	10B	Financial liabilities are recognised when a present obligation to another party is entered into and the amount of the liability can be reliably measured.	
Trade Creditors	10B	Creditors and accruals are recognised at their nominal amounts, being the amounts at which the liabilities will be settled. Liabilities are recognised to the extent that the goods or services have been received (and irrespective of having been invoiced).	Settlement is usually made net 30 days.

20. Financial Instruments (cont.)

b) Interest Rate Risk

Financial Instrument	Notes	Floating Interest Rate		Fixed Interest Rate				Non-Interest Bearing		Total		Weighted Average Interest Effective Rate	
				1 year or less		1 to 2 years						%	%
		99-00	98-99	99-00	98-99	99-00	98-99	99-00	98-99	99-00	98-99	99-00	98-99
Cash at Bank	8A	-56,931	308,910							-56,931	308,910	n/a	n/a
Cash on Hand	8A							500	500	500	500	n/a	n/a
Deposits at call	8A	1,254,944	2,844,468							1,254,944	2,844,468	n/a	n/a
Receivables for goods and services	8B							1,328,928	1,453,823	1,328,928	1,453,823	n/a	n/a
Term Deposits	8A			8,430,445	3,308,500	2,863,312	5,572,072			11,293,757	8,880,572	6.03	5.69
Total Financial Assets (recognised)		1,198,013	3,153,378	8,430,445	3,308,500	2,863,312	5,572,072	1,329,428	1,454,323	13,821,198	13,488,273		
Total Assets										13,909,096	13,546,819		
Financial Liabilities (Recognised)													
Trade creditors	10B							25,040	192,233	25,040	192,233	n/a	n/a
Total Financial Liabilities (recognised)								25,040	192,233	25,040	192,233	n/a	n/a
Total Liabilities										125,593	297,764		

20. Financial Instruments (cont.)

c) Net Fair Value of Financial Assets and Liabilities

	Notes	2000	1999
Cash at Bank	8A	**(56,931)**	308,910
Cash on Hand	8A	**500**	500
Cash at Call	8A	**1,254,944**	2,844,468
Receivables for Goods and Services	8B	**45,332**	1,453,823
Term Deposits	8A	**11,293,757**	8,880,572
		12,537,602	13,488,273

Total Financial Assets

Financial Liabilities (Recognised)

Trade liabilities		**25,041**	192,233
Total Financial Liabilities		**25,041**	192,233

Financial assets

The net fair value of cash, deposits on call and non-interest-bearing monetary assets approximate their carrying amounts

Financial liabilities

The net fair values for trade creditors, of which are short-term in nature, are approximated by their carrying amounts.

d) Credit Risk Exposures

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

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

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

Project List

The Research Program

During 1999-2000 the Corporation funded 190 research, development, travel, extension and workshop projects. Agreements for the carrying out of these research and development activities are made under sections 13 and 14 of the Primary Industries and Energy Research and Development Act 1989. Corporation grant agreements are contracts entered into with research providers and are established on a whole-of-project-life basis.

Research Providers

Code	Organisation
AAAA	Aerial Agricultural Association of Australia
AAW	A & A Williams Pty Ltd
ACEC	Australian Cotton Exhibition Centre
AEM	Agricultural and Environmental Management Systems Pty Ltd
ANU	Australian National University
AWA	Agriculture Western Australia
CA	Cotton Australia
CHEM	ChemCert Australia
CRC	Australian Cotton Cooperative Research Centre
CRDC	Cotton Research and Development Corporation
CSE	CSIRO Entomology
CSP	CSIRO Plant Industry
CWPR	Centre for Water Policy Research
CWT	CSIRO Textile and Fibre Technology
DAN	NSW Agriculture
DAQ	Queensland Department of Primary Industries
DNR	Queensland Department of Natural Resources
FT	4T Consultants Pty Ltd
MCK	McKenzie Soil Management Pty Ltd
NEC	National Centre for Engineering in Agriculture
POLY	Polygon Pty Ltd
QUT	Queensland University of Technology
RIR	Rural Industries Research and Development Corporation
SLM	Cooperative Research Centre for Soil and Land Management
SPC	Sundown Pastoral Company
UA	University of Adelaide
ULA	La Trobe University
UMON	Monash University
UNE	University of New England
UQ	University of Queensland
US	University of Sydney
UTS	University of Technology Sydney
UWS	University of Western Sydney

Projects Funded 1999-2000

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
Program A: Insect Management				
AWA2C	Defining an integrated pest management (IPM) system for INGARD cotton in north-western Australia.	1/7/99	30/6/02	Annells, Amanda
CRC10C	Physiological and agronomic factors affecting the efficacy of Bt in transgenic cotton	1/7/99	30/9/00	Wright, Philip
CRC23C	Forecast of spring helicoverpa migration from central Australia	1/6/00	30/6/00	Gregg, Peter
CRDC88C	IPM Guidelines & Support 1999/2000 Budget Meeting.	1/7/99	30/6/00	Pyke, Bruce
CRDC89C	INGARD Survey III 1999/2000 Budget Meeting.	1/7/99	30/6/00	Pyke, Bruce
CSE64C	Ecological aspects of Helicoverpa populations related to the successful deployment of Bt transgenic cottons.	1/7/97	30/6/00	Fitt, Gary
CSE65C	A reappraisal of sampling relationships and Helicoverpa feeding behaviour in INGARD cotton.	1/7/97	30/6/00	Abbott, K
CSE69C	Identifying the key groups of soil fauna in cotton agroecosystems.	1/7/97	30/6/00	Lytton-Hitchins, James
CSE72C	Resistance to Bt toxins in heliothine pests of cotton.	1/7/98	30/6/01	Akhurst, Ray
CSE73C	Genetics of Bt Resistance in H. armigera. Genetics and mode of action of resistance to Bt toxins in heliothine pests of cotton	1/7/98	30/6/00	Daly, Joanne
CSE74C	Efficacy of Bt cotton plants and causes of variation in performance.	1/7/98	30/6/01	Daly, Joanne
CSE75C	Helicoverpa armigera stunt virus as a Source of Insecticidal Insert Genes for Engineering into Cotton – Phase III (not re-funded orderly exit by 31/10/99)	1/7/98	31/10/99	Gordon, K
CSE76C	Augmentation and conservation of Helicoverpa parasitoid populations in cotton	1/7/98	30/6/01	Schellhorne, Nancy

