

A close-up photograph of a large sack filled with golden-brown wheat grains. The grains are densely packed and fill most of the frame. The sack's texture is visible at the top and bottom edges.

**Deloitte.**

Access Economics

Market opportunities for  
Queensland agribusiness  
from FTA with South Korea

**FINAL REPORT**

# Executive summary

## Background

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Australia recently signed Free Trade Agreements (FTAs) with China (June 2015), Japan (July 2014) and South Korea (April 2014). These agreements substantially reduce or remove tariffs on a range of Australian food and agribusiness export products including beef, grains, horticulture, seafood and processed foods, which together represent a large share of Queensland's total agricultural production and exports.

Deloitte Access Economics has been engaged by Trade & Investment Queensland (TIQ) and the Queensland Department of Agriculture and Fisheries (DAF) to identify opportunities and barriers within Queensland agribusiness sectors arising from the FTAs.

The project has been undertaken in two stages.

**Stage 1** highlighted the commodities which showed the most promise for increased trade and investment between China, Japan and South Korea. These commodities were identified through analysis of tariff reductions, Queensland production, exports, consumption trends and major competitors as well as consultation with Queensland agribusiness stakeholders.

**Stage 2 (this report)** profiles these identified commodities in more detail to identify any non-tariff barriers, supply chain constraints, market operation and their Strengths, Weaknesses, Opportunities and Threats (SWOT). This profiling was informed through further consultation with Queensland Government, industry associations, traders and selected in-market contacts in China, Japan and South Korea.

This document is the **stage 2 report for South Korea** and profiles the selected commodities of **beef, mango, macadamia, mung beans and soybeans**.

## Key findings

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### Beef

Beef is perhaps the largest opportunity for Queensland agribusiness into South Korea. This is because it is Queensland's largest agribusiness sector, the tariff reductions are substantial (making Queensland produce more price competitive over time), trading partnerships are mature, and supply chains and systems are already well established and operating effectively.

Australian beef into South Korea fulfils a key market segment (i.e. it is grass fed and a more affordable product than South Korean domestic and US beef). Therefore, there is a continued need to consolidate this market segment through ongoing promotion of the benefits of Queensland beef's free-range, safe and healthy nature.



# Executive summary

## Key findings (cont.)

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### **Mango**

Consumer demand for counter-seasonal supply of Australian mangoes is strong and the FTA will result in a 30% tariff elimination over 10 years, which is significant. The main barrier to exporting mangoes to South Korea, however, is the requirement for vapour heat treatment which is required to control for fruit fly. This treatment is not only costly but compromises the quality advantage of Queensland mangoes and reduces shelf life. Only the best mangoes can withstand this treatment which presents a high risk to any exporter of fruit. Furthermore, the limited facilities in Queensland for this type of treatment creates a bottleneck in the supply chain, particularly in the peak of the mango season. There are a number of short or long term alternatives to control for fruit fly in export shipments; however, protocols need to be negotiated and agreed.

### **Macadamia**

The South Korean market for macadamias is currently experiencing a period of rapid growth, with total imports doubling in 2015 (predominantly from Australia). The tariff reduction from the FTA is also substantial with the base rate of 30% being eliminated in five years. Given this rapid growth, the market is at a crucial point in its development. As the market matures, Queensland macadamias will face greater competition from other export markets. Opportunities exist to not only supply more product to meet demand but to clearly differentiate Queensland macadamias in terms of quality and the fact that they are native to Australia to secure premium prices.

In terms of increasing Queensland production to meet growing demand, there is potential to increase the area under macadamia in Queensland and increase productivity. However, there are challenges to this; namely the relatively small size of existing Queensland orchards and the long lead times to crop maturity appears to restrict large scale investment. Any truncation of this lead time, for example through faster seedling development or accelerated orchard establishment techniques, could improve investment attractiveness.

### **Mung beans**

The main opportunity for Queensland mung beans is in meeting South Korean demand at times in the yearly cycle where South Korean domestic supply and Chinese supply are short. Due to the importance of mung beans to the Korean food industry, the key channel into South Korea is through periodic government tariff-free tenders which occur to balance supply and demand. Continued and consistent participation from Queensland producers in the tender process to help meet set quotas is likely to be the main avenue to establish Queensland's reputation as a reliable supplier of quality mung beans. It is noted that Queensland companies won tenders for supply of mung beans in 2014-15 and Australian mung beans reportedly have some quality advantage over Chinese beans. In terms of increasing Queensland production, continued research and development to increase the consistency and reliability of yields is likely to attract new entrants to diversify into mung beans and lift Queensland's supply.

# Executive summary

## Key findings (cont.)

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### **Soybeans**

Demand for culinary-grade soybeans (as opposed to stockfeed or oil grade soybean) is strong in South Korea, however, tariffs have not been reduced under the FTA. Similar to mung beans, the main opportunity for soybeans is to bid for the tariff-free tenders as they are released by the South Korean Government from time to time.

The key advantage of Queensland soybeans is that they are considered high quality and are GM-free. Queensland is only competing with Canada in this market segment. The main barrier for Queensland soybeans to South Korea is low production volumes, as tenders are often for quite large volumes at a specific point in time. Currently, soybean production in Queensland is small with production mostly opportunistic and meeting domestic culinary or stockfeed markets. A key to increasing production is to achieve and demonstrate better yields and productivity in Queensland growing conditions.

# Contents

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# Introduction

## Background

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Australia recently signed Free Trade Agreements (FTAs) with China (June 2015), Japan (July 2014) and South Korea (April 2014). These agreements substantially reduce or remove tariffs on a range of Australian food and agribusiness export products including beef, grains, horticulture, seafood and processed foods, which together represent a large share of Queensland's total agricultural production and exports.

Deloitte Access Economics has been engaged by Trade & Investment Queensland (TIQ) and the Queensland Department of Agriculture and Fisheries (DAF) to identify opportunities and barriers within Queensland agribusiness sectors arising from the FTAs.

### Stage 1 analysis (March 2016)

In March 2016, Deloitte Access Economics completed an initial review of the Queensland commodities that showed the most promise for increased trade and investment between China, Japan and South Korea, as a result of the FTAs. The review focused on four broad categories of interest to TIQ and DAF which were beef, grains, horticulture and seafood/aquaculture. These reports can be downloaded from <https://www2.deloitte.com/au/en/pages/economics/articles/fta-opportunities-agribusiness-queensland.html>.

A key objective of this first stage review was to identify specific commodities within the broader categories of beef, grains, horticulture and seafood/aquaculture that represented the greatest opportunities for increased trade and investment. To answer this, the following six questions were posed:

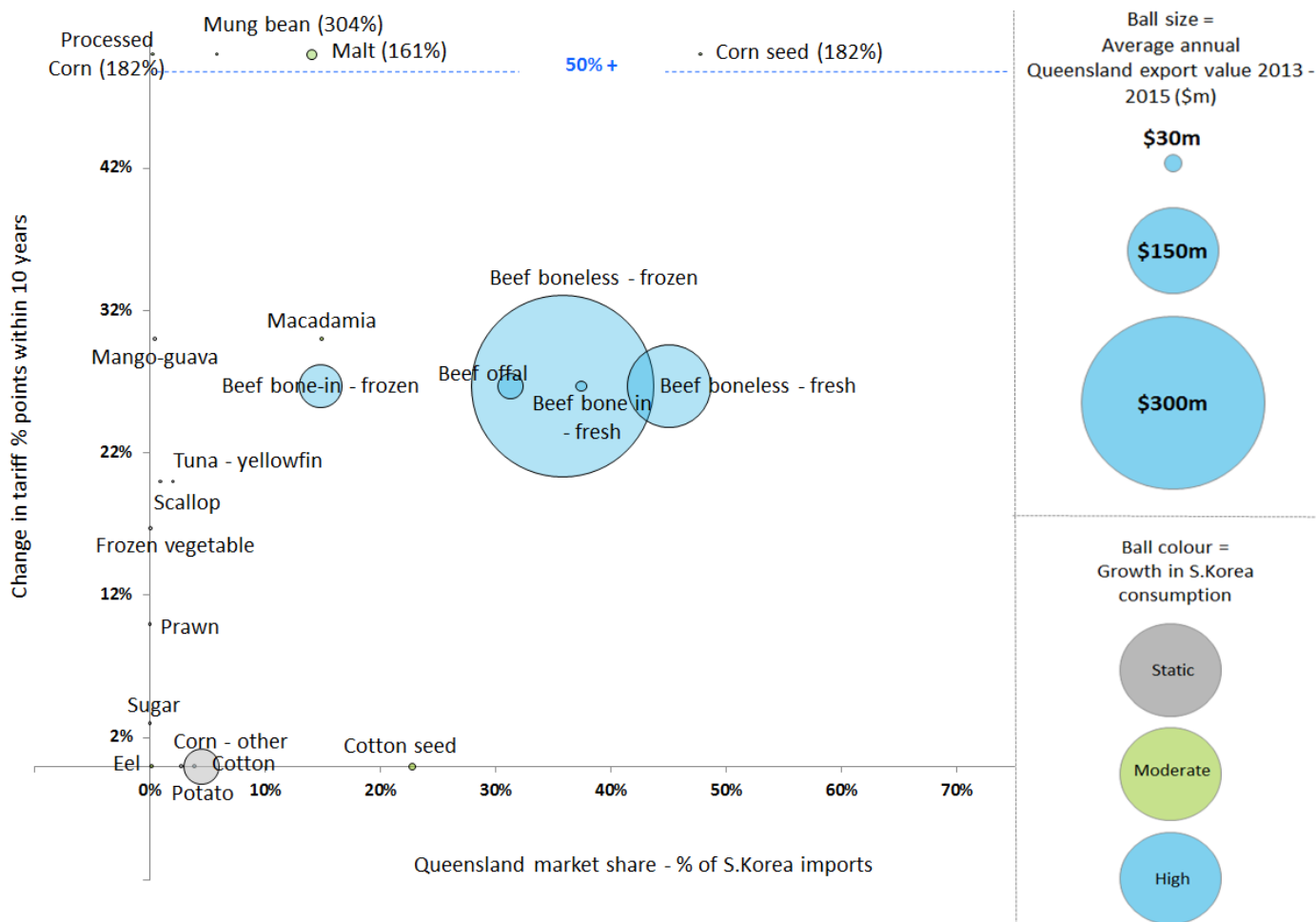
1. What does Queensland currently produce?
2. What does Queensland currently export to these markets?
3. Who does Queensland compete against in these markets?
4. What are Queensland's advantages and disadvantages versus these competitors?
5. What is the demand for imported produce into these markets?
6. What is the strength of the tariff changes from the FTAs?

For each question (and for each of the four broad agriculture categories), a separate analysis was undertaken. These analyses were then brought together in an '**opportunity map**' analysis which provided insight on where the opportunities might be the strongest.

The opportunity map plotted individual commodities for each of the three FTA countries according to Queensland's export value, Queensland's competitive advantage (represented by market share), the strength of the FTA changes (i.e. tariff after 10 years) and consumption growth. This map highlighted where the opportunities for increasing agribusiness trade and/or investment may be the strongest for each particular country. The sectors with a large export market, large market share, high tariff reductions, and strong consumption growth were considered the commodities with the greatest potential for growth. The opportunity map for South Korea is shown in the next page.

# Introduction

## Background (cont.)



From the above opportunity map, consultations with industry stakeholders, and further analysis of market access considerations, it was identified that **beef, macadamia, mango and mung beans** represented the strongest growth opportunities for Queensland agribusiness products into South Korea. In addition, although not represented on the map, it was also identified through consultation that **soybeans** was a potential emerging growth area for Queensland agribusiness into South Korea even though production and trade is not currently high.

Therefore, these five commodities were selected for more detailed profiling which is the purpose of this stage 2 report.

# Introduction

## Approach to stage 2 analysis

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The objective of this second stage report is to profile the five identified commodities of **beef, macadamia, mango, mung beans** and **soybeans** for South Korea in more detail. In particular, this report aims to answer the following questions:

1. What does the FTA mean for the relevant commodity – including what are the specific tariff reductions and other relevant provisions?
2. What is the level of demand for the commodity and what trends are driving this demand?
3. What is Queensland's ability to supply – specifically what are the trends in production and export for the commodity and what is driving these trends?
4. How does Queensland compare to other key export competitors into this country, in terms of prices, margins and other factors of competitiveness?
5. How does the market operate? Are there any technical market access issues or supply chain barriers that is preventing greater trade or investment in the commodity?
6. Who are the key players in the South Korean market, and what are they looking for with regards to product attributes and preferred method of dealing?

