

# Drought Resilience Adoption and Innovation Hubs



## On-ground Projects

Southern NSW

Project Title	Summary	Lead Organisation/s
<b>Managing Rangelands for Drought Resilience</b>	Demonstrate and build confidence in rangelands regeneration tools and techniques to monitor and manage key production species susceptible to being lost from the landscape during drought. Includes groundcover monitoring and Total Grazing Pressure (TGP) assessment tools, rangeland rehydration and other potential regeneration methods.	Lead Hub: Northern WA/NT Hub Participating Hubs: SNSW, South-West WA, South Australia, Southern Qld/Northern NSW, Tropical North Qld
<b>Drought Management for Health and Longevity of Perennial Horticulture Plants</b>	This project will demonstrate recent AgTech advances from R&D investments in commercial production settings to provide real-time information on canopy development and soil moisture, enabling optimised irrigation for plant health and longevity in water constrained settings, enhancing drought resilience. Capture participating growers' insights on current knowledge, skills, attitudes, aspirations, motivations, constraints and enablers for production and innovation to enhance likelihood of successful implementation by growers for all regions and target crops.	Lead Hub: SA Participating Hubs: SNSW, Vic, Tas
<b>Regional Soils Coordinators</b>	Southern NSW Innovation Hub has been granted \$187,500 per year to employ a Regional Soils Coordinator for two years as part of the rollout of the National Soils Strategy. Funding is provided as part of Building Landcare Community Capacity (BLCC) which is an element of the Smart Farms Program under Phase 2 of the National Landcare Program. <ul style="list-style-type: none"> <li>Develop the Regional Plan</li> <li>Working with SNSW Hub Knowledge Broker Network to identify end-user needs and capacity within the region to deliver solutions</li> <li>Provide support and direction to Smart Farm Soils Extension Officers and Soil Extension Activities.</li> <li>Broker partnership with stakeholders to build capability and to coordinate service delivery</li> <li>Promote the value of soil health, best management practices, project outcomes and achievements</li> <li>Participate in National CoP, Regional Soil Coordinator-specific forums and Soils Extension Activity grantee activities</li> <li>Assist participants in the Pilot Soil monitoring and incentives program and link with relevant grantee from the Smart Farms Small Grants: Soil Extension Activities program</li> <li>Respond to enquiries, reporting etc</li> </ul>	Collaborating partner: NSW DPI
<b>Soils Projects</b>		
<b>Saving Our Soils During Drought</b>	The purpose of these projects is to trial and demonstrate how scaling of particular practices (or combinations of practices) to improve management of natural capital can build drought resilience. Through this, the program aims to create and communicate an evidence base and case studies that contribute to scaling out the successful practices. The intended program outcomes are:	Lead: LLS Collaborating partners: Holbrook Landcare, FarmLink, CWFS, Riverine Plains, Peter Walker – Soils Knowledge Network, Irrigated Cropping Council
<b>Creating Landscape-Scale Change through the</b>		Lead: Holbrook Landcare Network

<b>Promotion of Resilient Pasture Systems</b>	<ul style="list-style-type: none"> <li>Increasing the number of land managers trialling and adopting drought resilient land management practices – both directly through project activities and by providing case studies and evidence that can support the “scaling out” of effective practices;</li> </ul>	Collaborating partners: FarmLink, CWFS, Monaro Farming Systems, NSW DPI, Riverine Plains, LLS
<b>Improved Drought Resilience through Optimal Management of Soils and Available Water</b>	<ul style="list-style-type: none"> <li>Strengthening collaborative networks between farmers and other land managers in support of increased adoption of drought resilient land management practices; and</li> <li>Demonstrating the effectiveness of particular land management practices, and combinations of practices, in improving drought resilience.</li> </ul>	Lead: Riverine Plains Collaborating partners: CWFS, FarmLink, NSW DPI, Southern Growers, CSIRO, GRDC
<b>Agricultural Innovation Hubs Program</b>		
<b>Managing Farmer Community Biosecurity Risk</b>	<p>This activity will build community, farmer and supply chain awareness of, and involvement in biosecurity management and create information and tools that can inform future activities to support community, farmer, supply chain involvement in and ownership of biosecurity management.</p> <p>Develop regional biosecurity profiles, leveraging existing program logic for biosecurity surveillance.</p> <p>Simulation exercise involving producers, community, supply chains as well as the responsible agencies.</p> <p>Develop plan to support biosecurity EA&amp;C systems across sectors and nationally.</p> <p>Deliver track and trace application, connecting NSW Wine (vineyard) biosecurity.</p> <p>Role of the simulation exercises in demonstrating the value of biosecurity management strategies.</p>	Lead: NSW DPI Partners: NSW Wine, PHA
<b>Harnessing the Value of AgTech on Farm</b>	<p>The project looks at the value proposition of commercially available technology solutions in livestock industries and makes the information available via publicly accessible online platform.</p> <p>The project will:</p> <ul style="list-style-type: none"> <li>Work with farmers and advisors to capture the true operating costs and opportunity costs of different livestock farm operations;</li> <li>Develop algorithms to calculate the costs saved or value created by commercially available technology solutions; and</li> <li>Create an easy-to-use online portal for farmers to input their own information to assess the value of different technologies in their own context.</li> </ul>	Led: CSU
<b>Sharing Early Insights for More Resilient Communities</b>	<p>This project will support rapid intervention through disaster cycles through analysis of existing and novel data sets to extract insights that could help government, NGOs and community organisations identify where resilience support is needed through the rapid identification of risk before, during and after extreme climatic events.</p> <p>The systems tests the existence of early indicators that resilience loss and disengagement is occurring, allowing for early intervention before catastrophic loss or longer hardship and mental health damage occurs that impacts regional resilience. Rather than involve the rebuilding of resilience after loss, this will enable the focus of interventions to be on innovative approaches to maintaining resilience before significant loss occurs.</p>	Led: University of Canberra

South-West WA

Project Title	Summary	Lead Organisation/s
<b>WaterSmart Dams</b>	Better understand how dams can function in dry years, and through co-design develop new farm water planning tools to create more drought-resilient farm enterprises and regional communities.	GGA/SW WA Hub
<b>Kondinin Group Drought Resilience for Agriculture Research Extension and Adoption program</b>	A comprehensive farmer-focused extension and adoption program aimed at seeking out the most successful drought-related techniques, strategies and technologies being used by farmers and agribusinesses around the country.	Aspermont Limited
<b>A Sustainable Weather Certificate Industry project</b>	This project will establish a sustainable Weather Certificate Industry.	Arqus Pty Ltd
<b>Wheatbelt Drought Resilience Small to Medium Enterprise Planning</b>	This project will engage with small and medium enterprises in Western Australia's Wheatbelt region through workshops and one-on-one focus sessions to develop Drought Resilient Plans.	Wheatbelt Business Network (Inc)
<b>The Benefits of Shelter Belts</b>	The project will undertake a comprehensive review to evaluate the use of shelterbelts in the Southwest region of WA.	Murdoch University
<b>Revitalising the Drought Resilience of Western Australia's Southern Rangelands</b>	The project will implement and demonstrate mature drought resilience strategies and land management practices to pastoralists in WA's Southern Rangelands, spanning 52.3 million ha.	DPIRD
<b>Making Every Drop Count – Below and Above Ground Targeted Soil Moisture Conservation from Paddock to Landscape</b>	The project demonstrates a combination of practices to improve drought resilience of cropping and grazing lands. This involves maintaining permanent groundcover by managing pasture legume systems, sowing techniques, stubble height and other elements.	Mingenew – Irwin Group
<b>Improving Sowing Opportunities for Increased Farm Resilience in a Changing Climate</b>	The project demonstrates the impacts on drought resilience of practices involving early sowing and optimal soil water storage. The program spans regions in WA, Vic, SA and NSW.	CSIRO
<b>Drought Resilient Landscapes with Profitable Native Shrub and Legume Systems across SA</b>	The project demonstrates the use of novel forage systems based on native shrubs and self-regenerating annual legumes to address feed gaps during drought. This will improve profitability and drought resilience of mixed farming and rangeland enterprises.	CSIRO
<b>Modern Soil Moisture Monitoring to Improve Irrigation Management</b>	This project will establish on-farm demonstration sites at growers' properties in WA, Northern Territory and Victoria to build their capacity to strategically implement soil moisture monitoring.	GGA/SW WA Hub
<b>Managing Rangelands for Drought Resilience</b>	This project will demonstrate management strategies and technology to assist Rangelands producers to improve grazing management, pasture regeneration and water use efficiency, making their businesses more drought resilient.	Northern Hub
<b>Fast tracking WA and NT to Align Nutritional Feed Base Mapping Technologies</b>	This project will test and refine the Cibo Labs satellite-based biomass monitoring platform in WA and NT.	Northern Hub

