



Inquiry into Northern Australia Workforce Development

Cooperative Research Centre for Developing Northern Australia (CRCNA)

About the CRCNA

The Cooperative Research Centre for Developing Northern Australia (CRCNA) was established in 2017 with a remit to invest \$75m of Commonwealth funds over ten years to support industry-led, co-funded research collaborations across three program areas:

- Agriculture and food (including aquaculture, and forestry)
- Northern Australia health service delivery and models of care
- Traditional Owner-led business development.

The purpose of funding industry-led research is to develop a responsive evidence-based program of work to enable the economic development of Northern Australia. The CRCNA's research programs are focused across four key pillars: policy harmonisation, water infrastructure and security, activating the Indigenous estate and enabling infrastructure.

Summary of key points

- An economically and socially prosperous Northern Australia is a secure Australia.
- Northern Australia has an image problem. It's often referred to as "too risky" and only those with a "pioneering spirit" are game enough to invest. More needs to be done to address these negative perceptions.
- Activating, accelerating and optimising economic development on the Indigenous Estate is a transformative agenda which contributes to Closing the Gap in education, workforce, health and socio-economic outcomes for First Nations people.
- Northern Australian-based industries and businesses will create thousands of new jobs in the next 20 years. The aquaculture sector alone is expected to generate 2,300 new jobs by 2030, the forestry and forest products sector is predicted to create 600 new direct jobs in the next decade, and the health sector – already one of the largest employers in the north – will continue to provide significant employment opportunities.
- Emerging crops like spice, condiments and oilseed will continue to scale-up, offering Northern Australian producers diversification options and new income streams and potentially create new export opportunities for northern businesses.
- Liveability and amenity are crucial to attracting and retaining skilled and unskilled workers. Genuine cross-jurisdictional, bi-partisan and long-term collaboration and partnerships are needed to plan and invest in the north's communities of the future. Agricultural, energy and infrastructure projects cannot be delivered in isolation they need to be part of an overarching population vision for the north and strategy which builds communities where people want to stay, move to and prosper.
- Training and education for the current and future needs of the north's workforce must be done in the north, for the north. Training and education needs to be fit-for-purpose, culturally appropriate and consider the climatic conditions in which work is done in the



north. Resourcing should reflect the costs of educational delivery in the north to achieve the same standards of amenity, education and vocational training available to southern contemporaries.

- Care should be taken to avoid unintended consequences of government programs incentivising competition from metro universities for regional, rural and remote students from Northern Australia, and the brain drain this can result in. Students who study in the north, stay in the north. The focus must be on enabling people in Northern Australia to access and succeed in school, TAFE and University.
- There needs to be a re-investment in modern agricultural and aquaculture skills training, including on-farm, hands-on training and a re-focusing of extension and translation of RD&E skills to support producers to diversify and continue to adopt improved environmental practices.
- Funding and investment models which underpin many First Nations' economic development programs need to better consider how these investments create inter-generational wealth for First Nations' communities.
- A new approach is needed to manage shared water resources in northern Australia, to ameliorate the impacts of drought events and provide opportunities to produce new agricultural products for high value markets.

Terms of Reference

- A) *Trends in Northern Australia that influence economic development and industry investment including population growth, economic and business growth, workforce development, infrastructure development, and Indigenous economic participation.*

As of November 2022, the CRCNA had invested in 77 industry-led projects across Northern Australia. Many of these projects have examined the challenges, impediments and opportunities which exist across the north, including those associated with attracting, training and retaining a ready, willing and able workforce. The main points as they relate to the part A of this submission are highlighted in Table 1.



