



CRDC
INVESTMENTS
2021-22

CRDC Investments 2021-22

The 2021-22 year marks the fourth year under CRDC's five-year plan: the 2018-23 CRDC RD&E Strategic Plan. Under this Plan, during 2021-22, CRDC will invest \$18.9 million into RD&E projects across five key areas, in collaboration with around 100 researcher partners, and on behalf of Australia's cotton growers and the Australian Government. This table outlines the projects that CRDC will invest in, along with the lead researcher, their research organisation, and the commencement and completion dates for the projects. *Please note that this table is current as of 5 May 2021, and may be subject to change.*

Key focus area	Outcome	Project title	Project code	Researcher	Organisation	Commenced in:	To be completed in:
Goal 1: Increased productivity and profitability on cotton farms							
1.1 Optimised farming systems	1.1.1 Improved yield and quality	Improving crop establishment, termination and weed control in dryland cotton farming systems	CRDC1937	Annabelle Guest	DCRA	Jan-19	Jun-22
		Increased yield through improved management of soil constraints in cotton farming systems	USQ1903	John Bennett	USQ	Jun-19	Jun-22
		PhD: Assessing yield and fibre quality variability in cotton systems through data science for improved management	US2104	Mikaela Tilse	USYD	Mar-21	Feb-24
	1.1.2 Improved input efficiencies	Combining targeted location and control of pests with prophylactic crop defence	COMM	Mary Whitehouse	CSIRO	Jul-21	Jun-24
		Determining the next steps for nitrogen research	COMM			Jul-21	Jun-23
		Identifying the trends and drivers of water productivity in Australian cotton through benchmarking (including CottonInfo technical lead Ben Crawley)	DAN2002	David Perovic	NSW DPI	Jul-19	Jul-22
		More Profit from Nitrogen – New technologies and managements: transforming nitrogen use efficiency in cane production.	RRDP1719	Matt Redding	QDAF	Sep-16	Sep-21
		More Profit from Nitrogen – Science leadership and project coordination	RRDP1711	Marguerite White	ICD Project Services	Nov-16	Sep-21
		Novel options and strategies for Integrated Pest Management (IPM) in Australian cotton	COMM	Doug McCollum	CCA	Jul-21	Jun-24
		PhD: Sub-paddock scale prediction of soil-water characteristic – need for localised calibration	COMM	Ned Skehan	USQ	Feb-21	Feb-23
		PhD: The impact of irrigation methods and management strategies on nitrogen fertiliser recovery in cotton in southern QLD	UQ1502	John Smith	UQ	Jul-14	Dec-21
		Professor of Soil Biology (includes CottonInfo technical lead and myBMP module lead)	UNE2001	Oliver Knox	UNE	Jul-19	Jun-24
		1.1.3 On-farm sustainable development is supported	Building profitable farming systems for the future through increasing Soil Organic Carbon (SOC) and optimising Water Use Efficiency (WUE) in a changing climate	2122FRP020	Annabelle Guest	DCRA	Jul-21
	Dryland & limited water systems research		2122FRP024	Sarah Dadd	NSW DPI	Jul-21	Jun-23
	Integrated Pest Management (IPM), biosecurity leadership & spodoptera, defoliation and climate adaption RD&E (including CottonInfo technical leads Paul Grundy and Sharna Holman)		DAQ2201	Paul Grundy	QDAF	Jul-21	Jun-24
	Leveraging limited water to maximise profit: 20+ years of cotton systems research		2122FRP014	Claire Welsh	CSIRO	Jul-21	Jun-23
	Optimising dryland cotton production in the Namoi Valley		US2102	Stephen Cattle	USYD	Oct-20	Sep-21
	Optimising dryland cotton production on the Liverpool Plains		US2103	Stephen Cattle	USYD	Oct-20	Sep-21
	PhD: Classifying the suitability of Murrumbidgee Valley soils for cotton production		US2002	Jonathon Moore	USYD	Mar-20	Mar-23
	Potential for broadacre cropping in the Northern Territory		CRCNA2001	Matt Hall	CRCNA	Jun-19	May-22
	Science leadership for cotton development in Northern Australia		CSP1903	Stephen Yeates	CSIRO	Oct-18	Sep-22
	1.1.4 Improved reliability of cotton production		Minimising yield variability to maximise yield in a cotton farming system	DAN1801	Guna Nachimuthu	NSW DPI	Jul-17
		Supporting southern cotton production systems: Cotton Research Officer (including CottonInfo technical lead Beth Shakeshaft)	DAN2001	Hayden Petty	NSW DPI	Jul-19	Jun-22

