

PACIFIC LABOUR FACILITY

Detailed Industry Assessment

Food Product Manufacturing

May 2021



Executive summary

This detailed industry assessment (DIA) of Australia's food product manufacturing sector has identified no major near-term opportunity for the Pacific Labour Facility (PLF) to supply migrant labour from the Pacific into this sector. Small-scale opportunities in specific product markets are likely present, however, and could be engaged on an opportunistic basis. Broad industry engagement is not recommended.

The economic outlook for the wider manufacturing sector in Australia, and employment growth within that sector, is flat. The outlook for the food product manufacturing subsector is similarly flat. Over the past 10 years the gross value-added of the food product manufacturing subsector has grown at 3.1% a year, lower than both the manufacturing sector and the economy as a whole. The Australian Government projects a slight net decline in the demand for labour in manufacturing over the next 5 years. The overall Australian economy will generate 991,600 new jobs, an increase of 7.6%, over the next 5 years out to 2025, with 17 of the 19 industries showing net job gains. But manufacturing is one of the 2 industries with estimated net job losses over the next 5 years. While the economy is expected to grow in net terms, automation in manufacturing will place downward pressure on the demand for labour in that sector.

There was no formalised external consultation process undertaken as part of the preparation of the DIA. However, there was direct consultation with key peak entities, such as the Australian Food and Grocery Council, and several individuals in the industry. These discussions confirmed the results of the analysis. That is, while there may be small pockets of modest labour supply gaps, there was no industry-wide labour shortage. The sector was in a long-term automation journey. The 2020 analysis by Price Waterhouse Coopers, as part of its labour market assessment (LMA), likewise concluded that the only opportunities in this sector would likely be small, opportunistic and in specific product markets.

Some product components of the food product manufacturing subsector are contracting. These include processed vegetables (due to low-cost imports and preference changes), fruit juices (due to avoidance of high sugar content), and processed cheese (due to a move to specialty products). Conversely, some specific product markets are expanding and may, in the future, offer minor placement opportunities for the PLF. These include craft beer, marinated meat, health foods and wine. It's important to note that 2 of the components of food product manufacturing sector – meat and meat products, and other food product – have the highest expected growth of demand for labour through until 2025, albeit in an overall flat sector.

In March 2021, the Australian Government declared the industry one of Australia's 6 manufacturing priorities and launched the Food and Beverage National Manufacturing Priority Road Map. The vision of the roadmap is to double the value of Australia's food and beverage manufacturing by 2030 through a focus on 3 key growth opportunities:

1. Smart food and beverage manufacturing (ie automation)
2. Innovative foods and beverages (eg products for health and wellbeing)
3. Food safety, origin and traceability systems

The strong focus on automation, coupled with the fact that much of production occurs in urban and peri-urban areas, means here are no major worker placement opportunities for PLF. Smaller-scale

labour shortages, however, likely exist in parts of regional Australia and can be engaged on an opportunistic basis.

Industry selection tool

Deal-breaker criteria		
Has a detailed industry assessment for the industry been completed? If yes, does it recommend PLS engagement with the industry?	No	- No, industry engagement is not recommended.
Does the industry exhibit characteristics consistent with PLF's program goals?	No	- The industry has a declining workforce, is increasing the use of automation, has a high proportion of operations in urban locations. No significant labour gap has been identified.
Is a focus on this industry consistent with ambitions for PLF's scalability and sustainability?	No	- Excluding meat and bakeries, there are no significant workforce sizes which would translate to economies of scale for the PLS.
Does the PLF risk assessment on this industry indicate that risks are manageable/treatable?	Yes	- Generally a low-risk industry.
Essential criteria		
Are there indications that PLF workers can be placed in this industry with relative efficiency?	No	- No, see above. Although there may be small pockets of demand in certain sub-segments, there is no evidence of larger-scale placement opportunities.
Has evidence of a growth trajectory for this industry been confirmed?	No	- Negative or flat growth overall, however some subsectors are experiencing modest growth in production.
Has evidence of an enduring industry labour shortage been confirmed?	No	- The PWC LMA indicated that there is no evidence to confirm a labour shortage. Our consultations with peak bodies and sectors actors found the same result.
Does the evidence demonstrate that demand for workers exists in PLF areas of operations or appropriate regional parts of Australia?	Limited	- Findings suggest that small pockets of demand are in urban or peri-urban areas, rather than regional and remote Australia.

Is the industry considered robust and secure and relatively shock proof?	Yes	<ul style="list-style-type: none"> - The industry is relatively shock proof, as many of the products are staples. Many products are also consumed more during times of shock e.g., beer and processed food.
Does the industry provide opportunities for women or vulnerable groups and is supportive of GEDSI goals?	Yes	<ul style="list-style-type: none"> - Relatively high proportion of women in workforce, in some subsectors.
Have impacts on Indigenous Australians been properly considered?	Limited	<ul style="list-style-type: none"> - Limited information on Indigenous ownership and workers is available.
Is there evidence of an adequate array of potential suitable approved employers?	-No	<ul style="list-style-type: none"> - Many employers are small.
Preferential criteria		
Have welfare issues and risks been assessed as manageable?	Yes	<ul style="list-style-type: none"> - Generally, a low-risk industry, and few if any operations are considered remote.
Do PLF workers have, or can they acquire, necessary skills and experience required by this industry?	Yes	<ul style="list-style-type: none"> - The industry is small in the Pacific, but relevant skills are easy to learn. PNG may be the exception and it has some industry and experienced workers.
Have any potential worker cultural issues been considered?	No	<ul style="list-style-type: none"> - Does not appear to be, however not fully explored.
Is the industry supportive of DFAT's strategic goals for the Pacific?	Partially	<ul style="list-style-type: none"> - Improved food manufacturing in the Pacific would improve caloric intake and health outcomes.
Has some initial industry consultation occurred to help ground truth the DIA conclusions?	Yes	<ul style="list-style-type: none"> - Including with the Australian Food and Grocery Council.
Do repatriated skills to the Pacific support greater economic integration with Australia and New Zealand?	No	<ul style="list-style-type: none"> - Limited job opportunities for workers upon return to the Pacific.

Does the industry exhibit characteristics that will enable transfers of applicable skills back to PLF countries?	No	- Limited job opportunities for workers upon return to the Pacific.
Have issues and risks related to COVID-19 been considered and is mitigation possible?	Yes	- The industry has been relatively isolated from the impacts of COVID-19, noting the reduced demand for certain products due to reduced tourism.
Is the lead-in time to build relationships within the industry and place workers considered reasonable?	Yes	- Entry into the industry should be relatively straightforward in terms of barriers, however there are few major employers with more than 200 workers.

Recommendations

This detailed industry assessment of Australia’s food product manufacturing sector has identified no major near-term opportunity for the PLF to supply migrant labour from the Pacific into this sector. Minor opportunities in specific sub-sectors are likely present.

It is recommended that the PLF:

- not divert PLF resources to this sector currently
- monitor the progress and growth of the food product manufacturing sector in Australia and regularly assess any observable changes in the labour supply.
- remain alert to opportunities along the supply chain which may suit existing or future PLF migrant workers while engaging with related sectors such as aquaculture, agriculture, hospitality and meat processing.

There are certain trends emerging in Australia’s food product manufacturing sector that may have relevance or benefits to the Pacific, either for job generation, food source diversification or improved health outcomes. In Australia, there is faster-than-average growth in the production of specialised health and organic foods with low processing levels. These products tend to attract premium prices and lessen the risk of diabetes. So PLF might, over time, choose to consider some of these product markets for worker placement if there is an identifiable development dividend in the Pacific.

