Onion

STRATEGIC INVESTMENT PLAN

2017-2021

Hort Innovation
Strategic levy investment

ONION FUND

Content

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Introduction

This Strategic Investment Plan (SIP) is the roadmap that helps guide Hort Innovation's oversight and management of individual levy industry investment programs. The SIP lays the foundation for decision-making in levy investments and represents the balanced interest of the particular industry from which the levy is collected. The very important function of the SIP is to make sure that levy investment decisions align with industry priorities.

Hort Innovation is the not-for-profit, grower-owned research and development (R&D) and marketing company for Australia's $9 billion horticulture Industry.

As part of the role Hort Innovation plays as the industry services body for Australian horticulture, the Australian Government tasks the organisation with working alongside industry to produce a strategic plan for investment of levies in industry R&D and marketing activities.

Each individual levy industry investment strategy also speaks to the future growth and sustainability of the Australian horticulture industry as a whole. The SIPs are produced under the umbrella of the Hort Innovation Strategic Plan, which takes a whole-of-industry view in setting its direction, as it considers broader agriculture government priorities for the advancement of Australian horticulture.

The process in preparing each SIP was managed by Hort Innovation and facilitated in partnership with Industry Representative Bodies and Strategic Investment Advisory Panels (SIAP). Independent consultants were engaged to run the consultation process, to gather the advice from stakeholders impartially and produce a plan against which each levy paying industry can be confident of its strategic intent.

Hort Innovation has valued the support, advice, time and commitment of all stakeholders that contributed to producing the SIPs, especially onion growers.

The onion SIP

Producers in the onion industry pay levies to the Department of Agriculture and Water Resources (DAWR), which is responsible for the collection, administration and disbursement of levies and charges on behalf of Australian agricultural industries.

Agricultural levies and charges are imposed on primary producers by government at the request of industry to collectively fund R&D, marketing, biosecurity and residue-testing programs.

Levy is payable on onions that are produced in Australia and either sold by the producer or used by the producer in the production of other goods. The levy rate on onions is $4.00 per tonne.

Hort Innovation manages the onion levy funds proportion directed to R&D ($2.90 per tonne) and marketing ($1.00 per tonne). Separately, Plant Health Australia (PHA) manages plant health programs ($0.10 per tonne). In 2015/16, total onion levy receipts were approximately $1 million: $755,000 of R&D levies and $252,000 of marketing levies.

Hort Innovation has developed this SIP to assist in strategically investing the collected onion levy funds in the priority areas identified and agreed by the onion industry. The ability to deliver on all the articulated strategies (and investments) in an impactful manner will be determined by the ability of the statutory levy to provide the resources to do so.

This plan represents the Australian onion industry's collective view of its R&D and marketing needs over the next five years (2017 to 2021).

The people consulted in the preparation of the plan are listed in ***Appendix 1***, and the documents referred to are listed in ***Appendix 2***.

The onion SIAP has responsibility for providing strategic investment advice to Hort Innovation. Both Hort Innovation and the panel will be guided by the strategic investment priorities identified within this plan. For more information on the onion industry SIAP constituency, please visit Hort Innovation's website at www.horticulture.com.au.

Onion

STRATEGIC INVESTMENT PLAN 2017-2021 AT A GLANCE

POTENTIAL IMPACT OF THIS PLAN

$23.9 Million

Based on an estimated investment of $7.83 million over the next five years

Major opportunities

- Build category value through consumer engagement and product differentiation
- Build awareness of health attributes of onions
- Export market growth
- Replacement of imports by building a year-round supply capability
- Fresh value-added product for food service and processing channels.

Major challenges

- Oversupply relative to current demand
- Stagnant category demand
- Declining industry profitability and high costs of production
- Inconsistent best practice agronomic advice
- Lack of robust industry data, including market intelligence
- Climate change
- Biosecurity risks
- Potential loss of market access.

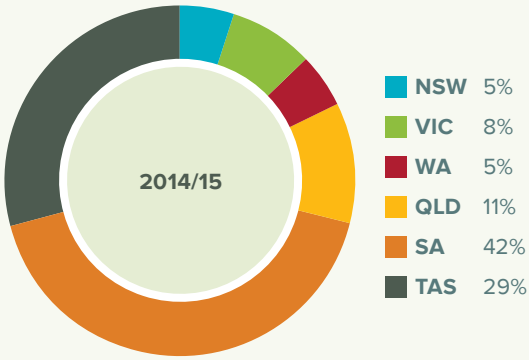
OUTCOMES	STRATEGIES
A combined marketing approach working in harmony to show the versatility of onions to increase consumption	Develop a domestic marketing strategy with a focus on gaining a stronger understanding of consumers and increasing their engagement with the category
	Support pilot projects around the development of new, differentiated and value-added products
	Engage with supermarkets to gain a stronger understanding of consumer behaviour and issues affecting the success of the onion category
	Equip SME growers with better supply chain knowledge, and increase capability to serve local and regional market channels
	Introduce voluntary quality guidelines and processes that are aligned with consumer preferences
Export growth achieved through market diversification and product customisation, to support and maintain domestic pricing	Develop a five-year holistic and diversified export market development plan with a focus on Asian and Middle Eastern markets
	Conduct in-market trade research in high-prospect markets to identify opportunities for product differentiation or customisation
	Support exporters to build capability and capacity to understand and service the emerging markets of Asia and Middle East
	Collaborate more with the vegetable industry on inbound and outbound trade missions and trade shows

Onion
STRATEGIC INVESTMENT PLAN 2017-2021
AT A GLANCE

OUTCOMES	STRATEGIES
Reduced costs and improved returns to growers through improvements in business and production skills	Assist industry to gain a stronger understanding of costs and profitability drivers
	Continue with a prioritised R&D program to manage pest and disease challenges and threats with a focus on soil health and IPM
	Develop a regional extension program using small discussion group formats to transfer R&D knowledge in a more targeted and localised manner
	Initiate an onion-specific training program for consulting agronomists to improve the knowledge transfer from R&D and new technology, with possible input from international experts
	Organise an international tour to study pack house and supply chain best practice
	Investigate issues around seed quality, availability and variety selection appropriate to regional conditions
	Explore options to replace imports by improving storage practice and/or variety selection

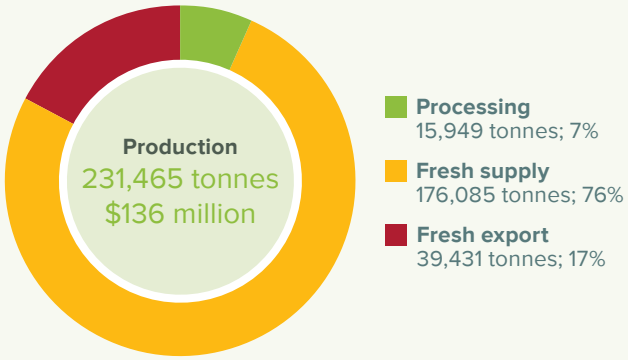
OUTCOMES	STRATEGIES
An informed engaged industry results in greater ability to respond to market shifts	Investigate ways to drive greater industry engagement, such as a local extension group project
	Provide scholarship for participation by industry leaders in industry management and governance development programs (Pool 2)
	Introduce scholarships for young grower overseas study programs
	Encourage young growers to participate on industry committees and advisory groups
	Better leverage levy investments by increasing collaboration with potato and vegetable industries on training, industry capability building, export, and pest and disease R&D
	Include a regular business and financial management skill column in *Onions Australia* magazine
	Include a regular pack house and supply chain best practice column in *Onions Australia* magazine

Industry size and production distribution



2015/16 Approximately 265 growers

Onion supply chain and value 2014/15



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SECTION ONE

Context

The Australian onion industry

Industry overview

The Australian onion industry is a mature industry with stable production. It is the fourth largest vegetable crop produced in Australia and the second largest vegetable category exported.

231,484 tonnes of onions were produced in 2014/15, which was roughly in line with production in the prior year (less than one per cent difference). Wholesale production value was $135.5 million, a two per cent decline on the prior year. By contrast, fresh supply value was up six per cent at $185 million[1].

Production

Onions are grown in most states of Australia, but South Australia and Tasmania together produce 71 per cent of the Australian crop. Key onion production locations are the Lockyer Valley in Queensland, north-eastern regions of South Australia and the Adelaide plains, and the Devonport/Launceston region of Tasmania. The total area planted to onions is largest in South Australia, as is the average planting per farm.[2]

The onion industry in Australia is characterised by three very large producers who supply the supermarkets via closed-loop supply chains. The majority of the production is orchestrated through about eight large businesses and many smaller growers who are either contracting to the larger players or reliant on wholesale fresh markets for distribution.