Table 1 : Trend highlights from CRCNA sector situational analyses

Sector	Opportunity	Impact
Aquaculture	<ul style="list-style-type: none"> Increasing demand due to rising incomes and urbanisation across SE Asia and Asia broadly are anticipated to drive seafood production by 17.6% by 2030 from 2016 levels Blacklip Rock Oysters grown in tropical Northern Australian waters present new business opportunities for First Nations communities Tropical Rock Lobster (TRL) industry to grow to a \$160 million p.a. industry, exporting 1,100 tonnes of sustainable Australian grown TRL from north Queensland and far north Western Australia 	<ul style="list-style-type: none"> Industry value to grow to \$1.3 billion 1,400 to 2,300 new jobs CRCNA project partners Ornatas Pty Ltd have employed 25 new full-time staff at their Toomulla Beach site, north of Townsville in FY2021/22. Once the tropical lobster hatchery is at full commercial scale, they predict they will need circa 300-400 additional staff.
Forestry	<ul style="list-style-type: none"> Development opportunities in First Nations' communities in forestry management and manufacturing Development of commercial forestry plantations with mining rehabilitation Emerging carbon incentive and sequestration schemes Collaborating with pastoral industry on silvopastoral opportunities 	<ul style="list-style-type: none"> Production value could treble to \$300 million by 2030 600 new direct jobs CRCNA's \$1.3 million investment with Tiwi Plantation Corporation and the Tiwi Land Council has seen and additional \$100 million investment in the Tiwi forestry assets, expected to create 120 ongoing jobs for community.
Broadacre cropping	<ul style="list-style-type: none"> Broadacre cropping expansion and diversification requires immediate and increased extension capacity to aid grower adaption to the environment and to capture opportunities from new crops Integrated farming systems with a focus on profitable business models rather than an individual commodity Emerging oilseed and condiment crops present diversification and new business opportunities for Northern Australian producers – the global spice trade is worth circa \$12 billion and growing at 5.2 % p.a. 	<ul style="list-style-type: none"> 70-90 new jobs created along spice production value chain worth circa \$65 million - \$14.75 million gross income to Northern Australian producers over the next decade with continued growth in Northern Australia expected. Potential for 60,000 tonnes of safflower oil products from small scale oilseed processing plants located in-situ on sugar cane properties worth circa \$67 million to those producers.
Cotton, Grains and Cattle – an integrated	<ul style="list-style-type: none"> Partnering with Cotton Research and Development Corporation, Grains Research and Development Corporation, Northern Territory, Western Australian and Queensland governments, pastoralists and producers. 	<ul style="list-style-type: none"> Unlock 300,000ha high-value cotton and grain production in Australia Unlock additional high-value, carbon-neutral beef production enabled through feeding of



cropping system	<ul style="list-style-type: none"> • Integrated RD&E seeking to maximise the productivity of cropping and beef production farming systems in the Kununurra/Ord region (WA), Douglas Daly (NT) and north-western QLD. Synergistic investment and RD&E could result in substantial local and regional economic outcomes, with community, animal welfare and environmental outcomes ensuing. 	<p>fodder, grain and cotton seed produced in North</p> <ul style="list-style-type: none"> • New agronomic skills being developed (research, agronomist and producer capacity) • A cotton/grain farm directly employs 6.6 people on average, while a cotton gin requires circa 30 FTEs.
Horticulture	<ul style="list-style-type: none"> • The net value of major horticultural produce across Northern Australia was worth \$1.6 billion/yr in 2019–2020, with north QLD supporting \$1.2 billion/yr, the NT, \$291 million/yr, and northern WA, \$126 million/yr. These estimates exclude several emerging crops, such as durian, jackfruit, lychee, and other tropical commodities. • New trellising techniques trialled in Northern Australia will increase crop resilience to severe weather events, improve productivity and could support automation in harvesting 	<ul style="list-style-type: none"> • High density orchard techniques produced 3.5 times more mangoes than lower density plantings.
Indigenous Estate / Indigenous economic participation	<ul style="list-style-type: none"> • 53 million hectares or 28% of land across Northern Australia’s tropical savannah country with potential for agricultural development owned by First Nations people • Place-based On Country planning and prospectus building empowers First Nations’ communities to identify, understand and activate their lands and seas and develop viable business prospects which attract investment and generate employment and sustainable economic. • Kakadu Plum and other native plants provide opportunity for new First Nations businesses and provide healthier snack/ convenience food alternatives and sustainable employment along the value and supply chains. • CRCNA open funding call attracted 39 submissions requesting \$79 million in funds to support First Nations-led RD&E. 	<ul style="list-style-type: none"> • A 5% increase in use of Indigenous owned agricultural land by 2030 could unlock \$230 million in addition GDP and 1,500 new jobs • CRCNA research in Kakadu Plums supported development of 6 new commercial snack foods to be developed and sold through First Nations community partners and enterprises • 400 + jobs created during harvest of Kakadu Plums.
Health service delivery	<ul style="list-style-type: none"> • Health care and social assistance is the largest employing industry across Northern Australia, representing 13% of total employment, and with huge potential for sector growth. • New treatments and models of care for diabetes will reduce health care cost burden and create new medical research and development jobs. 	<ul style="list-style-type: none"> • Macrobiome Therapeutics’ work with protein enzymes of hookworms to develop effective treatments for Type 2 diabetes estimated to save circa \$14 billion health care related costs. • New tele eye screening platform used in clinics in far north, north and western Queensland demonstrated a saving of \$2.4 million to the QLD health system over 3 years.