<b>Value added Lupin Exports</b>	Establishment of an incorporated lupin value-adding syndicate to advance the production and export of lupin food ingredients, finished food products and concentrated livestock feeds.	DPIRD
<b>Digital Edge: Next Generation Agribusiness Analytics for the Eastern Wheatbelt</b>	Deploying the next generation of agribusiness models aimed at improving climate resilience in the eastern wheatbelt of WA by targeting profitability and sustainability at paddock, farm and farm enterprise scale.	Curtin University
<b>Avondale First People's Traditional Produce Innovation and Manufacturing Hub</b>	The Avondale First People's Traditional Produce Innovation and Manufacturing Hub ('Avondale Hub'), a commercially viable not-for-profit organisation, will support existing and aspiring Noongar and other Aboriginal and Torres Strait Islander traditional produce entrepreneurs to develop and grow traditional produce businesses.	Noongar Land Enterprise Group
<b>AgTech Decoded: Growers Critically Analysing the Role of New Technology in On-Farm Decision Making</b>	The objective of this project will be to critically assess the ability of modern data analytics to address farming system challenges and improve in-season decision making when faced with a variable climate.	Liebe Group
<b>Paddock Level Carbon Benchmarking</b>	Development and implementation of Clean Energy Australia-approved University of Melbourne GAF10.4 (and future updated versions of the same) Carbon Calculator within a cloud-based data capture and benchmarking platform.	Farmanco
<b>Reducing Technical Barriers for Malting Barley Market Access Using Innovative Technology</b>	This project will generate value to barley growers, barley breeders and the entire barley industry by supporting a faster pathway to market and market acceptance of new higher yielding barley varieties.	AEGIC
<b>Implementing Improved Vineyard Floor Management for Premium Grape Production</b>	This project partners with Wines of Western Australia, the Agricultural Produce Commission (Table Grapes), and directly with at least four leading WA growers, to test and demonstrate whether cover crops can be used in vineyards to address this challenge.	UWA
<b>Drone-mounted Feral Species Recognition System</b>	This project aims to use a drone mounted species recognition system to locate and visually record feral animal species that contribute negatively to total grazing pressure.	Southern Rangelands Pastoral Alliance
<b>Developing Automated Technology to Assess Natural Capital on Pastoral Leases</b>	This project will develop automated technologies for the assessment of the natural capital elements of biodiversity and soil organic carbon to remove the current human requirements which impact resources, time and costs.	Southern Rangelands Pastoral Alliance
<b>Supporting the Adoption of Biodegradable Mulch Technology in Vegetable and Perennial Fruit Enterprises</b>	Demonstrating a novel, semi-commercialised Sprayable Biodegradable Polymer Membrane (SBPM) developed by CSIRO.	DPIRD

<i>Project Title</i>	<i>Summary</i>	<i>Lead Organisation/s</i>
<b>AgTech</b> <b>Top Crop App (low to medium rainfall broadacre farming)</b>	To develop a digital APP version of the MEYcheck manual, for use by farmers and advisors to deliver agronomic information in an updatable format which can incorporate in Yield Prophet Lite and other simple calculators.	Birchip Cropping Group
<b>Circular Economy</b> <b>Creating Circular Economies with Biofertilizers to improve resilience and diversify incomes with farmers</b>	To examine circular economy options for farmers in the NE node as part of drought resilience.	Riverine Plains
<b>Climate</b> <b>Weather Station Network</b>	To develop a more Robust Weather Station Network to support bushfire management.	Riverine Plains
<b>Containment Feeding</b> <b>Containment Feeding Innovation: Enhancing Stock Containment Practices Before, During and Post-Drought</b>	To improve pasture and livestock management prior to, during and post-drought in NE Victoria.	Riverine Plains
<b>Drought Resilience Research</b> <b>Over the Fence, a Drought Resilience Lens</b>	To inspire information sharing and innovative ideas within the North-West of Victoria and boost mental health through positive imagery.	Birchip Cropping Group
<b>Environment</b> <b>Review of the Functioning of Victoria's Emergency Supply Networks</b>	A review is being conducted and reported for government purposes to create a plan or action for repairs/maintenance.	Southern Farming Systems, with DWELP
<b>Environment</b> <b>Sovereign Fertiliser Manufacturing Capacity</b>	To develop new fertiliser products supporting crop water use efficiency and production.	Food & Fibre Gippsland
<b>Environment</b> <b>Trigger Points for Containment Feeding</b>	To build farmer skills to create trigger points for containment feeding.	Riverine Plains
<b>Fodder Storage</b> <b>Future Fodder Project: Supporting Improved Fodder Storage to Enhance Quality</b>	To improve preparedness for drought on livestock farms in Gippsland.	Food & Fibre Gippsland
<b>Mental Health</b> <b>Mental Health Awareness Training (Train the Trainer)</b>	Food & Fibre Gippsland will be working with Latrobe Community Health and other agencies to develop a number of 'train-the-trainer' products to support rural mental health professionals in understanding the drought cycle.	Food & Fibre Gippsland
<b>Physical Health/Social</b> <b>Health in Harvest</b>	To improve the health and wellbeing of farmers by providing locally based fitness programs.	Birchip Cropping Group
<b>Social</b> <b>Young Farmers Network</b>	To build strong social and professional networks for early career farmers and young agribusiness professionals.	Birchip Cropping Group

<b><i>Soil</i></b> <b>Drought Management for the Health and Longevity of Perennial Horticulture Plants</b>	Through collaborative co-design and implementation, the project teams will work with producers to identify challenges and needs in preserving plant health during drought.	South Australia Drought Hub
<b><i>Soil</i></b> <b>Spraying Pork Effluent onto Farm Soil</b>	Australia Pork Limited (APL) is seeking to quantify the impacts of effluent spraying on soil health the better understand the value of the practice as no quantitative data is currently available in Australia.	Federation University
<b><i>Water Management</i></b> <b>Green Dams Project: Improving Vegetation Management around Dams</b>	To improve water harvesting, maintain water quantity and quality in dams in Gippsland as part of drought preparedness.	Food & Fibre Gippsland
<b><i>Water Management/Water Quality</i></b> <b>Zero Row Spacing</b>	To improve drought resilience through research into “Zero Row Spacing” for improved water use efficiency and minimising herbicides through crop competition.	Birchip Cropping Group

