



THE UNIVERSITY OF  
**WESTERN  
AUSTRALIA**

Institute of  
Agriculture



**UWA FARM RIDGEFIELD  
BEST PRACTICE FARMING SYSTEMS PROJECT**

# **Strategic Plan**

## **2022-2027**

---



# CONTENTS

---

FOREWORD	3
PURPOSE	5
CHALLENGE	6
RESPONSE	8
STRATEGIC INTENT	10
STRATEGIC PRIORITIES, GOALS AND ACTIVITIES	12
KEY PERFORMANCE INDICATORS	15
GOVERNANCE AND ACCOUNTABILITY	17
THE INSTITUTE'S PROJECT OPERATIONAL STRUCTURE	18





# FOREWORD

---

***The University of Western Australia's Institute of Agriculture has built an enviable reputation by focusing on effective communication of agricultural research and research training activities at UWA, and deepening UWA's engagement with progressive farmers and farmer groups, agri-food businesses, national and international collaborators, funding bodies and alumni.***

As we look forward, there is wide recognition that while we have been successful to date, the world as we know it is fundamentally changing so fast that the status quo will no longer suffice. Never has our Institute's vision to provide research-based solutions to food and nutritional security, environmental sustainability and agribusiness been more pertinent.


Since 2009, the Institute operated the Future Farm 2050 (FF2050) Project at UWA Farm Ridgefield. The FF2050 Project played an important role in engaging with farmers, researchers, industry, and metropolitan and rural communities to share this vision, link industry and research, and inspire the next generation.

On review, the Institute concluded that unlocking the full potential of the FF2050 Project required changes to the current business model and has established a new enterprise: the UWA Farm Ridgefield Best Practice Farming Systems (BPFS) Project.

This BPFS Project Strategic Plan 2022-2027 will guide the Institute and its partners, collaborators and funders as they adapt, pivot to new directions where required and set the base for innovative dryland agricultural systems and progressive environmental stewardship in the Western Australian grainbelt.

In the next five years, the BPFS Project will develop and support five Strategic Priorities that will require cross-disciplinary approaches with a focus on sustainable production systems, managing biodiversity and ecosystems, and communication and translation of our R&I and education offerings for societal benefit.

*We acknowledge UWA Farm Ridgefield is situated on Gnaala Karla Boodja. The Noongar people remain the spiritual and cultural custodians of their land, and continue to practice their values, languages, beliefs and knowledge.*



**Professor Kadambot Siddique**  
AM CitWA FTSE FAIA FNAAS FISPP FAAS  
*Hackett Professor of Agriculture Chair and Institute Director*

*January 2022*









# PURPOSE

---

*Innovative profitable dryland farming systems, progressive environmental stewardship and resilient regional communities are central to everything we do.*

## ABOUT US

As the custodians of the UWA Farm Ridgefield Best Practice Farming Systems (BPFS) Project, we:

- Explore the future of dryland farming within its environments and communities.
- Are committed to clean, green and ethical systems that support our social license.
- Are focused on the restoration of ecosystems and biodiversity at landscape scale.
- Are committed to partnering with regional communities and not-for-profit organisations in educational initiatives, research, capacity building and outreach projects.

## VISION

Best practice solutions for resilient farming systems, environmental stewardship and community engagement.

## MISSION

Multidisciplinary research and innovation delivering robust farming systems that are economically viable, environmentally credible and create tangible social benefits.

## WHAT MAKES US DIFFERENT?

UWA was ranked first in Australia and 16th in the world for Agricultural Sciences in the 2021 Academic Ranking of World Universities. We have global access to best practice multidisciplinary research and innovation with a focus on sustainable production systems, managing biodiversity and ecosystems, communication and translation of our research, and a deep commitment to partnering with regional communities.





# CHALLENGE

---

*The next decade will see the convergence of powerful forces for change with the potential to disrupt food production systems locally and globally.*

The UWA Institute of Agriculture's Strategic Plan 2021-2025 identified key drivers such as climate change, unpredictable geopolitical events, technological advances elsewhere and increasing demands for energy, food and water are impacting the agri-food sector like never before.

Compounding the difficulties, consumer preferences are also rapidly changing, driven by macro trends in demographics, population growth and mass urbanisation, along with demands for convenience, provenance and social/environmental responsibility.

Dryland agricultural production of cereal grains, pulses, oilseeds, pastures for grazing and livestock products are major pillars of the Western Australian economy and drivers of economic, social and environmental prosperity and well-being for all Western Australians.