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Glossary of terms, abbreviations and acronyms

ABS	Australian Bureau of Statistics
ANZSCO	Australian and New Zealand Standard Classification of Occupations
ANZSIC	Australian and New Zealand Standard Industrial Classification
APTC	Australia Pacific Training Coalition
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DIA	Detailed industry assessment
FTE	Full-time equivalent
GDP	Gross domestic product
GVA	Gross value added
IRC	Industry Reference Committee
IVI	Internet vacancy index
OECD	Organization for Economic Co-Operation and Development
PC	Productivity Commission
PIA	Preliminary industry assessment

1. Introduction

1.1 Industry assessments program

To build its evidence base for programming decisions, the PLF has initiated an industry assessments program to better understand the nature of the demand in Australia for Pacific migrant labour. This is an ongoing 2-step program to both assess new industries and re-assess previously considered industries as and when conditions change.

The first step of the program is to conduct a preliminary industry assessment (PIA). This is a brief and rapid assessment to determine whether a more detailed analysis is warranted.

The second step is a detailed industry assessment (DIA) to assess the industry in greater depth, including both the domestic economic characteristics of the industry and its appropriateness for the PLF, PLS workers, and Pacific Island economies.

The industry assessments program is undertaken using the Australian Bureau of Statistics (ABS) industry classification system. The Food Product Manufacturing subdivision is reported by the ABS via Division C of the ABS Industry Classification System (ANZSIC) detailed below:

- Division C: Manufacturing
- Subdivision 11: Food product manufacturing
 - Group 111: Meat and meat product manufacturing (not included in this DIA)
 - Group 112: Seafood processing (not included in this DIA)
 - Group 113: Dairy product manufacturing
 - Group 114: Fruit and vegetable processing
 - Group 115: Oil and fat manufacturing
 - Group 116: Grain mill and cereal product manufacturing
 - Group 117: Bakery product manufacturing
 - Group 118: Sugar and confectionary manufacturing
 - Group 119: Other food product manufacturing

1.2 Methodology

This DIA was preceded by a PIA, completed in July 2020. As opposed to the results of some of the other PIAs, the PIA on food product manufacturing was not enthusiastic about the prospects of the sector for the PLF. It concluded that:

The data suggests that the current state and outlook for the overall manufacturing industry basis is negative. Four of the 5 individual subdivisions of product manufacturing (petroleum, coal, chemical and rubber products; metal products; machinery and equipment; and other manufacturing) have declined. But the prospects for the food, beverage and tobacco manufacturing subdivision were positive. The labour force statistics showed a substantial contraction in employment in the industry over the past decade. Thus, there is little statistical evidence to indicate a general increase in demand for labour in the food product manufacturing industry in the near future. However, there is evidence of pockets of demand on the ground and so it may be that, combined with labour immobility issues, there are some regions across the country where demand for Pacific migrant labour is favourable,

including in specific groups and classes within this sub-division such as poultry processing. Accordingly, a detailed industry assessment is recommended when priorities and resources permit.

A DIA on food product manufacturing sector was later requested. The PIA solely focused on examining readily accessible quantitative evidence and relied on ABS data, Australian Government industry forecast data, and internal regression analysis. This DIA has substantially expanded this evidence base and incorporated additional quantitative data including the PLF’s Labour Market Assessment and external third-party data sources as well as drawn on a wide range of qualitative information sources and internal PLF knowledge of the sector.

There was a strong focus on analysis of the data. The DIA analysis has gone beyond the assessment of the numerical scope of the labour market shortage to better understand if that labour supply gap was addressable by the PLF and its partners.

There was no formalised external consultation process undertaken as part of the preparation of the DIA. However, we consulted directly with key peak entities such as the Australian Food and Grocery Council and several individuals in the industry. These discussions confirmed the results of the analysis. That is that while there may be small pockets of labour supply gaps, there was no industry-wide labour shortage and that the sector was amid a long-term automation journey.

2. Industry overview

Section summary	
Food product manufacturing is a large component of the Australian economy	<ul style="list-style-type: none"> - Food and beverage manufacturing is a major industry within Australia, providing \$20 billion in exports every year. - However, growth within the industry has been slow, with an aggregate 1% growth over the last decade.
Changing consumer preferences, both domestically and within our export markets, have significant impacts on industry composition	<ul style="list-style-type: none"> - The industry classification is diverse, including fruits and vegetables, meat, confectionary, and alcoholic and non-alcoholic beverages. - Major trends such as changing consumer behaviour, both domestically and within our export markets, have changed the industry landscape. The more traditional sectors such as processed vegetables or fruit juices have experienced a decline. Conversely, the newer subsectors such as marinated meat and wine have experienced solid growth.
The prevalence of automation is set to increase	<ul style="list-style-type: none"> - The industry is heavily automated, with continued adoption of automated processes expected to continue for the foreseeable future. This has significant implications for the industry demand for labour.

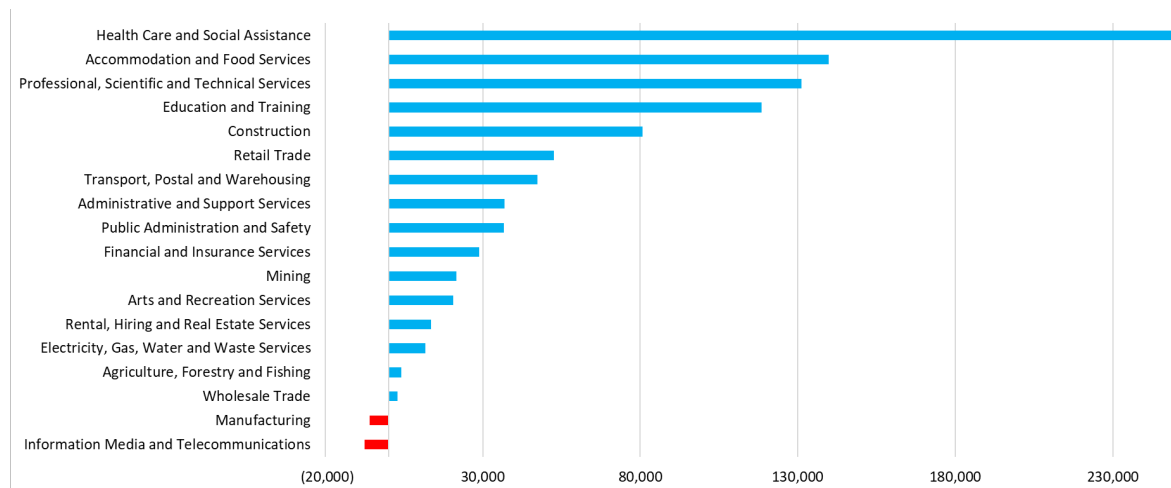
2.1 State of the food product manufacturing industry

Over the past decade, the overall manufacturing sector in Australia has contracted, with annual gross value added (GVA) declining by around \$7.4 billion from March 2010 to March 2020. However,

the food manufacturing industry has performed better than the manufacturing sector as a whole. It expanded over the decade from 2010-2020, albeit slowly, with annual rate of GVA growth of around 1% for the past 10 years.

By way of update, the latest Australian Government data from the labour market information portal has projections for employment growth out to 2025, and estimates that the overall Australian economy will generate 991,600 new jobs, an increase of 7.6%, over the next 5 years. Seventeen of the 19 industries show net job gains, but manufacturing (along with the IT sector) is one of the 2 with estimated net job losses over the next 5 years.