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
CSE82C	Post Grad – Erica Crone – "Characterisation of a potential new insecticidal transgene".	15/3/99	14/3/02	Crone, Erica
CSE83C	Management of Bemisia tabaci biotype B	1/7/99	30/6/02	De Barro, Paul
CSE84C	Insect pest resistance and the role of induced responses to damage in Australian cottons	1/7/98	30/6/02	Fitt, Gary
CSE86C	Quantifying behavioural responses of Helicoverpa moths to trap crops for area wide management	1/7/99	30/6/02	Dillon, Martin
CSP103C	Management of early season damage and secondary pests in cotton	1/7/99	30/6/02	Wilson, Lewis
CSP80C	Development and field testing of micro-computer cotton management packages.	1/7/97	30/6/00	Bange, Michael
CSP82C	Physiology of crop responses to insect pests.	1/7/97	30/6/00	Lei, Tom
DAN114C	Post Doctoral – Mr Moazzem Khan – Ecology and management of Apple Dimpling Bugs on cotton.	1/7/97	30/6/00	Khan, Moazzem
DAN118C	Resistance Management in Australian cotton: conventional insecticides & transgenic cottons	1/7/98	30/6/01	Holloway, Johnathon
DAN119C	Conservation and utilization of beneficial insects in the cotton agroecosystem for Integrated pest Management in conventional and transgenic cotton II.	1/7/98	30/6/01	Mensah, Robert
DAN120C	Yield Effects on Cotton Pollinated by Honey Bees – EXTENDED TO 30/6/2000 NO ADDITIONAL COST.	1/10/98	30/6/00	Rohdes, J
DAN138C	Insecticide Resistance Management in Bemisia tabaci	1/7/99	30/6/02	Gunning, Robin
DAN139C	Pesticide Resistance in Cotton Aphid and Twospotted Mite	1/7/99	30/6/02	Herron, Grant
DAN140C	Management of Resistance to Conventional Chemicals in Helicoverpa spp.	1/7/99	30/6/04	Gunning, Robin
DAN141C	Role of Conventional and Novel Insecticides in Integrated Pest Management in Cotton	1/7/99	30/6/02	Holloway, Johnathon

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
DAN142C	IPM in cotton: Semiochemicals of cotton plant surfaces and pest management – change in focus	1/7/99	30/6/00	Mensah, Robert
DAQ102C	Risk factors for silverleaf white fly outbreaks in cotton	1/7/99	30/6/02	Lea, David
DAQ83C	Monitoring silverleaf whitefly and its natural enemies in cotton areas of Queensland	1/7/98	30/6/01	Franzmann, Bernard
DAQ84C	Thresholds for green mirids in cotton	1/7/98	30/6/01	Simpson, Gordon
DAQ85C	GRDC1C – Regional Management of Heliothis on the Darling Downs	1/7/98	30/6/01	Miles, Melina
DAQ92C	Post Grad – David Lea – "Risk factors for silverleaf whitefly outbreaks in cotton"	1/2/99	30/6/02	Lea, David
DAQ95C	In-field development of novel options for Helicoverpa control in central Queensland	1/9/99	30/6/02	Grundy, Paul
DAQ96C	IPM in dryland cotton on the Darling Downs	1/7/99	30/6/02	Scholz, Brad
DAQ97C	Development of trap cropping protocols for heliothis management on cotton in central Queensland	1/7/99	30/6/02	Sequeira, Richard
UNE31C	Post Grad – Emma Louise Cottage – Management of resistance in Bemisia tabaci to insect growth regulators and juvenile hormone mimics	1/1/98	31/12/00	Cottage, Emma
UNE33C	Post Grad David Britton – Studies of slow-release formulations for semiochemicals in cotton pest management	1/8/99	31/7/02	Britton, David
UNE34C	Review of Research into Role of Beneficial Insects in Cotton Farming Systems	3/4/00	30/6/00	
UQ24C	Heliothis movement and pest management: Effects of movements within and between cropping regions (Carry over of unspent funds)	1/7/98	30/6/00	Zalucki, Myron
UQ26C	Ecology of Trichogramma egg parasites in the Ord River Irrigation Area and their role in cotton IMP (Project only started Jan 2000)	1/7/99	30/6/02	Zalucki, Myron

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
UQ28C	Post Graduate – Ecology of the Trichogramma egg parasites in the Ord River Irrigation Area and their role in cotton IPM (Project only started Jan 2000) – Andrew Davies	1/7/99	30/6/02	Davies, Andrew
UQ29C	Post Graduate: Mark Wade: Biology, ecology and utilisation of the Damsel Bug as a predator in cotton – towards real IPM	1/1/00	31/12/02	Wade, Mark

Program B: Diseases and Weeds

ANU6C	Testing the tomato I-2 resistance gene for its ability to confer Fusarium resistance in cotton	1/1/00	31/12/01	Jones, David
CRC24C	Bunchy Top Research	1/7/99	30/6/00	Wilson, Lewis
CRDC95C	Fusarium Solving 1999/2000 Budget Meeting. ($92,967 transferred to ANU6C David Jones project)	1/7/99	30/6/00	
DAN121C	Diseases of Cotton - IV	1/7/98	30/6/01	Allen, Stephen
DAN122C	Black Root Rot and Slow early Season Growth of Cotton	1/7/98	30/6/01	Nehl, David
DAN123C	Controlling Cotton Seedling Diseases and Vascular Wilts with Micro-organisms.	1/7/98	30/6/01	Putcha, Subbu
DAN124C	Sustainable Weed Management Systems for Cotton	1/7/98	30/6/01	Charles, Graham
DAQ99C	Ecology and development of managment strategies for fusarium wilt in cotton	1/7/98	30/6/00	Kochman, Joe
UNE28C	Ecology and management of the 'take-all' weed, Polymeria longifolia (Peak Downs curse), in cotton.	1/7/96	31/10/99	Johnson, Stephen
UNE29C	Post Grad - Stephen Johnson "Ecology and management of the 'take-all' weed, Polymeria longifolia (Peak Downs curse), in cotton	1/7/96	31/10/99	Johnson, Stephen
UNE32C	Ecology and management of Bladder Ketmia (Hibiscus trionum) and other emerging problem Malvaceae weeds	1/7/99	30/9/02	Johnson, Stephen

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
US48C	Post Grad - Fiona Frances Ballard - "Identification and characterisation of genes for resistance to bacterial bligh in the cotton plant".	1/3/99	1/3/02	Ballard, Fiona

Program C: Soils

CRC11C	Understanding the salinity threat in cotton growing areas of Australia Phase III – Implementation and Management	1/7/99	30/6/02	Triantafilis, John
CRC12C	Long-term effects of cotton rotations on the sustainability of cotton soils II	1/7/99	30/6/02	Hulugalle, Nilantha
CRC1C	Improving the N nutrition of cotton using rotation crops. (PROGRAM 5)	1/7/97	30/6/00	Rochester, Ian
CRC7C	Cotton residue decomposition	1/7/98	30/6/01	Putcha, Subbu
DAN99C	Assessment of winter crop rotation phases for salinity prevention in cotton based rotation systems.	1/7/96	30/6/00	Friend, John
MCK2C	Soil Management Training Courses – Walgett and Bourke	1/7/99	30/6/00	McKenzie, David
SLM1C	Impact of pesticides on soil biological processes essential for plant growth and nutrition.	1/7/97	30/6/00	Gupta, Vadakattu .V.S.R.
SPC1C	Composted organic wastes as a soil amendment for sustainable cotton production.	1/7/97	30/6/00	Buckerfield, J
US52C	The development and adoption of a cross-platform computer program to quantitatively assess soil structural features.	1/7/99	30/6/00	Cattle, S
US56C	Post Graduate – Sevag Bedrossan: Potassium status and mineralogy of soil in relation to premature senescence in cotton in Northern NSW	1/1/00	1/1/03	Bedrossian, Sevag

