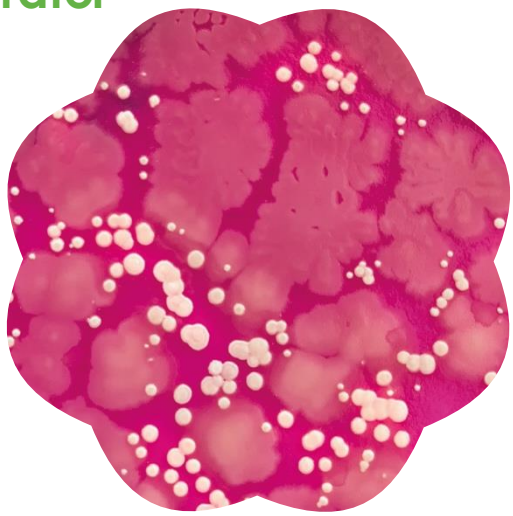
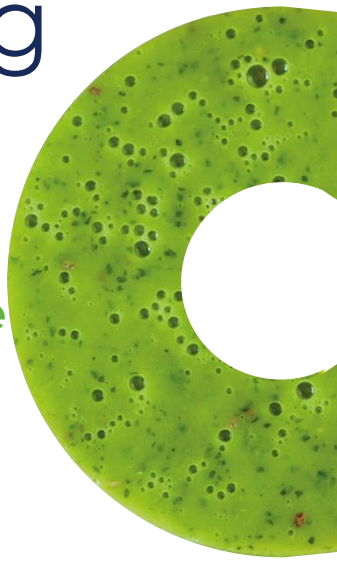
FaBA Food and Beverage Accelerator

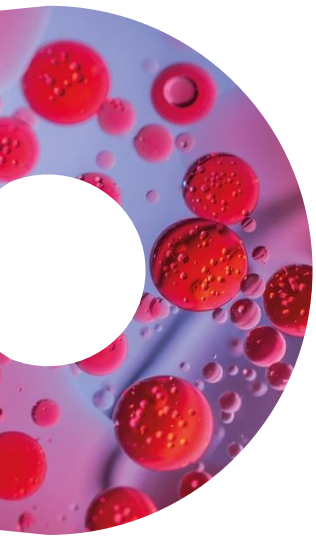
We are accelerating innovations in Australia's food and beverage sector.

Inquiry into the food and beverage manufacturing industry in Australia

A submission from Australia's Food and Beverage Accelerator







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FaBA Food and Beverage Accelerator

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Introduction

Meeting supply and demand expectations, feeding a growing global population, and responding to increasingly diverse consumer preferences require better technology, new products, trusted public private sector partnerships and an upskilled workforce within the Australian food and beverage (F&B) manufacturing industry. Innovation can—and must—be accelerated, enabling value-added products to meet community expectations, to scale up and to export.

Australia's Food and Beverage Accelerator (FaBA) is equipped to develop multidisciplinary teams that accelerate the commercialisation of university research, increase engagement with industry and deliver value at speed.

FaBA is proudly hosted by Australia's leading food science and technology research organisation, The University of Queensland[i], in collaboration with partners QUT, the University of Southern Queensland and UniQuest. It is supported by the Australian Government's Department of Education through the Trailblazer Universities Program.

This submission represents the opinions of the contributing authors listed in this document. It does not necessarily represent an official position of the Food and Beverage Accelerator or its Participants.

Summary and recommendations

From iron ore to natural gas, grains to livestock, Australia is well regarded internationally for its ability to deliver raw materials and commodities to the world. The burgeoning F&B manufacturing market presents opportunities for the Australian industry to grow, and thrive, in the delivery of value-added products that benefit small and large business owners, Australian workers and the national economy. In parallel, we are seeing more discerning consumers with the resources to seek premium, high-quality products with strong provenance and sustainability credentials.

In our submission, we highlight some of the many ways that Australia can leverage its strengths – including fresh produce, strong traceability and taste diversity – to provide value-add products that meet the desires of consumers, while delivering benefit for Australia.