Figure 1: Australian Government employment projections by industry, 2020-2025



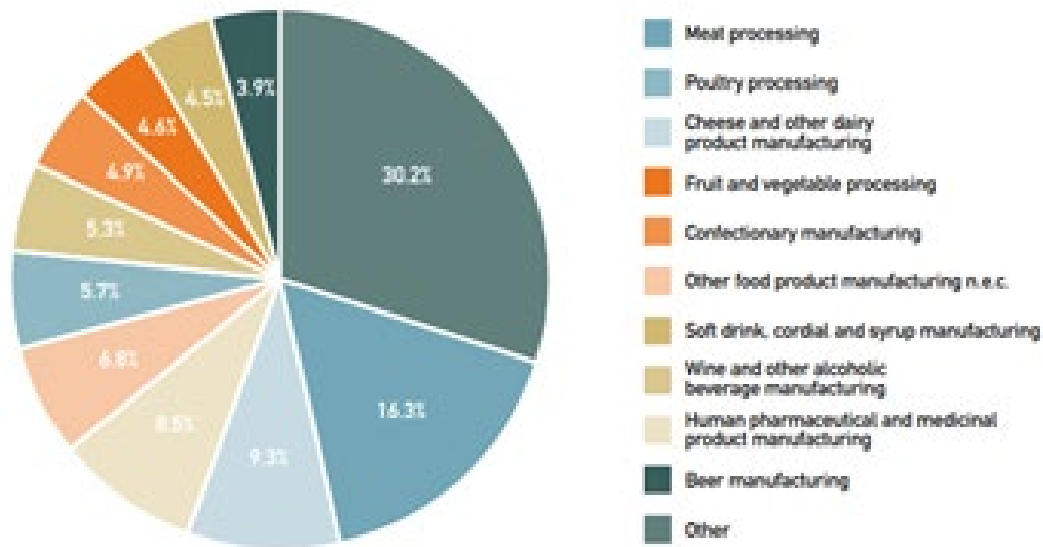
Likewise, within the wider manufacturing sector, there are substantial variations in the employment outlook. The food product manufacturing sector is one of those sectors within the wider manufacturing sector where a decline in employment is predicted (1,800 jobs over the next 5 years).

The food and beverage manufacturing industries provide almost A\$20 billion in exports each year. According to Austrade, Australia has a reputation for supplying clean and natural products with low chemical residues. In addition, Australia offers a diverse range of produce due to large climatic differences across the continent.¹ The sector is characterised by many small- and medium-sized producers who are producing for local or niche markets, and a smaller number of large producers, often multinational companies operating globally.² The industry is broad and captures many different activities along the supply chain, from the first state of processing to the final step before consumption. The pie chart below shows turnover by subsector and provides an indication of the types of subsectors covered within the industry.

¹ <https://www.austrade.gov.au/International/Buy/Australian-industry-capabilities/Food-and-Beverage>

² <https://nationalindustryinsights.aisc.net.au/industries/food-and-pharmaceutical-production/food-beverage-and-pharmaceutical-product-manufacturing>

Figure 2: Food product manufacturing turnover share by subsector³



Growth of traditional versus newer subsectors

The overall 1% growth in the sector hides the variation between subsectors. The more traditional food manufacturing subsectors tend to be flat or declining, whereas other less traditional subsectors are experiencing growth.

The subsectors experiencing declining or negative growth trends are those such as processed vegetables, fruit juices and processed cheese.

- Processed vegetables: In decline due to low-cost imports and preference of health-conscious consumers for fresh vegetables rather than tinned.
- Fruit juice manufacturing: Limited growth due to competition from private labels and other beverages. Consumers avoiding high sugar content juices.
- Processed cheese: Shift away from processed cheese such as cheddar as consumers lean towards higher value, specialty cheeses, such as feta and goat's cheese.

Newer subsectors, including craft beer, marinated meat and wine manufacturing, are growing faster. China's recent decision to impose high tariffs on Australian wine may affect growth in this sector, as China is the second largest export market after the US).

Outlook 2021 onwards

There are a number of trends identified as important directions for the food manufacturing sector to continue to grow in future.

- Automation: AISC and IBISWorld note a trend towards increasing automation in the industry and increased productivity.

³ Australian Food and Grocery Council, State of the Industry Report 2019, <https://www.afgc.org.au/industry-resources/state-of-the-industry>

- Self-sufficiency: COVID-19 may push governments to place more focus on increasing food self-sufficiency and lead consumers to prefer locally grown and produced products. In a recent report ABARES found that Australia is one of the most food secure nations in the world. ⁴
- Functional foods and immunity boosters: foods that serve a “double purpose” by boosting health and immunity are increasingly in demand. For similar reason, plant-based foods are popular as consumers are increasingly demanding healthier products.
- Indigenous products: health-conscious consumers are driving demand for indigenous plant and animal products known as “bush foods”.⁵

Figure 3: Innova Market Insights suggest the following top 5 trends for 2021⁶:

Trend	Description
Transparency triumphs	Consumers are interested in learning more about where their food comes from - technologies such as invisible bar-codes can assist to meet consumer ethical, clean label and environmental demands.
Plant-forward	The continued and accelerated demand for plant-based alternatives driven by health, diet variety, sustainability, and taste.
Tailored to fit	Personalized nutrition meeting a demand for products that meet consumer needs and beliefs.
New omnichannel eating	Restaurant delivery and branded products
In tune with immune	The impact of COVID-19 has led consumers to focus on their immune health. Immunity boosting ingredient will be key in 2021.

A CSIRO pre-COVID roadmap for the sector selected 5 key “growth enablers” for food manufacturing:

- traceability and provenance
- food safety and biosecurity
- market intelligence and access
- collaboration and knowledge sharing
- skills.

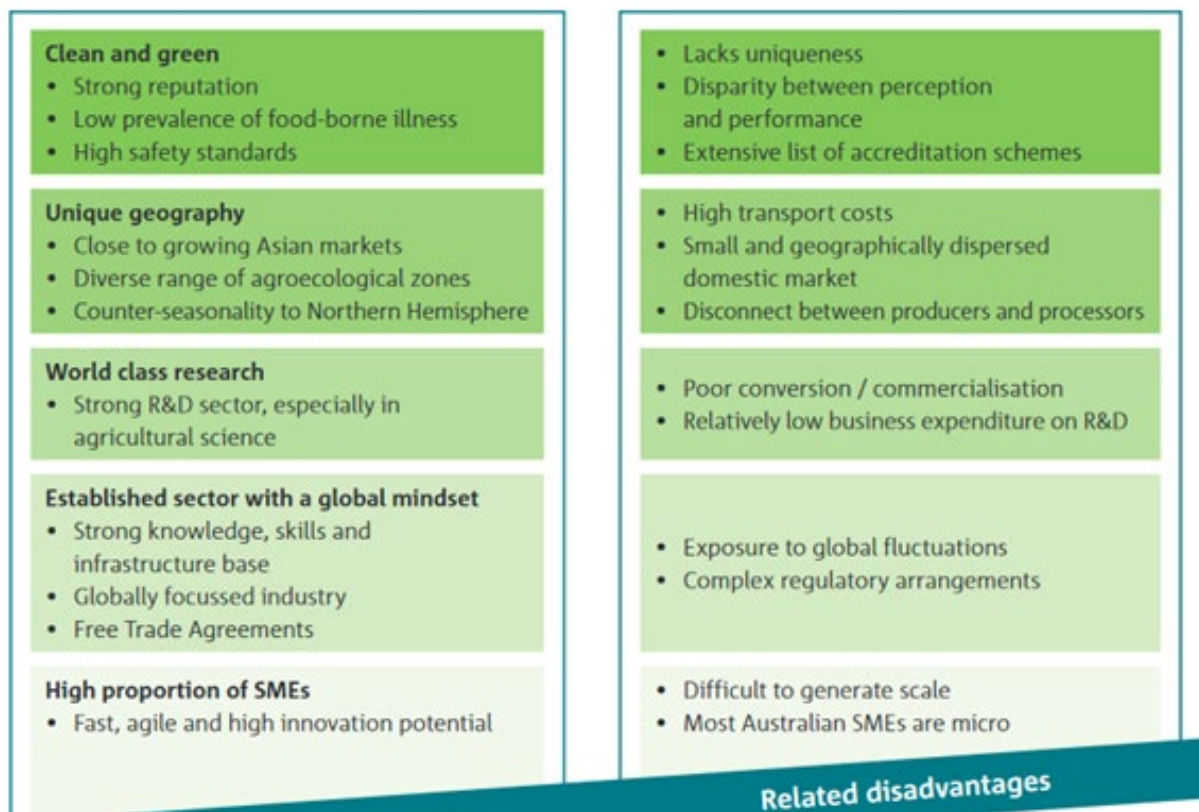
These “growth enablers” appear to remain relevant post-COVID, with an increased focus on health. The CSIRO identifies advantages and disadvantages for the food sector in Australia in growing in the future:

⁴ <https://www.agriculture.gov.au/abares/products/insights/australian-food-security-and-COVID-19>

⁵<https://nationalindustryinsights.aisc.net.au/industries/food-and-pharmaceutical-production/food-beverage-and-pharmaceutical-product-manufacturing>

⁶ as summarised by PRC (2020); see <https://www.foodingredientsfirst.com/news/transparency-triumphs-in-innova-market-insights-top-trends-for-2021.html>

Figure 4: CSIRO roadmap for growth⁷



Impact of COVID-19 on food manufacturing in more detail

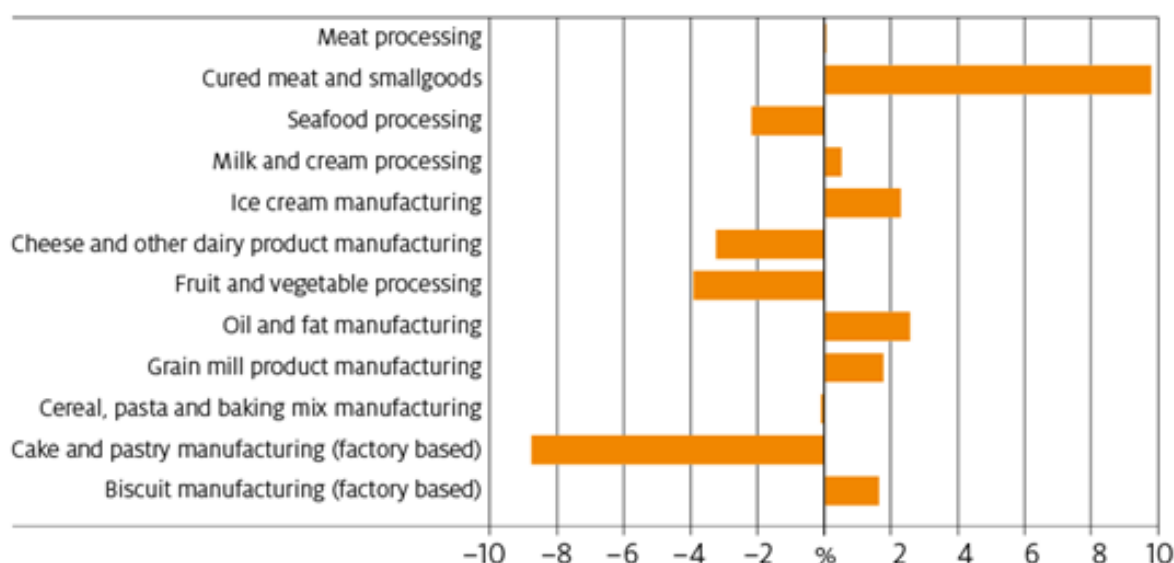
COVID-19 lockdowns during 2020, as well as the ongoing drought, imposed challenges on food manufacturers. ABARES notes that prices for cakes and pastries fell noticeably over 2020 because demand from cafes and restaurants dwindled due to lockdowns. Fruit and vegetable processors also saw output prices fall as better seasons after drought resulted in higher production and lower prices. Input prices for vegetables were flat, but fruit and nut prices for manufacturing rose during the first half of 2020. There have also been challenges faced by some producers in securing harvest labour, which so far has not had a significant impact on prices for manufacturers and consumers.⁸

Spending on food rose during 2020 in Australia, as shown below. Expenditure associated with travelling and social gatherings formed a significant proportion of household spending before the pandemic. In Australia, and some other advanced economies, this was redirected to precautionary savings, grocery purchases and household goods. In some countries, overall food spending has increased as consumers spend more on food retailing than they previously did on eating out. With the food services sector in many countries heavily affected by lockdowns, this has shifted the composition of food consumption in restaurants to more easily prepared food consumed at home.

⁷ <https://www.fial.com.au/blogs/post/csiro-futures-roadmap-for-growth>

⁸ <https://www.agriculture.gov.au/abares/research-topics/agricultural-outlook/agriculture-overview>

Figure 5: Annual price change for output of food manufacturing industries, 2020⁹



In line with the ABARES report, KPMG notes that there has been an increase in home-cooking, as well as ready-made or convenience meal consumption and increased loyalty towards brands. There has also been an equal and opposite trend towards ‘5-star’ chef-style cooking.¹⁰

The consensus in the literature appears to be that there are promising growth prospects for the food manufacturing sector if it pays attention to the trends within the sector - including the increased focus on food security and safety - and immunity boosting, plant-based foods, and use technology to increase efficiency of manufacturing.

3. Economic assessment

Section summary	
Industry value added has grown modestly over the last decade	- The industry value added of food product manufacturing has grown modestly at 3.1%, slower than the national average, however this growth has been uneven.
Location of business registrations largely follows population trends	- Unlike the primary industries that feed into manufacturing, many manufacturing facilities are located closer to major population centres. Thus there may be a relatively high proportion of operators in Sydney or Melbourne that are ineligible to join.
Automation has subdued the demand for labour and kept employment levels flat	- The industry is highly automated and has become increasingly so over the past decade - subduing the demand for labour. - Only meat products, other food products, and sugar and confectionary are projected to have increased employment

⁹ <https://www.agriculture.gov.au/abares/research-topics/agricultural-outlook/agriculture-overview>

¹⁰ <https://home.kpmg/au/en/home/insights/2020/06/post-covid-19-australia-food-agribusiness-sector-outlook.html>

