

09 December 2022

Committee Secretary  
House of Representatives Standing Committee on Agriculture  
PO Box 6021  
Parliament House  
Canberra ACT 2600

**RE: Submission – Inquiry into food security in Australia**

The Australian Institute of Food Science and Technology (AIFST) is a not-for-profit organisation representing food industry professionals working in all facets of the food industry including food science, food technology, engineering, sensory, new product development, innovation, regulatory, QA, nutrition, microbiology, and food safety, as well as those in leadership positions within the academic, industry and private sectors.

AIFST's mission is to advance and inspire all food sector professionals through education, collaboration, and recognition, to champion a robust, innovative, science-based Australian food industry to meet future food needs.

The AIFST welcomes the opportunity to provide this Submission to address the terms of reference of the [Inquiry into food security in Australia](#) ("the Inquiry").

Our feedback and comments are set out in the document provided with this covering letter.

The AIFST is willing to provide more information to assist the Inquiry if required and welcomes further engagement.

Thank you for the opportunity to provide this input to the Inquiry. If you require any further information, please do not hesitate to contact me.

Sincerely

**Fiona Fleming**

CEO

Australian Institute of Food Science and Technology Limited (AIFST)



## Executive Summary

The Australian Institute of Food Science and Technology (AIFST) welcomes the opportunity to contribute to the *Inquiry into Food Security in Australia*. Historically, Australia has enjoyed a high level of food security with most Australians having access to an affordable, safe, nutritious food supply catering to the diverse multicultural and lifestyle needs of the community.

The terms of reference suggest a focus of the Committee will be on agricultural production, which in Australia underpins the high levels of food security for Australians. Upon that foundation, however, stands the food manufacturing sector which transforms agricultural products and produce into the foods Australians eat every day. The AIFST requests the Inquiry ensure the issue of food security is examined in the context of the whole supply chain – from paddock to plate.

In October 2020, the AIFST was commissioned by the Page Research Centre (PRC) to deliver a paper discussing the potential to grow Australia's food manufacturing sector and proposing focus areas to support this growth.

AIFST worked with RDS Partners to deliver a report which synthesised current key reports related to the future of Australia's agricultural and food production system with a series of conversations with 26 industry leaders, scientists, and stakeholders deeply embedded in the sector.

The resulting report, *Exploring the growth potential of Australia's food manufacturing sector: a new narrative for Australia's agrifood system*, published in January 2021, provides the basis for the AIFST submission to this inquiry.

The report presented a series of recommendations arising from our review of contemporary information and from our discussions with industry experts. While priorities will change as the operating environment also inevitably changes, these recommendations point to some key activities that will help governments develop a clearer picture about what their food policy is and how they are going to support it.

The main recommendation coming out of the report was:

**The AIFST calls upon the Government to urgently work with food system stakeholders to establish an industry-led, food system strategic advisory body, chaired at the Ministerial level, to develop a National Food Plan.**



## Recommendations

**Recommendation 1:** That the Australian Government works with food system stakeholders to establish an industry-led, food system strategic advisory body, chaired at the Ministerial level, to develop a National Food Plan that:

- i) prioritises and guides activities supporting Australia's food system
- ii) identifies and drive programs so that Australia's food system is supported as a cohesive, nationally important whole, and
- iii) guides government on all aspects of policy that impacts Australia's food system.

**Recommendation 2:** That the Australian Government's work on international trade negotiations and relationships actively supports, and is actively supported by, the Australian food system.

**Recommendation 3:** That the Australian Government works with food system stakeholders to identify reforms that will make the Australian tax environment more attractive, especially to those food system companies considering capital and/or R&D investments.

**Recommendation 4:** That the Australian Government works with Australian food system stakeholders to identify reforms to simplify and streamline the regulatory environment in which the food system operates.

**Recommendation 5:** That the Australian Government works with industry to identify key domestic and export growth opportunities for the national food system, alongside ways that government can support the Australian food system to capitalise on these opportunities over the longer term.

**Recommendation 6:** That the Australian Government works with industry to mitigate ways that existing Australian policies and regulations are inhibiting the Australian food system's potential to upcycle waste and participate more fully in circular economy projects.

**Recommendation 7:** That the Australian Government substantially increases its prioritisation and support for food system capability and capacity building programs across schools, VET institutions and universities.