The start-up culture that has emerged in Australia in the last decade creates opportunities for the next generation of food entrepreneurs – but there are also challenges that require a strong regulatory and investment framework. Recommendations in this submission are centred around innovation and regulation – we hope they are of interest to the Committee.

- Prioritise the growth of the food and beverage manufacturing sector by establishing a food and beverage Ministry and Department in Federal Cabinet.
- We welcome the recent budget announcement of a cross-portfolio review of the R&D system to strengthen and align innovation and investment support for industry. We recommend that this review include Australia's priority F&B sector so as to ensure better outcomes for industry.
- Maintain and grow programs such as the Trailblazer Universities Program building new research capabilities, driving commercialisation outcomes and investing in new industry engagement opportunities to enable the F&B industry to access the skills and capabilities to assist them in applying innovative trends and technologies within their businesses.
    a. Implement a network of F&B Innovation Hubs for long-term collaborative projects enabling researchers to act as an extension of industry in-house R&D teams and to integrate innovation from outside the F&B sector (e.g. AI) into the F&B manufacturing industry.
- Develop and deliver a regulatory framework that supports and enables the safe and rapid implementation of new technologies supporting growth of the food and beverage manufacturing industry now and into the future, specifically:
    a. Consider fast-tracking regulatory approval through FSANZ for foods and ingredients that have already been approved by credible international food agencies to, in turn, enhance development in Australia (TOR ii)
    b. Ensure appropriate regulation of new technologies (e.g. synthetic protein manufacturing and associated precision fermentation processes) and enabling technologies (e.g. the impact of AI technology on the F&B industry) (TOR i)
    c. Regulate the use of bio-based plastics in food and beverage packaging, which have a lesser environmental impact than other available plastics (TOR ii).

- Targeted support for Indigenous F&B enterprises enabling the production, value addition and marketing of Indigenous products in Australian and global markets. This support must include appropriate up-skilling in business development, entrepreneurship and innovation. The provision of micro-processing facilities on country will also enable Indigenous communities to process and commercialise native foods.
- Provide ongoing financial support for F&B SMEs to mitigate risk and reduce costs while they bring new products to market.
- Develop a framework for trustworthy and accurate provenance labelling for the Australian food and beverage industry, so both domestic and international consumers can be assured of the quality, sourcing and credentials of Australian produce.
- Support industry in the use of Life Cycle Assessments and labelling as an evidence base for environmental impact and consumer choice.
- Support careers in the F&B manufacturing sector through promotion to high school students; clear career progression and promotion pathways for professionals; and clear access to up-skilling and re-skilling programs particularly at the vocational level.

Terms of Reference

The inquiry has provided the terms of reference (TOR) in relation to opportunities for expanding innovation and value-adding in the food and beverage manufacturing industry in Australia. Our responses to each of these terms follows.

(i) Innovation trends and new technologies, both locally and internationally

Market push and pull levers are simultaneously driving change in the Australian food and beverage manufacturing sector. Science and technology are enabling high value-add products with a high degree of sophistication to enter the market (the 'push'); while consumers are demanding products that are healthier, sustainable, more convenient and increasingly meeting personalised demand (the 'pull').

The FaBA 2023 Global Food and Beverage Trends Report[ii] identified 10 major trends driving changes in consumption and production, organised into five distinct themes:

1. Sophisticated demand: consumers want more personalised, functional and convenient products
2. Healthier products: more natural and 'fresh' products, aligning to healthier, more nutritional diets
3. Environmental concerns: consumers are more environmentally conscious about their choices
4. Techno-economic forces: increased transparency linking the producer and consumer
5. Business resilience concerns: about the weather, geo-political stability and economic turbulence.

Further, the FaBA 2024 report, *Food AI: A game changer for Australia's F&B sector*[iii], identified the importance for industry to take a data driven, evidence-based approach.