Program D: Water

CRDC100C	Water Use Efficiency Workshop. 1999/2000 Budget Meeting.	1/7/99	30/6/00	
CRDC97C	Drip Irrigation 1999/2000 Budget Meeting.	1/7/99	30/6/00	

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
CSP93C	Assessing water use efficiency on eastern Australian cotton farms.	1/7/97	30/6/00	Tennakoon, Sunil
CWPR1C	Developing a system of water management in the river systems of New South Wales and Queensland based on capacity sharing	17/3/99	30/6/00	Foreman, Jim
DAQ103C	A Scoping Study: finfish production in cotton farm ring-tanks	26/7/99	30/6/00	Potter, Mike
NEC2C	Best Management Practice for Maximising Whole Farm Irrigation Efficiency in the Australian Cotton Industry.	16/9/97	31/3/01	Dalton, Paul
NEC4C	Post Grad - Benjamin Mark White - "Best management practices for maximising water use efficiency in the Australian Cotton Industry"	1/7/98	7/6/00	White, Ben
NEC6C	A Scoping Study of Trickle Irrigation use in the Australian Cotton Industry	1/2/00	30/6/00	Raine, Steven
US54C	Improving irrigation management of cotton grown on read soil using subsurface drip irrigation	1/1/00	31/12/00	O'Brien, Ben

Program E: Best Mangement Practise

AAAA1C	Aircraft Check-up Program	1/7/99	30/6/00	Hurst, Phil
AEMS1C	Investigation of endosulfan contamination in cattle	1/8/99	30/6/00	Hugo, Lyndal
CA1C	Best Management Practice Co-ordinator – Gavin Inglis.	1/12/98	30/6/00	Inglis, Gavin
CHEM1C	Development of ChemCert Ground Rig Operators Course	1/7/99	30/6/00	Woods, Nicholas
CRDC108C	Spray Application Program – ground rig operator guidelines	1/7/99	30/6/00	Rankine, Ian
CRDC109C	BMP – MDBC Project	1/7/99	30/6/00	Slack-Smith, Peta
CRDC110C	BMP - Audit Development Scheme	1/7/99	30/6/01	Slack-Smith, Peta
CRDC113C	BMP – Spray and Drift Management Plan	1/7/99	30/6/00	Pyke, Bruce
CRDC114C	BMP – Revision of Manual	1/7/99	30/6/00	Williams, Allan
CRDC115C	BMP – Communications	1/7/99	30/6/00	Slack-Smith, Peta

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
CRDC116C	BMP – Pilot audit seminar	1/7/99	30/6/00	Slack-Smith, Peta
CRDC118C	Weather Station Darling Downs CGA	1/1/00	30/6/00	
CRDC24C	Commissioned Research – Best Management Practice	1/7/97	1/7/01	Pyke, Bruce
CRDC85C	Endosulfan Worker Exposure 1999/2000 Budget Meeting.	1/7/99	30/6/00	Clarke, Lyn
CRDC87C	Spray Application Program 1999/2000 Budget meeting	1/7/99	30/6/00	Pyke, Bruce
CRDC90C	Lyndal Hugo – Pesticide Contamination Issues. 999/2000 Budget Meeting.	1/7/99	30/6/00	Hugo, Lyndal
CRDC91C	Development of Endosulfan Management Notes. 1999/2000 Budget Meeting.	1/7/99	30/6/00	Pyke, Bruce
CSE77C	Bioremediation Enzymes for Endosulfan.	1/7/98	30/6/01	Oakeshott, John
DAQ98C	Improved pesticide application performance	1/7/99	30/6/02	Hughes, Peter
DNR1C	Best management practices to minimise pollutant transport from cotton production systems.	1/10/97	30/6/00	Waters, D
UQ27C	Optimisation of large droplet placement (LDP) technology for the aerial application of insecticides in cotton	1/7/98	30/6/02	Craig, Ian
US39C	Post Grad – Angus Crossan – remediation of Pesticides on Cotton Farms.	1/7/97	30/3/01	Crossan, Angus
US49C	Ecological Risk Assessment and Risk Management for New Cotton Developments.	1/3/99	30/6/00	Kennedy, Ivan R
UTS2C	Relationship between pesticides in Passive Samplers to Riverwater Concentrations and Macroinvertebrate Populations	1/7/99	30/6/02	Leonard, Alex
UTS3C	Post Grad – Joanne Hawkins – Toxicity Pesticide Mixtures and Sediment Binding of Pesticides in Storm Runoff Water from Cotton Fields	1/7/99	30/6/02	Hawkins, Joanne
UTS4C	The effects of endosulphan on macroinvertebrate communities using artificial streams – extension of LWRRDC Post Grad Scholarship – 6 months support	1/7/99	30/12/99	Hose, Grant

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
Program F: Community & Economics				
CRDC130C	Australian Cotton Exhibition Centre	1/7/99	30/6/00	
CRDC18C	Joint Funded Farm Occupational Health and Safety R&D Programs.	1/4/97	30/6/02	Fragar, Lynette
CRDC93C	Economics of Production. 1999/2000 Budget Meeting - Wicks	1/7/99	30/6/00	
CRDC94C	CIE Re-Report 1999/2000 Budget Meeting.(Boyce)	1/7/99	30/6/00	
Program G: Processing & Marketing				
CRC14C	Cotton dying and related research – CSIRO Wool Technology	1/7/99	30/6/00	Cookson, Peter
CRDC105C	Schlafhorst Assessment	1/7/99	30/6/00	
CRDC92C	Cotton Trade Barriers Study – 1999/2000 Budget Meeting.	1/7/99	30/6/00	
CWT3C	Gary Robinson – Lubricants for processing – preliminary investigation	1/7/99	30/6/00	Robinson, G.A
CWT4C	Measuring Cotton Fibre Fineness and Maturity using the Sirolan-Laserscan	1/7/99	30/6/01	Naylor, Geoffrey
NEC3C	Post Doc – Grant Roberts – Cotton ginning research with emphasis on cotton quality	1/9/97	30/6/00	Roberts, Grant
NEC5C	Hygiene, fertiliser equivalence, soil pathogen suppression and guidelines for production of cotton gin trash compost.	1/7/99	30/6/00	Roberts, Grant
POLY1C	Polygon Process for Removal of Plastic Contamination in Cotton	1/5/00	30/6/00	Armstrong, Peter
Program H: Plant Breeding & Genetic Engineering (Biotechnology)				
ANU4C	Cloning genes to manipulate cotton fibre cellulose production for improved fibre traits.	1/7/98	6/2/02	Burn, Joanne
CSE67C	Targetted disruption of digestion for control of Helicoverpa on cotton.	1/7/97	30/6/00	Campbell, Peter
CSE68C	Novel resistance genes for mirids and other sap-sucking pests of cotton.	1/7/97	30/6/00	Akhurst, Ray