Program Title	Program Goal	Program Lead
<b>Sustainable Aboriginal and Torres Strait Islander Enterprise</b>	<p>To encourage engagement in agriculture and agribusiness that offers positive social, cultural, and economic opportunities for Indigenous community members. Management of Tropical North Queensland's land and sea resources reflects the rights, values and aspirations of Aboriginal and Torres Strait Islander Peoples.</p> <p>The Sustainable Aboriginal and Torres Strait Islander Enterprise Program will deliver on this through three key activities.</p> <p><b>Activity 1: Innovation in Community Resilience</b></p> <p>Queensland's 17 discrete Aboriginal and Torres Strait Islander communities face important economic, social and environmental resilience challenges.</p> <p>These challenges are significantly exacerbated by drought, particularly in regard to water, food, infrastructure and digital security. There has previously been no regionalised approach to supporting individual councils to identify and address these issues and find innovative solutions.</p> <p>This activity will support, facilitate and promote regional approaches to planning, peer-to-peer learning and developing products, services and tools to address regionally identified gaps.</p> <p><b>Activity 2: Innovation in Building Traditional Owner Enterprise Resilience</b></p> <p>Traditional Owners (TO) across the TNQ region are now entering the post-native title determination period with "whole of country" opportunities (including new and emerging water rights, access to land and ecosystem services) only just beginning to be identified and mobilised to contribute to drought resilience. Diversified business and income opportunities will help build resilience.</p> <p>This activity seeks to support regional collectives of TOs and individual TO institutions (e.g. Ranger Programs and Aboriginal Corporations) to access business opportunities through adopting innovative approaches to mobilising water, agricultural lands, natural resources and traditional knowledge.</p> <p><b>Activity 3: Facilitating Innovation in Indigenous Business</b></p> <p>Indigenous Australians have lower rates of self-employment and entrepreneurship than non-Indigenous Australians. The greatest disparity occurs in very remote areas with Indigenous people being nine times less likely to be self-employed. The TNQ region has a large Indigenous population in very remote areas.</p> <p>Indigenous business opportunities for growth exist in agriculture, especially through accessing water, land and other opportunities. <a href="#">Supply Nation</a> have identified through their research that many large companies are wanting to invest into Indigenous supply chains and business to help create a new generation of entrepreneurs, to grow business knowledge and help remove barriers to employment for future generations.</p> <p>This activity seeks to accelerate new business opportunities and build resilience by supporting improvement in Indigenous business structures, processes, technologies and innovation through collaboration and learning across networks.</p>	Allan Dale, Professor of Tropical Regional Development at The Cairns Institute, James Cook University
<b>Building Human Capacity (BHC)</b>	<p>To build human capacity and skill to deliver transformational change for profitable, socially and environmentally responsible and drought resilient agricultural systems and supply chains.</p> <p>The Building Human Capacity program has identified a range of themes and activities to grow and develop regional capability and is working with relevant Nodes to deliver these activities.</p> <p><b>Theme 1: Educational Pathways and Industry Placements</b></p> <p>Education and industry opportunities will grow capability across the sector increasing the pipeline of talent for current and future opportunities. Activities include:</p> <ul style="list-style-type: none"> <li>Delivering a School to Industry Partnership Program where secondary students can apply to undertake a three-day intensive tour of agribusinesses in their region.</li> </ul>	Jane Oorschot

	<ul style="list-style-type: none"> <li>Delivering a JCU Work Integrated Learning Programs through TNQ Hub Nodes where undergraduate and postgraduate students can apply their learnings in a real-world professional environment.</li> <li>Building networks and relationships with training, educational, and extension organisations to contribute to educational pathways and identify opportunities to increase practical competencies.</li> <li>Offering TNQ Hub scholarships (full time and top-up) that are more regionally focused approach and will build academic knowledge in the agricultural sector.</li> </ul> <p><b>Theme 2: Governance &amp; Financial Literacy</b> Increased Governance and Financial literacy will contribute to the building of community capacity and strengthen their wellbeing and social capital. Activities include:</p> <ul style="list-style-type: none"> <li>Delivering a governance and a regional financial skills workshop through industry partners to build community capability.</li> <li>Exploring opportunities to upskill small business or enterprise skills to increase community capability.</li> </ul> <p><b>Theme 3: Succession Planning and Leadership Skills</b> Building leadership capability in the sector will enable better business decisions and improve people management skills. Activities include:</p> <ul style="list-style-type: none"> <li>Delivering a regional leadership program to build community capability, resilience and adaptability, and future focused decision making.</li> </ul> <p><b>Theme 4: Accessible Information &amp; Data Analysis</b> Contribute to building inherent skills and capability by increasing awareness of available programs and tools to enable more future focused decision making. Activities include:</p> <ul style="list-style-type: none"> <li>Delivering a stakeholder training workshop or forum with sessions from services such as Climate Mates, LongPaddock and Climate Services for Agriculture.</li> <li>Developing training materials and information videos with industry experts to increase adoption behaviours.</li> </ul> <p><i>As part of Theme 4, the TNQ Hub is pleased to present our <a href="#">Industry Expert Video Series</a>. This series will explore our expert's career, their wealth of knowledge and their demonstrated ability to provide specialist advice that empowers land managers and industry to make future focused decisions. <a href="#">Watch Expert Meteorologist and Climatologist, Professor Roger Stone and Expert Extension officer, Bob Shepherd</a>.</i></p> <p><b>Theme 5: Social and Behavioural Change</b> Identify potential opportunities in existing resilience programs. Activities include:</p> <ul style="list-style-type: none"> <li>Engaging with GrazingFutures Livestock Business Resilience Program to identify gaps and potential future opportunities to support decision making and build economic resilience in the region.</li> </ul>	
<p><b>Agricultural Innovation</b></p>	<p>The TNQ Agricultural Innovation Program supports the uptake of innovation by producers while motivating and encouraging collaboration in the agricultural innovation system.</p> <p>Our program is anchored as part of the established Tropical North Queensland Drought Resilience, Adoption, and Innovation Hub within James Cook Universities (JCU) innovation centre located in Cairns.</p> <p>Under the TNQ Agricultural Innovation Program, JCU will bring together producers, agriculture companies, supply chain businesses, innovators, start-ups, investors, and researchers to drive agricultural innovation in Northern Australia.</p>	<p>Nicole Lucas, TNG Ag Innovation Program, Program Lead</p>
<p><b>Transformational Agricultural Systems</b></p>	<p>To achieve efficient and collaborative translation, provision, evaluation and use of knowledge across production, natural resource management and business management domains.</p> <p>The Transformation Agricultural System program will deliver on this through four key activities.</p> <p><b>Activity 1: Drought Investigation</b> The TNQ Hub is accessing and interpreting climate data from a number of sources (e.g Bureau of Meteorology, Department of Agriculture and Fisheries) to help identify future drought impacts for land managers. Each of the TNQ Hub Drought Resilience Coordinators are working closely with producers and industry groups to integrate local knowledge and available climate data to enhance decision making.</p> <p><b>Activity 2: Sustainable Finance and Insurance</b></p>	<p>Yvette Everingham, Director, JCU Centre for Agriculture, Technology and Adoption</p>



	<p>The TNQ Hub is enhancing and building knowledge of the benefits and risks for farmers looking to enter the environmental market space. A number of products will be developed in conjunction with the TNQ Hub Drought Resilience Coordinators to ensure the products meet the needs of each region.</p> <p>As part of this activity, the TNQ Hub in collaboration with key industry experts are investigating a potential opportunity to develop an insurance product aimed at enhancing drought resilience.</p> <p><b>Activity 3: AgTech Drought Solution</b></p> <p>This activity will demonstrate and adapt the successful water and energy efficiency measures currently being implemented by irrigators in the Burdekin sugar cane industry into other TNQ regions. The TNQ Hub Drought Resilience Coordinators will engage their networks to promote and share opportunities for interested landholders to be involved in demonstrations/farm walks.</p> <p><b>Activity 4: Honours Project</b></p> <p>The TNQ Hub is encouraging and supporting honours students through scholarships to conduct drought resilience projects that target agricultural production systems. The students will work with the TNQ Hub Drought Resilience Coordinators to ensure their topics address regional priorities and in turn be better prepared to enter the agricultural workforce.</p>	
<p><b>Innovation and Commercialisation</b></p>	<p>Tropical North Queensland is a producer of intellectual property, technology and technical services in agriculture and agribusiness. This supports the establishment of new agricultural and agribusiness and agtech enterprises servicing regional, national and export markets. The Innovation and Commercialisation program is undergoing a sprint until June 2023 through the delivery of the Agricultural Innovation Program. Find out more <a href="#">here</a>.</p>	
<p><b>Coordination and Outreach (C&amp;O)</b></p>	<p>Virtuous cycles of education, employment growth, research and development, innovation and commercialisation are enabled by durable arrangements for inter-organisational and cross-sectoral collaboration across Tropical North Queensland.</p>	