1.2 Transformative technologies	1.2.1 New technologies are adapted for use in cotton	Aggregating on-farm data sets: can we use old data to answer new questions?	COMM			Jul-21	Jun-22
		Defoliating cotton in an increasingly difficult environment	2122FRP015	Mark Congreve	ICAN	Jul-21	Jun-22
		Future Farm Phase 2: Improving farmer confidence in targeted nitrogen management through automated sensing and decision support	QUT1902	Peter Grace	QUT	Jul-18	Jun-22
		Identifying sensors for better Integrated Pest Management (IPM) in cotton	NEC1901	Alison McCarthy	USQ NCEA	Jul-18	Jun-21
		Smarter Irrigation for Profit 2: Beyond water smart – advancing dairy irrigation system performance	RRDP2012	James Hills	UTAS	Jul-19	May-22
		Smarter Irrigation for Profit 2: Cross sectoral integration and extension	RRDP2005	Louise Gall	GVIA	Jul-19	May-22
		Smarter Irrigation for Profit 2: Economic dairy case studies	RRDP2102	Daniel Armstrong	D-ARM Consulting	Aug-20	Feb-22
		Smarter Irrigation for Profit 2: Evaporation mitigating solution for Australian cotton water storages	RRDP2007	Greg Qiao	UMELB	Jul-19	May-22
		Smarter Irrigation for Profit 2: Gwydir Valley demonstration of latest digital technologies for precise automated irrigation	RRDP2004	Louise Gall	GVIA	Jul-19	May-22
		Smarter Irrigation for Profit 2: Improved irrigation system selection and operation for increased sugarcane productivity and profitability	RRDP2013	Michael Scobie	USQ	Jul-19	May-22
		Smarter Irrigation for Profit 2: Improving the science of water footprinting	RRDP2103	Guy Roth	USYD	Feb-20	Feb-22
		Smarter Irrigation for Profit 2: Key learning sites southern (making the most of water)	RRDP2014	Alex Schultze	NSW DPI	Jul-19	May-22
		Smarter Irrigation for Profit 2: Monitoring and Evaluation	RRDP2020	Adam McNeill	KG2	Jun-20	Mar-22
		Smarter Irrigation for Profit 2: Monitoring and Evaluation case studies and analysis	RRDP2101	George Revell	AgEcon	Jul-20	Mar-22
		Smarter Irrigation for Profit 2: New tech integrated smart sensing & automation for cotton	RRDP2003	John Hornbuckle	DU	Jul-19	May-22
		Smarter Irrigation for Profit 2: Plant-based sensing for cotton irrigation	RRDP2006	Hizbullah Jamali	CSIRO	Jul-19	May-22
		Smarter Irrigation for Profit 2: Project Management Committee meetings	RRDP2015	Cathy Phelps	C&J Phelps Consulting	Nov-19	May-22
		Smarter Irrigation for Profit 2: Precise real-time automated cotton and dairy irrigation for improved water productivity	RRDP2002	Joseph Foley	USQ NCEA	Jul-19	May-22
		Smarter Irrigation for Profit 2: Project communications	RRDP2104	Cathy Phelps	C&J Phelps Consulting	Jun-20	Jun-22
		Smarter Irrigation for Profit 2: Project leadership and coordination	RRDP2001	Cathy Phelps	C&J Phelps Consulting	Jul-19	Jun-22
	Smarter Irrigation for Profit 2: Scaling irrigation management to support whole farm operations	RRDP2011	Andy McAllister	DJPR	Jul-19	May-22	
	Smarter Irrigation for Profit 2: Smart irrigation control for water and labour savings in rice growing systems	RRDP2008	John Hornbuckle	DU	Jul-19	May-22	
	Smarter Irrigation for Profit 2: Video training sessions	RRDP2105	Steve Barratt	MRL Media	Nov-20	Jun-22	
Smarter Irrigation for Profit 2: What is my yield gap? Maximising water productivity	RRDP2010	Cath Lescun	Dairy Australia	Jul-19	May-22		
Smarter Irrigation for Profit 2: YourDATA Monitoring & Evaluation Database	RRDP2017	Jeff Coutts	Coutts J&R	Nov-19	May-22		
1.2.2 Cotton farms are digitally enabled	Informing a digital strategy for the Australian cotton industry (Business case)	CRDC2110	Sarah Nolet	AgThentic	Mar-21	Sep-21	
	Informing a digital strategy for the Australian cotton industry (Data audit)	CRDC2111	Ian Posthumus	DataGene	Mar-21	Sep-21	
1.3 Protection from biotic threats and environmental stresses	1.3.1 Increased understanding of the impact of pests, diseases and weeds, and environmental stresses	Climate proofing Australia's cotton industry through improving crop water use and photosynthetic carbon assimilation (Climate proof cotton)	2122FRP028	Robert Sharwood	UWS	Jul-21	Jun-24
		Evaluating and compiling cotton disease research findings for future direction	COMM			Jul-21	Jun-22
		Using DNA diagnostics to monitor disease suppressive cotton farming systems	CAS2101	Rob Long	Crown Analytical	Jul-20	Jun-23
	1.3.2 Improved identification, surveillance and management systems for pests, diseases and weeds and environmental stresses	Applying molecular tools to inform the Bt RPM for Helicoverpa and FAW	COMM	Sharon Downes	CSIRO	Jul-21	Jun-24