**Recommendation 8:** That the Australian Government recognises formal industry clusters as best practice in fostering collaboration and growth and works with food system stakeholders to identify and support meaningful food system clusters.

**Recommendation 9:** That the Australian Government works with food system stakeholders to design and deliver flexible support mechanisms and packages for small, medium, and large food system companies and collaborations.



**Recommendation 10:** That the Australian Government works with Australia’s food system stakeholders to promote to domestic and international consumers the ‘Australian-ness’, the safety, quality and provenance attributes of Australian food products (in whatever way is best for specific products) – to boost domestic sales, exports, onshoring and import replacement.

**Recommendation 11:** That the Australian Government works with Australia’s food system stakeholders to identify and mitigate key logistic infrastructure bottlenecks.



## 1. Introduction

Australia's food manufacturing sector has enormous growth opportunities. Recently, Food Innovation Australia Ltd (FIAL), amongst others, have provided strong evidence to propose a potential increase of AUD\$200 billion by 2030 ... "*which would almost triple the current size of Australia's food and agri-business sector*".

In October 2020, the AIFST was commissioned by the Page Research Centre (PRC) to deliver a paper discussing the potential to grow Australia's food manufacturing sector and proposing focus areas to support this growth.

AIFST worked with RDS Partners to deliver a report which synthesised current key reports related to the future of Australia's agricultural and food production system with a series of conversations with 26 industry leaders, scientists, and stakeholders deeply embedded in the sector.

The resulting report, *Exploring the growth potential of Australia's food manufacturing sector: a new narrative for Australia's agrifood system*, published in January 2021, provides the basis for the AIFST submission to this inquiry.

Perhaps the most important message arising from this review was the need to reimagine the way we understand and manage food production in Australia – to think about an Australian food system, not just 'agriculture', 'production' or 'manufacturing' silos.

There has been, in recent years, a plethora of reports and papers and opinion regarding the opportunities and threats facing Australian food producers – typically focussing on either side of an artificial divide between what have become known as "pre-" and "post-" farm gate domains. These reports all provide their own value, and – reassuringly – their narratives all seem to be pointing us in the same direction. But there is something missing – there does not appear to have been any great call to action.

To that end, the report presented a series of recommendations arising from our review of contemporary information and from our discussions with industry experts. While priorities will change as the operating environment also inevitably changes, these recommendations point to some key activities that will help governments develop a clearer picture about what their food policy is and how they are going to support it.

The main recommendation coming out of the report was:

***That the Australian Government works with food system stakeholders to establish an industry-led, food system strategic advisory body, chaired at the Ministerial level, to develop a National Food Plan.***

The recommended industry-led advisory body would be responsible, amongst many other things, for reviewing the recommendations in this and contemporary reports, and for developing and delivering against its own priorities.



There was a strong call for a well-coordinated and resourced national food system plan and strategy covering what, how and why we grow, harvest, store, value add, market, regulate and export our agricultural, aquacultural and wild harvest primary products and to be rid of the siloed, often piecemeal ways in which these activities are designed and delivered.

In short, we must view and integrate all these largely disparate activities under the auspices of a single, national food system. We need to decide what that system should do – what success looks like – and then design policies and effective actions to achieve that vision.

If the Australian food system is to be positioned to take advantage of the huge opportunities foreseen by our experts, and to mitigate the threats, a serious, nationally coordinated approach to food must occur.

A nationally coordinated approach to food needs to be prioritised so that it is led by industry with true commitment, collaboration, and support from the highest levels of government.

## 2. AIFST comments on Inquiry Terms of Reference

### Scope of the Inquiry

The terms of reference suggest a focus of the Committee will be on agricultural production, which in Australia underpins the high levels of food security for Australians. Upon that foundation, however, stands the food manufacturing sector which transforms agricultural products and produce into the foods Australians eat every day.

The sector turns cattle into cuts of meat and many other products, it takes wheat and manufactures breads and pastas etc. and it converts milk into a wide range of dairy products. Indeed, any comprehensive inquiry into food security in Australia must examine the role of food manufacturing and supply as the *sine qua non* to developing and implementing public policy initiatives or undertakings designed to protect and promote food security.

With this backdrop, this Submission describes the strengths of the agrifood sector which contribute to food security in Australia. In doing so the AIFST requests the Inquiry ensure the issue of food security is examined in the context of the whole supply chain – from paddock to plate.