Activity Title	Summary	Program Lead
<b>Developing the Knowledge Bank</b>	A summary of Hub region's agricultural industries and production systems, the emerging impact of climate variability and drought programs. Using this base data, the project aims to create a permanent central space to restore research and data in an accessible and user-friendly platform.	
<b>Learning from the Past</b>	The Northern Hub has 8 nodes across the region all staffed by Node Managers who are engaging directly with our Region's producers to understand and capture their knowledge, including Traditional Knowledge.	
<b>Farm Business Resilience Training</b>	Based on eight-week, cohort program approach where businesses come together to work on their long-term strategic farm business plan. Once registered for a program, the first step is a detailed on-line Farm Business Health Check, followed by two blocks of in-person workshops (two days each) with virtual mentoring in between blocks. The mentoring is focused on assisting each business complete their plan. The final step is a resilience checklist of the plan.	
<b>Enhancing Grazing Practices</b>		
	Project will fund a series of workshops to promote the use of a "lite" version of the Cibo Labs software being made available for free across the NT. The project builds on a previously funded FDF activity awarded to Territory NRM and is aimed at land managers for conservation and native production systems, in addition to pastoralists. The platform provides information on forage availability, fuel loads (for fire management), and the onset of drought conditions.	Territory NRM
	Project extends by 24-months at TNRM project that has established 10 producer sites for Cibo Labs technology in the NT. This extension will evaluate the impact of adoption from a production, management and environmental standpoint, and conduct outreach activities, and will further improve calibration of the algorithm. The project will also support training of extension staff in region.	Territory NRM
	Project raises discussions with pastoralists around the tools available to them to assess climate, weather and forage. Through this process a clearer understanding of producer needs will be developed and then responded to. Funding for the response is not included in the budget. The proposal addresses topics that are central to the NWANT Hub's objectives but lacks detail. The objective starting with discussions is suitable for this node, which has had limited exposure to localised expertise.	KPCA
	Use of <i>Stylosanthes</i> spp. to increase green biomass availability in otherwise native pastures is common in Qld but hasn't been widely adopting in WA. This project will clarify the approvals process, identify suitable soils and phosphorus requirements, and address constraints to adoption.	DPIRD
	Project will improve NT DITT's capacity to deliver basic 1-day rangeland management courses across the NT. These are entry-level courses for new station staff, who may later enrol in Edge (MLA) courses, delivered on-station using station-specific examples. Funding will increase the reach of existing courses geographically (to southern NT), culturally (engaging Indigenous-run stations) and technically (develop further modules). A mentor program will also be developed.	NT DITT
	Project will extend Rangelands work in the WA Southern Rangelands to the Kimberley and Pilbara regions. The proposal will introduce satellite-based forage assessment to several properties and provide training for producers to identify key pasture species and interpret satellite data for improved management.	Rangelands NRM
	Spinifex dominated pastures are less productive and less understood than Buffel or Mitchell grass pastures. Their importance increases in times of drought when other feed sources are depleted. This project will collate existing knowledge first from published literature, and then from interviews with pastoralists and indigenous stakeholders. The proposal is led by KPCA but co-funded by DPIRD and is intended to build a strong foundation for a future long-term demonstration site.	KPCA
	Project will apply the cotton 'myBMP' concept to forage production in the NT, thus creating a grower community for best-management-practice production of forage.	NT Farmers

Water Use Efficiency		
	Over the last 30 years there has been a variety of ecologically based rehydration works performed on at least 170 WA pastoral stations. This will be the first evaluation of their longer-term consequences, and perhaps the first attempt to collate learnings across ecoregions and production systems. The project will produce publications for print and social media to disseminate guidelines and stories of success and failure in regeneration and resilience building.	Rangelands NRM
	Pastoral surveys were conducted in 2010 in (a) the NT and (b) the Kimberley-Pilbara. This project will update the NT survey and might be replicated in northern WA. It will use a smaller question set and leverage station visits from other projects to reduce cost. An important milestone in this project will be the development of an instrument (questionnaire) that is deliverable and useful to multiple organisations.	Territory NRM
	This proposal investigates current irrigation practices and water use within the Ord river irrigation area, then barriers and incentives to adopting greater water use efficiencies. The proposal is more related to industry expansion than to drought resilience but has implications for future adaptation to increasingly limited water. Cost is relatively small and almost half the funding is for extension activities (identifying barriers / incentives), which is aligned with NWANT objectives.	DPIRD
	This project will clearly present the process for trading aboriginal water reserves in the Northern Territory, so that this resource can be traded for the benefit of both producers and Indigenous owners.	Territory NRM
	Soil pits are an effective tool for outreach, providing a clear demonstration of soil constraints, plant root growth, and infiltration. This project will establish and use three demonstration sites to promote soil stewardship and improve producer knowledge.	NT Farmers
	This Project involving both NT DITT (for managing trials) and NT Farmers (for producer engagement and feedback) will raise awareness of a range of climate-smart-agriculture (/horticulture) practices that build soil organic matter, by demonstrating them on-farm, and by identifying key messages to increase adoption.	NT DITT
	Citizen science proposal to enable people to collect groundwater samples and send to CDU for analysis. The proposal would fund collection kits and analysis for one or more regions within the Hub, but is contingent on the lead investigator winning a \$400k proposal to the Ian Potter Foundation for developing a collection app.	CDU
	Bullara Station is a pastoral station that has a home-stay tourism operation with up to 500 daily visitors. The project will provide potable water and improve wastewater management to cope with visitors. This is the foundation for a second proposal stage in which water is reused for forage production and be used as a demonstration site for other stations.	RDA Pilbara
First Nations Drought Projects		
<b>Aboriginal Workforce – Increasing Resilience, Capacity and Support in WA’s Aboriginal Pastoral Workforce</b>	Developing the systems, knowledge and ability of Aboriginal-owned pastoral enterprises and other stations to engage (employ, manage and mentor) Aboriginal station hands in northern WA Building the knowledge and resilience in Aboriginal station hands (and the broader workforce and managers of stations they work on) to assist and manage sustainable pastoral leases in northern WA Enhancing the capacity and learning from the knowledge and experience of Aboriginal leaders to participate in and benefit the pastoral industry, workforce and land management in northern WA.	KPCA
<b>Blue Economy</b>	Facilitating the transition from a mining to a blue economy via aquaculture and helping the Groote Eylandt community to an economy based on the ocean, which is sustainable and in alignment with Anindilyakwa customs (‘saltwater people’).	Groote Aqua Aboriginal Corporation
<b>Co-Mapping on Country</b>	Centrefarm is an Aboriginal-owned organisation that works with NT First Nations communities in horticultural development which has done previous co-mapping exercises with Traditional Owners at Alekarenge and Mataranka in 2018. The current project aims to hold workshops at Alekarenge and Mataranka to update their maps and to use them to develop two-way governance arrangements that will assist remote First Nations primary producers and communities with communication and decision-making. The workshops will be run by Centrefarm staff in direct liaison with the community at both locations.	Centrefarm
<b>Cross Hub Projects</b>	The Northern Hub is involved in 3 projects that a shred between 2 or more Hubs around the country including:	