Water Security	<ul style="list-style-type: none">• Develop and retain the skills and capabilities of industry and community across northern Australia.• Deepen cooperation across the north between universities, industry and stakeholders.• Regionally appropriate and forward-facing policy frameworks• Technologies and solutions for tropical, tropical savannas and remote arid areas	<ul style="list-style-type: none">• Improved water supply sustainability in northern Australia, to underpin the de-risking of northern Australia for investment and the future development of agriculture, food and aquaculture industries, health outcomes and Traditional Owner-led business development
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B) Impediments to building the economic and social infrastructure required to support industry and business to expand and create regional jobs

The CRCNA's research across the key sectors of Northern Australia has identified common impediments across sectors and jurisdictions. An overview of the key impediments facing industry and businesses seeking to develop, grow and attract investment can be summarised as:

- A lack of coordinated planning and policy to inform the prioritisation, promotion and staging of agricultural investment in Northern Australia. These planning activities need to align water, vegetation management, biodiversity, enabling infrastructure, workforce opportunities, supply chains and the aspirations of First Nations communities.
- A lack of access to consistent, high-quality, affordable internet to underpin flexible service delivery, such as telehealth. It's imperative the models which govern how these services are funded and delivered remotely are reviewed and updated.
- Across all sectors there is an acute need for adequate housing for all skilled and unskilled jobs both and students on placement (in a health context).
- Barriers to staff mobility between jurisdictions. Cross-jurisdictional barriers exist in cross-border industrial relations, registration processes, credentialing, and police clearance checks across many key sectors, including health, education, training and the public service.
- Access to socio-economic and socio-demographic data to inform better planning, especially in the health service delivery context.
- Access to fit-for-purpose financial products, like insurance, which better manage climate variability and weather risk in Northern Australia.
- Funding and investment models which create and support inter-generational wealth creation especially for First Nations communities.
- First Nations training and education – 68% of First Nation agricultural employees do not have any recognised post-school qualifications and on average only 4 graduates per annum from university agricultural courses.
- Water management challenges peculiar to the north of Australia are still to be addressed.

C. Challenges to attracting and retaining a skilled workforce across Northern Australia

- Lack of appropriate housing generally means businesses cannot expand and sector growth limited because they can't physically house their workers and communities can't support the peripheral social services (childcare, health care) needed to sustain a growing population. There is significant anecdotal evidence suggesting even the offer of high wages isn't enough to attract workers to regional and remote areas, if there is no housing or social infrastructure to support individuals and families.
- Career pathways across multiple professions are poorly defined, reducing the attractiveness of rural careers.



