

South-West WA Drought Resilience Adoption and Innovation Hub

Priority projects

List updated 23 September 2022

Background

The Situational analyses for the Hub's four agro-ecological zones – Southern Rangelands, Mid West & Gascoyne Coastal, Wheatbelt and South West – were developed to document baseline knowledge of drought-related agricultural initiatives that have occurred in recent years and to identify 'gaps' where new opportunities could enhance outcomes in a hotter, drier climate.

Regional Advisory Committees (RACs) have been appointed for each of the four agro-ecological zones in the area covered by the Hub. They are skills-based representatives of agricultural industries. Through their knowledge and expertise, they provide guidance to the Hub on priority issues impacting the drought and climate resilience of farming systems, their industries and communities.

Workshops have been held with members of the four RACs to agree on priority projects to be developed for the Future Drought Fund bid. The intended outcomes of the workshops were that:

- Priority projects meet FDF guidelines
- Regional and industry need is clearly described
- Targeted consultation and scientific rigour underpins each project

Process

RAC members reviewed project ideas identified by the situation analyses and added new ideas for potential projects. All ideas were discussed, and areas of duplication were identified.

The RAC members then prioritised project ideas based on the (a) likelihood of the building climate change and drought resilience; (b) addressing regional need; and (c) feasibility of implementation.

The situational analyses and priority project documents are draft, 'living' documents and may be refined in the light of further information and changing contexts.

Mid-West

Drought Lever	Priority theme and (3 or 4) sub-ideas
Agricultural Practices - Agronomy	<ul style="list-style-type: none"> • Investigation and analysis of protected cropping systems and cooling systems, including retractable and partial netting systems, for suitability to Carnarvon area conditions • Improved shelf life and post-harvest best practice management • Improved management of summer weeds • Review of trial programs and crop varieties to suit the regions current and future challenges
Carbon Footprint	<ul style="list-style-type: none"> • Education and support programs for carbon neutrality and future sustainability challenges • Waste management and recycling options to improve sustainability
Water Management	<ul style="list-style-type: none"> • Development and promotion of robust irrigation scheduling systems • Review of water use policies to protect against salinisation and 'over-allocation'



Business Management	<ul style="list-style-type: none"> • Improve business skills, analysis and engagement with external consultants • Education on supply chain and mapping to identify areas to improve efficiency and returns • Study tours to investigate global growing practices in comparable systems and environments
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Southern Rangelands

Drought Lever	Priority theme and (3 or 4) sub-ideas
Agricultural Practices - Livestock	<ul style="list-style-type: none"> • Cattle forage preferences and impact on productivity and performance • Development of forage budgeting methods with remote sensing data for visual assessments, with calibration against body condition scores of breeders across the production year • Cost-effective animal control options, including self-mustering yards at water points • Control of non-domestic grazers including kangaroos, camels, donkeys, developing cost-effective methods to assess numbers in a management unit; collaborating with existing task forces • Improve or optimise reproductive rates through benchmarking, genetic selection of <i>Bos indicus</i> and <i>Bos indicus</i> infused herds in the region, use of tropically adapted <i>Bos taurus</i>, extension activities • Maximising year-round ground cover
Carbon footprint	<ul style="list-style-type: none"> • Extension activities on Australian Carbon Credit Unit (ACCU) scheme, including cost benefit analysis and modelling information • Sustainability metrics, greenhouse gas account information and potential implications for market development and access in the future
Water Management	<ul style="list-style-type: none"> • Analysis of relative benefits of investing in improved rainfall infiltration rates compared to earth works to control run-off • Rehydration, total grazing pressure and dynamic management planning • Water management in designing and building/maintaining road and track infrastructure and rehydration implications
Business Management	<ul style="list-style-type: none"> • Systems analysis of future climate scenarios, including species, land use strategies, range conditions, costs of establishment, including transition speed for new strategies