### 2.1 National production, consumption, and export of food

The Australian food system plays a significant role in delivering safe, reliable, and nutritious food products to the Australian population.

The Australian food and agribusiness industry added AUD\$61.3 billion of industry gross value in 2018-19. This is equivalent to 3.1% of total GDP (FIAL 2020a).



The agricultural and food production system traditionally has been a strong contributor to Australia's myriad regional economies. Raw product and minimally transformed (meat) exports have made up most of Australia's exports between 1988 and 2018 (Greenville *et al.* 2020). In value terms, around two-thirds of Australian agricultural production was exported and in 2017–18 represented 19% of total merchandise exports (Greenville 2019). Australian agricultural exports were worth more than AUD\$48 billion dollars in 2018–19, accounting for 13% of Australia's overall merchandise export earnings (ABARES 2020).

Across the same period (the last decade), Australia's food exports increased by 24% to about AUD\$37 billion.<sup>1</sup> This increase was slightly less than that for total global food exports across that decade of 27%, reaching about USD\$1,500 billion in 2019, and representing about 8% of total merchandise exports.<sup>2</sup>

The 2019 figure representing about 10% of Australia's total merchandise exports and about 1.8% of global food exports. These data are largely weighted towards meat and meat preparation exports. Of Australia's top 20 commodity exports by sector in the period 2018–19, beef, meat (excluding beef) and wheat were the only foods (DFAT 2020). Food exports represented around 2% of Australia's 2019 GDP, compared to 3% and 10% in Canada (chosen as a comparative market) and Viet Nam (chosen as an emerging market), respectively.<sup>3</sup>

ABS data for 2019 suggested that Australian food imports were valued at about AUD\$18 billion, representing about 6% of Australia's total merchandise imports for that year.<sup>4</sup> Excluding takeaway and restaurant meals, imported products comprised just 11% of Australian households' total food and beverage expenditure (ABARES 2020).

Australia's top ten two-way trading partners by value in 2019–20 were China, United States, Japan, Republic of Korea, United Kingdom, Singapore, New Zealand, India, Germany, and Malaysia.<sup>5</sup> China was Australia's largest export market and import source. Over the decade leading up to 2019, China's export value for Australian agricultural produce increased by almost 300% to A\$11.8 billion. Despite the US and Europe being Australia's third and fourth largest individual export markets more than two thirds of Australian agricultural exports go to Asia (NAB 2019).

Section 2.3 of the AIFST/RDS report addresses this further.

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<sup>1</sup> Data extracted from <https://www.abs.gov.au/statistics/economy/international-trade/international-trade-goods-and-services-australia/latest-release>

<sup>2</sup> <https://data.wto.org/>

<sup>3</sup> <https://tradingeconomics.com/country-list/gdp>

<sup>4</sup> Ibid #20

<sup>5</sup> <https://www.dfat.gov.au/sites/default/files/australias-goods-services-by-top-15-partners-2019-20.pdf>



## 2.2 Access to key inputs such as fuel, fertiliser and labour, and their impact on production costs

AIFST does not have any comments in relation to this aspect of the inquiry.

## 2.3 The impact of supply chain distribution on the cost and availability of food

In the 1960s, total manufacturing accounted for almost 30% of Australia's gross domestic product. Recent data puts manufacturing at 5.6% of Australia's 2019 economy. With recent events exposing major risks in the global value chain, the notion of 'reshoring' has gained added impetus.

Reshoring, as defined by the Cambridge Dictionary, is: *"The practice of moving a business or part of a business that was based in a different country back to its original country. Reshoring is essentially the opposite of offshoring."*<sup>6</sup>

While our interviewees considered that international competition will mean that a return to large scale manufacturing on Australian shores is unlikely, the impact of COVID-19 on supply chains means that reshoring or near shoring must be considered as a strategy for Australian food manufacturers.

FIAL (2020b) have identified the following triggers for change:

- Reshoring can assist to strengthen domestic manufacturing resilience, and create local employment, developing new skills
- Trade tensions prompting companies to rethink supply chain models, and
- Supply chain disruptions due to COVID-19.

In that paper, FIAL also identified domestic challenges for Australia in relation to a move to reshoring:

- Lack of economies of scale
- Vocational education system decline
- High operational costs – for example – energy and labour
- Geographical distance from large export destinations.

The actions identified to make reshoring successful could also apply to the future success of the food system more generally.

Section 2.2 of the AIFST/RDS report addresses this further.