High quality science, technology and education that help to build the requisite capacity and skills in Western Australia are critical to delivering an agri-food sector that must be more innovative, agile and responsive if it is to remain competitive and productive.

The Institute has chosen to establish a new enterprise with a strong focus on enabling transformational research and innovation (R&I) that leads to sustainable dryland agricultural systems and best practice environmental stewardship to enable economic growth and prosperity over the next decade.









# RESPONSE

---

In 2009, UWA purchased a 1,600-hectare working farm in Western Australia's grainbelt, known as UWA Farm Ridgefield, which experiences a Mediterranean climate and an annual rainfall of 425mm.

The major agricultural industries in the region are cropping of cereals, and other broadacre crops such as canola, lupins and pulses, and sheep production for wool and meat. Many farmers run mixed farming enterprises with crops and livestock on the same property.

The FF2050 Project was established soon after the purchase with a mandate to further research, innovation, education and industry engagement; and to provide a collaborative centre for engagement with regional and remote wheatbelt farming communities.

Responsibility for the management and direction of the FF2050 Project and UWA Farm Ridgefield are vested in the Institute.



Following the release of the Institute's Strategic Plan 2021-2025, a workshop was held to reflect on what the FF2050 Project had achieved since its inception in 2009; and to consider what improvements could be made into the future. The workshop identified several critical issues that were holding back the FF2050 Project.

The Institute concluded that unlocking the full potential of the existing FF2050 Project required changes to the current business model, including better integration with UWA Farm Ridgefield, prioritisation of research and innovation, greater clarity of purpose, appropriate infrastructure and stronger governance and accountability frameworks.

***In response to the findings of the workshop, it was agreed that the Institute would implement measures for a new endeavour: the UWA Farm Ridgefield Best Practice Farming Systems (BPFS) Project.***

The BPFS Project will communicate widely with farmers and other stakeholders including industry funding bodies, State and Federal governments, public and private research entities and agri-businesses to ensure that the BPFS Project is focused on delivering best practice farming systems for commercial farmers that they can adopt to sustain and grow their ability to make sustainable profit and generate societal wealth.



## KEY FEATURES OF THE BPFS PROJECT

- The BPFS Project will be integrated into UWA Farm Ridgefield and managed accordingly.
- The BPFS Project will adopt new Purpose, Vision and Mission statements that more clearly reflect its goals.
- The BPFS Project will identify and, where possible, improve on current best practice for resilience and sustainability.
- The BPFS Project will focus on developing multidisciplinary solutions for the major challenges facing dryland farming and ecosystem and biodiversity repair in WA.
- There is no expectation that UWA Farm Ridgefield will operate at a profit. The return on investment in the BPFS Project comes from the outputs and outcomes delivered.
- The BPFS Project will have a governance and accountability framework that is fit for purpose.





# STRATEGIC INTENT

---

*The UWA 2030 Vision and UWA Strategic Plan 2025 recognised that the next 10 years will provide opportunities to build on UWA's strong foundations in response to the changing external environment and ensure UWA stays at the leading edge of knowledge creation and its translation for societal benefit.*

The Institute's Strategic Plan 2021-2025 has committed to a major initiative titled *Sustainable Agriculture and Food Systems for Western Australia's Future*.

The Institute's Strategic Initiatives address pressing global challenges through the engagement of six Research Themes to bring together a community of practice model.

The BPFS Project is ideally placed to take advantage of the broad and deep expertise that the Institute's Research Themes will bring to the new enterprise.

The BPFS Project has identified these five Strategic Priorities:

1. Mitigation of on-farm greenhouse gas emissions
2. Adaptations for the changing climate
3. Profitable, ethical production systems
4. Restoration of ecosystems and biodiversity
5. Education, community engagement and capacity building

In the next five years, the BPFS Project will develop and support these Strategic Priorities that will require cross-disciplinary approaches with a focus on sustainable production systems, managing biodiversity and ecosystems and communication and translation of our R&I and education offerings for societal benefit.

