Seafood Industry Supply Chain & Market Channels

Opportunities for domestic market innovation and diversification that may assist in mitigating COVID-19

Prepared by **Macroplan**

For **Seafood Industry Victoria** (SIV) in collaboration with the **Victorian Fisheries Authority** (VFA)

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_Important notice

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_About this study

This paper was prepared by Macroplan for Seafood Industry Victoria (SIV) in collaboration with the Victorian Fisheries Authority (VFA)

This study explores the impacts of the 2019 coronavirus (COVID19) outbreak on the seafood supply chain and retail market channels and identifies several opportunities to address and overcome industry dislocation caused by COVID-19.

Seafood industry relationships and supply chain interdependencies are explored, including production and harvest, processing, wholesale, distribution, transportation and domestic and international retail channels, to better understand industry inputs, outputs, value add and the direction and magnitude of impacts arising from COVID-19.

Given the lack of available published data relating to industry 'value added' associated with seafood production, processing, wholesale and distribution stages of the supply chain, this study draws on ABS Input-Output data and explores two studies prepared by others to interpret the likely direction and extent of impacts from COVID-19 on elements of the seafood supply chain.

This paper shows there are complex industry and sectoral relationships and dependencies across all stages of the seafood supply chain. This suggests disruptions to retail market channels due to COVID-19 may have significant direct and indirect impacts on the seafood supply chain.

Interestingly, most elements of the seafood supply chain use inputs from the same sectors, meaning that greater sector coordination of inputs across the supply chain could support industry-wide innovation and adoption of integrated marketing channels.

With further research, active marketing, education and industry-wide consideration of online marketing platforms and tools, the Victorian seafood industry has the potential to overcome many of the disruptions caused by COVID-19.

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_Report outline

The findings of this study are presented in four section with a supporting data compendium attached as a resource for readers

The **first section** explores the Australian and Victorian seafood industries and presents feedback from several industry operators, including representatives from Seafood Industry Victoria (SIV), Victorian Fisheries Authority (VFA) and Melbourne Seafood Centre (MSC) highlighting the main issues, strengths, weaknesses, opportunities and threats facing the industry, in the context of COVID-19.

The **second section** of the study examines the seafood industry supply chain and key domestic and external market channels. This draws on Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) and ABS data and research studies prepared by others. This information is used to interpret industry and sectoral interrelationships and dependencies in the production, harvest, processing, cold storage, wholesale and retail distribution of seafood products to consumers.

The **third section** presents a high-level analysis of the direction and significance of impacts arising from COVID-19 on seafood production, harvest, processing, wholesale, distribution and retail channels. The *Australian fisheries and aquaculture outlook 2020* prepared by ABARES in March 2020 has been referenced as a recognised source of information in understanding the impacts of COVID-19 on the Australian seafood industry.

The **fourth section** outlines opportunities available to the Victorian seafood industry to mitigate the impacts of COVID-19. This includes several tools, policy actions, marketing efforts and further research that will require ongoing industry coordination and collaboration.

The report concludes by drawing together the study findings and outlining recommendations for further targeted research.

A **data compendium** is presented containing a glossary of terms, references and supporting information and technical analysis, which forms the basis of the findings presented in this report. This information is attached as a resource for readers and does not contain a complete outline of all available information and data relating to the seafood industry in Australia or Victoria.

_Study snapshot

The Victorian seafood industry has the potential to overcome significant disruptions caused by coronavirus (COVID-19) by proactively coordinating to target domestic consumers with a willingness to pay for local, high quality seafood through active marketing and education campaigns and industry-wide online marketing platforms and tools

The 2019 coronavirus (COVID19) outbreak has significantly dislocated Australia's seafood industry supply chain and market channels.

Seafood exports to China, representing **45%** of Australia's seafood revenue and **60%** of the value of Victorian seafood exports, have declined since January 2020.

Victorian Department of Health & Human Services Stage 3 restrictions have restricted restaurant dining, with online orders and delivery, takeaway and click and collect offering alternative solutions for many retailers and customers. Recent Stage 4 restrictions across metropolitan Melbourne have led to the closure of restaurant and café dining and restrictions across workplaces with onsite work allowed for permitted workers.

Overall it is anticipated that COVID-19 will have a **negative impact** on the volume and value of seafood production in Australia, although the analysis presented in this paper suggests this impact will be short term.

Retail sales turnover data from the ABS shows expenditure on fresh food in Victoria has achieved sales growth above average since February 2020. Supermarkets and grocery stores are recording year on year growth of around **8%** from February to June, while specialised food retailing has averaged **5.5%** against a long-term average of around **3.5%** per annum.

This may be a result of uncertainty among consumers due to Stage 3 and Stage 4 restrictions and an increased propensity for customers to shop online. However, it is not clear what portion of this relates specifically to sales of seafood products and it is not clear what the recent Stage 4 impacts will have on fresh food sales in metropolitan Melbourne.

Earlier this year ABARES estimated the gross value of Australia's seafood production will fall by **12%** to **$2.81 billion** before normalising in 2020-21. This is largely a result of lower demand from China due to COVID-19. This could imply a short-term reduction of approx.**$13 million** in gross value of Victorian seafood production. This is expected to be followed by total Australian production value growth of **2.4%** to **$3.41 billion** in the next five years.

Whilst ABARES research suggests a return to normal conditions in 2020-21, this may belie the real extent of impacts across an industry involving thousands of individual producers, processors, wholesalers and retailers dispersed across a vast network of coastal, inland and metropolitan operations around Australia.

It is likely the loss of income from reduced demand from China will be significant. Whilst there are positive retail anecdotes, it is not clear the extent to which domestic consumers will respond to widespread availability of high quality locally sourced seafood products. It is also unclear whether retail market channels, including supermarkets have the infrastructure, operational capacity or interest to distribute high quality, locally sourced seafood products to domestic consumers in a COVID-compliant environment.

Managing COVID on site and across workplaces and retail outlets has led to social distancing, screening and hygiene measures that have anecdotally reduced customer numbers and increased business operating costs at a time when sales volumes and retail turnover have generally declined. In some cases this has presented barriers that have slowed down or limited customer access and reduced sales volumes, impacting profitability.

_Study Snapshot

However, there is also evidence of many positive responses across the hospitality industry, among seafood retailers and from consumers who have adapted well to online and social media ordering and delivery, takeaway and click and collect arrangements. This has improved access for many customers and supported businesses in adapting to new operational approaches in an uncertain environment.

The Melbourne Seafood Centre (MSC) has reported a significant pivot away from wholesale distribution to restaurants and supermarkets towards direct sales, independent retail and local seafood markets such as Queen Victoria Market and South Melbourne Market, which have reported significant growth in online sales and click and collect transactions in response to Stage 3 restrictions.

Whilst independent local seafood retailers previously accounted for around **50%** of wholesale distribution, these groups now account for over **80%** of total distribution, with restaurants and supermarkets accounting for less than **20%** of wholesale distribution.

This shift may indicate that overall seafood consumption rates remain generally in line with trend, with supply and access to seafood products shifting from restaurant dining towards takeaway and online purchases, with fresh seafood markets now playing a major role in distribution to consumers. This is yet to be revealed through sales data, noting some reports of a general industry slowdown in supply and distribution owing to on-site COVID-compliance measures across aspects of the supply chain.

Given recent strong growth in fresh food sales, despite COVID-19, this may indicate an opportunity for supermarkets to play a more active role in directly promoting, stocking, marketing and labelling locally sourced seafood products. Australian supermarket chains have strict sustainability and reporting' requirements which limits the potential for locally sourced seafood products, particularly from smaller suppliers without third-party certified sustainability credentials. This means supermarkets mostly stock imported seafood, which is generally considered to be at the cheaper end of the quality/value spectrum.

A general trend towards online purchasing presents a significant opportunity for the seafood industry to actively target domestic consumers prepared to pay for high quality seafood products. Raising awareness among consumers about the quality and source of Australian seafood products through appropriate product labelling and pricing will be critical in attracting and retaining customers and increasing the size of the Australian seafood consumer market.

Seafood retail outlets as well as restaurants and supermarkets can play an important role in making locally sourced seafood available through various means including click and collect, takeaway, delivery, focused electronic media advertising about Australian seafood availability (e.g. similar to beef, lamb, pork, cheese, wine) and promoting local seafood as a food tourism experience.

With targeted research, active marketing and education and industry-wide adoption of electronic marketing platforms, the seafood industry has the potential to not only overcome dislocation of COVID-19 but as a new way of expanding and developing the seafood industry locally.

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There has been a marked pivot away from wholesale distribution to restaurants towards direct sales to consumers, increased reliance on independent retail and local seafood markets, which have reported significant growth in online sales and click and collect transactions reflecting a general switch towards online purchasing

1_Overview of the Australian & Victorian Seafood industries

1_Overview of the Australian & Victorian Seafood industries

This section explores the Australian and Victorian seafood industries and presents feedback from several industry operators, including representatives from Seafood Industry Victoria (SIV), Victorian Fisheries Authority (VFA) and Melbourne Seafood Centre (MSC) highlighting the main issues, strengths, weaknesses, opportunities and threats facing the industry, in the context of COVID-19.

The findings presented in this section are drawn from the data compendium attached to his report. Compendium C3-C4 presents supporting data, information and technical analysis relating to the elements discussed in the following section.

1.1_Australian seafood industry

Australia's **$3.18 billion** seafood industry is heavily focused on export markets, which are dominated by high unit value products such as Western and Southern Rock Lobster and Blacklip and Greenlip Abalone.

Reduced demand for seafood products from China has the potential to cut Australia's **$1.58 billion** export market in half and reduce total domestic seafood industry production to **$2.81 billion** in 2019-20^.

— Wild caught seafood - between 2000–01 to 2011–12 there was a decline in wild-caught Gross Value of Production (GVP) driven by domestic policy and Australia's exchange rate appreciation over the period. In volume terms the sector most affected by these changes was the Finfish sector, where volumes produced declined by **35%** in the decade to 2014–15, with declines across a broad range of species landed, particularly from Commonwealth fisheries.

— Aquaculture – the aquaculture sector has increased its overall contribution to Australian fisheries and aquaculture GVP. This is partly due to global trends in aquaculture production, which has contributed to the declining relative value of the wild-catch sector plus growth in the Salmonids industry (largely Atlantic Salmon) which has provided competition for wild-caught Finfish products.

In 2017 Australia imported seafood products totalling **$2.18 billion** to fulfill local demand. Australian seafood imports largely comprise lower unit value products such as canned or frozen Finfish but also include some higher unit value products such as Prawns and Salmonids.

The major sources of Australian edible fishery and aquaculture product imports in 2017-18 (excluding live products) were Thailand, China, Vietnam and New Zealand. Together, these countries accounted for **64%** of imports in 2017-18.

Whilst Australian domestic consumption of seafood industry products has increased in volume terms, per person seafood consumption has trended down to **13.7 kilograms** in 2018 from **15.5 kilograms** in 2006.

Consumer research surveys indicate frequent eaters of seafood (those that consume seafood once a week or more) only account for **33%** of consumers. Themes such as freshness, food labelling and safety are more important to consumers than price, but price is more important than quality and presentation.

^Source: Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) 2020

1_Overview of the Australian & Victorian Seafood industries

This reinforces a view held by some that Australian consumers lack certainty about choosing, preparing and cooking seafood and tend to consider food safety, nutrition and price ahead of quality meaning these factors continue to be barriers to domestic seafood consumption.

— There has been a broadly-based shift in food consumption toward spending on meals out and fast foods with a national increase in the share of meals out and fast foods in household food expenditure, particularly among younger age cohorts and higher income households.

— For people living in higher income and/or net worth households, there is a revealed preference to pay a premium for quality attributes of food products and services, including convenience factors.

— This highlights economic opportunities for seafood producers to market their products towards higher income cohorts and towards higher value food services.

There may be opportunities for domestic seafood retailers to target higher value export-orientated products toward higher income households, noting retailers and consumers are generally less likely to pay premium prices for these high unit value products.

This may indicate a need to diversify domestic production into lower unit value import-replacing products such as Finfish, subject to regulations.

1.2_Victorian seafood industry

Victoria's fishing industry, including ports and operations are dispersed along Victoria's coastline, inland and metropolitan areas. Wild-catch fisheries stretch along a significant coastline from the Victorian/South Australian border to Victorian/NSW border, and through inland waterways.

Most aquaculture production lies with a few large farms, dominated by abalone on the south-west coast, mussel mariculture in Port Phillip Bay and salmonid aquaculture concentrated in the Goulburn Valley with Barramundi in Western Melbourne.

The Gross Value of Production (GVP) of the Victorian seafood industry was **$111.0 million** in 2017-18, compared with **$93.7 million** a year earlier, an increase of 19% during this time.

During this time the Victorian seafood industry produced **7,323 tonnes** of seafood products – **3,961 tonnes** wild-caught from state fisheries (excluding Commonwealth fisheries) and **3,362 tonnes** from aquaculture operations.

1_Overview of the Australian & Victorian Seafood industries

Victorian seafood accounted for nearly **4.0%** of Australia's total seafood industry GVP in 2017-18, compared with **6.2%** in 2000-01. Victoria's aquaculture GVP accounted for **3.4%** of Australia's total aquaculture GVP in 2017-18, compared with **2.0%** in 2007-08.

— Since 2001–02 there has been a progressive decline in the gross value of Victoria's wild-caught production, partly offset by recent increases in the volume and gross value of aquaculture production since 2008-09.

— Structural change in the wild-caught fisheries sector and adverse environmental and disease factors reduced the availability of some species, as well as adjustment to changing commodity demand patterns in the global market.

Victorian seafood exports were valued at **$245 million** in 2018-19. This was around **2%** higher than in 2017-18. Victoria accounts for **17%** of Australian seafood exports valued on a free on board (fob) basis, which includes some seafood products not caught in Victoria.

It is important to note exports are valued on a processed basis, which includes processing and transportation costs required for the product to be readied for export from Australia. This differs from the GVP of seafood products, which are valued on a beach price.

The highest valued export from Victoria were crustaceans at **$149 million** followed by molluscs valued at **$74 million**. Almost all of Victoria's Abalone and Rock Lobster catch are exported to Asian markets. China and Hong Kong were Victoria's major seafood export markets in 2018-19 valued at **$149 million** and **$37 million.** respectively.

Current ABS household expenditure data shows average take-home seafood expenditure per person in metropolitan Melbourne is approximately **14.4%** higher than the Australian average. Sydney is around **19.7%** higher than the Australian average.

According to ABS Household Expenditure Surveys (HES), for people living in higher income and/or net worth households, there is a revealed preference to pay a premium for quality attributes of food products and services, including convenience factors.

This highlights economic opportunities for seafood producers to market their products towards higher income cohorts.

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1_Overview of the Australian & Victorian Seafood industries

Feedback from several industry operators, including representatives from Seafood Industry Victoria (SIV), Victorian Fisheries Authority (VFA) and Melbourne Seafood Centre (MSC) highlights the following issues, strengths, weaknesses, opportunities and threats facing the industry, in the context of COVID-19

1.3_Feedback from industry stakeholders

1.3.1_Issues, weaknesses & threats

— **Industry culture & collaboration** – The culture of commercial fishing is one of reluctance to change and commercial fishers do not generally see themselves as part of the whole supply chain. Victorian commercial fisheries have contracted under Government policy and farmed seafood has prospered. Anecdotally the industry has not come together to explore how it may adapt, yet still compete. Collaboration is not widespread or contemplated.

— **Data & information** – Lack of published data on seafood value across the supply chain, particularly production. Data captures the gross value of production (GVP) based on landed price and the total value of exports measured as free on board (fob), which includes the value added through processing/wholesale/transportation/distribution. There is also a general lack of information available to consumers about the diverse range of high-quality Australian seafood products available.

— **Consumption trends & competition** – Australian seafood consumption ranks behind beef, chicken and pork but ahead of lamb and sheep meat. According to an ABS Household Expenditure Survey (2017), Australian households spent **$5.46** per week on fish and seafood in 2016 compared with **$27.0** per week for meat.

— **Consumer knowledge** – Some in the industry have expressed a view that Australian consumers lack information and certainty about choosing, preparing and cooking local seafood products, with seafood safety and labelling being a dominant focus for consumers rather than quality and experience.

— **External market competition** – A current overreliance on Asian (particularly Chinese) export markets for industry returns and growth as well as import competition from low cost production of Asian aquaculture.

— **Supermarkets** – Australian supermarket chains have strict sustainability and reporting' requirements which limits the potential for locally sourced seafood products, particularly from smaller suppliers without third-party certified sustainability credentials. This means supermarkets mostly stock imported seafood, which is generally considered to be at the cheaper end of the quality/value spectrum. Supermarkets have a role to play in making locally sourced seafood available through appropriate country of origin labelling, combined with focused electronic media and education about Australian seafood (e.g. similar to beef, lamb, pork, cheese, wine) and click and collect and delivery options.

— **Supply chain fragmentation** – coordination of systems, processes and infrastructure does not currently take place to respond to opportunities that arise with changing consumer preferences, the impact of CV19 on high value channels, and need for the industry to adapt. The current scenario represents a high level of opportunity cost.

— **Social license, sustainability & viability** – factors affecting the availability of fish stocks include regulations around sustainability of fishing practices, including quotas and fishing regions, disease and overfishing of some varieties, along with increased costs associated with on-site COVID-compliance and a lack of consolidated freight along common transport routes, which has resulted in financial distress for some businesses.

— **On site COVID-compliance** – the Melbourne Seafood Centre reports one of the most significant issues facing the industry is worksite COVID-compliance, which is adding to costs and delays in access to seafood stocks and distribution, which also results from COVID-compliance requirements across aspects of the supply chain.

1_Overview of the Australian & Victorian Seafood industries

1.3_Feedback from industry stakeholders (cont)

1.3.2_Strengths & opportunities

— **Industry adaption & transition** – Victorian has a prosperous farmed seafood sector that is adapting and value-adding to grow their businesses. Some seafood companies are taking a reduction in price to gain brand exposure and access to new channels. Population growth and cultural diversity has led to growing demand for emerging Victorian seafood products and Government policy is supporting industry transition.

— **Shifting consumer purchasing behaviour** – there is an observed change preferences (including lifestyle factors) toward meals out and fast foods including a desire to consume locally sourced food in preference to imported food. Locally sourced food is increasingly regarded as offering ‘safe’, ‘ethical’ or ‘humanitarian’ food choices for consumers and is also a popular way to ‘support local farmers’. There is early indicators this will continue to be a key driver of food demand growth in the future, considering the recent Stage 4 restrictions on restaurant dining in metropolitan Melbourne.

— **Early adaptation to online purchases & home delivery** – many independent retail and local seafood markets have reported significant growth in click and collect and home delivery transactions in response to Stage 3 and Stage 4 restrictions, consistent with growing shift among consumers towards online purchases, home delivery and takeaway food services. This has the potential to increase in popularity and will continue to be a significant driver of food consumption in a post-COVID19 environment. This presents an opportunity for seafood producers to both supply fresh quality local produce to independent retail and food preparation services and take an active place in the food services sector, which is a major supplier to the home food delivery market.

— **Incomes, Culture & revealed preferences** – Among higher income / net worth households, there is a revealed preference to pay a premium for quality attributes of food products and services, including convenience factors, highlighting opportunities for seafood producers and retailers to market their products towards higher income cohorts. Some people who regularly shop for seafood at wholesale and retail markets (anecdotally from diverse cultural backgrounds) have a greater knowledge about how to select, prepare, cook and consume seafood. An opportunity exists to deepen this market through targeted education about seafood being part of an experience as well as being a safe, reliable and highly nutritious food source.

— **Seafood labelling & promotion** – market research indicates the introduction of transparent country of origin labelling of all products, through the implementation of a bar chart system in supermarkets generated a positive public response, which has led to growing demand for emerging Victorian seafood products. Seafood restaurants also have a role to play in promoting seafood as a food experience through prepared foods as input to home food delivery and takeaway.

1_Overview of the Australian & Victorian Seafood industries

1.4_Summary of findings

- There has been a continued decline in the relative share of wild caught seafood products as a share of total seafood products, offset by an increased relative share of farmed seafood products.
- Exports account for a significant share of Australian and Victorian seafood revenue. China accounts for 45% of Australian seafood sales revenue and around 60% of Victorian seafood exports, making the industry highly susceptible to external market disruptions. COVID-19 is expected to limit current exports to China, whilst other international markets such as Japan may not be as severely impacted.
- Domestic per person consumption of seafood products has trended down and frequent eaters of seafood (those that consume seafood once a week or more) only account for 33% of consumers. However this group accounts for 77% of seafood consumption.
- Imported seafood products account for a significant share of total seafood consumption (pre-COVID-19). An opportunity exists to increase deepen the domestic market for local seafood products through targeted education about seafood being part of an experience as well as being a safe, reliable and highly nutritious food source.
- Consumer research suggests themes such as freshness, food labelling and safety appear to be more important to consumers than price, but price is more important than quality and presentation.
- Some people who regularly shop for seafood at wholesale and retail markets (anecdotally from diverse cultural backgrounds) have a greater apperception for seafood and knowledge about how to select, prepare, cook and consume different seafood varieties.
- ABS Household Expenditure surveys indicate a revealed preference among higher income / net worth households to pay a premium for quality attributes of food products and services, including convenience factors, highlighting opportunities for seafood producers and retailers to market their products towards higher income cohorts.
- Overall domestic seafood retailers have an opportunity to target higher value seafood products toward higher income households and cultural groups with knowledge about how to select, prepare, cook and consume a diverse range of seafood products.

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2_Seafood Industry Supply Chain, Value Add, Interdependencies & Vulnerabilities

2_Seafood Industry Supply Chain, Value Add, Interdependencies & Vulnerabilities

This section examines the seafood industry supply chain and key domestic and external market channels. This draws on available published industry and ABS data and two studies prepared by others to interpret industry and sectoral interrelationships and dependencies in the production, harvest, processing, cold storage, wholesale and retail distribution of seafood products to consumers.

2.1_Seafood Supply Chain Network & Market Channels

Victoria's seafood industry comprises many wild capture operators spanning ocean, river and estuary fishing and onshore aquaculture facilities enabling access to farmed seafood stocks.