The main type of onion grown in Australia is the traditional brown onion, which accounts for 79 per cent of fresh production. Onion production is during late spring, summer and autumn. Planting starts around April through September, harvesting from August to March, and storage supplies the market for the winter months.

The year-to-year volatility is largely due to fluctuations in the hectares planted. Because barriers to entry for onions are relatively low, opportunistic croppers can plant or increase their acreage if the returns look promising relative to alternative crops.

Yield variability from year-to-year highlights the vulnerability of onions to weather, pest and disease. It could also be more of a reflection of less experienced growers coming in and out of the industry to chase better returns than other cropping enterprises.

1 *Australian Horticulture Statistics Handbook 2014/15*
2 *Australian Horticulture Statistics Handbook 2014/15*

Pest and disease

Pest and disease management is an important issue for the onion industry, not just because of the impact on yield and quality, but also because of the heavy use of chemicals, which adds considerably to production costs.

The 2014 *Strategic Agrichemical Review Process* (SARP) report listed the following diseases (***Table 1***) as high priority for the onion industry. Progress has been made evaluating fungicides to address downy mildew, however no new fungicides have been identified for the other fungal issues.[3] The industry consultation confirms that these diseases are still problematic although there are different diseases of most concern in each production area.

Table 1: Pest, disease and bacteria issues of concern
(Source: Onion SARP, 2014 and industry consultation)

Disease – common name	Disease – scientific name
Downy mildew	*Peronospora destructor*
Neck and bulb rot	*Botrytis allii* and *B. aclada*
Black mould	*Aspergillus niger*
White root rot	*Sclerotium cepivorum*
Pink root	*Phoma terrestris*
Erwinia	*Erwinia* spp.
Botrytis	*Botrytis* spp.
Mallee stunting disease	*Rhizoctonia solani*
Fusarium	*Fusarium spp.*
Cutworms	*Agrotis spp.*
Onion thrips	*Thrips tabaci*
Nematodes	Various

There are two high-priority pests shown on the SARP study, with one new insecticide identified for cutworms and four for onion thrips.[4]

Weeds are a continual production issue due to the parallel growth phases with onions and the fact that seedling onions are susceptible to herbicides.[5] In the consultation, industry members indicated that more R&D is required on variety selection with a focus on susceptibility to herbicides. Work is also needed on the optimum fertiliser program for various varieties and to influence different flavour profiles.

Access to chemicals was a constant theme in the industry consultation. While the minor use permits that the industry had been successful in securing have been a great help, industry still feels that it is falling behind the rest of the world.

The implications of high chemical use in the industry were also noted as a concern in the consultation. While better growers were said to be very focused on soil health, the impact of high chemical use and fumigation on soil microbes was felt to be poorly understood, and adoption of IPM relatively low, even by the biggest players in the industry.

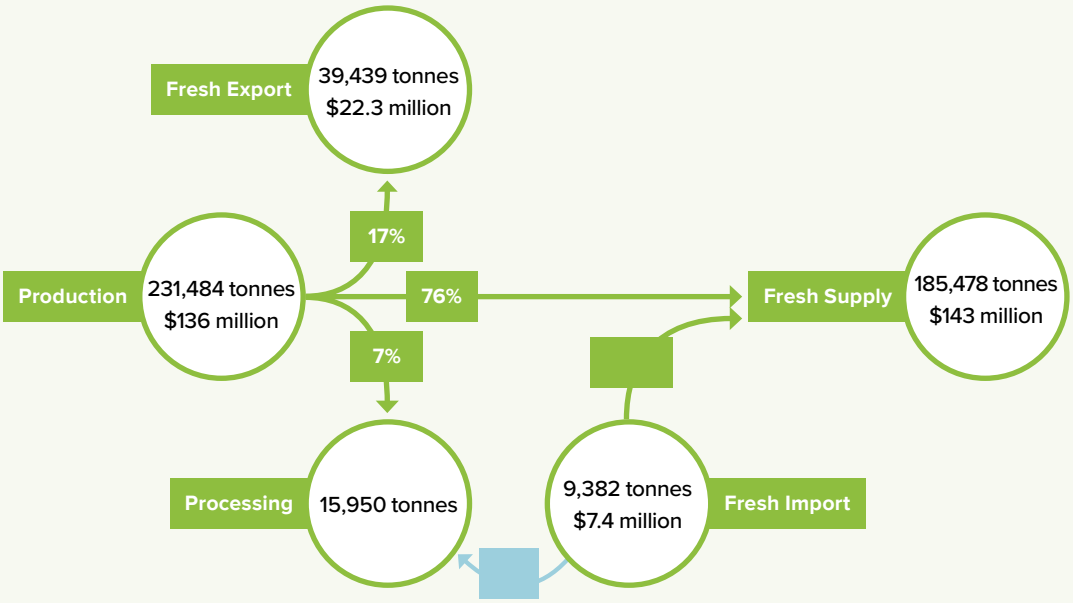
Forecast future production

Given that onions are an annual crop grown on a rotational cycle with other crops, the future production will depend on how optimistically growers view the returns on onions relative to other crops. Production will continue to grow at a slower rate than historically observed, trending toward 275,000 tonnes in 2020. The key insight here is that the industry needs to find profitable markets for this additional volume to avoid price erosion as production comes on stream.

Exports have also fluctuated from year to year, but within a range of 35,000 to 55,000 tonnes, averaging about 16 per cent of production. Exports are analysed in more detail later in this document.

3 Onion SARP, 2014
4 Onion SARP, 2014
5 Onion SARP, 2014

Figure 1: Fresh onion supply chain, year ending June 2015 (Value of production, farm-gate)
(Source: Australian Horticulture Statistics Handbook 2014/15)



Cost of production and profitability

Despite a considerable search, the authors have not been able to find any meaningful data on cost of production and farm profitability. This has been identified later as a significant data gap.

One of the key production costs for onions is chemicals. Given the challenges that industry has faced in securing access to chemicals as well as the costs associated, industry believe that more R&D emphasis needs to be given to other preventative solutions. For example, IPM and soil health require more R&D emphasis as both have the potential to greatly improve yield and potentially lower input costs.

Registration of pesticides can be problematic if agricultural chemical suppliers cannot justify the expense of registering a product in Australia on the basis that it is not used regularly enough or in significant volume. The onion industry is concerned that it can no longer get ready access to the chemicals that it has become reliant on to manage pests and diseases of greatest concern, and it is disadvantaged against export market competitor countries with greater access to a wider variety of chemicals. Priority needs to be given to advancing Minor Use Permits for the important chemicals.

Markets

Onion market supply chain

Figure 1 from the *Australian Horticulture Statistics Handbook 2014/15* outlines the dispersal of onions in the year 2015. It shows that 76 per cent of volume went into fresh supply, 17 per cent into fresh export and seven per cent of production to local processing. Processed onions are most often dried and preserved. About 95 per cent of local fresh supply is produced in Australia and five per cent (9,382 tonnes) is imported. As explained further in the trade section of this document, import volumes grew strongly in 2014 over the prior year at 49 per cent volume growth, 34 per cent value growth. This has driven the growth of total fresh local supply by six per cent volume and four per cent value.[6]

In the domestic market, the vast majority of onions are sold through supermarkets, followed by independent retailers. It is likely that foodservice outlets are also an important channel to market, although again, there is no data to qualify this. This lack of data on channels to market is identified later in this SIP as a significant information gap.

6 *Australian Horticulture Statistics Handbook 2014/15*

Purchasing patterns

Available data on the purchasing and consumption of fresh onions indicates that onions are a frequently purchased category, in a relatively large volume compared with other vegetables. It is a low value, and therefore low involvement, staple food category.

The data available (based on different methodologies) does not align in absolute values, but indicates general trends. The *Australian Horticulture Statistics Handbook 2014/15* consumer metrics show that 76 per cent of Australian households purchased onions, buying an average of 700 grams per shopping trip. The consumption per capita was 7.8 kilograms, based on the volume supplied. Consumption per capita was relatively stable from 2012/13 to 2014/15.

Nielsen Homescan data (in the year to 25/02/2017)[7] indicates 92.2 per cent of households purchased onions at least once in the year. This has remained relatively stable over time. The onion buyer base remained stable in the year to 14/05/2016[8]; shoppers bought less than the year before (9.53 kilograms versus 9.67 kilograms) but spent more on average than the year before ($17.49 vs $17.27). In the year to 12/07/2014, the volume purchased was 9.6 kilograms and spend was $16.00 (not adjusted for inflation)[9].