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<sup>6</sup> <https://dictionary.cambridge.org/dictionary/english/reshoring>





## 2.4 The potential opportunities and threats of climate change on food production in Australia.

### **The Australian Regulatory Environment**

Like many Australian industries, the food system is regulated by different levels of government and several different portfolios as set out in Table 1.

Australia's food and grocery policy and regulatory system is large and complex, involving 10 Governments and at least 20 Departments developing policy and regulations as well as numerous agencies responsible for enforcement (AFGC 2012).

Regulation touches a broad range of areas across the Australian food system, from paddock to plate—from controlling which chemicals can be applied to a crop, to setting compositional and labelling requirements for foods to food safety for both local and overseas manufactured products.

Development of food policy and regulation is hampered by different jurisdictions having different expectations and institutional arrangements. Each of these agencies imposes regulatory requirements on the food system that place a burden on the ability of business to achieve and maintain sustainable growth (AFGC 2012).



Table 1: Australia's food and grocery policy and regulatory system

AGENCY	Department	Regulations
Food Standards Australia New Zealand (FSANZ)	Australian Government Department of Health	FSANZ Act 1991 FSANZ Regulations 1994 Australia New Zealand Food Standards Code Food composition, labelling and claims
Department of Agriculture, Water and the Environment		Biosecurity Act 2015 Imported Food control Act 1992 Biosecurity Act 2015 Biosecurity Regulations 2016
Australian Industrial Chemicals Introduction Scheme (AICIS)	Australian Government Department of Health	Industrial Chemicals Act 2019 Industrial Chemicals (General) Rules 2019
Australian Pesticides and Veterinary Medicines Authority (APVMA)	Australian Government	Agricultural and Veterinary Chemicals Act 1994 Agricultural and Veterinary Chemicals (Administration) Act 1992 Agricultural and Veterinary Chemicals Products (Collection of Levy) Act 1994
Office of the Gene Technology Regulator	Australian Government Department of Health	Gene Technology Act 2000
Therapeutic Goods Administration (TGA)	Australian Government Department of Health	Complementary Medicines Therapeutic Goods Act 1989 Therapeutic Goods Regulations 1990
National Measurement Institute (NMI)	Australian Government Department of Industry, Science, Energy and Resources	National Measurement Act 1960 National Measurement Regulations 1999 National Trade Measurement Regulations 2009
The Australian Competition and Consumer Commission (ACCC)	Australian Government	Competition and Consumer Act 2010 Country of origin labelling Competition Policy Recalls
Safe Work Australia	Australian Government	Safe Work Australia Act 2008
Fair Work Australia	Australian Government	Fair Work Act 2009
National Transport Commission		
IP Australia	Australian Government	Intellectual property rights and legislation relating to patents, trademarks, registered designs, and plant breeder's rights in Australia
Department of Agriculture, Water and the Environment		Environment protection
Department of Home Affairs	Australian Government	Immigration Employment of overseas workers
Department of Agriculture, Water and the Environment	Australian Government	Water Act 2007 Waster Regulations 2008
<b>Australian States and Territories</b>	<b>State governments</b>	<b>Compliance and enforcement</b>
• ACT Health		Food Act 2001; Food Regulations 2002
• NSW Food Authority		Food Act 2003; Food Regulation 2015



AGENCY	Department	Regulations
<ul style="list-style-type: none"> <li>• NT Department of Health &amp;</li> <li>• Department of Primary Industries and Resources</li> </ul>		Food Act
<ul style="list-style-type: none"> <li>• Queensland Department of Agriculture and Fisheries; Queensland Health; Safe Food Queensland</li> </ul>		Food Act 2006; Food Regulation 2006 Food Production (Safety) Act 2000 Food Production (Safety) Regulation 2014
<ul style="list-style-type: none"> <li>• SA Health</li> </ul>		Food Act 2001; Food Regulations 2002
<ul style="list-style-type: none"> <li>• Tasmanian Department of Health and Human Services</li> <li>• Department of Primary Industries, Parks, Water and Environment</li> </ul>		Food Act 2003; Food Regulations 2012
<ul style="list-style-type: none"> <li>• Department of Health and Human Services Victoria</li> <li>• Dairy Food Safety Victoria</li> </ul>		Food Act 1980
<ul style="list-style-type: none"> <li>• Health Department of WA</li> <li>• WA Department of Agriculture and Food</li> </ul>		Food Act 2008; Food Regulations 2009



Examples of the complexity of the food and agriculture regulatory systems in Australia can be seen in:

- Figure 1: Regulation across the agricultural supply Chain (Productivity Commission 2016)
- Figure 2: Australia-New Zealand food safety regulatory system (Productivity Commission 2009).