Victoria's seafood industry **supply chain network** includes several elements spanning the following:

- Production and harvest.
- Post-harvest transport, logistics and cold storage.
- Post-harvest processing, packaging (including **150** Victorian licensed seafood processing facilities in 2017-18^) and wholesale distribution such as the Melbourne Seafood Centre.

Key domestic and international **retail market channels** (including **214** Victorian licensed retail establishments in 2017-18^):

- Direct to distribution to customers such as onsite farm gate sales, seafood co-operatives and exports.
- Supermarkets.
- Restaurants and cafes.
- Independent fishmongers and seafood retailers.
- Fresh food markets (such as Queen Victoria/South Melbourne) and food vans.
- International and interstate exports.

In the production and harvest supply chain there are several corporate players and many small-scale family-owned operators. Some smaller operators process, transport and distribute products directly to local consumers, interstate and overseas markets.

However, given the time-cost involved in harvesting and often significant travel distances involved in reaching retail outlets, most producers sell their produce to cooperative where one exists or to wholesale distributors and processors concentrated in Melbourne, which streamlines storage, processing, packaging and distribution into domestic and international retail markets.

The geographically disbursed nature of production, the diversity and seasonality of seafood products and costs involved in production and harvest means most producers rely on third party transport, logistics, cold storage and centralised processing infrastructure and wholesale distribution.

Centralised processing infrastructure and distribution channels can provide certainty for producers and reduce risks. However, it highlights that without access to this infrastructure, there are few alternative mechanisms available for producers for processing or distribution of seafood products into domestic or international markets.

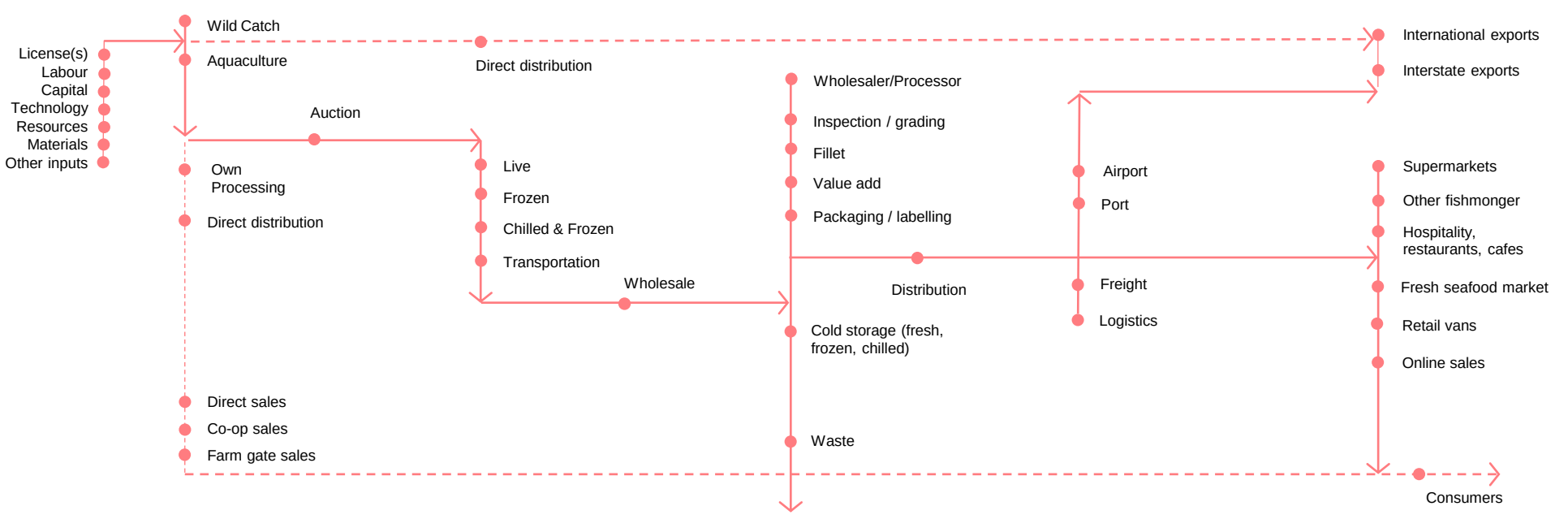
Source: ^ https://www.primesafe.vic.gov.au/licensing

2_Seafood Industry Supply Chain, Value Add, Interdependencies & Vulnerabilities

The decisions of individual supply chain and retail market participants influence the types of seafood industry products available and accessible, and the way food is produced and consumed. The complexities of relationships between individual participants and their decisions are not accurately captured in simplified descriptions of supply chains and market channels

_Supply Chain Network

_Market Channels



Source: Macroplan 2020; various

2_Seafood Industry Supply Chain, Value Add, Interdependencies & Vulnerabilities

2.2_Supply Chain / Industry Relationships

Given the lack of available industry and ABS data on the seafood industry supply chain, two studies have been considered to inform an assessment of seafood industry value added across the supply chain.

The first study was prepared by the Fisheries Research and Development Corporation (FRDC) entitled 'Victoria's fisheries and aquaculture: economic and social contributions' (May 2020).

The second study entitled 'Economic analysis for Australian Seafood Chains: development and application of a generic value-chain model (January 2011) was prepared by the Centre of Excellence Science Seafood & Health (CESSH), Curtin Health Innovation Research Institute Curtin University in collaboration with the Department of Agriculture and Food, WA (DAFWA).

A summary of the findings of these studies along with an analysis of Australian Bureau of Statistics (ABS) Australian National Accounts: Input-Output Tables and their relevance to value added across the supply chain is presented below.

2.2.1_FRDC Research

The FRDC research paper entitled 'Victoria's fisheries and aquaculture: economic and social contributions' (May 2020) considers the economic contribution of the seafood supply chain network and market channels – including the initial value add through production and harvest, value add created through processing and other impacts flowing through transport, logistics / wholesale trade / retail trade activities.

According to FRDC, in 2016-17 fishing and aquaculture contributed **$323 million** of added value and **3,101 full-time equivalent** jobs (909 State professional fisheries, 1,205 Commonwealth professional fisheries, 987 aquaculture).

FRDC reported that processing of Victorian-produced seafood contributed **$37 million** of added value, beyond the gross value of the landed catch of 18,179 tonnes (not the 55,000+ tonnes handled) and 645 full-time jobs.

The FRDC study defines seafood processing as excluding wholesale or other parts of the secondary seafood sector such as retailing or food services.

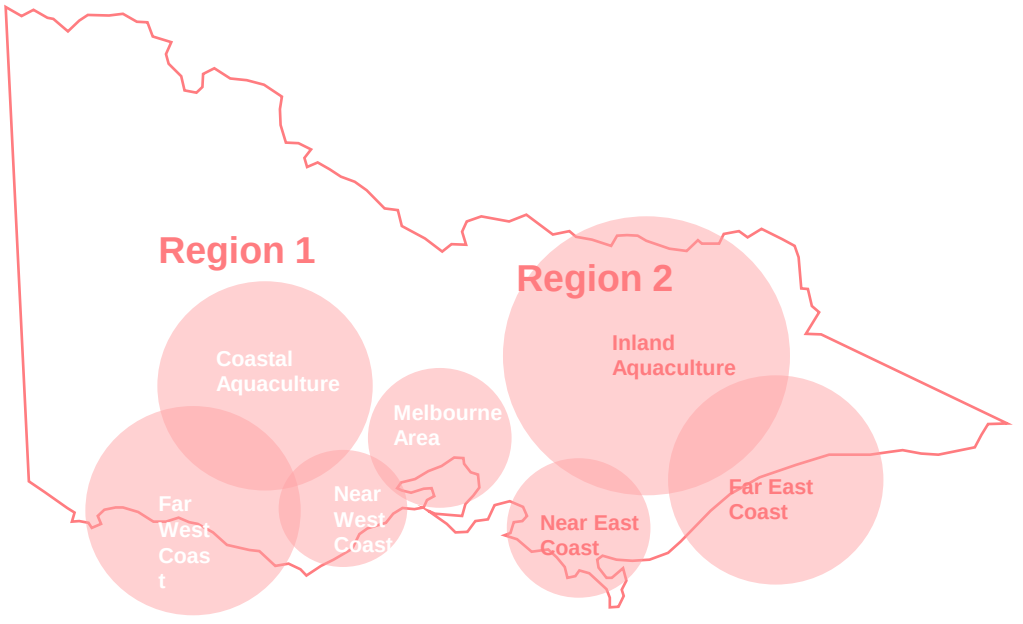
For analysis purposes, the FRDC study delineates Victoria's regional fisheries and aquaculture producing areas into two regions:

— **Region 1** – Far West Coast, Near West Coast, and coastal aquaculture production.

— **Region 2** – Far East Coast, Near East Coast, Melbourne Region and inland aquaculture production.

An investigation of economic contribution to value add at key points in the supply chain is presented for each region.

2_Seafood Industry Supply Chain, Value Add, Interdependencies & Vulnerabilities



2.2.1_FRDC Research (cont)

Region 1 – Far West, Near West and Coastal Aquaculture

According to the FRDC study, the Far West Coast (west of Warrnambool) generated **$42 million** of added value, **352** FTE jobs. The Near West Coast (Bellarine Peninsula, Great Ocean Rd) generated **$22 million** of added value, **198** FTE jobs. Coastal aquaculture **$35 million** of added value, **427** FTE jobs.

Estimates of the relative contributions to industry value add through the supply chain from production and harvest, processing and other supply chain impacts presented in the FRDC research for Region 1 are set out below:

— Initial Value Add – contributed between **20%-30%** of total wild-catch and aquaculture value added from these regions, representing a **63%** increase in the initial estimated value of output.

— Processing of Seafood Value Add – contributed approx. **36%** of total wild-catch and aquaculture value added from these regions, representing on average an **87%** increase in the initial estimated value of output.

— Other Supply Chain impacts – e.g. transport, logistics / wholesale trade / retail trade contributed between **30%-40%** of total wild-catch and aquaculture value added from these regions.

Region 2 – Far East, Near East, Melbourne Region and Inland Aquaculture

According to FRDC research, the Far East region, which is made up primarily of professional fishing activities out of the Gippsland Lakes and Mallacoota, had the highest economic impact in Victoria, with total direct and indirect impacts of **$75.8 million** of added value and **810** FTE jobs contributed to the region. Inland aquaculture **$52 million** of added value, **447** FTE jobs.

Estimates of the relative contributions to industry value add through the supply chain from production and harvest, processing and other supply chain impacts presented in the FRDC research for Region 2 are set out below:

— Initial Value Add – production and harvest contributed between **20%-30%** of total wild-catch and aquaculture value added from these regions, representing a **46%** increase in the initial estimated value of output.

— Processing of Seafood Value Add – contributed between **30-40%** of total wild-catch and aquaculture value added from these regions, representing on average an **67%** increase in the initial estimated value of output.

— Other Supply Chain / Market Channels – e.g. transport, logistics / wholesale trade / retail trade contributed between **35%-50%** of total wild-catch and aquaculture value added from these regions.

2_Seafood Industry Supply Chain, Value Add, Interdependencies & Vulnerabilities

2.2.2_CESSH, Curtin University & DAFWA Research

A second research paper (January 2011), considered the value chain of the three selected Fin-fish companies in Western Australia.

The study defines Western Australia's seafood value chain as comprising three main elements for analysis purposes:

1. Harvest.
2. Wholesale/processing.
3. Retailing.

Each case study was based on a different Western Australian company involving different inputs and outputs.

The three case studies measured inputs from sectors within and outside the industry; and outputs to sectors within the industry and outside the industry.
Inputs from sectors within the seafood industry were generally higher than inputs from outside the industry at all stages of the supply chain in all case studies, but particularly during the wholesale/processing stage.

Similarly outputs to sectors within the industry were generally higher than outputs to sectors outside the industry at all stages of the supply chain in all case studies, particularly at the wholesale/processing stage.

This highlights that whilst all stages of the seafood supply chain are important across the three case studies considered, the wholesale/processing stage on average recorded a higher value of total inputs, especially from sectors within the seafood industry, and resulted in a higher value of outputs to sectors within and outside the seafood industry when compared with other stages of the supply chain.

Intuitively, wholesale and processing stages of the supply chain will be dominated by inputs from within the seafood sector such as fresh, chilled or frozen wild-catch and aquaculture produce. Inputs from outside the seafood industry may include petrol, transport, finance and insurance, rental and hiring services and employment and other administrative services.

The three case studies demonstrate that on average, outputs to sectors within the industry during the wholesale/processing stage are higher than for the harvest stage and retail stage; and on average outputs to sectors outside the industry are higher than the harvest stage but lower than the retail stage.

Overall total inputs and outputs involving all industries during the wholesale/processing stage are larger than other stages of the supply chain.

2_Seafood Industry Supply Chain, Value Add, Interdependencies & Vulnerabilities

2.2.3_Australian Bureau of Statistics (ABS) Australian National Accounts: Input-Output Tables

The Australian Bureau of Statistics (ABS) Australian National Accounts: Input-Output Tables, 2016-17 (Table 10) shows the total requirements (i.e. initial + direct + indirect requirements) from all sectors involved in producing the outputs of the following industries:

— Aquaculture.
— Fishing.
— Road Transport and Transport services and storage.
— Processed seafood manufacturing^.
— Wholesale trade.

The most significant inputs to the production and harvest of aquaculture and fishing are Professional, Scientific and Technical Services, Oil, gas and petroleum and Wholesale Trade – with other significant inputs being Ships and Boat Manufacturing, Construction Services, Retail Trade, Road Transport, Transport Support services and storage, Finance, Rental and Hiring Services (except Real Estate), Employment, Travel Agency and Other Administrative Services

The most significant inputs to road transport and transport services and storage are Professional, Scientific and Technical Services, Wholesale Trade, Construction Services and Auxiliary Finance and Insurance Services.

The most significant inputs to processed seafood manufacturing are Aquaculture and Fishing, which collectively make up more than 50% of total industry inputs – followed by Oil, gas and petroleum, Road Transport, Auxiliary Finance and Insurance Services, Rental and Hiring Services (except Real Estate), Employment, Travel Agency and Other Administrative Services.

This is broadly consistent with the WA case study research, which demonstrated seafood processing stages of the supply chain are dominated by inputs from within the seafood sector, specifically unprocessed seafood produce.

The most significant inputs to wholesale trade are Professional, Scientific and Technical Services, Non-Residential Property Operators and Real Estate Services, Construction Services – followed by Employment, Travel Agency and Other Administrative Services, Insurance and Superannuation Funds, Internet Service Providers, Internet Publishing and Broadcasting, Websearch Portals and Data Processing, Library and Other Information Services.

This indicates that each of the sectors supplying inputs to these industries will be directly and indirectly impacted as a result of disruptions to the seafood supply chain from either within the supply chain or resulting from external disruptions.

^ Seafood processing includes skinning or shelling, grading, filleting, boning, crumbing, battering and freezing of seafood. This also includes operating vessels and equipment which gather and process fish or other seafoods. There is no available published ABS data in relation to industry value add associated with processed seafood manufacturing.

2_Seafood Industry Supply Chain, Value Add, Interdependencies & Vulnerabilities

2.2.4_Supply Chain – Industry Relationships

The table here is based on Australian National Accounts: Input-Output Tables, 2016-17 (Table 10) and highlights sectors with common and significant inputs to industry production during different stages of the seafood supply chain.

It highlights the relative significance of sector inputs, common inter-industry dependencies and reveals the potential for inter and intra-industry coordination across the various segments of the supply chain.

The most significant intra-industry relationships exist between initial production/harvest and high-value-adding processing/wholesale functions.

The most common and significant inter-industry/sector inputs across the various stages of the supply chain include:

- Professional, Scientific and Technical Services.
- Construction Services.
- Wholesale Trade.
- Road Transport and Transport Support services and storage.
- Finance, Rental and Hiring Services (except Real Estate).

The direction and extent of impacts associated with disruption arising from the above themes is presented here.

Value of sector inputs involved in generating $100 increase in industry outputs

In excess of $10 sector input per $100 output	✔ ✔ ✔
In excess of $5-$10 sector input per $100 output	✔ ✔
In excess of $1-$5 sector input per $100 output	✔

Sector Inputs	Industry Outputs: Production / Harvesting	Processing Value Added Impacts	Other Flow-on Impacts i.e.transport/ storage wholesale/retail
Aquaculture.	✔	✔ ✔ ✔	
Fishing	✔	✔ ✔ ✔	
Professional, Scientific and Technical Services	✔ ✔ ✔	✔ ✔ ✔	✔ ✔ ✔
Construction Services	✔ ✔ ✔	✔	✔ ✔ ✔
Oil, gas and petroleum	✔ ✔	✔	✔ ✔
Ships and Boat Manufacturing	✔ ✔	✔	
Retail Trade	✔ ✔	✔	
Wholesale Trade	✔ ✔ ✔	✔	✔ ✔ ✔
Road Transport	✔ ✔	✔ ✔ ✔	✔ ✔ ✔
Transport Support services and storage	✔ ✔	✔ ✔ ✔	✔ ✔ ✔
Finance, Rental & Hiring Services (except Real Estate)	✔ ✔	✔ ✔ ✔	✔ ✔ ✔
Auxiliary Finance and Insurance Services	✔	✔ ✔	✔ ✔
Non-Residential Property Operators and Real Estate	✔	✔	✔ ✔

Source: Australian Bureau of Statistics (ABS) Australian National Accounts: Input-Output Tables, 2016-17 (Table 10)

2_Seafood Industry Supply Chain, Value Add, Interdependencies & Vulnerabilities

2.2.4_Supply Chain – Industry Relationships (cont)

Inter–industry Integration

There is evidence of common and significant inter-industry relationships within the various parts of the seafood supply chain, indicating a degree of common dependence on several sectors such as Professional, Scientific and Technical Services, Wholesale Trade, Construction Services, Transport Support services and storage, Finance, Rental and Hiring Services (except Real Estate) and Auxiliary Finance and Insurance Services.

This suggests there may be potential for a greater level of industry representation and coordination involving these sectors and activities, which may strengthen relationships between parts of the supply chain that don't relate directly on an intra-industry basis such as harvest/production and retail channels.

For example road transport, transport services and storage are common and significant across all element of the supply chain, meaning some participants in this sector may play a role in mitigating supply chain bottlenecks or creating more streamlined or direct distribution linkages between harvest/production and retail channels.

Intra–industry Integration

There is a strong direct intra-industry relationship between harvest/production and processing/wholesale, meaning disruptions within the initial stages of the supply chain (e.g. severe weather events, climate change, drought, pests or disease, social license and sustainability) or during processing (e.g. market access, labour supply, cold chain and/or freight space availability) will likely have significant direct upstream and downstream impacts within the supply chain.

Whilst there are fewer direct intra-industry relationships between harvest/production and retail channels, there is a strong relationship between wholesale/distribution and retail channels.

The extent of this dependency means disruptions within the retail supply chain (i.e. access to markets, access to labour, geopolitical and/or global health risks) will have significant direct implications for wholesale/processing and therefore significant flow-on implications for production and harvesting.

This highlights a requirement to strengthen direct relationships between harvest/production and retail channels and diversity wholesale/processing systems, infrastructure and networks to mitigate risks upstream and downstream impacts arising disruptions arising externally or within the seafood supply chain.

2_Seafood Industry Supply Chain, Value Add, Interdependencies & Vulnerabilities

2.3 Seafood Industry Integration & Vulnerability Mapping

There are several important themes that have direct implications for elements of the seafood industry supply chain and disruptions or events involving these elements may significantly impact the supply chain.

Production/Harvest

Themes that most significantly impact or disrupt seafood and harvest functions include:

— Severe weather events.
— Climate change.
— Drought.
— Natural disasters.
— Pests or disease.
— Social license & sustainability.
— Access to transport systems.
— Geopolitical and/or global health risks.

Processing/Wholesale/Retail

Themes that most significantly impact or disrupt processing, wholesale and retail functions include

— Access to domestic and international markets.
— Labour supply/costs.
— Operating costs (e.g. vessel/materials/resources).
— Access to transport systems.
— Cold chain and/or freight availability.
— Geopolitical and/or global health risks.

There are several common vulnerabilities across the seafood supply chain, the following being significant in the context of COVID-19.

— COVID compliance requirements / COVID-plans including increased costs of security, legal and consultant advice and other compliance that has been necessary because of COVID-19.

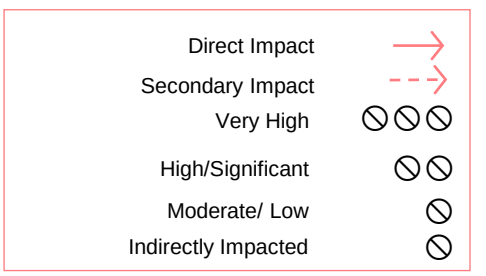
— A reported lack of access to coordinated freight and logistics infrastructure and services on shared regional freight routes, access to air freight and competition from other export commodity types.