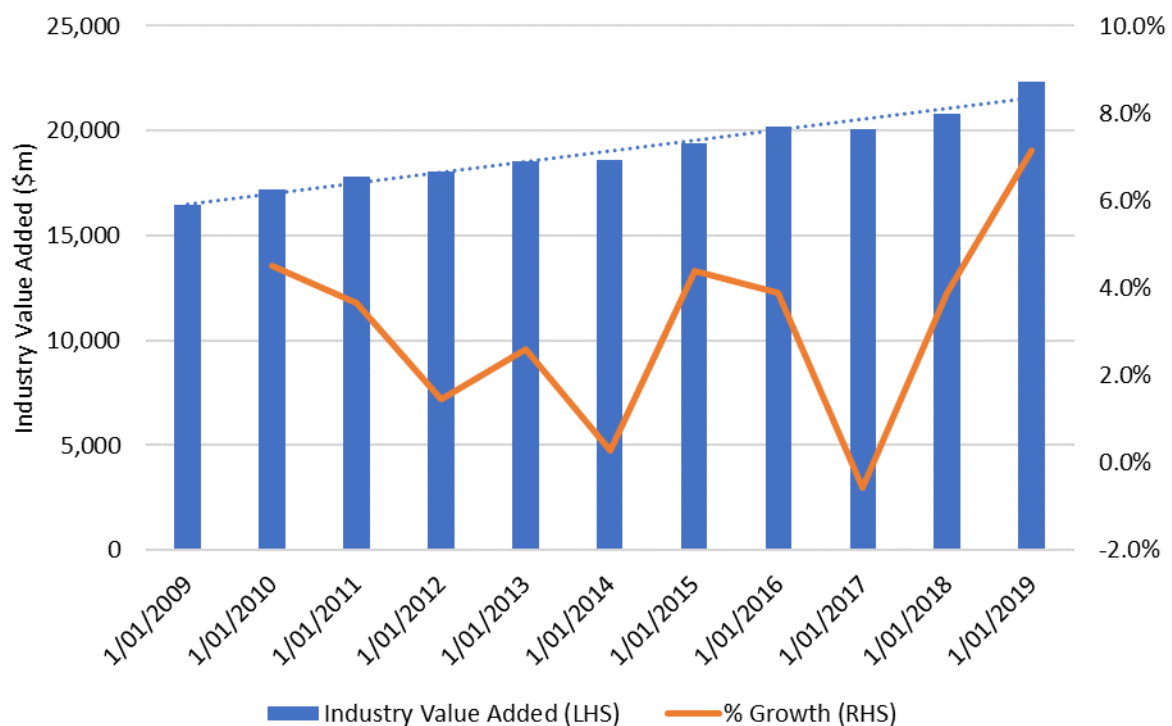
	levels. All other subsectors will have reduced demands for labour – particularly bakery, dairy and cereal products.
Both skill requirements and average earnings are low	<ul style="list-style-type: none"> - Two-thirds of workers have no formal qualifications beyond high school, and entry requirements into most positions are modest. - The average earnings of entry level positions are \$43,300 pa, slightly above the current PLS worker average.

3.1 Economic value of activity

ABS figures show that the industry value added (IVA) of food product manufacturing experienced modest growth over the past decade – growing from \$16.4 to \$22.3 billion. This equates to a compound annual average growth rate of 3.1%, below the total industry annual rate of 4.5%.

It is important to note that an increased value of production, or value add, does not necessarily equate to greater employment levels – see the sections below. Currency movements, increasing prices, and increased production efficiencies, such as automation, have had positive impacts on the industry. In general, the food product manufacturing industry is becoming increasingly automated, as evidenced by a growth in production value yet stagnation of employment levels over the past decade. Increasing reliance on automation is set to continue, subduing the demand for additional workers despite production increases.

Figure 6: Food product manufacturing IVA 2008-09 to 2018-19



3.2 Business counts

The ABS business counts show the number of registered businesses by state and number of employees as of June every year. It is important to note that this counts business registration, and not the location of the business' primary activities. For example BHP would be registered in Victoria

yet has extensive operations in Western Australia. Thus, they only provide an indication of the location of industry activity.

Table 1: ABS business counts: all businesses in food product manufacturing except meat products and seafood processing, 2019

State	Non-employing	1-19 employees	20-199 employees	200+ employees	Total
NSW	1,036	1,838	365	24	3,246
Vic	911	1,594	432	34	2,965
Qld	570	955	178	11	1,711
SA	317	445	93	0	856
WA	259	464	108	0	823
Tas	70	138	56	0	252
ACT	47	51	15	0	106
NT	10	32	3	0	46
Total	3,220 32.2%	5,517 55.1%	1,250 12.5%	69 0.7%	10,005 100%

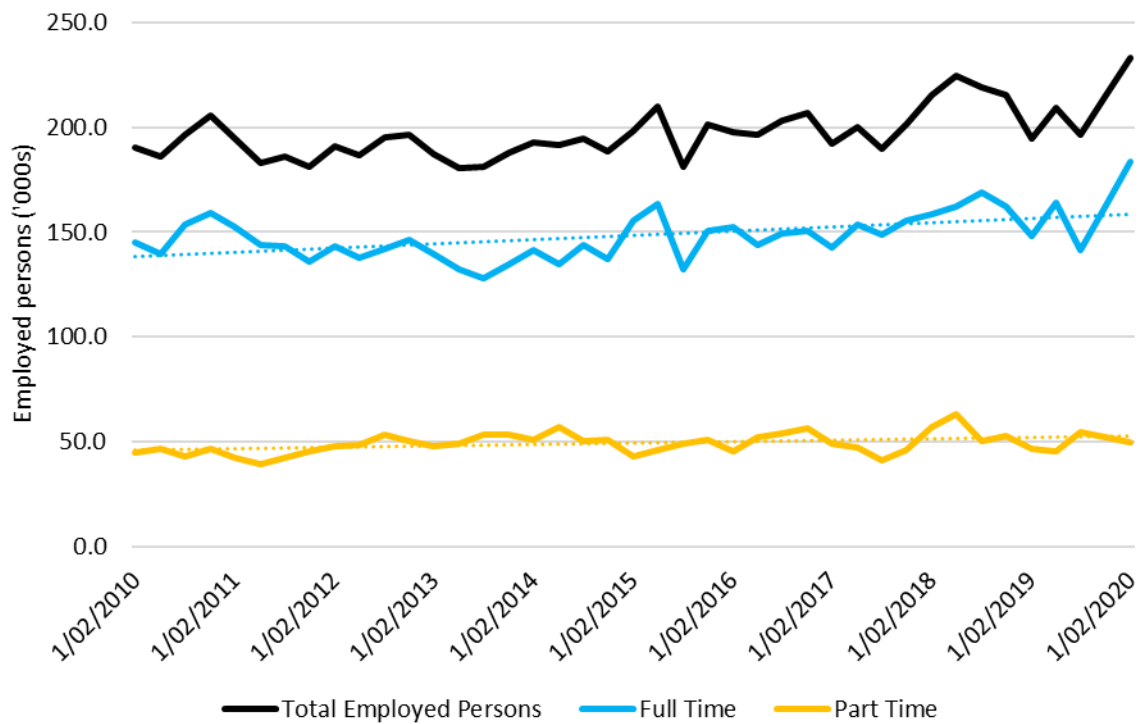
The ABS businesses counts show that there are a large number of business in the subdivision. As expected, there is a significant underrepresentation in non-employing businesses, and much higher instances of larger businesses. The geographic location of businesses largely follows broader population patterns, given that many businesses are located close to population centres.

3.3 Employment

ABS labour force figures show that employment levels in food product manufacturing have been relatively stable over the past decade – increasing from 190,000 to 233,000 – with a noticeably large uptick over 2019-20 responsible for much of the growth.