Australian F&B manufacturers do have access to world class researchers in the university sector who have the ability and knowledge to assist in the innovation of F&B processes and development of novel ingredients that can lead the development of value-add products desired locally and globally. The challenge can be that small business and small to medium enterprises (SMEs) may not have the experience or knowledge of how to engage with the university sector to gain access to the skills and capabilities to assist them in applying innovative trends and technologies within their businesses.

The Trailblazers University Program, which includes the Food and Beverage Accelerator, is designed to enhance the commercialisation of university research with industry. FaBA is investing in F&B industry innovation projects and initiatives that will help to position universities and industry more strongly to respond to new innovation trends and to adopt new technologies from local and international sources.

There is also the opportunity for the Australian Government to rapidly ensure appropriate regulation of new technologies such as synthetic protein manufacturing and associated precision fermentation processes to ensure they can be best utilised for the growth and development of the Australian F&B manufacturing sector without delay.

> For example: Traditional fermentation (the use of microorganisms to produce foods such as cheese, yoghurt and beer) has been a mainstay of food production for centuries. Scientists are now using precision fermentation (programming of microorganisms to produce proteins, fats and other ingredients) to develop innovative products that meet consumer needs. The Australian Government has a role to appropriately regulate the development of precision fermentation to

ensure foods developed through synthetic biology are safe, build trust and reach their potential, in the same way traditional fermentation has done for many years.

Recommendations

Maintain and grow programs such as the Trailblazer Universities Program building new research capabilities, driving commercialisation outcomes and investing in new industry engagement opportunities to enable the F&B industry to access the skills and capabilities to assist them in applying innovative trends and technologies within their businesses.

Develop and deliver a regulatory framework that supports and enables the safe and rapid implementation of new technologies supporting growth of the food and beverage manufacturing industry now and into the future.

(ii) Ways to support new and emerging products and industries, including premium and niche products, new proteins and Indigenous foods

Australia's onshore food and beverage manufacturing sector is dominated by SMEs, with about two thirds of all businesses in Australia's food and beverage manufacturing industry recognised as small businesses[iv]. These businesses are leading the way in the development of niche products and ingredients but need greater support as food innovation often remains cost-prohibitive until large-scale production is viable. The F&B sector is recognised as an industry of small margins. Although in overall terms, Australia produces more than enough food to feed its population and is one of the few countries which is a net exporter of food[v], globally it is still a small agricultural producer. The opportunity for Australia's F&B sector is to value-add, specifically targeting premium global markets, working towards branded products and moving away from unimproved commodities[vi].

We identify four opportunities for the Australian Government to act in support of value adding to the F&B sector:

1. Introduce shared innovation hubs
2. Streamline regulatory processes
3. Continue investment support for start-up company development and expansion in the Australian F&B sector
4. Continue to seek opportunities for the development of unique Australian food products in collaboration with Indigenous communities, start ups and SMEs.

1. Start-up companies and SMEs often don't have the scale nor capabilities for world-class laboratory facilities, or pilot plants to test and refine new products. The development of common user facilities – whereby companies can contract the use of facilities with cutting edge technology – enables start-ups and SMEs to refine their product (and its economics) and rapidly scale. Such an approach also ensures efficiency of scale for government investment, by focussing that investment in strategic locations accessible to many. Dedicated F&B Innovation Hubs with close connection to one or more universities with food and beverage innovation and skills development capabilities would ensure appropriate access across the nation.

   For example: An opportunity to closely align the Australian Government's investment in the Turbine Hub and the Food and Agribusiness Network (FAN) with leading capabilities being mobilised by Australia's Food and Beverage Accelerator (FaBA) will provide a significant support and growth opportunity for F&B SMEs in the south-east Queensland region. The FAN/Turbine model could be implemented in other regions and states as part of a formal collaborative and coordinated national Innovation Hub Network which allows for shared knowledge between members of the F&B sector, and the university.