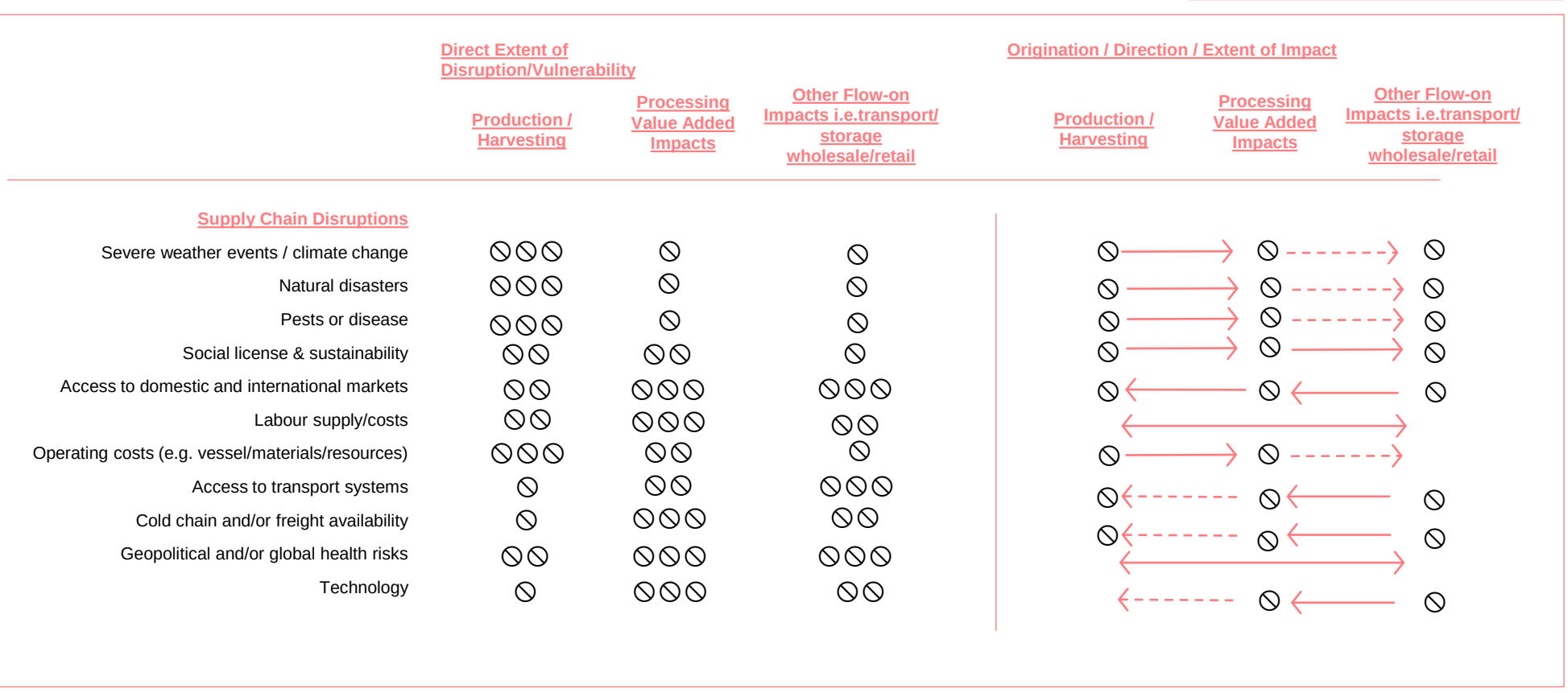
The direction (upstream/downstream) and extent of impacts (direct / indirect) associated with disruption arising from the above themes is represented overleaf.

2_Seafood Industry Supply Chain, Value Add, Interdependencies & Vulnerabilities

2.3 Seafood Industry Integration & Vulnerability Mapping

Disruptions to retail market channels due to COVID-19 have direct and indirect implications for seafood distribution, wholesale trade, processing and production/harvest elements of the supply chain





Source: Macroplan 2020; various

2_Seafood Industry Supply Chain, Value Add, Interdependencies & Vulnerabilities

2.4_Summary of findings

- There are complex industry and sectoral relationships and dependencies across all stages of the seafood supply chain.
- Unfortunately, there is no published industry or ABS data relating to industry value added arising through elements of the seafood supply chain, especially seafood processing.
- Whilst some seafood producers have the capacity to process and distribute seafood to consumers directly, most producers sell their produce via centralised wholesale channels for processing and distribution through retail channels.
- This may contribute to a perception that commercial fishing is one of reluctance to change and commercial fishers do not generally see themselves as part of the whole supply chain.
- Studies of industry value added through the supply chain reveal the following:
  - There are more direct relationships between seafood producers and wholesale/processing functions than between producers and retail market channels. This presents an opportunity to build social licence by proactively fostering inter-industry relationships.
  - There appears to be a reliance on centralised wholesale and processing functions, partly owing to the time-costs/effort involved in harvest. Centralisation streamlines the process and provides price certainty for producers and minimises costs/risks in getting products to market.
  - Seafood processing contributes a relatively high share of total seafood industry value added.
- Disruptions to retail market channels due to COVID-19 have direct and indirect implications for seafood distribution, wholesale trade, processing and production/harvest.
- Significantly, most elements of the seafood supply chain use inputs from the same sectors (such as Road Transport, Transport Services and Storage and Professional, Scientific and Technical Services), meaning that greater sector coordination of inputs across the supply chain could support industry-wide cost-savings, innovation and adoption of integrated marketing solutions.
- Overall there is an opportunity to coordinate infrastructure / networks for commercial seafood producers across diverse regions, especially those with interest/capacity for direct distribution to retail market channels.
-

3_Exploring the direction & significance of impacts arising due to COVID-19

3_Exploring the direction & significance of impacts arising due to COVID-19

This section presents a high-level analysis of the direction and significance of impacts arising from COVID-19 on seafood production, harvest, processing, wholesale, distribution and retail channels. A summary of the findings of a recent ABARES study addressing the impacts of COVID-19 on the Australian seafood industry is presented.

3.1_Overview

The 2019 coronavirus (COVID19) outbreak has significantly dislocated Australia's seafood industry supply chain and market channels.

Demand for Australian seafood products in several export markets including China has fallen in response to COVID19. Australian seafood exports account for over half of total industry revenue, with approximately **45%** of export revenue value generated from China. Seafood exports to China represent **60%** of the value of Victorian seafood exports.

Victorian Department of Health & Human Services Stage 3 Restrictions have limited travel and restaurant dining, with online orders and delivery, takeaway and click and collect offering alternative solutions for many retailers and customers. Restrictions across metropolitan Melbourne and elsewhere in Victoria have led to the closure of restaurant and café dining and restrictions across workplaces with onsite work allowed for permitted workers.

3.2 Direct impacts of COVID-19

COVID-19 has directly impacted retail market channels and subsequently dislocated seafood industry supply chains. This has arisen through a reduction in demand for seafood products by China and restrictions on domestic hospitality/restaurant and retail market channels. The direction of flow through the supply chain has primarily occurred through reduced orders from restaurants and demand from China, which has sent a direct signal to wholesale distributors about a reduction in demand for stock, which has flowed to processing and production / harvest functions.

Interestingly, Melbourne Seafood Centre (MSC) has reported a strong market signal from wholesale distributors shifting away from restaurants and supermarkets towards independent retail and local seafood markets such as Queen Victoria Market and South Melbourne Market.

Anecdotally QV Market recorded 900 click and collect bookings on one day in response to Stage 3 restrictions; and Oakleigh fish outlet recorded significant growth (up to 350 orders via social media), directly in response to Stage 3 restrictions.

Whilst independent local seafood retailers previously accounted for around **50%** of wholesale distribution, these groups now account for over **80%** of total distribution, with restaurants and supermarkets accounting for less than **20%** of wholesale distribution.

This shift may indicate that overall seafood consumption rates remain generally in line with trend (noting retail sales volumes are currently tracking above long-term trends), with supply and access to products shifting from restaurant dining towards takeaway and online purchases, with fresh seafood markets now playing a major role in distribution to consumers.

This is yet to be revealed through sales data, noting some reports of a general industry slowdown in supply and distribution owing to on-site COVID-compliance measures across aspects of the supply chain.

3_Exploring the direction & significance of impacts arising due to COVID-19

3.2 Direct impacts of COVID-19 (cont)

There are several important themes that have direct implications for elements of the seafood industry supply chain and disruptions or events involving these elements may significantly impact the supply chain.

Production/Harvest

Wild-catch producers are reporting the following current challenges:

— Increased costs associated with adjusting to regulations around sustainability of fishing practices, including quotas and fishing regions, increased regulatory burden, value management systems, electronic reporting, pre/post fishing reports in most fisheries.
— COVID workplace compliance / COVID-plans including anxiety among staff about contracting COVID-19, increased costs of security, legal and consultant advice and other compliance that has been necessary because of COVID-19.
— A lack of coordinated freight and logistics infrastructure and services on shared regional freight routes, access to air freight and competition from other export commodity types, which has resulted in financial distress for many businesses.

Wholesale / processing

The Melbourne Seafood Centre reports the most significant issues it faces following COVID-19 include:

— Difficulties sourcing seafood stocks from producers, due to an overall slowdown in supply and distribution owing to on-site COVID-compliance measures across aspects of the supply chain.
— A significant pivot away from restaurants and supermarkets towards independent retail and seafood markets.
— Other costs related to COVID-compliance including increased costs of security, legal and consultant advice and other compliance.

Seafood distribution channels

Seafood distributors are reporting the most significant issues they face following COVID-19 include:

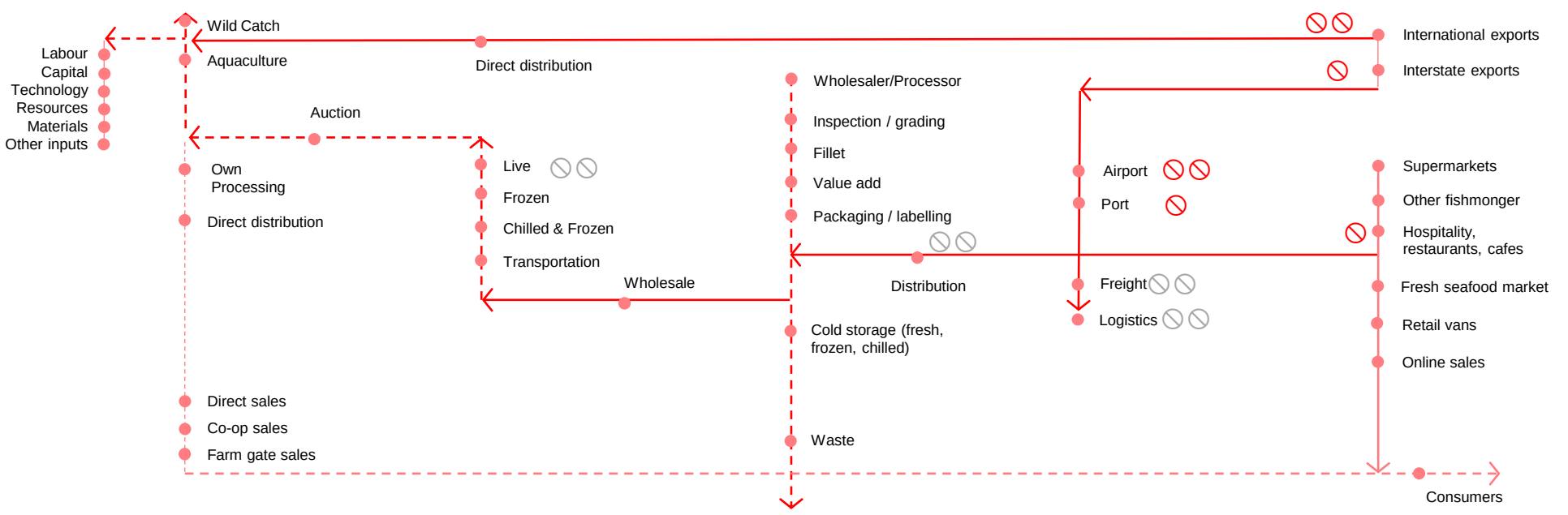
— A highly competitive market responding to a pivot away from restaurants and supermarkets towards independent retail and seafood markets.
— A reduction in the volume of retail outlets due to closure of restaurant and café dining for customers.
— Lag times in adaptation to COVID workplace compliance / COVID-plans and consequent loss of revenue.
— Persistence among supermarkets on cheaper imported products, which has limited the potential to expand into this market. Whilst some supermarkets stock locally sourced fresh, chilled and frozen Australian seafood, this in not common with supermarkets preferring imports of lower unit value products such as canned or frozen Finfish and some higher unit value products such as Prawns and Salmonids.

3_Exploring the direction & significance of impacts arising due to COVID-19

The direction of flow through the supply chain has primarily occurred through reduced orders from restaurants and demand from China, which has sent a direct signal to wholesale distributors about a reduction in demand for stock, which has flowed to processing and production / harvest functions

_Supply Chain Network

_Market Channels



Source: Macroplan 2020; various

3_Exploring the direction & significance of impacts arising due to COVID-19

3.3 Adaptation to COVID-19

The retail sector faces the following impacts arising through COVID-19:

- Restaurants and café dining is prohibited, and food sales are limited to takeaway only. This has reduced the number of retail venues operating in metropolitan Melbourne and Victoria.
- Retail markets such as Queen Victoria Market and other markets have reported significant growth in click and collect transactions, online ordering and social media purchases
- Takeaway ordering, seafood delivery and click and collect are growing in significance.
- Cost of COVID workplace compliance in the form of reduced staffing / COVID-customer plans including increased costs such as signage, security hand hygiene

3.4 Questions & Considerations

Future demand for fresh and prepared seafood in Australia will continue to be influenced by population growth. However, the short-medium term outlook for population growth is likely to be mixed given ongoing restrictions on overseas travel, overseas migration and interstate migration in the current COVID19 environment.

It is not clear the extent to which domestic consumers will respond to the widespread availability of high quality locally sourced fresh seafood products considering reduced demand from China due to COVID-19. However this presents a significant opportunity for the seafood industry proactively diversity and expand existing market channels and relationships with domestic consumers.

It is also unclear whether retail market channels, including supermarkets have the infrastructure, operational capacity or interest to distribute high quality, locally sourced seafood products to domestic consumers in a COVID-compliant environment.

Some of the questions that continue to face the industry include:

- How long a reduction in demand for Australian seafood last in China?
- Are there opportunities to expand into other export markets?
- Will restaurant dining return to normal after COVID-19 or will there remain a relative share of takeaway and delivery?
- Is there potential to increase the market among multicultural communities who generally have greater diversity in seafood tastes?
- Will domestic consumers consume the same, more or less seafood following COVID-19?
- Will online ordering and click and collect last beyond COVID?
- Will online be a sustainable future for the seafood industry post COVID?
- To what extent will supermarkets stock, label and promote Australian seafood product lines?

3_Exploring the direction & significance of impacts arising due to COVID-19

3.5_Summary of findings

- COVID-19 has directly impacted retail market channels and subsequently dislocated seafood industry supply chains.
- The Melbourne Seafood Centre (MSC) has reported a strong market signal from wholesale distributors shifting away from restaurants and supermarkets towards independent retail and local seafood markets
- Whilst seafood sales volumes are likely to be reduced, there is some potential that a pivot towards takeaway, online ordering and click and collect may mitigate a large share of lost retail sales of fresh seafood products through restaurants and other restricted retail outlets.
- COVID compliance in retail shops and COVID-plans in workplaces including costs of security, legal and consultants are reported as a common issue across the supply chain and retail channels.
- A lack of access to coordinated freight and logistics infrastructure and services on shared regional freight routes, access to air freight and competition from other export commodity types remain significant issues for the seafood industry.
-

4_Opportunities for the seafood industry to pivot & diversify to mitigate the risks of disruption caused by COVID–19

4_Opportunities for the seafood industry to pivot & diversify to mitigate COVID–19

This section outlines opportunities available to the Victorian seafood industry to mitigate the impacts of COVID-19. This includes several tools, policy actions, marketing efforts and further research that will require ongoing industry coordination and collaboration

4.1 Key Opportunities

As consumers shift from spending disposable income on food products towards higher-priced food services (e.g. takeaway/home delivery), the seafood industry can actively target food services, including home food delivery and takeaway.

This would specifically target higher income households, younger age cohorts, those in the 55-64-year cohort including cultural groups with a propensity to purchase seafood products.

— Real consumer prices increased overall by **5%** for food and **17%** for meals out and take away food between 1988-89 and 2015-16. This demonstrates that as consumers progressively switch away from food products with lower price growth toward higher-priced food services, consumers will record higher food expenditure on average.

— ABS household expenditure survey (HES) data shows higher income households, younger age cohorts and those in the 55-64-year cohort generally consume more on meals out and fast foods when compared with the Australian benchmark and other income quintiles.

Whilst there is a trend toward increased demand for meals out, online food ordering and click and collect, a challenge for domestic seafood producers is to ensure people have information about seafood products including seafood attributes such as country of origin, freshness, safety and nutrition.

This means the industry needs to embark on a focused marketing campaign targeting retail supermarkets and other seafood retail outlets and consumers as a means of increasing domestic market penetration.

Retail supermarkets should play a more active role in stocking Australian product lines across several isles focusing on seafood as an experience with matching food, wine and related food experiences.

Domestic distributors and retailers have an opportunity to diversify into domestic markets by targeting high quality export products such as Rock Lobster, Abalone at higher income domestic consumers.

Equally domestic producers could focus on lower unit value import-replacing products such as Finfish, subject to social license and permits. e.g. selling fish direct from the boat requires an extra PrimeSafe permit.

4_Opportunities for the seafood industry to pivot & diversify to mitigate COVID–19

4.2 Tools, Policy Responses, Research & Marketing Initiatives

The following tools, policy responses, research and marketing opportunities have been identified in collaboration with SIV, VFA and others for further consideration.

4.2.1_Tools

Tool 1 – Develop an online trading platform that connects all aspects of supply-demand:

i. Seafood products (primary and secondary).
ii. Wholesale markets/logistics nodes.
iii. Distribution networks.
iv. independent retail and fishmongers.
v. Consumers and their tables.

Tool 2 – Map a logistics framework that incorporates:

i. Victorian Consumer Profile data
ii. Current distribution networks, including:
    1. Location of current outlets for Victorian seafood and products.
    2. Click and collect options.
    3. Home delivery.

4.2.2_Policy Action

Policy Action 1 – Seafood industry to advocate for Country of Origin Labelling on restaurant menus.

Policy Action 2 – Seafood industry to advocate for import replacement in high volume food service e.g. aged care, etc.

4.2.3_Further Research

Undertake a Victorian Consumer Profile Study using ABS Census, HILDA and other data that maps consumers by:

i. Location.
ii. Ethnicity.
iii. Disposable income.
iv. Wealth.
v. SEIFA.
vi. Age cohorts.

4.2.4_ Marketing and Consumer Education – product development

Step 1 – Develop the story of commercial seafoods around key themes such as:

i. Seasonality – a seafood for all seasons.
ii. Nutrition – you can trust Victorian seafood to be safe
iii. History – the people and places.
iv. Variety and diversity – Victoria has something for everyone.
v. Sustainability – Victorian fishers look after the sea environment because this is where the fish live.

Step 2 – Develop a compatible story associated with farmed seafood

i. Family businesses.
ii. A range of price points.
iii. etc.

4.2.5_Marketing Campaign – utilising consumer profile data

Action 1 – Develop targeted messages that align with consumer profiles drawing on ABS Census data.

Action 2 – Utilise communication channels specific to consumer cohorts identified above.

4_Opportunities for the seafood industry to pivot & diversify to mitigate COVID–19

4_Opportunities for the seafood industry to pivot & diversify to mitigate COVID–19

4.3_Concluding Remarks

- Coronavirus (COVID-19) has impacted Australia's seafood supply chain through reduced demand for Australian seafood products by China and the imposition of Stage 3 and Stage 4 restrictions on workplaces, restaurants, cafes and retail channels.
- These impacts have flowed through the supply chain through changes in wholesale distribution with consequences for processing and production of wild-caught and aquaculture seafood products.
- The Melbourne Seafood Centre (MSC) has reported a significant pivot away from wholesale distribution to restaurants and supermarkets towards independent retail and local seafood markets which have reported significant growth in click and collect transactions in response to Stage 3 restrictions.
- there have been many positive responses across the hospitality industry, among seafood retailers and from consumers who have adapted well to online and social media ordering and delivery, takeaway and click and collect arrangements. This has improved access for many customers and supported businesses in adapting to new operational approaches in an uncertain environment. This highlights an opportunity to consider ways to draw-out, reinforce and foster direct customer connections among fishers and producers.
- Seafood industry value added is difficult to measure given lack of available data. Research prepared by others reinforces the significance of processing within the seafood value chain.
- Given the centralisation of processing and an overwhelming reliance by producers on road transport and wholesale processing and distribution, this highlights a need to provide more infrastructure and coordinated transport systems and services networks to get locally sourced products to consumers.
- Supply chain inter-relationships shows similar industries supply various stages of the supply chain (such as Road Transport, Transport Services and Storage and Professional, Scientific and Technical Services) meaning these groups could play a greater role in coordinating across the supply chain.
- A general trend towards online purchasing presents a significant opportunity for the seafood industry to actively target domestic consumers prepared to pay for high quality seafood products.
- Seafood retail outlets as well as restaurants and supermarkets can play an important role in making locally sourced seafood available through various means including click and collect, takeaway, delivery, focused electronic media advertising about Australian seafood availability (e.g. similar to beef, lamb, pork, cheese, wine) and promoting local seafood as a food tourism experience.
- With further targeted research, active marketing and education and industry-wide adoption of electronic marketing platforms, the seafood industry has the potential to not only overcome dislocation of COVID-19 but as a new way of expanding and developing the seafood industry locally.

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Data Compendium

_Contents

C1_Glossary of Terms

Aquaculture: commercial growing of marine or freshwater animals and aquatic plants. Often called 'fish farming'.

Aquaculture value: assessed value received by aquaculturists on the basis of an 'at farm gate' equivalent for product marketed.

Australian Fishing Zone (AFZ): the area extending seaward of coastal waters (3 nautical miles from the territorial sea baseline) to the outer limits of the Exclusive Economic Zone (EEZ). In the case of external territories, such as Christmas Island, the AFZ extends from the territorial sea baseline to the outer limit of the EEZ. The AFZ is defined in the *Fisheries Management Act 1991*, which also specifies a number of 'excepted waters', notably in Antarctica and Torres Strait, that are excluded from the AFZ.

Beach price: a price that would be received by fishers or aquaculture farmers per unit of whole-weight fish at the point of landing or farm gate. It excludes any margins for freight, marketing and processing.

Catch: in relation to fishing, means capture, take or harvest.

Catch limit: A general term used to describe any limits on catching or possessing fish. Bag and possession limits are types of catch limits.

Coastal waters: the waters extending 3 nautical miles from the territorial sea baseline. The states and the Northern Territory have jurisdiction over the coastal waters adjacent to them.

