

### Detailed regional priorities for Tropical North Queensland

Priority Theme	Priority issues
<p>1. <i>Drought and climate change adaptation</i></p>	<ul style="list-style-type: none"> <li>• Identifying and addressing risks of increased evaporation, reduced rainfall, or greater rainfall variability to water storage and allocation for irrigated cropping and horticulture, for stock and domestic use in livestock enterprises and in vulnerable communities</li> <li>• Identifying and addressing risks of increased frequency of drought-related heatwaves to agricultural production, especially in horticulture and cropping systems</li> <li>• Adding value to existing drought knowledge, platforms and tools, and related current RDEA&amp;C especially through promotion and adoption within the TNQ Hub region by:               <ul style="list-style-type: none"> <li>○ collaborating with the Northern Australia Climate Program to develop a knowledgeable and trusted climate resource across the TNQ Hub region</li> <li>○ increasing the awareness and use of LongPaddock products by primary producers and service providers</li> <li>○ working closely with Climate Services for Agriculture to add value to existing services and industry needs</li> <li>○ creating linkages and adding value to existing long-term agricultural experimental sites</li> </ul> </li> <li>• Translating technical information (e.g., future drought probabilities, seasonal forecasts, forage tools) to relevant property, locality or regional scales for improved understanding, decision making and planning</li> <li>• Supporting enterprise level adaptation to changing drought and climate risks by diversifying into an unfamiliar enterprise, for example transitioning between sugarcane, cropping, horticulture or livestock production</li> <li>• Identifying drought management techniques in rangeland systems which improve landscape health, carrying capacity, animal productivity and long-term enterprise viability</li> <li>• Supporting the adoption of improved agricultural production systems and business management practices fundamental to resilient natural resources and drought-ready agricultural operations</li> <li>• Identifying irrigation systems and overland flow management for cropping land to optimise water use efficiency, and mitigate risks arising from potential diminishing ground water resources</li> <li>• Identifying risks and impacts of drought and climate change on water quality and runoff</li> <li>• Optimising the economic benefits from efficient and sustainable agricultural production systems to build greater financial resilience at enterprise, town and community, and regional scales</li> <li>• Identifying and supporting opportunities for economic diversification at farm, community and regional scales, especially to generate income during extended droughts</li> <li>• Identifying and piloting innovative financial models that generate income during drought through:</li> </ul>