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
CSE70C	Post grad - Constanza Angelucci - Binding sites for the Cry 1 Ac delta-endotoxin of Bacillus thuringiensis in Helicoverpa armigera.	1/7/97	30/4/01	Angelucci, Constanza
CSP102C	Isolation of Novel Cotton Promotors to drive the Robust Expression of useful Genes in Transgenic Cotton.	1/7/98	30/6/01	Llewellyn, Danny
CSP104C	Evaluation of disease tolerance of transgenic cotton lines containing genes for putative antifungal proteins	1/7/99	30/6/01	McFadden, Helen
CSP105C	Potential for the Genetic Manipulation of Gossypol - A Defence Chemical with Negative Impacts on Cottonseed Products	1/7/99	1/7/02	Townsend, Belinda
CSP110C	Cotton Fibre EST sequencing: Gene discovery towards improving cotton fibre quality and yield	1/7/99	30/6/00	Llewellyn, Danny J
CSP111C	New methods to enhance regeneration of cotton plants from tissue cultures to aid crop improvement (OLD UMON1C)	1/7/98	30/6/01	He, Ping
CSP73C	Natural production of indigo in cotton fibres by genetic engineering. (Extension of time & carry over of funds)	1/1/96	30/6/00	Van De Loo, Frank
CSP78C	Post Doc - Qing Liu Development of cotton genotypes with high-value oil quality.	1/7/97	30/6/00	Liu, Q
CSP84C	Genetic manipulation of the systemic acquired resistance responses of cotton for improved tolerance to fungal pathogens.	1/7/97	30/6/00	McFadden, Helen
CSP85C	Development of genome specific markers for the Australian C, G, and K genomes and continuing development of intergenomic germplasm.	21/7/97	30/6/00	Brubaker, C
CSP87C	Post Doc - Dr Y-L Ruan Molecular control of photoassimilate import into developing cotton fibre.	8/9/97	30/6/00	Ruan, Yong-Ling

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
CSP88C	ACRI Plant Breeding Fibre Quality Laboratory.	1/7/97	30/6/00	Constable, Greg
CSP96C	Breeding Improved Cotton Varieties	1/7/98	30/6/03	Constable, Greg
CSP97C	Cotton Biotechnology: Core Program	1/7/98	30/6/01	Llewellyn, Danny
DAQ89C	Cotton Strain and Cultivar testing in Queensland	1/7/98	30/6/03	Mann, Gavin
UA5C	Isolation of gene sequences to manipulate the cotton fibre.	1/7/97	30/6/00	Orford, Sharon
ULA6C	Post Grad - Ms Kerryn Dunse - Engineering proteinase inhibitors for enhanced activity against Lepidopteran proteases.	1/3/98	1/3/01	Dunse, Kerryn
US32C	Isolation of pathogencity genes from Verticillium wilt fungi infecting cotton.	1/7/96	30/6/00	Ho, Kinnie
US33C	Molecular genetic markers for accelerated selection of Verticillum wilt-resistant cotton cultivars.	1/7/96	30/6/00	Kailasapillai, Sivakala
US34C	Post Grad - Mona Akbari "Molecular genetic markers for accelerated selection of Verticillium wilt-resistant cotton cultivars. (no annual report due - thesis to be submitted Mar. 2000)	1/7/96	31/12/99	Akbari, M
US43C	Identification and Utilisation of Disease Resistance Genes in Australian Cotton Cultivars.	1/7/98	31/12/00	Jacobsen Lyon, Karin

Program 1: Farming Systems

CRC16C	Northern Australia Contingency 1999 / 2000	1/7/99	30/6/00	
CRC2C	Improving the sustainability of cotton production with new plant growth regulators. (PROGRAM 5)	1/7/97	30/6/00	Wright, Philip
CRC5C	The application of precision techniques to cotton farming systems.	1/7/97	30/6/00	Boydell, Broughton
CRDC101C	Soils – Farming Systems. 1999/2000 Budget Meeting.	1/7/99	30/6/00	
CRDC119C	Acquisition of new Truck and Trailer ACRI, Myall Vale	1/7/99	30/6/00	Constable, Greg

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
CSP106C	Enhancing Development, Support and Evaluation of Computerised Decision Support	1/7/98	30/6/02	Bange, Michael
CSP112C	Providing continuous and reliable weather data collection at the Austrlian Cotton Research institute	1/1/00	30/6/00	Bange, Michael
CSP89C	Field experiments with cotton at Myall Vale.	1/7/97	30/6/00	Fitt, Gary
CSP90C	Enhancing CERCOT to meet industry needs	1/7/97	30/6/00	Milroy, Steven
CSP91C	Maintenance of cotton industry weather station.	1/7/97	30/6/00	Bange, Michael
CSP95C	Development of agronomic management options for dry season cotton production in NW Australia.	1/7/98	30/6/01	Singh, Dhananjay
CSP98C	Delivering to industry the benefits of cropping systems models.	1/7/98	30/6/01	Bange, Michael
DAN131C	Evaluation of Ultra Narrow Row Cotton production in cool season irrigated areas.	1/10/98	30/6/01	Cooper, Jack
DAN145C	Operational costs for cotton experiments – III	1/7/99	30/6/02	Reddan, Bruce
DAQ104C	GRDC2C – Using seasonal climate forecasts for more effective grain-cotton production systems (joint project)	1/7/99	30/6/02	Pollock, Kirrily
US36C	Post Grad – Broughton Boydell "Mapping and interpretation of cotton yield variability".	1/3/97	1/3/00	Boydell, Broughton
US42C	Development of "Nutrilogic" for Precision Agriculture – a Decision Support System for Agrotechnology transfer in the Cotton Industry	1/7/98	30/6/01	Stewart, Craig
US44C	Post Grad – Craig Stewart – 'Development of "Nutrilogic" for Precision /Agriculture – a Decision Support System for Agrotechnology transfer in the Cotton Industry'	1/7/98	30/6/01	Stewart, Craig
USQ8C	Machinery Development and Extension Support for the Australian Cotton Industry	1/7/98	30/6/00	Schoenfisch, Murray

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
Program J: Extension				
CRC13C	Trainee Industry Development Officer	1/7/99	30/6/02	To be appointed
CRC4C	National cotton extension coordinator.	1/11/96	31/12/99	Gibb, Dallas
CRC8C	IPM Training Coordinator.	1/4/98	30/6/01	Kauter, Greg
CRDC102C	Workshops - Other 1999/2000 Budget Meeting.	1/7/99	30/6/00	
CRDC104C	Publications general - 1999/2000	1/7/99	30/6/00	
CRDC98C	Mobile Regional Conference 1999/2000 Budget Meeting.	1/7/99	30/6/00	
CRDC99C	Extension Workshop. 1999/2000 Budget Meeting.	1/7/99	30/6/00	
DAN134C	Industry Development Officer - Bourke	1/7/99	30/6/02	Whyte, Simon
DAN135C	Promotion of SoilPAC - Production of Video.	1/3/99	30/8/00	Shaw, Gus
DAN143C	Industry Development Officer - Warren	1/7/99	30/6/02	Rourke, Kirrily
DAN144C	Industry Development Officer - Gunnedah	1/7/99	30/6/02	Hickman, Mark
DAQ100C	Extension Agronomy for Cotton Production in CQ	1/7/99	30/6/04	Kelly, David
DAQ90C	Cotton Industry Development Extension Officer - Border Rivers	1/7/98	30/6/01	Korteweg, Mascha
DAQ93C	Cotton Industry Development Extension Officer - Dirranbandi & St George.	1/2/99	1/2/02	kerlin, Sarah
Program K: Human Resources				
CRDC103C	Contingency Research Budget - 1999/2000 Budget Meeting.	1/7/99	30/6/00	
CRDC107C	V.S. Putcha Travel to second international fusarium biocontrol workshop in France 15th to 17th September 1999	1/7/99	30/6/00	Putcha, V.S
CRDC117C	Post Graduate Stipend adjustment	1/12/99	6/6/00	
CRDC136C	Commissioned Research - Other	1/7/99	30/6/00	
CRDC96C	Women in Cotton 1999/2000	1/7/99	30/6/00	

