

MLA Gulfood Innovation Challenge 2026



Background

Australia is the world's second-largest beef exporter and the largest exporter of sheep meat and goatmeat. Last year, 2.24 million tons of red meat left Australian shores for 104 countries, generating over \$20 billion in export value.

Meat & Livestock Australia (MLA) invests approximately \$320 million annually in R&D and marketing on behalf of Australian cattle, sheep, and goat producers. Its role is to find and fund the ideas, technologies, and partnerships that keep Australian red meat competitive in global markets. Most of that investment flows through established channels: university research programs, industry partnerships, and applied trials with processors and producers.

In 2026, MLA piloted a new approach. Three industry problems were defined as open challenges and distributed to the broader innovation ecosystem, inviting responses from researchers, startups, and entrepreneurs who might bring fresh thinking from adjacent fields. The five strongest applicants were selected, prepared to engage with industry audiences, and brought to Gulfood Dubai, one of the world's largest food and beverage trade shows, to pitch their solutions directly to Australian processors, exporters, and R&D investment managers. "By aligning defined challenges from the Australian red meat industry with solutions from global innovators, we're creating an accelerated process for problem-solving," said Michael Lee, MLA's Group Manager of Science & Innovation.

This is a record of that program: how it was designed, who participated, what happened in Dubai, and what it produced.

The Three Challenges

MLA invited applications across three problem areas where the industry needed new thinking.

Challenge A: Sustainable packaging. For decades, PVDC plastic resin has been the backbone of red meat packaging, enabling 90-day shelf life for boxed lamb and 120-day shelf life for beef. It is now classified as a problematic plastic under evolving Australian and international recycling legislation. The industry needed alternatives that could match or exceed that shelf-life performance, eliminate problematic plastics from the supply chain, and operate at commercial scale.

Challenge B: Ambient storage. Raw red meat requires refrigeration from processing to the consumer. Cold chains are expensive, generate significant greenhouse gas emissions, and are unavailable or unreliable in many of the emerging markets that want Australian red meat most. Products that don't need refrigeration would reduce costs, lower emissions, and open new markets. The difficulty is that existing ambient alternatives, such as freeze-dried meat, tend to be unpleasant to eat. Prior research had shown that it was technically possible to reduce water activity to below 0.6 while achieving shelf stability. The unresolved problem was whether the result could taste and feel like real meat. The challenge was not whether shelf-stable red meat was achievable, but whether it could be made worth eating.

Challenge C: Nutrient-dense wellness products. Iron deficiency affects 30% of the global population. By 2035, over half the world's population will be overweight or obese, yet malnutrition persists in parallel. Governments are investing in nutrition programs to address both problems, from school lunch initiatives to fortified foods to wellness products, but red meat remains underutilised despite being one of the most nutrient-dense foods available. The challenge was to develop products or platforms that use Australian beef, lamb, or goat as a nutrient-rich ingredient in formats that resonate with modern consumers and institutional buyers in key growth markets.

How the Program Worked

The program ran from October 2025 through February 2026 across three phases.

Phase 1: Launch and selection (October to November 2025). A challenge brief was developed and distributed through MLA's networks and the broader Australian innovation ecosystem, reaching universities, accelerators, and industry associations. Applications came from teams across Australia, Canada, and New Zealand. Each was assessed against four weighted criteria: innovation and feasibility (40%), industry fit (30%), team capability (20%), and impact potential (10%). Five teams were selected and notified in early December.

Phase 2: Preparation (December 2025 to January 2026). Getting a research team or early-stage startup ready to pitch to meat processors required preparation. The five selected teams came from backgrounds in materials science, food technology, nutrition science, and bioengineering. Some had commercial experience. Others were primarily researchers. All needed to translate their technical work into language and formats that would resonate with industry audiences who care about shelf life, unit economics, and integration with existing processing operations.

Each team was given access to a self-guided resource library covering the practical frameworks used in innovation and commercialisation programs, including the Technology and Investment Readiness Levels, the Business Model Canvas, the Value Proposition Canvas, stakeholder mapping, customer validation, and pitching. The anchoring frameworks were drawn from Steve Blank, Y Combinator, Strategyzer, MIT, and Rob Fitzpatrick's The Mom Test.

Before a two-hour virtual bootcamp held on 12 January 2026, each team completed three tasks.

1. They built a 30-second pitch for networking conversations and a 10-slide deck for longer meetings.
2. They completed a Business Model Canvas, identifying the three to five riskiest assumptions underlying their innovation.
3. And they planned their Gulfood agenda, working out who they most needed to meet and what they wanted to learn from those conversations.