The above analysis is summarised in a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis for each relevant commodity and opportunities for increasing trade and investment with South Korea are identified.

The above key questions have been addressed through a combination of desktop research, analysis of publicly available data and consultation with both local stakeholders and potential buyers and investors in South Korea.

In relation to **local consultations**, interviews were held over the period of June to November 2016 with key industry associations and the Queensland Trade Commissioners. The **local stakeholders** consulted were:

- Meat and Livestock Australia (MLA), with information sourced directly from MLA offices in South Korea
- Macadamia Society
- Australian Mangoes Industry Association
- Australian Oilseeds Federation (Soy Australia)
- Food and Grocery Council
- Agforce
- The Queensland South Korea Trade Commissioner

The broad themes covered in the local interviews included:

- The demand and supply aspects of the commodity (e.g. level and characteristics of demand in South Korea and investment willingness as well as Queensland supply advantages)
- The challenges or barriers to export or investment (e.g. market barriers as well as local or in-market supply chains)
- What is needed to maximise opportunities and mitigate threats for Queensland agribusiness.



# Introduction

## Approach to stage 2 analysis (cont.)

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In relation to **potential buyers and investors** in South Korea, three interviews were conducted, however these organisations participated in the interview on the basis of anonymity. The profile of these three stakeholders were as follows:

- Potential mango buyer/investor – A hypermarket with expertise in groceries, clothing and electronics. This company had 2015 sales worth \$5.1 billion USD. The expert had 18 years of relevant experience.
- Potential mung bean buyer/investor – A food manufacturing company with annual revenue of \$199 million USD. The expert had 35 years of relevant experience.
- Potential soy bean buyer/investor – An industry association that imports the vast majority of soybeans into South Korea. The expert had 28 years of relevant field experience.

Seven key questions were posed to these in-market contacts which were:

1. What is the level and nature of current and future demand for the relevant commodities? What are the key drivers of this demand? Where (regions, demographics) is demand occurring? What consumer preferences exist for the relevant commodities? i.e. local vs. imported, taste, quality, colour, visual, appearance, particular cuts, fresh/processed etc.
2. Who are the direct in-market buyers in each market for Queensland commodities? (e.g. which specific companies? Are these companies importer/distributors, wholesalers, retailers?)
3. What are buyers looking for in each of the relevant commodities? What are their key purchase criteria? e.g. are there specific quality or quantity specifications? Do they seek supply at certain times of the year? What is their preferred method of dealing? (i.e. supply contracts or spot market?)
4. How does Queensland/Australian produce compare with other importing countries for each commodity?
5. What would potential investors be looking for in Queensland agribusinesses for the relevant commodities? Where would they be looking to invest (e.g. which regions or points in supply chain?) What is their key commercial criteria for investment?
6. What are the main barriers to importing the relevant commodities from Queensland? Examples of barriers might be: Queensland supply constraints (e.g. quantity, quality, consistency of supply etc.), in-market supply chain constraints (e.g. infrastructure capacity constraints, infrastructure gaps, lack of cold chain etc.). What needs to happen to overcome these trade barriers?
7. In their view, what actions should the Queensland Government and/or agribusinesses take to increase trade for the relevant commodities?

# Introduction

## Structure of commodity profiles

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The remainder of this document profiles the commodities identified for South Korea, namely **beef, mango, macadamia, mung beans** and **soy beans**.

Consistent with the key questions for stage 2, each commodity profile outlines:

- FTA changes including specific tariff reductions and other relevant provisions
- The level of demand for the commodity including consumption trends and drivers
- Queensland supply such as trends in production and exports
- Analysis of Queensland's competitors in terms of prices, margins and other factors of competitive advantage and differentiation
- Key elements of market operation such as technical or supply chain barriers
- SWOT analysis of the above information
- Opportunities for trade and investment.

# Beef profile



## Beef overview

Beef and beef products were identified in the Stage 1 report as being the largest opportunity for Queensland's trade and investment growth to South Korea. The Stage 1 report identified that:

- Beef consumption is relatively strong in South Korea compared to other commodities. In particular, there has been strong growth in total and per capita consumption of beef in South Korea over the last decade.
- South Korea is an established beef market for Australia, with a mutually respectful trading relationship.
- Australia has a dominant import market share position for beef where, for the three years between 2012 and 2014, Australian beef consisted of 51% of South Korean imports. The other major competitor for beef was the United States which consisted of 41% of imports.
- Queensland has a large share of Australian exports to South Korea, consisting of 62% of Australian exports between 2012 and 2014.
- The tariff reductions applied to Australian beef through KAFTA are significant and are expected to strengthen this market further.

## FTA changes

The FTA with South Korea eliminates tariffs for Australian frozen and fresh beef as well as frozen offal over 15 years. This is a significant reduction in tariffs and is expected to make Australian beef cheaper to buy for the end consumer than it is currently. This reduction in price will likely stimulate greater demand for Queensland beef. However, Australia's key competitors will also experience tariff elimination within the next eight years (with the USA achieving full tariff elimination two years sooner). Therefore the FTA does not necessarily increase Australia's competitiveness against other imports, but it will against South Korean domestic supply.

### Tariff reduction schedule <sup>(19)</sup>

	Base rate (%)	Yr2	Yr4	Yr6	Yr8	Yr10	Yr12	Yr14	Yr16	Yr18	Yr20
Frozen beef (bone in or boneless)	40	35	29	24	19	13	8	3	0	0	0
Fresh or chilled beef (bone in or boneless)	40	35	29	24	19	13	8	3	0	0	0
Frozen offal	18	16	13	11	8	6	4	1	0	0	0

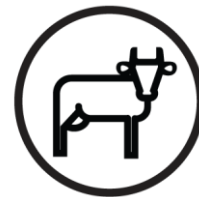
### Other FTA conditions <sup>(21)</sup>

Agricultural safeguard measures apply (Annex 6-A of KAFTA) to beef imports over 160,829 tonnes (in 2016), at which point a 40% tariff would apply.

### Competitor tariff comparison <sup>(18)</sup>

Country	2015 tariff (fresh and frozen)	Comment
Australia	34.6%	0% by 2029
United States	29.3%	0% by 2027
New Zealand	40%	0% by 2029

# Beef profile



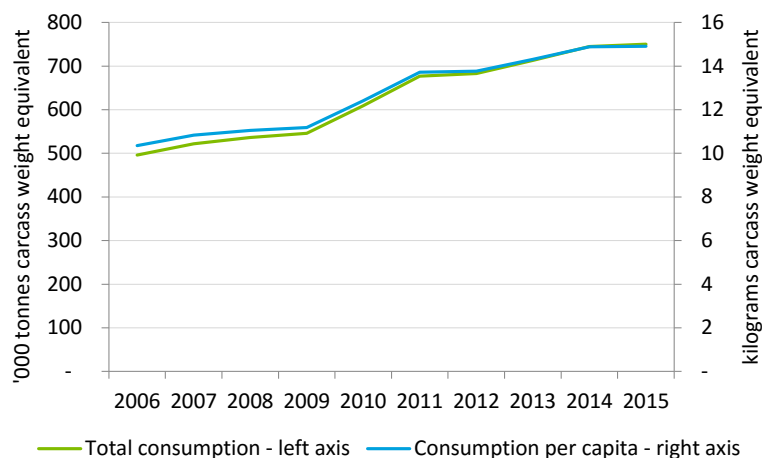
## South Korean beef demand

There has been strong growth in total and per capita consumption of beef in South Korea over the last decade. Per capita consumption in 2015 was 44% higher than 2006 levels, and total consumption 51% higher (due to population growth of around 5% per annum).

While population growth is expected to slow in South Korea, it is projected to remain positive for much of the next 35 years, creating reasonable prospects for total consumption growth.

Consultations noted that freshness, taste and locally sourced product are the highest ranked consumer preferences for South Korea. The premium product in South Korea is local beef (Hanwoo) given it is local (freshness) and has marbled attributes (taste). South Korea is still heavily focused on marbled meat qualities which are used in traditional BBQ dishes. USA marbled beef fetches a higher price premium over Australian grass-fed beef for this reason. Beef is expensive, however, compared to key substitutes such as pork or poultry.

South Korean beef consumption <sup>(1)</sup>



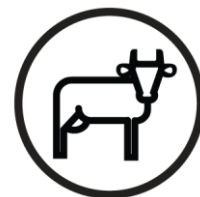
## Consumer channels and key players

Key consumer channels for beef products are food processors, foodservice, hypermarkets, grocery stores, supermarkets, department stores and convenience stores. The city of Seoul and surrounding areas account for over 50% of the total Korean population and 70% of total retail sales. Growing regional markets include Busan, Incheon, Jeju, and Daejeon. Food processing in South Korea is a highly developed sector which includes meat processing.

Large players in the foodservice sector include CJ Freshway, Ourhome, Samsung Everland and Shinsegae Food. These companies tend to value-add product and then on-supply to catering companies, wholesalers and retailers. Hypermarkets such as E-Mart, Homeplus, Lotte Mart and Costco are increasingly likely to purchase products for retail directly from foreign suppliers. Cross-country links in these chains may make it more feasible to gain access (for example, if you already supply Costco Australia, it may be easier to access Costco in South Korea). Grocery stores/supermarkets are similar to hypermarkets but are less likely to carry imported products. Department stores such as Lotte, Shinsegae, Galleria and Hyundai occupy a high-end segment of the market; however, they tend not to directly import products themselves. Convenience stores such as Family Mart, CU and 7-Eleven also do not directly import themselves, but will still carry imported products.

Premium Australian beef, unlike most other Australian food exports to Korea, is typically marketed directly to consumers as Australian beef. Oz Nature, for example, is a New South Wales business which has established a name for itself in South Korea with its 'Oz Nature Wagyu'.

# Beef profile



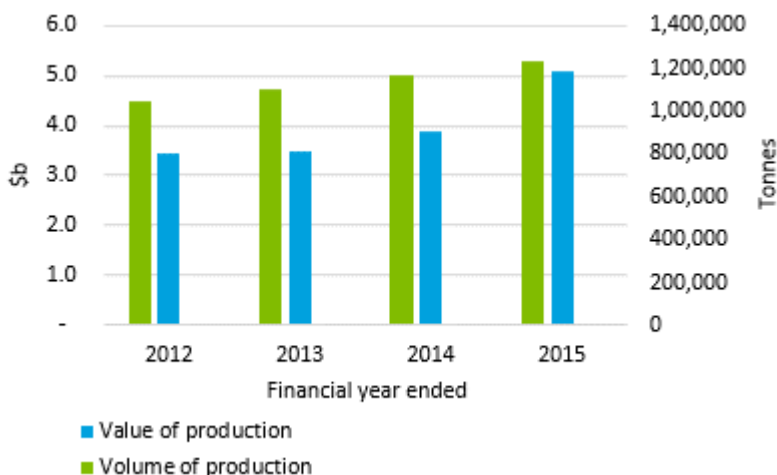
## Queensland beef supply

The value of beef production in Queensland has increased in recent years. This has been driven by growth in both volumes and prices, but price growth has been the dominant factor.

Queensland production can be subject to seasonal conditions which may impact continuity of supply.

Following significant turnoff in recent years (driven by poor seasonal conditions and high prices), the herd is currently in a rebuilding phase.

Queensland beef production (2, 3-6)

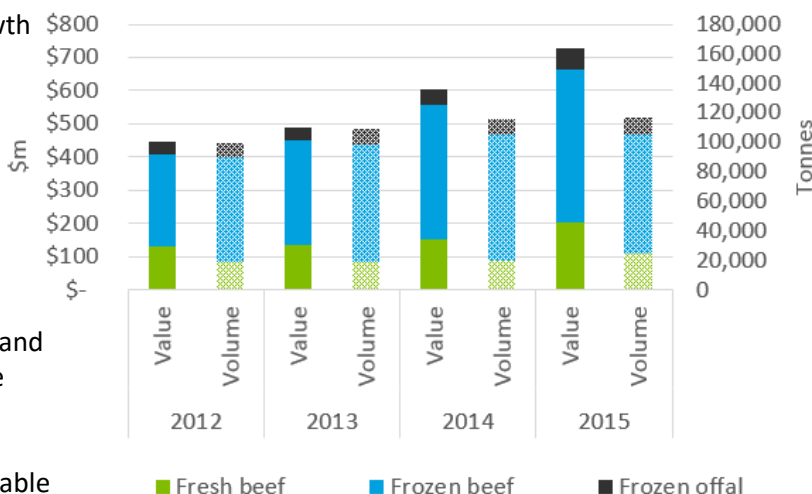


## Queensland beef exports

The value of Queensland beef exports to South Korea increased by around 60% from 2012 to 2015. This was mostly driven by growth in the prices received, with the volume exported increasing by less than 20% over the same period.