The overarching outcome sought from BPFS Project is:

**Best practice multidisciplinary R&I that identifies and resolves major problems and captures new opportunities for innovative dryland agricultural systems and progressive environmental stewardship.**









# TABLES: STRATEGIC PRIORITIES, GOALS AND ACTIVITIES 2022-2027

---

## STRATEGIC PRIORITY #1: MITIGATION OF ON-FARM GREENHOUSE GAS EMISSIONS

GOAL	ACTIVITIES
Substantially reduce greenhouse gas emissions from ruminant livestock, cropping activities and promote widespread adoption of renewable energy in regional WA	<ul style="list-style-type: none"><li>• Develop practical methods to optimise production and significantly reduce methane emissions of sheep and cattle production</li><li>• Cropping systems that lower emissions from nitrogenous fertilisers and changes in farm equipment that reduce energy consumption</li><li>• Promote biodiverse carbon farming, soil carbon sequestration and natural capital accounting services</li><li>• Champion innovative ways to support businesses and communities exploit renewable energy opportunities</li></ul>

## STRATEGIC PRIORITY #2: ADAPTATIONS FOR THE CHANGING CLIMATE

GOAL	ACTIVITIES
Implement climate adaptation innovations that protect the viability of livestock and cropping enterprises	<ul style="list-style-type: none"><li>• Develop practical methods to detect and mitigate the impact of heat stress and drought on the welfare and productivity of grazing ruminants</li><li>• Apply genetic and molecular technologies to increase heat and drought tolerance in crops such as wheat, barley, canola, pulses and lupins</li><li>• Ensure water security through innovative conservation and reuse</li><li>• Manage climate variability and nutrient uptake and overall nutrient budgets in grains industry</li><li>• Agronomic research to optimise performance of alternative high value crops for food or fibre</li><li>• Ag-tech solutions for environmental and sustainable production issues</li></ul>



## STRATEGIC PRIORITY #3: PROFITABLE, ETHICAL PRODUCTION SYSTEMS

GOAL	ACTIVITIES
Profitable dryland farming systems that deliver clean, green and ethical products and outcomes that meet consumer and community expectations and underpin our social license	<ul style="list-style-type: none"><li>• Assure the wider community and decision makers our focus is on achieving and maintaining best practice animal welfare standards</li><li>• Develop and promote practical methods to optimise sheep stocking rates that maximise whole-farm profit while ensuring animal welfare and sustainable feed-base management</li><li>• Develop and promote livestock production systems that use fewer drugs, hormones and chemicals, have better ecosystem and biodiversity care, and best practice animal welfare</li><li>• Develop and promote cropping production systems that use less herbicides, pesticides and other chemicals and foster natural resource management best practice</li><li>• Translate our ongoing research that shows phyto-oestrogens in some subterranean clovers are causing serious infertility among sheep flocks in WA and nationally</li></ul>

## STRATEGIC PRIORITY #4: RESTORATION OF ECOSYSTEMS AND BIODIVERSITY

GOAL	ACTIVITIES
At landscape scale, use native plant species to restore biodiversity and soil functions to provide ecosystem services such as water availability, carbon capture and erosion prevention	<ul style="list-style-type: none"><li>• Build and operate WA's first Critical Zone Observatory at UWA Farm Ridgefield</li><li>• Develop capabilities to accurately predict changes in the terrestrial biosphere and climate to better manage natural resources</li><li>• Restore native ecosystems and biodiversity by planting native grasses, legumes, shrubs, and trees simultaneously</li><li>• Benchmark agricultural water management, carbon farming and carbon balance for managing salinisation, and understanding the resilience of wheatbelt landscapes to changing climate</li><li>• Provide excellence in ecosystem services from soil health to carbon capture and erosion prevention</li><li>• Partner with regional natural resource management organisations to continue the UWA Farm Ridgefield Multiple Ecosystem Services Experiment</li></ul>



## STRATEGIC PRIORITY #5: EDUCATION, COMMUNITY ENGAGEMENT AND CAPACITY BUILDING

### GOAL

Build partnerships with regional communities in targeted educational initiatives, capacity-building and outreach projects with triple bottom line outcomes and societal benefits

### ACTIVITIES

- Build a high level of mutual understanding and respect between the BPSF Project and key industry stakeholders, farmer groups, rural communities and First Nations people
- Focus on educational, capacity-building and outreach projects with positive triple bottom line outcomes and societal benefits
- Partner with regional natural resource management organisations to drive innovation through adoption of economically viable and sustainable technologies and practices
- Managing programs to support groups and individuals to adapt to the changes expected over the next decade (societal benefit)
- Build expertise in environmental financial knowledge to support landholders to benefit from new sources of revenue that can improve the environment (EEA/NCA/ACCUs)
- Commitment to partner with the Shire of Pingelly to deliver Pingelly Astrofest every two years from 2021





# KEY PERFORMANCE INDICATORS

---

Over the next five years, the BPFS Project will contribute to the Institute's three Strategic Priorities as defined in the Institute's Strategic Plan 2021-2025. Key performance indicators (KPIs) for the BPFS Project involving UWA Farm Ridgefield have been derived under the Institute's three Strategic Objectives.