In the 2014/15 year, Australia exported 39,439 tonnes of onions with a value of $22.3 million (Global Trade Atlas), which accounts for 17 per cent of total production for that year.

Consumer trends

Industry market research conducted from 2004 confirms[9]:

- Onions are a mid-engagement (but staple) category compared with other vegetables; consumers buy regularly and routinely; they tend to prefer loose over barcoded product
- In 2014, the proportion of light onion buyers has increased. These buyers are more skewed to younger households than those considered medium and heavy buyers. Brown and red onions are consistent across buyer groups
- New South Wales represents over 25 per cent of the total onions value of Australian sales
- Opportunity of over $1.5 million exists in increasing the number of times that families shop for onions
- Onions are versatile and suit all ethnicities and cooking styles.

In summary, the available industry research suggests that onions are a commodity and bought without much thought or involvement. Clearly, the marketing plan needs to re-engage consumers with the category and build a stronger value proposition.

Australian trade in onions

In terms of volume, onions are one of the largest export vegetable categories although volume has declined since 2010, largely because of the high Australian dollar. As the Australian dollar has depreciated over the past two years, onion exports have recovered, indicating a high level of price sensitivity.

7 Nielsen Homescan data MAT 12/05/2017
8 Nielsen Homescan data MAT to 14/05/2016
9 Nielsen Homescan data MAT to 12/07/2014

Figure 2: Australian onion exports, 2011 to 2016 (5 years)
(Source: Global Trade Atlas; Fresh Intelligence analysis)

Onion exports

In the 2015/16 year, Australia exported 43,887 tonnes of onions with a value of $28.6 million (Global Trade Atlas), which accounts for 15 per cent of total production for that year.[10] Onion exports are variable from year to year. Prior to the recovery in exports last season, onions had been showing a downward trend since 2011. Onion exports achieved an average Free On Board (FOB) (delivered to port) return of $0.65 per kilogram that is believed to be substantially higher than the average returns from domestic market sales.

Exports are important to industry profitability because they remove excess volume from the domestic markets for the season and thereby drive upward price pressure.

Europe is by far the biggest market for Australian onions, accounting for around 50 per cent of all exports. Although the statistics record Belgium as being the biggest market, in fact, most of the export is going to Germany through Belgian traders. Almost all of the trade occurs in the April to June quarter in the European counter season. This market is built around the small seasonal window filling the supply gap at the end of Europe's onion storage and before the start of the local season. It can therefore be a fluctuating market, depending on the quality of the European harvest. This trade is extremely price sensitive and highly dependent on the seasonal conditions in Europe and the ability of European growers to successfully store local product.

Other significant markets for Australian onions include Malaysia, Japan, Thailand, United Arab Emirates and Singapore.

Exports to Europe in the second quarter (the seasonal window that Australia fills) are steadily declining (***Figure 3***). This indicates that Australia is losing market share to Egypt and Peru, which are showing market share growth with their location/freight advantage.

Industry believes that the fall off in European demand is due to the improvement in European storage extending the reach of local products. This assertion is not confirmed by the statistics, which show that exports to Europe, although lower than 2011, 2013 and 2014, have not declined. Australia seems to be losing market share to competitors, all of whom have a significant production cost advantage.

Although the European market will remain the biggest market for the near future, volumes are likely to decline (notwithstanding seasonal variation), together with downward pressure on prices and margins. Freight cost is making Europe a less profitable export destination than Asia and the Middle East.

10 HIA, McKINNA et al. *Vegetable Export Strategy 2016*

Figure 3: Europe imports of onions, June quarter 2011 to 2016 *(Source: Global Trade Atlas; Fresh Intelligence analysis)*

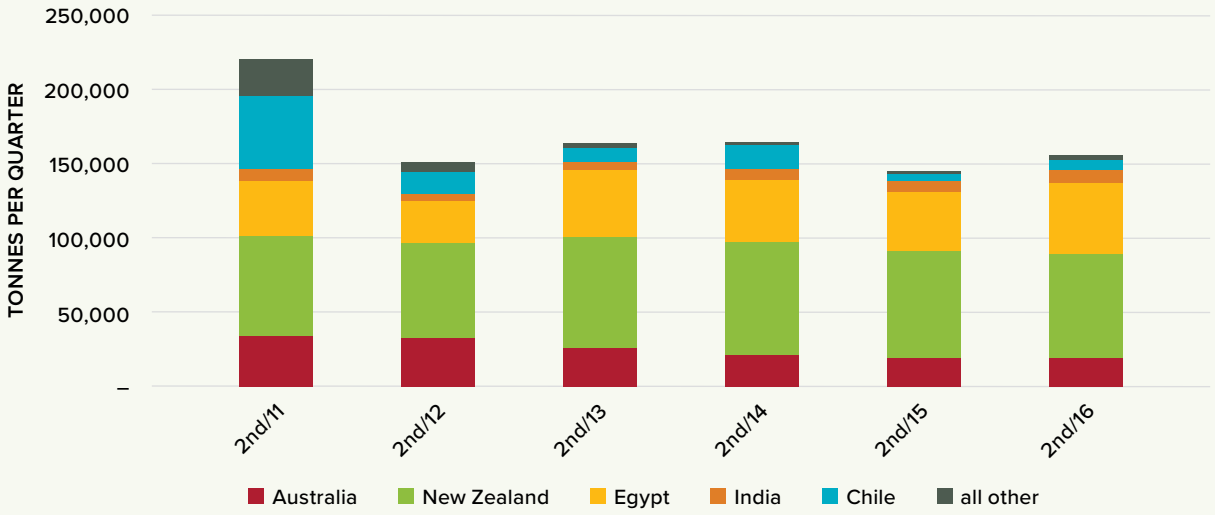
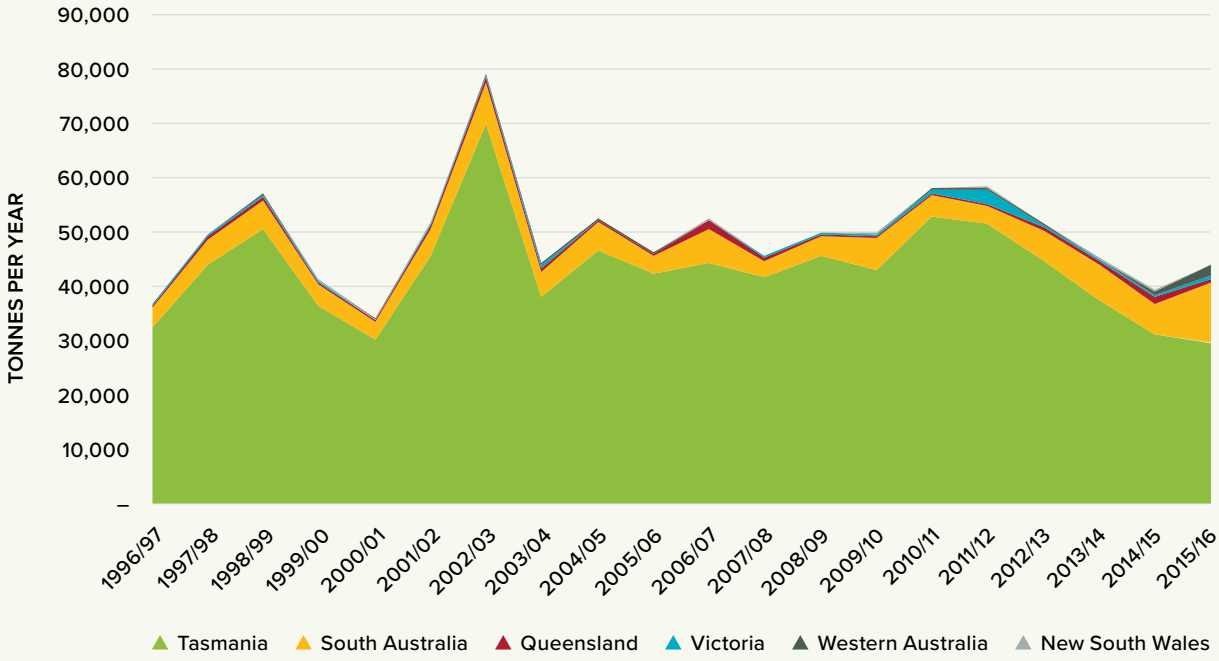


Figure 4: Onion exports by state, 1997 to 2016 *(Source: Global Trade Atlas; Fresh Intelligence analysis)*



Exports by state

Figure 4 provides a breakdown of exports by state. It indicates that, historically, Tasmania was the dominant export state, followed by South Australia. Tasmania traditionally supplied onions more suited to export (especially to Europe with long transit times) due its growing conditions (slow growing/robust product), however the loss of a regular sea freight connection from Tasmania has put this product at a disadvantage.

