



Annual Report

2017/2018





Investment partners



Australian Government
Department of Industry,
Innovation and Science

Business
Cooperative Research
Centres Program



Queensland
Government



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Department of
Primary Industries and
Regional Development



Minister's foreword: Hon. Senator Matthew Canavan

The Cooperative Research Centre for Developing Northern Australia (CRCNA) – established by the Australian Government with a commitment of \$75 million over 10 years from the Cooperative Research Centres Program – plays an important role in ensuring that northern Australia's industries remain competitive, productive and sustainable.

It is also a key commitment from the Government's *Our North, Our Future: White Paper on Developing Northern Australia*.

The north has an abundance of natural resources and is close to a growing Asian market. To capitalise on those strengths, the CRCNA was established to support industry-led research projects, particularly in areas that are critical to the north's economy.

The development of northern Australia can diversify regional economies. We can attract investment, develop trade with domestic and overseas markets, and sustainably draw on natural resources. We can create demand for infrastructure development, new business opportunities, and develop stronger regional communities.

The CRCNA assists businesses, governments and researchers to work together to solve industry problems. It identifies opportunities to improve the competitiveness, productivity and sustainability of businesses and industries, particularly Indigenous businesses.

With CRCNA's focus on research and development, businesses can collaborate with researchers on ideas which could go commercial and greatly improve their relative industries. The CRCNA also facilitates international and small and medium-sized business participation in collaborative research.

The CRCNA received an overwhelming response to the first funding call in late 2017, and has since contributed to research projects that will drive productivity improvements in horticulture, aquaculture and transport industries. The projects will also establish access to new export markets and grow existing markets with our trading partners.

Overall, the CRCNA is on a promising path to assist developing industries and unlock the potential of others.

I value the efforts made by the CRCNA Board, led by Sheriden Morris, as well as Chief Executive Officer Jed Matz and his staff.

I also commend the researchers and business people for sharing their expertise and experience, and working together for the economic prosperity of the north.

Senator Matt Canavan

Federal Minister for Resources and Northern Australia



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Chair's report: Sheriden Morris

During our first year of operations, the Cooperative Research Centre for Developing Northern Australia (CRCNA) has been focused on laying the foundation for our strategic investment plan and ensuring we are encouraging investment in projects which meet the North's strategic objectives and research priorities. Our focus is firmly on attracting serious investment to advance northern Australia for the long-term benefit of northern Australia – we want to invest in research which challenges the status quo and pushes the boundaries of expectations.

With our 10-year funding commitment from the Australian Government, the CRCNA is uniquely placed to examine the high level strategic and broader policy issues facing northern Australia's communities and businesses, provide insights into possible solutions and bring together the right people to deliver these solutions.

Our first Expressions of Interest funding call held in October 2017 attracted 115 submissions from across the country. This strong response reaffirmed the interest and need for research collaborations across northern Australia. It also

identified several strategic issues impeding progress and development in the region and highlighted the important role the CRCNA will play in working to broker, coordinate and fund effective and meaningful solutions.

The CRCNA Board would like to thank our investment partners including the Australian Government, the Northern Territory Government, the Western Australian Government, the Queensland Government as well as our research partners, project participants and the Office of Northern Australia.

I would also like to thank CRCNA Chief Executive Officer Jed Matz and all of the staff working in our Townsville, Darwin and Broome offices who have worked hard to make 2017/18 the first of many successful years.

Sheriden Morris

Chair





CEO's report: Jed Matz

During our first year of operating the Cooperative Research Centre for Developing Northern Australia (CRCNA) has focused on building the right operational and strategic frameworks to support our long-term vision for developing a more prosperous northern Australia. We have done this by bringing together key stakeholders to implement a strategic research portfolio to overcome investment barriers and resolve industry-identified problems across the Northern region.

Our first open funding call in October 2017 revealed the depth and breadth of the challenges facing our key agricultural, health and Traditional Owner-led business sectors. During 2017/18 the CRCNA committed \$7.2 million towards 24 projects which leveraged participant cash and in-kind co-contributions exceeding \$16 million over four years.

Our projects are expected to deliver significant benefits to northern Australian businesses and communities by creating jobs and training opportunities within key agricultural industries and research sectors. So far, we've seen these benefits include the hiring of additional PhD students and trainees as well as 29.6 Full-Time Equivalent staff working across the eight contracted projects. Looking forward, the CRCNA is committed to measuring and reporting the actual impact of our projects and are currently developing a methodology to do this. Our Impact Tracking Tool will be used to monitor and report how our projects are delivering against the CRCNA's strategic objectives in actual dollar-value terms.

In addition to funding projects from our open funding call, the CRCNA has a strategic interest to invest in research which examines the current state-of-play and issues facing key northern Australian agricultural sectors. CRCNA staff are progressing several industry specific situational analyses which will be aggregated into the first *State of the North* report regarding the growth and development of agriculture by 2019.

The CRCNA, by nature of our funding agreements, is uniquely positioned to work with and across State and Territory borders, collaborating with all tiers of government, industry, business leaders and researchers to prioritise projects

and deliver meaningful outcomes and solutions. Our work with the Office of Northern Australia (ONA), the Western Australian, Queensland and Northern Territory governments to identify key strategic policy, regulatory and regional development opportunities will assist the Northern Australian Senior Officers Networking Group (NASONG) formulate a preliminary agenda for consideration at future Northern Australian Ministerial Forums. This work will also inform further research and development priorities for the CRCNA.

I believe our 17/18 funded projects demonstrate the CRCNA's serious commitment to funding research which delivers significant change for industry and the broader community. During the year I have had the privilege of working with project participants and have seen their ideas transition from concept to action as they begin to implement their research plans. The CRCNA will continue tracking the progress of these co-funded projects and will be reporting key milestones to our Members, investment partners, and public via our website (www.crcna.com.au) and social media channels.

2017/18 was a big year for the CRCNA and I believe we have a lot to be proud of. I would especially like to thank the staff and Board of the CRCNA who have worked professionally and diligently to get the largest CRC in Australia running in such a short space of time.

I look forward to continuing to work with our project participants as we strive to build potential, develop new industries, grow jobs and wealth and create a happier and healthier northern Australia.

Jed Matz
Chief Executive Officer

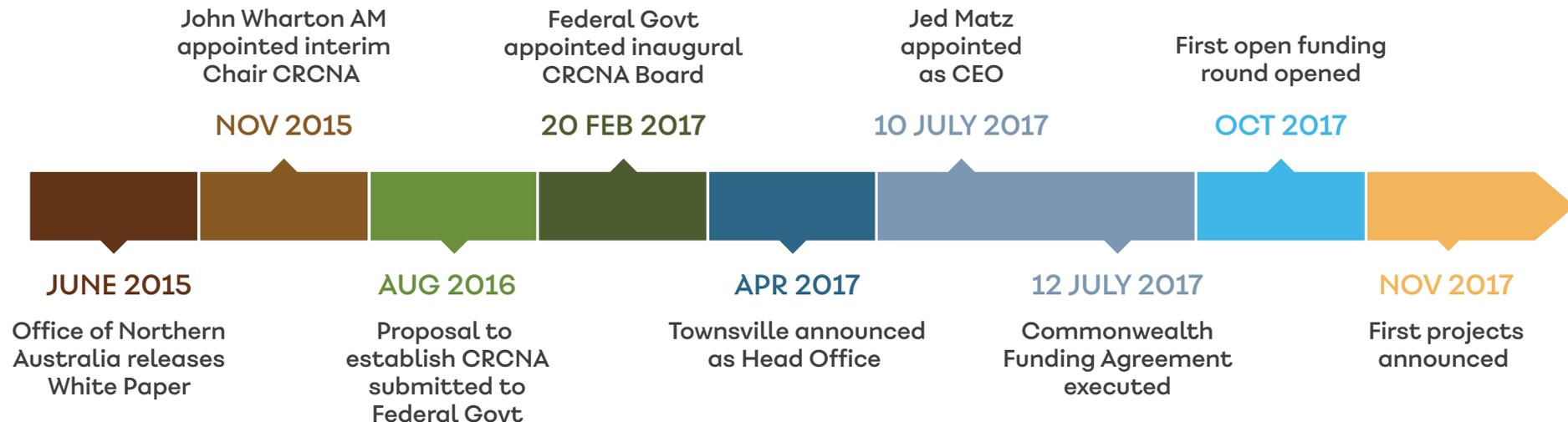
About the Cooperative Research Centre for Developing Northern Australia

Our vision: To create a prosperous, sustainable, vibrant and healthy northern Australia.

Our mission: To grow the economy, investment, employment, markets, skilled population and wellbeing of the communities of northern Australia.