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
CSE87C	Technical and Local Travel Support for a Distinguished International Visitor in Insecticide Biochemistry, Professor A.L. Devonshire	1/7/99	30/6/00	Russell, Robyn J
CSP108C	ACRI Computer Network Support	1/7/98	30/6/02	Pfeiffer, Tony
DAN125C	Purchase of high clearance applicator: Extension of cease Date to June 01	1/7/97	30/6/01	Roberts , Grant A
DAN146C	Visit by Prof J Kloepper to V.S. Putcha	1/12/99	1/2/00	Putcha, V.S
DAN147C	Walk in cool room	1/3/00	30/6/00	Constable, Greg
DAN149C	Travel to XXI International Congress of Entomology, Iguassu Falls, Brazil	1/7/99	30/6/00	Mensah, Robert
DAQ101C	Travel Application - International Conference "Spray Oils Beyond 2000"	1/7/99	29/10/99	Franzmann, B.A
DNR2C	Des Mcgarry travel to Multifunctional character of land conference in the Netherlands	13/9/99	17/9/99	McGarry, Des
RIR6C	Cotton Industry based scholarship for the Australian Rural Leadership Program - Courses 6 & 7	1/7/99	30/6/00	Beckingham, Mike
ULA7C	Travel - 21st International Entomology Conference, Igassu Falls, Brazil (Post Grad Kerryn Dunse)	1/6/00	30/6/00	Dunse, Kerryn
UMON3C	Travel - to attend the annual meeting of plant physiologists in Brisbane	26/9/99	30/9/99	White, Rosemary
US55C	UNDERGRADUATE SCHOLARSHIP PROGRAM - Sydney Uni	1/7/99	30/6/03	Kennedy, Ivan

Projects Funded 2000-2001

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
Program A: Insect Management				
AWA2C	Defining an integrated pest management (IPM) system for INGARD cotton in north-western Australia.	1/7/99	30/6/02	Dr Amanda Annells
CRC10C	Physiological and agronomic factors affecting the efficacy of Bt in transgenic cotton (Project continued under CRC26C)	1/7/99	30/9/00	Dr Philip Wright
CRC17C	Enhancing the impact of early season predation on Helicoverpa spp.	1/7/00	30/6/03	To be appointed
CRC26C	Physiological and agronomic factors affecting the efficacy of Bt in transgenic cotton (Dept Ag CRC10C)	1/10/00	30/6/01	To be appointed
CRDC122C	Pest status and management of shield bug pests in cotton.	1/7/00	30/6/01	To be appointed
CSE72C	Resistance to Bt toxins in heliothine pests of cotton.	1/7/98	30/6/01	Dr Ray Akhurst
CSE74C	Efficacy of Bt cotton plants and causes of variation in performance.	1/7/98	30/6/01	Dr Joanne Daly
CSE76C	Augmentation and conservation of Helicoverpa parasitoid populations in cotton	1/7/98	30/6/01	Dr Nancy Schellhorne
CSE82C	Post Grad - Erica Crone - "Characterisation of a potential new insecticidal transgene".	15/3/99	14/3/02	Ms Erica Crone
CSE83C	Management of Bemisia tabaci biotype B	1/7/99	30/6/02	Dr Paul De Barro
CSE84C	Insect pest resistance and the role of induced responses to damage in Australian cottons	1/7/98	30/6/02	Dr Gary Fitt
CSE86C	Quantifying behavioural responses of Helicoverpa moths to trap crops for area wide management	1/7/99	30/6/02	Mr Martin Dillon
CSE88C	Post Graduate-TBA: Protease resistant insecticidal proteins for controlling Helicoverpa species	1/7/00	30/6/03	To be appointed
CSE89C	Genetics of Bt resistance in Helicpverpa Armigera: Understanding Bt resistance	1/7/00	30/6/03	Dr Rod Mahon

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
CSE90C	Ecological studies of Helicoverpa populations related to the successful implementation of IPM systems based on Bt transgenic cottons	1/7/00	30/6/03	Dr Gary Fitt
CSP103C	Management of early season damage and secondary pests in cotton	1/7/99	30/6/02	Dr Lewis Wilson
DAN118C	Resistance Management in Australian cotton: conventional insecticides & transgenic cottons	1/7/98	30/6/01	Dr Johnathon Holloway
DAN119C	Conservation and utilization of beneficial insects in the cotton agroecosystem for Integrated pest Management in conventional and transgenic cotton II.	1/7/98	30/6/01	Dr Robert Mensah
DAN138C	Insecticide Resistance Management in Bemisia tabaci	1/7/99	30/6/02	Dr Robin Gunning
DAN139C	Pesticide Resistance in Cotton Aphid and Twospotted Mite	1/7/99	30/6/02	Dr Grant Herron
DAN140C	Management of Resistance to Conventional Chemicals in Helicoverpa spp.	1/7/99	30/6/04	Dr Robin Gunning
DAN141C	Role of Conventional and Novel Insecticides in Integrated Pest Management in Cotton	1/7/99	30/6/02	Dr Johnathon Holloway
DAQ102C	Risk factors for silverleaf white fly outbreaks in cotton	1/7/99	30/6/02	Mr David Lea
DAQ105C	Improved application and formulation of viral biopesticides against Helicoverpa.	1/7/00	30/6/04	Dr Caroline Hauxwell
DAQ106C	Design and construction of a high clearance multi-treatment spray rig	1/7/00	30/6/01	Dr David Murray
DAQ83C	Monitoring silverleaf whitefly and its natural enemies in cotton areas of Queensland	1/7/98	30/6/01	Mr Bernard Franzmann
DAQ84C	Thresholds for green mirids in cotton	1/7/98	30/6/01	Mr Gordon Simpson
DAQ85C	GRDC1C - Regional Management of Heliothis on the Darling Downs	1/7/98	30/6/01	Dr Melina Miles
DAQ92C	Post Grad - David Lea - "Risk factors for silverleaf whitefly outbreaks in cotton"	1/2/99	30/6/02	Mr David Lea

