 SDG 2 Zero Hunger

Overview

UQ is actively contributing to SDG 2 through a range of initiatives. On campus, UQ supports students and staff facing food insecurity by offering food pantries, free meals and pop-up foodbanks, particularly for international students. The University promotes healthy eating through educational resources like the Sharper Minds program and is working to reduce food waste and improve sustainable food choices. Academically, UQ integrates sustainable food security into its curriculum. The University offers degrees and courses in agriculture, aquaculture, food science and technology, alongside veterinary science programs focused on animal health, biosecurity and welfare, which prepare students to protect and stabilise the global food supply. Beyond campus, UQ leads global research on crop resilience, Indigenous food systems and dairy productivity in developing countries. It also engages local farmers through events, workshops and research facilities access to foster innovation in sustainable agriculture. These efforts reflect UQ's commitment to seeking solutions to sustainability issues such as food security both globally and locally, as articulated in its Sustainability Strategy 2021-2025.

Progress made in 2025 towards SDG 2 is reported here with reference to the following domains and enablers from UQ's Strategic Plan 2022-2025:

- learning and student experience
- research and innovation
- enriching our communities
- our global profile
- our people.

Related SDGs

- SDG 1 No poverty
- SDG 8 Decent work and economic growth
- SDG 10 Reduced inequalities
- SDG 16 Peace, justice and strong institutions.

Learning and student experience

Courses and units relating to food, agriculture, aquaculture and veterinary science

UQ's commitment to Zero Hunger is embedded in its curriculum through programs that address sustainable food systems, agriculture and aquaculture. The School of Agriculture and Food Sustainability focuses on global issues relevant to sustainable farming and fishing, ranking 1st in Australia for agriculture in the NTU Performance Ranking of Scientific Papers for World Universities 2025, 1st in Australia for agriculture and forestry in the QS World University Rankings by Subject 2026 and 2nd in Australia for food science and technology in the Global Ranking of Academic Subjects 2025.

The Bachelor of Agricultural Science is a flagship program that equips students with the scientific, technological and economic knowledge to improve food security and environmental sustainability. Students explore sustainable crop and livestock production, soil science and agricultural economics, with majors in Agronomy, Animal Science and Horticulture. Courses such as Fish, Fisheries and Aquaculture (BIOL3340) provide advanced training in aquaculture systems, fish health and sustainable fisheries management.

The Bachelor of Veterinary Science (Honours) and Bachelor of Veterinary Technology prepare students to safeguard global food systems and animal health, with the honors degree providing an internationally accredited pathway. Students explore disease prevention, biosecurity management and animal welfare, focusing directly on ensuring the safety and productivity of food-producing animals. Advanced training in outbreak containment and livestock medicine is delivered through core curriculum courses, including Veterinary Population Medicine (VETS4040) and Rural Veterinary Practice - Livestock Medicine (VETS5024), contributing towards stabilising food supply.

UQ offers a Food Technology Major and a Food Science and Nutrition Major as part of bachelor programs. At postgraduate level, the Graduate Certificate in Food Science and Technology and Master of Food Science and Technology provide students with the ability to apply leadership, research and problem-solving skills to meet the global challenges associated with feeding the world, maintaining the environment, biosecurity concerns and competition for limited resources, by contributing to the provision of high quality, safe and nutritionally valuable food and food products, as well as having an understanding of the global policy dialogue on food and food products.

These courses and programs integrate real-world challenges, including climate resilience and ethical food production, preparing students to contribute to global food systems. Students benefit from hands-on learning across UQ's over 1,000 hectares of subtropical farmland and aquaculture facilities, and participate in industry placements and research projects that address hunger and sustainability challenges locally and globally.

Student food security and welfare

UQ has the following initiatives in place to assist students in need with the provision of food and grocery items. Those continuing to experience hardship or who need assistance in obtaining food are also put in touch with organisations which may be able to assist. 2025 partnerships included:

- Allianz Foodbank partnership, which brought pop-up foodbank services to the St Lucia campus in August 2025, targeted at international students. More than 700 students accessed free pantry products and fresh produce as part of Student Health Month.
- UQ Student Union (UQU), which organises Morning Marmalade, Kampus Kitchen and Midday Munchies welfare initiatives providing free breakfasts and dinners for UQ students. In 2025, more than 100,000 free breakfasts and dinners were served to students across the St Lucia, Herston and Gatton campuses.
- UQU Food Co-Op Pantry's partnership with SecondBite, which provides free and low-cost grocery items sourced through charity partners to students year-round on campus. Designed to help mitigate costly grocery bills for as many students as possible, this initiative delivered over 20 tonnes of free food, beverages, groceries and well-being products in 2025.