Export prices

Unlike most other categories, onion exports are not as responsive to exchange rates as imports are, as noted in the ***Figure 5***. This may reflect the fact that onions are seen to be an essential year-round item, and import countries are paying for the supply in the northern hemisphere counter season.

Figure 5: Export vs import volume of fresh onions with USD exchange rate *(Source: Global Trade Atlas; Fresh Intelligence analysis)*

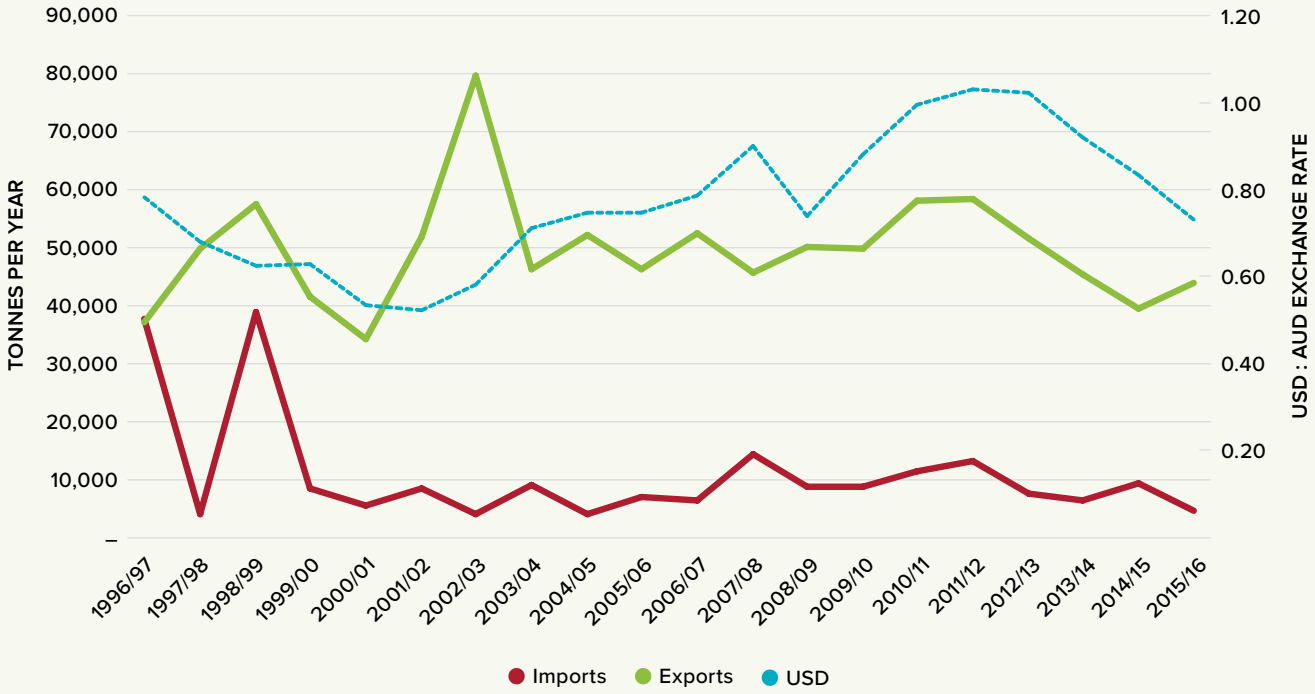


Figure 6: Australian onion export prices (Free On Board) per month *(Source: Global Trade Atlas; Fresh Intelligence analysis)*

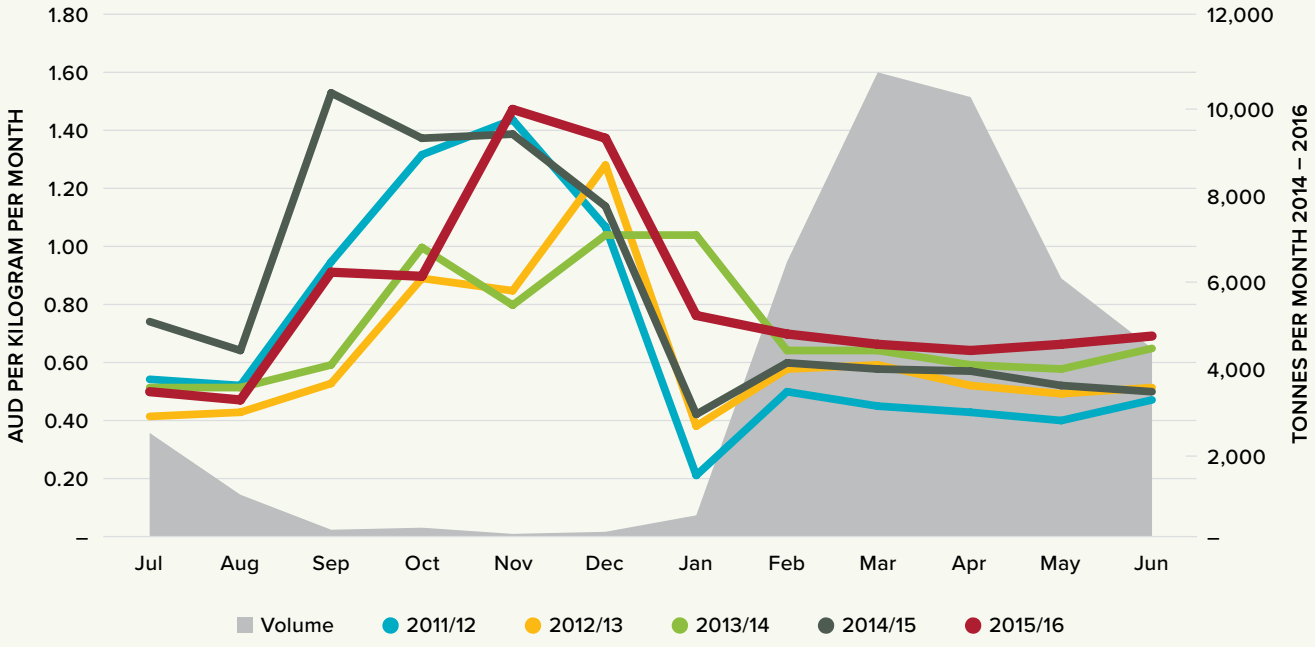


Figure 6 shows the sensitivity of Australian onion export prices to seasonality and supply. There is a demonstrable premium to be gained in the September to December seasonal window, which would benefit the early season regions in Queensland.

It should be noted this does not take into account the seasonal price growers get for quality onions when supply would be restricted, and hence the export price could reflect the high local price/demand situation.

Putting the Australian industry into global context

Figure 7 puts the Australian market into a global context. Although global production sits at about 90 million tonnes, it is trending towards 100 million tonnes, with Australia contributing only 250,000 tonnes. Australia is even a small player in the context of the southern hemisphere industry, accounting for less than one per cent of production, as illustrated below. The dominant southern hemisphere players are Peru, Argentina, Chile, Brazil and South Africa, all of which have a lower cost of production due to lower labour costs.

