

South-West WA Drought Resilience Adoption and Innovation Hub

Priority projects

List updated 9 November 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. 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 underpin 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 (a) likelihood of the projects building resilience to climate change and drought; (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.

1. Mid West & Gascoyne Coastal

Theme	Theme priorities
Agricultural Practices – Agronomy and post-farm gate	Grower and industry adoption of: <ul style="list-style-type: none"> • (a) Systems to protect and cool horticultural crops • (b) Post-harvest practices that improve the shelf life of horticultural products • (c) Improved summer weed management practices • (d) Improved crop varieties that better suit the region’s current & future climate • (e) Optimal global agronomic practices used in comparable systems and environments • (f) Efficient supply chains that increase returns, and are achieved through measures including industry education and supply chain mapping
Environmental Footprint	Grower uptake of: <ul style="list-style-type: none"> • (g) Education and support programs addressing carbon neutrality and future sustainability challenges



	<ul style="list-style-type: none"> (h) Improved waste management and recycling techniques
Water Management	<p>Grower adoption of:</p> <ul style="list-style-type: none"> (i) Irrigation scheduling and storage systems for optimal water use efficiency practices (j) Practices that reduce the risk of salinisation

2. Southern Rangelands

Theme	Theme priorities
Agricultural Practices - Livestock	<p>Pastoralist adoption and investment in:</p> <ul style="list-style-type: none"> (a) Grazing management practices that address limiting nutrients to optimise stocking rate and productivity (b) Forage budgeting methods that utilise visual assessments and/or remote sensing satellite or drone technology data, with calibration against body condition scores across the production year (c) Infrastructure and cost-effective practices to control stock numbers to aid in the management of total grazing pressure, including controlling pest species such as kangaroos, camels and donkeys (d) Practices and technologies (including benchmarking, genetic selection and grazing management) that optimise herd and flock productivity (e) Practices that maximise year-round ground cover (f) Optimal and economically viable systems for a future climate
Digital Agriculture	<p>Pastoralist adoption of:</p> <ul style="list-style-type: none"> (g) Remote technologies to better monitor and manage livestock and landscape condition to achieve increased efficiencies and improved decision making
Environmental footprint	<p>Pastoralist participation in:</p> <ul style="list-style-type: none"> (h) Extension activities addressing carbon farming, biodiversity certification schemes, natural capital projects and implications for market development and access (i) A review of past landscape rehabilitation works and programs within the Southern Rangelands to focus future advice to pastoralists on techniques and practices that have industry acceptance and proven, positive on-ground impacts
Water Management	<p>Pastoralist adoption of:</p> <ul style="list-style-type: none"> (j) Evidence-based and cost-effective techniques to improve rainfall infiltration rates (k) Adaptive management planning that considers rehydration and total grazing pressure (l) Water management practices for designing and building/maintaining road and track infrastructure and rehydration implications



3. Wheatbelt

Theme	Theme priorities
Agricultural Practices - Agronomy	<p>Grower adoption of:</p> <ul style="list-style-type: none"> (a) Soil amelioration practices that improve water use efficiency, increase water infiltration, conserve water and optimise access to subsoil water (b) Practices that protect and rebuild soils and minimise wind and water erosion (c) Crop and pasture varieties and associated agronomic practices that optimise profitability and productivity in a variable climate (d) Options that improve moisture retention and germination rates (e) Diverse farming systems that improve drought resilience and could include native species; trees; bushfoods; greenhouse gas emission accounting and carbon farming; off-farm enterprises; natural capital accounting; and biodiversity credits (f) Practices that optimise the preservation and utilisation of summer rainfall
Agricultural Practices - Livestock	<p>Grower adoption of practices that:</p> <ul style="list-style-type: none"> (g) Decrease ewe and lamb mortality (h) Optimise management of and business decisions relating to livestock in dry and variable seasons (i) Optimise year-round water and feed supplies (j) Incorporate a genuine farming systems approach to the management of cropping and livestock enterprises
Digital agriculture	<p>Grower adoption of practices that:</p> <ul style="list-style-type: none"> (k) Build industry digital capacity and literacy (l) Utilise remote sensing technology and the 'Internet of Things' (IoT) to efficiently manage seasonal variability in a drying climate
Farm planning and decision making	<p>Extending information that:</p> <ul style="list-style-type: none"> (m) Showcases farm enterprises that demonstrate business resilience and performance in dry and variable years (n) Improves understanding of farmers' attitudes towards managing seasonal variability and a drying climate, including identifying triggers for transformational change
Water Management	<p>Grower and industry uptake of:</p> <ul style="list-style-type: none"> (o) Planning and practices that optimise farm and catchment-level access to and storage of high-quality water (p) Education and training about best practice earthworks for optimal water capture