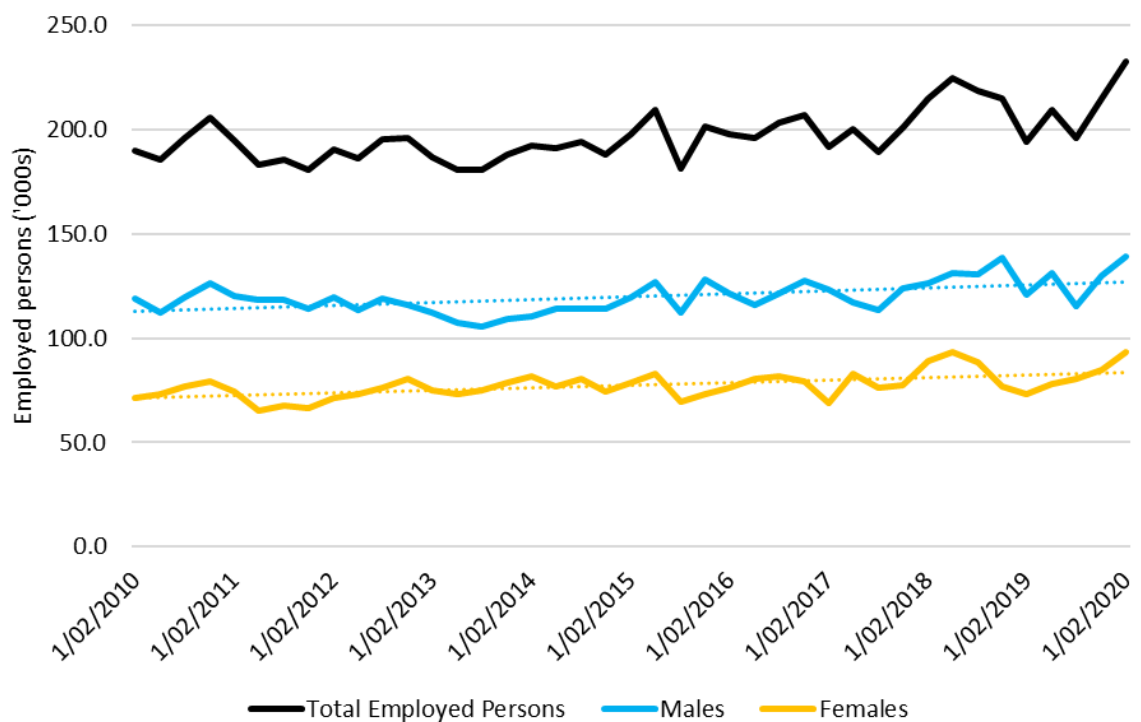
As of 2020, 76.3% of the labour force are full-time employees. This proportion has increased slightly over the past decade, with part-time roles stagnating while full-time roles have grown.

Figure 7: Persons employed in food product manufacturing, full-time and part-time split, 2009-10 to 2019-20



As of 2020, males comprise 60.5% of the labour force, a ratio which has been consistent over the past decade. This is higher than the national average of 52% of the workforce, but lower than the current mix of PLS engaged industries. Much of this gender skew is due to meat works. Subsectors such as confectionary, seafood, and bakery products have a more balanced gender split.

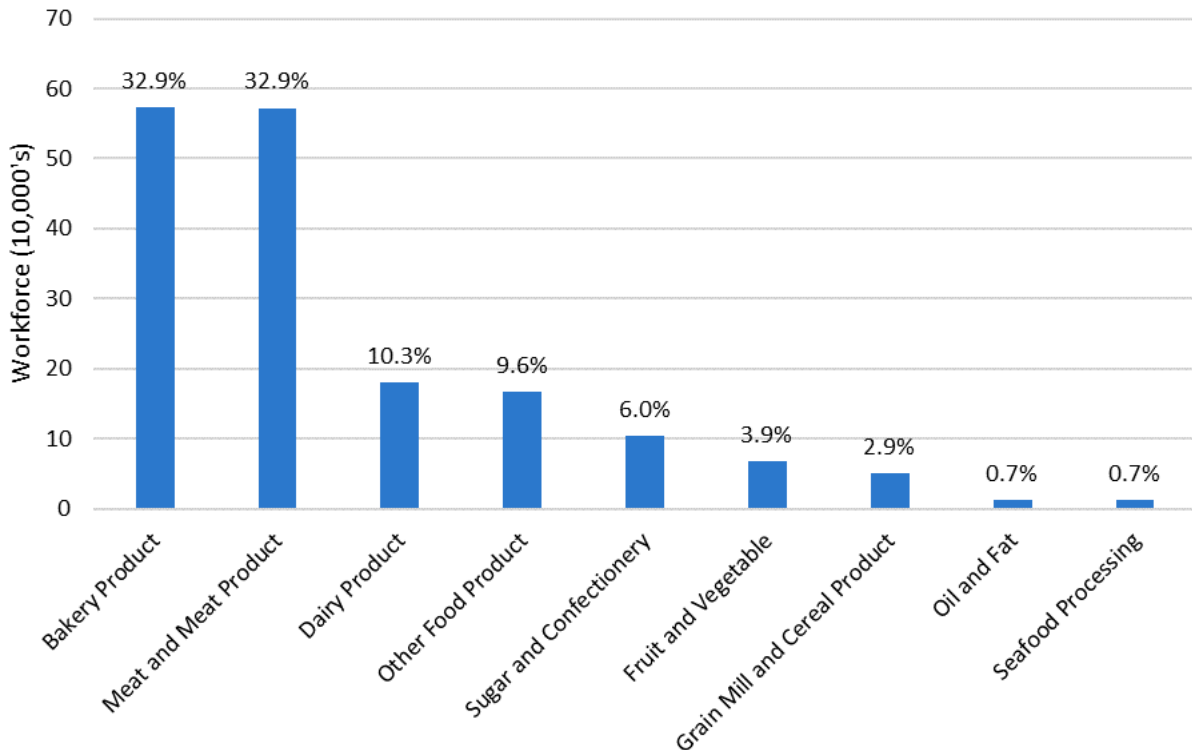
Figure 8: Persons employed in food product manufacturing, sex split, 2009-10 to 2019-20



3.4 Employment by subdivision

As of 2020, the combined bakery product manufacturing and meat product manufacturing sectors comprised two-thirds of the total food product manufacturing workforce, with approximately 58,000 workers each. All other sub-groups make up the remaining third of the total workforce.

Figure 9: Size of workforce in each sub-group of food manufacturing, 2020-2025



The Australian Government labour market information portal provides detailed 5-year employment projections, down to the 3-digit level from 2020 to 2025, devised by the Department of Employment, Skills, Small and Family Business.