Each team also received an individual consultation on their specific value proposition and commercial positioning. The bootcamp brought all five teams together to pressure-test their pitches, surface gaps, and coordinate their approach to the week ahead.

Phase 3: Gulfood Dubai (January 26 to 30, 2026). Gulfood is the world’s largest annual food and beverage trade show, drawing more than 100,000 attendees from across the global food industry. MLA maintains a trade booth at the event each year, where Australian exporters and brand owners meet international buyers, distributors, and partners.

For the five Innovation Challenge teams, the booth became their base. Across the week, they had structured access to Australian exporters, brand owners, and MLA’s R&D investment managers, as well as the broader Gulfood floor and the international buyers, food manufacturers, and procurement leads attending from around the world. For most early-stage innovators, reaching that concentration of relevant decision-makers in a single week would take years of relationship-building. The formal pitch session took place on 29 January. Each team presented for eight to ten minutes, followed by questions from a panel of industry representatives.

The Teams

The five teams came from Australia, Canada, and New Zealand, addressed all three challenge areas, and ranged in development stage from early-stage university research to commercially active ventures already operating in international markets.

Zero-OxTech (Tewari Systems)

Challenge A: Sustainable Packaging | Canada

Zero-OxTech developed a patented oxygen-elimination technology that preserves meat’s natural enzyme systems without chemicals, antimicrobials, or modified-atmosphere gases. Their system targets the same performance benchmarks as PVDC (90-day shelf life for lamb, 120 days for beef) and has demonstrated spoilage rates below 0.1% in commercial pilots across North America and the Middle East.

Dubai reinforced its model rather than challenging it. “Our business model focuses on meat packers and exporters interested in shelf-life extension of centrally prepared retail-ready red meat cuts, and this assumption was rather reinforced with the event than challenged.” What came into sharper focus was the practical reality of pursuing commercial opportunities across continents. “The amount of funds required to present or explore our opportunity in another continent comes with huge funds and resources commitment, which we realised during the MLA Gulfood event.”

Zero-OxTech (Tewari Systems)				
Business Model Canvas Challenge A: Sustainable Packaging				
Key Partners Commercial validation partners (North America) University R&D partners (enzyme and DNA research) Early adopter processors and retailers Mars Discovery District (commercialisation and investment) Film and sachet manufacturers	Key Activities Distribution channel development Business development and client relations Ongoing R&D and product development Seed round fundraising Key Resources Global intellectual property portfolio Institutional knowledge and technical expertise Sales team and commercial infrastructure	Value Propositions 120-day shelf life for retail-ready meat cuts via enzyme retention No chemicals, antimicrobials, or modified-atmosphere gases Spoilage rates below 0.1% demonstrated in commercial pilots Significant added economic value per kilogram of exported meat Meaningful reduction in supply chain GHG emissions	Customer Relationships Direct B2B engagement focused on client shelf-life constraints and market access goals Quantified cost savings and revenue uplift modelling for prospective clients Channels Direct sales Industry network introductions Food technology expos and trade shows Industry media	Customer Segments Export meat packers Australian premium beef processors (Gulf, Americas, Japan) Large supermarket chains with international import operations
Cost Structure Payroll Office, warehouse, and R&D facilities Sachet and film manufacturing		Revenue Streams Sachet and film product sales (direct, no licensing)		

Challenge C: Nutrient-Dense Wellness Products | New Zealand

Miti arrived in Dubai already in market, backed by AgResearch and Fonterra partnerships, and with a world-first Nutritional Life Cycle Assessment methodology to their name. Their shelf-stable, organ-fortified meat snacks, made from young dairy-beef animals, treat red meat not as a commodity but as a nutrient delivery system.

The preparation process sharpened what they brought to the booth. “Having the opportunity to speak with producers and pitch our technology was extremely valuable.” Their concrete takeaway: simplify the technical explanation for industry audiences and let the product do the talking.