Continental shelf: either the area of relatively shallow water that fringes a continent from the shoreline to the top of the continental slope (the top of the continental slope is often defined by the 200-metre isobath), or a defined maritime zone that comprises the continental shelf where it extends beyond the limit of the Exclusive Economic Zone to the limit of the continental margin. The defined maritime zone is also sometimes referred to as the 'extended continental shelf', and its limit is determined by the United Nations Commission on the Limits of the Continental Shelf.

Domestic fishery: fishery within the Australian Fishing Zone operated by Australian-flagged vessels.

Export quantity: data supplied by the Australian Bureau of Statistics (ABS) are on the basis of the net product weight (excluding packaging) exported. Exports are identified by the ABS according to source state or territory, not state or territory in which the product was grown or processed.

Export value: data supplied by the ABS and valued on a *Free on board (fob)* basis at the Australian port of export. The costs of freight, insurance and other distributive services beyond the Australian customs border are not included.

Farmgate value: see *Beach price*.

Fisheries: refers to Commonwealth, state and territory waters in which marine and freshwater animals are commercially caught or farmed, unless otherwise specified.

Fisheries production: refers to commercial production of wild-caught and aquaculture marine or freshwater animals from Commonwealth, state and territory waters and aquaculture farms, unless otherwise specified.
The *Farmgate value* of a cultivated product in aquaculture is the net value of the product when it leaves the *farm*, after marketing costs have been subtracted.

Fishing season: the period during which a fishery can be accessed by fishers. Sometimes referred to as a fishing year.

Free on board (fob): a seller pays for transportation of the goods to the port of shipment, plus loading costs. The buyer pays the cost of marine freight transport, insurance, unloading, and transportation from the arrival port to the final destination.

Gross value of production (GVP): historically, the value placed on recorded production at the wholesale prices realised in the marketplace. The point of measurement can vary between commodities. Generally the marketplace is the metropolitan market in each state and territory. However, where commodities are consumed locally or where they become raw material for a secondary industry, these points are presumed to be the marketplace. Prices used in these calculations exclude GST.

C1_Glossary of Terms

Import quantity: data supplied by the ABS on the basis of the net product weight (excluding packaging) imported import value data supplied by the ABS on the basis of product cost.

Import value: data provided by the ABS are valued on a customs value for duty basis that is identical to a *Free on board (fob)* basis. The customs value for duty is the price actually paid at the port of origin, including inland freight and insurance costs incurred in delivering the product(s) to the port of origin; the freight and insurance costs of delivering the product(s) to the Australian port of destination are excluded.

Line fishing: fishing methods that use fishing lines, including handlines, hand reels, powered reels, pole and line, droplines, longlines, trotlines and troll lines.

Net economic returns (NER): a fishery's NER over a particular period are equal to fishing revenue less fishing costs. Fishing costs include the usual accounting costs of fuel, labour, and repairs and maintenance, as well as various economic costs such as the opportunity cost of owner labour and capital (c.f. Opportunity cost). The concept of NER is very closely related to economic efficiency—a necessary condition for NER to be maximised.

Quota: amount of catch allocated to a fishery (total allowable catch), or to an individual fisher or company (individual transferable quota).

Quota species: species for which catch quotas have been allocated.

Real: 'real 2017–18 dollars' or 'real terms' refers to conversion of nominal dollar values to take account of inflation; comparison from year to year is expressed in nominal terms unless stated otherwise.

Rounding: small discrepancies in totals are generally caused by the rounding components.

Real prices; real terms: Real prices are historical prices that have been adjusted to reflect changes in the purchasing power of money (most commonly measured by the consumer price index). Such prices may also be expressed as being in real terms. Commonly, a year is indicated alongside a real price to show the year's prices to which historical prices have been adjusted. Prices quoted in real terms allow meaningful comparison over time because any fluctuations exclude the effect of inflation.

Species group: group of similar species that are often difficult to differentiate without detailed examination.

Territorial sea baseline: the baseline from which all the zones (for example, Exclusive Economic Zone) of Australia's maritime jurisdiction are measured. The baseline is defined as the level of lowest astronomical tide along the coast. Straight baselines may be drawn along deeply indented coastlines or to encompass islands fringing the coast. The baseline may also be drawn straight across the entrances to bays and estuaries, rather than following the coast inshore.

Trap fishing: fishing by means of traps, often designed to catch a particular species (for example, rock lobster pots).

Trawl fishing: fishing method in which a large, bag-like net is drawn along behind a vessel to target either demersal or pelagic fish species. There are many variations.

Wild Catch: Wild-caught fish are caught by from their natural habitats such as rivers, lakes and oceans.

Source: ABARES 2020

C2_Data Sources & References

This paper references the findings of several research papers published by the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES).

Note that at the time of preparing this technical compendium most historic timeseries data extending to 2017/18 was available in a consolidated format. More recent 2018/19 data was published separately.

All information available at the time of preparing this paper has been considered by the author. However, not all information and data has been reproduced or presented in a timeseries in this resource document.

This information may be referenced at several publicly available sources including those listed here.

- Australian Bureau of Statistics (ABS)
- ABS Household Expenditure Surveys
- ABS, Information Consultancy Services, 2007, cat. no. 9920.0, Canberra
- Agriculture Victoria 2020
- Australian Government Department of Agriculture, Fisheries and Forestry
- Australian Government Department of Foreign Affairs and Trade
- Australian Government Department of Sustainability, Environment, Water, Population and Communities
- Australia New Zealand Food Authority
- Australian Quarantine and Inspection Service
- Commonwealth Fisheries Association
- Melbourne Seafood Centre
- Fisheries Research and Development Corporation (FRDC)
- IBISWorld reports database
- PrimeSafe
- Seafood Services Australia
- Victorian Fisheries Authority – various https://vfa.vic.gov.au/commercial-fishing/commercial-fish-production

C3_Victorian Seafood Industry

Gross Value of Production

The Gross Value of Production (GVP) of the Victorian seafood industry was **$111.0 million** in 2017-18, compared with **$93.7 million** a year earlier, an increase of 19% during this time.

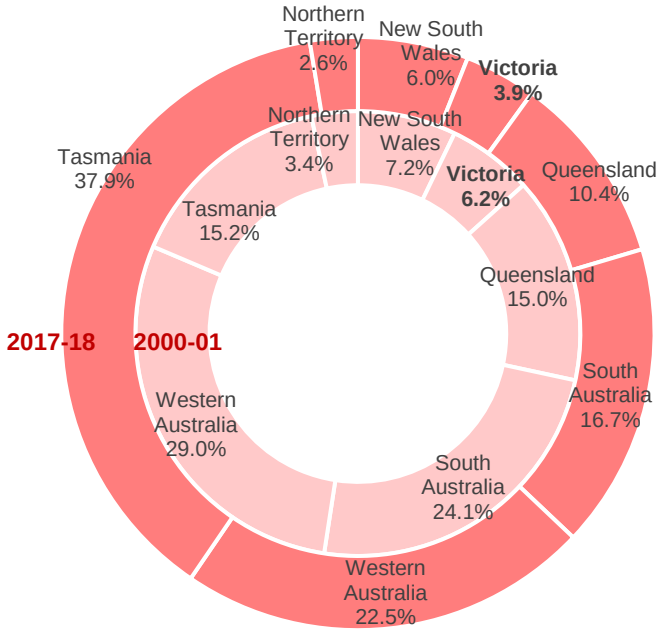
The Victorian seafood industry accounted for nearly. 4.0% of Australia's total seafood industry GVP in 2017-18, compared with 6.2% in 2000-01.

Tasmania has seen the most significant increase in its relative share of total seafood industry GVP, increasing from 15.2% in 2000-01 to 37.9% in 2017-18.

All other states and territories have seen declines in their relative share of Australian seafood industry GVP during this time.

In 2017-18, Western Australia, South Australia and Queensland accounted for 22.5%, 16.7% and 10.5% of total national seafood GVP respectively.

Gross Value of Seafood Production – All States 2000-01 and 2017-18 (Relative Share - %)



Sources: ABARES; AFMA; Western Australian Department of Fisheries; Tasmanian Department of Primary Industries and Regional Development; New South Wales Department of Primary Industries; Queensland Department of Agriculture and Fisheries; Victorian Fisheries Authority; Northern Territory Department of Primary Industry and Resources; Primary Industries and Regions South Australia; South Australian Research and Development Institute.

C3_Victorian Seafood Industry

Historic Activity – Wild-caught GVP

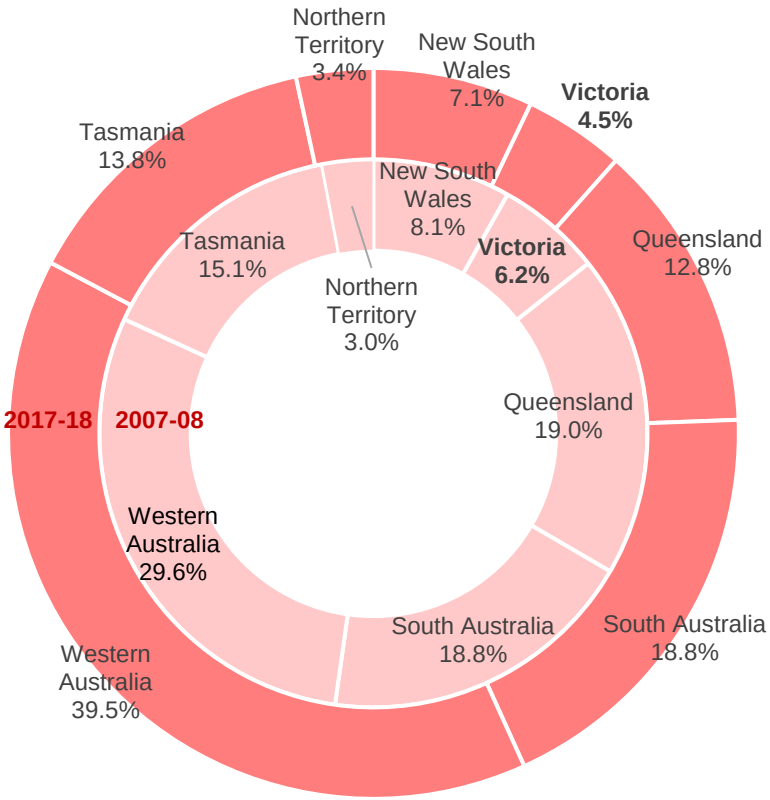
Victoria's wild-catch seafood GVP accounted for 4.5% of Australia's total wild-catch GVP in 2017-18, compared with 6.2% in 2007-08.

Western Australia has seen the most significant increase in its relative share of wild-catch GVP, increasing from 29.6% in 2007-08 to 39.5% in 2017-18.

Except for South Australia and the Northern Territory, all other states and territories recorded declines in their relative share of Australian wild-catch GVP during this time.

In 2017-18, South Australia, Queensland and Tasmania accounted for 18.8%, 12.8% and 13.8% of total national wild catch GVP respectively.

Gross Value of <u>Wildcaught</u> Production by State - 2007-08; and 2017-18



C3_Victorian Seafood Industry

Historic Activity – Aquaculture GVP

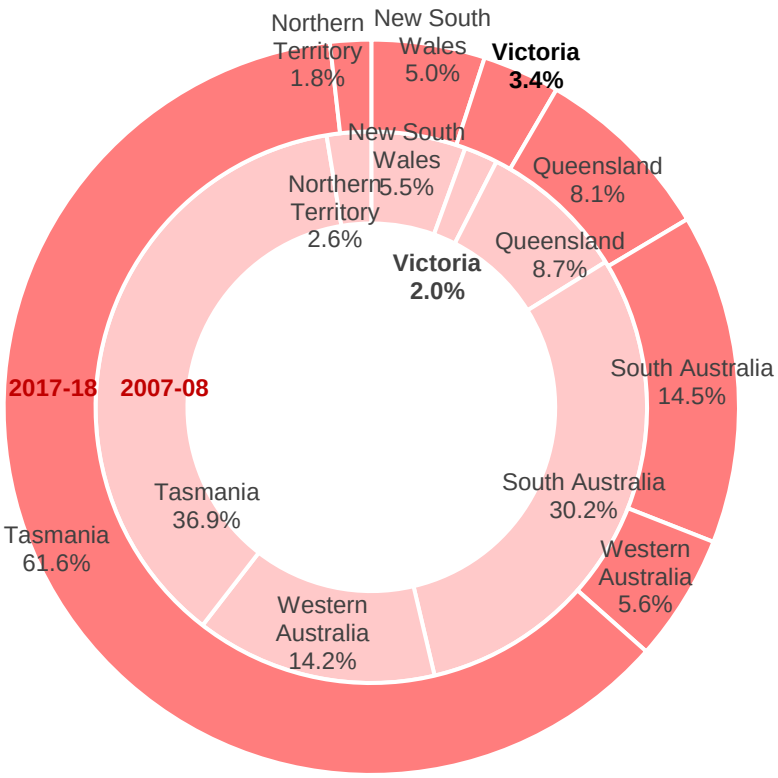
Victoria's aquaculture GVP accounted for 3.4% of Australia's total aquaculture GVP in 2017-18, compared with 2.0% in 2007-08.

Tasmania has seen the most significant increase in its relative share of aquaculture GVP, increasing from 36.9% in 2007-08 to 61.6% in 2017-18.

All other states and territories recorded declines in their relative share of Australian aquaculture GVP during this time.

In 2017-18, South Australia, Queensland and Western Australia accounted for 14.5%, 8.1% and 5.6% of national aquaculture GVP, respectively.

Gross Value of Aquaculture Production by State - 2007-08; and 2017-18



C3_Victorian Seafood Industry

Gross Value of Production

Since 2000-01 there has been a progressive decline in the relative share of Victoria's wild-caught GVP driven mainly by domestic policy and Australia's exchange rate appreciation during this period.

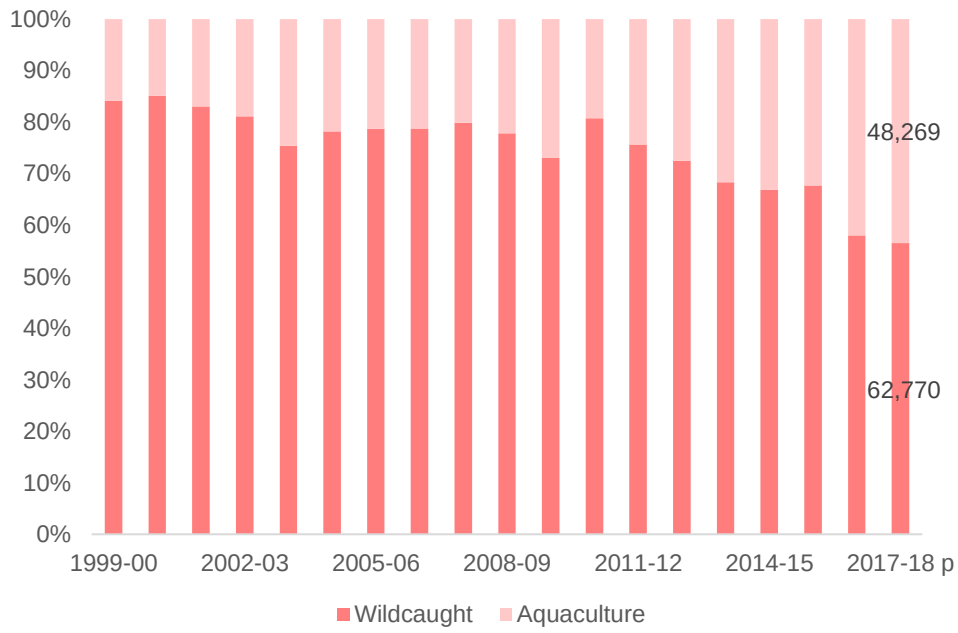
Despite this, Victorian wild catch GVP increased by 15% to **$62.8 million** in 2017-18, with almost all this growth attributed to higher GVP of abalone.

- Victorian wild-catch fisheries production was dominated by abalone and rock lobsters (predominantly Southern rock lobster), which together made up 80% of GVP.
- The GVP of wild-caught abalone increased 31% to $26.9 million driven in large part by higher unit prices, which increased by 24% to $35.6 per kilogram 2018 as a result of strong demand in the Chinese market.

Victorian aquaculture GVP increased by 23% to **$48.3 million** in 2017-18, with almost all of this growth being attributed to higher GVP of abalone.

- Victorian aquaculture production is dominated by abalone and salmonids (predominantly Rainbow Trout), which together make up 81% of aquaculture GVP. Abalone GVP increased by 42% to $25.2 million, reaching its highest level in real terms. The value of salmonids slightly decreased by 6% to a value of $13.7 million, due to a decrease in production volume.

Gross Value of Seafood Production – Victoria 1999-2000 to 2017-18 (Relative Share - %) ^

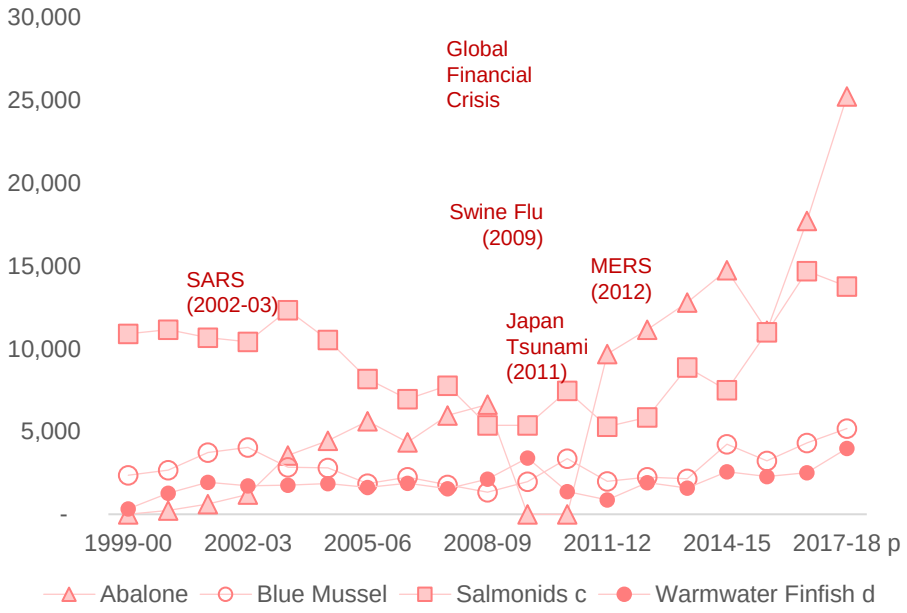


Source: ABARES; Victorian Fisheries Authority
Note: p Preliminary. na Not available. no Only number of fish is reported.

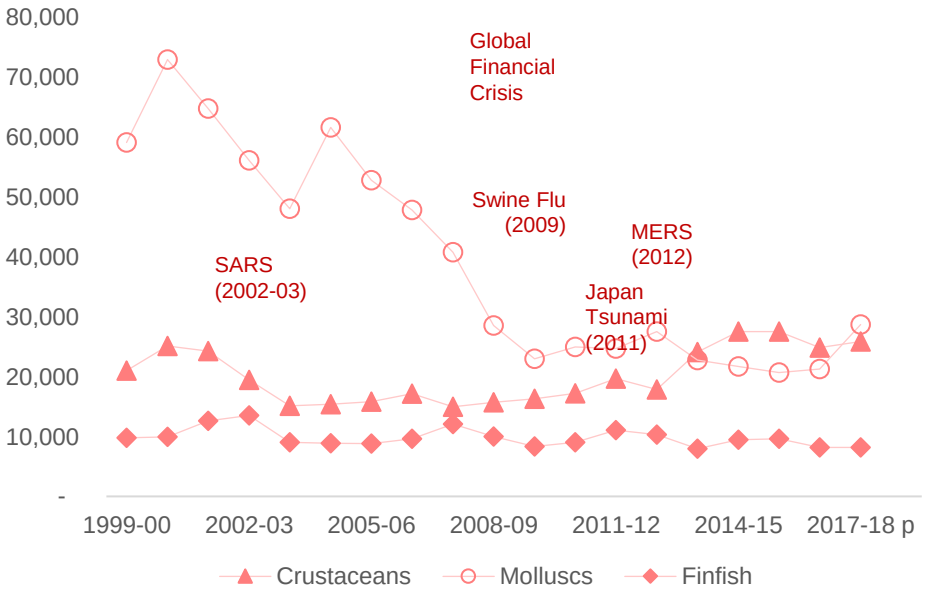
^ Note – 2018/19 data may be sourced here https://vfa.vic.gov.au/commercial-fishing/commercial-fish-production

C3_Victorian Seafood Industry

Gross Value of Aquaculture Production – Victoria 1999-2000 to 2017-18 ($'000 by product type) ^



Gross Value of Wildcaught Production – Victoria 1999-2000 to 2017-18 ($'000 by product type) ^



Source: ABARES; Victorian Fisheries Authority
Note: p Preliminary. na Not available. no Only number of fish is reported.

^ Note – 2018/19 data may be sourced here https://vfa.vic.gov.au/commercial-fishing/commercial-fish-production

C3_Victorian Seafood Industry

Historic Activity – Gross Value of Production

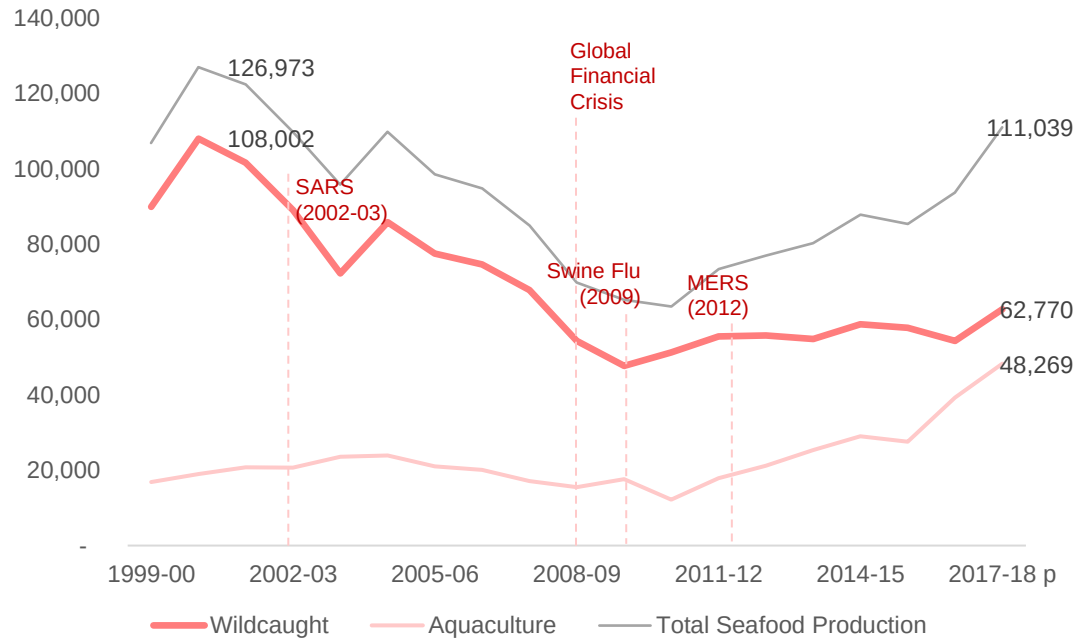
Since 2001–02 there has been a progressive decline in the value of Victoria's wild-caught produce, partly offset by recent increases in the volume and value of aquaculture production since 2008-09.