Through consultation, one stakeholder noted that South Korea is Australia's largest market for chuck, blade and rib, making trade beneficial for maximising carcass utilisation. Product from Queensland is mostly grass fed and lean beef, whereas the USA mostly serves the marbled beef market.

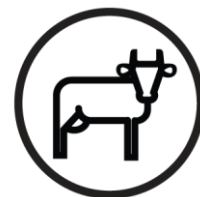
Queensland beef exports to South Korea (7)



Queensland beef essentially fulfils the 'affordable beef' market segment with significant demand volume. Local Hanwoo product has increased in price (due to cyclical decline of herd) which has seen increased demand for Queensland exports to South Korea. Queensland and Australian beef have a clean, green image through successful 'True Aussie Beef' marketing in South Korea. This reputation is particularly important amidst food safety and biosecurity concerns.



# Beef profile



## Queensland's key competitors

Australia had the largest market share for South Korean beef imports between 2011 and 2014. However, the USA (Australia's biggest competitor) enjoys a slight price premium, averaging around \$8 per kilogram in 2015. The USA also has processing costs which are less than half those of Australia<sup>(8)</sup>.

Queensland's key competitive advantage in the South Korean market is Australia's biosecurity status. Due to biosecurity issues in other competitor nations, the import market is concentrated. For example, Brazil (another major global beef exporter) does not currently have access to the South Korean market due to a BSE scare in 2012.

However, the USA and China have recently opened up their markets to Brazilian beef. If South Korea follows suit, this could impact Queensland's market position as processing costs are around three times those of Brazil<sup>(8)</sup>.

The most recent agri-benchmark results<sup>(8)</sup> indicate that total costs of cow-calf production are somewhat lower in Australia than the United States. However, US producers have lower processing costs and higher levels of profitability.

The USA out-ranks Australia across a range of key factors of competitiveness, most notably labour efficiency, regulatory burden and innovation capacity. However, Australia is closer to market than all of its main competitors.

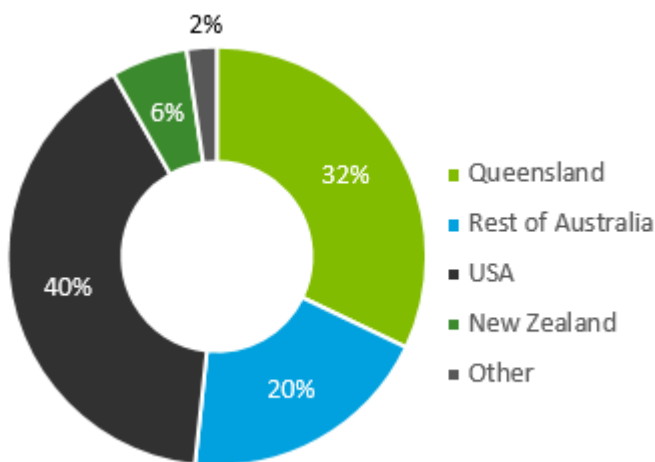
### Key factors of competitiveness

Country	Distance to market (km)	Labour efficiency <sup>1</sup> (rank - 150 countries)	Cost of inputs <sup>2</sup> (rank - 203 countries)	Quality of infrastructure <sup>1</sup> (rank - 150 countries)	Regulatory burden <sup>1</sup> (rank - 150 countries)	Innovation capacity <sup>1</sup> (rank - 150 countries)
Australia	6,507 (Qld.)	36	83	35	80	23
USA	10,736	4	17	13	51	4
New Zealand	9,794	6	169	29	36	24
Brazil	17,594	67	92	71	81	57
Argentina	18,957	139	138	122	135	93

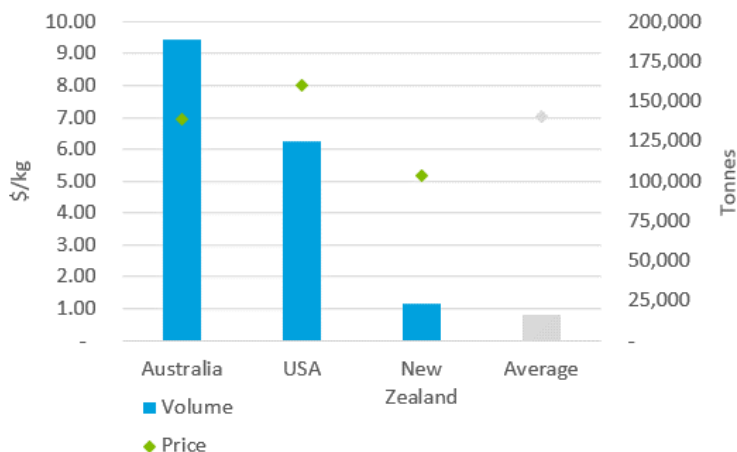
Notes: <sup>1</sup>Indicator sourced from the World Economic Forum, Global Competitiveness Index 2015-16

<sup>2</sup>The 'pump price for gasoline' sourced from World Bank's Development Indicators Database 2016 is used as a proxy for the cost of inputs

Import market share 2011 – 2014<sup>(9)</sup>



Competitor prices and volumes 2015<sup>(9)</sup>



# Beef profile



## Supply chain and trade barriers



### Farm gate

In consultation it was noted that the supply chain from farm gate to the export terminal is well-established; however, many beef producing regions of Queensland have some distance to travel to the export terminal. Discussions with one industry stakeholder revealed that there are some constraints on road transport for heavy vehicle configurations.



### Export terminal

No restrictive trade impediments for Queensland beef into South Korea were identified by stakeholders in consultation. In general, beef has free market access to South Korea from an animal health perspective.



### Destination port

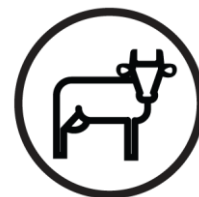
Most imported food products enter Korea through the port of Busan (the second largest city in Korea) or the Port of Incheon (near Seoul). Airfreighted cargo enters via Incheon International Airport near Seoul.



### Consumer

Imported product makes its way to South Korean consumer channels via a network of trading agents, importers and distributors. In some circumstances, large retailers will have a more direct trading relationship with suppliers. Importers often request exclusive rights to particular products in South Korea for at least two years. Working with an importer (as opposed to a large retailer or food manufacturing business) is typically how Queensland/Australian producers first enter the South Korean market.

# Beef profile



## SWOT analysis

Strengths

- South Korea is Australia's third largest beef export destination and Australia (Queensland) has strong import market share.
- South Korea is Australia's largest market for chuck, blade and rib, making trade beneficial for maximising carcass utilisation.
- Per capita and total beef consumption has been growing in South Korea.
- Australian beef has a clean, green image (through successful 'True Aussie Beef' marketing) which is particularly important amidst food safety and biosecurity concerns.
- Australian beef fulfils the 'affordable beef' market segment with significant demand volume. Recent high prices for local Hanwoo product (due to cyclical decline of herd) has seen increased demand for Australian imports.

Weaknesses

- Australia's biggest competitor – the USA – has a tariff advantage over Australia and has secured faster phased tariff reductions than those under KAFTA.
- The premium product in South Korea is local beef (Hanwoo) given it is local (freshness) and has marbled attributes (taste).
- USA beef also fetches a price premium (particularly for its marbling attributes).
- Beef is expensive compared to pork or poultry, which are key substitutes in South Korea.

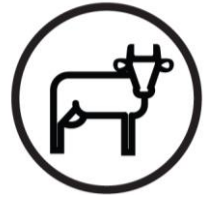
Opportunities

- 40% tariff on beef and 18% tariff on bovine offal removed over 15 years. ABARES research suggests the value of Australian beef exports to South Korea will be around 57% higher in 2029 than they would be without KAFTA <sup>(10)</sup>.
- The FTA may make Queensland beef cheaper for consumers, stimulating demand. In particular, Queensland beef will be more price competitive against local Hanwoo product.
- The grass-fed market segment for health conscious consumers is likely to grow over the long term and is a key opportunity as it plays to Queensland's advantages. However, South Korea is still heavily focused on marbled meat qualities which are used in traditional BBQ dishes.
- The growing consumer awareness of product attributes presents a clear opportunity to differentiate product based on traceability attributes and quality.

Threats

- South Korea may negotiate other trade agreements that reduce the relative competitiveness of Queensland's product. Similarly, if Brazil is able to negotiate market access this would increase competition for the South Korean beef consumer.
- A biosecurity outbreak or breach of protocol would threaten the clean, green image and be potentially catastrophic for the Queensland beef sector.
- An economic downturn in the economy could shift consumption towards cheaper protein sources such as pork and poultry, and/or result in higher quality domestic and USA product pushing into the value category.

# Beef profile



## Key opportunities and activities

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In order to maximise the Queensland beef trade and investment opportunity in South Korea, the following opportunities and gaps have been identified:

- Queensland/Australian beef into South Korea fulfils a key market segment (i.e. predominantly grass fed and more affordable than local and USA beef). Consolidating and defending this market segment, and further promotion of the benefits of Australian beef's free-range, safe and healthy nature will benefit Queensland producers in the event of increased competition from both higher quality beef products and red meat substitutes.
- Any market development initiatives and market access strategies in Queensland need to be coordinated between government and industry bodies. This avoids duplication, makes the most of collective skills and resources and ensures strategic alignment between key parties. Regular reviews to identify areas of overlap and agreement on how activities should be coordinated in the short, medium and longer term may assist.
- Further promotion of the regional benefits of the FTA for beef exports could assist in creating greater community awareness and self-directed identification of trade opportunities into South Korea.
- Hypermarkets such as E-Mart, Homeplus, Lotte Mart and Costco are increasingly likely to purchase products for retail directly from foreign suppliers. Cross-country links in these chains may make it more feasible to gain access.

# Mango profile



## Mango overview

Mangoes were identified in Stage 1 of the project as a potential opportunity for Queensland's trade and investment growth to South Korea. The Stage 1 report identified that:

- Queensland has a large share of Australian exports to South Korea, consisting of 67% of Australia's exports between 2013 and 2015.
- The tariff reductions applied to Australian mangoes through KAFTA are significant and are expected to strengthen this market.
- South Korea's mango imports have increased significantly in recent years – from around 3,000 tonnes in 2012 to nearly 14,000 tonnes in 2015.
- While Australia is a relatively small player in the South Korean mango import market, it does have an edge in terms of countercyclical supply relative to the major (northern hemisphere) suppliers (Thailand, Philippines, Vietnam, India).

## FTA changes

Prior to KAFTA, South Korea imposed a 30% tariff on Australian mangoes. Under KAFTA, mangoes fall under staging category 10, which means that the pre-FTA tariff rate of 30% will be reduced to 0% in 10 equal increments. This means that the tariff is reducing by 3% annually, and will be completely abolished by 2023.

Other major suppliers of mangoes to South Korea – Thailand, Philippines, Vietnam – all currently have 30% tariffs imposed, and these will remain in place unless they negotiate trade agreements with South Korea.

### Tariff reduction schedule <sup>(19)</sup>

	Base rate (%)	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10
<b>Mango</b>	30%	27%	24%	21%	18%	15%	12%	9%	6%	3%	0%

### Other FTA conditions

There are no additional conditions in place associated with KAFTA.

However, as was the case prior to KAFTA, mangoes imported into South Korea need to be treated using vapour heat treatment. In addition, orchards, pack houses and treatment facilities must be inspected by South Korean Quarantine inspectors prior to being registered as an export establishment, and pre-clearance of each consignment by South Korean Quarantine inspectors is required to export.

### Competitor tariff comparison <sup>(18)</sup>

Country	2015 tariff	Comment
Australia	24.7%	0% by 2023
Thailand	30%	
Philippines	30%	
Vietnam	30%	



# Mango profile



## South Korean mango demand

There has been strong growth in the South Korean mango market in recent years – total imports in 2015 were six times what they were in 2011.