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
DAQ95C	In-field development of novel options for Helicoverpa control in central Queensland	1/9/99	30/6/02	Mr Paul Grundy
DAQ96C	IPM in dryland cotton on the Darling Downs	1/7/99	30/6/02	Mr Brad Scholz
DAQ97C	Development of trap cropping protocols for heliothis management on cotton in central Queensland	1/7/99	30/6/02	Dr Richard Sequeira
UNE31C	Post Grad - Emma Louise Cottage - Management of resistance in Bemisia tabaci to insect growth regulators and juvenile hormone mimics	1/1/98	31/12/00	Ms Emma Cottage
UNE33C	Post Grad David Britton - Studies of slow-release formulations for semiochemicals in cotton pest management	1/8/99	31/7/02	Mr David Britton
UQ26C	Ecology of Trichogramma egg parasites in the Ord River Irrigation Area and thier role in cotton IMP (Project only started Jan 2000)	1/7/99	30/6/02	Prof Myron Zalucki
UQ28C	Post Graduate - Ecology of the Trichogramma egg parasites in the Ord River Irrigation Area and their role in cotton IPM (Project only started Jan 2000) - Andrew Davies	1/7/99	30/6/02	Mr Andrew Davies
UQ29C	Post Graduate: Mark Wade: Biology, ecology and utilisation of the Damsel Bug as a predator in cotton - towards real IPM	1/1/00	31/12/02	Mr Mark Wade
UQ30C	Understanding the behaviour of egg laying Helicoverpa moths: New designs for integrated control in cotton.	1/8/00	30/6/03	Dr Paul Cunningham
UQ31C	The Impact of LDP Spray Application upon the Biological Efficacy of Cotton Insecticides	1/7/00	30/6/02	Mr Ian Craig
UQ32C	Population Genetics of Heliothis Migration, Recruitment and Origins	1/7/00	30/6/03	Mr Glenn Graham
UWS2C	Oil and biological pesticide-based integrated pest management in cotton	1/7/00	30/6/01	Assoc Prof Andrew Beattie
CRDC No	**Project Title**	**Start Date**	**Cease Date**	**Researcher Name**

Program B: Diseases and Weeds

ANU6C	Testing the tomato I-2 resistance gene for its ability to confer Fusarium resistance in cotton	1/1/00	31/12/01	Dr David Jones
CRC18C	Cotton soil health: influences on cotton root diseases - Post Graduate Project	1/7/00	30/6/03	To be appointed
CRDC121C	Bunchy Top	1/7/00	30/6/01	
CRDC125C	Fusarium workshop for researchers, growers and consultants.	1/7/00	30/6/01	
CRDC127C	Large scale trials for biological control of Fusarium Wilt	1/7/00	30/6/01	Dr Subbu Putcha
CSP113C	Australian native cottons as sources of resistance and new pathotypes of fusarium wilt	1/7/00	30/6/03	To be appointed
CSP114C	Discovery of genes involved in the expression of cotton resistance responses ot Fusarium wilt by the application of microarray technology	1/7/00	30/6/03	To be appointed
CSP115C	Targeted expression of genes for manipulation of the systemic acquired resistance responses of cotton for improved tolerance to fungal pathogens	1/7/00	30/6/03	Dr Helen McFadden
DAN121C	Diseases of Cotton - IV	1/7/98	30/6/01	Dr Stephen Allen
DAN122C	Black Root Rot and Slow early Season Growth of Cotton	1/7/98	30/6/01	Dr David Nehl
DAN123C	Controlling Cotton Seedling Diseases and Vascular Wilts with Micro-organisms.	1/7/98	30/6/01	Dr Subbu Putcha
DAN124C	Sustainable Weed Management Systems for Cotton	1/7/98	30/6/01	Mr Graham Charles
DAN148C	Cotton Disease Control Washdown Facility	1/7/00	6/30/01	
DAQ107C	Ecology and development of management strategies for fusarium wilt in cotton.	1/7/00	30/6/04	Dr Natalie Moore
QUT1C	Review of molecular diagnostic R & D for detecting fusarium wilt in cotton.	1/7/00	31/12/00	Prof James Dale
UNE32C	Ecology and management of Bladder Ketmia (Hibiscus trionum) and other emerging problem Malvaceae weeds	1/7/99	30/9/02	Dr Stephen Johnson

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
US48C	Post Grad - Fiona Frances Ballard - "Identification and characterisation of genes for resistance to bacterial bligh in the cotton plant".	1/3/99	1/3/02	Ms Fiona Ballard

Program C: Soils

CRC11C	Understanding the salinity threat in cotton growing areas of Australia Phase III - Implementation and Management	1/7/99	30/6/02	Dr John Triantafilis
CRC12C	Long-term effects of cotton rotations on the sustainability of cotton soils II	1/7/99	30/6/02	Mr Nilantha Hulugalle
CRC19C	Identification and remediation of nutritional stresses in cotton crops	1/7/00	30/6/03	Dr Ian Rochester
CRC7C	Cotton residue decomposition	1/7/98	30/6/01	Dr Subbu Putcha
CRDC126C	Soil Workshop	1/7/00	30/6/01	
SLM2C	Management of herbicide effects on soil biological processes essential for plant health and nutrition	1/7/00	30/6/03	Dr Vadakattu .V.S.R. Gupta
US56C	Post Graduate - Sevag Bedrossan: Potassium status and mineralogy of soil in relation to premature senescence in cotton in Northern NSW	1/1/00	1/1/03	Mr Sevag Bedrossian

Program D: Water

CRDC128C	Engineering Water Use Efficiency	1/7/00	30/6/01	
CRDC132C	Water Research Review Workshop	1/7/00	30/6/01	
CSP116C	Developing integrated farm water management for cotton production	1/7/00	30/6/03	Dr Sunil Tennakoon
NEC2C	Best Management Practice for Maximising Whole Farm Irrigation Efficiency in the Australian Cotton Industry.	16/9/97	31/3/01	Mr Paul Dalton
US54C	Improving irrigation management of cotton grown on read soil using subsurface drip irrigation	1/1/00	31/12/00	Mr Ben O'Brien

Program E: Best Mangement Practise

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
AAW1C	1. Enhancement of BMP Manual into an Environmental management System 2. Development of further BMP Manual modues	1/7/00	30/6/02	Mr Allan Williams
AAW2C	Best Management Practise - Workshops	1/7/00	30/6/01	Mr Allan Williams
CRC20C	Bioremediation enzyme for endosulfan sulphate	1/7/00	30/6/03	Dr John Oakeshott
CRDC110C	BMP - Audit Development Scheme	1/7/99	30/6/01	Ms Peta Slack-Smith
CRDC120C	Potential For Long Distance Endosulfan Drift	1/7/00	30/6/01	
CRDC129C	Risk Assessment: Impact on Environment in Cotton Growing Areas	1/7/00	30/6/01	
CRDC133C	Spray Technology	1/7/00	30/6/01	
CRDC24C	Commissioned Research - Best Management Practice	1/7/97	1/7/01	Mr Bruce Pyke
CSE77C	Bioremediation Enzymes for Endosulfan.	1/7/98	30/6/01	Dr John Oakeshott
DAQ98C	Improved pesticide application performance	1/7/99	30/6/02	Mr Peter Hughes
UQ27C	Optimisation of large droplet placement (LDP) technology for the aerial application of insecticides in cotton	1/7/98	30/6/02	Mr Ian Craig
US39C	Post Grad - Angus Crossan - remediation of Pesticides on Cotton Farms.	1/7/97	30/3/01	Mr Angus Crossan
US58C	Best Management Practice in Occupational health and Safety in the cotton industry	1/7/00	30/6/01	Assoc Prof Lynette Fragar
UTS2C	Relationship between pesticides in Passive Samplers to Riverwater Concentrations and Macroinvertebrate Populations	1/7/99	30/6/02	Mr Alex Leonard
UTS3C	Post Grad - Joanne Hawkins - Toxicity Pesticide Mixtures and Sediment Binding of Pesticides in Storm Runoff Water from Cotton Fields (04/09/00 Researcher not returning from leave).	1/7/99	30/6/02	Ms Joanne Hawkins