Structural change in the wild-caught fisheries sector and adverse environmental and disease factors reduced the availability of some species, as well as adjustment to changing commodity demand patterns in the global market.

In value terms a sector most significantly affected by these changes has been the Victorian wild-caught Molluscs sector i.e. abalone, scallops, squids and octopus, where values produced have **declined by around 60%** from a peak in 2003 mainly driven by abalone. Declines in wild-catch GVP have moderated since 2009-10 and largely offset by growth in aquaculture GVP.

Downward movements in wild-catch GVP have coincided with several globally significant disruptions since 2000-01 including SARS in 2002-03, the Global Financial Crisis (GFC) in 2008-09, with limited empirical evidence supporting a direct causal relationship between these events and Victorian wild-caught GVP.

Gross Value of Seafood Industry Production – Victoria 1999-2000 to 2017-18 ($'000)^



Source: ABARES; Victorian Fisheries Authority
Note: p Preliminary. na Not available. no Only number of fish is reported.

^ Note – 2018/19 data may be sourced here https://vfa.vic.gov.au/commercial-fishing/commercial-fish-production

C3_Victorian Seafood Industry

Historic Activity – Volume of Production

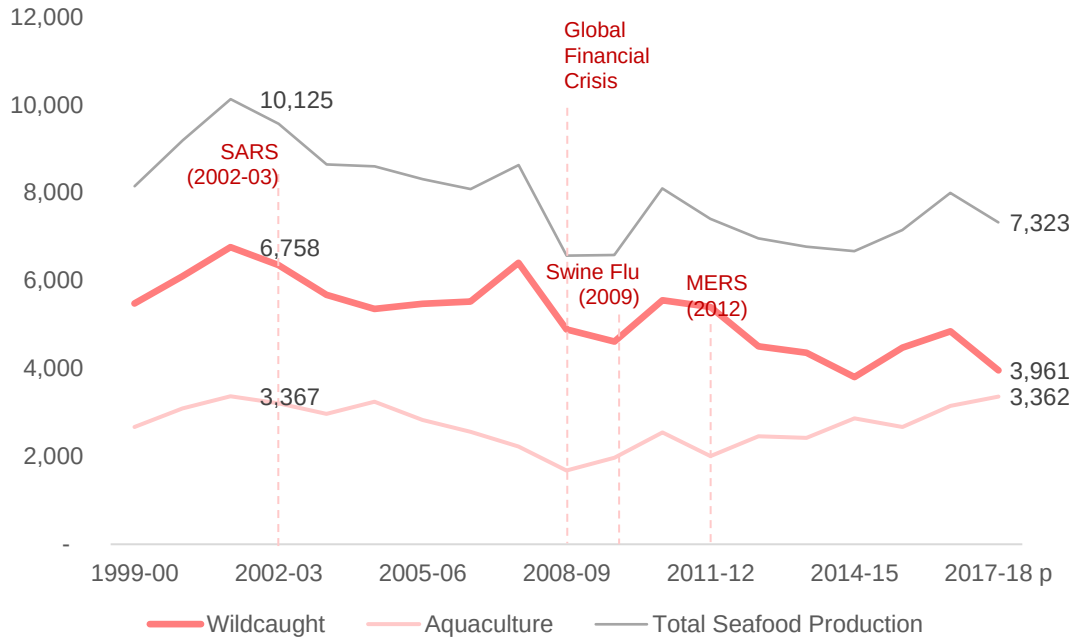
In 2017-18, the Victorian seafood industry produced **7,323 tonnes** of seafood products – 3,961 tonnes wild-caught from state fisheries (excluding Commonwealth fisheries) and 3,362 tonnes from aquaculture operations.

Victorian fisheries have seen many peaks and troughs in volume of production during the last two decades due to several factors including variation in supply and demand, changes in exchange rate and other global disruptions.

Declines in wild-catch volumes have been partly offset by growth in aquaculture volumes since 2008-10.

Downward movements in volumes appear to have coincided with several globally significant disruptions including SARS in 2002-03, the GFC in 2008-09 and MERS (2012), although there is limited empirical evidence to suggest direct causal relationships.

Volume of Seafood Industry Production – Victoria 1999-2000 to 2017-18 (Tonnes)^

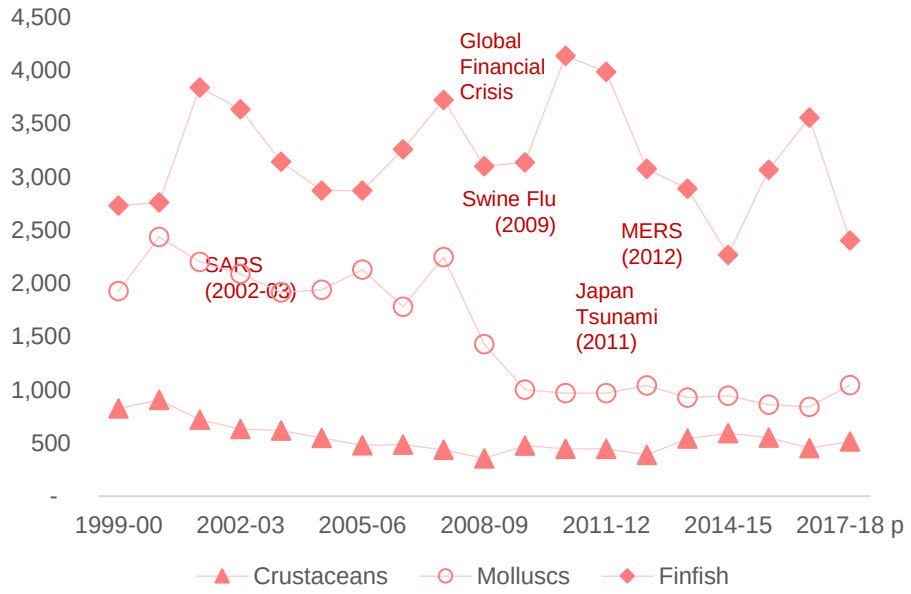


Source: ABARES; Victorian Fisheries Authority
Note: p Preliminary. na Not available. no Only number of fish is reported.

^ Note – 2018/19 data may be sourced here https://vfa.vic.gov.au/commercial-fishing/commercial-fish-production

C3_Victorian Seafood Industry

Volume of Wildcaught Production – Victoria
1999-2000 to 2017-18 (Tonnes)^



Source: ABARES; Victorian Fisheries Authority
Note: p Preliminary. na Not available. no Only number of fish is reported.

^ Note – 2018/19 data may be sourced here https://vfa.vic.gov.au/commercial-fishing/commercial-fish-production

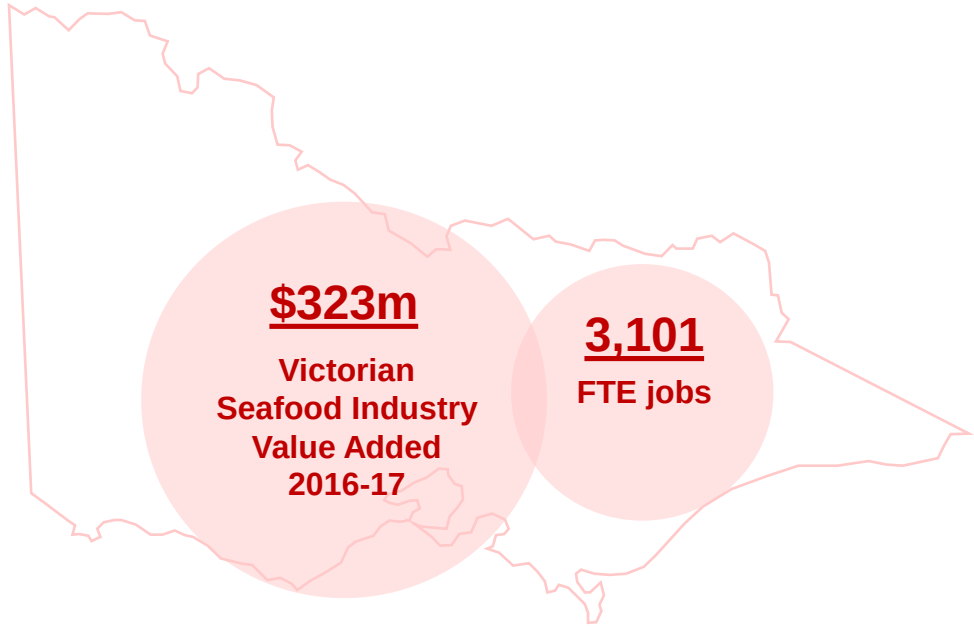
C3_Victorian Seafood Industry

Regional Seafood Industry – Value Add & Employment

A research paper prepared by FRDC titled '*Victoria's fisheries and aquaculture: economic and social contributions*' (May 2020) demonstrates the economic contributions of professional fishing (state and Commonwealth fisheries operating in Victoria) and aquaculture to Victoria for the financial year 2016–17 were:

- **$323 million** of added value to the seafood industry*
- Approx. **3,100 full time** industry jobs (2,113 professional fisheries, 988 aquaculture).
- **$186 million** household income generated ($129 m professional fisheries, $56 m aquaculture).

**Note FRDC research considers wild-catch fisheries and aquaculture value add and employment for seven regions. The sum of wild-caught and aquaculture industry value added, and employment may not add to the total Victorian seafood industry value added reflecting the role of commonwealth fisheries and regions not considered in the research or activities not captured in the wild-caught and aquaculture estimates presented.*



Source: FRDC Victoria (2020)

C3_Victorian Seafood Industry

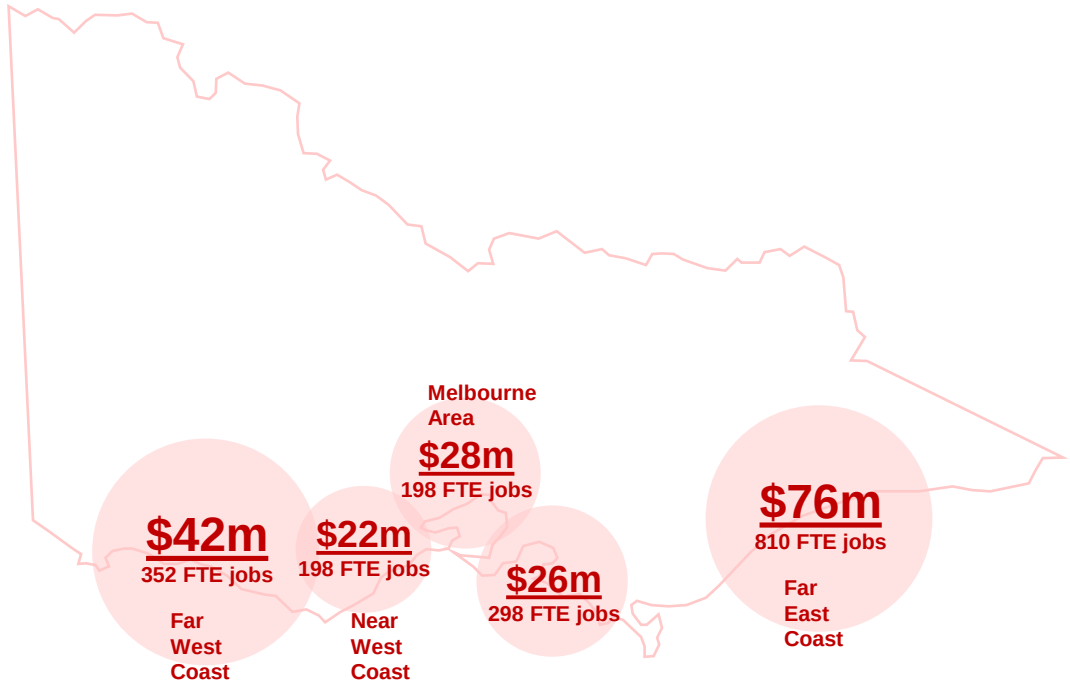
Regional Seafood Industry – Value Add & Employment

Wild-catch production by region

Victorian wild-catch fisheries stretch along a significant coastline from Portland to Mallacoota, and through inland waterways. In addition to fishing ports, fishing operations are dispersed along Victoria's coast and inland.

According to the May 2020 FRDC research paper, wild-catch **fishing** (excluding Commonwealth fisheries) contributed up to **$194 million** industry value added and **1,934 full time jobs** to regional Victoria during the 2016–17 financial year:

- Far East Coast (East Gippsland): $76 m of added value, 810 FTE jobs.
- Near East Coast (Gippsland, Mornington Peninsula): $26 m of added value, 298 FTE jobs.
- Melbourne area (Melbourne, Geelong): $28 m of added value, 276 FTE jobs.
- Near West Coast (Bellarine Peninsula, Great Ocean Rd): $22 m of added value, 198 FTE jobs.
- Far West Coast (west of Warrnambool): $42 m of added value, 352 FTE jobs.



Source: FRDC Victoria (2020)

C3_Victorian Seafood Industry

Regional Seafood Industry – Value Add & Employment

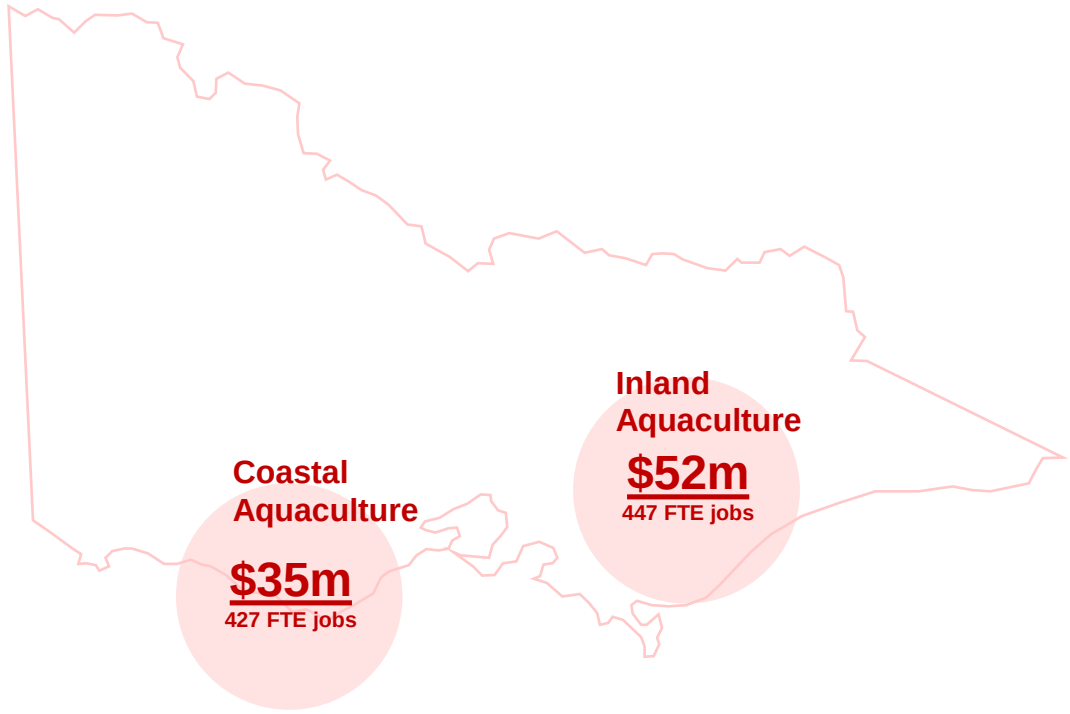
Aquaculture Production by region^

According to the May 2020 FRDC research paper **aquaculture** contributed **$87 million** industry value added and **874 full time jobs** to regional Victoria for the 2016–17 financial year:

- Coastal aquaculture $35 m of added value, 427 FTE jobs.
- Inland aquaculture $52 m of added value, 447 FTE jobs.

Most aquaculture production lies with a few large farms, dominated by abalone on the south-west coast, mussel mariculture in Port Phillip Bay and salmonid aquaculture concentrated in the Goulburn Valley with Barramundi in Western Melbourne.

Aquaculture made a large economic impact in the inland areas in the east of Victoria. Coastal aquaculture made an important economic impact along the Victorian west coast, which is growing due to abalone aquaculture expansion.



Source: FRDC Victoria (2020)

C3_Victorian Seafood Industry

Victorian Seafood Exports

Victorian seafood exports were valued at **$245 million** in 2018-19. This was around 2% higher than in 2017-18. Victoria accounts for 17% of Australian seafood exports valued on a **free on board** (fob) basis.

It is important to note exports are valued on a processed basis, which includes processing and transportation costs required for the product to be readied for export from Australia. This differs from the GVP of seafood products, which are valued on a beach price.

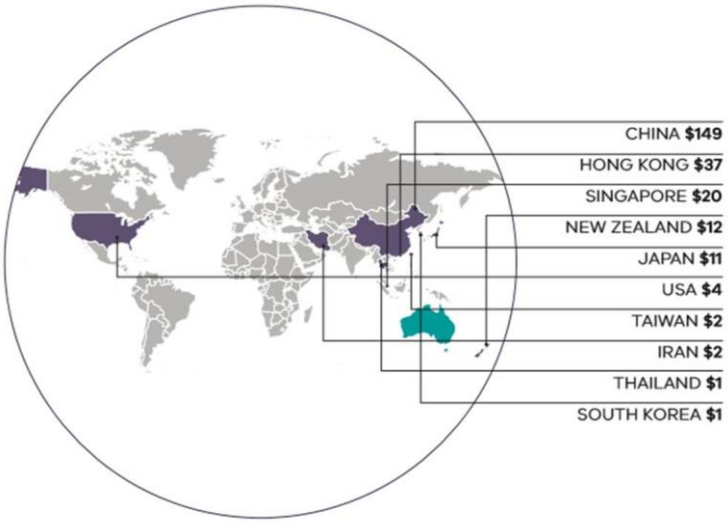
The highest valued export from Victoria were crustaceans at **$149 million** followed by molluscs valued at **$74 million**.

Almost all of Victoria's Ablone and rock lobster catch are exported to Asian markets.

China and Hong Kong were Victoria's major seafood export markets in 2018-19 valued at **$149 million** and **$37 million** respectively.

The continued growth of Victoria's barramundi aquaculture sector is expected to attract interest from several overseas markets, which is important considering China's ban on seafood imports from Australia.

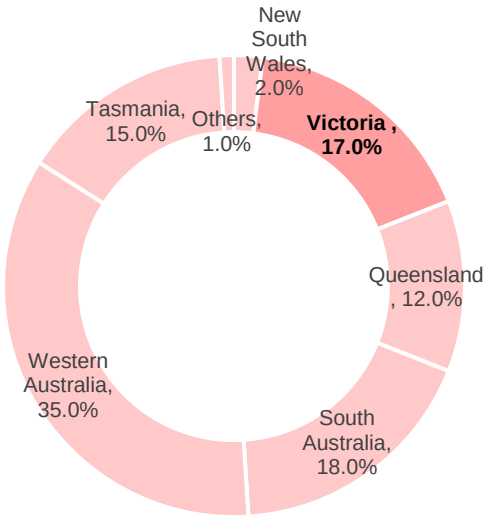
Top 10 Countries for Victorian seafood by value (A$ million)



Source: Agriculture Victoria 2020

C3_Victorian Seafood Industry

Victorian Seafood Exports*



Source: Agriculture Victoria 2020

**Others refers to ACT, NT, re-exports and exports for which no state details are released for confidentiality reasons*

Victorian seafood exports to China (A$ million, '000 tonnes)

Commodity group	Product	2014-15 A$	2014-15 Vol	2015-16 A$	2015-16 Vol	2016-17 A$	2016-17 Vol	2017-18 A$	2017-18 Vol	2018-19 A$	2018-19 Vol	% total
Seafood	Crustaceans	<0.5	<0.5	4	<0.5	46	1	142	2	140	1	
	Molluscs	2	<0.5	4	<0.5	6	<0.5	8	<0.5	9	<0.5	
	Fish	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1	<0.5	
	Seafood extracts and oils	1	<0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
	Seafood Total	**4**	**<0.5**	**9**	**<0.5**	**52**	**1**	**150**	**2**	**149**	**2**	**3%**

Value of Victorian seafood exports by product category and item (A$ million, '000 tonnes)

Product and item	2014-15 A$	2014-15 Vol	2015-16 A$	2015-16 Vol	2016-17 A$	2016-17 Vol	2017-18 A$	2017-18 Vol	2018-19 A$	2018-19 Vol	$ change*	% change*	% total
Crustaceans Total	**111**	**1**	**111**	**1**	**119**	**1**	**160**	**2**	**149**	**2**	**-11**	**-7%**	**61%**
Lobster	111	1	111	1	118	1	159	2	148	2	-11	-7%	60%
Prepared or preserved	1	<0.5	1	<0.5	1	<0.5	1	<0.5	1	<0.5	<0.5	<0.5%	0%
Molluscs Total	**59**	**1**	**60**	**1**	**69**	**1**	**68**	**1**	**74**	**2**	**6**	**9%**	**30%**
Abalone	34	1	32	1	44	1	38	1	35	1	-4	-9%	14%
Prepared or preserved	17	<0.5	18	<0.5	17	<0.5	20	<0.5	32	1	11	55%	13%
Other Molluscs	8	<0.5	10	<0.5	8	<0.5	9	<0.5	8	<0.5	-1	-16%	3%
Fish Total	**7**	**1**	**21**	**14**	**15**	**9**	**9**	**1**	**21**	**3**	**12**	**128%**	**8%**
Live or fresh	2	<0.5	4	1	5	1	5	<0.5	10	1	5	110%	4%
Prepared or preserved	3	1	6	4	4	2	3	<0.5	9	1	6	227%	4%
Frozen	1	1	12	9	6	5	2	1	2	1	<0.5	17%	1%
Seafood extracts and oils Total	**4**	**<0.5**	**4**	**<0.5**	**2**	**<0.5**	**2**	**<0.5**	**1**	**<0.5**	**-1**	**-50%**	**0%**
Seaweed Total	**<0.5**	**<0.5**	**1**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**1**	**<0.5**	**<0.5**	**15%**	**0%**
Total Victoria	**181**	**4**	**197**	**17**	**204**	**12**	**240**	**5**	**245**	**6**	**5**	**2%**	**100%**

*$ change and % change based on the difference between 2017-18 and 2018-19 data.