Figure 7: Southern hemisphere vs Northern hemisphere volume and forecast, 2004 to 2019

(Source: FAOSTAT, SHAFFE, ABS; Fresh Intelligence analysis)

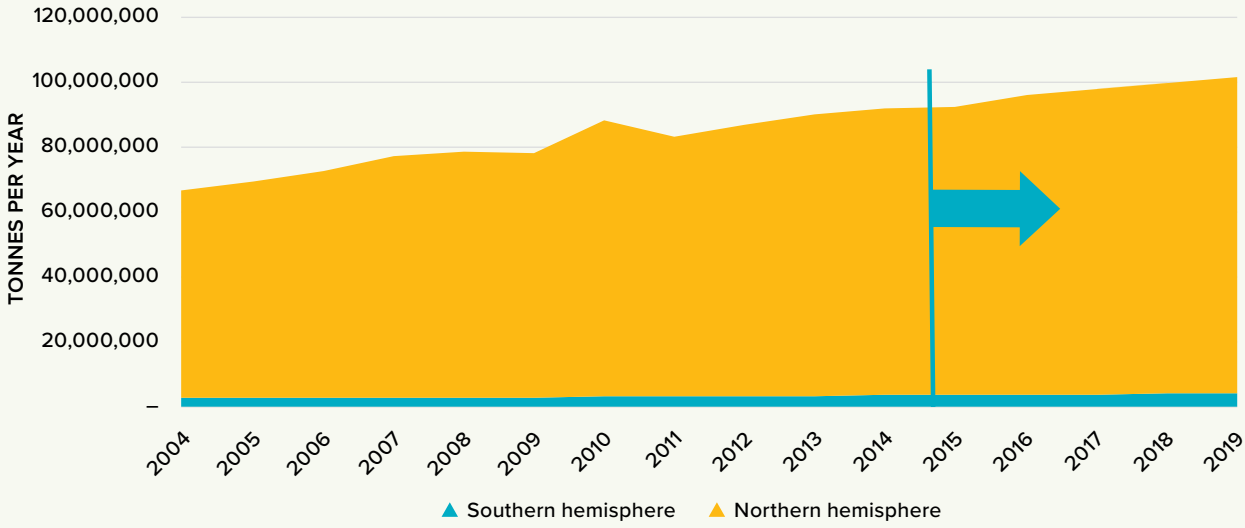
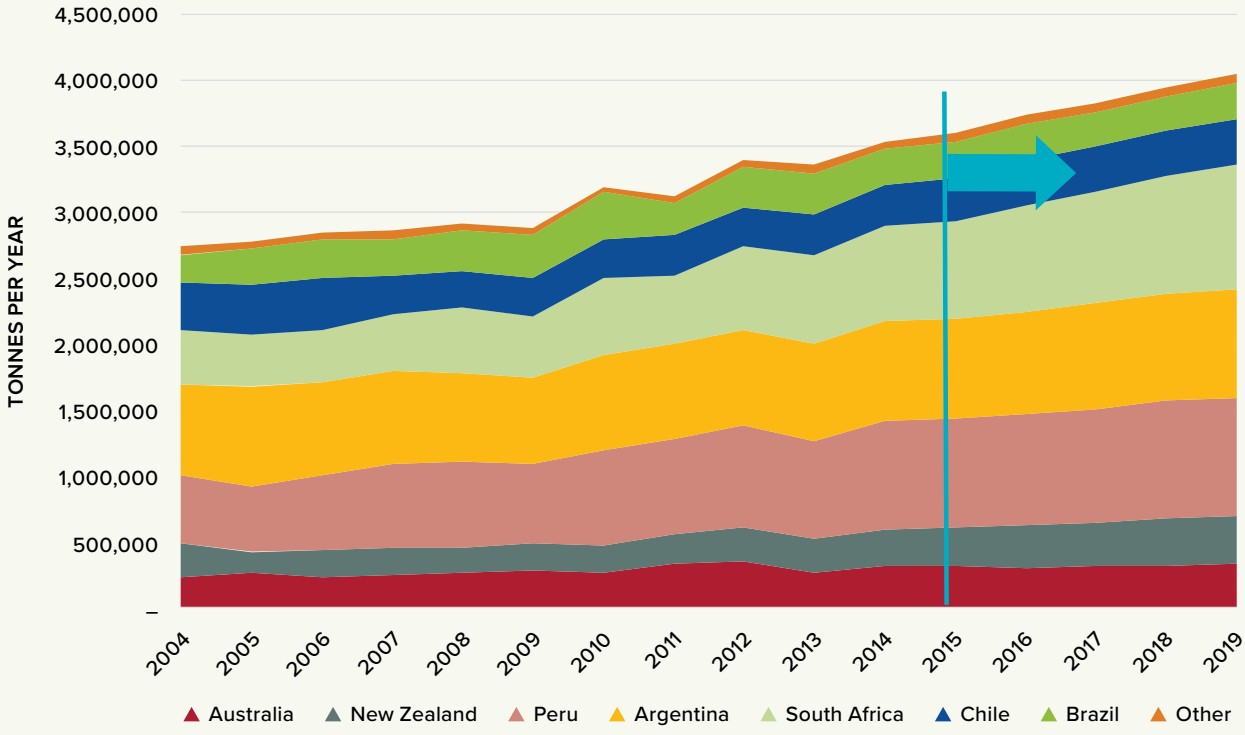


Figure 8: Southern hemisphere onion production and estimated forecast, 2004 to 2019

(Source: FAOSTAT, SHAFFE, ABS; Fresh Intelligence analysis)



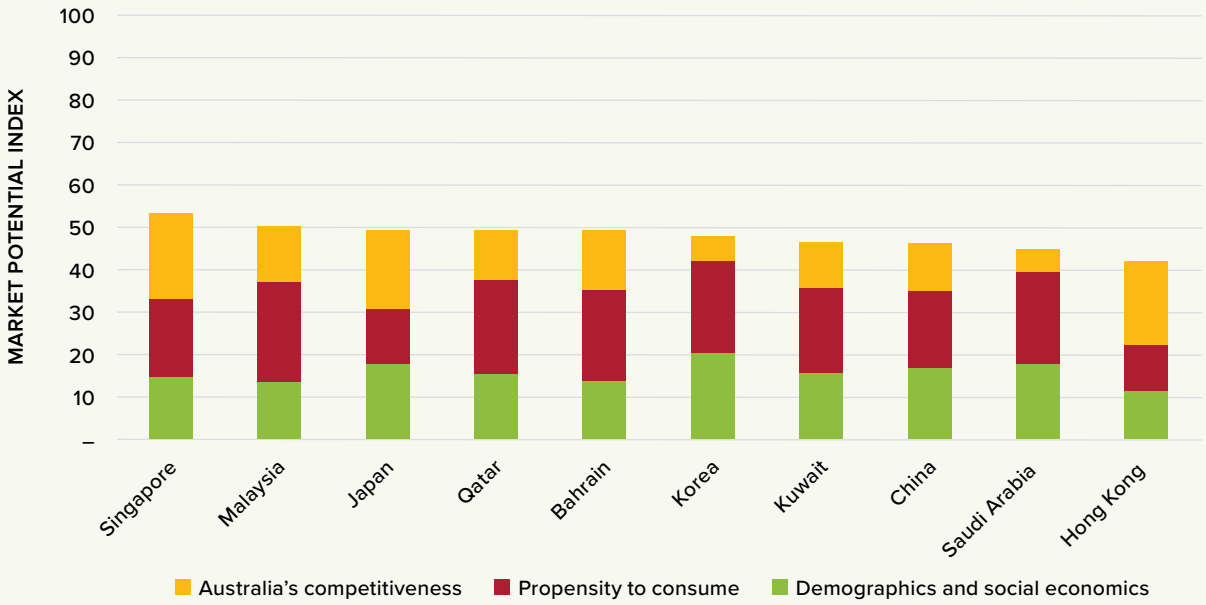
Competitor set

Table 2 shows Australia's direct competitors in the key markets in which it operates. China is the dominant player in the Asian onion markets while Egypt is a strong supplier to the Middle East.

Table 2: Main competitors *(Source: Fresh Intelligence analysis)*

	CHINA	EGYPT	NEW ZEALAND	NATIONAL
	Tonnes	Tonnes	Tonnes	Tonnes
UNREGULATED MARKETS				
Malaysia	90,723	1,184	9,573	5,972
Singapore	8,507	137	2,565	1,948
Hong Kong	11,022	–	3,265	986
Sub total	**110,252**	**1,321**	**15,403**	**8,906**
REGULATED PROTOCOL MARKETS				
Japan	245,804	–	15,567	4,364
Thailand	13,165	–	–	2,629
Taiwan	–	138	7,762	1,818
Indonesia	2,811	–	28,127	234
Vietnam	180,536	17	–	8
United States	2,787	29	712	–
New Zealand	–	–	–	–
China	–	8	–	–
Korea South	176,756	–	–	–
Sub total	**621,859**	**192**	**36,601**	**9,053**
OTHER MARKETS – PHYTOSANITARY				
MIDDLE EAST				
United Arab Emirates	4,529	60,924	78	2,465
Bahrain	1,206	8,756	–	183
Kuwait	_	37,105	26	169
Qatar	283	12,900	–	111
Saudi Arabia	_	237,479	–	51
Oman	113	19,337	–	24
Sub total Middle East	**6,131**	**376,501**	**104**	**3,003**
EUROPE				
Belgium	–	1,577	24,083	12,899
Netherlands	80	25,481	18,929	2,212
Italy	–	6,338	148	1,876
France	–	537	8,301	1,771
United Kingdom	984	15,188	8,781	1,589
Germany	–	3,208	19,755	1,124
Spain	–	58	669	267
Norway	–	54	3,317	100
Ireland	–	96	995	49
Sub total Europe	**1,064**	**52,537**	**84,978**	**21,886**
Russia	23,818	68,700	26	–
All other	101,535	161,002	29,334	1,039
WORLD	**840,840**	**591,553**	**166,420**	**43,888**

Figure 9: Market potential ratings (top 10) *(Source: McKINNA et al, 2016)*



Australia's competitive advantage in the global market is perceived quality and product integrity, proximity to markets and lower freight cost to Asian and Middle Eastern markets, relative to competitors, together with some narrow seasonal window advantages. Because onions are a low-value category, freight costs are a big part of landed cost.