	<ol style="list-style-type: none"> <li>1. A 6-hub project with demonstration sites showcasing technologies and techniques that use mapping and other technologies to improve rangeland management, and thus support primary producers to become more prepared for, and resilient to, climate variation.</li> <li>2. A collaboration between the Southwest WA, Northern Hub and Victorian Drought and Innovation Hub to improve drought resilience in irrigated horticulture.</li> <li>3. A project addressing the gaps in satellite data by fast tracking the work required to bring the WA and NT pastoral industry in line with the rest of the country.</li> </ol>	
<b>Building Landcare Community and Capacity</b>	<p>This project plans and constructs working demonstrations of landscape rehydration to demonstrate drought resilience at scale at major watercourse catchments on four pastoral properties in two catchments located in central Australia.</p>	
<b>National Agricultural Innovation Agenda</b>	<p>This program includes 10 projects driving innovation in Biosecurity, Export Readiness, Climate Resilience and Agricultural Technology including:</p> <ol style="list-style-type: none"> <li>1. A biosecurity system of assurance that enables businesses to continue operation even after an outbreak has occurred in the State / Territory.</li> <li>2. A feasibility study of developing high-throughput antibody detection facilities in the NT for LSD &amp; FMD preparedness.</li> <li>3. Development of a strategic plan for growing community psychological resilience to drought and climate variation by creating pathways for transformative learning.</li> <li>4. Proof of concept for a hand-held sensor that mimics mammalian olfactory processes that can detect diseases, pests, and even abiotic stresses in plant industries in field.</li> <li>5. Extending the reach of the Northern Australia Climate Program (NACP) by recruiting more staff to work on the Northern Hub region.</li> <li>6. An on-line resource detailing carrying capacity recommendations for the land types used for pastoralism in the Northern Hub region.</li> <li>7. A project that utilises drones to with new technology to analysis water for inorganic nitrogen in river ecosystems adjoining farms.</li> <li>8. Developing a remote early detection and biosecurity response reporting tool linked to the national biosecurity system.</li> <li>9. Developing a business case to expand Northern Australian Fire Information - a spatial model that uses our current scientific knowledge to predict the impacts of fire events.</li> <li>10. Developing a regionally focussed pilot program that demonstrates a business case to support capacity, knowledge and understanding of animal biosecurity in the Northern Hub region.</li> </ol>	

Project Title	Summary	Lead Organisation/s
<b>Drought Resilience Projects</b>		
<b>Trees Grow Resilience</b>	This project will collate accessible and user-friendly tools, information, and programs, into a consolidated online knowledge hub which showcases how integrating trees on farms through whole farm planning can improve farm resilience through environmental and economic shocks such as droughts.	Private Forests Tasmania
<b>East Coast Farming Community Engagement and Learning</b>	This project provides the day-to-day resources necessary to enable the East Coast Primary Producers to design a community-led learning program to build drought preparedness and community connection. Experts will be engaged to teach, mentor, and connect with the community, before a drought crisis hits.	East Coast Primary Producers Association
<b>Production Systems Approach to Soil Ecological Restoration</b>	By drawing on the extended farmer networks of two major primary industry processing companies, this project aims to foster adoption of practices that build healthy, productive, and resilient soils in the beef and intensive horticulture sectors. Work will focus on demonstrating techniques that build soil carbon and improve water holding capacity and nutrient cycling - reducing reliance on increasingly expensive inputs.	Cradle Coast NRM
<b>Drought Risk Assessment – Practical Management Support to Build Resilience</b>	This project is developing a simple assessment tool for farmers and landowners to identify how vulnerable they are to the impacts of drought. The tool and supporting processes will be targeted to overcome accessibility constraints and work with the middle band of producers. The assessment and scorecard will provide the farmer with a risk rating and pathways to increase their preparedness for future droughts.	Rural Business Tasmania
<b>Creating Drought Management Tools for NW Pasture Managers</b>	Farming systems based around regular rainfall create unique risks when exposed to drier seasons. Combining long term climate modelling with improved local weather monitoring, and in particular increased monitoring of subsoil moisture, can give growers an early warning for reduced pasture growth. This allows farmers to proactively manage their risk. This project combines monitoring hardware with purpose designed interfaces and training to reduce drought risk.	Ag Logic
<b>Redesigning Grazing for Drought Resilience</b>	The project will demonstrate that whole of system planning, alongside increasing pasture recovery times, can decrease rainfall risk and increase drought resilience. The workshops, webinars and events will ensure that individual participants are able to design their grazing management, test their design and objectively assess the outcomes.	Regenerative Agriculture Network Tasmania
<b>Natural Capital and On-Farm Opportunities in the Derwent</b>	This project is a collaboration between commercial primary producers and the Derwent Catchment Project. The project will explore market opportunities for natural capital and carbon projects and how to integrate new investment streams to build on-farm resilience.	Derwent Catchment Project
<b>Supporting Drought and Climate Resilience in Aboriginal Farm Enterprises</b>	This project will include a facilitated property planning process led by the Flinders Aboriginal Resource Management (FARM) to build business and community resilience. FARM will work with multiple partners to identify short and long term land management plans that will build climate resilience for farming activities on Thule, a 1700ha grazing property. The project will provide FARM with valuable spatial and physical data to understand their soil resource base and to consider options for on-farm sustainability, prioritise investment and enterprise development, and facilitate knowledge sharing. The project will integrate other sources of information on vegetation condition, climate variability, enterprise suitability and market information to help FARM strengthen the viability of their business, especially in dry years. The process, lessons and insights from this project will be documented and shared with similar Aboriginal-owned businesses operating with restricted tenure arrangements.	Flinders Aboriginal Land Management (FARM) Ptd Ltd
<b>Midland Project 1 – Restoring Ecosystem Functions for Drought and Extreme Weather Resilience of Agricultural Production Systems in the Midlands</b>	This project will develop a regional prioritisation strategy for strategic plantings with the objective of improving animal welfare, biodiversity, drought, and extreme weather resilience on Midlands’ farms. This regional strategy will identify areas where native plantings are most likely to maximize economic and ecological benefits at both regional and farm scales. Ten whole-of-farm drought resilience and planting plans will be prepared for participating properties, including assessments of the potential benefits in terms of natural capital increase.	

	<p>The plans will be partially implemented with a hundred hectares of the highest priority plantings revegetated with native species across the ten farms.</p> <p>The project will be the basis for a range of complementary research projects, notable on water quality, pollinators diversity and natural capital accounting.</p> <p>Finally, the project will contribute contents and resources to the knowledge hub being developed by Private Forests Tasmania where landowners can find tools, factsheets, and case-studies for increasing drought resilience through strategic plantings on their farms and will work with project partners to promote these techniques at a series of workshops.</p>	
<p><b>Midland Project 2 – Maximising the Dual Benefits of Key Ecosystem Services and Drought Resilience in Strategic Revegetation Programmes – Strategies to Monitor and Enhance Pollination and Pest Control at a Farm and Landscape Scale</b></p>	<p>Revegetation has great potential to mitigate the impacts of drought on farmland. Plantings can also promote key ecosystem services, such as pest control and crop pollination. However, we have limited understanding of how to plan revegetation programmes to maximise both drought mitigation and ecosystem services. This project will collect vital data on the success of plantings for promoting broader ecosystem services, as well as working with programme partners to develop strategies to monitor and enhance pollination and pest control at a farm and landscape scale. These findings will be used to plan and inform future revegetation programmes.</p>	<p>Tasmanian Institute of Agriculture (TIA), UTAS</p>
<p><b>Midlands Project 3 – Maximising the Dual Benefits of Ecosystem Services and Drought Resilience in Strategic Revegetation Programmes – Best Practices for the Management of Bankside (Riparian) Vegetation to Maximise the Benefits for Water Quality and Aquatic Health</b></p>	<p>This project will update best practices for the management of bankside (riparian) vegetation to maximise the benefits for water quality and aquatic health. It aims to scope current strengths and shortcomings in assessing the benefits and costs of riparian management and identify R&amp;D opportunities to extend and strengthen water monitoring networks. This will support on-farm decision about improving drought resilience and identify the tools needed to support Strategic Activities under the Rural Water Use Strategy which are key to continuing the social licence of farming and irrigation and value-adding farm outputs via stewardship and accreditation schemes.</p>	<p>Tasmanian Institute of Agriculture (TIA), UTAS</p>
<b>Ag Innovation Projects</b>		
<p><b>Enabling Ag Innovators of the Future</b></p>	<p>This pilot project aims to inspire the next generation of ag innovators through exciting in school workshops with upper primary school students. The curriculum aligned workshops with our Education Officer, will cover sustainable agriculture, the need to manage land and water, biosecurity, technology in ag and more.</p>	<p>Tasmanian Farmers and Graziers Association</p>
<p><b>Integrating Digital Innovation into Tasmanian Oysters</b></p>	<p>Sensors will be placed in spatially diverse locations within estuaries, capturing important information on hydrology and hydrodynamics. Oysters Tasmania’s online data portal ShellPOINT will be the means for displaying in-situ sensor data in real time. Site specific temperature, salinity, tide information will be able to be accessed in an easily interpreted format for growers and ShellMAP staff to incorporate into daily duties. The increased information will bring increased agility for on-farm decisions and builds capability for strategic management and planning.</p>	<p>Oysters Tasmania</p>
<p><b>A Model for Grass-Roots Biosecurity Collaboration in the Derwent</b></p>	<p>This project will implement the highest priority actions of the regional biosecurity plan in collaboration with the Derwent Catchment Biosecurity Network, land holders and community and offers a model for place-based biosecurity networks that strengthen the work undertaken by Biosecurity Tasmania.</p>	<p>Derwent Catchment Project</p>
<p><b>Farmgate Futures: Innovating Through Agritourism</b></p>	<p>Agritourism plays a key role in directly connecting the consumer with the primary producer so that they can learn and experience first-hand the story behind what they eat. It provides farmers with opportunities to bring in a new source of income and market produce and products in different ways, often at a premium price. The project will work with farmers to identify spare capacity and resources on farm and provide them with the business tools and tourism networks they need to diversify.</p>	<p>Optimum Standard</p>