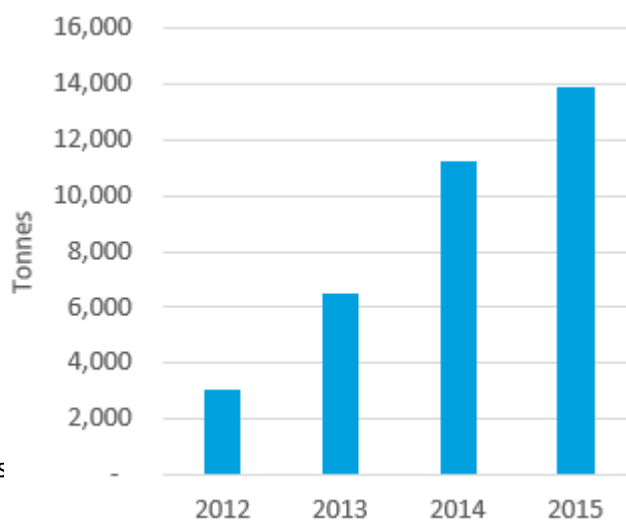
Consultation with one in-market contact has indicated that demand is strongest in South Korea's major cities, especially among women in their 20s and 30s. In-market consultation has also indicated that South Korean consumers prefer mangoes that are easy to handle (300-400 grams), shorter-ripening and red in colour. Kensington Pride in particular has been mentioned as a preferred variety.

Nevertheless, consultation with one in-market contact (a merchandiser at a hypermarket) indicated that mangoes are still an unfamiliar fruit in South Korea.

South Korea is, like many international markets, highly sensitive to potential biosecurity threats. One in-market contact indicated that the discovery of a harmful insect in Queensland directly led to a reduction in Queensland mango exports to South Korea.

While population growth is likely to slow in South Korea, it is projected to remain positive for much of the next 35 years, creating reasonable prospects for total consumption growth.

Total South Korean mango imports <sup>(9)</sup>



## Consumer channels and key players

South Korean importers of mangoes supply mainly to hypermarkets, supermarkets, department stores and foodservice companies. Imported mangoes are typically sold for consumption as whole fruit (this is distinct from vegetables, which are often used as inputs in the production of processed food products).

Hypermarkets include companies such as Homeplus, E-Mart, Lotte Mart and Costco. An increasing trend is for these companies to source direct from foreign suppliers.

Foodservice companies such as CJ Freshway, Ourhome, Samsung Everland and Shinsegae Food also import fruit from Australia to supply to catering companies, wholesalers and retailers. Companies such as Binggrae also use mangoes in the production of desserts.

Department stores include Lotte, Shinsegae, Galleria and Hyundai and occupy a high-end segment of the market, which fits the criteria of Queensland mangoes.

# Mango profile



## Queensland mango supply

Queensland's mango supply window runs from mid-November (in the north of the state) to January-February (in south-east Queensland). Precise timing varies from year to year based on seasonal conditions and the biennial nature of fruit set.

A number of varieties are grown, including Kensington Pride (65%), Calypso™ (20%), R2E2 (6%), Honey Gold™ (4%) and Keitt (3%).

From 2013 to 2015 production and prices fluctuated (with the largest variation seen in volumes produced). Over this period Queensland produced, on average, around 28,000 tonnes of mangoes each year.

There is unlikely to be interest from South Korea in investing in the Queensland mango industry. A factor contributing to this is that South Korea is still relatively unfamiliar with mangoes, and even less familiar with Australian mangoes. The high price of Queensland mangoes also means the product faces stiff competition from South East Asian producers.

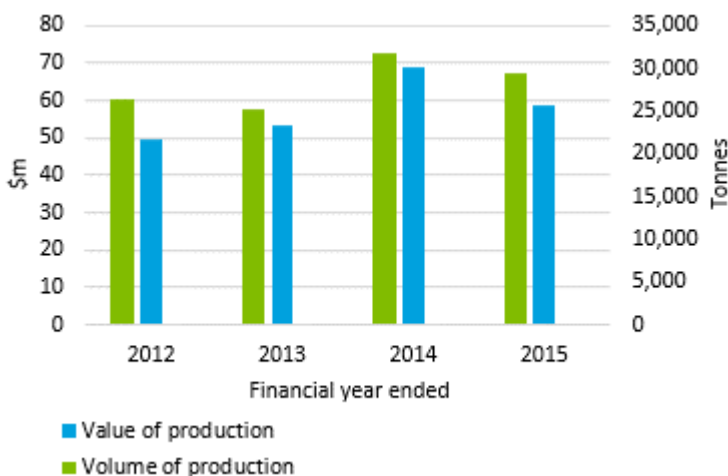
One in-market stakeholder indicated that Queensland's mangoes present as having a less uniform visual appearance than competitors, and tend to be more yellow than red (the preferred colour). These are factors which limit demand.

## Queensland mango exports

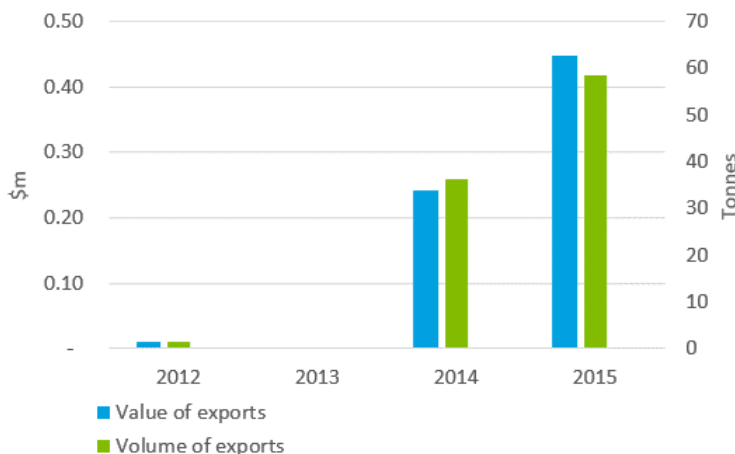
Queensland currently exports small volumes of mangoes to South Korea. After very small shipments in 2012, none were exported in 2013 (according to one in-market consultation). This was due to the discovery of a harmful insect.

There has, however, been strong growth in 2014 and 2015. Queensland mango exports to South Korea were worth around \$450,000 in 2015.

Queensland mango production <sup>(3-6, 11-14)</sup>



Queensland mango exports to South Korea <sup>(7)</sup>



# Mango profile



## Queensland's key competitors

Queensland's key competitors are Thailand and the Philippines. Together, these two markets alone accounted for over 80% of South Korea's mango imports from 2011-2014. However Queensland's supply is counter-seasonal to these countries therefore not directly competing.

In-market consultation indicated that Queensland mangoes have some weaknesses compared to major international competitors; namely that:

- Queensland mangoes are priced too high.
- The harvest season of Queensland mangoes (November through to January or February) is relatively short which hampers the development of brand continuity and loyalty.

The competitor prices and volumes chart (to the right) suggests that Australian product receives a premium, but this high price is an impediment to increased exports to South Korea.

Australia ranks relatively well compared to our major competitors in supplying mangoes to South Korea in terms of labour efficiency, better quality infrastructure and a greater innovative capacity compared to Thailand and the Philippines. Competitors have an advantage when it comes to distance to market and major competitors do not require vapour heat treatment.

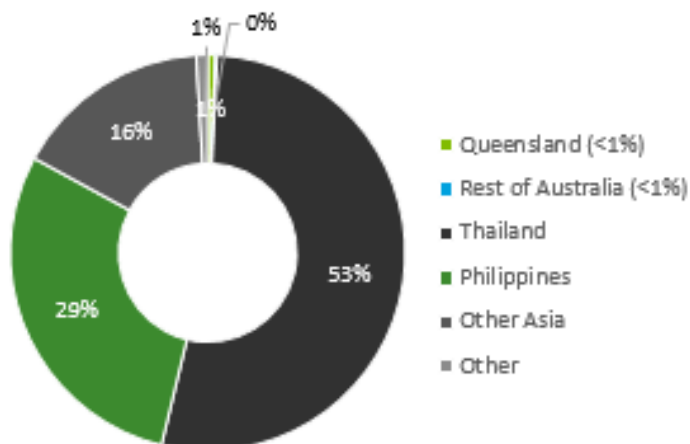
### Key factors of competitiveness

Country	Distance to market (km)	Labour efficiency <sup>1</sup> (rank - 150 countries)	Cost of inputs <sup>2</sup> (rank - 203 countries)	Quality of infrastructure <sup>1</sup> (rank - 150 countries)	Regulatory burden <sup>1</sup> (rank - 150 countries)	Innovation capacity <sup>1</sup> (rank - 150 countries)
Australia	6,507 (Qld.)	36	83	35	80	23
Thailand	3,460	67	92	71	81	57
Philippines	2,628	82	48	106	101	48
Vietnam	3,109	52	45	99	90	73
Taiwan	1,506	22	N/A	21	20	11

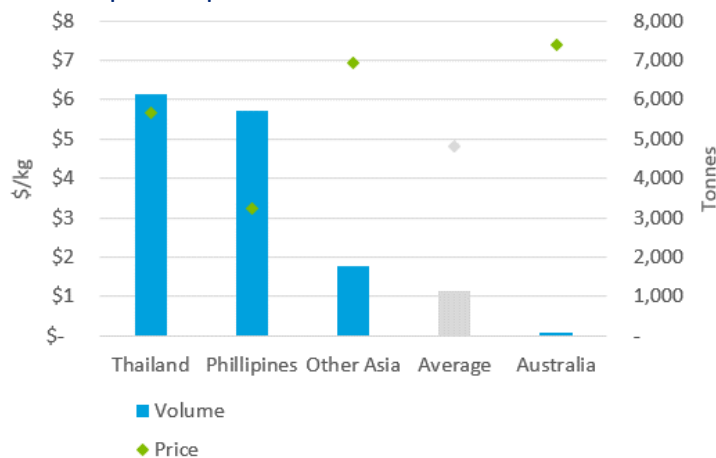
Notes: <sup>1</sup>Indicator sourced from the World Economic Forum, Global Competitiveness Index 2015-16

<sup>2</sup>The 'pump price for gasoline' sourced from World Bank's Development Indicators Database 2016 is used as a proxy for the cost of inputs

Import market share 2012 – 2015 <sup>(9)</sup>



Competitor prices and volumes 2015 <sup>(9)</sup>



# Mango profile



## Supply chain and trade barriers



### Farm gate

As was the case prior to KAFTA, mangoes imported into South Korea need to be treated using vapour heat treatment. There are currently only two facilities that can provide this treatment (Mareeba and Ayr) though there is one under construction in Brisbane.



### Export terminal

Orchards, pack houses and treatment facilities must be inspected by South Korean Quarantine inspectors prior to being registered as an export establishment, and pre-clearance of each consignment by South Korean Quarantine inspectors is required to export. This adds complication and cost to the export process, and this is exacerbated by the combination of a short harvest season and large geographic spread of producers.



### Destination port

Mangoes are typically airfreighted to Incheon International Airport to supply Seoul. Imported product makes its way to South Korean consumer channels via a network of trading agents, importers and distributors. In some circumstances, large retailers will have a more direct trading relationship with suppliers. In-market consultation has indicated that the spot market (rather than supply contracts) is the main means of purchasing mangoes in South Korea.



### Consumer

A key importer/distributor of mangoes to South Korea is Jinwon, which is a wholesale distributor of fresh fruit and vegetables. Jinwon was responsible for Australia's first shipment of mangoes in 2010. In-market consultation suggested that other major importers are PSK International Inc., SOO IL Commerce Inc. (who both import Thai and Taiwanese mangoes) and Dongwoo International and Yejuo International (who both import mangoes from the Philippines).

# Mango profile



## SWOT analysis

- Around two thirds of Australian mango exports to South Korea are from Queensland.
- Australia has counter-seasonal supply to South Korea's main current sources of mangoes (Thailand, Philippines, Vietnam, India).
- Previous campaigns undertaken by industry bodies have been well received. For example Homeplus (hypermarket) had in-store mango demonstrations over the 2015-16 Christmas period as well as 'taste of summer' promotions.

Strengths

- Australian mangoes currently make up a very small share (~1%) of South Korea's mango imports. The market is currently dominated by Thailand and the Philippines.
- Exporting requires registration by the Commonwealth Department of Agriculture and Water Resources, and shipments require inspection by Korea's Animal and Quarantine Agency.
- Only 10% of Australian production is exported with the industry focus clearly on domestic consumers.
- The requirement for vapour heat treatment is costly and compromises the quality and flavour of mangoes and reduces shelf life.
- One in-market stakeholder indicated that Queensland mangoes present as having a less uniform visual appearance than competitors, and tend to be more yellow than red (the preferred colour) – these factors limit demand.