Research and innovation

UQ supports food security through its research and outreach activities, engaging with food producers locally and globally. Research partnerships, such as those between UQ's Queensland Alliance for Agriculture and Food Innovation (QAAFI), the Queensland Department of Primary Industries (DPI) and a range of domestic and international research partners, support a greater shared understanding of food security by providing access to information, skills and technology about sustainable agriculture for local agribusinesses and producers.

How we achieved this

- UQ leads international research on banana diseases, diagnostics and prevention, aiding food security for over 400 million people who depend on the crop for food or income. Through collaborations and support of banana research in Indonesia, Papua New Guinea, Africa and Latin America, UQ is improving and maintaining a capacity for accurate diagnosis of banana pathogens to reduce the risk of incursions from exotic banana diseases, such as Black Sigatoka, Moko, Blood Disease and banana bunchy top, and aid in the containment and/or eradication of emerging and endemic diseases. In August 2025, the Australian Bananas Magazine featured a story 'Dodging Banana Diseases is Value for Money', which highlighted a strategic biosecurity research program led by UQ. The feature demonstrated that the program delivered a remarkable 12-to-1 benefit-cost ratio and showed the potential to save the industry more than A$52.2 million. Backed by Hort Innovation and the Australian Banana Growers' Council (ABGC), the program utilised overseas outbreak data to build an accurate picture of control costs, equipping domestic growers with the early-detection tools necessary to protect national production.
- UQ is helping to scale use of genomic selection in India's smallholder dairy herds in collaboration with the Bill and Melinda Gates Foundation, Bharatiya Agro Industries Foundation (BAIF) Development Research, the Indian National Dairy Development Board, University of New England (UNE) and the French National Research Institute for Agriculture, Food and Environment (INRAE). Despite being the world's largest milk producer, India's milk yield per cow is very low. This initiative aims to lift the rate of genetic gain in Indian dairy cattle and buffalo to increase milk production and nutrition, enhance sustainability and boost the prosperity of India's 75 million smallholder dairy

farmers. By leveraging previous UQ-led research in the Northern Australian beef cattle industry, which is estimated to deliver A$33.6 million in herd fertility benefits over 30 years, UQ advanced the program through key scientific milestones in 2025:

  - evaluating genotype-by-environment interactions across diverse Indian cattle populations to understand how genetic merit is expressed under varying climatic and nutritional conditions
  - progressing research to characterise thermo-tolerance and heat resilience traits in dairy cattle and buffalo for hot and humid environments
  - partnering with AbacusBio to design custom selection indices that integrate production, fertility, temperament and heat tolerance to align breeding objectives directly with smallholder needs.

  Together, these activities were accelerating the application of genomic selection to deliver more productive, resilient and sustainable dairy systems at scale.

- Led by UQ from 2020 to 2027, the ARC Centre of Excellence for Plant Success in Nature and Agriculture explores how plants adapt to diverse environments to enhance agricultural resilience and global food security. A major advance in 2025 was a computational tool called Ensemble AnalySis with Interpretable Genomic Prediction (EasiGP), developed by PhD candidate Shunichiro Tomura. EasiGP uses machine learning and AI to enhance predictions by combining traditional parametric prediction models, machine learning models and quantitative genetics. EasiGP is already being used to make new genomic discoveries utilising available crop breeding data resources. In 2025, the Centre hosted several public research seminars and legal policy forums via the series 'Talking Plant Science' and 'People Plants and the Law', which engaged global experts to address critical challenges in food systems, crop resilience and agricultural heritage:
  - Talking Plant Science Seminar on 17 April 2025. Professor Peter Reich discussed scaling plant traits to predict biodiversity ecosystem functions, emphasising the integration of ecological data with natural climate solutions and equitable decarbonization strategies.
  - Guest Lecture on Crop Genetic Resources on 30 September 2025. Guest speakers presented on the legal frameworks governing crop genetic resources and community engagement within traditional maize systems in North America.
  - Talking Plant Science Seminar on 7 October 2025. Distinguished Professor Junko Kyozuka delivered a presentation on the evolutionary pathways of strigolactone signalling and its dual functions in plant growth and rhizosphere symbiosis.
  - Guest Lecture on Intellectual Property Law on 28 October 2025. Susannah Chapman examined the intersection of intellectual property law and agriculture, analysing the commercialisation of proprietary fruit varieties through plant variety protection and grower networks.
  - Guest Lecture on Biocultural Heritage on 18 November 2025. Rosemary Coombe and David Jefferson shared socio-legal research on the making and marketing of biocultural heritage in agriculture, tracking policy impacts from the Andean Community to Asia.