Source: Agriculture Victoria 2020

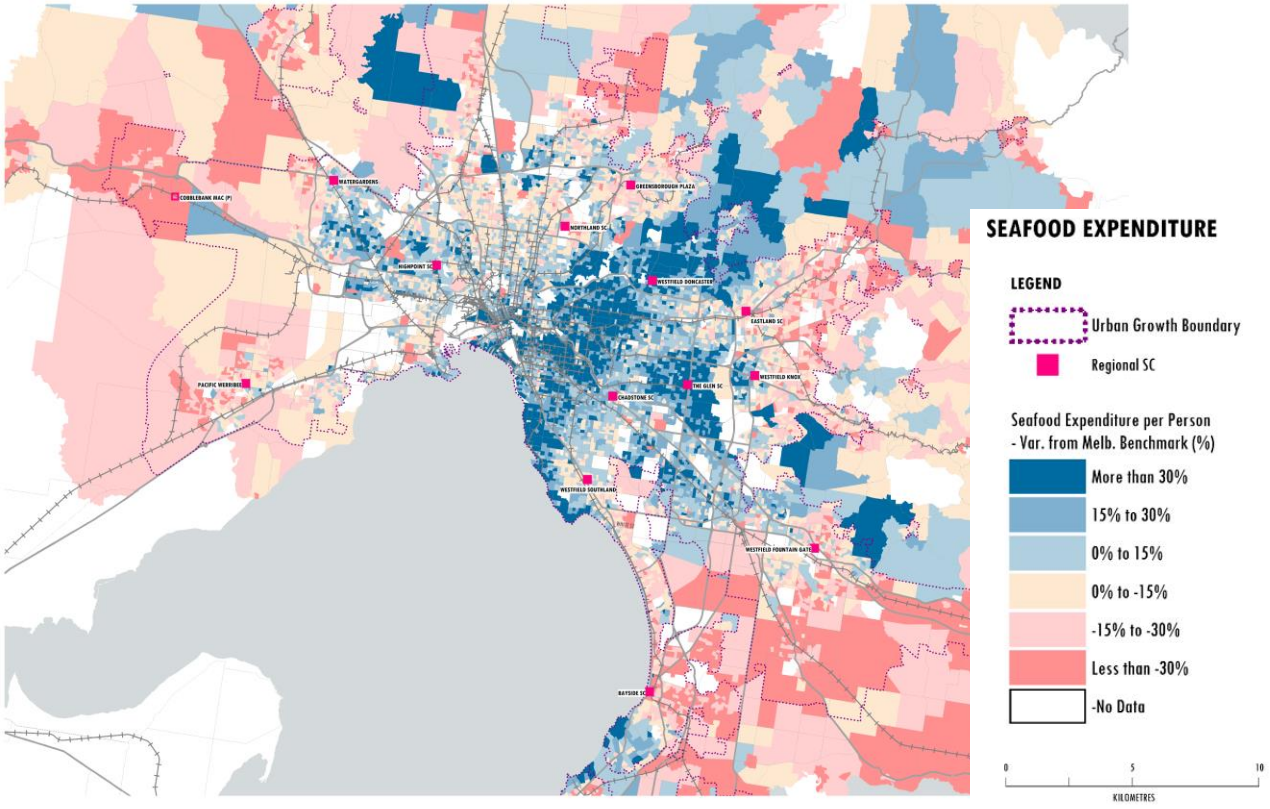
C3_Victorian Seafood Industry

Domestic Food Consumption & Imports

Seafood consumption in Melbourne

- Average take-home seafood expenditure per person in metropolitan Melbourne is approximately 14.4% higher than the Australian average. Sydney is around 19.7% higher than the Australian average.
- Conversely, Adelaide, Hobart and Brisbane are all well below the Australian average.
- There are several factors that may influence relative per person expenditure on seafood across different geographies, including individual tastes and preferences, income, wealth, cultural background, access to recreational fishing/waterways and propensity to undertake recreational fishing activities.
- Darker blue areas indicate a positive variance in average seafood expenditure per person above the Melbourne benchmark. People living here spend more on seafood per person compared with the Melbourne benchmark.
- Darker red areas indicate a negative variance in average seafood expenditure per person below the Melbourne benchmark. People living here spend less on seafood per person.

Seafood Expenditure Metropolitan Melbourne
Suburban Benchmark Comparison, 2020



Source: MarketInfo, Macroplan 2020

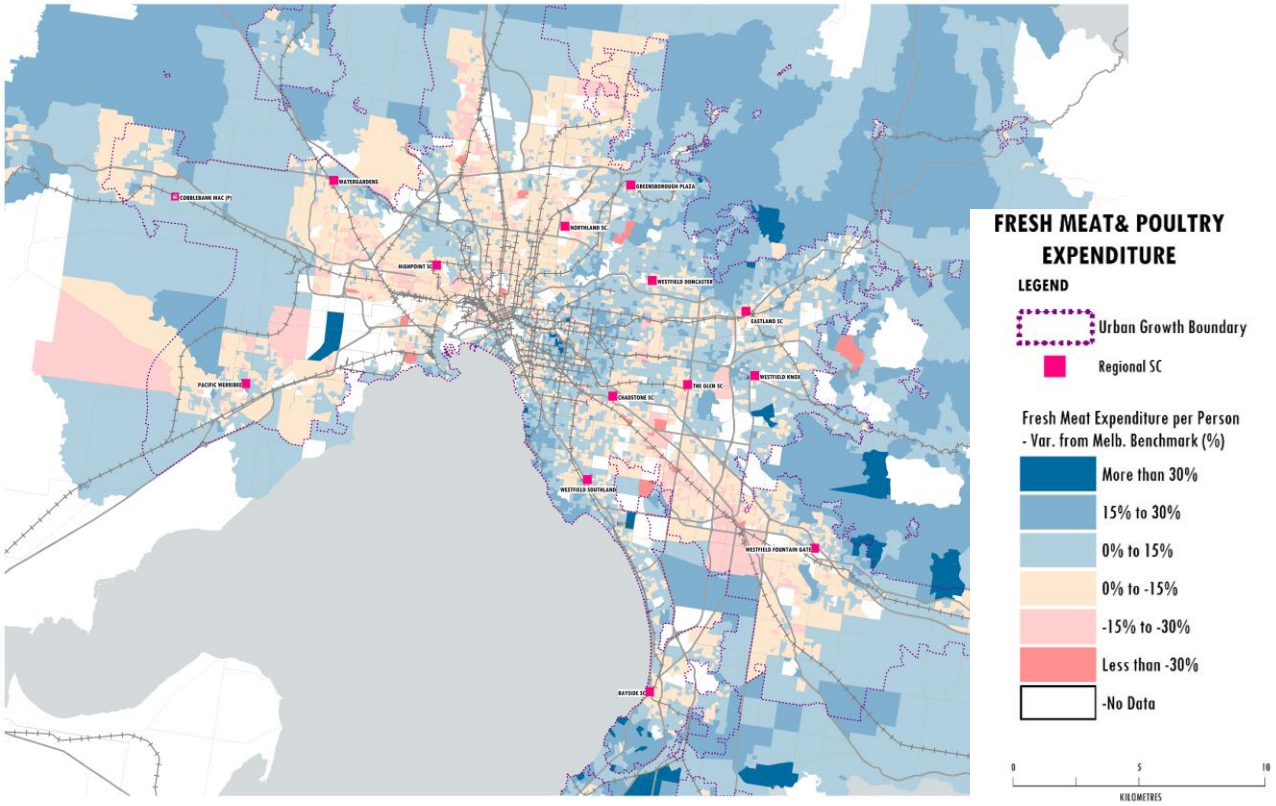
C3_Victorian Seafood Industry

Domestic Food Consumption & Imports

Seafood consumption in Melbourne

- An assessment of fresh meat and poultry expenditure per person shows there is less overall variance from Melbourne benchmark expenditure across suburbs when compared with seafood expenditure (shown on the previous page).
- Darker blue areas indicate a positive variance in average fresh meat and poultry expenditure per person above the Melbourne benchmark. People living here spend more on fresh meat products per person compared with the Melbourne benchmark.
- Darker red areas indicate a lower variance in average fresh meat and poultry expenditure per person from the Melbourne benchmark. People living here spend less on fresh meat products per person compared with the Melbourne benchmark.
- Overall, there is less variation in per person expenditure (positive or negative) on fresh meat products when compared with seafood, which indicates greater geographic variability in per person expenditure.

Fresh Meat & Poultry Expenditure Metropolitan Melbourne – Suburban Benchmark Comparison, 2020



Source: MarketInfo, Macroplan 2020

C4_Australian Seafood Industry

Seafood & Aquaculture Production & Exports

The overall value added by the seafood sector to the Australian economy has been recently estimated at $5.3 billion*

*Source: * BDO Econsearch & IMAS 2019*

Wild catch & Aquaculture

- In 2018, the gross value of production (GVP) of Australian fisheries and aquaculture was $3.18 billion whilst the total volume of production was 265,975 tonnes.
    - **Wild catch^** – was valued at $1.79 billion or for 56% of total GVP whilst volume was 173,430 tonnes or for 64% of total fisheries and aquaculture production volume; and
    - **Aquaculture** – was valued at $1.42 billion or 44% of total GVP. Whilst volume was 97,406 tonnes, accounting for 36% of total fisheries and aquaculture production.
- In recent years, disease outbreaks have impacted on production volumes of salmonids, oysters and prawns, resulting in some volatility of total production value.
- Despite this, the aquaculture sector has increased its overall contribution to Australian fisheries and aquaculture GVP.
- This is partly due to global trends in aquaculture production, which has contributed to the declining relative share and value of the wild-catch sector.
- Global growth in aquaculture-produced species in Asia during this period may have negatively affected prices for some finfish and prawn species through increased competition from these products in the domestic market.
- In the domestic market, the rise of the salmonids industry (largely Atlantic salmon) has also provided competition for wild-caught finfish products.

Note ^ Wild-caught fish are caught by from their natural habitats such as rivers, lakes and oceans.

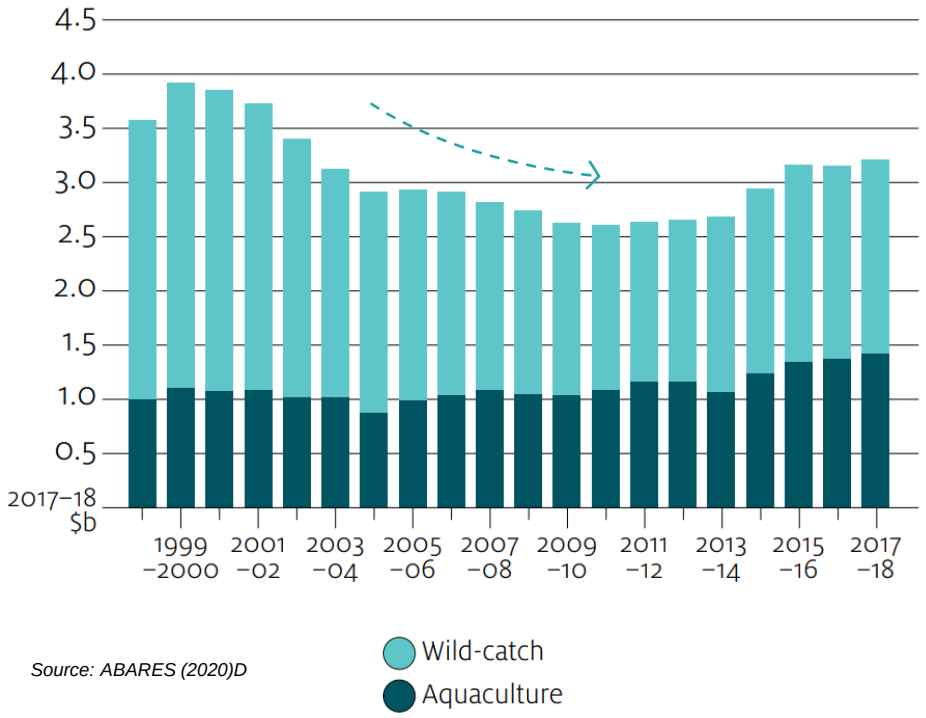
C4_Australian Seafood Industry

Seafood & Aquaculture Production & Exports

Key Points

- Between 2000–01 to 2011–12 there was a decline in wild-caught GVP driven by Australia's exchange rate appreciation over the period.
- Other factors influencing wild-caught volumes during this time included structural change in the wild-caught fisheries sector to achieve more sustainable wild-caught fisheries and adverse environmental and disease factors that reduced the availability of some species, as well as adjustment to changing commodity demand patterns in the global market.
- In volume terms the sector most affected by these changes was the finfish sector, where volumes produced declined by 35% over the period 2004–05 to 2014–15, with declines across a broad range of species landed, particularly from Commonwealth fisheries.

Wild-catch and aquaculture GVP, 1998–99 to 2017–18



Source: ABARES (2020)D

C4_Australian Seafood Industry

Seafood & Aquaculture Production & Exports

Rock lobsters, salmonoids and prawns account for over 60% of Australia's total seafood industry output

*Source: * BDO Econsearch & IMAS 2019*

Main Product Types

- In 2018, the three most valuable species groups (wild-catch and aquaculture) accounting for 61% of total GVP were:
  - **Salmonids** ($855 million, a 13% increase from 2016–17).
  - **Rock lobsters** ($713 million, an 8% increase from 2016–17).
  - **Prawns** ($361 million, a 9% decrease from 2016–17).
- Growing demand for rock lobsters (largely for Western rock lobster and Southern rock lobster) in China and an industry focus on direct exports of live products to that market have resulted in higher unit prices in recent years.
- Consequently, this has heightened the risk of income losses from high value seafood products to China due to COVID19.
- Higher export volumes of rock lobsters and higher GVP from this species has resulted from increased total allowable catch (TAC) of Western rock lobster and the scaling down of tariffs for direct exports of rock lobsters to China following the introduction of the China Australia Free Trade Agreement (ChAFTA).
- Tariffs for rock lobsters and abalone, amongst several other species, steadily declined from 2015 and are zero from 2019 for products exported to China under the ChAFTA.
- This is most likely to change considering China's current ban on seafood imports from Australia.

Source: ABARES (2020)D

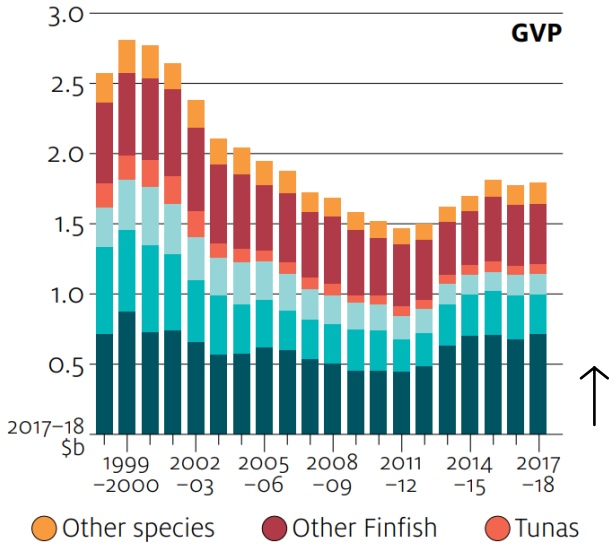
C4_Australian Seafood Industry

Seafood & Aquaculture Production & Exports

Species from the rock lobsters family (principally Western rock lobster and Southern rock lobster) represented the highest-value exported fisheries and aquaculture product in 2017–18 ($771.3 million).

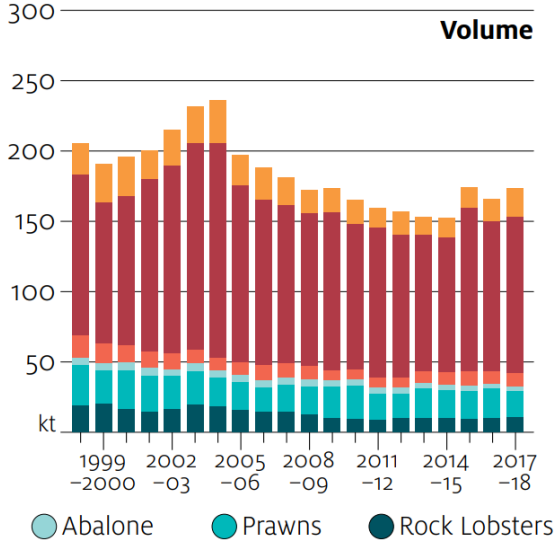
Main Product Types

Wild-catch GVP by major species group, 1998–99 to 2017–18



Source: ABARES (2020)

Wild-catch volume by major species group, 1998–99 to 2017–18



Source: ABARES (2020)

C4_Australian Seafood Industry

Seafood & Aquaculture Production & Exports

Main Production Locations

In 2018, the three highest producing states in terms of total GVP (wild-catch and aquaculture) accounting for 68% of total GVP were:

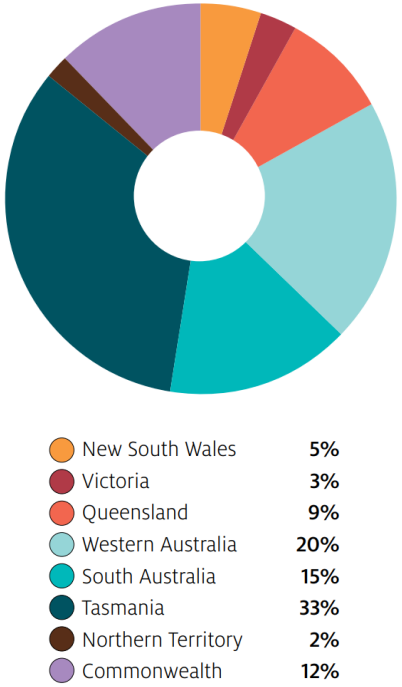
- **Tasmania** ($1,068 million, a 13% increase from 2016–17)
- **Western Australia** ($634 million, a 2% increase from 2016–17)
- **South Australia** ($470 million, a 3% decrease from 2016–17).

Between 1999 and 2018 Tasmanian production has been the main driver of growth in GVP.

Tasmania's fisheries and aquaculture GVP more than doubled between during this time with the expansion of the aquaculture industry.

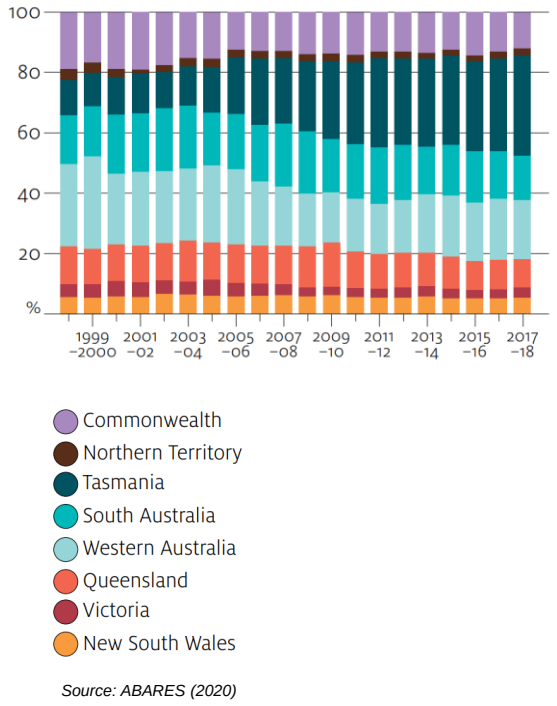
Aquaculture accounted for $873.5 million GVP (or 82% of total GVP) in 2018 compared with wild catch of $194.3 million GVP during this period.