<i>Key Australian Government involvement/regulation</i>	<i>Key stages of the agricultural cycle</i>	<i>Key state/territory government involvement/regulation</i>
<ul style="list-style-type: none"> <li>• native title</li> <li>• environmental protection               <ul style="list-style-type: none"> <li>– biodiversity conservation</li> <li>– international treaties</li> <li>– natural, cultural and world heritage</li> </ul> </li> </ul>	<p>Acquisition, leasing and preparation of land</p> 	<ul style="list-style-type: none"> <li>• land tenure and use               <ul style="list-style-type: none"> <li>– <i>land use planning</i></li> <li>– <i>building regulations</i></li> <li>– <i>pastoral leases</i></li> </ul> </li> <li>• environmental protection               <ul style="list-style-type: none"> <li>– <i>native vegetation</i></li> <li>– <i>natural and cultural heritage</i></li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• agricultural and veterinary chemical standards</li> <li>• biosecurity               <ul style="list-style-type: none"> <li>– pest surveillance</li> </ul> </li> <li>• export control</li> <li>• environmental protection               <ul style="list-style-type: none"> <li>– biodiversity conservation</li> <li>– international treaties</li> <li>– natural, cultural and world heritage</li> </ul> </li> <li>• national land transport regulatory frameworks</li> <li>• water access and regulation</li> <li>• welfare of exported animals</li> </ul>	<p>Agricultural production and on-farm processing</p>   	<ul style="list-style-type: none"> <li>• agricultural and veterinary chemicals</li> <li>• animal welfare</li> <li>• biosecurity               <ul style="list-style-type: none"> <li>– <i>pest and disease control and response</i></li> </ul> </li> <li>• food certification for export</li> <li>• <i>building regulations</i></li> <li>• genetically modified crops</li> <li>• land use planning</li> <li>• livestock regulation and identification</li> <li>• transport               <ul style="list-style-type: none"> <li>– <i>road access</i></li> <li>– <i>transport and use of machinery</i></li> <li>– <i>vehicle licensing</i></li> </ul> </li> <li>• water access and regulation</li> </ul>
<ul style="list-style-type: none"> <li>• biosecurity               <ul style="list-style-type: none"> <li>– pest surveillance</li> </ul> </li> <li>• export control</li> <li>• national land transport regulatory frameworks</li> <li>• shipping and maritime safety laws</li> <li>• welfare of exported animals</li> </ul>	<p>Transport and logistics</p> 	<ul style="list-style-type: none"> <li>• transport regulations               <ul style="list-style-type: none"> <li>– <i>road access</i></li> <li>– <i>transport and use of machinery</i></li> <li>– <i>vehicle and machinery licensing</i></li> </ul> </li> <li>• animal welfare</li> <li>• livestock regulation and identification</li> </ul>
<ul style="list-style-type: none"> <li>• biosecurity               <ul style="list-style-type: none"> <li>– pest surveillance</li> </ul> </li> <li>• export control</li> <li>• food labelling</li> <li>• food standards</li> <li>• welfare of exported animals</li> </ul>	<p>Marketing</p> 	<ul style="list-style-type: none"> <li>• <i>food safety</i></li> <li>• <i>food packaging</i></li> <li>• biosecurity               <ul style="list-style-type: none"> <li>– <i>pest and disease control and response</i></li> </ul> </li> <li>• food certification for export</li> <li>• <i>statutory marketing</i></li> </ul>

**A** *Italics* denote local government responsibility in at least one jurisdiction. **B** There is also a range of issues and regulations that affect all stages of the agricultural supply chain. Cross-cutting issues include investment opportunities and access to capital, as well as regulations relating to competition, foreign investment, immigration, industrial relations, work health and safety, and taxation.