	<ul style="list-style-type: none"> <li>○ Advance knowledge and understanding about environmental markets</li> <li>○ New insurance products for drought resilience</li> <li>● Supporting regional drought resilience planning processes through translating data, multi-agency collaboration and increasing awareness of future drought risks and vulnerabilities</li> </ul>
<p><b>2. Land and soil management</b></p>	<ul style="list-style-type: none"> <li>● Enhancing land condition for drought resilience, animal production and environmental market opportunities including: <ul style="list-style-type: none"> <li>○ Prevention of land degradation through best management grazing practices such as wet-season-spelling and balancing grazing pressure with existing conditions and pasture availability</li> <li>○ Restoration of degraded lands</li> <li>○ Weed control and restoring tree-grass balance</li> <li>○ Management practices that contribute to healthy soils</li> <li>○ Management practices that contribute to functioning ecosystem processes and biodiversity</li> </ul> </li> <li>● Enhancing pasture response for improved drought resilience through: <ul style="list-style-type: none"> <li>○ grazing management which ‘primes’ 3P grasses to respond effectively to rainfall during and at the break of drought (‘rain ready pastures’)</li> <li>○ maximising ground cover based on Land Type potential</li> <li>○ understanding impacts on efficient recovery including perennial grass growth, insect incursions, total grazing pressure and management burns</li> </ul> </li> <li>● Enhancing soil health in cropping, sugarcane and horticulture production systems for improved drought resilience through development and adoption of management practices to: <ul style="list-style-type: none"> <li>○ optimise soil organic matter content</li> <li>○ optimise soil moisture absorption and retention, and availability for crop production</li> <li>○ sustain and improve soil biological systems</li> </ul> </li> </ul>
<p><b>3. Innovation and technology</b></p>	<ul style="list-style-type: none"> <li>● Increasing commercial application of intellectual property, technology and technical services in drought resilience</li> <li>● Supporting the establishment of new agricultural businesses, ag-tech enterprises, and engaging innovative approaches for existing regional SMEs</li> <li>● Identifying and capturing industry problem statements through a co-design and evaluation process</li> <li>● Facilitating an innovation and technology ecosystem that integrates industry problem statements, practical understanding of ag-tech solutions, and on-farm demonstration and/or testing of: <ul style="list-style-type: none"> <li>○ technologies and practices to assist monitoring and improvement of soils, pastures and land condition</li> <li>○ technologies to integrate pasture, feed quality, and animal production decisions</li> <li>○ technologies to integrate soil moisture, crop requirements and irrigation scheduling</li> <li>○ livestock drought resilience traits e.g. reproductive performance during drought; feed conversion during drought</li> <li>○ water availability, quality and allocation to address climate variability in rangeland grazing areas, irrigated agriculture and indigenous enterprises</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ smart irrigation technologies to increase water and energy use efficiencies</li> <li>● Supporting solutions to enhance digital connectivity and planning to enable the rapid uptake of new technological innovations</li> <li>● Facilitating innovation and technologies to improve knowledge, understanding and objective decision making, and create opportunities to accelerate solutions</li> </ul>
<p><b>4. Enhancing skills and human capacity</b></p>	<ul style="list-style-type: none"> <li>● Building human capacity to enhance enterprise, town and community, and regional resilience (e.g. by enhancing leadership, volunteering and mental health knowledge and skills) through: <ul style="list-style-type: none"> <li>○ Succession planning and leadership skills</li> <li>○ Educational pathways &amp; linkages/ industry placements and associated activities</li> <li>○ Improved pathways to attract and develop agricultural professionals by engaging in high school programs, internships and scholarships</li> <li>○ Increasing the awareness and interest in the broad range of roles available in agriculture</li> <li>○ Building leadership capability in agri-business to enable better business decisions and improve people management skills</li> </ul> </li> <li>● Facilitating collaborative and co-design pathways which generate new drought resilience practices based on traditional knowledge, local knowledge, experiential learning, and scientific understanding</li> <li>● Upskilling multi-agency staff and primary producers to promote practice change within three whole of business themes: (1) land management; (2) agricultural production; and (3) people/business</li> <li>● Upskilling research, academic and extension professionals in co-design and engagement techniques to ensure meaningful and practical outcomes</li> <li>● Building greater adaptive capacity in grazing land managers and communities to manage impacts of climate variability and change</li> <li>● Improving the understanding of behavioural barriers to uptake and trigger points for engagement</li> <li>● Supporting the translation of research into practice</li> <li>● Creating partnerships between RDEA&amp;C providers, policy decision makers, funding opportunities and communities (scaling up), speeding up learning by others with similar problems and contexts (scaling out), and changing the perceptions and mental models of non-residents to better understand the needs of TNQ (scaling deep)</li> </ul>
<p><b>5. Enhancing sustainable Aboriginal and Torres Strait Islander resilience</b></p>	<ul style="list-style-type: none"> <li>● Supporting new and existing Aboriginal and Torres Strait Islander agricultural enterprises through access to water and land, and empowered by sustainable community business networks and governance</li> <li>● Enhancing business, governance and organisational capacity and capability at enterprise, community and regional scales</li> <li>● Supporting the identification of information needs for agricultural systems transformation and enterprise development to incorporate into Aboriginal and Torres Strait Islanders future plans</li> <li>● Supporting Aboriginal and Torres Strait Islander Peoples' knowledge and aspirations in sustainable agribusiness and in Indigenous led sustainable supply chains</li> <li>● Identifying, piloting and testing innovative financial models to develop Aboriginal and Torres Strait Islander Peoples community enterprises</li> </ul>

- Supporting Aboriginal and Torres Strait Islander Peoples' aspirations to lead culturally appropriate regional development and RDEA&C activities based on sharing locally relevant data and information
- Contributing to Aboriginal and Torres Strait Islander identified needs for:
  - Water security
  - Agricultural development and food security
  - Digital connectivity and capacity
  - Innovation and agricultural technology
  - Improved pastoral sector resilience
  - Workforce and labour shortages
  - Coordinated fire management
  - Improved mental health servicing
  - Improved regional governance capacity
  - Community and personal resilience
  - Governing to build community resilience