Shares in GVP of fishery and aquaculture production by jurisdiction, 2017–18



Source: ABARES (2020)

Shares in gross value of fisheries and aquaculture production by jurisdiction, 1998–99 to 2017–18



Source: ABARES (2020)

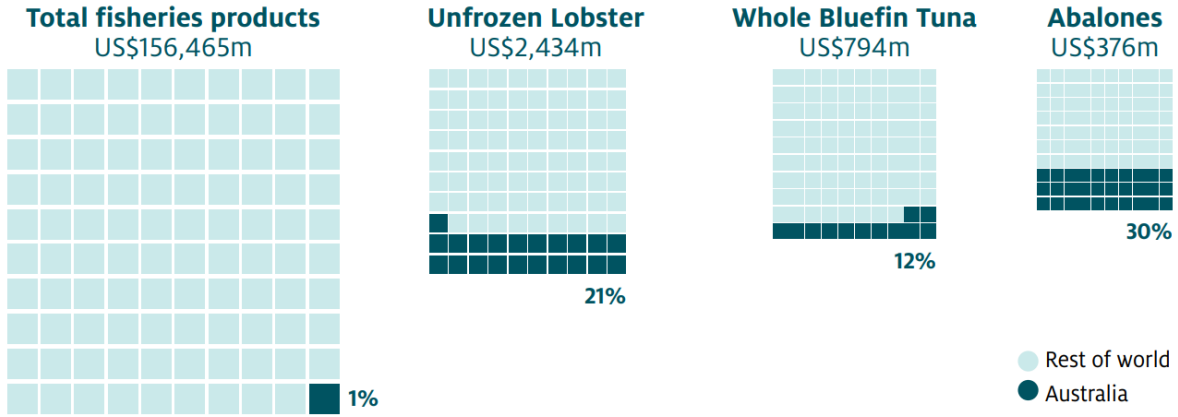
C4_Australian Seafood Industry

Seafood & Aquaculture Production & Exports

Australian Exports

- In 2018 the total value of Australian fisheries and aquaculture exports was $1.58 billion.
- Australian exports of fishery and aquaculture products are dominated by high unit value products such as Western and Southern rock lobster and blacklip and greenlip abalone.
- Total international trade of seafood products estimated at a value of US$156 billion in 2017 (FAO 2018). Australia's role in global trade is relatively minor, with the value of Australia's exports and imports accounting for about 1% of global trade value.
- Seafood exports in the fishing industry account for over half of industry revenue with the main fisheries product export destinations for Australia being China, Vietnam, Japan, Hong Kong and the United States.
- Together, these countries accounted for 88% of edible fishery products exported from Australia in 2018. Approximately 45% of total export revenue is generated from China.

Australia's place in global seafood exports in 2018



Source: ABARES (2020)

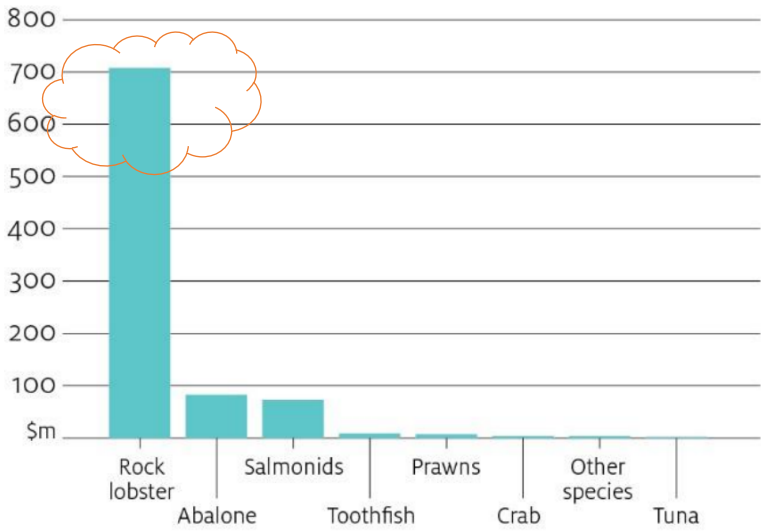
C4_Australian Seafood Industry

Seafood & Aquaculture Production & Exports

Australian exports to China

- Exports to China reached $658 million in 2018, making China the most valuable export destination that year for Australian fisheries products.
- Australian fisheries exports to China are concentrated in three product groups - rock lobster, abalone and salmonids.
- Together these products accounted for 97% of all fisheries product exports to China in 2019.
- China is the major market for Australian rock lobster, accounting for approx. 94% of rock lobster exported in 2019.
- Prawns and salmonids have relatively lower export dependence and have lower market concentration compared with rock lobster.
- China was the major export destination for salmonids accounting for 62% of exports in 2019. China accounted for 8% of Australian prawn export value in 2019.

Major fisheries product exports to China, 2018–19

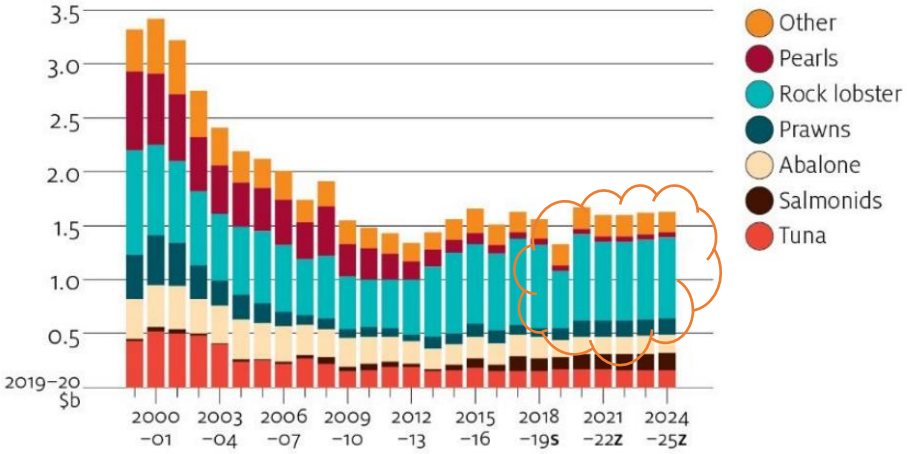


Source: ABARES (2020)

C4_Australian Seafood Industry

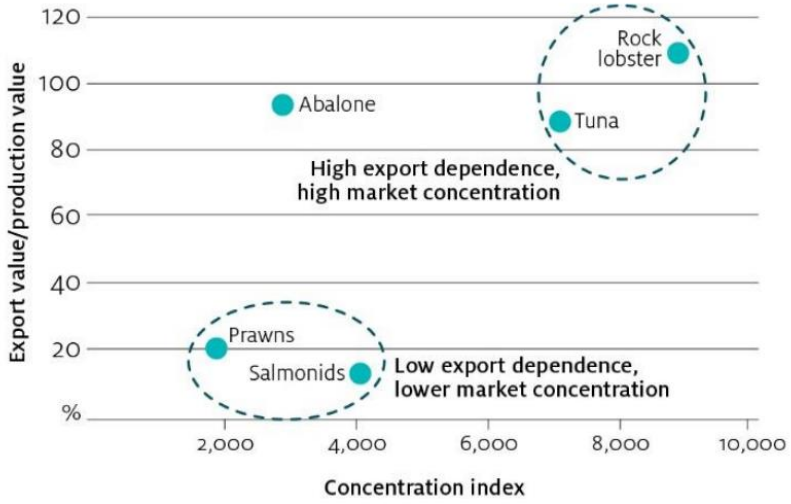
Seafood & Aquaculture Production & Exports

Australian fisheries export value, 1999–2000 to 2024–25



Notes: s ABARES estimate. z ABARES projection
Source: ABARES

Export market concentration of major fisheries products, 2018-19



Source: ABARES Note: In 2018–19 China was the largest export market for rock lobster, abalone and salmonids. Export value greater than 100% could be the result of timing of exports and value added activities (such as processing and transport costs) that increase the value of product from the beach to port. Market concentration index is measured by the Herfindahl-Hirschman Index.

C5_Domestic Food Production & Food Exports

Australia is considered one the world's most food-secure nations, ranking seventh for food affordability in the Global Food Security Index.

Australia produces substantially more food than it consumes with 71% of agricultural production exported*

*Source: * ABARES (2020)*

Key Points

- Australia's total food production increased from $65 billion in 1988-89 to $117 billion in 2016-17, or 2.1 per cent a year on average.
- Food production continued to increase in the decade 2000-2010 but at a slower rate than in the previous decade, owing in part to prolonged drought conditions.
- The impacts of a higher real exchange rate during this time compared with today was offset to some extent by a global food price boom in the latter half of the decade, meaning food exports fell during this time as more food was diverted to the strongly growing domestic market.
- Since then, slower growth in domestic food demand and subsequently a lower real exchange rate has meant food exports have increased.
- Food exports increased from $20 billion in 1989 to $35 billion in 2002, fell to $25 billion in 2010, but have since recovered to $39 billion in 2017.
- According to ABARES, in 2016-17 Australia was a net exporter in nine food categories:
  - grains and oilseeds $10.7 billion.
  - meat processing $10.4 billion.
  - sugar $2.2 billion.
  - live animals except fish $1.3 billion.
  - **fish or shellfish (unprocessed fisheries-based food) $1.0 billion**
  - unprocessed fruit and vegetables $0.9 billion.
  - milk and cream processing $0.9 billion.
  - flour mill and cereal food $0.4 billion; and
  - poultry processing $0.1 billion.
- The capacity for Australian food producers to obtain a price premium for food quality is likely to be dependent on domestic and overseas consumers having relevant information about the quality of Australian food products including food services more broadly.

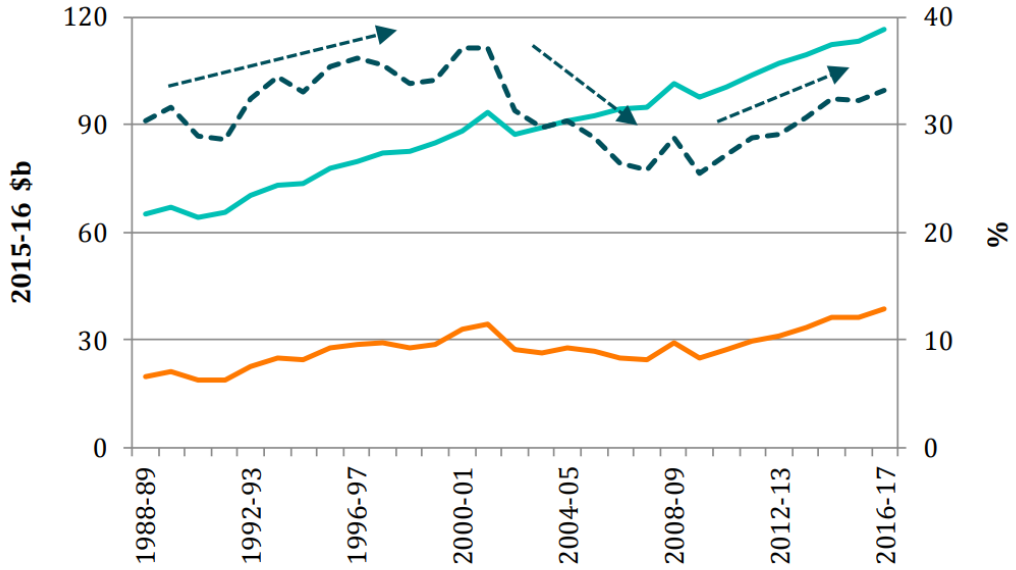
C5_Domestic Food Production & Food Exports

Key Points

- The export production ratio shown as the dashed line (right axis) indicates the food industry became progressively more export-oriented during the 1990s, with this trend temporarily reversing between 2000-2010.
- Food exports, as a share of the value of indicative food production, were 30 per cent in 1989, 37 per cent in 2002, 25 per cent in 2010 and 33 per cent in 2017.

Note: Values are in 2015-16 prices; CPI-adjusted data. Food includes non-alcoholic beverages. Indicative food production is calculated as household food consumption minus imports plus exports.

Australia's food production and exports, 1988-89 to 2016-17



Sources: ABARES 2017; ABS 2017b,c

C6_Domestic Food Consumption & Imports

Australia's household food consumption expenditure rose from $49 billion in 1988-89 to $92 billion in 2016-17, or by 2.3 per cent a year on average.

*Source: * ABARES (2020)*

Key Points

- Australian consumers source most of their food from the domestic food industry, although there has been a relatively steady increase in imports in recent decades.
- Food imports increased from $4 billion in 1988-89 to $7 billion in 2001-02, $10 billion in 2009-10 and $14 billion in 2016-17. Between 1988-89 and 2016-17, food imports increased by 4.8 per cent a year on average—4.5 per cent, 4.8 per cent and 5.2 per cent in the three sub-periods.
- Overall, the share of imports in household food consumption expenditure increased from 8 per cent in 1988-89 to 10 per cent in 2001-02, 12 per cent in 2009-10 and 15 per cent in 2016-17.

According to ABARES, In 2016-17, Australia was a significant net importer in six categories:

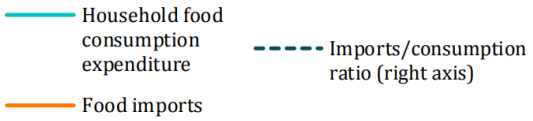
- **seafood (processed fisheries-based food, $1.6 billion)**
- processed fruit and vegetables ($1.3 billion).
- soft drink, cordials and syrups ($0.8 billion).
- confectionery ($0.6 billion).
- bakery products ($0.5 billion).
- oils and fats ($0.3 billion).

Food imports provide domestic consumers and food service providers with access to a wider range of food products than would otherwise be the case.

C6_Domestic Food Consumption & Imports

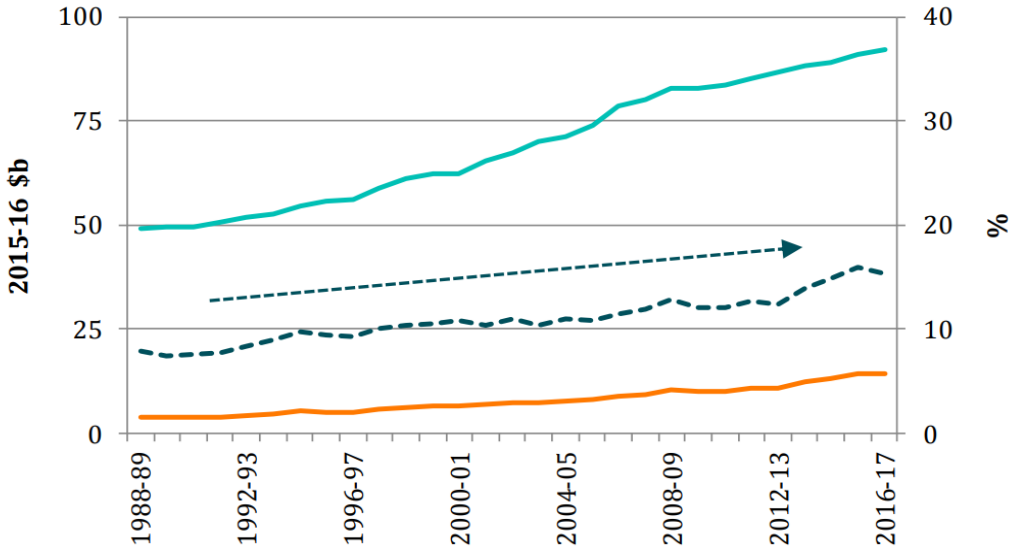
Key Points

- The import / consumption ratio shown as the dashed line (right axis) indicates the food industry remains overwhelmingly export orientated, although there has been a slight increase in imported foods since 2014.
- Food imports, as a share of the value of indicative food consumption, increased from 8 per cent in 1989 to 10 per cent in 2002, 12 per cent in 2010 and 15 per cent in 2017.



Note: Values are in 2015-16 prices; CPI-adjusted data. Food includes non-alcoholic beverages.

Australia's food consumption and imports, 1988-89 to 2016-17



Sources: ABARES 2017; ABS 2017b,c.

C6_Domestic Food Consumption & Imports

Drivers of Household Food Demand

According to ABARES, annual growth in the volume of food consumption or food demand growth has been relatively stable for several decades, averaging 2.4 per cent in aggregate and 1.0 per cent on a per person basis.

Between 1988-89 and 2016-17, Australia's resident population increased by 1.4 per cent a year on average.

By contrast, the real value of household food consumption expenditure per person increased from $2,950 in 1988-89 to $3,787 in 2009-10 and has levelled off in recent years.

The main influences on food demand growth are:

1. Population growth
2. Real income growth
3. Changes in real food prices
4. Changes in consumer tastes

According to ABARES analysis of recent trends in food demand in Australia and a range of food security issues (Hogan 2018), between 1988-89 and 2009-10, key drivers of growth in the volume of total food consumption were:

- population growth (accounting for 55 per cent),
- real income growth (42 per cent),
- changes in tastes and preferences including lifestyle choices (9 per cent),
- higher real food prices detracted from food demand growth (-7 per cent).

However, between 2009-10 and 2016-17, key drivers of food demand growth were:

- population growth (64 per cent),
- **changes in tastes and preferences (20 per cent),**
- lower real food prices (10 per cent) and
- real income growth (6 per cent).

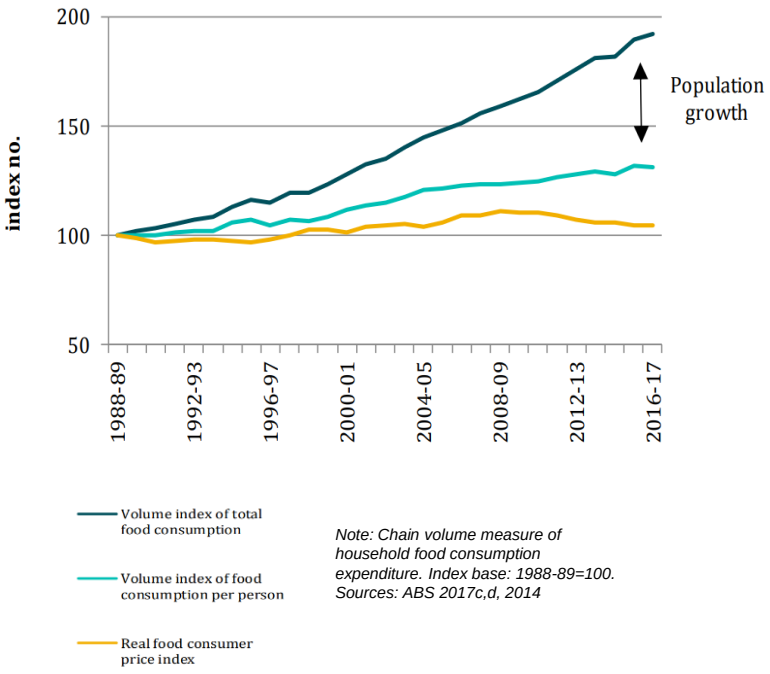
This demonstrates that over time population growth continues to play a significant role in determining annual growth in the volume of food consumption along with changes in tastes and preferences, whilst real income growth and prices have featured less significantly.

Changing tastes and preferences includes the trend away from home cooking toward meals out and fast foods, as consumers switch from food products toward higher-priced food services.

This presents an opportunity for the seafood industry.

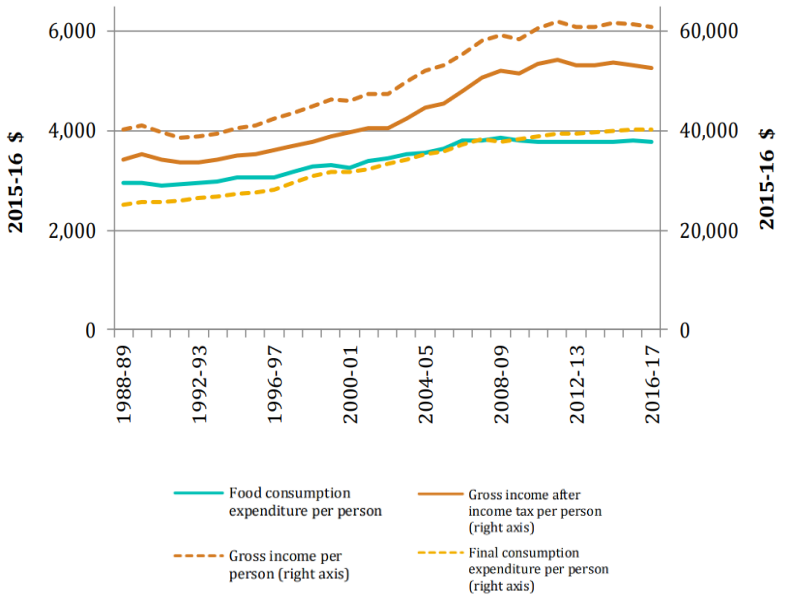
C6_Domestic Food Consumption & Imports

Food demand, population growth and food prices in Australia, 1988-89 to 2016-17



Note: Chain volume measure of household food consumption expenditure. Index base: 1988-89=100. Sources: ABS 2017c,d, 2014

Value of household income and food consumption per person, 1988-89 to 2016-17



Note: In 2015-16 prices; CPI-adjusted data. Food excludes alcoholic beverages. Sources: ABS 2017b,c

C6_Domestic Food Consumption & Imports

Drivers of Household Food Demand

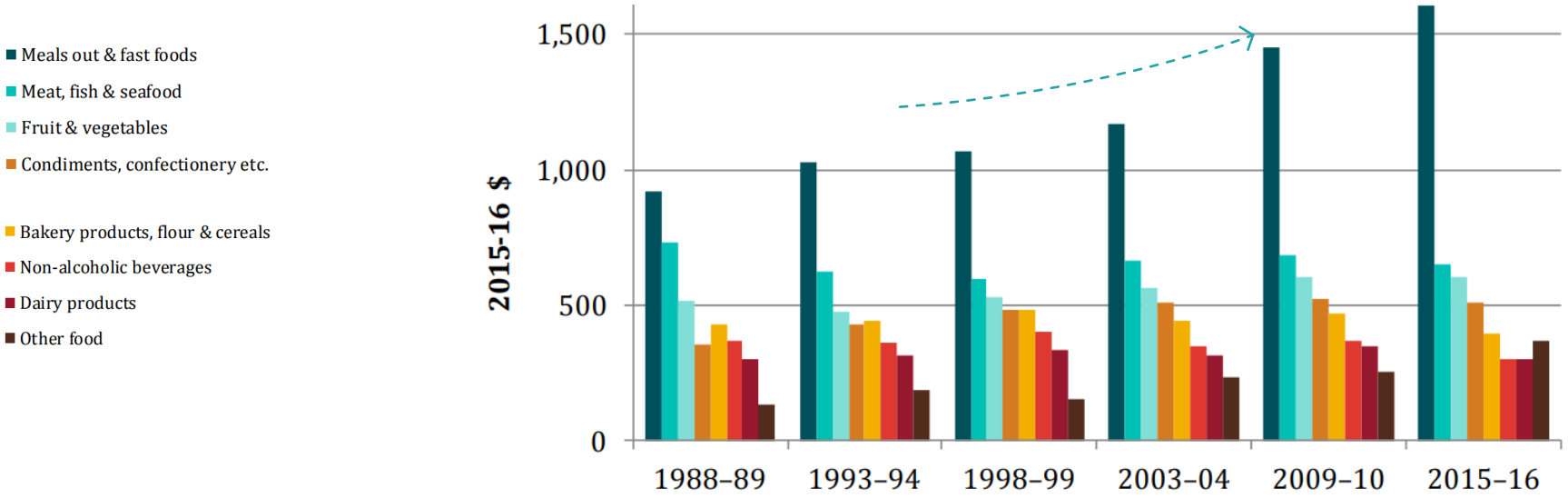
- The most recent ABS household expenditure survey (HES) indicates a progressive shift away from home cooking toward meals out and fast foods in recent years (shown overleaf).
- The share of meals out and fast foods in total food expenditure increased from 25 per cent in 1989 to 31 per cent in 2010 and 34 per cent in 2016.
- Between 1988-89 and 201-16, real consumer prices increased overall by 5 per cent for food and 17 per cent for meals out and take away food.
- This demonstrates that as consumers progressively switch away from food products with lower price growth toward higher-priced food services, consumers will record higher food expenditure on average.
- Overall, the share of meals out and fast foods in total food expenditure increased from 25 per cent in 1988-89 to 34 per cent in 2015-16.
- Between 1988-89 and 2015-16, food expenditure per person increased for four food types, including:
  - other food (3.8 per cent a year on average),
  - meals out and fast foods (2.1 per cent),
  - condiments, confectionery, food additives and prepared meals (1.3 per cent) and
  - fruit and vegetables (0.6 per cent)

  This is generally consistent with a recent increases in the real value of household food consumption per person over time.
- An analysis of HES data prepared by ABARES shows during the period 2009-10 to 2015-16, the main influences on food demand growth were:
  - population growth (accounting for 59 per cent of the total increase in the estimated volume of food purchased),
  - changes in tastes and preferences (17 per cent),
  - lower real food prices (13 per cent) and
  - higher after-tax income per person (12 per cent).
- Changes in tastes and preferences (including lifestyle factors) were the most significant driver of increased demand for meals out and fast foods in recent years.