2. Practical policy enhancements that hasten innovation for SMEs, particularly those working through clusters, would be a key enabler. Food Standards Australia New Zealand (FSANZ) approval can be significantly protracted and very costly. While appropriate regulation is necessary for new technologies, ingredients and foods, those products that have already been approved by reputable international agencies should be considered for fast-track approval mechanisms. The recognition of food safety regulation from reputable international agencies would enable Australian F&B manufacturers to access new products and ingredients in a timelier manner. Consideration should be given to FSANZ accepting regulatory approval from well-

regarded international agencies such as the European Food Safety Authority (EFSA). This would enable faster access to market for a broader range of products and ingredients in Australia.

3. Australia has a growing and vibrant F&B start-up ecosystem that warrants significant further support including entrepreneurship training and pipelines, start-up company venture capital investment, innovation support and skills development for new products and technologies.

   One of the primary challenges faced by SMEs in bringing new products to market is financial constraints, compounded by an underdeveloped market infrastructure that must be tailored to meet the needs of innovative products. Innovation hubs play a crucial role in supporting these enterprises through the initial stages of innovation. The support should extend beyond the early phases, continuing until these SMEs become competitive. Generally, innovative products are expensive until they can be produced on a large scale, which hampers their market competitiveness. Therefore, we propose ongoing financial support for these industries to mitigate risk and reduce costs.

4. Australia has a unique opportunity for economic development of native Australian F&B products in collaboration with Indigenous communities, start-ups and SMEs. Australia's Indigenous F&B sector is growing and gaining profile in both Australian and international markets. Further sector growth requires ongoing targeted support, and collaboration with, and strengthening of Indigenous leadership, that will enable Indigenous F&B enterprises to grow. Support must include appropriate skills development in business, entrepreneurship and innovation. There is an opportunity to support Indigenous F&B businesses across the value chain and to position products in the market with clear and consistent Indigenous credentials which will benefit the wider Australian economy (tourism, restaurant trade, export).

   Innovation opportunities exist to harvest and stabilise raw materials close to production locations and then transport for further processing and value addition close to market. Decentralised models for processing and distribution – for example, micro-food processing on country or setting up of regional hubs for collection and distribution – should be considered, especially in remote communities. This would enable Indigenous SMEs to process native foods while fresh, maintaining produce quality and safety, and ensuring produce was ready for transport, leading to higher production and more local jobs.

   For example: The Kakadu Plum is wild harvested by Aboriginal communities in remote parts of the Northern Territory and Western Australia. These plums need to be frozen within 24 hours of harvesting to maintain high vitamin C levels and safety during transportation. The University of Queensland has worked with remote Aboriginal communities to assist with starting new food businesses which process and commercialise the Kakadu Plum. New products and uses include food and cosmetic products, and use as a natural food preservative to extend shelf life of products such as frozen meals and fresh cooked chilled prawns.

Recommendations

The Australian Government fund the development of dedicated Food and Beverage Innovation Hubs closely aligned with universities with specialist capabilities in food innovation to support SMEs and start-ups during the innovation and pilot testing of new ingredients and products. This will lead to more premium Australian products in the market sooner and at lower cost.

Regulatory approval by credible international food agencies be used as inputs to fast-track regulatory approvals for technologies and ingredients in Australia.

Provide ongoing financial support for F&B SMEs to mitigate risk and reduce costs while they bring new products to market.

Targeted support for Indigenous F&B enterprises enabling the production, value addition and marketing of Indigenous products in Australian and global markets. This support must include appropriate up-skilling in business development, entrepreneurship and innovation. The provision of micro-processing facilities on country will also enable Indigenous communities to process and commercialise native foods.

(iii) Opportunities across both domestic and export markets for Australian manufactured products, including shifting consumer trends

Globally, consumers increasingly demand to know from where ingredients are sourced and where their food is manufactured. Security (or 'safe supply of food') and provenance ('trust in the food source and its supply chain') have never been more important[vii] – Australia's food and beverage products and ingredients are recognised for both provenance and security, and are highly desirable, domestically and internationally.