Miti (Alps2Ocean Foods)				
Business Model Canvas Challenge C: Nutrient-Dense Wellness Products				
<p>Key Partners</p> <p>AgResearch (digestion, fermentation, and nutrient utilisation validation)</p> <p>Fonterra (strategic partnership)</p> <p>Alliance Farmers’ Produce (supply)</p> <p>Bioresource Processing Alliance (processing)</p> <p>Pamu Farms of New Zealand (supply)</p> <p>MLA and NZ Ministry for Primary Industries (industry bodies)</p> <p>NZ Ministry of Business, Innovation and Employment (funding)</p>	<p>Key Activities</p> <p>Platform formulation and nutritional design</p> <p>Supply chain integration from farm to finished product</p> <p>Scientific validation and NLCA methodology development</p> <p>Market positioning and export strategy</p> <p>Processing and manufacturing partnerships</p> <p>Key Resources</p> <p>World-first Nutritional Life Cycle Assessment (NLCA) methodology</p> <p>Proprietary formulation platform and IP</p> <p>AgResearch and Fonterra validation partnerships</p> <p>Established supply chain across Australasian agriculture</p> <p>Industry recognition: Fieldays Innovation Awards, NZ Food Awards finalist</p>	<p>Value Propositions</p> <p>Nutrition delivery platform converting commodity red meat and offal into targeted functional nutrition</p> <p>First animal-based food to achieve higher essential nutrition per unit of carbon than soy protein (world-first NLCA)</p> <p>Independently validated through AgResearch research on digestion, fermentation, and nutrient utilisation</p> <p>Shelf-stable, organ-fortified snacks made from young dairy-beef animals</p> <p>Tunable formulations targeting youth nutrition, elderly nutrition, performance and recovery, and gut health</p> <p>85% consumer preference over ultra-processed protein bars in comparative testing</p>	<p>Customer Relationships</p> <p>Direct B2C through retail and online channels</p> <p>B2B ingredient and platform licensing to food manufacturers</p> <p>Strategic partnerships with processors and exporters for platform integration</p> <p>Industry body engagement for market access and credibility</p> <p>Channels</p> <p>Direct-to-consumer via retail and online</p> <p>B2B supply to food manufacturers and brands</p> <p>Export through existing processing and distribution partners</p> <p>Industry events and trade show presence</p>	<p>Customer Segments</p> <p>Health-conscious consumers seeking clean-label, whole-food nutrition</p> <p>GLP-1 medication users and ageing populations</p> <p>Youth nutrition and performance and recovery markets</p> <p>Food manufacturers seeking differentiated functional ingredients</p> <p>Premium export nutrition buyers</p>
<p>Cost Structure</p> <p>Raw material sourcing (young dairy-beef animals and functional ingredients)</p> <p>Processing and manufacturing</p> <p>Scientific validation and NLCA development</p> <p>Sales, marketing, and export market development</p>		<p>Revenue Streams</p> <p>Direct product sales: premium shelf-stable meat snacks (retail and export)</p> <p>Platform licensing to food manufacturers</p> <p>B2B ingredient supply to functional nutrition producers</p>		

CelluGuard (UQ AIBN)

Challenge A/B: Sustainable Packaging and Ambient Storage | Australia

CelluGuard, a research team from The University of Queensland’s Australian Institute for Bioengineering and Nanotechnology, developed an antimicrobial nanocellulose coating derived from agricultural waste. The coating is dual-function: it both kills and repels pathogens, with potential applications in packaging materials and food contact surfaces for shelf-life extension and reduction of food-borne disease. The team was led by Associate Professor Nasim Amiralian.

The team entered Dubai with a broad framing and left with a sharper one. “I will strengthen the concept as a drop-in antimicrobial additive for meat packaging, with clearer benchmarking against incumbent solutions used in the red meat sector.” The industry appetite surprised them. “It was encouraging to see genuine excitement around exploring how these innovations could be trialed and applied in real industry settings.”

For Dr Sandya Athukoralalage, the experience carried weight beyond commercial work. “As an early career researcher, I found the experience very rewarding and valuable for building confidence and connections at the research-industry interface.”

CelluGuard (UQ AIBN)				
Business Model Canvas Challenge A/B: Sustainable Packaging and Ambient Storage				
Key Partners Packaging manufacturers (coating integration and scale-up) Meat processors (pilot programs and validation) Food processing equipment OEMs (surface coating applications) Regulatory bodies and food safety organisations (approval pathways) Innovation labs and NGOs in food safety	Key Activities R&D and coating optimisation Regulatory approvals across multiple jurisdictions Pilot production and manufacturing scale-up Integration support for packaging lines Business development and partner engagement	Value Propositions Natural antimicrobial nanocellulose coating derived from agricultural waste Dual-function: kills and repels a broad range of foodborne bacteria, and prevents biofilm formation Drop-in compatibility with existing packaging formats: inner surfaces, absorbent tray layers, roll-to-roll film coatings, and food-contact processing surfaces Extends shelf life of fresh meat without chemicals or synthetic preservatives Natural and sustainable cellulose base with strong early proof of efficacy	Customer Relationships Direct technical sales to processors and packaging manufacturers OEM partnerships for equipment and packaging integration Pilot programs to validate performance and build commercial references Consulting and integration support for packaging line certification and testing	Customer Segments Meat processors (large, medium, and small scale) Packaging manufacturers Export-driven processors with food safety compliance requirements Food retailers and supermarket chains Food service chains and industrial food producers
	Key Resources Patented nanocellulose formulation and process UQ AIBN research infrastructure and expertise Early efficacy data and proof-of-concept results Academic and industry networks for commercialisation		Channels Direct sales to processors and packaging manufacturers OEM partnerships (equipment and packaging) Technology licensing to large manufacturers Pilot programs with processors and innovation partners	
Cost Structure R&D and coating optimisation Regulatory approvals across multiple jurisdictions Pilot production and scale-up Sales, business development, and quality compliance		Revenue Streams Direct product sales to packaging manufacturers Technology licensing to large packaging producers (recurring royalties) White-label partnerships with meat brands and retailers Long-term supply contracts with processors and supermarket chains B2B surface coating sales for food-contact processing environments		