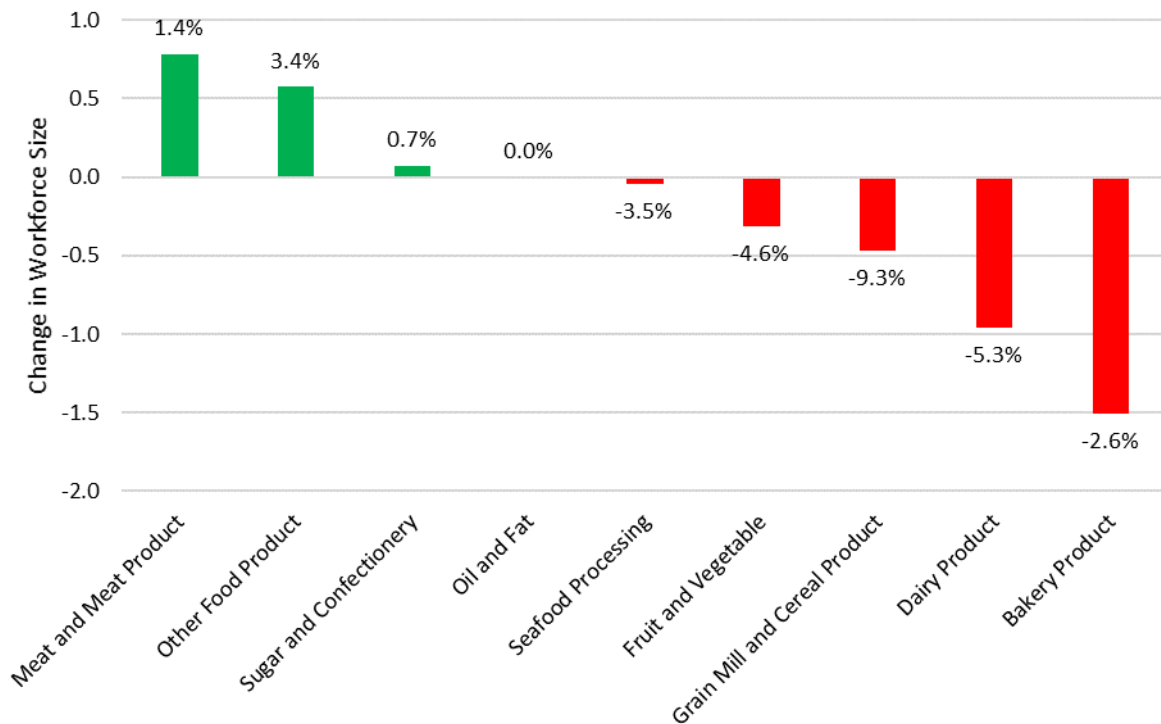
Projections of employment growth in food product manufacturing are negative from November 2020 to November 2025, at a projected change of -1.8% over the period. The only industries of size that have positive growth projections are meat, other, and sugar and confectionery. Oils and fats, and seafood processing both have a neutral outlook. This weak projected growth in employment figures, despite positive growth in industry value add over the same time period, is largely attributed to automation.

Table 2: Projected employment growth in food product manufacturing

Industry	Employment Nov 2020 ('000)	Projected employment Nov 2025 ('000)	Growth over 5 years	% change
Meat and meat product	57.2	58.0	0.8	1.4
Other food product	16.7	17.3	0.6	3.4
Sugar and confectionery	10.5	10.6	0.1	0.7
Oil and Fat	1.3	1.3	0.0	0.0
Seafood processing	1.2	1.2	0.0	-3.5
Fruit and vegetable	6.7	6.4	-0.3	-4.6
Grain mill and cereal product	5.0	4.5	-0.5	-9.3
Dairy product	18.0	17.0	-1.0	-5.3
Bakery product	57.3	55.8	-1.5	-2.6
Total food product manufacturing	192.1	188.6	-3.4	-1.8
All industries	12,879.6	13,954.7	1,075.0	8.3%

Most subsectors of food product manufacturing are projected to experience a decline in their workforce over the next 5 years. Only meat, other, and sugar and confectionary are projected to have an increased workforce size – albeit marginally. The below figures show both magnitude and total percentage change over 5 years. In total, the entire food manufacturing subdivision is projected to decline by 1.8% over 5 years, equivalent to loss of 3,400 FTE job. Most of this will be dairy product and bakery product manufacturing, which will lose more than 2,500 combined.

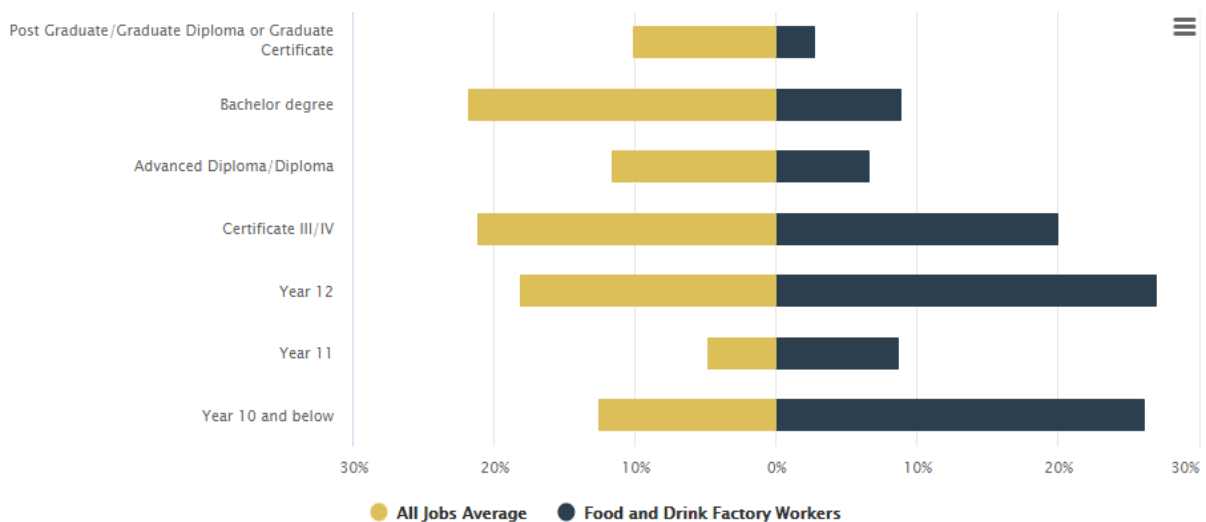
Figure 10: Change in size of workforce in each sub-group of food manufacturing, 2020-2025



3.5 Labour force characteristics

Using the JobOutlook profile for a food and drink factory worker, the role is classified as entry level and formal education of the workforce is modest. As of the 2016 Census, almost two-thirds of the workforce had no formal qualifications beyond high school. Post-school qualifications were typically a Cert III or IV.

Figure 11: Education profile of food and drink factory workers from the 2016 census¹¹



¹¹ Job outlook - <https://joboutlook.gov.au/occupations/aquaculture-workers?occupationCode=8411>

Under the current Food, Beverage and Tobacco Manufacturing Award, a food-processing worker level 1 adult is paid \$753.80 per week at a rate of \$19.84 per hour worked¹². The average full-time hours for this occupation category is 42 per week, which is lower than the national average, indicating that a labour shortage is unlikely. Using this average of 42 hours a week, which includes overtime, the expected salary is \$43,300, slightly higher than the current average PLS worker salary.

3.6 Risk of displacement of Australian workers

The risk of displacement of Australian workers is comparatively high compared with the other industries examined through the DIA process. This is a combination of negative employment growth projections and the fact that many facilities are located close to major population centres. Thus they have a larger pool of labour available, and have not experienced chronic shortages.

The labour market analysis conducted in 2020 showed little-to-no evidence of a labour shortage in the food product manufacturing industry. The exception to this is meat products, which have largely been excluded from this assessment given PLF's existing presence.

4. Australian demand characteristics

Section summary	
There is a shift in production toward urban and peri-urban areas	- Manufacturing is tending to occur closer to large population centres and, thus, further from remote and regional Australia where PLF typically places workers.
There is a growing shift toward organic and healthy products	- Organic and health food products are growing quickly, however much of this production is done at a lower scale in smaller facilities.
Competition to match consumer demands is driving automation	- Consumers for most products in this sector are price sensitive and producers are pursuing cost-efficiencies through automation.

4.1 Automation trends in food product manufacturing

To boost global productivity and achieve scale and competitiveness in future, 'smart' food and beverage manufacturing has been identified as a key direction for the food manufacturing sector. This includes automation of processes and the application of robotics and soft robotic technologies. Automation is applicable to continuous and batch control systems and inspection and line control systems. Robotics can be used for tasks such as high-speed palletising machinery; and soft robotic technology for monitoring systems for temperature, humidity and pressure, and sanitisation verification. Food safety, original and traceability systems, such as digital labelling with instant information about origin of foods and production methods, or blockchain technologies, also need to

¹² <https://www.fairwork.gov.au/awards-and-agreements/awards/award-summary/ma000073-summary>

be adopted. These securely capture and store information on origin and food safety - handling, preparation and storage - for high-value-add foods.