<b>Securing Tasmania's Supply Chain Reputation and Product Integrity from Farm to Plate</b>	This project will be a partnership between Biosecurity Tasmania and one or more seafood industry stakeholders in a Tasmanian seafood industry supply chain to implement robust traceability systems from harvest to plate so that they can take advantage of opportunities afforded to them through traceability to mitigate biosecurity risks, differentiate their produce, and ensure continued attractiveness of the industry.	Biosecurity Tasmania
<b>Accelerating Adoption of Electronic Nose Technology</b>	OpenNose is a low-cost open-source electronic nose which aims to solve this issue. In this project, we aim to demonstrate OpenNose on commercial properties facilitate grower lead engagement with the tool. Using this engagement, we will explore barriers to adoption and use this information to further develop a business plan for the commercialisation of electronic nose technology in Tasmania and the wider world.	Borlaug Technology
<b>Cross Hub Projects</b>		
<b>Drought Management for the Health and Longevity of Perennial Horticulture Plants</b>	The project will boost drought preparedness and resilience capabilities of horticultural farmers and rural communities engaged in wine grape, almond and citrus production value chains across South Australia, Southern NSW, Victoria, and Tasmania. The Tas Hub will be responsible for establishing demonstration sites for wine grapes in the drought sensitive East Coast and Coal Valley regions, as well as lead the qualitative data collection and synthesis.	SA Hub
<b>Drought Resilience Practices in Mixed Farming Systems</b>	This project will fast-track direct support to cropping and livestock farmers across three states (Victoria, South Australia, and Tasmania) in the management of pastures and use of livestock containment and feeding systems for drought resilience.	Vic Hub
<b>New Ag Innovation Projects</b>		
<b>Digital Literacy</b>	Digital literacy is an essential, and fundamental, tool to enable farmers to access the potential of digital innovation and technology to support production and farm management. This project will provide a comprehensive understanding of the key digital literacy barriers, enablers, technology, and on-farm success stories in Tasmania. The project will focus on two or three key sectors that form the foundation of Tasmanian agriculture – for example livestock (dairy and beef), vegetables (peas, potatoes, and beans), and fruit (berries and cherries). Each sector deep dive will highlight trends of adoption of digital ag tech along with the main challenges faced by farmers and the broader supply chain and develop and deliver engagement activities and resources to build digital literacy for producers and service providers in each sector.	Lead: Beanstalk AgTech Partner Support: TFGA, TAPG, TWIA, Fruit Growers Tas, Ag Logic, Optimum Standards
<b>Creating Drought Management Tools for King Island, Midlands, North East and East Coast Pasture Managers</b>	The aim of this project is to give growers access to local weather and soil moisture data. More accurate and regionally relevant data gives growers a solid objective baseline to make better decisions from. When combined with long term climate modelling growers will have much improved lead times to respond to impending drought conditions. The current weather data availability across the productive agricultural regions of King Island, the Midlands, Northeast, and East Coast is at best sparse and/or weather stations are not located in agriculturally relevant locations. The expected benefit of this project to primary producers in these regions is improved productivity as a result of increased data access allowing for objective decision making. The project may link to the Digital Literacy project (see listed above) proving 3 target regions for piloting approaches for building digital literacy.	Lead: Ag Logic Partner Support: Ag Logic, XHub Viticulture Project, East Coast Producers Group, Midlands Project
<b>Sense T: Engaging Farmers in Data Analysis for Business Intelligence</b>	Six properties in Northern Tasmania's Tamar Valley are currently hosting I4.0 Mobile Platforms (ex. Sense T) which house a range of atmospheric, weather and soil sensors. Supporting these farmers to access, analyse, and interrogate this data to support decision making is a critical next step in their data technology journey. This project will engage these 6 properties to identify their needs and barriers to effective use their sensor data. By linking them with Ag Tech providers and data scientists the project will pilot approaches for building digital literacy in Tasmania in a local catchment setting (see Digital Literacy project listed above). Stage 2 of this project may involve the development of tools / models to enable predictive capabilities for farm planning and preparedness and risk management for drought and future climatic events (under DR).	Tas Farm Innovation Hub and TIA and possibly Ag Logic
<b>Understanding Environmental Market Opportunities in</b>	There is growing momentum in governance frameworks, market-based incentives, and regulatory mechanisms to support sustainable food and fibre production. However, the range of mechanisms, methodologies and organisations working in this space creates a confusing and potentially risky landscape for producers and land managers considering if and how to engage	Tas Farm Innovation Hub & Beanstalk AgTech

<p><b>Tasmania: Supporting a Stakeholder Dialogue</b></p>	<p>with these opportunities. This activity will build understanding, awareness and connection across organisations involved in environmental accounting, natural capital, and broader environmental and social governance frameworks. The Hub's role would be neutral facilitator and broker to support dialogue as a basis for partner-led pathway(s) forward that are connected and complementary rather than fragmented.</p>	
<p><b>The On Country Agritourism Business Development Program</b></p>	<p>The current AI Agritourism Project, Farmgate Futures, managed by Optimum Standard is underway. The project team are working with farmers to identify spare capacity and resources on farm and provide them with the business tools and tourism networks they need to diversify.</p> <p>The On Country Agritourism Business Development Program is new for Tasmania. This project would be positioned as a pilot to reframe the way that agritourism business development programs engage with traditional custodians and landowners, working with the principle of self-determination.</p> <p>The point of difference for the On Country Agritourism Business Development Program will be through its co-design and delivery. Landowner (Jason Whitehead, Okehampton), and Ochre Rain (Traditional custodians) have a relationship that is grounded in mutual respect and recognising traditional land ownership. There is a desire to work together to create opportunities to bring other people into Okehampton and learn what is possible when landowners and traditional owners work together for the benefit of country and each other.</p>	<p>Optimum Standard and Cape Herbert Pty via Jason Whitehead (Okehampton landowner)</p>