Weaknesses

- Large tariff reduction from 30% to 0% by 2023.
- Australia will have a tariff advantage over Thailand, Philippines, Vietnam and Mexico (which will all remain at 30%).
- Queensland's supply window is November to January, corresponding to the season of gift giving and festivities.
- Development of better market access protocols, particularly around fruit fly. In the short term, there is potential to move towards radiation or low dose methyl bromide fumigation (which is a much cheaper, flexible and streamlined option).
- A longer term market access protocol would be to get agreement on the export of 'hard and green' mangoes which are not a host for fruit fly. The Northern Territory Government are building the database of evidence to support this claim.

Opportunities

- Biosecurity outbreaks or phytosanitary breaches could affect market access and damage brand.
- Changes to Maximum Residue Limits for South Korea may affect trade between Korea and all importing countries for mangoes. Current negotiations are for a longer time frame in order to develop solutions to current fungal treatments.
- Peru – which accounted for 8% of world mango exports from 2013 to 2015 – gained access for its mangoes to the South Korean market in 2015. While it does appear that Peruvian mangoes generally occupy a different, lower price, segment of mango markets, this could still impact Queensland product's place in the South Korean market.

Threats



# Mango profile



## Key opportunities and activities

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In order to maximise the Queensland mango trade and investment opportunity in South Korea, the following opportunities have been identified:

- Being a relatively new market, there is potentially an opportunity to shape demand for mangoes that are grown in Australia. This could potentially leverage off the seasonality of Australia's mango harvest, which occurs over the Christmas period (which is counter-cyclical to most of South Korea's current mango imports).
- A key importer/distributor of mangoes in South Korea is Jinwon, a wholesale distributor of fresh fruit and vegetables. Jinwon was responsible for Australia's first shipment of mangoes in 2010. Other major importers are PSK International Inc., SOO IL Commerce Inc. (who both import Thai and Taiwanese mangoes) and Dongwoo International and Yejoo International (who both import mangoes from the Philippines). Fostering stronger trade relationships between Queensland industry representatives and these importers will present greater opportunities for trade in mangoes.
- It would improve the ease of doing business if the Queensland and Australian Governments could negotiate with the South Korean Government to allow delegation of quarantine inspection work to local authorities (rather than requiring South Korean officials to be present in Australia to approve each shipment).
- It would also be valuable for Queensland producers looking to export to South Korea if an alternative could be found to the currently required vapour heat treatment procedure. This could include radiation or low dose methyl bromide fumigation, or even the ability to export 'hard and green' mangoes which do not host fruit fly. The Northern Territory Government is building a database of evidence to support this claim.

# Macadamia profile



## Macadamia overview

Macadamias were identified in Stage 1 of the project as a potential opportunity for Queensland's trade and investment growth to South Korea: The stage 1 report identified that:

- Queensland produces around 45% of Australia's macadamias, and the 2016 crop is expected to be a record.
- Queensland accounted for 17% of Australia's macadamia exports to South Korea between 2013 and 2015.
- The tariff reductions applied to Australian macadamias through KAFTA are significant and are expected to strengthen this market.
- While export volumes are relatively low (less than \$2 million in 2015), there are good prospects for demand growth.
- Australia currently dominates the South Korean macadamia market, and KAFTA is bringing tariffs down from 30% to 0% by 2018.
- South Korea's macadamia imports have gone from non-existent five years ago to being worth over \$10 million.

## FTA changes

Prior to KAFTA, South Korea imposed a 30% tariff on Australian macadamias. Under KAFTA, macadamias fall under staging category 5, which means that the pre-FTA tariff rate of 30% will be reduced to 0% in 5 equal increments. This means that the tariff is reducing by 6% annually, and will be completely abolished by 1 January 2018.

The only other country that supplies macadamias to South Korea in any significant volume is the USA, who have also negotiated tariff reductions reaching 0% by 2019. In 2015, however, the USA had a tariff advantage over Australia. Australia did have a tariff advantage in 2015 over other potential key competitors such as China, South Africa and Kenya, all of which had a 30% tariff on shelled macadamias.

### Tariff reduction schedule <sup>(19)</sup>

	Base rate (%) 2014	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10
Macadamia	30%	24%	18%	12%	6%	0%	0%	0%	0%	0%	0%

### Other FTA conditions

There are no additional conditions in place associated with KAFTA.

### Competitor tariff comparison <sup>(18)</sup>

Country	2015 tariff	Comment
Australia	18%	0% by 2019
USA	13%	
China	30%	
South Africa	30%	
Kenya	30%	

# Macadamia profile



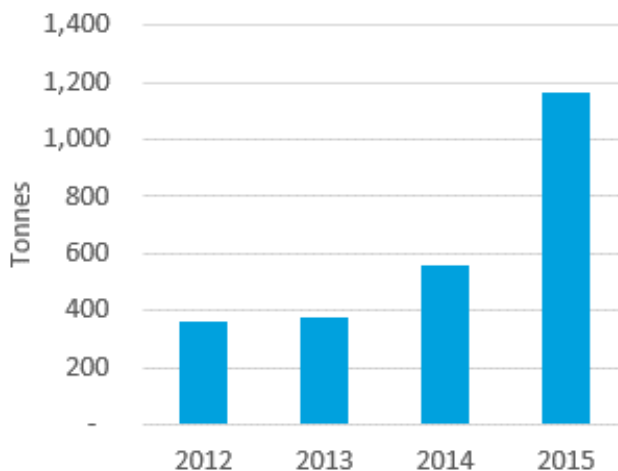
## South Korean macadamia demand

There has been strong growth in the South Korean macadamia market in recent years. From 2012 to 2015 the value of imports increased from less than \$3 million to just over \$11 million. The largest year-on-year increase occurred from 2014 to 2015 (around \$6.5 million).

Almost 100% of the macadamia nuts that South Korea imports are already shelled.

While South Korean demand is still small relative to Australia's macadamia industry, consultation with industry has indicated hopes that, over time, it will grow to be as big as the Japanese market (around 1,800 tonnes annually).

Total South Korean macadamia imports <sup>(9)</sup>



## Consumer channels and key players

Key consumer channels for snack-nuts are hypermarkets, supermarkets, department stores, convenience stores as well as online channels.

Key players in the hypermarket and supermarket sector are E-Mart, Homeplus, Lotte Mart and Costco. Department stores include Lotte, Shinsegae, Galleria and Hyundai. Major convenience stores are Family Mart, CU and 7-Eleven.

The snack-nut market in South Korea is worth around \$51 million in 2015, and CJ CheilJedang has the largest share of this market.

# Macadamia profile



## Queensland macadamia supply

Queensland's macadamia production has had a clear upward trajectory over the last four years, which is the direct result of investment over the last decade.

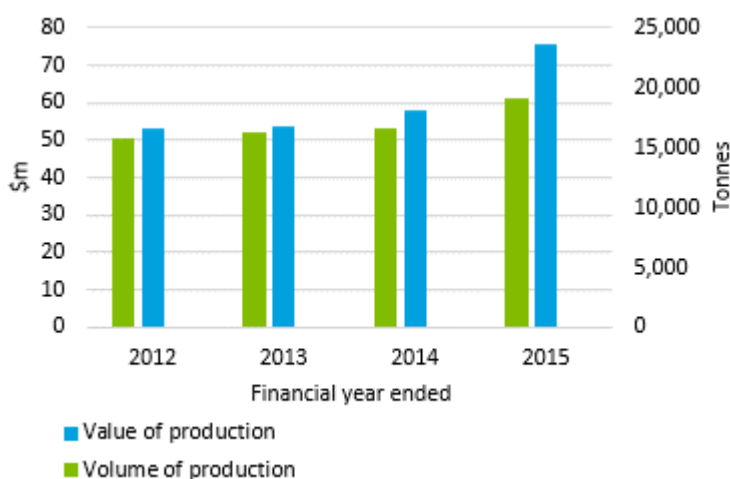
Strong price growth in 2015 led to the value of production increasing by 30%, while the volume of production grew by 15% (which is itself still a relatively significant figure for a perennial crop like macadamias).

There is difficulty attracting investment into the industry due to the long lead times involved (seedling production takes 3 years, which is followed by a 7-10 year period while the tree matures). There is some foreign investment (including from South Korea) already.

A difficulty that particularly relates to the attraction of institutional capital is the scale of the industry. Individual properties are in general too small to be of interest to institutional investors (around \$20 million minimum, but ideally in the \$50-\$100 million range). Packaging up properties to a sufficient scale is not a straightforward process.

There is potential for industry expansion though. Queensland has seen the biggest growth in macadamia area in recent years, particularly in the Bundaberg region. This growth has been driven by reasonable land prices (relative to northern NSW), access to water, and experienced growers.

Queensland macadamia production <sup>(3-6, 11-14)</sup>

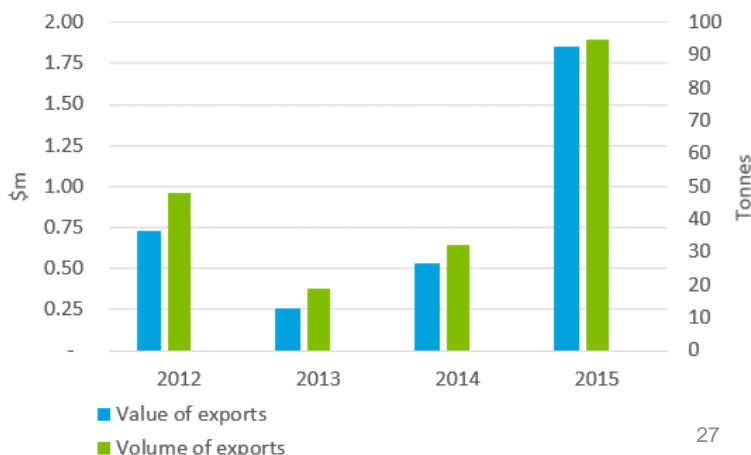


## Queensland macadamia exports

Queensland's macadamia exports to South Korea averaged around half a million dollars from 2012 to 2014, but 2015 exports were more than triple this, at around \$1.85 million.

The rapid growth in exports in 2015 was welcome for the industry, and made the South Korean trade worth around 6% of total Queensland macadamia exports.

Queensland macadamia exports to South Korea <sup>(7)</sup>



# Macadamia profile



## Queensland's key competitors

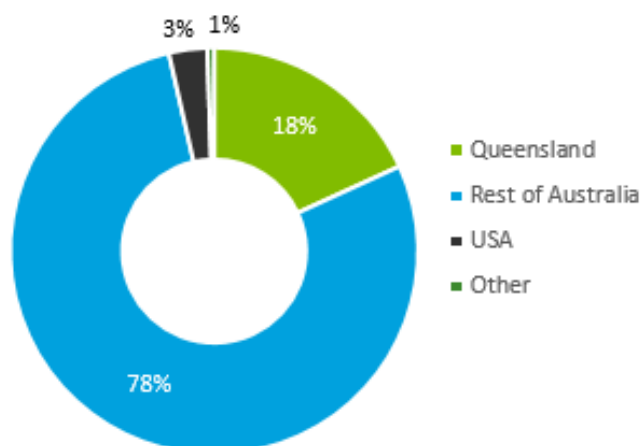
From 2013-2015 Australia dominated the South Korean Macadamia market, accounting for 96% of all imports (with Queensland comprising 18% of the total).

While the rest of Australia holds a dominant position in the South Korean market relative to Queensland, there is a strong element of complementarity between increased exports from the rest of Australia and Queensland exports. South Korean consumers are unlikely to differentiate between Queensland and New South Wales macadamia nuts. Exports from the rest of Australia grows brand awareness for Australian macadamia nuts in general.

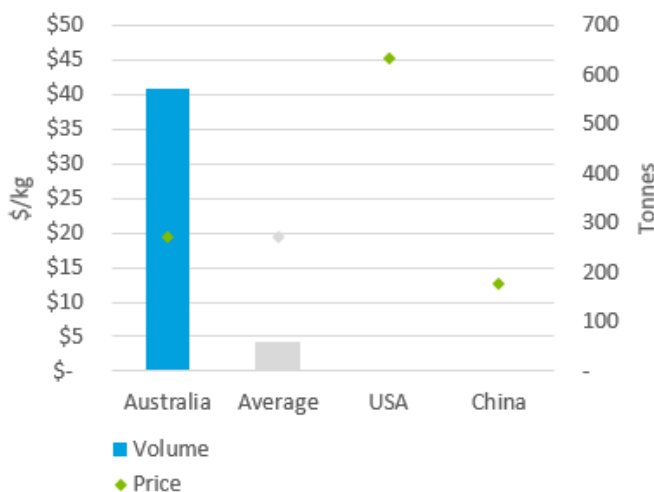
While they have not had a presence in the market in recent years, consultation has indicated that South Africa and Kenya are likely to be Australia's biggest competitors in the South Korean macadamia market. The USA and China exported negligible amounts (6 tonnes in total) of macadamias to South Korea in 2015, so their presence in the two figures on the right likely overstates their importance for the future.

