



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, offering degrees and courses in agriculture, aquaculture, food science and technology. 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 access to research facilities, fostering 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](#).

Progress made in 2024 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
- Securing our future.

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, and aquaculture

UQ's commitment to Zero Hunger is embedded in its curriculum through programs that address sustainable food systems, agriculture, and aquaculture. UQ is ranked first in Australia and 20th worldwide for food science and food technology. The [School of Agriculture and Food Sustainability](#) focuses on global issues relevant to sustainable farming and fishing.

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 [BIOL3340: Fish, Fisheries and Aquaculture](#) provide advanced training in aquaculture systems, fish health, and sustainable fisheries management.

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 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.

- **Allianz Foodbank partnership** brought pop-up foodbank services to the St Lucia campus in August 2024, targeted at international students. More than 700 students accessed free pantry products and fresh produce as part of Student Health Week activities.
- **[UQ Student Union \(UQU\)](#)** partner with food charity SecondBite to provide Food Co-Op, a pantry for UQ students to stock up on a range of free and low-cost grocery items. UQU also organise [Morning Marmalade & Kampus Kitchen](#), welfare initiatives providing free breakfasts and dinners for UQ students across campuses throughout the semester.
- **The [UQ Food Drive](#)**, a UQ Student Rights Collective initiative, accepts non-perishable food items that are unopened, unused, and have a minimum 4-week shelf life. Launched in 2024, the Food Drive works with the broader UQ community and suppliers to assist as many students as possible.
- **[Healthy eating: Food for the Brain Self-Paced Online Module](#)** is part of the [Sharper Minds](#) free package of resources that UQ offers students to learn more about health and self-care behaviours which help them achieve at university. Students explore the kinds of foods and nutrients that can aid focus, memory and energy during intensive study periods, as well as how to manage a budget for food.

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.

- **Safeguarding the future of Banana production.** 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 2024 validated diagnostic assays were published for Moko disease and national diagnostic protocols produced for both Moko and Blood disease. To raise awareness among industry stakeholders, articles were published in industry magazines as well as a series of scientific articles. In 2024, Professor André Drenth was an editor of and authored 4 chapters in a reference book, [Achieving sustainable cultivation of bananas – Volume 3: diseases and pests](#). An outcome of the banana disease research at UQ is stronger food security and supporting the livelihood of farmers across the tropics. Additional outcomes include dividends for Australia in the form of exclusion benefits, which are significant for the major diseases: Fusarium wilt TR4 (\$177 million per annum), Moko and Blood disease (\$134 million), Black Sigatoka (\$80 million), Bunchy top (\$37 million). In addition, farmers in Australia benefit from reduced production costs, reduced risk of crop failure, domestic market access, and a reduced environmental footprint supporting the industry social license to farm.
- **Empowering Indigenous Communities and Food Systems.** QAAFI is driving research on Indigenous food systems through the UQ-led [Uniquely Australian Foods ARC Industrial Transformation Training Centre](#). One of the five research themes in the centre is Social Factors and Indigenous Participation. Projects contribute to the Centre's goal of developing sustainable business models involving all stakeholders by identifying social factors and beneficial Indigenous participation across the value chain from raw material to finished foods. Two key projects underway in 2024 include Understanding Value for Uniquely Australian Foods in Target Markets and Development of a Sustainable Business Model for the Kakadu Plum.
- **ARC Centre of Excellence for Plant Success in Nature and Agriculture.** The Centre led by UQ (2020–2027) explores how plants adapt to diverse environments to enhance agricultural resilience and global food security. It combines genetics, ecology, and crop science, while supporting early-career researchers (ECRs) through grants and interdisciplinary training. In 2024 its Kickstart and ECR Capacity Building grants funded collaborative research for a group of 9 investigators and 6 mentors across 5 nodes. The Centre also hosted a public lecture series ("[Talking Plant Science](#)") and an academic lecture series ("[People, Plants and the Law](#)"), both available via the [ARC](#)

[CoE for Plant Success YouTube channel](#), which fostered dialogue on global plant science challenges.

- **Scaling Genomic Selection Across the Indian Smallholder Dairy Sector.** 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. India's dairy cattle and buffalo industries are now applying genomic selection to deliver substantial improvements. This builds substantially on learnings from the Northern Australian beef cattle industry, where UQ-led genomic selection research has already resulted in fertility improvements to the herd that are estimated to deliver \$33.6 million in benefits over the next 30 years. In 2024 training in analysis of large genomic data sets was provided to BAIF researchers and researchers from Indian government organisations and universities.
- **[Breeding Program Assessment Tool \(BPAT\)](#).** 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, that are designed to deliver improved cultivars to small-scale farmers in emerging economies of Africa, Asia and Latin America and the Caribbean. In 2024 UQ actively used the BPAT to enhance plant breeding education and global agricultural research. For example, the BPAT was integrated into the AGRC3041 Plant Breeding 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.

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 2024 UQ held a number of events that supported knowledge transfer on sustainable food production and security for industry, experts, and the broader local community.