While China is a formidable competitor to Australia in many vegetable categories, Australia currently has an advantage over China in terms of product integrity, particularly with supermarkets that are targeting affluent consumers in Asia and the Middle East.

Market access

Relative to other categories, onions have wide access to a number of markets (apart from China and Russia). The lack of access to China is almost certainly an artificial technical trade barrier to protect the local industry, as China is a massive onion exporter. Even if market access to China could be attained, it is unlikely that Australia could be competitive in that market.

Future export potential

Based on the analysis in the Horticulture Innovation Vegetable Industry Export Strategy[11] there are good prospects to grow onion exports, despite the decline in market share of the European market. Export opportunities could be developed in Asia and the Middle East through Australia's seasonal advantage over northern hemisphere suppliers.

The best prospects are outlined in the Market Potential Index (MPI) chart in ***Figure 9***. By way of explanation, the MPI is a methodology developed to rank and rate export markets. It is based on a standardised algorithm that includes a number of weighted factors proven to be the key export drivers. While a full explanation of the index can be found in the Vegetable Industry Export Strategy, the following is a simple interpretation:

- **Scores 50 or above: Australia can be competitive in mainstream markets**
- **Scores 40 to 49: Australia can compete only in higher-end niche markets and/or in seasonal windows**
- **Scores below 40: Opportunistic; Australia is not competitive except for short-term market gaps.**

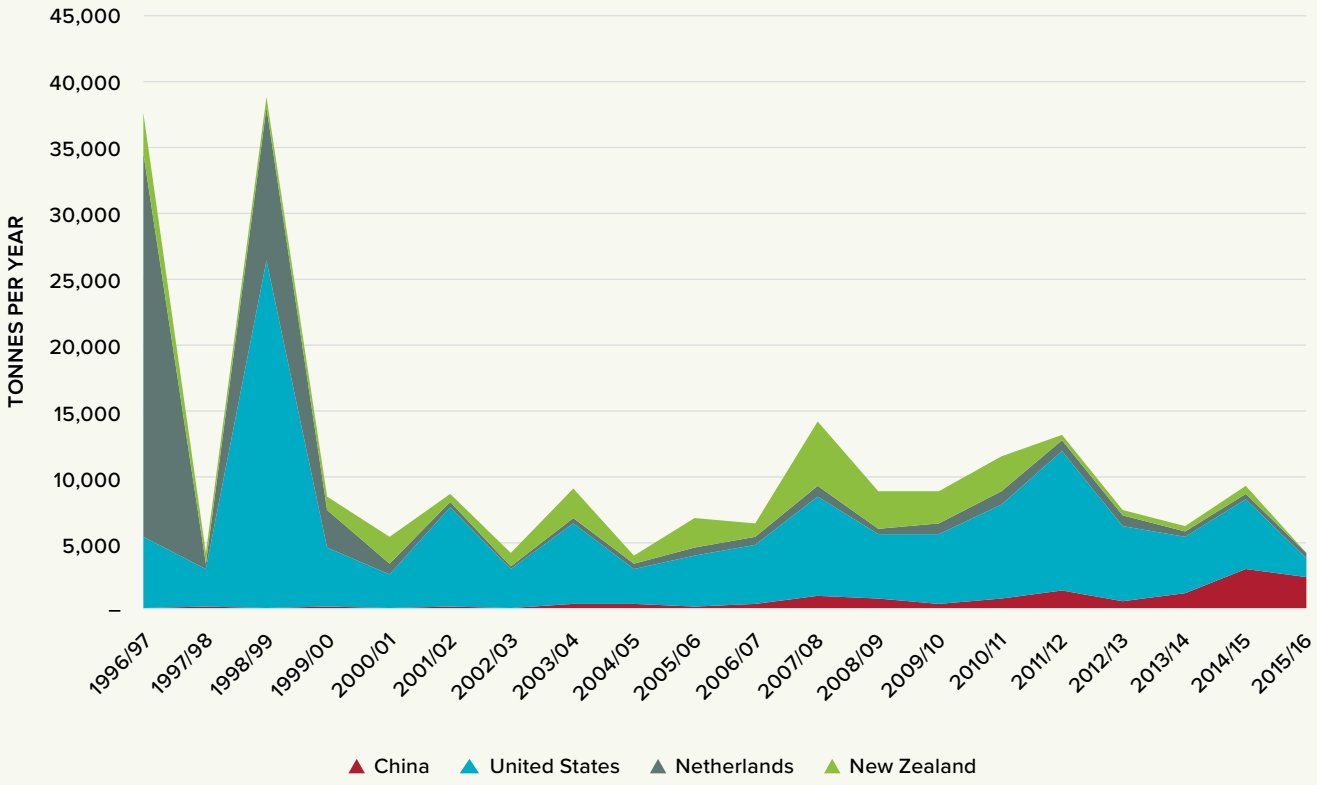
Appendix 4 presents the MPI findings for onions in more detail. It should be noted that the European market was excluded from this analysis, which concentrated on the high potential markets for Australian vegetables more broadly.

The MPI chart indicates that there are good long-term prospects for Australian onions in Singapore, Malaysia, Japan, Qatar and Bahrain; and reasonable prospects in a number of other Asian and Middle Eastern markets, although this will be heavily dependent on the Australian dollar staying in the current favourable range.

Given the relative flatness and oversupply in the domestic market, it is important for the industry to prosper by increaseing exports and finding new markets to replace the

11 HIA, McKINNA et al. *Vegetable Export Strategy 2016*

Figure 10: Fresh onion imports by supplier, 1997 to 2016 (20 years)
(Source: ABS data via Global Trade Atlas; Fresh Intelligence analysis)



lost market share in Europe. Realistically, Australia can be competitive only in onions in niche markets where a segment is prepared to pay a premium, based on product integrity and/or where there is a seasonal window advantage.

Although the future of the Australian dollar is unknown, it appears that it will stay in a favourable range for the life of this SIP. However, for the onion industry to be a sustainable exporter longer term, it must work on preparing the industry for a time when exchange rates may be less favourable. Industry must work on reducing costs at every level of the supply chain by whatever means possible, while at the same time developing differentiated products that suit the needs of a niche market segment in a particular export market, for which they are prepared to pay a premium.

If Australia is to compete in the longer term, it must look to develop products customised to the opportunities in niche markets through variety selection, growing method, quality specifications or packaging.

Onion imports

Fresh onion imports in the year ending June 2015 were 9,381 tonnes (Global Trade Atlas). The bulk of imports were from United States and significant volumes were also imported from China. The available trade data is not specific, but industry sources suggest that most of the United States imports are red onions. A very small quantity comes from New Zealand. Trade sources indicate that most of this product is imported in the Australian counter season, reflecting the need by supermarkets to have a consistent, all-year stock of onions.

Imports have dropped off since the Australian dollar depreciated in 2013. This suggests a market opportunity for Australian growers to replace imports by developing varieties and regions that can fill this gap, as well as researching better storage options.

A further point about imports that was raised in the industry consultation is the concern about the product integrity and food safety of imported product (particularly from China) of both fresh and processed onions. Industry members believe that apart from food safety, this could represent a biosecurity risk.

Australia is a net importer of processed onions, which can be imported without restriction. In the year ending June 2015, a total of 5,481 tonnes ($16.1 million) of processed product was imported, and 35 tonnes exported.[12] Australian producers do not have the economies of scale to compete against imports of frozen or dried onion products. However, value-adding of fresh onions is occurring domestically to service the food service and industrial channels. Food service is a growth sector driven by high restaurant real estate costs (making kitchens smaller with less storage room) and the prohibitive cost of skilled chefs. Because the processing onion industry is relatively new, the data on the size of the fresh cut market is not available.