Figure 1: Regulation across the agricultural supply Chain (Productivity Commission 2016)

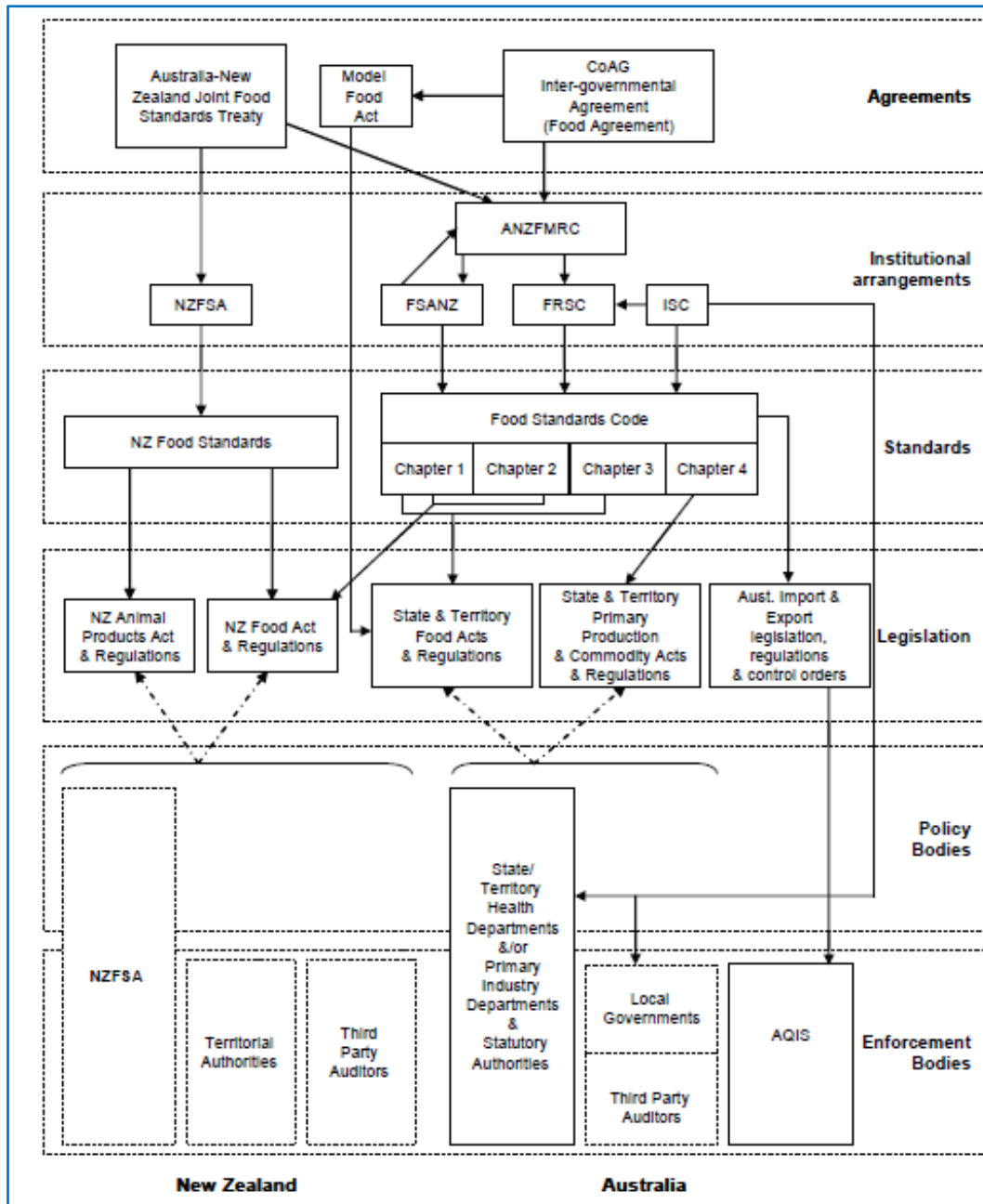


Figure 2: Australia-New Zealand food safety regulatory system (Productivity Commission 2009)

The Productivity Commission (2009) noted that Australia’s regulatory and institutional structure is complex – as shown in Figure 22 for the food safety regulatory system. While this information is from 2009, it is still relevant.



## Education, research, and skills

The food sector is regarded as a critical source of economic growth and job creation in Australia. Strategic investment in research capacity, innovation, infrastructure, and skilled workforce have been identified as crucial to strengthening the productivity and competitiveness of the food industry and capturing trade opportunities in Asia (DAFF 2013).

### Education

In the context of this paper, the scope of education relates vocational education and training (VET), apprenticeships and traineeships and higher education from undergraduate to post graduate levels.