Our history



Investment focus

The \$75 million committed to the CRCNA will help fund the development of new technologies, products and services which address industry issues in northern Australia within three initial focus areas:

1. Agriculture and food (including aquaculture)

Removing barriers and improving supply and value chains for new and existing northern agricultural industries.

2. Northern Australian health service delivery

Identifying new models and approaches, early detection, health seeking behaviour and mental health.

3. Traditional owner-led business development

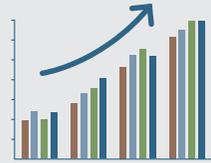
Identifying new models and approaches and building an industry ready skilled workforce in the fields of agriculture, food and/or health industries.

The CRCNA brings together industry, universities and other research bodies, regional development organisations, all northern jurisdictions and international partners in a collaborative industry-led research and development venture to assist businesses, governments and researchers identify opportunities for business and growth in the north.

We also work closely with and are supported by our investment partners the Northern Territory, Western Australia, Queensland and Australian Governments.

Strategic intent

The CRCNA aims to deliver high impact research that will lower investment barriers and enable significant capital to flow leading to:



Increased GDP in northern Australia



Increased investment in northern Australia



Improved supply chain efficiencies across northern Australia



Generate new jobs in northern Australia to help grow the region's population



Improved capabilities and wellbeing of the northern Australian community

Investment impacts 2017/2018: Current research locations



Key

- CRCNA Offices

Project Sites:

- Prawn
- Mangoes
- Health
- Traditional Owners
- Supply Chains

Funding highlights:



Round one open funding call: 115 EOIs requesting \$100.7m

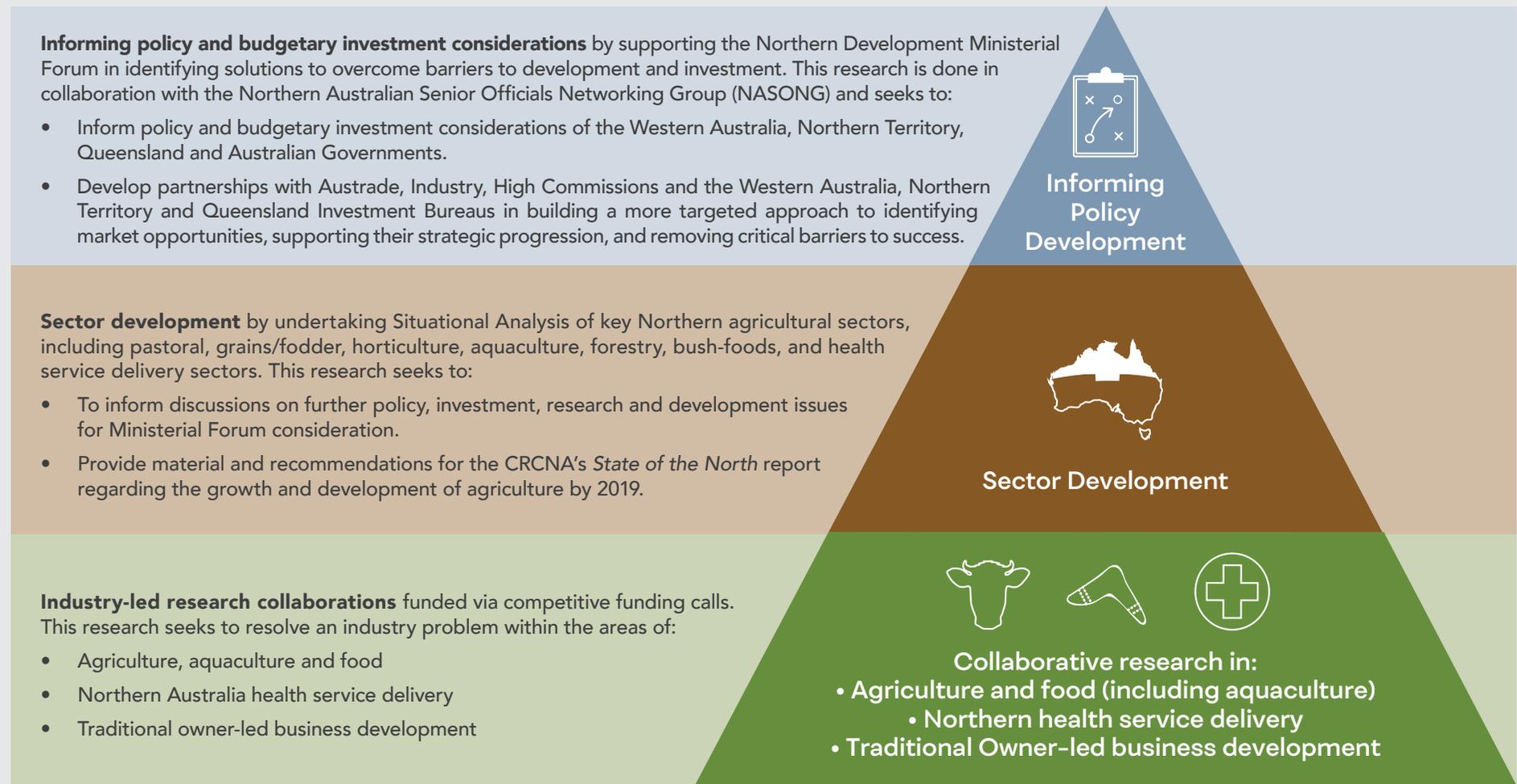
All figures quoted are exclusive of GST



CRCNA Strategic investment priorities

In forming its strategic focus, the CRCNA built on priorities already articulated by industry bodies, regional communities, Federal, State and Territory governments and regional communities as identified within the *White Paper for Developing Northern Australia* and during preliminary consultations undertaken during the formation of the CRCNA.

The CRCNA's strategic investment plan prioritises investment decisions across three tiers of funding:



CRCNA funding pyramid shows how investment is prioritised against Strategic Investment Plan

CRCNA Research programs

The CRCNA has five research programs designed to deliver the overarching strategic objectives of the CRCNA. These Programs, their objectives and outcomes are outlined below. The table also shows how the CRCNA research projects are situated within the context of these Research Programs.

Research Program	Objectives	Outcomes
1. Building potential in northern Australia	To create and present data and knowledge in a meaningful form which enables investment, strategy development and/or resolution of major policy issues and regulatory harmonisation.	<ol style="list-style-type: none"> 1. Produce a <i>State of the North</i> report encompassing the strategic assessments of relevant regions, industries, sectors and markets relating to agriculture, food and health service delivery relevant to northern Australia. 2. Identify and provide solutions to supply, market access, policy and/or regulatory barriers to investment.
2. New and developing industries in northern Australia	To grow and improve developing industries and to help establish new industries in northern Australia.	<ol style="list-style-type: none"> 1. Establish models for Traditional Owner-led businesses in northern Australia. 2. Develop and enhance supply chains for developing industries in northern Australia. 3. Deliver innovation that enables sectors to develop in northern Australia.
3. Production and supply chain innovation in northern Australia	To deliver research which develops new technologies, efficiencies and approaches that are game changers for northern Australia.	<ol style="list-style-type: none"> 1. Address market access barriers and develop export opportunities. 2. Improve supply chain efficiencies and/or enabling infrastructure. 3. Resolve northern production, productivity or profitability issues at a strategic level.
4. Building industry and community capacity in northern Australia	To build capacity, develop sectors and create prospectus' that enhance investment in agriculture, food and/or health service delivery businesses.	<ol style="list-style-type: none"> 1. Create new models that improve northern Australian workforce development and retention. 2. Build the foundational capacities of Traditional Owners, businesses and institutions. 3. Create new approaches which address key National and/or State policy constraints that limit Indigenous-led approaches to development. 4. Create enhanced models for non-Indigenous development interests to partner with Traditional Owners and communities.
5. Service delivery innovation	To create strategic breakthroughs that deliver innovation in logistics, business models and health service delivery.	<ol style="list-style-type: none"> 1. Improve early detection of health issues. 2. Improve health seeking behaviours in northern communities. 3. Improve mental health seeking behaviours and service delivery in northern communities.