Situation summary

The previously presented data analysis highlights the following key points:

1. Declining industry profitability is the greatest concern. Farm-gate returns have not kept up with the significant escalation in production costs
2. The devaluation of the category is due the combination of the commoditisation and supermarket power
3. Although onions remain a popular and versatile staple food, consumer engagement is low. Onions have become an automatic purchase, with indifference regarding provenance of the product and low levels of knowledge about varieties, types and fitness for purpose. Furthermore, although consumers believe that onions are good for you, they do not associate them with any specific nutritional attribute or health benefit
4. The lack of product differentiation further drives the commodity status of onions, making them a price-driven purchase. This combination of factors makes it almost impossible for the industry to build value
5. There is a need to develop new export markets for onions in light of the softening of the European market. The recently released *Vegetable Export Strategy 2016*[13] has particularly identified opportunities in Asia and the Middle East that have strong potential for growth and that need to be given priority in terms of export market development and industry capability building
6. There is an opportunity to help regional businesses better connect with local markets to reduce the reliance on the supermarket channel, which is based on a central purchase model. Support is needed to build supply chain capability to service local markets, perhaps through regional clusters or other such models
7. The oversupply relative to the demand is being driven to some extent by the lack of a good understanding of production costs and profit drivers. The industry needs to therefore be given access to better information about costs and profitability to drive more informed decision-making, with the expectation that this may drive some industry rationalisation and consolidation
8. It is critical to industry profitability that every opportunity be taken to reduce input costs. In this regard, the best opportunity is building yield and reducing the use of chemicals. This can be achieved through better access to best practice agronomic advice, with a particular focus on IPM and improvement of soil health through better understanding of beneficial bacteria. There is also the need for ongoing work on pest and disease management; much of this work needs to be region-specific.

Data gaps

After an exhaustive interrogation of the accessible databases and enquiry with industry, some significant data shortcomings have been identified that have compromised the data analysis. In particular, the following significant gaps are highlighted:

1. A clear understanding of the market, breakdown of market by channel, product preferences, usage by onion type, supply chain dynamics
2. Up-to-date consumer insights
3. Detailed information on cost of production, business profitability and profit drivers
4. Accurate production volumes, hectares planted and yields down to State/Regional levels.

12 *Australian Horticulture Statistics Handbook 2014/15*
13 HIA, McKINNA et al *Vegetable Export Strategy 2016*

Environmental scan

The purpose of the environmental scan is to identify the factors in the external operating environment that could affect the industry's opportunities and risks. The analysis is based on a PESTEL framework that systematically reviews the external market forces through the following lenses: political, economic, social, technological, environmental and legal.

Political impacts

FACTOR	IMPLICATIONS	RISK/OPPORTUNITY
1. Domestic regulation		
Review of horticulture award	Increased penalty rates	Higher labour costs
Food labelling	Nutrition or country of origin labelling	Potential to drive demand for Australian food
2. Global geopolitics		
South China Sea tension	Disruption to world trade resulting in displaced product exported to receptive markets	Cheap imports of onion products would undermine industry profitability Export markets could become disrupted
Brexit	Depreciation of UK pound	
Elections	Growing protectionism in trade	

Economic impacts

FACTOR	IMPLICATIONS	RISK/OPPORTUNITY
1. Domestic economy delicately balanced		
High levels of household debt	Reduction in consumer spending	Erosion of industry profitability at every level of the supply chain
Increasing current account deficit	Strong likelihood that Australia's AAA credit rating will be downgraded	
Housing market bubble	Shift to lower-value products	
Economy not responding to low interest rates	If central banks change strategy and increase interest rates, the cost of borrowing will increase and credit become harder to secure	
Heavy reliance on Chinese economy		
2. Rising costs		
Rising costs of doing business	Difficult to pass on price increases in current environment	Reduced profitability and viability of farming businesses
3. United States economy is recovering		
Employment rate rising	The American dollar likely to appreciate	The Australian dollar likely to depreciate again, which will deter American imports The cost of American machinery and parts will rise
GDP growth improving	Increased local demand	Less exports
Increased business confidence	Greater investment in capacity	More exports to Australia at lower prices
4. European economy is faltering		
Major economies in Europe delicately balanced	Further devaluation of Euro	Depreciation against Australian dollar will drive imports

5. Food deflation		
Food prices have declined in real terms in most categories: » **Global oversupply** » **Supermarket power** » **Impact of cheap imports** » **Growth of private label**	Returns to food producers at every level of the supply chain are not keeping up with costs, causing declining profitability	Reduce industry profitability
6. Supermarket dynamic		
Dominance of Coles and Woolworths is under threat from Aldi, Costco and new entrants	Aggressive price war	Increased downward pressure on grower selling prices
Increasing trading terms		Threat of introduction of increases in trading terms reducing grower returns
Growth of private label	Erosion of brand loyalty and brand power	More imports Less brand loyalty
7. Concentration among global agribusiness supply/ technology companies		
Recent merger and acquisitions: » **Bayer and Monsanto** » **Dow and DuPont** » **China National Chemical** » **Corporation and Syngenta**	Inputs and technology will become more expensive and availability more restricted Shift from chemicals to genetics to control pest and disease	Higher import costs Australia may get secondary access to latest technology Delays in access to critical chemicals
8. Sea freight rationalisation		
Overcapacity in global sea freight has led to bankruptcy among shipping companies (such as Hanjin)	Rationalisation within the sea freight sector Increased shipping costs	Higher freight costs will deter imports Exports less competitive

Social impacts

FACTOR	IMPLICATIONS	RISK/OPPORTUNITY
1. Social licence		
Changed community attitudes empowered by social media are demanding more accountability from corporate Australia	Greater accountability required in: • Use of chemicals • Labour practices • Workplace safety • Food miles • Environmental sustainability	Adverse social media reaction can be potentially extremely damaging
2. Provenance		
Consumers are interested in where their food comes from: » **Where it was grown/made/who by/ how?** » **The story behind it**	Pressure for more detailed food labelling Pressure for increased whole-of-chain traceability Growth of organics	Added cost and regulation burden More support for Australian-grown produce
3. Declining national health		
Australia is in the middle of a health epidemic: » **Obesity** » **Type 2 diabetes** » **Cardiovascular disease** » **Increased cancer rates**	Increasing pressure by governments to change lifestyle and eating habits because of the spiralling health costs	Positive environment for increased vegetable consumption

4. Changed eating habits		
The Australian diet is as multicultural as its community	There is now no such thing as a typical Australian diet Recent migration trends mean that Chinese, Indian and Middle Eastern cultures are the fastest growing	Onions are a feature in Australia's more popular cuisines and in the cuisines of the fastest growing ethnic cohorts
Australians are eating out more	Around 40 per cent of food in Australia is consumed 'out of home' Time-poor consumers are either eating out more or purchasing 'ready meals' or meal components, such as pasta sauce	Growth is likely in the food service channel and processed or value-added onions If consumers are not making meals from scratch, there is less need to keep onions in the pantry
Food allergies	Increasing incidents of food allergies; many self-diagnosed	Onions are not permitted on the FODMAP diet

Technological impacts

FACTOR	IMPLICATIONS	RISK/OPPORTUNITY
1. Emerging technologies		
Game-changing technologies: » **Sensing** » **Big data** » **Robotics** » **Drones** » **Radio frequency identification (RFID)** » **Near-infrared (NIR)** » **Smart packaging**	Will drive efficiency and speed of change	Opportunity for Australia to improve its global competitiveness by reducing labour cost or increasing productivity and yield Failure to keep up with technology will increase import threat Opportunities for new forms of value-added vegetables
2. Disruptive technologies		
IT is allowing the entry of disruptive technologies: » **Smartphone connectivity** » **Direct-to-consumer and business-to-business**	Disruption to traditional business models Increased competition Regulators cannot keep up with the pace of change	More competition Greater scrutiny and accountability

Environmental impacts

FACTOR	IMPLICATIONS	RISK/OPPORTUNITY
1. Climate change		
Less/unreliable rainfall	More reliance on irrigation	Higher cost Need for heat-resistant varieties Increase in isolated summer storms with heavy rain/hail/wind could damage crops Greater pest, disease and weed incidence
Higher temperatures	More crop failures Changed pest and disease profile	
More extreme weather events	More catastrophic crop failures	

2. Water cost and availability		
Impacts of climate change: » **Less run-off** » **Environmental wat er buy-backs** » **Lowering of underground water table** » **Declining water quality** » **Stricter Catchment Management Authority (CMA) regulations**	Restricted water availability Higher cost of water	In some catchments, water may be too expensive for irrigating onions

Legal impacts

FACTOR	IMPLICATIONS	RISK/OPPORTUNITY
1. Increased red tape		
Increased red tape and compliance burden: » **Increasing public pressure** » **Political correctness** » **Social accountability**	Increased cost of doing business	Threat to viability of marginal agribusinesses Reduces Australia's competitiveness
2. Food labelling regulations		
Tighter food labelling and consumer protection regulations	Stricter regulations and accountability on food labelling from government	Benefit to Australian-produced product

Strategic risk

The following strategic risks to industry have been identified, together with the required R&D response.