  - Talking Plant Science Seminar on 2 December 2025. Dr Lizzie Wandrag presented findings on species interactions, including mutualisms and plant-soil feedback, as key drivers of plant community dynamics and ecosystem resilience under global change.

- Breeding Program Assessment Tool (BPAT) is a Bill and Melinda Gates Foundation funded humanitarian project led by UQ since 2015. The project is designed to assess the effectiveness of public sector breeding programs operating in the Consultative Group for International Agricultural Research (CGIAR) network, which delivers improved cultivars to small-scale farmers in emerging economies of Africa, Asia, Latin America and the Caribbean. In 2025, UQ used the BPAT to enhance plant breeding education and global agricultural research. For example, the BPAT was integrated into the Plant Breeding (AGRC3041) course at UQ Gatton, helping students evaluate breeding program efficiency. The BPAT also supported international donor-funded projects aimed at improving breeding outcomes for smallholder farmers in developing countries, reinforcing UQ's commitment to sustainable agricultural innovation.
- In 2025, UQ secured A$21.8 million through the South East Queensland (SEQ) Innovation Economy Fund to enhance the Queensland Animal Science Precinct at Gatton, establishing a dedicated innovation hub for animal production systems. This new investment will support the development of infrastructure enabling partnerships between livestock industry, primary producers and researchers to test, scale and commercialise new farming and biosecurity innovations that enhance food security and the supply of affordable and reliable meat and animal products to both domestic and global markets.
- In November, UQ hosted the TropAg 2025 Conference, bringing together 688 delegates from 35 countries representing academia, industry and government to address global challenges in agriculture and food systems. The conference focused on the themes of 'Future Foods', 'Growing Agricultural' and 'Climate and Sustainability', highlighting the role of innovation in improving food security and system resilience. Through discussions on challenges facing smallholder farmers in both developing and developed countries, the event facilitated knowledge exchange and contributed to shaping future research and policy aimed at enhancing livelihoods and addressing techno-socio-economic barriers associated with global food security.

Enriching our communities

As part of UQ's broader commitment to delivering for the public good, the University ensures that it engages with local communities to facilitate knowledge sharing and provide access to infrastructure and resources to support farmers and food producers.

Events and knowledge sharing on food security

During 2025, UQ held a number of events that supported knowledge transfer on sustainable food production and security for industry, experts and the broader local community:

- hosting 'Burps, Bovines and the battle against methane' as part of the BrisScience free lecture series in September. Led by Dr Sarah Meale, the event explored current research into the use of feed additives aimed at addressing mounting global pressure

to reduce greenhouse gas emissions from livestock, and the challenge to lower methane outputs from ruminants while still producing enough meat to satisfy consumer demand.

- supporting UQ Community Gardens workshops and working bees throughout 2025 across the Gatton and St Lucia campuses to promote sustainable gardening practices, environmental awareness and community engagement. Open to students, staff, local producers and the public, these free, hands-on sessions focused on topics including soil health, water conservation, organic gardening, composting and pollination.