Projects



Informing policy development



Sector Development



Collaborative Research

<ul style="list-style-type: none"> Identifying policy and regulatory barriers to development Developing international partnerships 	<ul style="list-style-type: none"> Industry Situational Analysis studies in the following sectors: beef, cropping, rice, forestry, bush foods, aquaculture, and infrastructure and communications 	<ul style="list-style-type: none"> North Queensland Agricultural supply chain
	<ul style="list-style-type: none"> Building the Traditional Owner-led Bush Products Sector Developing a cropping sector in QLD 	<ul style="list-style-type: none"> Cherabin aquaculture production
		<ul style="list-style-type: none"> Smart supply chains Tropical beef genotypes Biosecurity audit of northern Australia prawn aquaculture
<ul style="list-style-type: none"> Diversified North Australia Land Sector Development Framework 		<ul style="list-style-type: none"> Building horticulture production knowledge and capacity within Indigenous Enterprise
		<ul style="list-style-type: none"> Establishing eye screening services to prevent avoidable blindness in remote northern Australia

2017/18 Research funding outcomes

Open funding call – Expressions of Interest

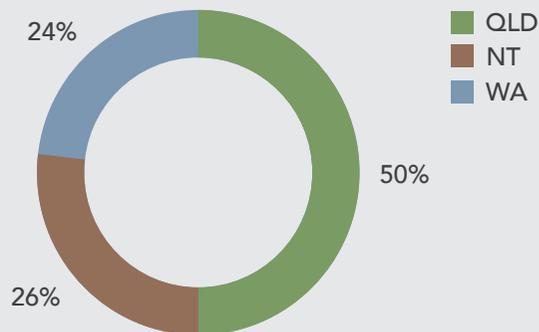
The CRCNA's first competitive funding for Expressions of Interest (EOI) for potential project participants opened 2 October 2017 and closed 31 October 2017. This open funding call attracted 115 submissions, requesting a total of \$100.7m in funding from the CRCNA.

The CRCNA committed \$4.07 million over four years towards 13 EOI projects. As at 30 June 2018, eight of these successful EOI projects had been contracted. More information about these projects is available in the Project Overview section of this report. Those projects which had CRCNA funding committed in 17/18 but had not been contracted by EOFY are shown in the Project Pipeline section of this report.

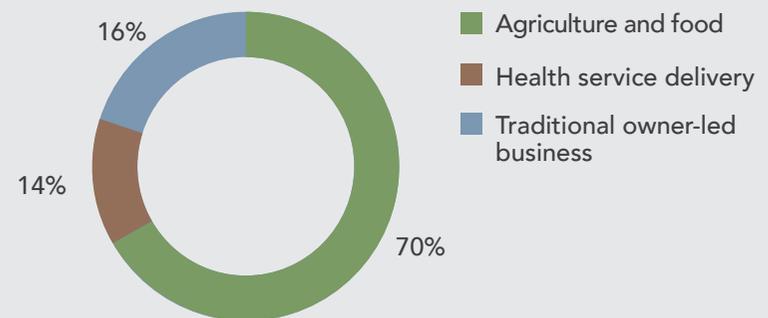
Targeted funding

In addition to the funds committed to projects funded from the open EOI process, the CRCNA committed \$3.18 million towards 11 targeted research projects, including those seeking to inform policy and budgetary investment considerations and sector development (Industry Situational Analysis studies). These projects are shown in the Project Pipeline section of this report, as the contracts for the research work to be undertaken had not been finalised as at EOFY 17/18.

EOI Submissions by State and Territory

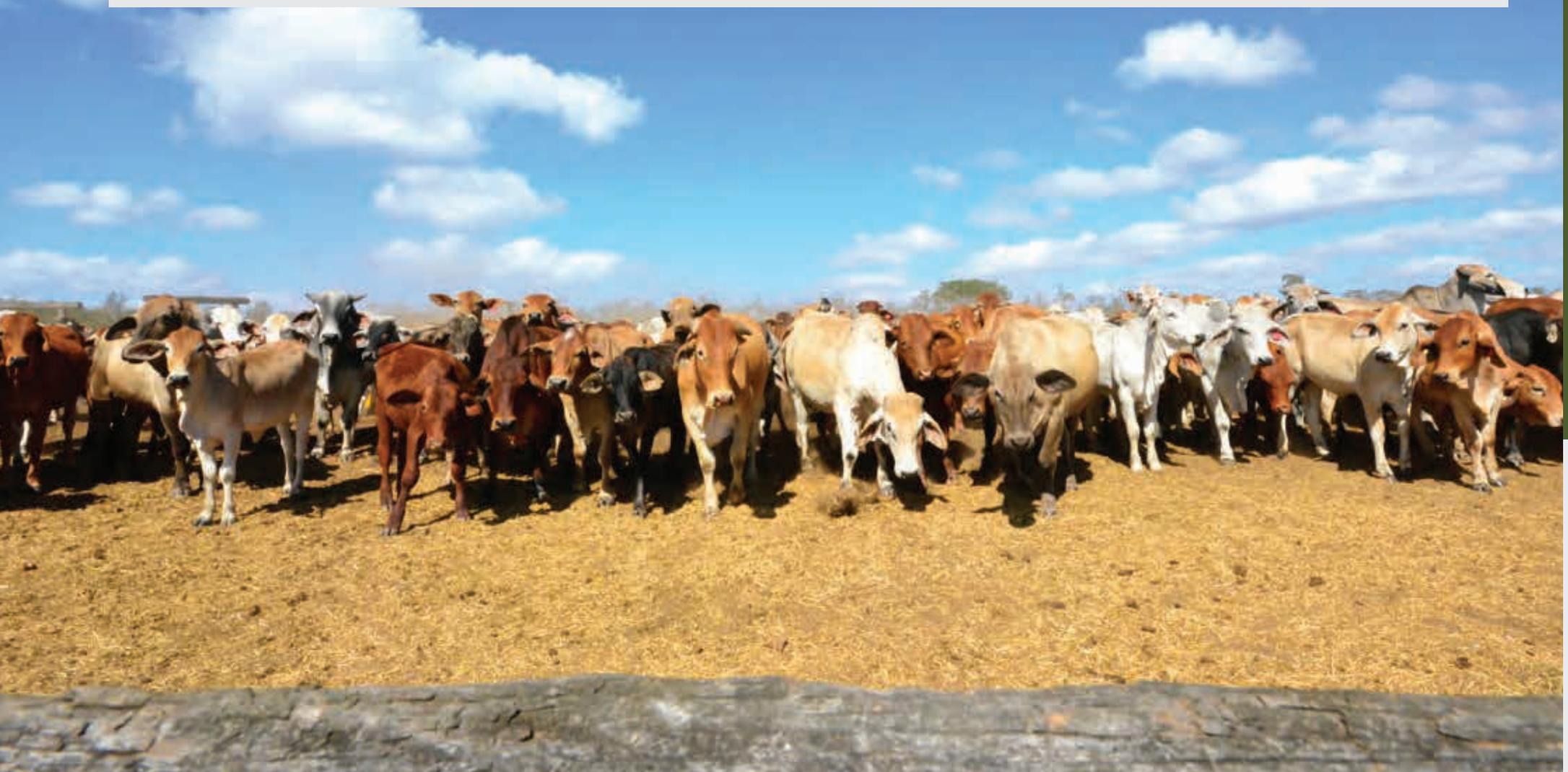


EOI Submissions by focus areas



Monitoring the impact of the CRCNA

The CRCNA is focused on maximising the potential research outcomes from our investment by ensuring Project Outlines and final Project Contracts have a clearly articulated pathway-to-impact. Participants are also required to track actual impact emerging from the research. In addition to this, the CRCNA has commissioned Agtrans Research to develop and implement a clear, simple and effective impact tracking tool. This tool will track the actual impact from the research during and beyond the project life of the CRCNA investment and across the current 10-year lifespan of the CRCNA.



2017/18 Project overviews

As at the end of the 2017/18 financial year, the CRCNA had finalised Head Agreement contracts for eight projects. The remaining projects from the 2017/18 funding allocation were continuing to progress through contract negotiations at the time of publication. Overviews of these projects are provided in the Project Pipeline section of this report.

The total value of the projects contracted as at 30 June 2018 is \$7.27 million (exclusive of GST). Projects are valued based on cash and in-kind contributions from the CRCNA and Project Participants.

A project may have been contracted in 17/18 financial year but work may not commence until 18/19 financial year.

Projects funded via 2017/18 EOI funding call

Project	Length	Date contract executed	Total CRC Funding (DIIS grant)	Total cash	Total In-kind	Total Project Value
Smart supply chains	2 Years	20/03/18	\$272,727	\$100,000	\$381,818	\$754,545
Exporting perishable commodities to Asia	2.5 years	26/03/18	\$235,455	\$379,090	\$309,091	\$923,636
North Queensland agricultural market and supply chain study	1 year	03/04/18	\$240,155	\$175,000	\$50,000	\$465,155
Biosecurity audit of northern prawn aquaculture	2 years	19/06/18	\$309,091	\$132,727	\$248,937	\$690,755
Building Traditional Owner-led bush products sector	1 year	19/06/18	\$70,909	\$27,178	\$168,651	\$266,738
Building horticulture production knowledge and capacity within Indigenous enterprises	2 years	19/06/18	\$52,364	\$0	\$132,727	\$185,091
Establishing eye screening services to prevent avoidable blindness in northern Australia	3 years	19/06/18	\$800,000	\$627,273	\$272,727	\$1,700,000
Cherabin aquaculture production as an enabler for Indigenous business development	3 years	26/06/18	\$90,909	\$0	\$2,202,404	\$2,293,313
			Total	1,441,268	\$3,766,355	\$7,279,233

Figures are GST exclusive and have been rounded to the nearest dollar.