The majority of employment growth over the past five years has been in occupations that generally require post-school qualifications – either VET or higher education. In 2017 VET enrolments were 3.4 million and 1.08 million domestic students enrolled in higher education (DJSB 2019).

In 2016, 9.6 million Australian adults held a post-secondary qualification – 56% VET and 44% university. Just over one quarter had a Science, Technology, Engineering and Maths (STEM) qualification. The definition of STEM qualifications used by the Office of Chief Scientist encompasses the fields of:

- Natural and Physical Sciences
- Information Technology
- Engineering and Related Technologies
- Agriculture, Environment and Related Studies.

Each of these areas has a critical role to play in developing the future of manufacturing in Australia and contribution to the growth of Australia's food system.

Australia's STEM Workforce report (Leigh *et al.* 2020), provides a comprehensive overview of people with STEM qualifications in Australia.

### Agriculture

In 2016 there were 32,418 people with university qualifications in Agricultural studies, an increase of 4,200 since 2011.

### Other Natural and Physical Sciences (Other NPS)

The 2020 report included a section on the field of Other Natural and Physical Sciences (Other NPS) which include food science and biotechnology. In 2016, there were 42,311 people in Australia with university qualifications in ONPS fields with 25% of these food science and biotechnology graduates.



## Research

Research and development expenditure by government and business in Australia as a percentage of GDP was 1.79% (2017-18)<sup>7</sup> compared to the OECD average of 2.4%.<sup>8</sup> Further, in the 2015 Global Innovation Index, Australia ranked 72nd (out of 141 countries) in “innovation efficiency” – the ratio of innovation output (e.g., commercial outcomes) to innovation input (e.g., R&D spending) (Cornell University 2015). When compared against OECD peers, Australia’s innovation efficiency rank is 30 out of 34.

In 2018-19 total business expenditure on research and development was AUD\$797 million of which AUD\$490 million was in food and beverage manufacturing and AUD\$307 million was in agriculture (FIAL 2020b).

The Australian Government provides support for the research workforce through various mechanisms: grant funding and tax transfers to industry, paying the salaries of researchers in government agencies and departments, and providing both grant funding through research councils and block funding to universities. In 2019–20, this was budgeted to be a total of \$9.6 billion – \$2.1 billion to industry, \$2.1 billion for Australian Government research activities (including CSIRO, Australian Institute of Marine Science, Australian Nuclear Science and Technology Organisation and Defence), \$3.6 billion to universities, and \$1.8 billion to medical research institutes and other sectors like agriculture and energy.<sup>9</sup>

A report from the Australian Academy of Science Rapid Research Information Forum on the impact of the pandemic on Australia’s research workforce (Larkins *et al.* 2020) found that Australia’s research workforce will be severely impacted by the pandemic and the effects are likely to be felt for an extended period. Industry sectors may experience a reduced capacity to innovate given that universities perform approximately 43% of all applied research in Australia. A decline in innovation may limit economic growth by slowing the development of new technology, skills, and efficiency gains in service and production processes.

## Skills

The skills of those employed in Australia’s food system are a key enabler of industry growth. Businesses need the right people to create new products and services and business models that will increase exports and productivity.

Securing enough people with the right skills will be a growing challenge to 2025. The food industry needs to expand the size and skills base of its workforce or, if this is not possible, adapt to a smaller labour pool (DAFF 2013).

Over the past two decades, there has been a shift away from medium-skill jobs towards higher-skill jobs. This is potentially due to the increasing use of technology leading to

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<sup>7</sup> <https://www.abs.gov.au/statistics/industry/technology-and-innovation/research-and-experimental-development-businesses-australia/latest-release>

<sup>8</sup> <https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm>

<sup>9</sup> <https://www.industry.gov.au/data-and-publications/science-research-and-innovation-sri-budget-tables>



automation, creating the need for workers to develop, use or supervise new technologies – for example – use of 3D printing.<sup>10</sup>

**3D printing** is a technique used for the manufacture of three-dimensional objects with high accuracy and quality finishing in their dimensions. The technique finds applications in industries, including aviation, automotive, packaging, construction, pharmaceuticals, and food. In the food sector, 3D printing is widely investigated across areas, such as customized food designs, personalized and digitalized nutrition, simplified supply chain, and broadened source of available food material.

Section 2.5 of the AIFST/RDS report addresses this further.