Australia's 'Nation Brand' is strong and highly regarded internationally, currently 9th out of 60 nations, providing a strong platform from which to promote Australian-made products and ingredients[viii]. Many international consumers target Australian products because they are trusted. Domestic consumers also want to know whether a food is sourced from Australia or overseas, so they can make an informed purchase decision.

As outlined previously, *The FaBA 2023 Global Food and Beverage Trends Report*[ix] identified 10 major trends driving changes in consumption and production, with five distinct themes:

1. Sophisticated demand: consumers want more personalised, functional and convenient products
2. Healthier products: more natural and 'fresh' products, aligning to healthier, more nutritional diets
3. Environmental concerns: consumers are more environmentally conscious about their choices
4. Techno-economic forces: increased transparency linking the producer and consumer
5. Business resilience concerns: about the weather, geo-political stability and economic turbulence.

Discerning international markets are increasingly seeking foods that are ethically and sustainably sourced, positioning Australia for future growth and export. Food is an emerging area and, with Australian Government support, Australia could lead. Support for tracking provenance with clear guidelines and processes would help distinguish Australian foods.

Recommendation

Develop a framework for trustworthy and accurate provenance labelling for the Australian food and beverage industry, so both domestic and international consumers can be assured of the quality, sourcing and credentials of Australian produce.

(iv) Approaches to circular economy, waste reduction and decarbonising, including packaging and food waste

Increasingly, 'shelf ready packaging' is favoured by retailers for their ease of transporting, storing and shelving (particularly fresh) produce. However, the additional manufacturing and input costs do not justify the costs to consumers and the environment, and contradict consumer preference for companies to prioritise sustainable packaging.

> For example: Sustainable packaging such as recycled materials and bio-based organic materials are increasingly being used by businesses to meet the demands of a small but growing group of consumers who value sustainable packaging. Sustainable packaging has the potential to enhance sustainability from farm production to manufacturing to retail shelf by keeping food fresher for longer, thereby reducing food waste[x].

Life Cycle Assessments (LCAs) are standardised methodology to analyse the effect that a product or service has on the environment across its lifespan. In food and beverage manufacturing, LCA analyses are critical for identifying opportunities to ensure resource efficiency, waste reduction and improved process and product design. Australia's food and beverage sector will increasingly be expected to provide environmental reporting due to customer expectations and developments in reporting requirements. The Australian Government should mandate Australia's LCA capabilities and optimal data and methods to maintain market access and competitive advantage for Australian food and beverage producers. Australia's Food and Beverage Accelerator is currently undertaking LCA with two participating companies.

> For example: LCA analyses have shown that greenhouse gas emissions associated with Australian chicken meat compare much better with imported plant-based meat replacement products than is often claimed[xi]. Previous comparisons were not based on the Australian context and locally relevant data have often been lacking. Data on Australia's major agricultural commodities is currently being collated through the AusLCI project. Australia's food and beverage industry needs to be supported in using these data to showcase their competitiveness and increase their market share nationally and internationally.

Similarly, a strong regulatory environment and fiscal policy (e.g. tax credits) will be critical for the circular economy.

Developing a truly circular economy is not just about using more recycled materials – it is designing and monitoring a holistic new economy that promotes the continual use, recycling, and regeneration of materials and products; more sustainable bio-based materials; and design principles to reduce, reuse, recycle, repurpose and remanufacture. A national framework is required to tightly monitor and regulate the approach, and consumer education should be provided to support the principles of a circular economy. Consumers want evidence that the goods they purchase are genuinely part of the circular economy. How the Australian Government approaches this will be a major factor in whether the circular economy is effective – and have a significant impact on the food and beverage sector, which will be directly impacted by the development of the circular economy.

Recommendations

Regulate the use of bio-based plastics in food and beverage packaging, which have a lesser environmental impact than other available plastics.

Support industry in the use of Life Cycle Assessments and labelling as an evidence base for environmental impact and consumer choice.