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
Program F: Community & Economics				
CRDC131C	Scholarships (undergraduate)	1/7/00	30/6/01	
CRDC134C	Benchmarks (Boyce/M.Fisher etc.)	1/7/00	30/6/01	Mr Philip Thompson
CRDC138C	Commissioned Research Other An un-allocated budget	1/7/00	30/6/01	
CRDC18C	Joint Funded Farm Occupational Health and Safety R&D Programs.	1/4/97	30/6/02	Assoc Prof Lynette Fragar
Program G: Processing & Marketing				
CWT4C	Measuring Cotton Fibre Fineness and Maturity using the Sirolan-Laserscan	1/7/99	30/6/01	Dr Geoffrey Naylor
CWT5C	Lubricants for improved ginning and spinning of cotton. A fresh approach to fibre length preservation in cotton processing.	1/7/00	30/6/01	Mr G.A Robinson
CWT6C	Measuring cotton fibre maturity using polarised light microscopy	1/7/00	30/6/03	Dr Stuart Gordon
CWT7C	The effect of short fibre and nep levels on marata vortex spinning (MVS) efficiency and quality	1/7/00	30/6/01	Dr Stuart Gordon
NEC7C	Field to Fabric research program	1/7/00	30/6/01	Dr Grant Roberts
Program H: Plant Breeding & Genetic Engineering (Biotechnology)				
ANU4C	Cloning genes to manipulate cotton fibre cellulose production for improved fibre traits.	1/7/98	6/2/02	Dr Joanne Burn
CRDC123C	BT Gene Test Kit	1/7/00	30/6/01	
CRDC124C	Ingard Survey	1/7/00	30/6/01	
CSE70C	Post grad - Constanza Angelucci - Binding sites for the Cry 1 Ac delta-endotoxin of Bacillus thuringiensis in Helicoverpa armigera.	1/7/97	30/4/01	Ms Constanza Angelucci
CSP102C	Isolation of Novel Cotton Promotors to drive the Robust Expression of useful Genes in Transgenic Cotton.	1/7/98	30/6/01	Dr Danny Llewellyn
CSP104C	Evaluation of disease tolerance of transgenic cotton lines containing genes for putative antifungal proteins	1/7/99	30/6/01	Dr Helen McFadden

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
CSP105C	Potential for the Genetic Manipulation of Gossypol - A Defence Chemical with Negative Impacts on Cottonseed Products	1/7/99	1/7/02	Belinda Townsend
CSP111C	New methods to enhance regeneration of cotton plants from tissue cultures to aid crop improvement (OLD UMON1C)	1/7/98	30/6/01	
CSP117C	Development and evaluation of cottonseed oils with improved nutritional and functional properties.	1/11/00	30/10/03	Dr Qing Liu
CSP118C	Manipulating genes to enhance cotton fibre elongation and cellulose synthesis	1/9/00	1/9/03	Dr Yong-Ling Ruan
CSP119C	Use of miroarrays to study gene expression and ot identify genes involved in cotton fibre initiation and development	1/7/00	30/6/01	Dr Yingru Wu
CSP120C	Genetic characterisation of homoeologous reconbination and chromosome inheritance in G. hirsutum x K genome alien chromosome addition lines	1/7/00	30/6/03	Dr C Brubaker
CSP121C	CSIRO Plant Breeding Fibre Quality Laboratory	1/7/00	30/6/05	Dr Greg Constable
CSP122C	CSIRO Field Experiments at ACRI	1/7/00	30/6/05	Dr Greg Constable
CSP96C	Breeding Improved Cotton Varieties	1/7/98	30/6/03	Dr Greg Constable
CSP97C	Cotton Biotechnology: Core Program	1/7/98	30/6/01	Dr Danny Llewellyn
DAQ89C	Cotton Strain and Cultivar testing in Queensland	1/7/98	30/6/03	Mr Gavin Mann
UA7C	Genetic manipulation of fibre quality in Australian cotton	1/7/00	30/6/03	Dr Sharon Orford
ULA6C	Post Grad - Ms Kerryn Dunse - Engineering proteinase inhibitors for enhanced activity against Lepidopteran proteases.	1/3/98	1/3/01	Ms Kerryn Dunse
US43C	Identification and Utilisation of Disease Resistance Genes in Australian Cotton Cultivars.	1/7/98	31/12/00	Dr Karin Jacobsen Lyon

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
Program I: Farming Systems				
CRC21C	Cotton production systems for Southern NSW	1/7/00	30/6/03	Dr Simon Duffield
CSP106C	Enhancing Development, Support and Evaluation of Computerised Decision Support	1/7/98	30/6/02	Dr Michael Bange
CSP123C	Applying cotton crop physiology to production issues	1/7/00	30/6/03	Dr Steven Milroy
CSP124C	Predicting and enhancing cotton compensation following pest damage	1/7/00	30/6/03	Dr Tom Lei
CSP95C	Development of agronomic management options for dry season cotton production in NW Australia.	1/7/98	30/6/01	Dr Dhananjay Singh
CSP98C	Delivering to industry the benefits of cropping systems models.	1/7/98	30/6/01	Dr Michael Bange
DAN131C	Evaluation of Ultra Narrow Row Cotton production in cool season irrigated areas.	1/10/98	30/6/01	Mr Jack Cooper
DAN145C	Operational costs for cotton experiments - III	1/7/99	30/6/02	Mr Bruce Reddan
DAQ104C	GRDC2C - Using seasonal climate forecasts for more effective grain-cotton production systems (joint project)	1/7/99	30/6/02	Ms Kirrily Pollock
US42C	Development of "Nutrilogic" for Precision Agriculture - a Decision Support System for Agrotechnology transfer in the Cotton Industry	1/7/98	30/6/01	Mr Craig Stewart
US44C	Post Grad - Craig Stewart - 'Development of "Nutrilogic" for Precision Agriculture - a Decision Support System for Agrotechnology transfer in the Cotton Industry'	1/7/98	30/6/01	Mr Craig Stewart
Program J: Extension				
CRC13C	Trainee Industry Development Officer	1/7/99	30/6/02	To be appointed
CRC22C	National Cotton Extension Coordinator	1/7/00	30/6/05	To be appointed
CRC8C	IPM Training Coordinator.	1/4/98	30/6/01	Mr Greg Kauter