Access to knowledge and university resources for food security

UQ provides access to resources and shared facilities as part of its partnerships with industry, government and other local stakeholders to drive innovation and sustainable agricultural practices. These include:

- UQ's Gatton Campus, which is located in one of Australia's most productive farming regions, Lockyer Valley, allows the University to work closely with local farmers and producers on real-world agricultural projects. With more than 1,000 hectares of farmland, the campus supports hands-on research in areas like native grain cultivation and using microbial biotechnology for soil regeneration. It also partners with Indigenous communities and local stakeholders to promote sustainable practices and food innovation. The Gatton campus includes the following resources tailored to meet the needs of industry clients:
  - crop production resources and technology such as specialised machinery for both general farm work and precision agriculture, Cravo retractable-roof glasshouses and purpose-built netted structures
  - irrigation systems to support crop research and pastures, including drip and trickle, gravity T-tape and hand-shift lateral boom systems
  - the Darbalara Beef Cattle Teaching Facility, a 184-hectare site featuring cattle yards, a dedicated teaching building, and areas for grazing and forage crop production
  - a commercial scale modern dairy, designed to support high-quality dairy science, animal welfare and nutrition research
  - an equine unit that provides world-class facilities and expert support, and a small ruminant unit that offers specialised infrastructure to support diverse research into sheep and goat management, welfare, genetics, nutrition and sustainable farming practices.
- Queensland Animal Science Precinct (QASP), which is a unique world-class research facility designed to manage and conduct animal research in the government, education or industry sectors. The Precinct includes:
  - non-contained services, such as feedlots, individual pens, metabolism facility, climate control rooms, an animal behaviour complex, cattle and sheep yards and crushes, and multifunction laboratories
  - SmartTech equipment including Growsafe units, Greenfeeders, SmartFeed Pro units and SF6 Tracer devices

  - biocontainment facilities, such as PC1 certified individual large animal pens, an isolation facility and containment area holding yards
  - services and research conducted in a variety of rural and remote offsite locations.
- The School of Agriculture and Food Sustainability, including the following facilities and services:
  - wildlife teaching facility at the Gatton campus, which supports teaching and research in small animal species. The facility collaborates with external zoological institutions and government agencies and is regularly involved in UQ engagement activities
  - plant science laboratories at the St Lucia campus which are occasionally made available to external stakeholders on request
  - scientific services, such as standard and non-standard analysis of sample submissions, and organic and inorganic chemistry techniques, and facilities that are available to research students, academic staff, UQ collaborators and external research partners.
- Queensland Alliance for Agriculture and Food Innovation (QAAFI), which collaborates with institutions and organisations across the globe to translate complex science into products and improved management and sustainable food production systems. QAAFI conducts research at 15 sites across Queensland. In addition to UQ's St Lucia and Long Pocket campuses, a number of these sites are co-located with the Queensland Department of Primary Industries (formerly Department of Agriculture and Fisheries), enabling further collaboration and capacity building with state government. These sites include:
  - Ecosciences Precinct, Boggo Road, Brisbane
  - Health and Food Sciences Precinct, Coopers Plains, Brisbane
  - Hermitage Research Facility, Warwick
  - Leslie research facility, Toowoomba
  - Parkhurst Complex, Rockhampton
  - Spyglass Research Facility, Charters Towers
  - Mareeba Research Facility, Mareeba.
- Food and Beverage Accelerator (FaBA), which is led by UQ in collaboration with the Queensland University of Technology (QUT) and the University of Southern Queensland (UniSQ). FaBA is a A$180 million national Trailblazer initiative funded to run through to 2028 and backed by the federal government. Established with the pragmatic objective to double the value of Australia's food and beverage manufacturing sector by 2030, FaBA exists to bring together the brightest university minds and industry experts to deliver the innovations, ingredients, tastes and foods that people need. By offering 1:1 matched funding, specialised research talent and open access to advanced pilot facilities, the accelerator provides clear pathways for new products and technologies by helping businesses seamlessly convert laboratory breakthroughs into commercially viable, supermarket-ready goods. This collaborative engine leads the way for smart, sustainable manufacturing across 4 distinct sub-programs:

- Innovative Ingredients. Specifically focused on the scaling and industrial implementation of synthetic biology, bio-manufacturing and precision fermentation. Utilising the state-of-the-art A$70 million UQ Biosustainability Hub and the QUT Mackay Renewable Biocommodities Pilot Plant, this stream works with metabolic engineers to optimise microbial strains and scale up production for novel, high-value molecules like non-animal dairy proteins and lipids.
- Premium Food and Beverage. Dedicated to helping processors design high-margin, market-ready products that meet shifting global consumer trends. This stream leverages advanced food engineering, sensory science, and rapid prototyping capabilities to optimise food textures, extend shelf-life naturally and create premium, health-forward functional foods.
- Innovation Pathways. The data-driven commercialisation engine that removes guesswork from product viability through bespoke market intelligence. Led by globally recognised researchers in market insights and consumer behaviour, this program provides start-ups to multinationals with rapid market scans, choice modelling, IP audits and access to over 25 premium databases.
- The FaBA Training Centre. Serving as the accelerator's hub for workforce upskilling, product prototyping and SME grant funding, this stream is jointly led by UQ's School of Agriculture and Food Sustainability and UQ Skills. This stream bridges the industry-academy divide through tailored short courses, industry secondments and student internships. Additionally, it operates the FaBA MakerSpace for lab-scale prototyping and administers the competitive Kickstarter Program, which provides vouchers of up to A$50,000 to connect SMEs with university experts. Furthermore, in partnership with UQ Ventures, the Centre delivers the FaBA Growth Hub, which is a tailored business accelerator designed to equip food founders, regional businesses and researchers with critical entrepreneurial and scaling capabilities.

Our global profile

UQ seeks to have a truly global impact by working with a range of partners and undertaking research and development initiatives that build the capacity of people to address complex challenges faced by their communities, including food security.

Smart pollination management in Vietnam

UQ secured over A$500,000 of funding in 2025 to help Vietnamese communities better adapt to climate change and safeguard food security. The project 'Smart Pollination Management to Improve Fruit Production in Vietnam' was funded through the Aus4Innovation Partnership Grants program, which was co-founded and managed by the Australian Department of Foreign Affairs and Trade and CSIRO. This project reinforces UQ's commitment to Vietnam's national development priorities, including science, technology and innovation, agriculture and food technology, public health and capacity building in the higher education sector. The project will run for just under 2 years to advance precision agricultural tools and technologies that improve crop yields and support more resilient farming systems. It achieves this by bringing new technology, including AI, insect tracking and insect monitoring, into meaningful information that can inform farmers via a mobile app. In line with Aus4Innovation principles, the project also emphasises

inclusive innovation by ensuring women, people with disabilities and other under-represented groups within farming communities can benefit from improved access to technology and agricultural information.

Sustainable Australian chicken feed

In 2025, UQ researchers worked to develop a sustainable alternative to imported soybean meal, a key ingredient in commercial chicken feed. Australia's current import of around 1.2 million tonnes of soybean meal annually creates supply chain risks and contributes to greenhouse gas emissions. The research demonstrated that locally sourced ingredients, including canola meal, lupin kernel meal, sunflower meal, meat and bone meal and black soldier fly larvae, can replace soybean meal without affecting chicken growth, meat quality or egg production. This finding has the potential to strengthen Australia's food security and support local farmers and industries while also reducing environmental impacts and contributing to a more resilient poultry sector.

Key Technologies in Bioeconomy conference

From 29 September to 3 October 2025, UQ was a major contributor to the Key Technologies in Bioeconomy (KTB) conference, an annual event run by the Global Bioeconomy Alliance (GBA) and hosted by the Technical University of Denmark (DTU). The annual Global Bioeconomy Alliance (GBA) brought together more than 200 representatives from research institutions, industry and government agencies across Europe, Australia, Latin America and beyond. The program featured three sessions exploring key questions: 'How can the world's leading bioeconomy nations collaborate across borders?', 'How do we build a common European approach and scale solutions globally?' and 'The industry perspective – what challenges does the sector face when scaling biosolutions?'. A recurring message throughout the day was clear: biosolutions must play a central role in the future economy, and Europe needs to accelerate efforts to bring these solutions to market.

Grains Value Chain Leadership Program 2025

In 2025, UQ International Development unit implemented the Australia Awards Short Course on Grains Value Chain Leadership Program, an initiative linking Australia and Indonesia through leadership development, industry engagement and knowledge exchange across the grains sector. In 2025, the program brought 25 future leaders from Indonesia's grain industry to Australia to further their knowledge, skills and professional networks. The 2-week program provided participants with exposure to multiple stages of the Australian grains value chain, culminating in attendance at the Australian Grains Industry Conference (AGIC) in Melbourne from 30 to 31 July. Co-invested by Grains Australia and the IA-CEPA ECP Katalis program, the course was developed and delivered in collaboration with industry partners including Grains Australia, the Indonesian Flour Milling Association (APTINDO) and the Indonesian Feedmills Association (GPMT). Participants gained greater awareness of the grains supply chain, improved business networks and enhanced opportunities for collaboration to address future food security challenges. Through its role in implementing the program, UQ contributes to international capacity building, leadership development and industry engagement across the agricultural sector.