### Food Science skills requirements

AIFST conducted an industry survey in July 2022 to gain an understanding of the core competencies the food industry values in new food science and technology graduates from Australian universities and TAFE. The survey was based on the graduate criteria identified by the Institute of Food Technologists. A summary of the findings is provided with this submission. A full report will be available in January 2023.

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<sup>10</sup> <https://www.futurebridge.com/industry/perspectives-food-nutrition/3d-printing-and-its-application-insights-in-food-industr/#:~:text=In%20the%20food%20sector%2C%203D,source%20of%20available%20food%20material.&text=Currently%2C%203D%20food%20printers%20make,%2C%20lasers%2C%20and%20robotic%20arms.>





### 3. Actionable steps to strengthen food security in Australia

Addressing societal issues such as food security requires both *technology innovation* and *policy innovation* alike.

The AIFST/RDS Partners paper set out a series of recommendations arising from our review of contemporary information and from our discussions with industry experts.

While priorities will change as the operating environment also inevitably changes, these recommendations point to some key activities that will help governments develop a clearer picture about what their food policy is and how they are going to support it.

The recommendations are as follows.

**Recommendation 1:** That the Australian Government works with food system stakeholders to establish an industry-led, food system strategic advisory body, chaired at the Ministerial level, to develop a National Food Plan that:

- i) prioritises and guides activities supporting Australia's food system
- ii) identifies and drive programs so that Australia's food system is supported as a cohesive, nationally important whole, and
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**Recommendation 11:** That the Australian Government works with Australia's food system stakeholders to identify and mitigate key logistic infrastructure bottlenecks.



## References

ABARES (2020). *Australian food security and the Covid-19 pandemic*. Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

<https://doi.org/10.25814/5e953830cb003>

AFGC (2012). *Submission to the Federal coalition deregulation taskforce in response to reducing red tape and unnecessary regulation*. Australian Food and Grocery Council, Canberra.

AIFST and RDS Partners (2021). *Exploring the growth potential of Australia's food manufacturing sector: a new narrative for Australia's agrifood system*. Page Research Centre, Canberra.

DAFF (2013). *National Food Plan: Our food future*. Department of Agriculture, Fisheries and Forestry, Canberra.

<http://www.ftaus.com.au/wp-content/uploads/2013/06/JUNE-national-food-plan-white-paper1.pdf>

DFAT (2020). *Trade and investment at a glance 2020*. Department of Foreign Affairs and Trade, Canberra.

<https://www.dfat.gov.au/about-us/publications/trade-investment/trade-at-a-glance/Pages/trade-at-a-glance>

FIAL (2020a). *Sector Competitiveness Plan*. Food Innovation Australia Ltd.

<https://www.fial.com.au/about/Sector-Competitiveness-Plan-2020>

FIAL (2020b). *Capturing the prize: The A\$200 billion opportunity in 2030 for the Australian food and agribusiness sector*. Food Innovation Australia Ltd.

<https://www.fial.com.au/sharing-knowledge/capturing-the-prize>

Garland, M. AIFST 2022 Food Science Graduate – Industry Survey. *food australia*, Volume 74, issue 4. October – December 2022, page 5.

Greenville, J. (2019). *Australia's place in global agriculture and food value chains*. Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

<https://doi.org/10.25814/5d799a58db665>

Greenville, J., Duver, A. and Bruce, M. (2020). *Analysis of value creation in Australia through agricultural exports: Playing to advantages*. Australian Bureau of Agricultural and Resource Economics and Sciences, Canberra.

[https://daff.ent.sirsidynix.net.au/client/en\\_AU/search/asset/1031181/0](https://daff.ent.sirsidynix.net.au/client/en_AU/search/asset/1031181/0)



NAB (2019). *Australian agricultural exports 2019: State of play*. National Australia Bank, Sydney.

<https://business.nab.com.au/australian-agricultural-exports-2019-state-of-play-34607/>

Productivity Commission (2009). *Performance Benchmarking of Australian and New Zealand Business Regulation: Food Safety*. Productivity Commission, Canberra.

<https://www.pc.gov.au/inquiries/completed/regulation-benchmarking-food-safety/report/food-safety-report.pdf>

Productivity Commission (2016). *Regulation of Australian Agriculture*. Productivity Commission, Canberra.

<https://www.pc.gov.au/inquiries/completed/agriculture/report/agriculture.pdf>