Total project value:

\$745,545

ex GST

CRCNA funding:

\$272,727

ex GST



Smart supply chains

Participants

- T-Provenance Pty Ltd
- Manbulloo Limited
- Growcom

Summary

This project aims to develop and implement new technologies to enhance and simplify how food quality is tracked and measured across northern Australia, with the expectation of improved returns to producers via increased market premiums and access to new, high value markets.

The massive distances involved in distributing northern Australian produce to markets elsewhere presents significant challenges in supply chain management, with both growers and consumers in tracking produce and ensuring its authenticity.

Next generation supply chain technologies under development in partnership between T-Provenance, Manbulloo Limited, Growcom and CRCNA will allow northern Australian mango producers to collect and utilise data on their supply chain, value-add to their businesses and capture new markets.

The project utilises a combination of sensor technology for quality assessment, smart chip technology measurement capabilities and new blockchain technology to ensure food safety, food quality, food traceability and authenticity within the supply chain.

While the research will focus on mango supply chains in the Burdekin and Katherine regions, the outcomes of the research will impact all horticultural regions of northern Australia.

Expected outcomes

- Upon adoption an additional 10 per cent to the value of farm gate production, which equates to \$14 million per annum, just in the mango industry. There will also be benefits further down the supply chain.
- The technology will be able to be replicated into other fruit, and other food industries.
- Value creation can be captured by leveraging the smart supply chain technology to underpin the value proposition of premium fruit in the export markets where mangoes can fetch \$15 to \$20 in some Asian countries (versus \$3 to \$4 in Australia).

Total project value:

\$923,636
ex GST

CRCNA funding:

\$235,455
ex GST



Exporting perishable commodities to Asia: Developing a stakeholder collaboration model

Participants

- Central Queensland University
- Growcom
- Rockhampton Regional Council
- Tropical Pines Pty Ltd
- Passionfruit Australia
- Queensland Department of Agriculture and Fisheries
- Queensland Department of State Development

Summary

This project will examine stakeholder collaboration in planning and investment for exporting high value perishable agricultural commodities (HVPACs) from northern Australia to Asian markets. The Minister for Northern Australian Senator Matthew Canavan launched the project in Rockhampton.

The project explores multi-party collaborations in producing and processing perishable commodities, investigates developing and enabling supply chain infrastructure and identifies policy and regulatory barriers to investment in the sector.

The research approach will combine a literature review, two stakeholder workshops, a farmer survey in Queensland, a consumer choice survey in China

and spatial-modelling for volumes of HVPACs in Central Queensland region.

The stakeholder workshops will examine the types and processes of collaboration suitable for HVPACs regarding processing, investment and international trade mechanisms.

Upon project completion, the stakeholder collaboration framework for better export market development will enable increased access of Central Queensland's commodities. This framework will be applicable to all regions within northern Australia.

Expected outcomes

- Long term horticulture production in the region at least doubled resulting in an increase to \$5.6 billion from its current revenue of \$2.8 billion in Queensland.
- Increased investment in northern Australia \$100 million from the three proposed case studies.
- Upon implementation of the functional collaboration framework, a 5 per cent increase, approximately \$9 billion in overall GDP within northern Australia in the short (up to 5 years) to medium term (5 to 10 years).
- This research can be applied to all regions in northern Australia who can utilise the functional collaboration framework to their own regions and industries.

Total project value:

\$465,155
ex GST

CRCNA funding:

\$240,155
ex GST



North Queensland agricultural market and supply chain study

Participants

- Townsville Enterprise Limited
- North Queensland Regional Organisation of Councils (NQ ROC)

Summary

This project will investigate how North Queensland is currently positioned within its capacity to supply and export internationally to ensure producers within the region are well informed to maximise production opportunities and meet future international agricultural demand. The Hon. Senator Ian Macdonald launched the project in Townsville.

The research undertaken in this project, will include initial market assessments, market-based production and supply chain opportunity assessments. It will identify areas of improvement to market access, clarify where policy and regulatory barriers exist and will seek alignment with DFAT, Austrade and Trade and Investment Queensland agendas.

The findings will inform a series of recommendations, a collaborative action plan and the development of a framework to assess future growth opportunities, defining high value products in international markets. Recommendations will include enabling infrastructure and financing pathways, investment opportunities into new greenfield development areas, critical policy changes and the potential formation of grower or supply chain cooperatives.

Expected outcomes

- Increasing agricultural output by 20 per cent or \$228 million, an additional \$168 million in output will be injected into the economy.
- 1,271 FTE jobs for North Queensland.
- This research can be applied to all regions in northern Australia who can use it to undertake their own assessment of production profiles and supply chain.

Total project value:

\$690,755
ex GST

CRCNA funding:

\$309,091
ex GST



Biosecurity in northern Australian prawn aquaculture

Participants

- James Cooks University
- Australian Prawn Farmers Association

Summary

A comprehensive biosecurity audit of prawn aquaculture farms in northern Australia seeking to identify known and unknown pathogens and develop risk management strategies for industry.

This project will firstly see researchers conduct a biosecurity metanalysis using traditional and molecular diagnostic tools to establish what pathogens currently occur on prawn aquaculture farms (i.e. the farm pathobiome) and how they relate to productivity. Secondly, it will develop a risk management strategy for industry and provide on-farm biosecurity training, so industry can continue to monitor and manage pathogens.

Researchers will visit farms to assess and determine the level of preparedness of biosecurity practices and protocols currently in play. They will work with stakeholders to assist in the improvement or formulation of enterprise-level biosecurity plans.

Expected outcomes

- Increased biosecurity awareness and capacity to monitor disease may decrease production losses to 10-20 per cent (from 2 to 30 per cent) which would translate into increased production of circa \$16 million per annum.
- Enhanced early detection protocols for emerging pathogens may prevent future catastrophic industry closures, such as the recent exotic white-spot syndrome virus outbreak in southern Queensland, which cost the industry \$25 million in lost production in 2017.

Total project value:

\$185,091
ex GST

CRCNA funding:

\$52,364
ex GST



Building horticultural production knowledge and capacity within Indigenous enterprise

Participants

- Growcom
- Mungalla Aboriginal Business Corporation
- Gudjuda Reference Group Aboriginal Corporation

Summary

This project connects new and old traditional knowledge to research how two motivated Indigenous enterprises can foster and demonstrate horticulture production within an Indigenous business model.

This project will identify specific research needs in value chain, agronomy, business and marketing and provide independent guidance and assistance, linking the enterprise to funding and grants the participants may be eligible for in coming years.

The initial stages of this project will establish a commercial horticulture production site at Mungalla Station, near Ingham, and expand the existing Gudjuda site at Home Hill.

It is expected once horticultural and agronomy processes have been fine-tuned, these sites will transition to produce native food and plants, as identified by market research.

Expected outcomes

- Increased area of vegetable crops under harvest at each site by the end of the 2019 season.
- Increased employment and training opportunities for the Gudjuda and Mungalla communities.
- Increased opportunity for Indigenous communities across northern Australia to investigate the production of native food and provide economic and job opportunities 'On-Country'.

Total project value:

\$266,738

ex GST

CRCNA funding:

\$70,909

ex GST



Building the Traditional Owner-led bush products sector

Participants

- CSIRO
- Kimberley Land Council
- Giringun Aboriginal Corporation
- Tropical Indigenous Ethnobotany Centre (TIEC)
- IN-Group Investments
- James Cook University
- Australian Native Food and Botanicals

Summary

This project is led by an Indigenous Steering Committee with advice from industry and government. It will design a Strategic Sector Development and Research Priority Framework to guide the strategic growth of the Traditional Owner-led bush products sector in northern Australia. This framework will include a consideration of Indigenous IP and future protection of cultural knowledge in line with the Nagoya Protocol on Access and Benefit Sharing.

This project will address the existing knowledge gap by adopting a mixed method approach:

- 1) Conduct a snapshot review of the relevant academic, practitioner and grey literature (with guidance from the Steering Committee and Advisors) to

determine base condition, potential opportunities, risk and key development priorities for the sector.

- 2) Design and run a workshop with key Indigenous and non-Indigenous organisations from the sector (identified and selected by the Steering Committee) to further consider sector-wide opportunities, challenges, barriers (and possible solutions), and development priorities to support sector-wide development.
- 3) Design a Strategic Sector Development and Research Priority Framework (incorporating an investment strategy) to guide the strategic growth of the sector. This will build on the potential opportunities, key development priorities and potential solutions to challenges identified in 1) and 2). This would include consideration of Indigenous IP; future protection of cultural knowledge, and generational of royalties in line with the Nagoya Protocol on Access and Benefit Sharing (ABS).