		ARC Research Hub for Sustainable Crop Protection	UQ2001	Neena Mitter	HIA/UQ	Jul-19	Jun-24
		Area Wide Management for cropping systems weeds, investigating the weed management, social and economic opportunity	GRDC2002	Rick Llewellyn	GRDC	Aug-19	Jun-22
		Biological based products for improved cotton production	UWS1901	Brajesh K Singh	UWS	Jul-18	Mar-22
		Characteristics of disease suppressive cotton farming systems and soils	DAQ2002	Linda Smith	QDAF	Jul-19	Jun-22
		Evaluate efficacy of novel chemistries, biocontrol agents and management practices to control Alternaria and Black Root Rot disease in cotton	DAN2101	Duy Le	NSW DPI	Jul-20	Jun-22
		Improved management of weeds in cotton and grains farming systems (including CottonInfo technical lead Eric Koetz)	DAN2004	Graham Charles	NSW DPI	Jul-19	Jun-22
		Modern systems agronomy for resilient cotton production	CSP2001	Claire Welsh	CSIRO	Jan-20	Jun-22
		Novel topical vegetable, cotton virus and whitefly protection – BIOCLAY	HIA1803	Neena Mitter	HIA/UQ	Feb-18	Jul-21
		Plant Biosecurity Research Initiative (PBRI) Phase 2	HIA2101	Jo Luck	HIA	Jul-20	Jun-23
		Plant Health Australia Membership 2020-2023	PHA2101	Stuart Kearns	Plant Health Aust	Jul-20	Jun-23
		R&D Manager, Disease	CRDC2105	Elle Storrier	Macpherson Agronomy Services	Oct-20	Oct-23
		Review of the Biosecurity Plan for the Cotton Industry	2122FRP029	Stuart Kearns	Plant Health Aust	Jul-21	Jun-24
		Sustainable insect management through improved insect resistance monitoring	DAN2003	Lisa Bird	NSW DPI	Jul-19	Jun-22
		Sustainable SLW management through improved insect resistance monitoring	DAQ2001	Jamie Hopkinson	QDAF	Jul-19	Jun-22
		Tools for assessing and achieving pesticide sustainability targets for the Australian cotton industry	2122FRP005	Mick Rose	NSW DPI	Jul-21	Jun-23
	1.3.3 Industry is prepared for a biosecurity incursion	Boosting Diagnostic Capacity for Plant Production Industries	GRDC2001	K'trie Coster	GRDC	Jul-19	Jun-22
		Plant Biosecurity Research Initiative (PBRI) – Phase 2	COMM	Jo Luck	HIA	Jul-21	Jun-22