- Vocational educational training in workforce development is as much about upskilling and retention of existing staff as it is in training new workers. It is crucial skills development is co-designed with industry and not rely solely on the TAFE-style approach to training delivery. This is crucial for sectors like aquaculture where employers don't demand training for entry-level roles.
- Conversely broadacre growers are concerned that people see working on cotton and grain farms as a short-term job on the way to a formal apprenticeship and long-term employment outside of agriculture. The Cotton Research and Development Corporation (CRDC) and the Grains Research and Development Corporation (GRDC) have supported a CQUniversity project '*Exploring a cotton and grains agricultural traineeship model*' project that will investigate how Vocational Educational Training (VET) and formal apprenticeships/traineeships can be utilised to support viable pathways for school leavers and career changers in the broadacre industry.
- Human capacity is a significant constraint to opening up broadacre cropping in the north, and extends beyond on-farm (grower and farm hand), including specialist agribusiness and industry support (for example agronomy support services, mechanics and technicians for maintenance and repairs of precision cropping equipment, specialist skills associated with post-harvest (e.g. cotton gin, grain handling) and research and extension skills.
- Structural issues such as lack of critical mass, tyranny of distance associated with developing broadacre industry mean that traditional models of service delivery and support may not be applicable, highlighting need for cross commodity solutions and workforce with broad skill set and capacity to address multiple gaps. Attracting a southern workforce into the north requires support to ensure that the translation of skills into a Northern context (farming system, environment, risks).

D. Empowering and upskilling the local Indigenous population

Activating, accelerating and optimising economic development on the Indigenous Estate is a transformative agenda which contributes to Closing the Gap in education, workforce, health and socio-economic outcomes for First Nations people. In June 2022, the CRCNA committed \$5 million towards an open funding call for projects to activate the Indigenous Estate. The EOI attracted 39 proposals seeking \$79 million in funding – a clear indication of the level of sophisticated interest in this agenda.

There is a clear evidence base that empowering Northern Australia's First Nations communities will underpin the economic future of the north – and Australia.

CRCNA's *Business on Country: land use diversification on the Indigenous Estate* (2020) report states that Indigenous landowners have obligations to make well-informed decisions because:

- many of the land use changes of the sort now being strongly promoted require effectively irreversible change in the land and the resource uses it can sustain
- traditional owners most often have neither the intention nor legal right to sell their lands, and little or no financial backing, leaving no avenues to escape or rectify bad decisions



- obligations to protect values extend beyond the landowners and their families to include other community members who have rights to access and use traditional lands for customary purposes
- obligations to country and their living and non-living attributes are codified in traditional law, which owners are bound to honour
- economic and spiritual dependence on natural and cultural values requires that the condition of these key assets is maintained over the very long term
- many traditional owners have experienced damage to the physical or functional integrity of land, waters or resources caused by externally dictated commercial uses that have effectively alienated country from continued customary use.

To advance properly informed, landholder-driven development that gives proper weight to these obligations, a Business on Country approach has emerged as a preferred approach to assessing options and attracting and managing preferred development to make the best use of their assets (NAILSMA,2012).

CRCNA's *Activating the Indigenous Estate baseline* project summarises the key impediments to First Nations participation in the modern Australian agricultural, fishing and aquaculture industries as:

- Data deficient environment – more information is required to better inform and support development planning which aligns with cultural priorities. To this end the CRCNA is looking to partner with the Anindilyakwa Land Council, Geoscience Australia and a commercial partner to develop a pilot project which seeks to identify priority cultural issues with community and use these to test how the cultural priorities can be overlaid on existing spatial datasets.
- Limited access to private capital - in 2017 one-third of the Australian First Nations population was either unable to, or presented with significant challenges with respect to, accessing financial services (Financial Ombudsman Service Australia 2017). Other research has identified that only one in ten First Nations Australians is financially secure (Centre for Social Impact and First Nations Foundation 2019). Factors known to contribute to these circumstances include lower levels of employment, particularly among higher paid professions and vocations, lower levels of inter-generational wealth transfer among First Nations families and, as a result, limited personal assets that can be used to access finance.

Conclusion

Many of Northern Australia's key sectors are predicting significant growth and expansion over the next decade. The opportunities are as vast but, in most cases, will be stymied if a ready, willing and able workforce is not available to capitalise on them. Attracting and retaining a fit-for-purpose workforce is a complex issue which can start to be addressed through genuine effort to collaborate, plan and challenge the status quo.

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