Expected outcomes

- A 5 percent growth in the bush product sector in the first year.
- A framework for ongoing investment in the Traditional Owner-led sector and opportunities for the development of new enterprises.
- Improved capabilities and wellbeing of the northern Australian community through the development of Indigenous enterprises which provide opportunities for Indigenous employment through a wholly Indigenous owned supply chain.

Total project value:

\$1,700,000
ex GST

CRCNA funding:

\$800,000
ex GST



Source: CSIRO a scan of retina showing signs of diabetic retinopathy

Establishing eye screening services to prevent avoidable blindness in remote northern Australian communities

Participants

- CSIRO
- Various health service delivery providers from Queensland and Northern Territory

Summary

A new eye screening service and delivery model will enhance the effectiveness of remote health service delivery, optimise health spending and 'reduce the gap' in health outcomes for people in remote areas, particularly for those at risk of blindness from underlying conditions, like diabetes.

This project will implement retinal screening using a telehealth platform developed by CSIRO, where health workers will be trained to use retinal cameras to take photos of patients' eyes in remote communities. Ophthalmologist teams based in larger regional centres will access this information via web-based technologies and provide review and diagnostic services.

The learnings from this research will be used to develop a new and innovative model of care for the delivery of remote health services, which will be applicable to broader health initiatives in remote communities.

Expected outcomes

- Screening and early detection of diabetic retinopathy will prevent blindness and close the gap in providing specialist eye care to rural and remote northern Australia and is expected to have a cost impact of \$2.4 million per annum¹.
- Building capacity of northern Australian healthcare workforce to perform eye screening tests which may be expanded to include other eye diseases is expected to have a cost impact of \$12 million per annum.
- Cost savings due to reduced travel: \$6.4m per annum².
- An increased ability to build relationships between remote communities and wider public health agencies.
- An increased opportunity for employment as well as expanding the skills of the northern Australia workforce.
- An increased uptake of high-end remote technologies in remote areas using telehealth.

¹ This impact cost is based on earlier diagnosis and prevention of vision loss in 1 per cent of the population living in 7 remote communities of ~1200 people each @ \$29,000*/patient. Source: Access Economic calculations, June 2010.

² Estimated at \$800/trip based on Qld Patient travel subsidy scheme.

Total project value:

\$2,293,313

ex GST

CRCNA funding:

\$90,909

ex GST



Cherabin aquaculture production as an enabler for Indigenous business development

Participants

- North Regional TAFE
- Ribinyung Dawang Aboriginal Corporation

Summary

This industry-led project is a collaboration between North Regional TAFE's Broome Aquaculture Centre (BAC) and the Ribinyung Dawang Aboriginal Corporation (RDAC), who together will develop an Indigenous freshwater prawn or Cherabin (*Macrobrachium rosenbergii*) business, whilst building an Aboriginal workforce with transferable skills.

By applying recent advances in international research, the project will introduce a novel approach to aquaculture business development that will introduce new technology in an integrated business development model appropriate for the RDAC community.

This research will focus on establishing aquaculture techniques for larval production, transport, and growout of Cherabin with a view to achieving consistent production of animals suitable for market.

Hatchery production activities will be undertaken in Broome and growout activities will follow at the Mud Springs site in Kununurra, Western Australia.

The project aims to build capacity and integrate with local businesses to capitalise on the unique value proposition of the Kimberley native Cherabin as a local bush food.

Expected outcomes

- Development of a new aquaculture species for Western Australia.
- Development of a nationally accredited training program.
- Job and investment opportunities across the West Kimberley region, Pilbara, Northern Territory and Queensland.
- Immediate and long-term economic outcomes for northern Australia in skills development, social development, and capacity building which will stimulate remote community self-sufficiency.

2017/18 Project pipeline

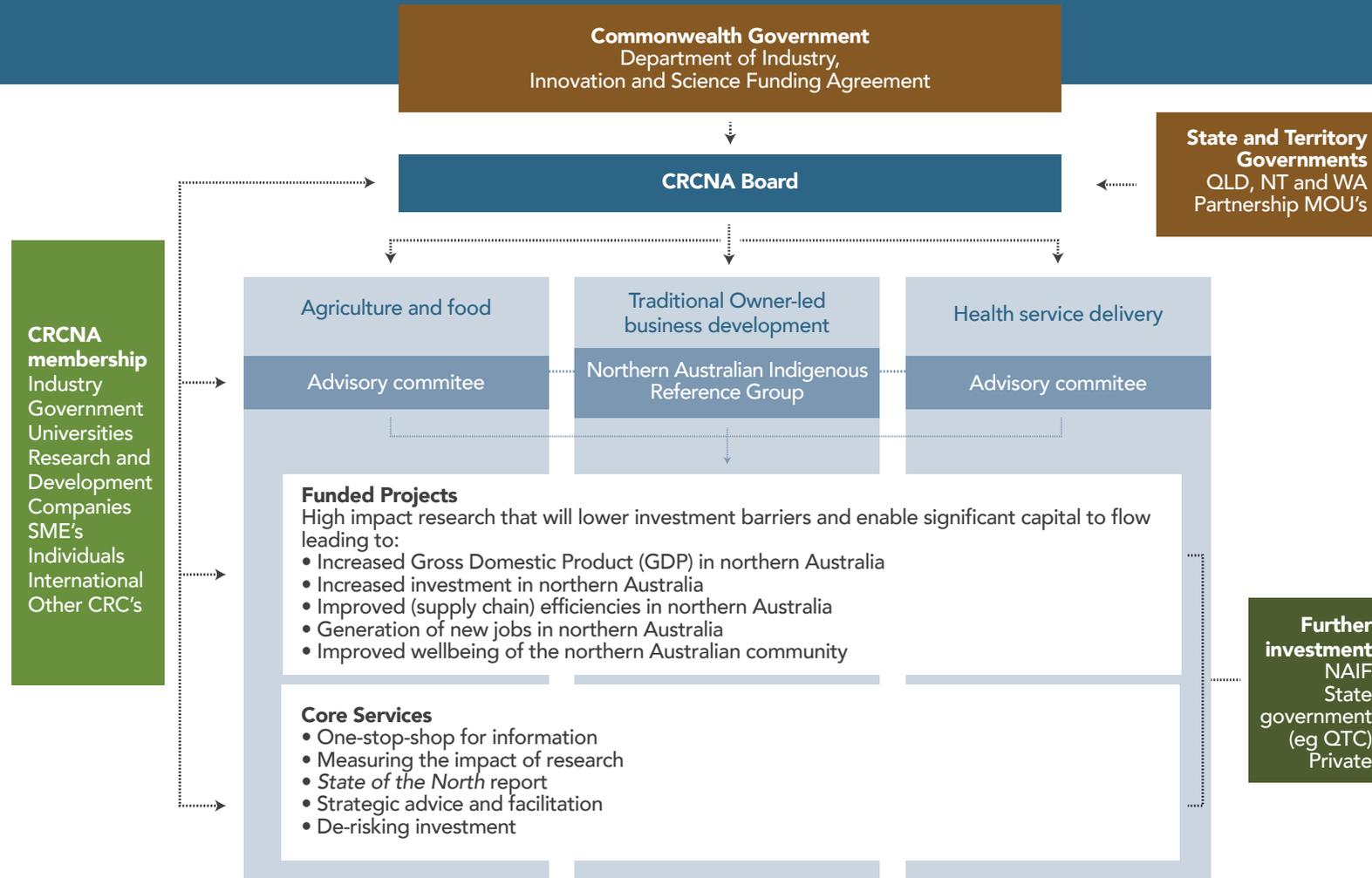
The following table provides an overview of the projects which have Commonwealth funding (ex. GST) committed as part of the 2017/18 initial funding allocation but were not contracted as at 30 June 2017. These include sector development (Industry Situational Analysis studies) and policy development projects, as well as EOI projects, which had contracts finalised after 30 June 2018.