Our people

The vitality and personal wellbeing of its people underpin UQ's success, which is reflected in a commitment to enhancing the quality of the campus community. As part of this, UQ provides programs that foster a sense of health and wellbeing for all, including enhancing access to knowledge of sound nutritional habits and cost-effective sustainable food options. In addition to the student-focussed food security initiatives mentioned earlier, UQ provides:

- 'Healthy eating: Food for the Brain Self-Paced Online Module' as part of the Sharper Minds free package of resources offered to UQ students to learn more about health and self-care behaviours that help them achieve. Resources detail the kinds of foods and nutrients that can aid focus, memory and energy during their intensive study periods and provide tips for managing budget for food.
- Employment Assistance Program, which provides staff with access to budgeting and nutrition advice. Staff who are experiencing financial distress that impacts food security can request support through Human Resources. This is addressed on a case-by-case basis depending on the individual circumstances. The University works with the employee to provide appropriate assistance.

To deliver fully for this campus community and ensure UQ is securely positioned for the future, the University invests in sustainable processes, programs and operations that provide a more sustainable campus experience for staff, students and visitors.

Food choices on campus

Food choices have a significant impact on personal carbon footprint and on the lives of those who contribute to the farming, production and distribution of food. UQ provides opportunities for the community to grow awareness of the full life cycle of food production, and to access sustainable and affordable food and dining choices on campus, with examples including:

- continuing its commitment to healthy, inclusive and sustainable food choices across all campuses in 2025, introducing the Upbeat and Lightbox cafés to offer healthy drink options and menus featuring local suppliers. These venues reflect a wider trend on campus, where most retailers prioritise locally sourced ingredients and locally roasted coffee, e.g. Campos and Merlo, to support Queensland producers and reduce food miles
- supporting homegrown research with the probiotic drink 'Perkii', which was invented at UQ and made available for sale at both Lakeside Cafe and Nano Cafe
- encouraging food service tenants across campus to offer affordable grab-and-go options under A$10, ensuring access for budget-conscious students
- launching the inaugural Retailer Awards with a designated 'Retailer Sustainability' category to encourage excellence across campus retail operations

For campus catering, UQ maintained 4 preferred providers selected based on their location, prior experience with UQ and social impact. Furthermore, UQ's 'Where to Buy Guide' recommended that when choosing a different catering provider, customer consider prioritising food and drinks made or grown locally in Queensland, and buying with impact.

This would include searching for businesses run by Aboriginal and Torres Strait Islander people through the Indigenous Payees list or Supply Nation, social enterprises through the UQ Social enterprise payees list or the Queensland Social Enterprise Council and businesses that employ people with a disability through Buyability.

These catering guidelines demonstrated the broader UQ Procurement Policy, which stipulated that all procurement practices reflect a commitment to sustainable procurement principles. Under this policy, it explicitly includes 'not engaging with suppliers who have supply chains that utilise modern slavery', while 'proactively ensuring that small and medium enterprises, as well as enterprises owned and operated by community groups such as people from culturally and linguistically diverse backgrounds, Aboriginal and Torres Strait Islander persons and people with disabilities, are provided with a fair and reasonable opportunity to supply to UQ'.

Beyond commercial dining and institutional purchasing, UQ's community gardens provide a space for staff and students to grow their own fresh food, a nutritious and affordable option. The two gardens, located at St Lucia campus and Gatton campus, provide a practical way to develop a stronger connection to food security and the environment. The gardens also promote social interaction across generations, disciplines and cultures through gardening, healthy eating and skills and knowledge sharing.

Campus organic waste

UQ is working towards being as close as possible to a zero-waste university with minimal waste sent to landfill, including organic and food waste. Methods include:

- organic waste collection of paper towel waste from bathrooms and organic waste generated in kitchens and back-of-house areas of cafes and food outlets
- organic waste collection points serviced through the waste contractor and sent to composting facilities.

While food waste is part of the collection, UQ does not receive separate data for food waste. Paper towel makes up most of the organic waste stream, and currently the two types of waste are combined.