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Goal 2: Improve cotton farming sustainability and value chain competitiveness							
2.1 Sustainability of cotton farming	2.1.1 Improved environmental footprint for cotton farms	Cotton Landcare Tech Innovations: Communications Support	NLP1903	Bernadette Pilling	HOC	Nov-18	Mar-22
		Cotton Landcare Tech Innovations: Florabank training	COMM			Jul-19	Jun-22
		Cotton Landcare Tech Innovations: Improved natural capital (biodiversity) on Australian cotton farms	NLP1901	Stuart Parsons	QUT	Jan-19	May-22
		Cotton Landcare Tech Innovations: Improved natural capital (biodiversity) on Australian cotton farms.	NLP1902	Rhiannon Smith	UNE	Jul-18	Jun-22
		Cotton Landcare Tech Innovations: One tree per bale business plan	COMM			Jul-18	Jun-22
		Cotton Landcare Tech Innovations: Spotlight evenings	COMM	Stacey Vogel	Stacey Vogel Consulting	Jul-18	Jun-22
		Feasibility study of managed aquifer recharge for improved water productivity	ANU1901	Anthony Jakeman	ANU	Aug-18	Aug-21
		Impacts and solutions: A scoping study on relative impacts of irrigation infrastructure on fish	DAQ2101	Michael Hutchison	QDAF	Jul-20	Jun-22
		Secretariat Support for Australian Screen Advisory Panel	CRDC2104	Craig Copeland	Ozfish Unlimited Ltd	Aug-20	Jun-22
		Supporting the revision of the industry's sustainable biodiversity indicators, metrics and target areas	COMM			Jul-21	Jun-22
		Towards carbon neutral cotton production	2122FRP027	Hizbullah Jamali	CSIRO	May-21	Mar-24
		Understanding the environmental co-benefits of irrigation water in the northern Murray-Darling Basin	2122FRP004	Peta Zivec	Griffith University	Jul-21	Jun-24
2.2 Create higher value uses for cotton	2.2.1 Increased value for Australian cotton	Developing renewable fine chemicals from cotton biomass (Biorefineries for higher-value animal feeds, chemicals and fuels phase 2)	SRA2001	William Doherty	QUT	Jul-19	Dec-20
	2.2.2 Increased understanding of market requirements and opportunities throughout the value chain	Joint RDC community trust project	RIRDC1903	Jennifer Medway	AgriFutures	Jul-21	Jun-22
		Strategies for improving labour conditions within the Australian cotton value chain	QUT1903	Alice Payne	QUT	Jun-19	Jun-22

2.3 Measurement and reporting throughout the value chain	2.3.1 CRDC collaborates in global leadership for sustainability initiatives	Australian participation in the European Union Product Environmental Footprint Technical Advisory Board	CRDC2008	Angus Ireland	AWI	Oct-19	Dec-22
		Cotton industry social and wellbeing sustainability indicators	UC1901	Jacki Schirmer	University of Canberra	Jun-19	Jun-22
		Membership of the Sustainable Agriculture Initiative (SAI) – Australian chapter	CRDC1902	Selwyn Heilbron	SAI Platform (Aust) Inc	Jul-18	Jun-23
		PhD: Textile supply chain transparency and accountability	UL1901	Mark Sumner	UL	Oct-18	Sep-21
		Sustainability metrics for the cotton industry	CRDC1944	Chris Cosgrove	Sustenance Asia	Jun-19	Jun-22
		Sustainable Apparel Coalition membership	CRDC1817	Glenn Robinson	SAC	Jul-21	Jun-22
	2.3.2 The value chain is transparent and understood by participants	Australian Cotton Industry Fourth Environmental Audit	COMM			Apr-21	Dec-22
		PhD: Sustainable value chain analysis of the Australian cotton industry	QUT1901	Zoe Mellick	QUT	Jul-18	Nov-21