CSIRO Prime & Plant

Challenge C: Nutrient-Dense Wellness Products | Australia

The CSIRO Food Program introduced an AI-driven formulation platform that pairs Australian beef heart with native crops to create high-protein, iron-rich snacks. The ten-person team had identified specific consumer segments (GLP-1 medication users, elderly populations requiring nutrient-dense foods) and built health claims around them: iron for cognitive development, protein for muscle health, B12 for energy.

One assumption didn't survive: "Initially, we assumed that large volumes of certain offals, such as beef hearts, were broadly underutilised and available for redirection into new products. Through discussions at Gulfood, we learned that a significant proportion is already exported for human consumption." Rather than undermining the project, the finding redirected it. "This highlighted the opportunity to instead position our technology as a complementary way to convert selected streams into higher-value hybrid snack products, rather than assuming full diversion of existing export pathways."

"It was incredibly satisfying to watch conversations shift from initial curiosity to real commercial interest around upcycling meat co-products and creating circular value. This demonstrated that science was translating into something practical, relevant, and valuable."

CSIRO Prime & Plant				
Business Model Canvas Challenge C: Nutrient-Dense Wellness Products				
Key Partners Meat processors (co-product supply, manufacturing scale-up) Snack manufacturers and consumer brands MLA and industry bodies Export and commercialisation partners	Key Activities Product formulation and optimisation Pilot-scale trials and validation Nutrition, functionality, and shelf-life testing Commercial translation and partner engagement	Value Propositions Converts offal into high-value product, significantly increasing carcass revenue Shelf-stable, high-protein, iron-rich snack requiring no refrigeration Clear health claims: protein for muscle health, iron for cognitive development, B12 for energy	Customer Relationships Collaborative co-development with processors and manufacturers Long-term technical partnerships Licensing and scale-up support	Customer Segments Meat processors seeking value-added pathways for offal and co-products Food manufacturers developing high-protein snacks Health-conscious consumers, GLP-1 medication users, and ageing populations Global food buyers prioritising sustainable sourcing
	Key Resources CSIRO formulation and processing capability Proprietary product development platform IP and formulation knowledge base Pilot and commercial-scale manufacturing infrastructure	Supports processor circularity and sustainability goals On-trend format for GLP-1 medication users, ageing consumers, and wellness buyers	Channels B2B supply to snack manufacturers and food brands B2C direct if end-product produced in-house Domestic and export markets Online and retail distribution	
Cost Structure R&D and pilot processing, including raw material sourcing Nutrition, safety, and shelf-life testing Partner engagement and commercialisation support		Revenue Streams Technology platform licensing (AI formulation, extrusion, drying) Ongoing research and co-development partnerships B2B ingredient or base-product supply		

Challenge B: Ambient Storage | Australia

MEAT GLASS™ combined retort processing with microwave-vacuum drying to create shelf-stable meat cubes designed for foodservice and institutional markets in regions where cold chain infrastructure is limited or unreliable. The team came with existing Middle East export experience through their Gold Coast retort facility, which gave their Dubai conversations a grounded, operational quality that purely research-stage teams can struggle to match.

“The most rewarding part was the quality of conversations with the Australian exporters who deal with hot-climate logistics. The structured mentoring helped sharpen the value proposition from ‘interesting food tech’ into a clear industry problem and solution with a credible pathway to pilot and adoption.”

The conversations took an unexpected turn. “How quickly the conversation moved from technical feasibility to operational realities: unit economics, regulatory pathway and how to go from pilot to market. The appetite for innovation is high, but buyers want a clear ‘how it gets made and who stands behind it’ story early.” The team arrived with a broad ambient meat concept and left with a defined first-use case: a chef-ready cube for curries, stews, and rice dishes, with defined rehydration ratios and preparation steps.