(v) How the research sector can help to grow this ecosystem

The university research sector has capacity to provide essential knowledge and capabilities to enable the F&B sector to use research to solve problems, be more innovative and grow. We address two key dimensions:

1. Supporting universities and research organisations to develop and deliver knowledge and capabilities pertinent to current and future industry needs in a way that is relevant
2. Supporting universities and research organisations to be able to engage more effectively with F&B companies to ensure that companies benefit and grow.

Australia is ranked poorly in terms of its ability to translate research for commercialisation[xii]. The flow-on effect for the F&B manufacturing industry is a scarcity of research and innovation jobs in Australian F&B businesses, such that talent departs Australia to pursue innovation roles overseas. Fragmentation remains a major challenge in the F&B sector, with manufacturing often owned by either large multinationals with limited in-house research and development (R&D) conducted in Australia or small- to medium-enterprises with limited scope for in-house R&D. Overseas based F&B companies regularly source knowledge through Australia's university sector, which whilst this helps grow local talent, the talent often has to leave Australia to pursue R&D and innovation roles, and long-term careers.

The Australian research sector already has great capacity to undertake a broad range of F&B research including investigations into what consumers value, such as nutritious food options, more personalised choices aligned with their changing tastes and preferences, and sensory experiences. Artificial intelligence (AI) can assist in the design and delivery of new food products across the food and beverage sector. However, it will be important to address the challenges of implementing AI[xiii].

Fundamental science provides the foundation of the chemistry, physics and engineering of food as well as the social and economic understanding that underpins technology and innovation. Food systems thinking can help explore different dimensions and scenarios involved in new food manufacturing, in turn helping identify where investment in fundamental science is needed. It can also integrate and translate fundamental science and a food systems approach to identify opportunities for innovations in food and beverage manufacturing that lead to improved outcomes for health, environment, society and economy.

Research partners, such as the F&B Innovation Hubs outlined in our response to TOR (ii), have the potential to be an extension of internal company research and development (R&D) teams and cluster support programs. In addition to the economic benefits outlined previously, these hubs would provide economic credibility for companies, by providing an evidence-base for high quality, innovative and sustainable products.

The Trailblazer Universities Program, developed by the Commonwealth Department of Education, is an excellent example of policy intervention that has an attractant for industry investment and research from academia. Programs such as the Trailblazer Universities Program have the potential to enhance Australia's innovation status despite their relatively short timeframe (five years, in the case of the Trailblazer Universities Program). The Australian Research Council's Industrial Transformation Training Centres (ITTCs), Industrial Transformation Research Hubs (ITRH) and Linkage grant schemes have a track record of building collaboration between research and industry, and are an excellent avenue for F&B manufacturers to engage with researchers however, again, the timeframes are important. Despite being listed as a priority research area, there are limited Australian Research Council (ARC) Discovery Grants for

basic research in food science. Longer research programs have multi-fold advantages including encouraging highly-skilled Australian expats to return to Australia.

Recommendations

Extend the Trailblazer Universities Program for a second term to enable maturity of the model which includes matching industry investment with Australian Government funds to increase the porosity between industry and universities.

Implement a network of F&B Innovation Hubs for long-term collaborative projects enabling researchers to act as an extension of industry in-house R&D teams and to integrate innovation from outside the F&B sector (e.g. AI) into the F&B manufacturing industry.

(vi) Future workforce and skills needs

The future of Australia's food and beverage manufacturing industry lies in its ability to value-add products and ingredients, resulting in a premium product with strong sovereignty that is available both in Australia and abroad. If the nation is to reach its F&B manufacturing potential, it requires a workforce that is appropriately skilled to innovate, think creatively and adopt the latest technologies in order to scale internationally.

Recent geopolitical shifts and an upwardly mobile global population has resulted in a growing demographic that can afford premium F&B products from Australia and that can accommodate the nation's high labour costs. In contrast, a significant barrier for the highly skilled workforce are pay rates, which are significantly lower than for other professionals in Australia.
Key workforce problems in Australia are a lack of science and engineering graduates, and a lack of skills in businesses to translate available knowledge into value-added outputs, in particular for international markets. The Global Innovation Index 2023[xiv] shows that Australia lags behind almost all major economies in terms of science and engineering graduates. To attract domestic undergraduate students, food technology should firstly be promoted as a career opportunity to high school students. There must be a pipeline for F&B career and industry success – innovation hubs that attract professionals and technical workers who are skilled in Australia and retained in Australia, for premium Australian products and ingredients are at the core of the success.