- In October 2024 UQ hosted **[The Future of Sustainable Food Production](#)** as part of the BrisScience free lecture series. The event, led by Dr Nicole Robinson, addressed worldwide threats to agricultural systems including degradation and pollution. It also explored new developments and innovations in revitalising soils, including the use of

novel materials, such as biodegradable plastics, to support sustainable crop production.

- In March 2024 QAAFI hosted [The Continuing Evolution of Agricultural and Food Science](#) as part of their Science Seminars series. The series invites a range of speakers from Australia and abroad to explore how high-impact science will significantly improve the competitiveness and sustainability of the tropical and sub-tropical food, fibre and agribusiness sectors. This event outlined the changing imperatives driving agriculture and food research in Australia and globally, as well as the need to embrace the 'license to operate' concerns of consumers and stakeholders with more traditional productivity and value drivers of the sector. It also considered the agriculture and food research landscape of the future and the steps needed to address the pressing workforce challenges the sector and broader society face.
- The UQ Sustainability Office hosted a series of [Community Gardens Workshops and Working bees](#) across its Gatton and St Lucia campuses. These free, hands-on sessions were designed to promote sustainable gardening practices, environmental awareness, and community engagement. Open to students, staff, local producers, and the public, the workshops focussed on areas such as soil health, water conservation, organic gardening, composting, and pollination.
- The [Australian Research Council Training Centre in Predictive Breeding](#), led by UQ, began its work in 2024 with an [official launch](#) in November. More than 90 industry and research experts attended, with panel discussions highlighting the challenges facing plant and animal breeding industries – a sector vital to boosting productivity and sustainability on Australian farms. The event provided an important forum for researchers and industry professionals to network and exchange knowledge.

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 ideally 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 1000 hectares of farmland, the campus supports hands-on research in areas like [native grain cultivation](#) and [vertical farming](#). 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 purpose-built infrastructure to support diverse research into sheep and goat management, welfare, genetics, nutrition and sustainable farming practices.
- **Queensland Animal Science Precinct (QASP)** is a unique world-class research facility designed to manage and conduct animal research in the commercial government, education or industry sectors. The Precinct includes:
 - Non-contained facilities 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** includes the following facilities and services:
 - A 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 which are available to research students, academic staff, UQ collaborators and external research partners
- **Queensland Alliance for Agriculture and Food Innovation (QAAFI)**. QAAFI 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 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.
- **UQ Agri-Food Innovation Alliance** fosters collaboration between UQ researchers and local agri-food businesses to drive innovation in sustainable food production. The Industry Kickstarter Grants scheme supports short-term, high-impact projects between UQ academics and Australian agri-food businesses. In 2024 grant recipients and projects included:
 - Dr Marlize Bekker and Canefields Distillery – Identifying heirloom sugarcane varieties with high sugar and unique flavour profiles
 - Dr Deirdre Mikkelsen and Bugs Alive – Microbial Safety and Nutritional Quality of Crickets (*Achaeta domestica*)
 - Dr Hima Haridevan and Australian Wood Fibre (AWF) – GelShroom Circularity: Tissue Paper Offcuts-based Gels as Alternative to Peat Casing Soils for Mushroom Cultivation
 - Dr Clement Chan and Queensland Trust for Nature – Development of bio-derived and biodegradable tree guard prototypes for a sustainable plastics future
 - Dr Peter Dart and Sea02 Algae – Utilising commercial microalgae production current byproducts.
- **Plant Futures Facility**. The \$65 million Plant Futures Facility, completed in 2024, will help Australian plant scientists and industry improve crop productivity and secure future food supplies. Fitted out with technology to finely control temperature, light intensity, light quality, humidity and CO2 concentration, the facility is unique in both scale and precision in the southern hemisphere. It is expected that experiments in the facility will expand knowledge about the relationship between a plant's genome and the environment.

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.

- **Building Capability for Climate Change Response in Myanmar.** In 2024 the International Development unit at UQ (UQID) delivered “Responding to the Climate Change Challenge”, a short course on climate change for the Australian Government’s Australia Awards Myanmar. One participant, Dr Khin Myat ‘Soe’, applied her expertise in both agriculture and aquaculture with her Short Course learnings to deliver further capacity-building training in agri-aqua farming with zero waste to 3 organisations. Soe and 6 other Australia Awards Short Course participants have collectively reached 180 (53 men and 127 women) students and learners (farmers, educators, scientists), exchanging expertise in environmentally friendly aquaculture and climate-smart farming practices, and inspiring youth groups from various cultural backgrounds to take action on climate change.