Research Program 1: Building potential in northern Australia				
Project	2018-19	2019-20	2020-21	Total
Evaluation of the potential to expand horticultural industries in northern Australia	\$127,273	\$54,545		\$181,818
Industry situational analysis including beef, cropping, rice, forestry, bush-foods and aquaculture	\$831,163			\$831,163
Infrastructure and communication	\$200,000			\$200,000
Identifying policy and regulatory barriers to development	\$200,000			\$200,000
Developing international investment partnerships	\$200,000			\$200,000
Research Program 2: New & developing industries in northern Australia				
Project	2018-19	2019-20	2020-21	Total
Developing a cropping sector in QLD	\$250,000	\$200,000	\$100,000	\$550,000
Developing medicinal native plant agribusiness	\$276,136	\$87,500		\$363,636
Research Program 3: Production and supply chain innovation in northern Australia				
Project	2018-19	2019-20	2020-21	Total
Tropical beef genotypes	\$212,154	\$214,723	\$164,033	\$590,910
Transforming mango futures	\$227,165	\$133,761	\$139,074	\$500,000
Research Program 4: Building industry and community capacity in northern Australia				
Project	2018-19	2019-20	2020-21	Total
Diversified north Australia land sector development framework	\$363,636			\$363,636
Research Program 5: Service delivery innovation				
Project	2018-19	2019-20	2020-21	Total
To build the strategic research capacity in northern Australia in the fields of agriculture, food and/or health industries.	\$400,000	\$400,000	\$400,000	\$1,200,000
			Total	\$5,181,163

CRCNA People and governance

CRCNA Structure

The CRCNA is a company limited by guarantee. The operations of the CRCNA are governed by the company's Constitution and the CRCNA's Commonwealth Funding Agreement.



CRCNA Board



Ms Sheriden Morris

Chair

BAppSc (Hons), Agronomy/ Horticulture, GAICD

Sheriden is currently the Managing Director and Company Secretary of the Cairns-based non-profit Reef and Rainforest Research Centre (RRRC) and Deputy Chair of Citizens of the Great Barrier Reef. She has served as a Director of Wetland Care Australia and has previously worked with CSIRO and GBRMPA. Sheriden has extensive experience in environmental research and monitoring management, aquaculture development, agricultural science and agronomy in the sugar cane and banana industries of Far North Queensland.

As an extensive contributor to land and sea management policy, Sheriden has also spearheaded the development and implementation of an innovative aid development programme on Australia's northern borderlands with Papua New Guinea.

Board term: 2017-2022



Mr Don McDonald AM OBE

Deputy Chair

Don is the Chair of MHD Pty Ltd - a family owned beef cattle operation in Cloncurry in north-west Queensland. Don has previously held Board positions with the Australian Agricultural Company Ltd, Queensland Industry Development Corporation, Kidson Gold Mines Ltd, CSIRO, ATEC Rail Group and the Queensland Royal Flying Doctors.

Board term: 2017-2019



Cr John Wharton AM

Director

John is Mayor of the Shire of Richmond. He received a Member of the Order of Australia Award and Centenary Medal for his service to the community of north-west Queensland and local government. He is the Director of his own company, Wharton & Co Pty Ltd and is a registered Real Estate Agent.

Board term: 2017- 2021



Cr Peter Long

Director

BE (Hons), BA, BSc(EnvSc), CPEng (1982-2012), CEnvP, GAICD, FIEAust

Peter is Mayor of the City of Karratha. A professional engineer and environmental scientist, Peter has instigated and managed a range of businesses in the environmental and engineering fields and has served on a number of Boards including the West Pilbara Institute, St Luke's College (Chair), Bioquest Australia and Worley Astron (Chair).

Board term: 2017-2022



Ms Tracey Hayes

Director

GCRngldMan, GAICD

Tracey has a strong business development background with considerable Asian engagement experience. She is an experienced Chief Executive Officer/ Director/ Board Member/ Chair with a demonstrated history of working in the agriculture sector at a local, national and international level.

Tracey is a council member of the Order of Australia Honours Council and serves as a Director on the Board of the Australia Indonesia Institute and as Chair of the Darwin Waterfront Corporation. She is currently studying her Global Executive Master of Business at the University of Sydney Business School.

Board term: 2017 -2020



Mr John Bearne

Director

*AdvDipEng, FAICD,
Registered Builder QLD*

John has substantial experience as Chair and Director of numerous commercial and not-for-profit organisations including Townsville Hospital Health Service (Chair), Tropical Health Academic Research Centre (Chair), the Jezzine Barracks Community Trust (Director), the Australian Technical College of North Queensland (Director) and Yumba Meta (Director). He is a Member of the Townsville Health Research Ethics Committee and was a former President of the Townsville Chamber of Commerce and is a Life Member of Townsville Enterprise Ltd.

Board term: 2017 -2019



Ms Melissa George

Director

Melissa is a Wulgurukaba Traditional Owner with traditional connections to Magnetic Island and the greater Townsville region.

Melissa is actively involved in protecting and managing land and sea through the empowerment of Traditional Owners' cultural law and obligations to care for country. She continues to work as a Ministerial advisor for the Federal Government on environmental and Indigenous issues.

Melissa has previously worked as the Chief Executive Officer of the North Australia Indigenous Land and Sea Management Alliance (NAILSMA) and served as a Director of the Great Barrier Reef Management Park Authority Board and Bush Heritage Australia.

Board term: 2017-2021



Communications and engagement

The CRCNA communications and stakeholder engagement strategy outlines our activities, communication channels, style and materials used to effectively inform our stakeholders and is based around three core themes:

- Building CRCNA'S brand and position CRCNA as a leader in driving meaningful research which aims to develop northern Australia.
- Inspire, attract and fund quality research projects with a clear pathway to impact and communicate these projects and their impact clearly and powerfully.
- Build a strong and broad membership which informs and guides decision making and advocates for the long-term benefit of the CRCNA.

Throughout 2017/18, the CRCNA has been focused on continuing to build brand awareness with the aim of attracting quality research collaborations and partners. We have enhanced our social media profile and engagement, ensuring our website reflects our announcements and activities. Other activities have included developing and distributing an electronic newsletter and coordinating project launches and media events.





North Regional TAFE Aquaculture Centre



Blockchain fix for mango farms



Mango appcs: Andrew Goss and Jackson Virgo from K11's Aveller Startup

Adelaide AgTech startup T-Provenance has raised \$500,000 to pilot its blockchain technology with Northern Australian mango producers, as part of a five-year project being supported by the Cooperative Research Centre for Developing Northern Australia (CRCA).

CRC for Developing Northern Australia
CRCA, NA

Our new Smart Supply Chains project will transform mango supply chain efficiencies across Northern Australia. bit.ly/2JiXxN6



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12 17

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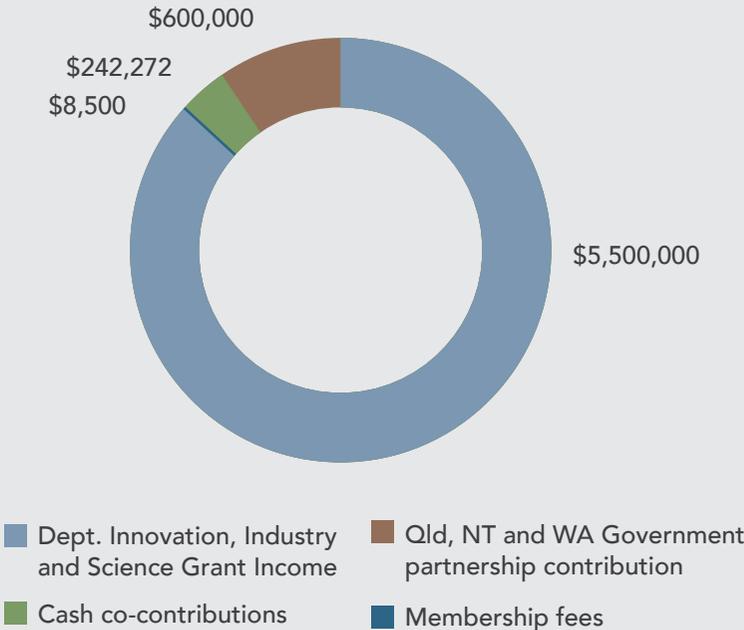




Financial overview

The CRC for Developing Northern Australia is a non-profit company limited by guarantee with charity status. Revenue is received from the Commonwealth (Department of Industry, Innovation and Science), the Northern Territory Government, the Queensland Government and the Western Australia Government, research partners and members. We currently have 85 members.

