

L.E.K.

Processed Food Brief – International Supply Chain Benchmarking Sectoral Assessment

Report for the Department of Infrastructure, Transport, Regional Development and Communications

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L.E.K. Consulting Australia Pty Ltd

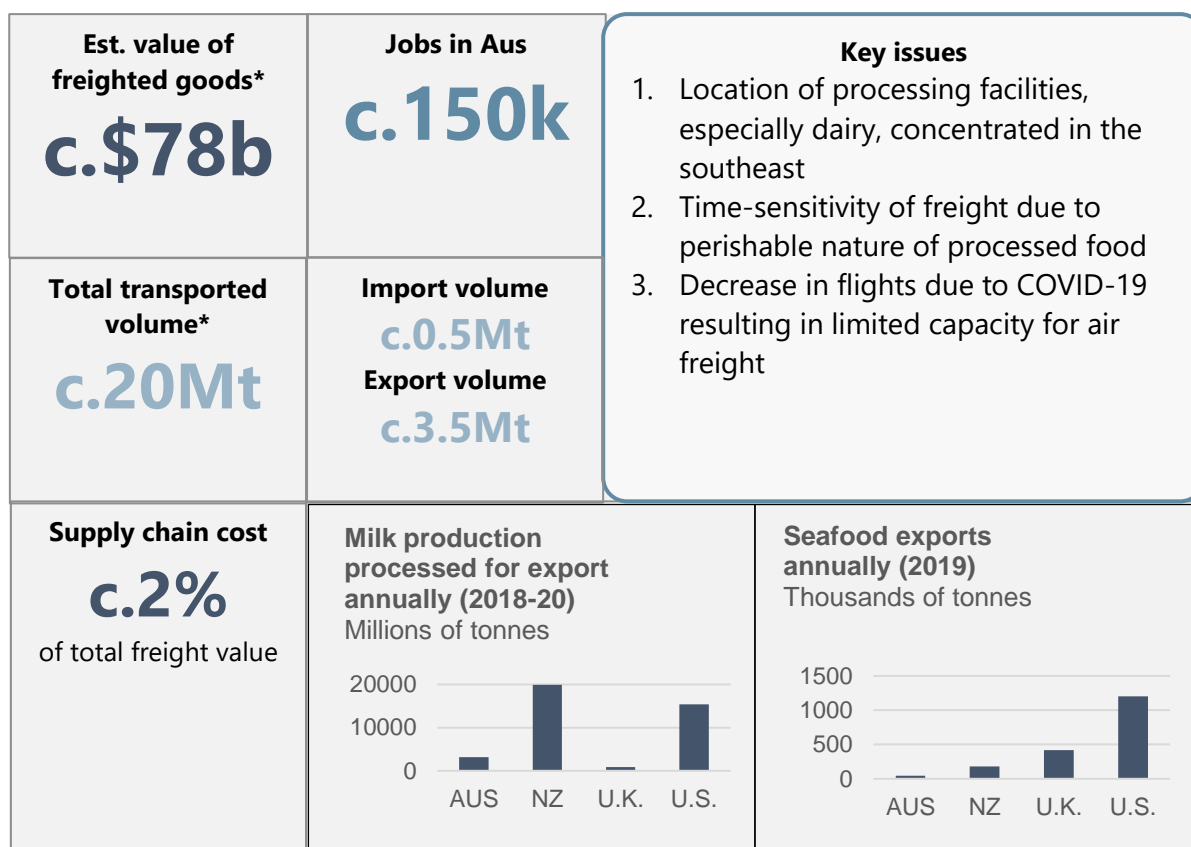
Level 26, 88 Phillip Street, Sydney, 2000, Australia

Phone: +61 2 9323 0715

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Executive Summary



*Value and volume include processed foods such as boxed beef, lamb, chicken & pigs, bread, eggs, boxed rice, and pet food as well as seafood and dairy products

Australia's processed food industry is estimated to be worth c.\$78b annually. Australia's most demanding processed food freight, in terms of overall freight task, are dairy products and meat products, which account for c.45% and c.25% of total transport costs respectively.

The key issues in Australia's processed food supply chain is the concentration of processing facilities in the southeast which increases the distance to deliver to other parts of Australia, the time sensitivity of freight and the bottlenecks in the export supply chain highlighted by COVID-19 limiting air freight capacity.

Processed Food Supply Chains in Australia

Processed food is split into boxed meat, seafood, dairy, eggs, rice and bread, and pet food.