4.2 Geographic considerations

The PWC LMA observed that most production occurred in urban or peri-urban areas, thus not currently eligible to join the PLS. See the below screenshot from the PWC labour market assessment as an example.

Snack food manufacturing	Brisbane - East (QLD)	72	Not eligible
	Sydney - Inner West (NSW)	50	Not eligible
	Melbourne - North East (VIC)	40	Partially eligible
	Sydney - Parramatta (NSW)	32	Not eligible
	Sydney - Blacktown (NSW)	28	Not eligible
Beer manufacturing	Ormeau - Yatala (QLD)	52	Not eligible
	Griffith Region (NSW)	51	Eligible
	Melbourne - Inner (VIC)	47	Not eligible
	Bright - Mount Beauty (VIC)	44	Eligible
	Beechworth (VIC)	43	Eligible

4.3 Skills

As manufacturers transform processes, many tasks currently undertaken by low-skill workers will be undertaken by using automation and robotic technologies. These include batch control, inspection and line control, palletising, monitoring temperature, humidity and pressure, and verifying sanitisation. Low-skill workers will need reskilling and vocational training. Workers whose tasks can be automated will need to reskill and upskill, especially in digital skills, to transition into new roles. The skill sets required to work in food product manufacturing are likely to alter. Rather than low-skill workers, manufacturers will need a pipeline of skilled workers with digital and data skills as they transform and scale up. Higher levels of skills will be required in relation to:

- adopting, adapting and developing smart and emerging technologies
- implementing and operating new technologies
- data analytics and management to provide real-time insights into supply chains, make proactive decisions in response to market demands and shocks, such as COVID-19
- demonstrating food safety and sustainability

4.4 ANZSCO classification system

The ANZSCO classification system categorises workers in the food product manufacturing sector as Unit Group 8311 Food and Drink Factory Workers. They are defined as performing routine tasks in manufacturing food and beverages. Most occupations in this unit group have a level of skill commensurate with the ANZSCO Skill Level 5, and in some instances, no formal qualification or on-the-job training may be required. Tasks include:

- weighing, measuring, mixing, dissolving and boiling ingredients
- adding materials, such as spices and preservatives, to food and beverages

- operating heating, chilling, freezing, pasteurising, carbonating, sulphuring, de-sulphuring plant
- monitoring product quality before packaging by inspecting, taking samples and adjusting treatment conditions when necessary
- operating machines to peel, core, slice, dice, pit and juice fruit and vegetables
- cleaning equipment, pumps, hoses, storage tanks, vessels and floors, and maintaining infestation control programs
- regulating speed of conveyors and crusher rollers, and adjusting tension of rollers to ensure total extraction of juice from sugar cane
- moving products from production lines into storage and shipping areas
- packaging and bottling products.

These tasks are generally undertaken by the following occupations:

- 831111 Baking Factory Worker
- 831112 Brewery Worker
- 831113 Confectionery Maker
- 831114 Dairy Products Maker
- 831115 Fruit and Vegetable Factory Worker
- 831116 Grain Mill Worker
- 831117 Sugar Mill Worker
- 831118 Winery Cellar Hand
- 831199 Food and Drink Factory Workers

5. Worker supply and sender country considerations

Section summary	
Food processing (excluding seafood) is underdeveloped in the Pacific	- Seafood aside, there are limited food processing facilities throughout the Pacific. PNG is a modest exception. This has implications for both prospective Australian employers sourcing workers, as well as any returning PLS workers seeking formal employment in this sector.
Copra and coconut product manufacture	- There is some relatively small-scale but mature production of food products based on copra, coconut, banana and seafood. There may be opportunities for those products to move up the value chain.

5.1 Synergy with sender country opportunities and worker supply

Aside from seafood processing, which is covered under a separate DIA, the food processing sector throughout the Pacific is underdeveloped. A review of recent country censuses and internet

searches revealed a dearth of both persons formally employed and commercial-scale processing facilities.

This has 2 primary implications. Firstly, Australian employers will have difficulty in sourcing a sufficient supply of suitably skilled and experienced labour. Given the modest employer requirements of their Australian workforces, however, this may not be a significant barrier. Secondly, returning workers will have limited formal employment opportunities in food processing.

6. Industry strategy and workforce growth initiatives

Section summary	
Industry priority is to automate	- The key priority, reportedly accelerated by COVID-19, of both the Australian Government and industry is to automate.
New labour demands relate to skilled workers	- Jobs are transitioning to highly skilled people with qualifications in robotics, logistics and IT.

6.1 Australia's food and beverage manufacturing strategy

Australia has recently listed food and beverage manufacturing as one of 6 priority manufacturing industries alongside space, critical minerals, defence, recycling and medical products. In March 2021 the Australian Government issued the *Food and Beverage National Manufacturing Priority Road Map*. The vision of the roadmap is to double the value of Australia's food and beverage manufacturing by 2030 through a focus on 3 key growth opportunities:

- *Smart food and beverage manufacturing*: automation of continuous and batch controls systems, inspection and line control systems; robotics, including high speed palletising machinery and soft robotic technology; monitoring systems for temperature, humidity and pressure, sanitisation verification.
- *Innovative foods and beverages*: products for health and wellbeing, with enhanced nutritional value, premium ready-to-eat convenient food offerings, high-value-add products, such as fortified breakfast cereals, antioxidant rich breads etc.
- *Food safety, origin and traceability systems*: systems to increase value differentiation based on safety and quality, such as standardised digital labelling with instant information about origin of foods and production methods, and blockchain technologies to securely capture and store information on origin and food safety (handling, preparation and storage) for high-value-add foods.

As discussed previously, the associated demand for labour due to the above initiatives is a smaller number of skilled workers, rather than the traditional industry demand of a high number of low-skilled workers.

6.2 Peak bodies related to food product manufacturing

The food product manufacturing sector is quite diverse, with many business types and a large proportion of SMEs. At a high level, the subsectors that make up the industry and examples of their value-add products include:

- grain mill and cereal products (high protein pasta and on-the-go breakfast cereals)
- dairy products (probiotic milk beverages and fortified yoghurts)
- meat products (ready-to-eat meals, and frozen and marinated value-add meats)
- oil and fat products (vegetable shortening and cultured butter)
- beverage products (energy and sports drinks, plant-based beverages, wine and premium spirits)
- bakery products (gluten-free breads and biscuits, and fortified cereals)
- sugar and confectionary products (sugar-free gum and protein nut bars)
- seafood products (smoked or dried fish and canned tuna)
- fruit and vegetable products (pre-packaged salads and fruit juice)

There is no single peak body that represents the whole industry. A key body, however, is the Australian Food and Grocery Council (AFGC). Other relevant peak bodies include the National Farmers' Federation (NFF) and the Council of Small Business Organisations Australia (COSBOA). There is also a Food Innovation Australia Limited (FIAL) group the federal government established to promote growth and collaboration.

Lack of industry integration has been raised as a barrier to scale. Components of the sector tend to work in isolation from each other, often in the same market and across supply chains. The Business Council of Australia notes that there has often been an adversarial, rather than collaborative, relationships within the supply chain. This leads to duplication of efforts and resources, and undermines opportunities for collaboration, greater efficiency and productivity. Collaboration across whole of government has also been regarded as a barrier in the industry as different departments and jurisdictions have policy responsibility for agriculture, and food and beverage manufacturing.

7. Risks assessment

Noting the recommendation not to give priority to food product manufacturing sector at this time, no risk assessment has been included in this DIA.

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