## Strategic Objective #1: Research and Innovation

The Institute's R&I activities are focused on solving the most difficult issues and mitigating the greatest risks facing agricultural and food systems

**KPI:** Enhance UWA's contribution to the advancement of sustainable agricultural systems in international, national and regional settings .

- Research projects in at least four agricultural disciplines
- Eight journal papers per annum from research based on UWA Farm Ridgefield – to include more than one School and external partners
- Five instances per annum of research based on UWA Farm Ridgefield being translated to farmers, researchers, community members

## Strategic Objective #2: Education and Training

The Institute's innovative post-graduate activities create unique and globally relevant educational experiences for a diverse cohort of students.

**KPI:** Utilise UWA Farm Ridgefield to maximise its value for research, teaching, technology development and exchange, and industry partnerships.

*To improve the quality of the student learning experience*

- Structured activities for undergraduates at UWA Farm Ridgefield
- Seven class excursions per annum to UWA Farm Ridgefield
- Short courses, postgraduate courses, MSc work projects at UWA Farm Ridgefield
- Four exchange students or vacation employees per annum working at UWA Farm Ridgefield

*To improve the quality, impact, and productivity of research and research training*

- Attract \$200,000 per annum for research at UWA Farm Ridgefield
- Five PhD students using UWA Farm Ridgefield annually
- Postgraduate projects in at least two disciplines
- Research projects in at least four agricultural disciplines





## Strategic Objective # 3: Strategic Partnerships and Engagement

Build deeper and broader partnerships with industry, governments and not-for-profits to inform and translate our research and educational offerings.

KPI: Proactive stakeholder and community interactions initiated by UWA Farm Ridgefield.

- Six international presentations per annum about UWA Farm Ridgefield
- Six international visitors per annum to visit UWA Farm Ridgefield
- Participate in six significant forums/workshops per annum
- Form five partnerships with other agencies, communities, grower groups and universities per annum
- Seven functions that involve industry and educational stakeholders/partners visiting UWA Farm Ridgefield per annum
- Regular engagement with HASS, Science and agriculture teachers and students from schools in both rural and metropolitan regions
- Membership of national and international networks
- Attract two international Higher Degree by Research per annum to work on UWA Farm Ridgefield





# GOVERNANCE AND ACCOUNTABILITY

---

## UWA FARM RIDGEFIELD BPFS PROJECT COMMITTEE

The BPFS Project is overseen by the Project Committee, which is chaired by the Director of the Institute.

The Project Committee is advisory in nature, with the purpose of sharing expertise and exchanging information among the variety of disciplines encompassed by the committee.

The BPFS Project itself furthers the broad, long-term aims of the University by implementing relevant aspects of the Institute's Strategic Plan 2021-2025 and the UWA 2030 Vision and UWA Strategic Plan 2025. This will include:

- Provision of locally relevant, high-level advice to the University for its strategic planning around the long-term needs of rural industries and community development
- Provision of feedback and advice regarding the impact of the UWA Farm Ridgefield BPFS Project on farmers, industry and the local community
- Enhancement of the profile of the UWA to industry leaders, political leaders, farmers and rural communities

The Project Committee operates in accordance with the UWA Principles for the Operation of Committees and UWA Rules for the Operation of Committees. Members must act in accordance with the University Committee Members' Code of Conduct.

## UWA FARM RIDGEFIELD COMMERCIAL OPERATIONS COMMITTEE

The UWA Farm Ridgefield Commercial Operations Committee is an advisory body with the purpose of sharing expertise and exchanging information to ensure the commercial operations of UWA Farm Ridgefield are managed appropriately. Importantly, the Commercial Operations Committee is charged with finding the optimum balance between UWA Farm Ridgefield's commercial enterprises and the research and innovation activities of the BPFS Project.