Broadly, processed food moves from the farm, abattoir, or flour/rice mill to a processor, and then to a port or airport to be exported or a distribution centre for domestic consumption. In some cases, food is transported straight to the supermarkets, but the vast majority of domestic consumption goes through the distribution centre. The main transport mode is road due to the importance of just-in-time logistics for perishable goods, with some dairy processors utilising rail networks to deliver containers of dairy products to port.ⁱ

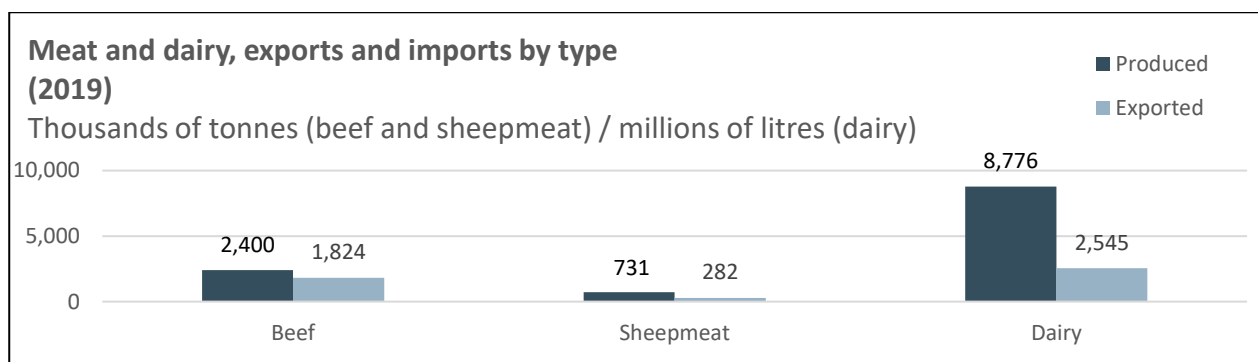
Dairy products account for c.45% of total transport costs for processed food, with raw milk taking up nearly half of this cost. Raw milk is stored at farms and then transported in a refrigerated tanker to dairy processors within 24-48 hours due to the high perishability of raw milk. Southeast Australia processes c.80% of Australia's raw milk.ⁱⁱ

Once produced and processed, dairy products are transported to distribution centres or ports (mainly located in Victoria) for export, predominantly by road but occasionally by rail in containers. Dairy product distribution

is more costly than other agricultural products due to the highly perishable nature of dairy products, especially fresh drinking milk.

Meat products make up a significant component of Australia's supply chain, accounting for a quarter of the total transport costs. The majority of beef, veal and sheep processing is done in the south of Australia, near to the key export ports. Chicken meat processing is mostly carried out near major capital cities. The predominant mode of transport is by road.

Australia is a major exporter of meat, exporting c.38% of sheepmeat production and c.75% of beef and veal production.ⁱⁱⁱ Australian meat is very competitive, earning a reputation for high quality, clean and safe meat, underpinned by its disease-free status.



Australia's wild fisheries are limited by the relatively low natural productivity of Australia's marine waters. As a result, Australia is a net importer of seafood, importing lower value processed products such as canned tunas and frozen finfish fillets, reaching a value of c.\$2b in FY18. In contrast, Australian seafood exports are dominated by high value products such as rock lobster, premium tuna species and abalone, reaching a value of \$1.6b in FY18.^{iv} Australia is not a top 10 exporter worldwide for any seafood product except for abalone, where Australia is the third largest exporter.

c.80% of exports are air freighted while c.95% of imports are shipped.^v Within Australia for domestic consumption, seafood is transported via road, requiring the product to be either iced or refrigerated.

Australia's processed food supply chain has the following key issues:

1. The location of fixed infrastructure, particularly dairy processing, is concentrated in the southeast, resulting in a significant distance to deliver to other parts of Australia for domestic consumption.
2. The perishable nature of some processed food, especially goods which require refrigeration (e.g. dairy, seafood), increases the cost of transport and makes delivery highly time sensitive and therefore vulnerable to delays.
3. COVID-19 has caused a decline in flights leaving Australia, decreasing the amount of air freight space available to ship produce overseas. This is a particular issue for seafood which is typically shipped overseas by air. This has resulted in difficulties meeting tight and variable air-freight schedules and has put considerable pressure on the supply chain.^{vi}

International Supply Chain Comparison

Globally, world milk production reached c.850Mt in 2019. The largest milk producers are India, US and Pakistan, producing c.40% of the world's dairy. However, New Zealand is the world's largest dairy exporter, processing and exporting 95% of the c.22Mt of milk produced^{vii}. Australia is the 8th largest dairy exporter after New Zealand, Germany, the Netherlands, the U.S., Belgium, France and Hong Kong.