In comparing Australia to what will likely be the major competitor in supply macadamia nuts to South Korea – South Africa – Australia ranks better on all of the key factors of competitiveness other than the cost of inputs.

Import market share 2013 – 2015 <sup>(9)</sup>



Competitor prices and volumes 2015 <sup>(9)</sup>



## Key factors of competitiveness

Country	Distance to market (km)	Labour efficiency <sup>1</sup> (rank - 150 countries)	Cost of inputs <sup>2</sup> (rank - 203 countries)	Quality of infrastructure <sup>1</sup> (rank - 150 countries)	Regulatory burden <sup>1</sup> (rank - 150 countries)	Innovation capacity <sup>1</sup> (rank - 150 countries)
Australia	6,507 (Qld.)	36	83	35	80	23
USA	10,736	4	17	13	51	4
China	2,117	37	65	51	26	31
South Africa	13,165	107	76	59	117	38
Kenya	9,990	31	79	63	44	41

Notes: <sup>1</sup>Indicator sourced from the World Economic Forum, Global Competitiveness Index 2015-16

<sup>2</sup>The 'pump price for gasoline' sourced from World Bank's Development Indicators Database 2016 is used as a proxy for the cost of inputs

# Macadamia profile



## Supply chain and trade barriers



### Farm gate

Queensland is on track to become the biggest macadamia producing state in Australia within the next few years. This comes on the back of investment in bigger, more efficient farms. Consultation has suggested that average orchard areas in Queensland are 30-40 hectares, with orchards in the northern rivers region of NSW averaging around 20 hectares.



### Export terminal

Consultation has also suggested that the supply chain within Australia is short, well-structured and efficient. At present, there is more processing capacity in Australia than supply of raw product, so future growth can easily be accommodated.

Around 80% of Australian exports go to five countries. Growing new markets – like South Korea – would diversify the demand facing Queensland producers.



### Destination port

Consultation with an Australian macadamia nut industry representative suggested that a greater focus on cool chain management on ships may be necessary, with macadamias currently on the highest risk rating by the USDA due to salmonella issues. Australia has not had any issues, but even incidents in other countries can harm the treatment of Australia's produce.

Most imported food products enter South Korea through the port of Busan (the country's second largest city) or the Port of Incheon (near Seoul). Airfreighted cargo enters via Incheon International Airport close to Seoul market.

Macadamias are imported by companies such as Shingdong and Nara Corporation.

Importers then typically supply macadamias to snack nut manufacturers or other food manufacturing companies for use in cereals and other food and cosmetic products. Imported nut products have limited visibility as most nuts sold in Korea are imported in bulk and contract packed under local snack-nut brands. There is very low visibility of the country of origin of nuts at the retail level.

Unroasted nuts have a tariff advantage under KAFTA and Korean importers prefer to import raw products and process them in-market.



### Consumer

# Macadamia profile



## SWOT analysis

Strengths

- Queensland's industry is already export-focussed, with macadamia the largest horticultural export product.
- The South Korean macadamia market is currently in a growth phase, with the value of imports more than doubling to around \$11 million in 2015.
- Australia has taken a dominant position in South Korea's nascent macadamia trade, with over 95% of all exports from 2013-2015.
- There is currently excess capacity in the post-farm processing stage of the Australian supply chain, so growth can be managed relatively easily.

Weaknesses

- Long lead time to ramp up production therefore difficult to respond quickly to market signals.
- Macadamia nuts are still expensive relative to other edible nut options.

Opportunities

- Australian macadamia producers will experience large and rapid tariff reductions due to KAFTA – decreasing from 30% to 0% by 2018.
- Exports increased recently on the back of the 'nut-rage' incident. Taking advantage of this spike in demand and undertaking market development activity to build the South Korean market long-term could be valuable.
- With growing scale in the Queensland industry, it may be possible to attract institutional capital to further modernise and improve industry efficiency.

Threats

- As the South Korean market develops, competition from South Africa and Kenya is likely to increase.
- Macadamias are currently on high risk rating from USDA as a result of salmonella detection in a Kenyan shipment. Repeat occurrences may result in requirement for pasteurisation across all countries which would add costs to all exporting nations.



# Macadamia profile



## Key opportunities and activities

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In order to maximise the Queensland macadamia trade and investment opportunity in South Korea, the following opportunities have been identified:

- Macadamias are imported by companies such as Shingdong and Nara Corporation. For growers looking to export product to South Korea, developing relationships with existing import companies is the first step. If the industry grows to sufficient size, direct relationships with processors should be explored.
- This is a crucial period for the development of the South Korean macadamia market. There has been a rapid increase in consumption recently, and as the market further matures Queensland product will face greater competition from other exporters. Opportunities exist to clearly differentiate Queensland/Australian macadamias in terms of quality and that Australia is the native home of macadamias.
- With growing scale in the Queensland industry, it may be possible to attract institutional capital to further modernise and improve industry efficiency. Recent high prices have seen increased interest in investment, including from foreign investors, but the industry requires patient capital (with lead times of up to a decade once the time taken for seedling production and maturing are taken into account).

# Mung bean profile



## Mung bean overview

Mung beans were identified in Stage 1 of the project as a potential opportunity for Queensland's trade and investment growth to South Korea: The stage 1 report identified that:

- Tariffs on dried (seed) mung beans are being reduced from 607.5% to 0% over 5 years, with other dried mung beans' tariff being reduced to 303.7% over 20 years. Fresh or chilled mung beans' pre-KAFTA tariff of 27% is reducing to 0% over 10 years.
- KAFTA will provide Australia with a tariff advantage over other major mung bean suppliers.
- Queensland accounted for 100% of Australia's mung bean exports to South Korea between 2013 and 2015.
- While Australia (Queensland) is still a small supplier of mung beans to South Korea, it had no presence in the market only three years ago.
- Participation in the mung bean market requires participation in a government-run tender process.

## FTA changes

Under KAFTA, the tariff on dried mung beans (seed) reduces to 0% over a 5 year phasing period. For dried mung beans (other), the tariff only halves (to 303.7%) and this occurs over a 20 year period (with significant front-loading – see table below). These tariffs on dried mung beans apply only after South Korea's total imports exceed 14,694 tonnes. Before that point, a 30% tariff applies.

The tariff on fresh or chilled mung beans was 27% prior to KAFTA, and is being reduced to 0% over 10 years. Australia has not exported any fresh or chilled mung beans to South Korea to date.

The major suppliers of mung beans to South Korea – China and Myanmar – still face tariffs of 608%.

### Tariff reduction schedule <sup>(19)</sup>

	Base rate	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10
Dried (seed)	607.5%	486%	364.5%	243%	121.5%	0%	0%	0%	0%	0%	0%
Fresh or chilled	27%	23.3%	21.6%	18.9%	16.2%	13.5%	10.8%	8.1%	5.4%	2.7%	0%

	Base rate	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr20
Dried (other)	607.5%	577.1%	546.7%	516.3%	486%	455.6%	425.2%	303.7%

### Other FTA conditions

There are no additional condition in place associated with KAFTA.

### Competitor tariff comparison <sup>(18)</sup>

Country	2015 tariff	Comment
Australia	546.7%	Dried (other) tariff
China	608%	
Myanmar	608%	

# Mung bean profile



## South Korean mung bean demand

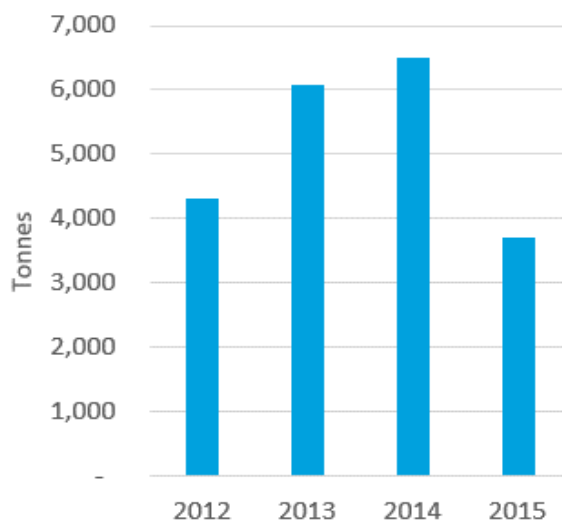
One in-market stakeholder indicated that South Korea's annual demand for mung beans is in the range of 6,000 to 7,000 tonnes. This is actually well below the level at which the tariff rates reduced under KAFTA come into play (14,694 tonnes), so the tariff rate faced will likely be 30% in the near future. These imports supplement local production of around 2,000 tonnes.

In-market consultation also highlighted that mung bean is a 'traditional' grain in South Korea, so demand is quite stable. The main use of mung beans is to make mung bean pancakes and grown green bean sprouts. The pancakes are popular among Chinese and Japanese tourists, so demand may increase as this tourist trade becomes more important (at present, around 6 million Chinese and 2.5 million Japanese tourists visit annually).

As a traditionally consumed grain, mung beans are more likely to be consumed by both men and women aged over 40 (in rural and urban areas, and in traditional market places in big cities).

In-market consultation has suggested that South Korean consumers do not place special significance on the place of origin of mung beans, with characteristics like how green they are (darker is better), how big they are (bigger is better) and price (cheaper is better) driving demand.

Total South Korean mung bean imports <sup>(9)</sup>



## Consumer channels and key players

Mung beans are imported by companies such as Singsong foods and then typically distributed to food processors, but also as raw product to wholesalers, retailers and foodservice sectors. Mung beans are commonly ground into flour to make noodles, vermicelli, breads, biscuits, cakes and cooked in soups and porridge. Mung beans are also commonly sprouted.

Mung beans and flour are purchased by consumers for use in dishes such as bindaetteok (Korean pancakes), which is a popular dish.

Korea's food manufacturing sector has expressed interest in Australian mung beans as a counter-seasonal supply from China.

# Mung bean profile



## Queensland mung bean supply

Queensland is estimated to have produced around 23,000 tonnes of mung beans in 2015, which is actually 4,000 less than estimated production in 2012.

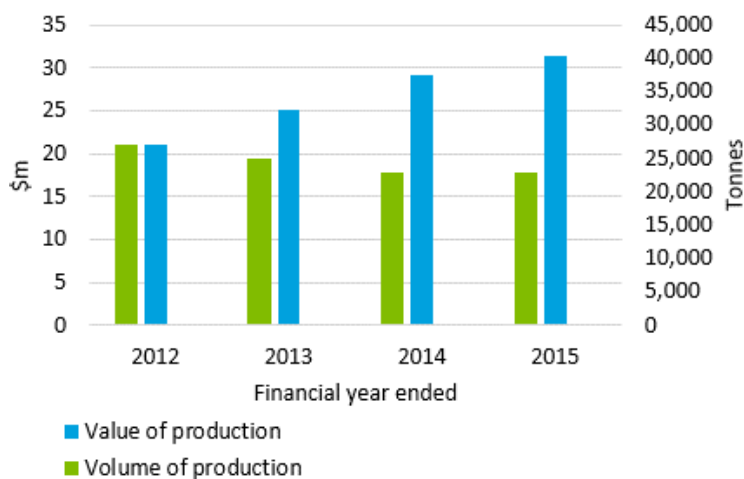
However, due to significant price rises, the value of production in 2015 was nearly 50% higher than it was in 2012. With prices staying high into the 2016 season, plantings have likely increased since 2015.

Queensland produces mung beans under both dryland and irrigated production systems, with the growing season running from September to April. Mung beans perform a role as a summer rotation crop as part of a broader cropping program.

Established breeding programs for new varieties (e.g. disease resistance) and advances in agronomy have lifted yield potential significantly.

In-market consultation has not indicated a particular interest from South Korea in investing in the mung bean supply chain in Queensland, but if this were to occur its focus would be on security of supply.