- **Bioeconomy and Sustainable Agriculture.** From 30 September to 4 October 2024, 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 Universidade Estadual Paulista (UNESP), Brazil. A key theme of the conference was sustainable agriculture, to enhance knowledge about food security and promote sustainable farming practices. By fostering cross-disciplinary collaborations between academia, industry, policymakers, and NGOs the GBA aims to refine research questions that drive real-world impact, connect industry R&D needs with cutting-edge research, and facilitate the implementation of innovative technologies. The network also advocates for government support, helping to establish green policies and funding programs that will accelerate the deployment of bioeconomy solutions at scale.
- **Bio-based Solutions for a Sustainable Agriculture with Technical University Munich (TUM).** UQ researchers collaborated with colleagues from TUM on bio-based solutions for sustainable agriculture. The project aims to create a platform that makes farming more sustainable by producing new agricultural chemicals. This will be done by combining the biotechnological production of existing natural agri-chemicals with the discovery of new active ingredients from plants native to Queensland. In collaboration with industry partners, the project will cover all aspects of the process, including extracting and testing compounds, using synthetic biology to produce specific bioactives from plant leftovers like bagasse and forestry residues, and analysing the effectiveness of these compounds. This project will set the stage for long term cooperation between Queensland and Germany to promote sustainable farming in both regions.
- **Collaboration for Knowledge, Innovation, and Technology Australia and Indonesia projects (KONEKSI).** In 2024 UQ researchers were involved in 2 projects funded by KONEKSI, which is a collaborative initiative supporting partnerships between the Australian Department of Foreign Affairs and Trade and Indonesian organisations for inclusive and sustainable policy and technology. Both projects worked towards promoting sustainable land management in the agricultural sector:
 - Addressing Vulnerabilities and Enhancing Resilience in the Smallholder Value Chains of Java's Peri-Urban Food Supply Systems engaged stakeholders through participatory workshops, interviews, and surveys to develop intervention strategies promoting sustainable agriculture in vulnerable agriculture areas in Java. The project aligns with Indonesia's vision for climate-resilient agriculture and demonstrates a replicable framework for enhancing sustainability and climate resilience in peri-urban farming systems.
 - MyINDAH Diet – Inclusive Digital Solutions for Healthy and Sustainable Diets and Food Security in Java's Urban and Peri-Urban Food Systems addressed sustainable use of land through the integration of digital technologies, systems dynamics modelling, and community engagement to promote resilient food systems. The project involved building databases of nutritional profiles, engaging communities through digital training, and developing predictive models for climate resilience. These outcomes also contributed to SDG 15 by fostering sustainable land use, conserving ecosystems, and empowering local communities through inclusive digital innovations.

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 activities mentioned earlier, UQ provides:

- **Healthy eating: Food for the Brain Self-Paced Online Module** is 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.
- **UQ Wellness Behaviour Change Programs** for UQ staff have a significant component on healthy eating and wellbeing, including the Mood Food program aimed at enhancing gut, brain and mental health.
- UQ staff are able to access budgeting and nutrition advice through the **Employment Assistance Program**. Staff who are experiencing financial distress which impacts food security and housing 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.

Securing our future

To achieve its mission of delivering for the public good, UQ must first ensure it is securely positioned for the future. That means investing in processes, programs, and operations that provide a more sustainable campus experience for staff, students and visitors.

Campus food 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 points serviced through the waste contractor and sent to composting facilities
- 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

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.

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. Examples include:

- In 2024 UQ strengthened its commitment to healthy, inclusive, and sustainable food choices across all campuses. A wide variety of vegetarian and vegan options are now available from key food retailers, including Kenko Sushi and Pacemaker Café.
- Many retailers, such as Patina and St Lucy's, prioritise locally sourced ingredients as well as locally roasted coffee (e.g. Campos and Merlo), supporting Queensland producers and reducing food miles.
- UQ supports homegrown research with the probiotic drink 'Perkii' invented at UQ and available for sale at both Lakeside Cafe and Nano Cafe.
- Across campus, food service tenants are encouraged to offer affordable grab-and-go options under \$15, ensuring access for budget-conscious students.
- [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, at St Lucia campus and Gatton campus, provide a practical way to develop a stronger connection to food and environment. The gardens also promote social interaction across generations, disciplines and cultures through gardening, healthy eating and sharing skills and knowledge.
- [UQ's Procurement Policy](#) stipulates that all procurement practices reflect a commitment to sustainable procurement principles, including not engaging with suppliers whose supply chains utilise modern slavery, and proactively ensuring that small and medium enterprises, including those owned by community groups such as Aboriginal and Torres Strait Islander people, are provided with a fair and reasonable opportunity to supply UQ.

The [Procurement Policy](#) also sets out the expectation that purchases are to be from suppliers who are known to be reputable and reliable and who demonstrate corporate values and commercial practices that are consistent with UQ's responsible and sustainable purchasing principles. This is also reflected in [UQ's Supplier Standards](#).

For catering, UQ has [four preferred providers](#) who have been selected because of their location, prior experience with UQ, and social impact.

UQ's "Where to Buy Guide" recommends that when choosing a different catering provider, the customer must consider prioritising food and drinks that are made, grown or produced 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](#) and [Supply Nation](#), social enterprises through the [Social Traders](#) or the [Queensland Social Enterprise Council](#), and businesses that employ people with a disability through [Buyability](#).