In seafood, Australia mainly exports rock lobster, salmon, tuna, abalone and prawns. Australia is the third largest abalone exporter after China and South Korea. The world's top rock lobster exporters are Canada, U.S. and Egypt, while the United Kingdom, Norway and Sweden are the world's top salmon exporters. Indonesia, Vietnam and South Korea export the most tuna.






Australia is the second largest exporter of beef (after Brazil) and veal. Australia is the largest exporter of sheepmeat and lamb in the world, exporting nearly 3Mt of these meat products and supplying c.14% of the world's beef. New Zealand is the second largest sheepmeat and lamb exporter.

Globally, the predominant mode of land transport for processed food is by road via milk tankers, refrigerated trucks and trailers. In the Nordic region, a new train route for seafood exports opened in 2020 to transport seafood from northern Norway to southern Sweden, streamlining transport to markets in Europe.

Processed food*	Australia	New Zealand	United Kingdom	Norway	U.S.	Canada
Est milk produced (ML)	c.9,000	c.21,000	c.14,900	c.1,480	c.96,000	c.923
Est % of milk production processed for export	35% (c.3,150)	95% (c.19,950)	6% (c.895)	Data not available	16% (c.15,350)	Data not available
Est seafood production (k tonnes)	c.250	c.450	c.900	c.4,000	c.5,500	c.1,030
Top seafood export products (total k tonnes, 2019)	Rock lobster, tuna, salmon, abalone, prawns (c.50kt)	Finfish, mussels, rock lobster, squid (c.180kt)	Salmon, mackerel, herring, cod (c.420kt)	Salmon, cod (c.2,390kt)	Pacific salmon, Alaska pollock, lobster (c.1,200kt)	Lobster, crab, salmon (c.550kt)

*Datapoints from a range of years (2018-2020) depending on availability

Benchmarking Outlook

Intl benchmarking considerations	Importance	Processed food supply chain
Size and growth		The processed food supply chain is high value, at \$78bn, 20Mt of freight carried, and employing 150k Australians
Freight importance		Freight costs vary for different product types. For dairy, transport costs are, on average, 12% of the value. Minimising delays in freight is also essential for enabling just-in-time logistics for perishable processed food
Export importance		While Australia does have significant exports in value terms, much of this is low volume, high value
Geographic scope		Processed food facilities are located all over Australia, with dairy processing concentrated in the southeast
Known efficiency / public interest		The processed food supply chain transports essential meat, dairy and seafood for domestic consumption. Enabling supply chain efficiencies would result in lower prices for the end consumer.

There is an opportunity to benchmark Australia's seafood and dairy supply chains, as these represent a significant proportion of the total freight task.

For dairy, New Zealand would be a suitable comparator due to its similar geographic location to Australia and the fact that it is the world's top dairy exporter. Both New Zealand and Australia use intermodal road and rail transport in the dairy supply chain, with road being the predominant mode of transport in Australia. Road transport cost for the dairy supply chain is comparatively more expensive than New Zealand, therefore there is an opportunity to compare the drivers of the transport costs for both countries. The different products within dairy should also be segmented as they will vary in weight and perishability, for example drinking milk, milk powder, cheese and butter.

For seafood, countries benchmarked should export similar high value products as Australia, for example lobster or salmon, and/or export to similar markets as Australia, for example China or Japan. The United Kingdom, the US, Canada and Norway are possible comparators due to the production of salmon and lobster (or both). Canada's top export destination for seafood is China, and the UK exports a large volume of salmon to China. Norway may be an interesting market to benchmark for the seafood industry due to the recent new rail route for seafood exports, though Norway's larger volume of exports compared to Australia should be noted. Seafood should be segmented by the method of processing, for example frozen, chilled or processed (e.g. canned).

References

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ⁱⁱ Dairy Australia, Australian Dairy Industry In Focus, 2020

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^{vi} Seafood Source (article), Australia providing air freight service network to seafood businesses, April 23, 2020

^{vii} Dairy Companies Association of New Zealand (webpage), About the NZ Dairy Industry