Queensland 'other pulses' production <sup>(15, 9)</sup>



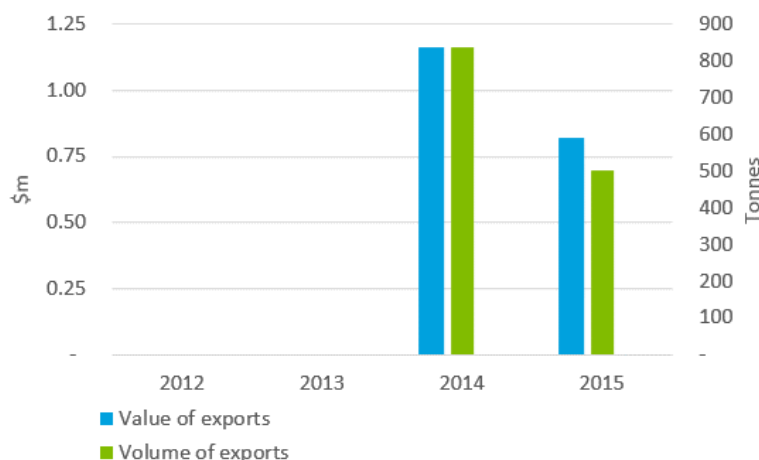
## Queensland mung bean exports

Mung beans are an export-focused industry, with most product generally going to the Indian subcontinent.

South Korea only accepted its first official shipment of mung beans from Australia in 2013. Queensland's exports were worth around \$800,000 in 2015.

While current trade volumes are low, Queensland is the only Australian jurisdiction exporting mung beans to South Korea.

Queensland mung bean exports to South Korea <sup>(7)</sup>



# Mung bean profile



## Queensland's key competitors

Queensland's key competitors are China and Myanmar. These two countries alone accounted for over 90% of South Korea's mung bean imports from 2011 to 2014.

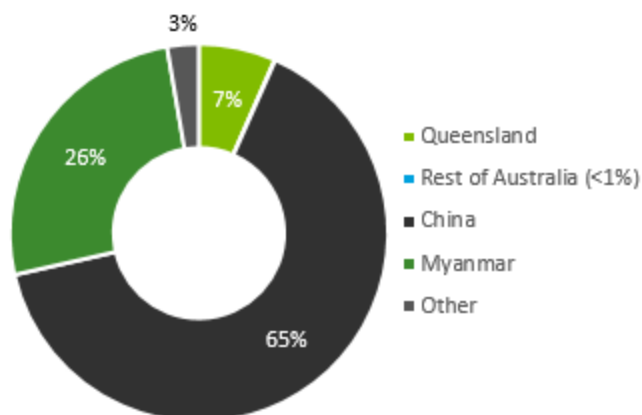
Australian – that is, Queensland – mung beans have been favourably received in South Korea relative to the main historical sources. This has been due to the large size of our beans (over 3.6mm in diameter) and their dark green colour.

In-market consultation revealed that so far in 2016 South Korea has imported 71% of its mung beans from China, 18% from Myanmar, and 11% from Australia.

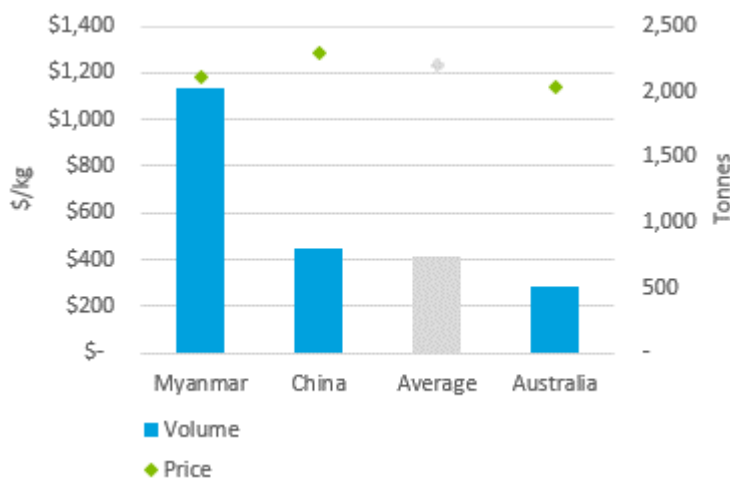
There does not appear to be wide variation in the prices paid by South Korea for mung beans. However, the data does suggest Australian product is slightly lower priced than its competitors. The low price of our mung beans – and their good quality – has been commented on as a virtue by one in-market stakeholder.

Compared with major competitors, Australia ranks well on most competitiveness indicators. In particular, Australia ranks best on labour efficiency, quality of infrastructure, and innovation capacity. Despite a large distance to market, and high inputs costs, Australia is able to supply mung beans at prices that are attractive to South Korea.

Import market share 2013 – 2015 <sup>(9)</sup>



Competitor prices and volumes 2015 <sup>(9)</sup>



### Key factors of competitiveness

Country	Distance to market (km)	Labour efficiency <sup>1</sup> (rank - 150 countries)	Cost of inputs <sup>2</sup> (rank - 203 countries)	Quality of infrastructure <sup>1</sup> (rank - 150 countries)	Regulatory burden <sup>1</sup> (rank - 150 countries)	Innovation capacity <sup>1</sup> (rank - 150 countries)
Australia	6,507 (Qld)	36	83	35	80	23
China	2,117	37	65	51	26	31
Myanmar	3,441	73	60	135	111	132

Notes: <sup>1</sup>Indicator sourced from the World Economic Forum, Global Competitiveness Index 2015-16

<sup>2</sup>The 'pump price for gasoline' sourced from World Bank's Development Indicators Database 2016 is used as a proxy for the cost of inputs

# Mung bean profile



## Supply chain and trade barriers



### Farm gate

It was noted in consultation that the supply chain within Australia is able to utilise existing grain infrastructure, and that there were no specific gaps at the current low quantities of export.



### Export terminal

All mung beans are imported to South Korea through a government tender process operated by the Korea Agro-Fisheries & Food Trade Corporation (aT). aT sets a quota, and takes bids from local agents and foreign suppliers, with the lowest priced contracts approved by aT up until the quota is met.

While the quotas can change from year to year (as can any individual country's share of mung bean imports), building South Korea as a destination for Queensland mung beans will need to be based around consistent participation in contributing to meeting the quotas. This would play the dual roles of countering the view in South Korea of Australia as a country prone to drought and variable supply (expressed in in-market consultation), and satisfying a basic requirement for South Korean mung bean buyers (who require consistency of supply for efficient operation of food processing businesses).



### Destination port

One in-market stakeholder has pointed out that the first shipment of product to South Korea is the hardest one to make, and Australia has overcome this hurdle. One factor contributing to this would be the 180 tonne minimum purchase (alongside general unfamiliarity and hesitancy with product from different countries).



### Consumer

# Mung bean profile



## SWOT analysis

Strengths

- Australia (Queensland) has gone from a non-existent mung bean trade with South Korea four years ago to being the third-largest exporter to South Korea (though a fairly distant third behind China and Myanmar).
- In-market consultation indicated South Korean buyers and consumers recognise Australian mung beans as a quality, well-priced product.
- Mung beans is an export oriented industry with around 98% of mung beans exported.
- Mung beans have a good track record as a summer rotation crop option as part of a broader cropping program.
- There is an established breeding program to develop new varieties and improve crop agronomy.
- Queensland has been the only Australian jurisdiction to export mung beans to South Korea to date.

Weaknesses

- The market for South Korea is currently dominated by Chinese imports (in-market consultation suggests China has secured around 71% of the 2016 quota to date).
- Most exports of Australian mung beans are currently directed to the Indian subcontinent.
- Currently a young, undeveloped market for Australia. Queensland's exports were worth only around \$800,000 in 2015.

Opportunities

- Tariff reductions are biggest, and are phased in quicker, for mung beans in seed form. Tariff reductions aside, South Korea is a new opportunity for Queensland mung bean producers.
- Participation in South Korean Government tenders is the primary avenue for exporting mung beans to South Korea. Consistent participation in contributing to meeting import quotas is likely to establish Queensland's reputation as a reliable supplier of quality mung beans.
- Australian mung beans can be supplied counter-cyclically to South Korea's other two sources of imported mung beans.

Threats

- South Korea may enter into trade agreements with other nations, which will reduce the relative competitiveness of Australian produce.
- Long-run success in exporting to South Korea will hinge on consistency of volume. While recent prices will encourage plantings in Australia, and the crop is used as part of a rotation, if Queensland producers significantly vary their cropping mix (due to, say, changes in prices) and South Korean buyers cannot secure their desired quantities this will hamper the trade long-term.



# Mung bean profile



## Key opportunities and activities

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In order to maximise the Queensland mung bean trade and investment opportunity in South Korea, the following opportunities have been identified:

- Consistent participation in the government tender process by which South Korea imports mung beans is important for building a reputation as a reliable supplier. In-market consultation has indicated South Korean buyers and consumers are satisfied with the quality of Queensland mung beans, so building a reputation for consistency will help increase Queensland's market share.
- There is an opportunity for Queensland in meeting demand in times of supply and demand imbalance, such as in the counter-season to Chinese supply.
- Mung beans are imported by companies such as Singsong foods and then typically distributed to food processors, but also as raw product to wholesalers, retailers and foodservice sectors. In the first instance, producers can develop trade relationships with existing importers that are familiar with the Queensland product.
- On the production side, continued research and development to increase the consistency and reliability of yields is likely to attract new producers and lift Queensland supply.
- With the market only opening to Australia in 2013, it is in a developmental stage, during which forging relationships and building reputation are of particular importance.

# Soy bean profile



## Soy bean overview

Soy beans have been identified as a potential export opportunity for Queensland's trade with South Korea:

- In volume terms the market is dominated by the USA, Brazil and China at present – together they accounted for over 90% of South Korea's soy bean imports in recent years.
- Most of South Korea's current imports are Genetically Modified (GM) soy beans, which are not allowed in the production of food products for human consumption.
- Australia is a very small player in the South Korean soy bean trade at present, but Australia could potentially leverage its status as a producer of non-GM soy beans, and a reputation for clean and safe production systems, to make further inroads.
- KAFTA introduces a quota system for Australian soy bean exports. Australian soy beans will be tariff-free up to the quota level, which started at 500 tonnes and will ultimately increase to 1,000 tonnes (Australia exported just over 1,000 tonnes to South Korea in 2015).
- In-market consultation has suggested that a spike in Queensland exports of soy beans to South Korea in 2014 can probably be attributed to marketing efforts undertaken by the Queensland Government in 2013.

## FTA changes

Australian exports of soybeans to South Korea are moving from a regime under which all exports are taxed at the maximum of 487% or 956 won/kg, to a regime under which there is a quota up to which no tariff applies (and the quota is increasing over time) and exports above the quota will still face a tariff of the greater of 487% and 956 won/kg.

### Increase in tariff free quota schedule <sup>(20)</sup>

	Base quota	Yr1	Yr2	Yr3	Yr4	Yr5	Yr6	Yr7	Yr8	Yr9	Yr10	Yr11
Soy beans	0t	500t	550t	600t	650t	700t	750t	800t	850t	900t	950t	1,000t

### Other FTA conditions

There are no additional condition in place associated with KAFTA.

### Competitor tariff comparison <sup>(18)</sup>

Country	2015 tariff (above quota)	Comment
Australia	487%	
USA	487%	
Brazil	487%	

# Soy bean profile



## South Korean soy bean demand

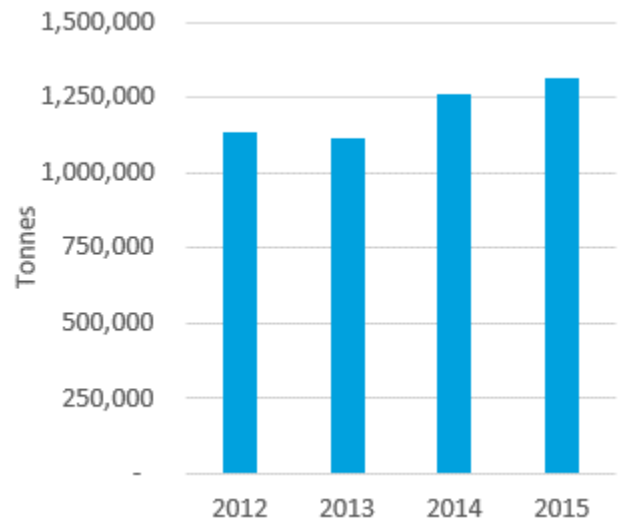
Soy beans are a traditional part of the South Korean diet, and demand is very stable. In-market consultation indicated that soy beans are consumed by people of all ages.