The assumption that gave way: “The assumption that superior technology alone wins. In reality, adoption hinges on integration: how easily the concept fits existing equipment, how quickly validation can be demonstrated, and whether a credible manufacturer or exporter partner is willing to champion the first commercial run.”

MEAT GLASS™ Business Model Canvas Challenge B: Ambient Storage				
<p>Key Partners</p> <p>Australian processor and exporter partners (co-manufacture, QA systems, export readiness)</p> <p>Drying technology partner (microwave-vacuum or optimised hot-air) for scale-up</p> <p>Accredited labs, process authority, and food safety advisors (validation and shelf-life)</p> <p>Halal certification and GCC import and labelling advisors</p> <p>High-barrier packaging suppliers</p> <p>Anchor customers: GCC distributors, central kitchens, and caterers</p>	<p>Key Activities</p> <p>Formulation and process optimisation for shelf stability while preserving organoleptic quality</p> <p>Food safety validation and shelf-life testing</p> <p>Cost-of-goods engineering</p> <p>Buyer discovery and chef demonstrations</p>	<p>Value Propositions</p> <p>Shelf-stable beef and lamb ingredient cubes for hot markets with limited cold chain</p> <p>No declared preservatives required</p> <p>Maintains meat-like texture and flavour: rehydrates in sauce or stock</p> <p>Reduces cold chain cost, waste, and supply chain risk</p> <p>New export SKU pathway from existing processing operations</p>	<p>Customer Relationships</p> <p>High-touch technical selling: samples, specification co-design, QA support</p> <p>Co-development with anchor buyers on format, performance, and pricing</p> <p>Ongoing B2B supply with consistency guarantees</p>	<p>Customer Segments</p> <p>GCC importers and distributors serving HORECA and central kitchens (beachhead)</p> <p>Central kitchens, caterers, and QSR commissaries requiring ambient logistics</p> <p>Australian exporters and processors seeking cold-chain-light SKUs</p> <p>Remote-site feeders and institutional buyers needing ambient storage</p>
<p>Cost Structure</p> <p>Raw material inputs</p> <p>Processing, drying, and packaging</p> <p>Food safety validation and QA</p> <p>Commercial development and trade show costs</p>	<p>Revenue Streams</p> <p>B2B per-kg sales via exporters and distributors (chef packs and institutional formats)</p> <p>Premium pricing justified by cold chain savings, reduced waste, and operational convenience</p> <p>Private label and custom specification fees</p> <p>Longer term: licensing or joint venture scale-up with exporters and processors</p>			

In Their Own Words

Post-event reflections yielded observations spanning all five teams and underscore the broader value of the Innovation Challenge.

On what being at Gulfood in person actually means:

“Most interactions with industry usually happen via Zoom or email, which limits how deeply ideas can be explored. Being on site allowed more open, practical conversations around shared challenges, constraints, and opportunities, and helped build trust much more quickly than remote communication.”

“Be ready to be exposed to a world-class opportunity and take it very seriously. It may shape or change the direction of your business in a very positive way.”

On the gap between technical language and industry language:

“As scientists, we are naturally inclined to use technical language, but this experience highlighted the need to translate innovation into commercially relevant terms that resonate more clearly with industry stakeholders.”

“Frame your innovation through the eyes of a meat processor and exporter. Be clear on where your solution fits in existing operations, what problem it removes, and what risk it does not introduce.”

On what to bring:

“Do your homework in advance to identify the right people, particularly R&D, innovation, and commercial leads, who will be present at the stands. Being clear on who you want to speak to and tailoring your message accordingly will significantly increase the value of the conversations you have during the event. You will gain from it what you give to it.”

“Come with two things: a crisp 30-second value proposition framed for exporters and buyers, and a simple pilot plan covering what’s needed, what it costs, and what success looks like. Don’t try to sell to everyone. Choose one target segment and one hero application and go deep.”

Looking Forward

The 2026 Gulfood Innovation Challenge was an initial attempt by MLA to use an international trade show as an active R&D forum rather than a passive showcase. The question was whether the format could produce something more than goodwill and business cards, whether the combination of structured preparation, a team environment, and direct industry access could move genuinely early-stage innovations toward commercial relevance in a compressed timeframe.

The evidence from five teams suggests it can. Every team left Dubai with a sharper value proposition than they arrived with. Several left with specific follow-up conversations already in train. Post-event reflections demonstrate that the shift from technical to commercial framing, which can take years in a conventional research environment, happened for most teams in a single week.

MLA intends to build on this model. Future iterations will create more room for the technical and commercial conversations that participants identified as most valuable. The ambition is a program that doesn’t just produce investor-ready pitches, but produces the first pilots.

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