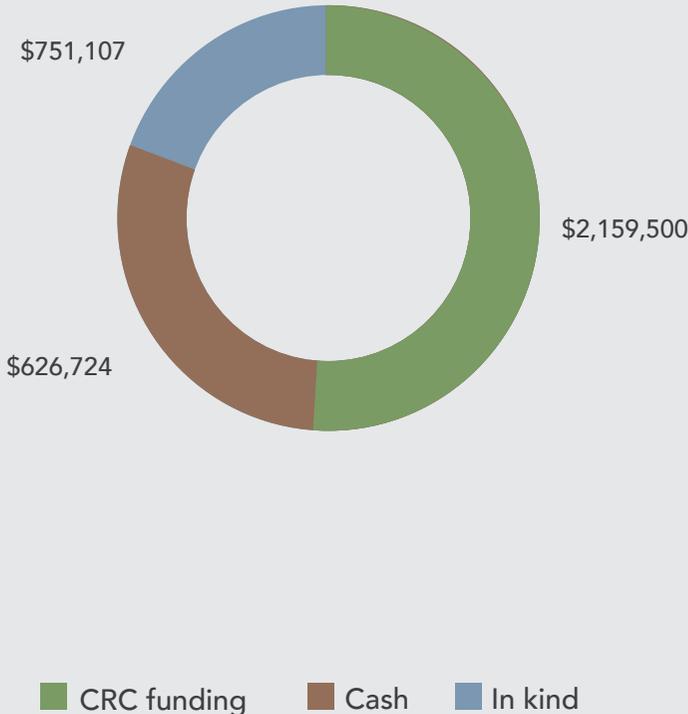
Revenue - actual as at 30 June 2018



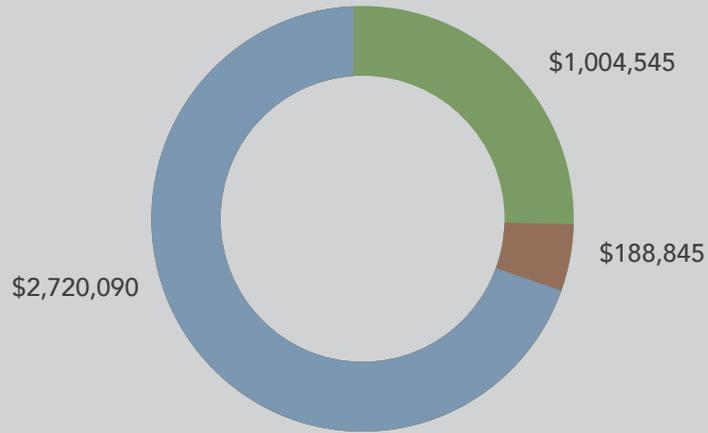
CRCNA investment profile by Research Program

Includes all CRC funding (Dept. Industry, Innovation and Science grant funding), cash contributions from participants and in-kind contributions exclusive of GST for all projects, including those contracted as at 30 June 2018 and in the project pipeline.

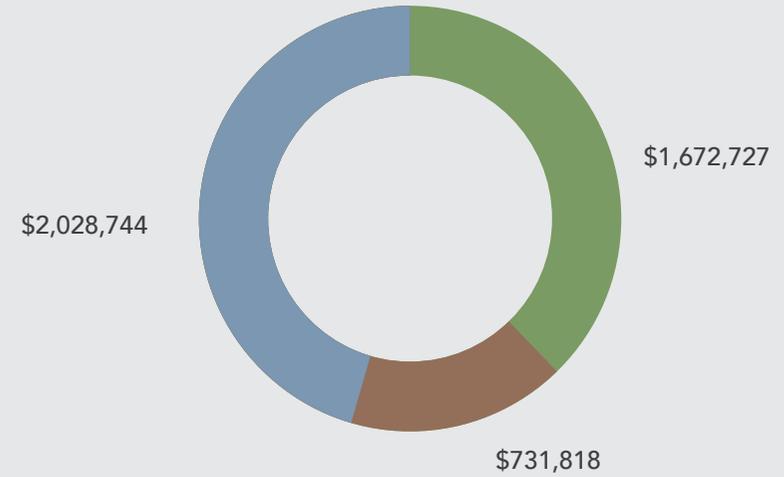
Research Program 1:
Building potential in northern Australia 2017-2021



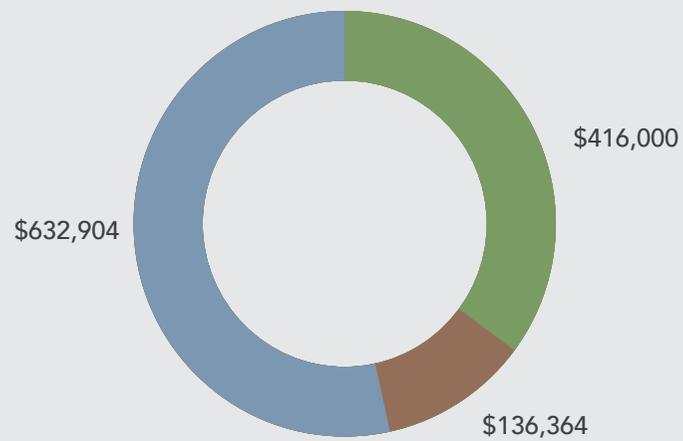
**Research Program 2:
New and developing industries in northern Australia 2017-2021**



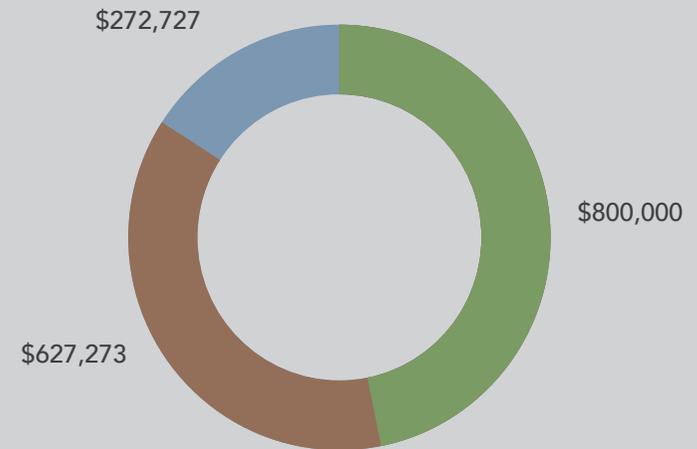
**Research Program 3:
Production and supply chain innovation in northern Australia 2017-2021**



**Research Program 4:
Building industry and community capacity in northern Australia**

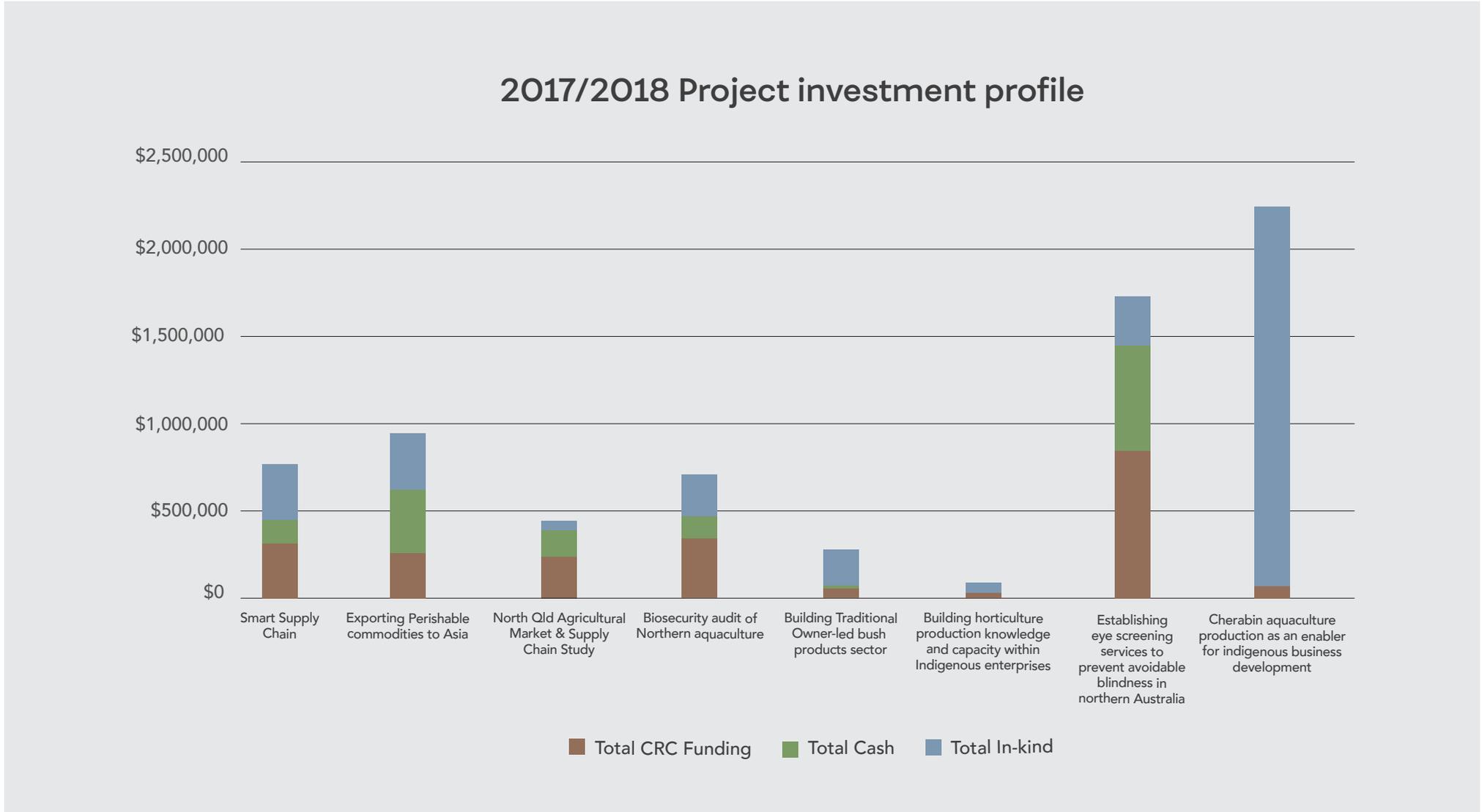


**Research Program 5:
Service delivery innovation**



2017/2018 Project investment profile

The CRCNA's project investment profile includes the eight contracted projects as at EOFY 17/18. Values shown are exclusive of GST and include CRC funding, cash and in-kind contributions.