<b>Project Title</b>	<b>Summary</b>	<b>Lead Organisation/s</b>
<b>Retaining Soil Water in Farming Systems using Strip/Disc Machinery</b>	Using disc sowing systems and stripper fronts with the aim of retaining soil water (less soil and stubble disturbance, more stubble residue retained at harvest, greater rainfall infiltration) to increase resilience in dry conditions. Other benefits cited include increased harvest efficiency and improved timeliness of sowing.	Lead: Agricultural Innovation & Research Eyre Peninsula (AIREP) Hub Partners: SARDI, Buckleboo Farm Improvement Group
<b>Best Practice for Early Sowing Opportunities</b>	Investigate best practice early sowing opportunities for producers in low rainfall areas on Eyre Peninsula including fertiliser rates, seeding depth, and variety.	Lead: Agricultural Innovation & Research Eyre Peninsula (AIREP) Hub Partners: SARDI
<b>Remote Water Management in the Arid Lands</b>	Demonstrate the application of Ag Tech options for remote water management in the pastoral Zone of SA. Produce information resources to showcase the technologies.	Lead: SA Arid Lands Landscape Board Hub Partners: AgCommunicators
<b>Building Pastoral Sustainability – Property Management Planning</b>	Property Management Planning with 6 large pastoral properties (1 to 4 participants from each property) from the SA Arid Lands region, covering goal setting, property mapping using Ecologically Sustainable Rangelands Management (ESRM), planning and development of a management/action plan.	Lead: SA Arid Lands Landscape Board Hub Partners: Bently's SA, Contour Environmental and Agricultural Consulting
<b>Utilising Satellite Imagery in the Growing Season to Inform Adaptive Management</b>	Improve understanding, knowledge and skills of farmers and advisors in the Upper North in utilising satellite imagery to inform in-growing season decision making in both cropping and grazing enterprises.	Lead: Upper North Farming Systems (UNFS) Hub Partners: SARDI, Society for Precision Ag Australia (SPAA), Breezy Hill Precision Ag Services
<b>Ground Truthing Satellite Imagery for use in Pasture Management and Assessing its Role in Adaptive Management of Grazing Systems in Upper North of SA</b>	Utilising pasture demonstration sites to quantify biomass and feed quality and compare this with zones and measures from satellite imagery platforms for improved and early decision making on livestock management and stocking rates.	Lead: Upper North Farming Systems (UNFS) Hub Partners: Spatial Hub Analytics, SARDI, Elders, Cibo Labs
<b>Intercropping in Break Crops in the Upper North – In-Crop Decision Making and the Impacts on Profitability and Soil Function</b>	Increasing complexity of the break crop from vetch pasture to a dual species vetch and canola inter-crop will increase profitability of rotations and reduce the risk by providing multi-end use options to adapt and respond to climatic variations.	Lead: Upper North Farming Systems (UNFS) Hub Partners: SARDI, Pinion Advisory, Elders
<b>Containment Feeding and the Effect of Ewe Health over Lambing</b>	Building on previous work to optimise containment feeding, this project will identify the metabolic status and cause of death in ewes that were in containment so that actions such as increased mineral supplementation can be considered to prevent further deaths because of containment.	Lead: Barossa Improved Grazing Group (BIGG) Hub Partners: Barossa Veterinary Service
<b>Improving On-farm Water Security Using Innovative Remote Sensing Systems</b>	Establish demonstration sites for producers to learn and observe the different water monitoring systems available to help them reduce water use and maximise water use efficiency, monitor salinity and ensure livestock have access to water.	Lead: Barossa Improved Grazing Group (BIGG) Hub Partners: SARDI, Coorong District Council
<b>Understanding Weather Forecasts (short &amp; long term) and Climate Change Predictions</b>	Support a presentation from leading SA weather and climate experts to assist growers to understand forecasts, climate prediction models and other tools to make better decisions on farm.	Lead: Hart Field-Site Group Hub Partners: SARDI

<b>Demonstrating Soil Zone Mapping for Variable Rate Nutrition Management</b>	The projects will demonstrate management of input costs and risk by zoning in different soil types, understanding input requirements in different zones, and fertilising accordingly. This is particularly relevant following dry or drought years where nutrients may be left behind and less will need to be replaced, and also in years with good soil moisture and rainfall to maximise the opportunity for higher yield potential.	Lead: Mallee Sustainable Farming (MSF) Hub Partners: Murray Plains Farmer (MPF), Frontier Farming Systems, Agronomy Solutions, SARDI
<b>Improving Canola Establishment in Dry Conditions</b>	A demonstration trial which leads to improved management of canola in dry conditions, particularly focused on dry seeding, as well as understanding agronomic practices that can maximise return on investment with high input costs.	Lead: Murray Plains Farmers (MPF) Hub Partners: Ag Xtra, Pinion Advisory, AgCommunicators
<b>Tools for Pasture Forecasting</b>	This project will investigate the tools available for use in pasture forecasting and pasture measurement tools in the high rainfall zone of South Australia (e.g. Farmer Forecaster, My Farm Dashboard, AskBill). The project aims to improve primary producer decision making around grazing decisions by providing them with up-to-date information about the tools available that they can access to help inform their decisions.	Lead: MacKillop Farm Management Group (MFMG) Hub Partners: Agricultural Innovation & Research Eyre Peninsula (AIREP), Limestone Coast Landscape Board, Hills and Fleurieu Landscape Board
<b>Mixed Species Pastures and Demonstration Sites</b>	Demonstrate mixed species pastures in medium to high rainfall environments and the drought resilience benefits they provide to soil, pasture longevity and productive use of out-of-season rainfall.	Lead: Barossa Improved Grazing Group (BIGG) Hub Partners: Mid North High Rainfall Zone (MNHRZ), Coopers of Mt. Pleasant
<b>Identifying Barriers and Enablers to Farmer Engagement with Climate Resilience Practices and Technologies</b>	This project will investigate effective methods and practices that should be employed to increase farmer engagement in projects that encourage the adoption of drought and climate resilience practices and technologies. The project will identify the barriers and challenges to farmer engagement and participation and recommend opportunities and strategies to overcome these.	Lead: Flinder University Hub Partners: Hub Nodes, SARDI, Grower Groups, Landscape Boards
<b>Regional Internship in Applied Grains Research</b>	This project will support Hart's regional internship program in applied RD&E, relevant to the needs of the southern grains industry with a strong focus on drought resilience. The intern will have the opportunity to work directly with the South Australian Drought Resilience Adoption and Innovation Hub, whether through field-based work or extension activities.	Lead: Hart Field-Site Group Hub Partners: SARDI
<b>SA Drought Hub Trainee</b>	SA Drought Hub Traineeship with focus and aim on identifying and selecting some past SAGIT projects with drought resilience aspects aligned to the priorities of the Hub. The trainee will work with researchers from these projects to facilitate some on-ground activities that help to increase both extension and adoption of the findings from the past projects.	Lead: SARDI Hub Partners: SAGIT, Grower Groups
<b>Image-based Sensing for Improved Irrigation Scheduling of Horticultural Crops</b>	It is well known that a tree's canopy size is strongly linked to irrigation requirements of a crop. This project will deliver a vineyard and orchard monitoring system to help growers manage irrigation and plan other management activities to achieve the best outputs with the available water resources. The tool will integrate canopy measurements and soil moisture data for accurate irrigation modelling.	Lead: SA Hub, NSW Hub, Vic Hub, Tas Hub Hub Partners: SA Hub Project Partners (University of Adelaide, Wine Australia, Duxton Green Brain, Ag Excellence Alliance, Plant and Food Australia, PIRSA)
<b>Drought Resilience Practices in Mixed Farming Systems</b>	This project will fast-track direct support to cropping and livestock farmers across three states (Victoria, South Australia and Tasmania) in the management of pastures and use of livestock containment and feeding systems for drought resilience. The project demonstrations, activities and outputs will lead to improved farm decision making and improved environmental conditions in preserving soil cover and livestock welfare and nutrition in periods leading into, during and post drought.	Lead: Vic Hub, SA Hub, Tas Hub, Vic Hub Hub Partners: SA Hub Project Partners (University of Adelaide, Wine Australia, Duxton Green Brain, Ag Excellence Alliance, Plant and Food Australia, PIRSA)

<b>Managing Rangelands for Drought Resilience</b>	This collaboration will establish at least six demonstration sites across Australia to showcase technologies and techniques that use mapping to improve rangeland management. Utilising digital precision mapping technologies at the property scale, each site will be analysed using property utilisation and land condition tools to develop a plan for future management and infrastructure changes that could be implemented to improve drought resilience.	Lead: Northern WA & NT Hub, SA Hub, SNSW Hub, Southwest WA Hub, Tropical North Qld Hub, Southern Qld/Northern NSW Hub Hub Partners: SA Hub Project Partners (Arid Landscape Board University of Adelaide, Cibo Labds)
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Southern Queensland Northern NSW