One in-market stakeholder indicated that domestically produced soy beans are priced around 10 times imported products, implying a strong preference for locally produced soy beans. This preference relates to locally produced beans being bigger, cleaner and brighter in colour than imported soy beans. Imports are an important source of soy beans for South Korea though, with around seven times as much soy beans imported as are produced domestically.

By law, GM soy beans can only be used for making cooking oil and animal fodder, with non-GM soy beans also able to be used for food production (for example tofu, bean sprouts, soy milk and snacks). While all local production is non-GM, South Korea imports both GM and non-GM soy beans. All Australian soy is non-GM.

One in-market stakeholder indicated that non-GM status and protein content are the two most important criteria in the South Korean market. Buyers require a protein content of 44-45%.

Total South Korean soy bean imports <sup>(9)</sup>



## Consumer channels and key players

Soybean products are distributed widely through most consumer channels and many products are also exported. In-market consultation suggested that around 0.18 million tonnes of domestically produced soy beans are used for food production, as well as around 0.27 million tonnes of imported product (note that there will be annual variation around these figures). This means that around 1 million tonnes of imported soy beans are GM, and are used to produce cooking oil and animal fodder. Wherever possible, South Koreans prefer non-GM soy beans.

# Soy bean profile



## Soy bean supply

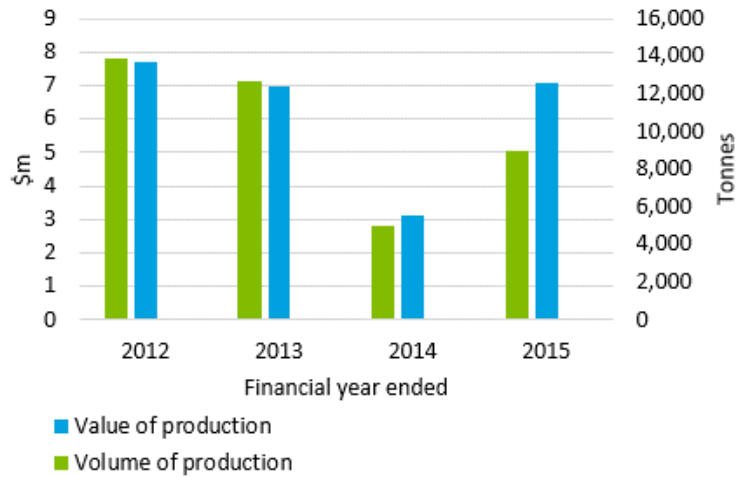
Queensland is estimated to have produced around 10,000 tonnes of soy beans, on average, over the period 2012-2015.

Soy beans tend to be grown on a smaller scale as an opportunity crop. Soy beans can be used as an effective rotation crop in cereal crop programs. As a summer or rotation crop it does then compete as an option against higher value crops including cotton, corn, sunflowers and sorghum. Relatively lower yield increases achieved in recent decades (relative to other rotation crops) makes soy beans less attractive in the cropping program.

The crop does have relatively high water requirements – the large drop in production in 2014 was likely due to decreased water availability.

Historical production volumes tend to be inadequate to fill the tender volumes that may be attractive in the South Korean market.

Queensland soybean production <sup>(3-6, 11-14, 16-17)</sup>



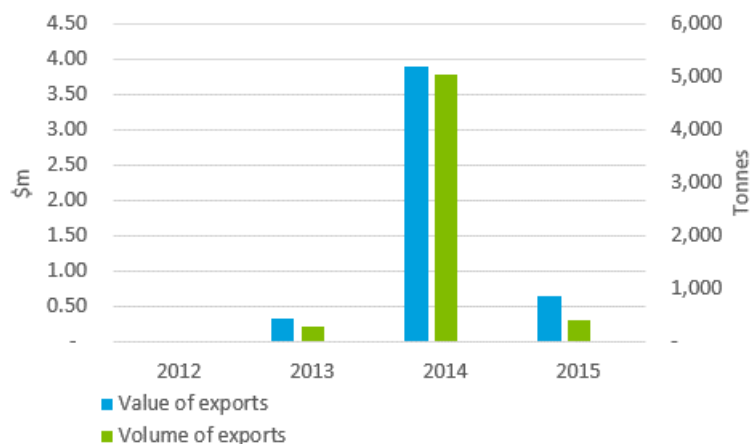
Note: Soy bean production has been calculated by multiplying 'other oilseeds' data (available for 2012-2015) by the soybeans share of 'other oilseeds' data which was available for 2011.

## Queensland soybean exports

Queensland has only exported soy beans to South Korea in three of the last four years. In two of these (2013 and 2015) the value of exports was less than \$1 million.

In-market consultation has suggested that the spike in Queensland exports of soy beans in 2014 was probably due to marketing activity organised by the Queensland Government in 2013.

Queensland soy beans exports to South Korea <sup>(7)</sup>



# Soy bean profile



## Queensland's key competitors

Queensland, and Australia as a whole, are small players in the South Korean soy bean trade. From 2013-2015 total Australian exports were less than 1% of what South Korea imported. The USA, Brazil and China together account for over 90% of South Korea's soy beans imports.

The major suppliers of soy beans to South Korea are able to supply at much lower prices than Australia. These are countries that mainly supply GM soy beans, which (while they make up the volume of imports) are regarded as inferior.

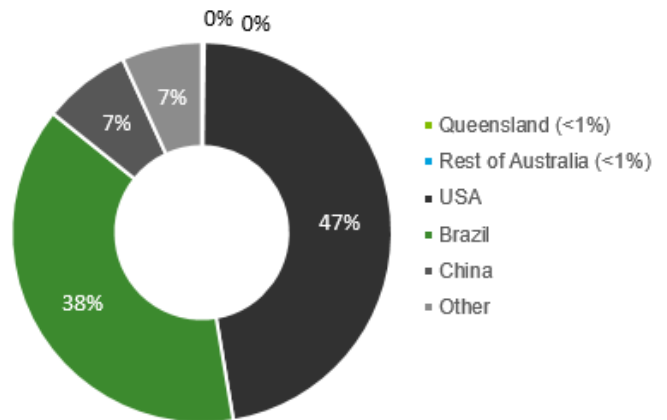
The non-GM characteristic of Australian soy beans needs to be clearly communicated to South Korean buyers. In-market consultation suggested that Queensland's product is perceived as being produced in a 'clean land and environment'.

Australia's main competitor in terms of non-GM soy beans is Canada, who currently supplies to South Korea in greater volumes than Australia.

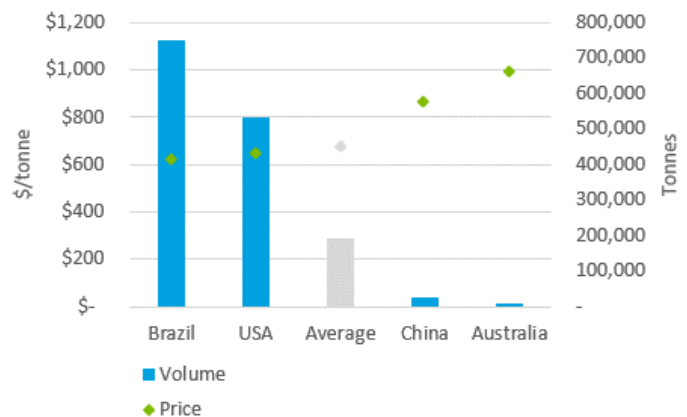
In-market consultation indicated that produce can be shipped from Brisbane to South Korea in less than two weeks, which compares favourably with the USA or Brazil (three weeks and six weeks respectively).

Australia is out-ranked by Canada on all key factors of competitiveness other than distance to market.

Import market share 2013 – 2015 <sup>(9)</sup>



Competitor prices and volumes 2015 <sup>(9)</sup>



### Key factors of competitiveness

Country	Distance to market (km)	Labour efficiency <sup>1</sup> (rank - 150 countries)	Cost of inputs <sup>2</sup> (rank - 203 countries)	Quality of infrastructure <sup>1</sup> (rank - 150 countries)	Regulatory burden <sup>1</sup> (rank - 150 countries)	Innovation capacity <sup>1</sup> (rank - 150 countries)
Australia	6,507 (Qld)	36	83	35	80	23
Brazil	17,594	122	88	123	139	84
USA	10,736	4	17	13	51	4
China	2,117	37	65	51	26	31
Canada	8,574	7	65	23	37	22

Notes: <sup>1</sup>Indicator sourced from the World Economic Forum, Global Competitiveness Index 2015-16

<sup>2</sup>The 'pump price for gasoline' sourced from World Bank's Development Indicators Database 2016 is used as a proxy for the cost of inputs

# Soy bean profile



## Supply chain and trade barriers



### Farm gate

Consultations noted that the supply chain within Australia is able to utilise existing grain infrastructure. No significant supply chain issues were identified at the current low volume of exports.



### Export terminal

Like mung beans, soy beans are imported through government tender, managed by the Korean Agro-Fisheries & Trade Corporation (aT). Local agents and foreign suppliers jointly bid on the price and quantity of soy beans. Contracts are approved by aT until the quota is met, and aT then distributes soy beans to food processors and charges a mark-up for handling and cleaning. The South Korean Government issues tariff-free tenders periodically to balance local supply and demand requirements.



### Destination port

Consultation has indicated that Australia has some experience with soy bean shipments being downgraded from culinary grade, resulting in significantly lower prices being received for product.



### Consumer

Key products produced using soy beans in South Korea include tofu, bean curd, soybean paste, soy sauce, and soymilk. Some raw product also makes it to wholesalers, retailers and foodservice sectors.

# Soy bean profile



## SWOT analysis

Strengths

- Queensland soy beans are non-GM, which South Korean consumers place a high value on.
- Australian soybeans are considered higher quality and receive higher prices generally than the major exporters to South Korea (e.g. USA and Brazil).
- Soy beans can be planted as a nitrogen fixing crop, and performs particularly well as a rotation crop in cereal programs.

Weaknesses

- Some agronomic challenges (e.g. high water requirement and susceptibility to disease) would need to be overcome in order to increase farmer acceptance of soy beans as an increased component of their cropping program.
- Australia is a higher cost producer of soy beans, compared to South America (Brazil, Argentina).
- Australia has a very small market share at present (less than 1%).
- Small tariff-free quota available for general trade provides little incentive or price support to Queensland farmers.
- Canada is the main competitor in the GM-free market segment and produces more tonnage than Australia.

Opportunities

- KAFTA introduces quotas up to which no tariff is to be paid. These start at 500 tonnes but will grow to 1,000 tonnes in the coming years.
- The non-GMO status of Queensland soy beans should be highlighted, as it provides a clear point of difference to the major volume suppliers of the product to South Korea.
- If soy beans can be produced under an organic production system (and certified as such) this would make soy beans even more desirable in the eyes of South Korean buyers.
- In-country marketing efforts may have real value in growing the market. In the view of one in-market stakeholder the spike in Queensland exports of soy beans to South Korea in 2014 was likely attributable to marketing efforts in 2013.
- Further research focused on increasing yields could increase farmer acceptance and lead to larger planted areas and total production volumes.

Threats

- Historical experience of shipments being downgraded (from culinary grade), resulting in significantly lower prices being received for product.
- South Korea may enter trade agreements with other nations which reduces the relative competitiveness of Australian product. A Central America FTA is currently under consideration.



# Soy bean profile



## Key opportunities and activities

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In order to maximise the Queensland soy bean trade and investment opportunity in South Korea, the following opportunities have been identified:

- Australia (and Queensland) does produce high quality soybeans with a GM-free status. As a result, competition is reduced for Australian soy beans. Queensland's main competitor for GM-free is Canada. The GM-free status of Australian soy beans, and reputation for clean and safe production environments, should be highlighted in efforts to increase sales of soy beans to South Korea.
- Participation in the South Korean Government tender process is the key path to the South Korea market. Similar to mung beans, continued and consistent participation in the tender process to help meet set quotas is likely to establish Queensland's reputation as a reliable supplier of quality soy beans.
- The main barrier for Queensland soy beans is achieving higher production volumes, which are needed to meet quotas in the South Korean Government tender process. Currently, soy bean production in Queensland is small with production mostly opportunistic and focused on meeting domestic culinary or stockfeed markets. A key to increasing production is achieving better yields and productivity. Through consultation it was identified that Queensland soy bean production hasn't observed significant yield or productivity increases over recent decades due to limited research and development funding, but that there is good potential for yield improvements under Queensland growing conditions.

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