C6_Domestic Food Consumption & Imports

Drivers of Household Food Demand

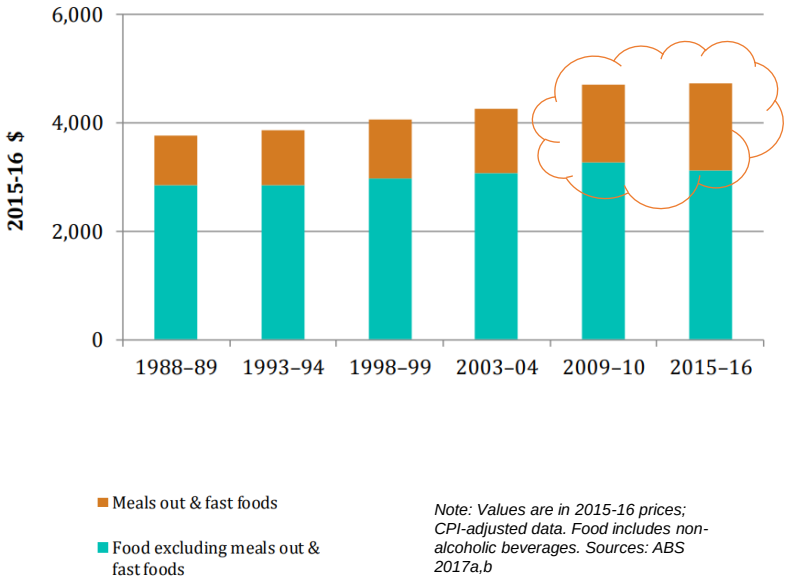
Food expenditure per person in Australia, by main food type, 1988-89 to 2015-16



Note: Values are in 2015-16 prices; CPI-adjusted data. Food includes non-alcoholic beverages; fruit includes nuts; dairy products includes milk; condiments, confectionary etc. includes food additives and prepared meals.
Sources: ABS 2017a,b

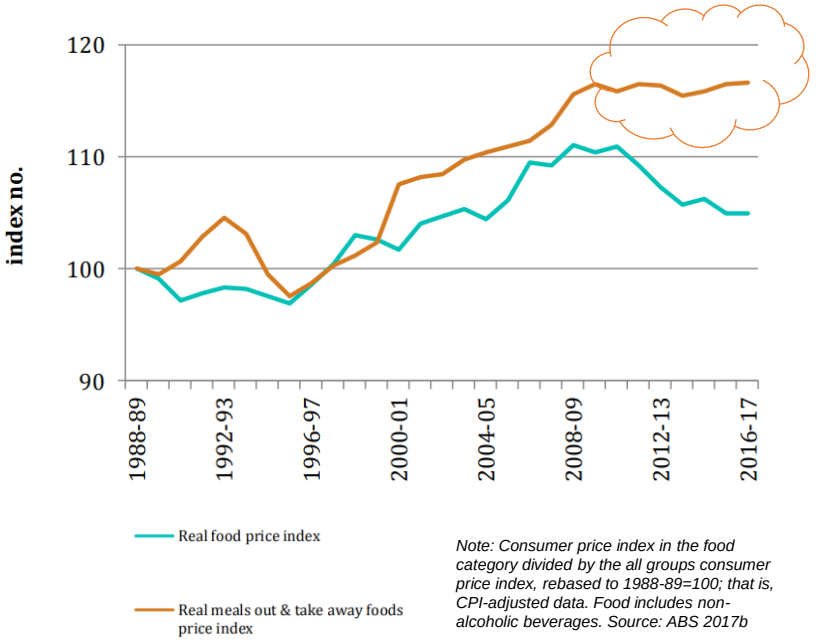
C6_Domestic Food Consumption & Imports

Australia's household food expenditure, by major food group, 1988-89 to 2015-16 (per person)



Note: Values are in 2015-16 prices; CPI-adjusted data. Food includes non-alcoholic beverages. Sources: ABS 2017a,b

Real food price indexes, total and meals out & fast foods, 1988-89 to 2016-17



Note: Consumer price index in the food category divided by the all groups consumer price index, rebased to 1988-89=100; that is, CPI-adjusted data. Food includes non-alcoholic beverages. Source: ABS 2017b

C6_Domestic Food Consumption & Imports

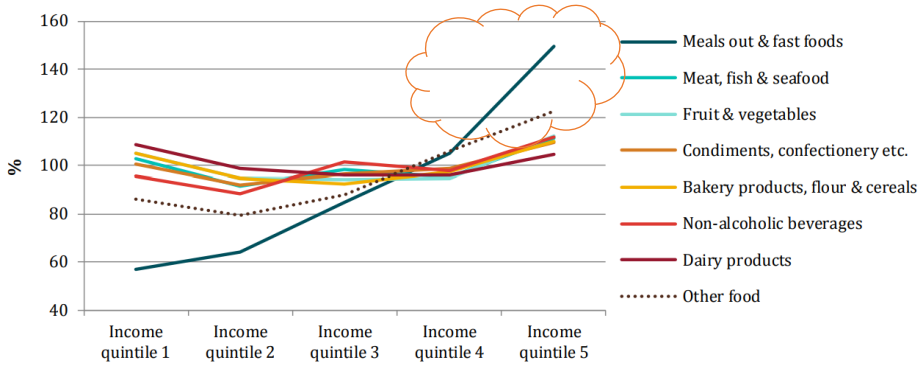
Drivers of Household Food Demand

- An investigation of ABS household expenditure survey (HES) data prepared by ABARES, involving comparing per person food expenditure ratios by population sub-group indicates the importance of income and life cycle on consumption patterns.
- Those in the two higher income quintiles generally consume above Australian benchmarks for all food groups and significantly more on meals out and fast foods when compared with the Australian benchmark and other income quintiles.
- Younger age cohorts and those in the 55-64-year cohort consume above the Australian benchmark for meals out and fast foods. The age cohort 45-54 years category is closest to the benchmark outcome for most food types, and the two youngest age categories spend relatively more on three food types compared with the Australian benchmark (other food, meals out and fast foods, non-alcoholic beverages).

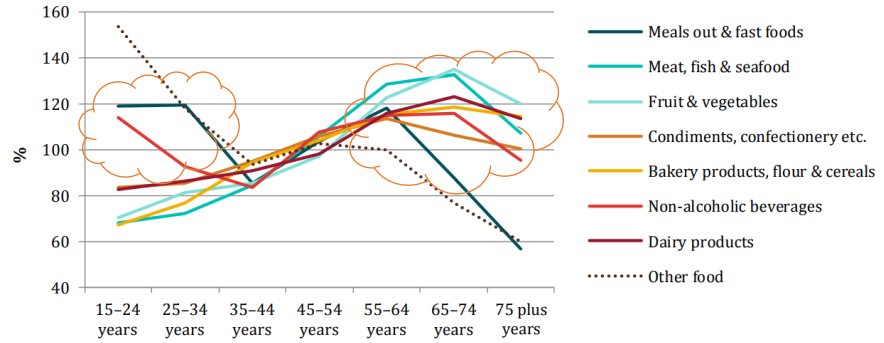
Note: Expenditure per person as a % of the Australian average in the same food type. Food excludes alcoholic beverages. Each quintile comprises 20% of households based on gross household income or household net worth where, for example, quintile 1 is the lowest 20% of households.

Source: ABARES 2020, ABS 2017a

Expenditure per person, % Australian average in the same food type, by population sub-group, 2015-16 (by income quintile)



Expenditure per person, % Australian average in the same food type, by population sub-group, 2015-16 (by age cohort)



C6_Domestic Food Consumption & Imports

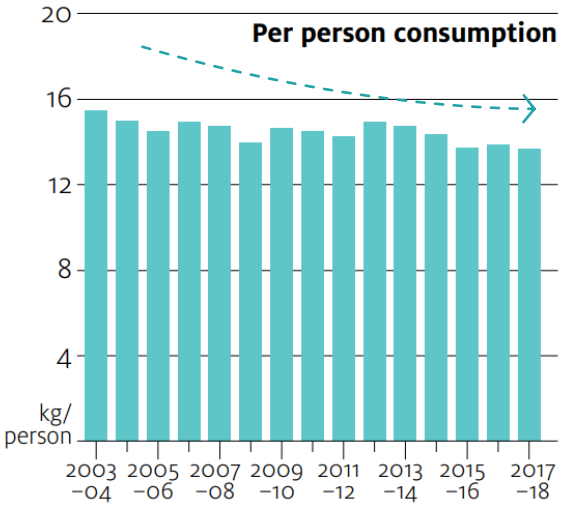
Seafood Consumption

- Whilst total seafood consumption increased steadily in Australia at around 1.9% per annum between 1998–99 and 2017–18, per person consumption of seafood has trended down between 2007–08 and 2017–18
- Australia's apparent consumption of seafood was **341,272 tonnes** in 2018, with per person consumption of seafood at **13.7 kilograms** per person, down from 15.5 kilograms per person in 2006.
- Australian seafood consumption ranks behind beef, chicken and pork but ahead of lamb and sheep meat.
- Australian households spent $5.46 per week on fish and seafood in 2016 compared with $27.0 per week for meat*.

** According to the ABS Household Expenditure Survey, Australian households spent $5.46 per week on fish and seafood in 2015–16 (ABS 2017). Fresh fish and seafood accounted for 45% of total fish and seafood expenditure, followed by frozen fish and seafood expenditure (24%) and canned and bottled fish and seafood expenditure (23%). The remainder is accounted for by items which are classified as 'not further defined'.*

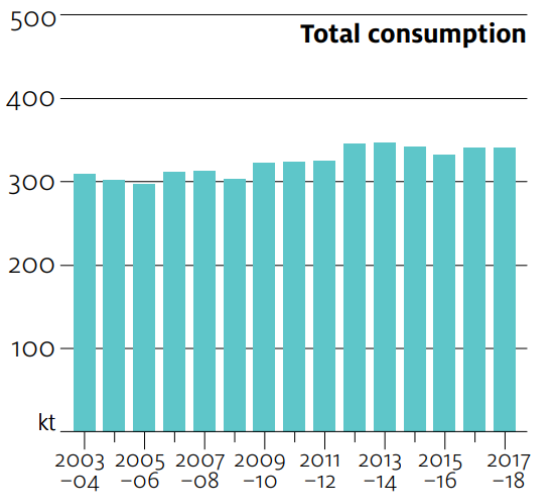
Source: ABARES (2020)

Per Person consumption of seafood in Australia, 2003–04 to 2017–18



Source: ABARES (2020)

Total apparent consumption of seafood in Australia, 2003–04 to 2017–18



Source: ABARES (2020)

C6_Domestic Food Consumption & Imports

Role of Imports in Consumption

Seafood imports play an important role in Australian seafood consumption, filling a gap between seafood consumption and local seafood supply.

Australian fishery and aquaculture imports largely consist of lower unit value products such as canned or frozen finfish but also include higher unit value products such as prawns and salmonids.

The major sources of Australian edible fishery and aquaculture product imports in 2017–18 (excluding live products) were Thailand, China, Vietnam and New Zealand. Together, these countries accounted for 64% of imports in 2017–18.

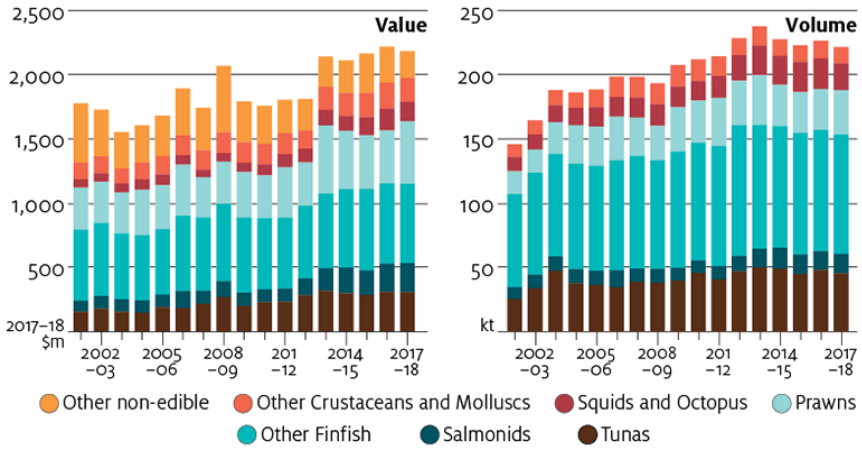
Key Points

- The total value of fishery and aquaculture product imports remained largely unchanged in 2017–18 at $2.18 billion.
- Edible finfish is the most valuable product group imported into Australia. Imports of this commodity group increased by 2% to $1.15 billion to account for 58% of seafood import value in 2017–18.
- Tunas (largely canned) remained the single most valuable imported finfish with a total import value of $307.4 million in 2017–18.
- Australian imports of salmonids increased by 4% in 2017–18, reaching a record $226.6 million. The value of imports of salmonids products more than doubled between 2007–08 and 2017–18.
- The total value of Crustacean and Mollusc imports increased by 7% in 2017–18 to $823.1 million. This was mainly driven by a 20% rise in the value of imports of prawns with frozen prawns imports accounting for most of the increase.
- Between 1999 and 2018 the proportion of domestic seafood consumption accounted for by imports rose from around 55% to peak at 69% in 2014 and then fell back to 65% in 2018, the lowest share since 2008.
- After 2014 the volume of imported seafood has generally declined, largely reflecting a decline in volume of frozen prawns and prepared or preserved fish and an increase in domestic supply during this period.
- This suggests there is the potential for import replacement in a post-COVID19 market, offsetting the loss of seafood exports to China and other markets.

C6_Domestic Food Consumption & Imports

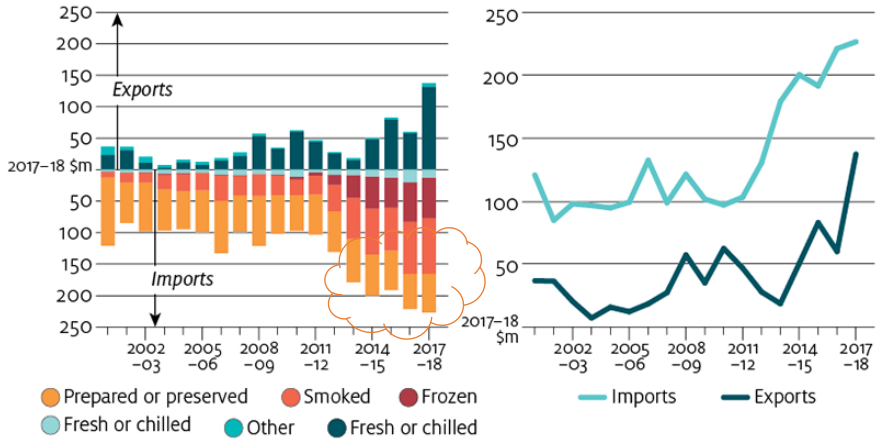
Australian fishery and aquaculture imports largely consist of lower unit value products such as canned or frozen finfish but also include higher unit value products such as prawns and salmonids. This compares with exports of fishery and aquaculture products which are dominated by high unit value products such as Western and Southern rock lobster and blacklip abalone

Australia's fisheries product imports, 2001–02 to 2017–18



Note: Import volumes shown only for seafood (edible) imports. For detailed statistics, see Table S29 in ABARES fisheries data products. Source: ABARES, ABS

Australia's salmonids trade, 2001–02 to 2017–18



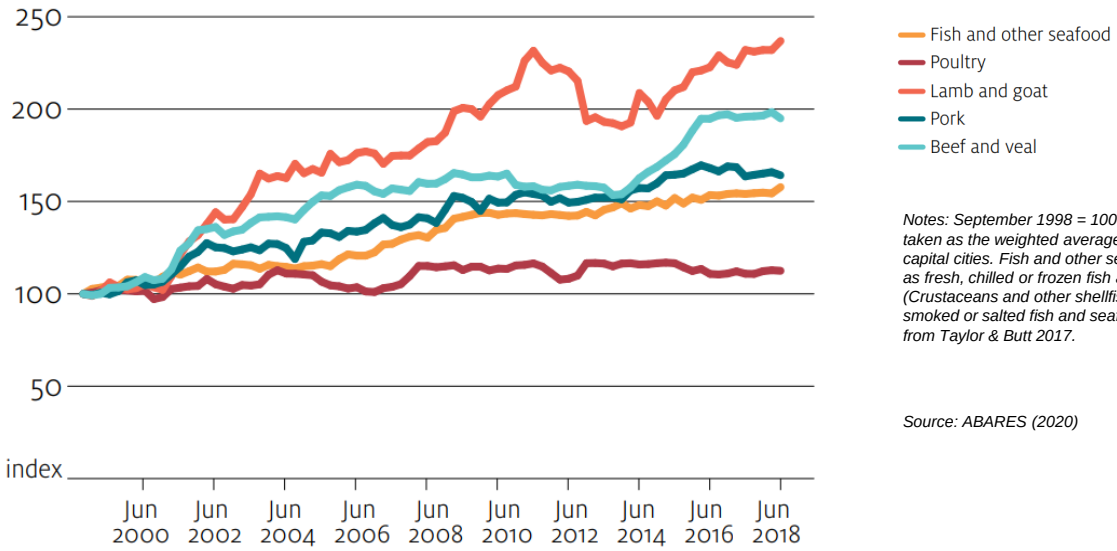
Source: ABARES, ABS

C6_Domestic Food Consumption & Imports

Consumer Tastes & Prices

- Changing trends in the consumption of meat products may provide some insight into what has been driving a progressive decline in per capita seafood consumption.
- Whilst total meat consumption in Australia (including seafood) has remained relatively stable for the 10 years to 2016–17, there have been divergent trends in the type of meat consumed and this may be a result of changing consumer preferences and prices.
- Beef consumption has declined significantly, while poultry consumption has continued to grow. This is most likely to reflect the lower relative price of poultry (and, to lesser extent, pork) compared with beef is a major reason why poultry consumption has increased so markedly.
- An assessment of retail meat and seafood prices between 1998-2018 (using an index) shows seafood has become relatively expensive compared with poultry but less expensive relative to beef and veal.

Retail meat and seafood prices in Australia, September 1998 to June 2018



Notes: September 1998 = 100. Prices are taken as the weighted average of eight capital cities. Fish and other seafood defined as fresh, chilled or frozen fish and seafood (Crustaceans and other shellfish); dried, smoked or salted fish and seafood. Adapted from Taylor & Butt 2017.

Source: ABARES (2020)

Important Considerations

The retail meat and seafood index includes a multitude of fisheries products and average movements in the price may obscure price trends in major species groups.

It may be the case that higher priced seafood products may compete with higher unit value meat products (such as beef) whereas cheaper (often imported) products may compete with cheaper protein alternatives such as poultry (DIIS 2017)

C6_Domestic Food Consumption & Imports

Seafood Products Consumption by Type

- Fresh fish and seafood accounted for 45% of total fish and seafood expenditure, followed by frozen fish and seafood expenditure (24%) and canned and bottled fish and seafood expenditure (23%).
- The remainder is accounted for by items which are classified as 'not further defined'.
- Between 2009–10 and 2015–16 Australian household expenditure on fish and seafood declined by 2% in real terms (ABS 2017).
- This was largely the result of a decline in expenditure on canned and bottled fish and seafood.
- In contrast, expenditure on fresh fish and seafood remained largely unchanged and expenditure on frozen seafood increased by 4%.

A recent consumer research titled *Unpacking the consumer seafood experience (Intuitive Solutions 2019)* shows that of the 2,002 grocery buyers surveyed, 78% had consumed seafood in the previous 12 months, largely unchanged from 77% in an earlier 2016 survey.

Seafood consumers fall into one of three categories: frequent eaters, regular eaters and infrequent eaters.

- Frequent eaters (those that consume seafood once a week or more) accounting for only 33% of consumers but accounted for 77% of consumption.
- Price is important to consumers but not the key driver of seafood consumption.
- Freshness and food safety are more important than price, but price is more important than quality and presentation.

This reinforces widely held views that Australian consumers lack certainty about choosing, preparing and cooking seafood and tend to consider food safety, nutrition and price ahead of quality meaning these factors continue to be barriers to seafood consumption.

Source: Survey - Unpacking the Consumer Seafood Experience (Intuitive Solutions 2019)

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