Wheatbelt

Drought Lever	Priority theme and (3 or 4) sub-ideas
Water Management	<ul style="list-style-type: none"> • Farm and landscape water planning, including access and availability of scheme water and water quality • Utilisation and preservation of summer rainfall options
Digital agriculture	<ul style="list-style-type: none"> • Building industry digital capacity and literacy • Utilisation of remote sensing technology including options for IoTs to manage seasonal variability and production efficiencies in a drying climate
Agricultural Practices - Agronomy	<ul style="list-style-type: none"> • Soil amelioration practices to improve water use efficiency and potential to enable access to subsoil water • Maintaining the soil resource – wind and water erosion • Genetics – seed selection and use • Machinery development for improved moisture retention and germination efficiency
Agricultural Practices - Livestock	<ul style="list-style-type: none"> • Decrease ewe and lamb mortality • Year-round water and feed supply • Consider genuine synergies between cropping and livestock enterprises on farm
Business Management	<ul style="list-style-type: none"> • Diversification of farming systems, including native species, bushfoods, carbon, off farm enterprise, trees, Natural Capital Accounting, biodiversity, etc. • Increased financial, business and climate risk management literacy • Showcasing businesses and examples that perform well in dry years • Better understanding farmers attitudes towards managing drought, including identifying triggers for transformation for farm businesses

South-West

Drought Lever	Priority theme and (3 or 4) sub-ideas	
Agricultural Practices - Agronomy	<ul style="list-style-type: none"> • Development of best practice guidelines for managing extreme heat (bringing together aspects of tree canopy structure, evaporative cooling, netting types, irrigation, nutrition, spray-on protectants and other stress reduction products) • Investigation of protected cropping options to manage water and heat stress, including ROI across a number of industries • Situation analysis of various climate scenarios and potential production impacts for crops, biodiversity and possible adaption strategies • Increasing floral resources for apiarists through partnerships with biodiversity plantings • More efficient management of nitrogen including emissions values 	Perennial fruit Veg bees
Agricultural Practices - Livestock	<ul style="list-style-type: none"> • Extension around how to develop drought resilient shelterbelts and blocks • Extension and Adoption program for various livestock feeding strategies including: economic analysis of feeding strategies, benchmarking and feeding strategies for confinement feeding, drought planning - plan what to do if the season breaks late. • Extension of Pastures from Space program, and existing commodity specific programs to other industries (ie EverGraze, Sheeplinks, FutureSheep project, Rumin8) • Model impacts of climate change on feed grain supply and quality and impacts on intensive livestock production • Issue of feed gap changes and production systems that consider: containment feedlots, forage conservation, forage shrubs, 	Sheep Beef Dairy Pig Chicken



	<p>pasture species mixes for higher rainfall areas and across a range of soil types</p> <ul style="list-style-type: none"> • Examine and consider role of alternative production systems, including the use of shedding systems in WA dairy industry, winter calving, stocking rates with an autumn calving cow with calf at foot • Economics of imported forage vs on-farm forage, including the value of silage over hay, timing of silage cutting, and grain feeding systems when hay is finished • Develop perennial + legume-based pasture compositions for different regions and time of sowing trials to survive summer and various grazing pressures and extend 'shoulders' (autumn and spring) of pasture supply 	
Business management	<ul style="list-style-type: none"> • Improve business capability and benchmarking required for environmental sustainability practices across all industries • Weather, soil and other sensor data capture on-farm and how best to use for decision making • Developing demonstration sites for digital agriculture and data use 	Veg Dairy Hort Beef sheep
Carbon footprint	<ul style="list-style-type: none"> • An education and adoption program for data capture, carbon accounting and sequestration 	Dairy Sheep Beef Veg Perennial fruit
Water Management	<ul style="list-style-type: none"> • Investigate the economics and production impacts of water supply, water quality and potential issues in future climates, including encouraging water testing, stock impacts, use of marginally saline water for irrigation, efficiency of irrigation systems • Improved water capture and conservation options, including dams, roaded catchments, technology options, catchment of surface irrigation water • Improve recycling or reuse options of wastewater from intensive industries 	Dairy Sheep Beef Veg Perennial fruit Pigs Chicken Grapes