Value-adding in Australia requires a diversity of skills that can utilise the available knowledge and innovations in value-added innovation outputs[xv]. The shortage of these skills is further exacerbated by the smaller nature of many F&B businesses lacking the scale and resources to develop those skills (as outlined under TOR(ii)). Upskilling programs and incentives through registered training providers could lead to more extensive adoption of the innovations which emerge from the research and development into food manufacturing sectors which, in turn, will open more market opportunities that will help deliver higher margins, higher skilled workforce and higher wages across the industry.
The Australian Government can support the F&B manufacturing industry through up-skilling and re-skilling programs, particularly through Registered Training Organisations (RTOs). The latter is particularly important for people wanting to enter the F&B industry as a second career. There are opportunities to provide more Work Integrated Learning to ensure job readiness.

Noting that food is often overlooked and 'lost' in the broader manufacturing sector, there is the opportunity for the Australian Government to further support the Jobs and Skills Council for the Food, Beverage and Pharmaceutical Industry, to raise awareness and focus on development of the food industry as a national priority.

Initiatives such as Australia's Food and Beverage Accelerator provide opportunities for greater porosity between industry and research. Integrated teams, along with the delivery of micro-credentials to industry, lead to greater opportunities to upskill professionals based in Australia.

Recommendation

Support careers in the F&B manufacturing sector through promotion to high school students; clear career progression and promotion pathways for professionals; and clear access to up-skilling and re-skilling programs particularly at the vocational level.

(vii) Mechanisms for the Australian Government to support further innovation and sustainable growth in the sector

The F&B sector employs more than 20 per cent of all manufacturing workers in Australia; 'food and beverage' is named as a National Manufacturing Priority; and 'food' is listed as a science and research priority by the Australian Research Council. However, there is no Commonwealth Minister for or Federal Department of Food – rather responsibility is diluted across multiple portfolios, which have a focus on primary produce. A single point of responsibility has the potential to move the policy and regulatory focus up the supply chain to value-added products and manufacturing.

> For example: Canada has positioned the food and beverage sector as a priority area, taking steps to emphasise the importance of the industry for the national economy including replacing the Minister of Agriculture with the Minister of Agriculture and Agri-Food in 1995. Since then canola production has more than doubled[xvi] to <20 million tonnes (Mt) per year, of which almost half (9.96Mt) is crushed. In comparison, Australia has a canola crush capacity of just 1.2Mt, or a third of the export market, which represents an opportunity for significant value-add in Australia.

Finally, food and beverage consumption is increasingly seen as an experience, rather than merely a product with a functional purpose. Discerning and wealthy consumers are increasingly seeking an experience, for example, knowing where their food has come from (traceability), its nutritional value and sustainability credentials[xvii]. If consumers do not see value, there will be no market – it is important that the sector retains a focus on customer centricity, as meeting consumer preferences will increase the value of Australia's F&B sector in the future. A supportive regulatory environment can help change behaviour, of both producers and consumers.

Australia's Food and Beverage Accelerator would encourage the Australian Government to prioritise innovation and regulation to foster growth in the F&B manufacturing industry in the future.

Recommendations

Prioritise the growth of the food and beverage manufacturing sector by establishing a food and beverage Ministry and Department in Federal Cabinet.

We welcome the recent budget announcement of a cross-portfolio review of the R&D system to strengthen and align innovation and investment support for industry. We recommend that this review include Australia's priority F&B sector so as to ensure better outcomes for industry.

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Notes

[i] https://agriculture-food-sustainability.uq.edu.au/about#:~:text=%2323%20in%20the%20world,Global%20Ranking%20of%20Academic%20Subjects

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