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Goal 3: Build adaptive capacity of the cotton industry							
3.1 Science and innovation capability, and new knowledge	3.1.1 Science and innovation capacity is strengthened and strategically fit for a digital future	2021 and 2022 Science and Innovation Awards for young people in Agriculture, Fisheries and Forestry	ABA2101	Maree Finnegan	ABARES	Jul-20	Jun-22
		Australian Rural Leadership Program Course 26, Course 27, Course 28, Trail 2020, Trail 2021	RIR1903	Matt Linnegar	ARLF	May-19	Dec-22
		Building digital capability in the Australian cotton industry	COMM			Jul-21	Jun-23
		Cotton Production Course	UNE2002	Oliver Knox	UNE	Jan-20	Jun-23
		CRDC R&D Manager, People and Capacity	CRDC2106	Rachel Holloway	Rachel Holloway Consulting	Jul-20	Jun-23
		CRDC summer & honours scholarships	COMM		CRDC	Jul-21	Jun-22
		CSIRO student vacation scholarship program	COMM		CSIRO	Jul-21	Jun-22
		Digital strategy for the Australian cotton industry – phase 2	COMM			Jul-21	Jun-23
		Graduate tour – Careers in cotton industry	COMM		CRDC	Jul-20	Jun-22
		Honours scholarship: Nutrient stratification in the soil under irrigated and dryland cotton systems in contrasting soil types	US2101	Sarah MacKay	USYD	Feb-21	Dec-21
		Improving grower decision in complex systems: A targeted tool to assist cotton growers in appropriate technology adoption	QUT2001	Geraldine Wunsch	QUT	Jul-19	Mar-22
		Nuffield Australia Farming Scholarships	COMM	Jodie Dean	Nuffield	Jul-21	Jun-23
	Supporting adaptive research capacity for careers in the cotton industry	2122FRP010	Trudy Staines	CSIRO	Jul-21	Jun-24	
	3.1.2 Increased understanding of the diverse human capital in regional communities	AACS Australian Cotton Research Conference	COMM		AACS	Jul-21	Jun-23
		Delivering best practice to manage future workforce skills	COMM	Nicole McDonald	CQU	Oct-21	Sep-24
People in Agriculture		COMM	Sally Roberts	Dairy Australia	Jul-21	Jun-24	
3.2 Futures thinking	3.2.1 Australian cotton growers are able to adapt to change	2022-2024 Joint-RDC Health and Safety Farming Alliance	COMM	Jennifer Medway	AgriFutures	Jul-21	Jun-24
		CRDC Grassroots Grants 2021-22	COMM		CGAs	Jul-21	Jun-22
		Grassroots Grant: Digitally enabled cotton farms	CGA2102	Amanda Thomas	Macquarie CGA	Sep-20	Oct-21
		Grassroots Grant: Increasing cotton grower skills, and awareness through projects across the Darling Downs cotton growing communities	CGA2106	Georgie Krieg	Darling Downs CGA	Nov-20	Sep-21
		Grassroots Grant: On-farm evaluation of pumping telemetry	CGA2002	Amanda Thomas	Macquarie CGA	Sep-17	Aug-21
		Nuffield Australia Farming Scholarship 2020: Richard Quigley	CRDC2009	Richard Quigley	Nuffield	Apr-19	Sep-21
	3.2.2 Increased opportunities for strategic foresighting	Strategic scoping studies	COMM			Jul-21	Jun-22
		Grower RD&E advisory panels and industry committees	CA2002	Sally Ceeney	Cotton Australia	Jul-21	Jun-22

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Goal 4 (Enabling Strategy 1): Strengthening partnerships and adoption							
4.1 Partnerships and collaboration	4.1.1 Growers/consultants value CRDC farming systems research outcomes	20th Australian Cotton Conference Foundation Sponsorship	CA2004	Tracey Byrne-Morrison	Cotton Australia	Dec-19	Nov-22