Appendix 1: Research partners and participants 2017/18 contracted projects*

Project	Participants	Lead	Participant
Smart Supply Chains	T-Provenance	✓	
	Growcom		✓
	Manbulloo Ltd		✓
Biosecurity audit of Northern aquaculture	James Cook University	✓	
	Australian Prawn Farmers Association		✓
Establishing eye-screening services to prevent avoidable blindness in remote Northern Australia	CSIRO	✓	
	Various health service delivery providers		✓
Building Traditional Owner-led bush products sector	CSIRO	✓	
	Kimberley Land Council		✓
	Girringun Aboriginal Corporation		✓
	Tropical Indigenous Ethnobotany Centre (TIEC)		✓
	IN-Group Investments		✓
	James Cook University		✓
	Australian Native Food and Botanicals		✓
Exporting perishable commodities to Asia	Central Queensland University	✓	
	Growcom		✓
	Rockhampton City Council		✓
	Tropical Pines Pty Ltd		✓
	Passionfruit Australia		✓
	Queensland Department of Agriculture and Fisheries		✓
	Queensland Department of State Development		✓
North Queensland Agricultural Market and Supply Chain Study	Townsville Enterprise	✓	
	Townsville City Council		✓
	Burdekin Shire Council		✓
	Hinchinbrook Shire Council		✓
	Palm Island Council		✓
	Charters Towers Regional Council		✓
Cherabin aquaculture production as an enabler for Indigenous business development	North Regional TAFE	✓	
	Nribinyung Dawang Aboriginal Corporation		✓
Building horticulture production knowledge and capacity within Indigenous Enterprise	Growcom	✓	
	Mungalla Aboriginal Business Corporation		✓
	Gudjuda Reference Group Aboriginal Corporation		✓

*Projects shown reflect those which the CRCNA has finalised Head Agreements with lead Project Participants as at 30 June 2018.

Appendix 2: CRC-P Developing Northern Australia projects

Prior to the commencement of the CRC for Developing Northern Australia, the Department of Industry, Innovation and Science (DIIS) made available \$13,868,252 for seven CRC Project (CRC-P) grants in the area of developing northern Australia. The total value of these projects is \$50,880,916.

For more information about any of these projects listed, please contact the Department directly on 13 28 46 or visit the website www.business.gov.au/crc-p.

Title	Participants	Description	Start/End Date	Total DIIS Grant Amount	Total Project Value
Developing sustainable cropping systems for cotton, grains and fodder	Ord River District Co-Operative Ltd, Kimberley Agricultural Investment Pty Ltd, The Chia Company Department of Agriculture & Food, University of Western Australia, University of Sydney, Harris Operations Pty Ltd, Department of Agriculture, Fisheries and Forestry, Queensland Government, Commonwealth Scientific and Industrial Research Organisation, King Abdullah University of Science and Technology	This project will address knowledge gaps related to commercial-scale irrigated cotton/ grain/forage cropping systems, develop regional skills and create tools to inform cropping investments across northern Australia. Cropping system requirements, agronomy and genetics will be explored and developed such that northern Australia can supply agricultural products to meet the quality, technical specifications and volume requirements of overseas and domestic markets.	1/10/2017 - 15/11/2020	3,000,000	\$11,694,131
New pastures to increase livestock productivity across the north	Agrimix Pty Ltd, SM Gorton & DF Lynch, Paraway Pastoral Company Limited, AM Cowan & JM Cowan, Corfield Downs Pastoral Pty Ltd, The North Australian Pastoral Company Pty Limited, Commonwealth Scientific and Industrial Research Organisation, James Cook University, Department of Agriculture, Fisheries and Forestry, Queensland Government	Legumes provide high quality pasture benefits for livestock, soils, environment and community but few are established in the vast clay soil regions of north Australia. The project will: - Evaluate establishment methods for new legumes linked to climate risk analysis - Conduct grazing, pen, plot, soil trials - Demonstrate legumes increase livestock productivity - Engage students in research and extension Uptake of legume pastures will result in significant economic, environment and social benefits.	17/10/2017 - 30/9/2020	\$2,833,000	\$8,243,000
Breeding for resistance to juvenile pearl oyster mortality syndrome	Ellies Pearling Pty Ltd, The Trustee for Cygnet Bay Pearls Unit Trust, James Cook University	The pearling industry in Northern Australia is a major employer and important contributor to the socio-economic fabric of regional communities. Of late the industry has been besieged by a juvenile pacific oyster mortality syndrome (JPOMS) which impacts young oysters and can wipe out >90% of seedstocks. This CRC-P project will determine correlative factors associated with the occurrence of JPOMS and gather the essential knowledge required to instigate a selective breeding program targeting resistance.	1/2/2018 - 31/1/2021	\$1,377,065	\$10,028,790
Strategies to prevent two viruses devaluing Australian crocodile skins	Porosus Pty Ltd, Lagoon Crocodile Farm Pty Limited Croc Pac Pty Ltd, The University of Queensland , La Trobe University, Australian National University, Northern Territory of Australia, Berrimah Veterinary Laboratories James Cook University, Department of Health Queensland Northern Territory of Australia, Department of Health	Two viruses, Kunjin virus and a new (porosus) poxvirus, have been identified in crocodile skin lesions. Crocodile skins are produced for the high-end fashion market. Any skin with lesions is rejected because it will be visible on the finished product. With >35% of skins affected by viral lesions, the estimated economic loss is more than \$11 million p.a. to the North Australian economy. We will develop and apply control strategies to prevent these diseases and reduce their transmission.	30/8/2017 - 30/9/2020	\$1,155,032	\$4,821,242
Applying new technologies to enhance biosecurity and cattle quality	Branir Pty Limited & The Trustee for Booloomani Unit Trust, Sensand Technologies Pty Ltd, James Cook University	The vast natural environment of Northern Australia feeds the cattle industry; however, biosecurity threats have negatively impacted this. Conventional management of such threats such as weeds are not suited to such broad, harsh landscapes. The project will use an Internet of Things network with low-cost environmental sensors, drone mapping and big data analytics to develop and test data-driven, strategic pest management programs - ultimately improving both cattle industry and natural assets.	15/1/2018 - 14/1/2021	\$1,500,000	\$5,748,000
Improving banana crop productivity in northern Australia	Terragen Biotech Pty Ltd, University of the Sunshine Coast, Coastal Rural (NQ) Pty Ltd, The Trustee for Kalbo Farming Trust, Domenico & Lynette & Paul D & Mark A Ferraro, The Trustee for M & A Cardillo Family Trust, The Trustee for Reidy's Bananas Trust, MF & GL Dunne, The Trustee for N & K Borsato Family Trust, EK McCarthy & McCarthy Farming Trust, The Trustee For Dotti Family Trust, Dicarlo Family Trust, The Trustee for the Spagnolo Family Trust, A & CF & CR & JD Edgerton, JAH Farming Pty Ltd	The Project will conduct scientific field trials on banana farms in Queensland on the use of bio-stimulant technology to improve crop yield and productivity in northern Australia, promoting market growth. Key areas to be investigated are nitrogen-based fertiliser usage, reduced fruit wastage, faster crop maturity, and enhancing nutrient content. Outcomes aim to improve the competitiveness of the sector and will establish learnings that can be applied in other crop production in tropical regions	1/10/2017 - 30/9/2020	\$1,003,155	\$3,389,503
The Probio-TICK Initiative	Microbial Screening Technologies Pty Ltd Meat & Livestock Australia Ltd Macquarie University	This project will deliver Probio-TICK, a sustainable microbial probiotic against cattle ticks and buffalo fly for northern Australia. Probio-TICK will comprise a community of beneficial microbes applied to the hide to give a life-long shield of protection against cattle pests. Probio-TICK is a novel concept that applies the well-established science of human "inner-health" probiotics to the "outer-health" of cattle hides by boosting the animal's innate resistance to pest invasion.	1/10/2017 - 30/09/2020	\$3,000,000	\$6,956,250





BROOME | DARWIN | TOWNSVILLE

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