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
CRDC135C	Commissioned research: UNR Workshop	1/7/00	30/6/01	
CRDC139C	Workshops Budget 00/01	1/7/00	30/6/01	
CSP125C	Continued development and field evaluation of micro-computer cotton management packages	1/7/00	30/6/03	Miss Sandra Deutscher
DAN134C	Industry Development Officer - Bourke	1/7/99	30/6/02	Mr Simon Whyte
DAN135C	Promotion of SoilPAC - Production of Video.	1/3/99	30/8/00	Mr Gus Shaw
DAN143C	Industry Development Officer - Warren	1/7/99	30/6/02	Ms Kirrily Rourke
DAN144C	Industry Development Officer - Gunnedah	1/7/99	30/6/02	Mark Hickman
DAQ100C	Extension Agronomy for Cotton Production in CQ	1/7/99	30/6/04	Mr David Kelly
DAQ90C	Cotton Industry Development Extension Officer - Border Rivers	1/7/98	30/6/01	Ms Mascha Korteweg
DAQ93C	Cotton Industry Development Extension Officer - Dirranbandi & St George.	1/2/99	1/2/02	Miss Sarah Kerlin
FT1C	Groundrig Operators Guidelines v2	1/7/00	30/6/01	Mr Ian Rankine
FT2C	SPRAYpak booklet revision	1/7/00	30/6/01	Mr Ian Rankine
Program K: Human Reseouces				
CRC25C	Jack Holland: Travel to 10th ACGRA Cotton Conference	16/8/00	18/8/00	Mr Jack Holland
CRDC137C	Contingency Budget 00/01	1/7/00	30/6/01	
CRDC140C	Publications budget 00/01	1/7/00	30/6/01	
CRDC141C	Insect Ute Guide (Joint funded with GRDC)	1/7/00	30/6/01	Mr Peter Wood
CSE91C	Travel to Vth International Conference on Bacillus Thuringiensis - Guanajuato, Mexico (travel for project CSE72C)	1/7/00	14/8/00	Dr Ray Akhurst
CSE92C	XXI International Congress of Entomology - Iguassu Falls, Brazil (travel for project CSE73C)	1/7/00	27/8/00	
CSE93C	Post Graduate - Erica Crone: Travel to 10 Australian ACGRA Cotton Conference	16/8/00	18/8/00	

CRDC No	Project Title	Start Date	Cease Date	Researcher Name
CSP108C	ACRI Computer Network Support	1/7/98	30/6/02	Mr Tony Pfeiffer
CSP126C	14th International Symposium on plant lipids - Cardiff Wales (travel for CSP78C)	1/7/00	29/7/00	Dr Qing Liu
CSP127C	Replacement of ACRI Computer file server (SICALA)	1/7/00	30/6/01	Dr Michael Bange
CSP128C	Enhancing Access to climate and weather data	1/7/00	30/6/03	Dr Michael Bange
CSP129C	Travel for USA Scientist (Dan Munk) to visit Australia on a scientific exchange	1/1/01	28/1/01	Dr Michael Bange
CSP130C	Travel to XXI International Congress of Entomology - Iguassu Falls, Brazil	20/8/00	28/8/00	Dr Lewis Wilson
DAN125C	Purchase of high clearance applicator: Extension of cease Date to June 01	1/7/97	30/6/01	Dr Grant A Roberts
DAQ108C	Travel - Study tour of Area-wide and Integrated Pest Management	1/7/00	15/7/00	Ms Julie Boddington
DAQ109C	Travel - 2001 Beltwide Cotton Conference	7/1/01	16.1.2001	Mr Brad Scholz
RIR7C	Australian Rural Leadership Program - Course 8	1/7/00	30/6/01	Mr Mike Beckingham
SLM3C	Travel to Australian Cotton Conference - Brisbane	15/8/00	18/8/00	Dr Vadakattu .V.S.R. Gupta
US55C	UNDERGRADUATE SCHOLARSHIP PROGRAM - Sydney Uni	1/7/99	30/6/04	Dr Ivan Kennedy
US57C	Travel to 5th International Conference on Precision Agriculture in Minneapolis, Minnesota & Madison, USA	14/7/00	26/7/00	Prof Alex McBratney

Acronyms

In the interests of readability and ease of use, the Corporation attempts to avoid acronyms, initialisms and those abbreviations that are not self-explanatory wherever possible. However, some times it is unavoidable. Following is a list of acronyms that are used in the cotton industry or by Government, and/or that may appear in this publication.

AAAA	Aerial Agricultural Association of Australia
ABARE	Australian Bureau of Agricultural and Resource Economics
ACEC	Australian Cotton Exhibition Centre
ACGRA	Australian Cotton Growers' Research Association
ACIC	Australian Cotton Industry Council
ACCRC	Australian Cotton Cooperative Research Centre (also Cotton CRC)
ACRI	Australian Cotton Research Institute (located near Narrabri, NSW)
AFFA	Agriculture Fisheries and Forestry - Australia
ANAO	Australian National Audit Office
ARLP	Australian Rural Leadership Program
ARRIP	Australian Agricultural Research in Progress database
AWA	Agriculture Western Australia (Department of)
AWM	Area Wide Management
BMP	Best Management Practice
BRS	Bureau of Rural Sciences
Bt	Bacillus thuringiensis (crystal protein expressed in Ingard® Cotton)
CAC Act	Commonwealth Authorities and Companies Act 1997
CCA	Cotton Consultants Australia Inc.
CRC	See ACCRC
CRDC	Cotton Research and Development Corporation
CSD	Cotton Seed Distributors
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DLWC	Department of Land and Water Conservation (NSW)
DNR	Department of Natural Resources (Queensland)
DOFA	Department of Finance and Administration (Federal)
EPA	Environmental Protection Agency (NSW)
GMAC	Genetic Manipulation Advisory Committee
GOA	Groundrig Operators Association
GRDC	Grains Research and Development Corporation
HRDC	Horticulture Research and Development Corporation
ICAC	International Cotton Advisory Committee

IOGTR	Interim Office of the Gene Technology Regulator
IP	Intellectual Property
IPM	Integrated Pest Management
LWRDC	Land and Water Research and Development Corporation
MDBC	Murray-Darling Basin Commission
MLA	Meat and Livestock Australia
MP	Member of Parliament
NFF	National Farmers' Federation
NRA	National Registration Authority
NSW Ag	New South Wales Agriculture (Department of)
PIERD Act	Primary Industries and Energy Research and Development Act 1989
QDPI	Queensland Department of Primary Industries
RCMAC	Raw Cotton Marketing Advisory Committee
RIRDC	Rural Industries Research and Development Corporation
RRDCC	Rural Research and Development Chairs' Committee
TIMS	Transgenic and Insect Management Strategy committee
TRC	Technology Resource Centre (at the Australian Cotton Research Institute)

Compliance Index

PIERD Act requirements	
– R & D activities co-ordinated or funded, wholly or partly	106-118
– amount spent in relation to each of those R & D activities	19, 27-32
– revisions of the R&D Plan or Annual Operating Plan during the year	13
– entering into agreements under section 13 and 14 and activities in relation to those agreements	106-118 25-32
– activities during the year in relation to applying for patents for inventions, commercially exploiting patented inventions and granting licences under patented inventions	56
– activities of any companies in which the Corporation has an interest	Not Applicable
– activities relating to the formation of a company	Nil
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– Influences on performance	iv, 25-57 20-23
Remuneration Committee	61, 67
Service Charter	N/A
Significant changes in state of affairs and/or principal activities	Nil
Significant events (as referred to in s.15 of CAC Act	Nil
Stakeholders	4
Subsidiaries	Nil

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