4.1.2 CottonInfo partnership is maintained and practice change improved	Climate, energy and business analysis for cotton growers (including CottonInfo technical lead)	AE2101	Jon Welsh	AgEcon	Jul-20	Jun-23	
		CRDC2101	Lee Armson	Lee Armson Consulting	Jul-21	Jun-23	
		COMM		CottonInfo	Jul-21	Jun-22	
		2122FRP017	Tonia Grundy	QDAF	Jul-21	Jun-24	
		CRDC2102	Stacey Vogel	Stacey Vogel Consulting	Jul-20	Jun-23	
			Jon Baird	NSW DPI	Jul-21	Jun-24	
		CRDC2103	Rene van der Sluijs	Textile Technical Services	Jul-20	Jun-23	
		CRDC2108	Helen Dugdale	Helen Dugdale Consulting	Apr-21	Jul-21	
4.1.3 Partnerships are strengthened to engage multi-disciplinary and multi-institutional resources	Agriculture Innovation Australia membership	COMM		AIA Ltd	Jul-21	Jun-23	
4.2 Best practice (myBMP)	4.2.1 Best practice is based on science and measured impact	Cotton industry injury and safety statistics	COMM		Jul-21	Jun-22	
		CRDC monitoring and evaluation data collection	COMM		Jul-21	Jun-22	
		Economic data collection	COMM		Jul-21	Jun-22	
		Ensuring best practice is based on science	CRDC2113	Chris Cosgrove	Sustenance Asia	Apr-21	Mar-24
4.3 Innovation and commercialisation	4.3.1 Improved R&D innovation and commercialisation	Commercialisation Management Tasks	COMM	Jarrod Ward	Ahurei Pty Ltd	Jul-21	Jun-22
		Spray Hazard Tower Network	COMM		GRDC	Jul-19	Jun-22

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Goal 5 (Enabling Strategy 2): Driving RD&E impact							
5.1 Impact and effectiveness	5.1.1 CRDC's RD&E investments meet grower, industry and government needs	CRDC Strategic Plan 2023-28 Project Management	CRDC2112	Bernadette Pilling	HOC	Mar-21	Jun-23
	5.1.2 CRDC monitors and evaluates RD&E impact	Annual consultant qualitative and quantitative surveys	CCA1901	Laura Causer	CCA	Mar-18	Sep-21
		Collaboration: Evaluation and Measuring impact	SRA2002	Leigh Clement	SRA	Oct-20	Sep-21
		CRDC Cotton Grower Survey 2020-22	CRDC2014	Michael Sparks	Intuitive Solutions	Jul-20	Mar-23
		Communications support project	COMM	Bernadette Pilling	HOC	Jul-21	Jun-23
5.1.3 CRDC funded projects demonstrate value and return on investment	Impact assessment of projects	COMM			Jul-21	Jun-23	

Key	
AACS	Association of Australian Cotton Scientists
AIA Ltd	Agriculture Innovation Australia Ltd
ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
AgriFutures	AgriFutures Australia (formerly the Rural Industries Research & Development Corporation)
ANU	Australian National University
ARLF	Australian Rural Leadership Foundation
AWI	Australian Wool Innovation
CCA	Crop Consultants Australia
CRCNA	Cooperative Research Centre for Developing Northern Australia
CGA	Cotton Grower Association
CQU	Central Queensland University
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DCRA	Dryland Cotton Research Association
DJPR	Victorian Department of Jobs, Precincts and Regions
DU	Deakin University
GRDC	Grains Research and Development Corporation
GVIA	Gwydir Valley Irrigators Association
HIA	Hort Innovation
HOC	House of Communication
ICAN	Independent Consultants Australia Network
MLA	Meat and Livestock Australia
NSW DPI	NSW Department of Primary Industries
NTDPIR	Northern Territory Department of Primary Industries and Resources
QDAF	Queensland Department of Agriculture and Fisheries
QUT	Queensland University of Technology
SAC	Sustainable Apparel Coalition
SAI	Sustainable Agriculture Initiative
SRA	Sugar Research Australia
UL	University of Leeds
UMELB	University of Melbourne
UNE	University of New England
UQ	University of Queensland
USQ	University of Southern Queensland
USQ NCEA	University of Southern Queensland National Centre for Engineering in Agriculture
USYD	University of Sydney
UTAS	University of Tasmania
UTS	University of Technology, Sydney
UWS	University of Western Sydney