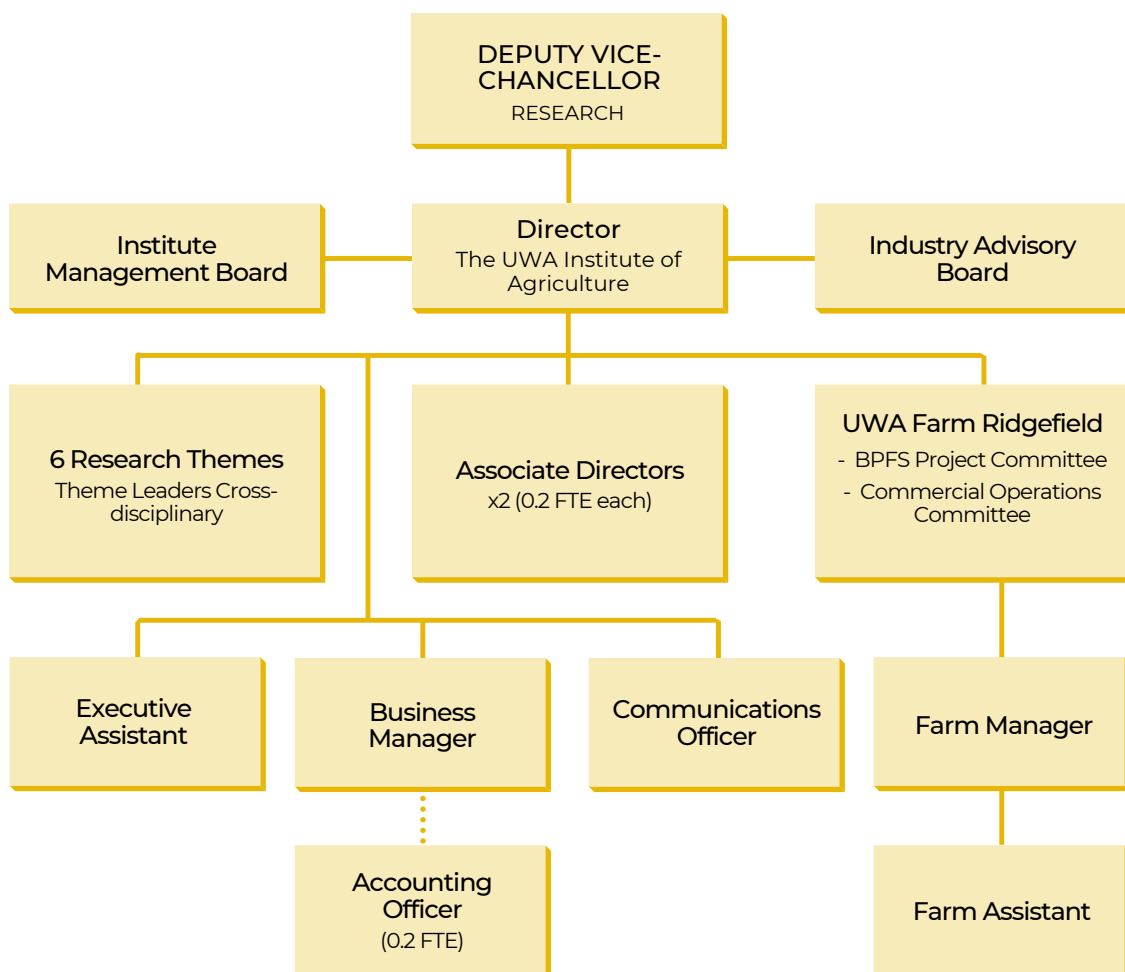


The Commercial Operations Committee is responsible for these specific actions:

- Develop, implement and manage the UWA Farm Ridgefield business plan
- Oversee the finances of UWA Farm Ridgefield enterprises
- Integrate UWA Farm Ridgefield activities with those of the BPFS Project
- Sign-off on proposals from the BPFS Project Committee
- Provide formal and informal feedback from the rural community regarding the University's activities related to the BPFS Project and UWA Farm Ridgefield

The Commercial Operations Committee operates in accordance with the UWA Principles for the Operation of Committees and UWA Rules for the Operation of Committees. Members must act in accordance with the University Committee Members' Code of Conduct.

## THE INSTITUTE'S ORGANISATIONAL STRUCTURE











THE UNIVERSITY OF  
**WESTERN  
AUSTRALIA**

Institute of  
Agriculture

[www.uwa.edu.au/ioa](http://www.uwa.edu.au/ioa)