4. South-West

Theme	Theme priorities	industry
Agricultural Practices - Agronomy	<p>Grower adoption or uptake of:</p> <ul style="list-style-type: none"> (a) Practices that optimise management during extreme heat, which may relate to tree canopy structure, evaporative cooling, netting, irrigation, nutrition, spray-on protectants, and other stress reduction products (b) Protected cropping options to manage water and heat stress, and provision to growers of return-on-investment (ROI) information for different crop types (c) Information relating to various climate scenarios and their potential production and business impacts, and adaptation strategies 	<p>Perennial fruit Vegetables Bees Grapes</p>



	<ul style="list-style-type: none"> • (d) Improved biodiversity plantings, revegetation, and pollination services to increase floral resources for apiarists • (e) Practices and technologies that optimise nutrient use efficiency, leveraging learnings from other regions and industries 	
Agricultural Practices - Livestock	<p>Grower adoption or uptake of</p> <ul style="list-style-type: none"> • (f) Information about drought resilient shelterbelts • (g) Information about feeding strategies, including benchmarking, economic analyses and seasonal variability planning. Feeding strategies may include containment feedlots, supplementary feeding, forage conservation, forage shrubs and crop and/or pasture species mixes for a range of soil types • (h) Industry learnings from initiatives such as Pastures from Space™, EverGraze, FEED365, FutureSheep, Lifetime Ewe Management and Rumen8 – to achieve widespread best practice • (i) Knowledge about how a future climate will impact on feed grain supply and quality, and impacts on intensive livestock production – to optimise planning and management • (j) Information on alternative dairy production systems that may address shedding systems, calving timings and stocking rates • (k) Information on the economics of using imported forage versus on-farm forage, including the value of silage over hay, timing of silage cutting and grain feeding systems when hay is finished • (l) Animal species that are adapted to heat stress 	<p>Sheep Beef Dairy Pig Chicken Aquaculture</p>
Digital agriculture	<p>Grower adoption or uptake of:</p> <ul style="list-style-type: none"> • (m) ‘Internet of Things’ (IoT) technology (which may include weather, soil and other sensor data) which will support farm management during variable seasons • (n) Information delivered at demonstration sites focusing on digital agriculture and data use 	<p>Vegetables Dairy Horticulture Beef Sheep Grapes</p>
Environmental footprint	<p>Grower participation in:</p> <ul style="list-style-type: none"> • (o) Business and productivity benchmarking for environmentally sustainable practices across all industries • (p) Education programs on best practice carbon accounting and sequestration 	<p>Dairy Sheep Beef Vegetables Perennial fruit Grapes</p>
Water Management	<p>Grower adoption or uptake of:</p> <ul style="list-style-type: none"> • (q) Best practice water management (including water testing) to ensure optimal water quality and supply in a changing climate • (r) Information delivered through extension programs addressing the productivity impacts of water quality (for example, impacts on livestock and management of irrigation systems – including the use of marginally saline water) 	<p>Dairy Sheep Beef Veg Perennial fruit Pigs Chicken Grapes Aquaculture</p>



**GROWER
GROUP
ALLIANCE**
Together we grow



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	<ul style="list-style-type: none">• (s) Improved water capture and conservation options, including management of surface irrigation water, roaded catchments and dam technology• (t) Improved wastewater recycling or reuse options from intensive industries• (u) Technologies that optimise water temperatures (for example, water recirculation systems) for maintaining aquaculture stock	
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