Project Title	Summary	Lead Organisation/s
<b>Securing Future Investment</b>	Activity 1 is geared toward providing the underpinning resources to allow the SQNNSW Innovation Hub to continue to contribute to the National Agriculture Innovation Agenda beyond the life of this project. The SQNNSW Hub is committed to investing in a business planning process to demonstrate a path to increased commercialisation outcomes, increased support for innovation, and continued support for Ag2030 beyond the current funding.	University of Southern Queensland
<b>Automated image analysis for detection of downy mildew from drone imagery</b>	Activity 2 involves the automated image analysis for detection of downy mildew from drone imagery. Following this proof-of-concept project, the ultimate outcome of developing automated algorithms is expected to be new farm practices for targeted application of eradicate fungicide to infected grapevine areas. A follow-on project would be required for additional field trials and commercial development of the technology with a commercial partner; this proof-of-concept Activity is an important step in the commercialisation process. This Activity will provide proof-of-concept of a sensing tool to detect downy mildew infection in grapevines from drone imagery. The technology is expected to enable targeted spraying of infected grapevine areas, with the potential to not only vastly reduce amount of chemical used for control of downy mildew compared to conventional control practices, but also provide on-farm efficiencies for growers.	University of Southern Queensland (Queensland College of Wine Tourism)
<b>Enhancing Ag360 through development of mobile phone app versions – iOS and Android</b>	Activity 3 is enhancing Ag360 through development of mobile phone app versions – iOS and android; this is an important extension of the current Ag360 desktop service. Ag360.com.au is a web-based software tool that allows producers to access the most up to date weather forecast (updated daily) for the next six months, customised to within 5km of their property location. The weather forecast is combined with farm management data (soils, pastures, livestock and treatments) and used in powerful models to predict the quantity of feed that will be available on the property, animal growth rates and wellbeing over the coming six months. This is a freely available, nationally useful platform that will receive ongoing support from the UNE Smart Region Incubator.	University of New England
<b>Regenerative agriculture professional learning pilot program</b>	Activity 4 is a regenerative agriculture professional learning pilot program aimed squarely at the next generation of primary producers, skilled agricultural workers and agricultural industry advisors. This teacher professional development pilot will facilitate system-level behaviour and practice change in the farming sector, that will lead to improved efficiencies along the value chain to increase profitability and productivity and reduce emissions. Enhancing teacher competence and confidence in teaching regenerative agriculture to the next generation of farmers via delivery of professional development to agriculture teachers is an innovative way of facilitating the transformational change from traditional to regenerative agricultural principles and practices across the country. This approach will embed knowledge of new practices, in this case the innovative regenerative approach, into the agricultural education sector which has, to date, primarily focussed on more traditional farming techniques. It is likely this approach will lead to the application of these innovative practices by future farmers and has the potential to contribute to an attitude of life-long learning.	Southern Cross University (Regenerative Agriculture Alliance & Farming Together)
<b>Regenerative agriculture mentoring program (RAMP)</b>	Activity 5 directly targets primary producers across the SQNNSW Innovation Hub region. This Activity extends the reach of the successful and in-demand Regenerative Agriculture Mentoring Program (RAMP) piloted in 2021/22. In this program, RAMP partners leaders in regenerative agriculture with enthusiastic farmers to facilitate transformational change in the practices and principles used, while developing the next generation of regenerative 'champions'. Again, this approach is likely to lead to the application of innovative practices, as well as a mindset among the participants (and those they influence within their families and communities) of seeking out and evaluating innovations in future. The mentor program developed and piloted in 2021/22 with support from the NSW Environmental Trust, Southern Cross University and local partners, can now be rolled out in any region across Australia where farmers are interested	Southern Cross University (Regenerative Agriculture Alliance & Farming Together)

	in regenerative agriculture but in this instance will focus on Northern NSW and Southern Queensland. Importantly, the extension of the innovative methodology utilised for this program will leave behind eight self-sustaining clusters of producers who actively seek out, evaluate and implement innovative practices, knowledge and technology.	
<b>Primary producer engagement program (PPEP)</b>	Activity 6 the primary producer engagement program (PPEP) extends upon existing on-ground work, in this case The Carbon Neutral Northern Rivers Pilot Program. The overall pilot project positions the Northern Rivers of NSW as leaders in landscape management and the carbon economy, attract investment, funding and reduce barriers to broad participation in environmental markets for local industries by developing a ‘carbon neutral’ brand for the Northern Rivers. Launched in early 2022 the project includes partners across agriculture (beef, dairy, sugar, nuts, timber, tea tree, horticulture), food & beverage manufacturing, education, tourism, logistics and local government.	Southern Cross University (Regenerative Agriculture Alliance & Farming Together)
<b>Taking it to the next level (workshops)</b>	Activity 7 is a direct response to the innovation repeatedly requested during the SQNNSW Innovation Hub’s initial co-design process in late 2021 and early 2022: access to relevant, trustworthy information in a user-friendly format. The Hub has tentatively identified some possible topic areas for a series of six tailored workshops (one per Node area) to be held in early 2023. These workshops will be co-designed with the Nodes and other relevant Members, Partners and other organisations and stakeholders without our large region. These workshops will champion climate resilience and/or help increase productivity, profitability and sustainability across the Hub region. These workshops are part of the Hub’s innovative Pathways to Practice Change approach, ensuring producers and their communities have access to ongoing capacity building opportunities. Due to the time-limited nature of most funding opportunities, producers and communities are at risk of only having one opportunity to learn about an innovation or engage with experts. The Hub is endeavouring to ensure all funding opportunities are part of a systemic approach to increase innovation uptake (across all aspects of innovation from the technological to personal capacity) by ensuring repeated access to relevant experts or information, in order to increase the chances of innovations being applied within the farm business.	SQNNSW Innovation Hub + Nodes, Members and partners
<b>GRDC – Changing the game – resilience to seasonal variations &amp; drought through Agtech</b>	Activity 8 is building on Australia’s existing global lead in precision agriculture. This Activity will introduce the next generation of farming technologies (automation / autonomy based) that are tasked for climate resilience and drought preparedness. The project will build ongoing capacity to deploy these technologies at an industry owned research/commercial farm spreading over 800ha. This scalability will inform real world applications that are conducive to training and adoption by farmers while providing a purpose-built testing ground to engage with both domestic and global technology manufacturers. The project will facilitate earlier access if not first user access to novel technologies for Australian farmers and crucial alignment with technology manufacturers. In an Australian first, this work will align agtech development, climate resilience and drought tolerance production objectives (uniquely Australian) in a real world, commercial farm scale environment.	University of Southern Queensland Queensland Cropping Research
<b>Lismore – Creating a sustainable node network as a SQNNSW Hub legacy</b>	Led by the Lismore Node, this project will focus on helping to create sustainable node networks at each of the Nodes across the SQNNSW Innovation Hub: Armidale, Lismore, Longreach, Narrabri, Roma and Stanthorpe.	Lismore Node
<b>Stanthorpe – Vermicast</b>	Led by the Stanthorpe Node, this project will focus on and demonstrate the benefits to local producers of vermicomposting operations and in particular the potential for improved soil health, drought resilience and carbon sequestration.	Stanthorpe Node
<b>Stanthorpe – Improving the adoption of evaporation mitigation technologies for open water storages in Stanthorpe</b>	Led by the Stanthorpe Node this project will provide awareness, learning, scaling, business development, networking, capacity building and extension, leading to practice change and increased adoption of Evaporation Mitigation Technologies (EMTs).	Stanthorpe Node

<b>Roma – Farmers on Tour</b>	Led by the Roma Node this project will see Maranoa-Balonne farmers, plus a small number of key service providers, offered a 3-day subsidised bus trip to the research-intensive Narrabri region to view a variety of sites that will offer research and peer learning opportunities across both cropping and grazing enterprises. The trip will be held from 23-25 August 2022.	Roma Node
<b>Roma – The link between mental health &amp; gardens during drought</b>	Led by the Roma Node, this project will see the Maranoa region participate in the Wallumbilla Women’s Wellness Weekend. The opportunity exists to present a workshop in collaboration with the local Moorlands Nursery around garden health, with a focus on resilient, water wise gardens, that in turn support mental health outcomes during drought periods. The event will be held from 9 -11 September 2022.	Roma Node