Charles Sturt University

Review copy

Research magazine

Research Showcase

From regional Australia to the world.



Cover photography Bernd Dittrich / Unsplash

Contents

In this issue

Three stories about how people, partnerships and research are shaping the future of farming.



Partnerships

Climate-smart farming across borders

Read story



Food systems

From paddock to pint

Read story



Crop protection

A vision for agricultural RNA innovation

Read story

Research priorities

Research that counts

Charles Sturt works with communities, industry, government and First Nations partners to turn research into practical outcomes.

Food security

Sustainable agriculture and strong biosecurity help strengthen food systems and support productive, resilient agriculture.

Water and ecosystems

Research supports water security, ecosystem recovery and biodiversity.

Regional health

Research helps improve health and wellbeing and strengthens regional health systems.

Education and inclusion

Research expands opportunity and helps communities participate and thrive.

Digital technology, artificial intelligence and cyber, engineering, business and economics, and cultural, ethical and community knowledge help connect these priorities to real-world applications.

Partnerships

Climate-smart farming across borders

An India–Australia partnership is connecting Charles Sturt's research farms with India's agricultural technology network.



India–Australia agricultural technology collaboration. Photo supplied with the Showcase brief.

Charles Sturt University is connecting its agricultural research and demonstration capabilities with India's agricultural technology sector to advance climate-smart farming, digital agriculture and sustainable food systems.

The partnership brings together Charles Sturt's Global Digital Farm and AgriPark with Indian research, industry and farmer networks. Workshops in Bengaluru and Hyderabad brought together government representatives, researchers, industry, start-ups and farmers to identify shared priorities for agriculture and horticulture.

The collaboration will support applied research and technology demonstrations to help farms adapt to climate pressures, make better decisions and maintain sustainable production. It also creates opportunities for students to study or work across both countries, for start-ups to get involved and for partners to invest together.

Explore the partnership at Charles Sturt

What the partnership is building

- Connections between research farms, technology developers and farmers
- Shared priorities for digital agriculture and horticulture
- Opportunities to test and demonstrate technology in the field

Who's involved

Charles Sturt University is working with the Research and Innovation Circle of Hyderabad and the Bengaluru Science and Technology Cluster, with support from the Australian Government through the Centre for Australia–India Relations. The collaboration also involves the Australian High Commission in India, the Office of the Principal Scientific Adviser to the Government of India, and government, industry, start-up and farmer-network partners across both countries.

Food systems

From paddock to pint

In Victoria's Wimmera, barley growers and researchers are measuring what happens in the paddock to better understand emissions across the beer supply chain.



Illustrative photograph. Jelena Senicic / Unsplash

9
Wimmera barley growers participating

75,000
tonnes of barley Asahi sources nationally each year

≈300 million
litres of beer produced annually at Abbotsford using barley from the program

Through Charles Sturt's Cool Soil Initiative, researchers are working with Asahi Beverages and nine Wimmera barley growers to measure emissions associated with barley production.

Researchers combine soil and farm-management data, including fertiliser use, herbicide application and field operations, to produce emissions reports for individual paddocks. Growers can use the reports to benchmark their performance and identify ways to improve nutrient-use efficiency, soil health and productivity.

The work builds on the Victorian Barley Program by adding emissions measurement and benchmarking. For Asahi, it provides a clearer picture of emissions associated with the barley it sources nationally.

Read the Charles Sturt case study

Beyond the Wimmera

A separate national project on carbon accounting and nutrient management will involve 13 advisers and 39 growers. It is funded by the Society of Precision Agriculture Australia and the Grains Research and Development Corporation.

Crop protection

A vision for agricultural RNA innovation

An international conversation on crop protection points to a proposed research and manufacturing hub in Wagga Wagga.



500+
symposium registrations

54
countries represented

Illustrative photograph. CHUTTERSNAP / Unsplash

Charles Sturt's international symposium on RNA interference (RNAi) in crop protection brought researchers, regulators, policymakers and industry together to discuss the science, regulation and practical adoption of emerging crop-protection approaches.

Charles Sturt hosted the OECD-sponsored virtual symposium with CSIRO and The University of Queensland. The event also placed a broader ambition in context: the proposed Agricultural RNA Innovation and Manufacturing Hub in Wagga Wagga, championed by Professor Neena Mitter, Deputy Vice-Chancellor (Research).

Looking ahead

The proposed hub would bring together research, manufacturing, regulatory expertise and industry to help move agricultural innovations towards practical use.

Explore Charles Sturt research

Photography and editorial credits

Cover photography by Bernd Dittrich. Barley photography by Jelena Senicic. Leaf photography by CHUTTERSNAP. These three photographs are illustrative and sourced under the Unsplash License. The partnership photograph was supplied with the Showcase brief.

The four priorities and three features draw on the supplied research copy. This prototype is for review.

Charles Sturt University – TEQSA Provider Identification: PRV12018 (Australian University). CRICOS Provider: 00005F.