STRATEGIC RISK FACTOR	R&D RESPONSE
Increasing cost of freight	Identify opportunities for research that can be used by growers, Onions Australia, federal and/or state governments
Appreciation of the Australian dollar	Identify opportunities for research to generate information and data that can be used by industry and Onions Australia
Issues with the complexity and high cost of agricultural chemical registration for crops with smaller industry market share	Identify opportunities to research that can be used by Onions Australia, federal and/or state governments and undertake more IPM R&D
Short- and long-term risks associated with climate change	R&D into climate variability impact on growing conditions
Absence of risk identification and management process	Establish a Crisis Management Team/develop a Crisis Management Plan
Commodity pricing	Improve eating quality and variety/new product development/ differentiation, such as pink/mild onions
Biosecurity incursion	Monitoring program Biosecurity plan including risk management
Dumping of cheap imported products in the domestic market	Improve global competitiveness/value-added product such as fresh cut food service/retail segment as import replacement for frozen product
Inability to retain export markets on the basis of cost competitiveness	Export market development strategy

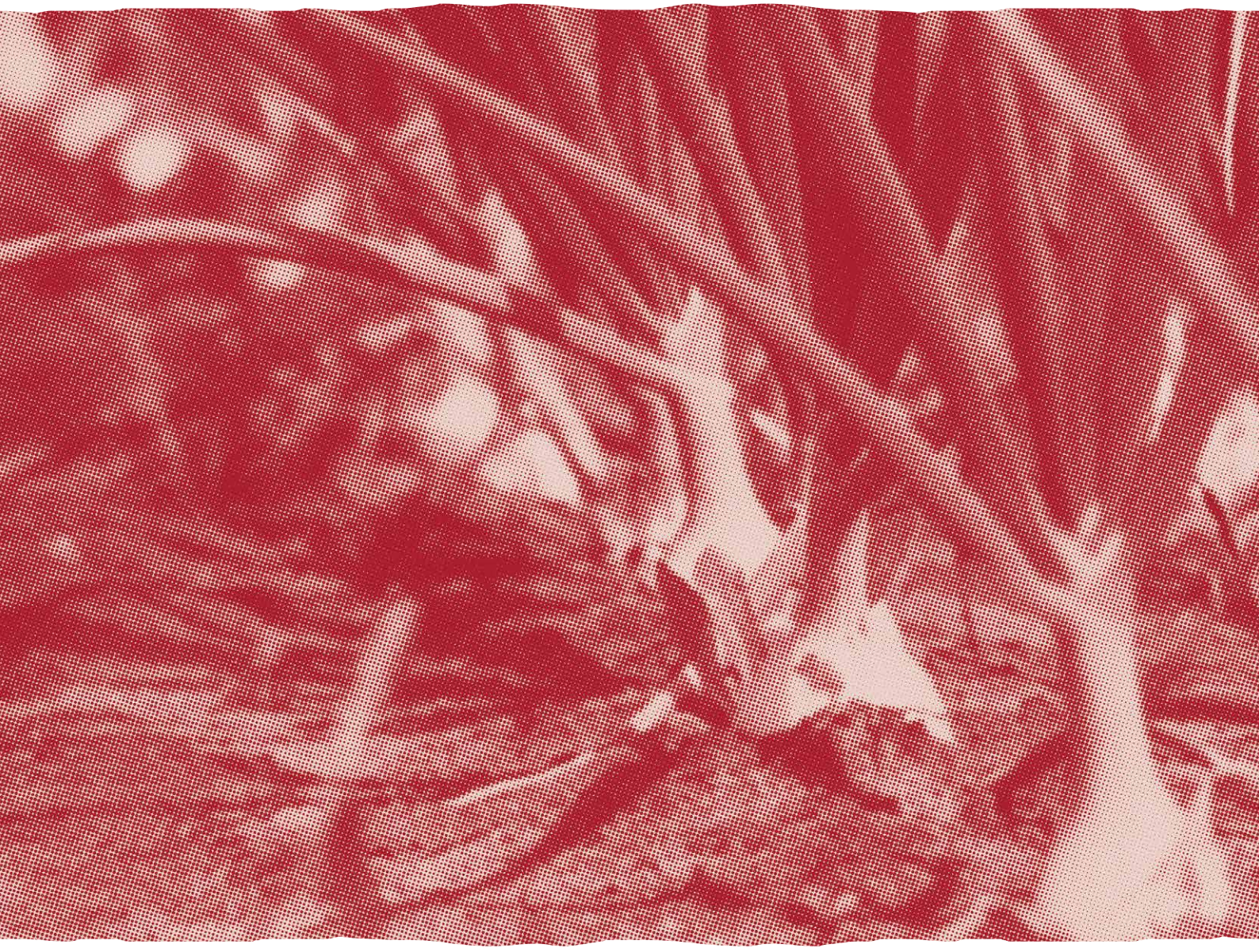
Operating environment

The onion industry	
Strengths	• Year-round supply • The staple, essential and versatile nature of onions drives a stable, albeit flat domestic market demand • The industry is well positioned to take advantage of emerging export market opportunities particularly in Asia and the Middle East, by virtue of the southern hemisphere location and market proximity. Onions also have favourable market access protocols
Weaknesses	• The oversupply relative to current demand which is depressing industry profitability • Low barriers to entry meaning opportunistic row crop growers can come in and out of the onion market with ease, causing supply imbalances • Stagnant category demand and devaluation of onion products domestically and the lack of consumer engagement due to the commoditisation and frequent price promotions • Supermarket dominance in the category and under development of non-supermarket channels • Declining industry profitability that limits investment and innovation • Access to seed and reliable seed production • Lack of access to consistent world's best practice agronomic advice • Lack of robust industry data (production/costs/profitability/market intelligence) on which industry can make informed investment decisions • Prospects of declining market share in European exports • High cost of production relative to other global suppliers
Opportunities	• Build category value through consumer engagement and product differentiation • Build awareness of health attributes of onions and leverage the increasing demand for 'healthy' foods • Export market opportunities growing demand for food globally; growing economies particularly in Asian and Middle Eastern markets • Replace imports by building a year-round supply capability • Fresh value-adding presents growth opportunities for food service and processing channels
Threats	• Impact of climate change and variability/weather events on supply • Appreciation of the Australian dollar • Biosecurity risks • Food safety risks • Loss of market access • Inability to access required chemicals as needed

Performance issues

By filtering the previous strategic analysis, the following factors have been identified and confirmed with the SIAP as being the most critical performance issues facing the onion industry and, as such, have formed the strategic response in the SIP:

1. Industry profitability is the pivotal performance issue, caused by oversupply and exacerbated by lack of high/strong financial management skills and supply chain knowledge
2. Onions have been treated like a commodity category without investment in product development or differentiation, so industry has not been able to grow value
3. The need to develop new export markets is acute to reduce price pressure on the domestic market
4. Some pest and disease issues (a major cost component) are highly localised and, as such, require local solutions
5. Australian growers are disadvantaged by the lack of access to world's latest chemicals
6. Soil health is a concern, given the chemical loads and new approaches to restoring soil health are required
7. Insights/data on both domestic and export markets are lacking or inconclusive
8. The quality of agronomic advice is inconsistent around the country and the industry does not benefit from international expertise to the extent that it could
9. Industry engagement is poor with low awareness of industry R&D investment or outcomes to date
10. The cost burden of the world's highest labour rates, over-regulation and low product pricing is stifling re-investment in the industry.



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SECTION TWO

Onion industry outcomes

Industry outcomes

OUTCOME 1

A combined marketing approach working in harmony to show the versatility of onions to increase consumption

- Domestic consumption appears to be relatively flat, with farm-gate returns declining in real terms and profits declining due to rising costs
- Onions are mostly marketed as an undifferentiated commodity and, as a result, they have become a low engagement category that consumers have come to buy largely on price
- The challenge is to increase the value perception of onions to consumers so they will accept higher prices. The most effective method of shifting consumer perception is through a combination of product differentiation and greater consumer engagement by building the value proposition for onions based on fitness for purpose and specific nutritional attributes
- The pink/mild onion program is such an initiative, which needs to be pursued through R&D and/or marketing support
- Given that supermarkets are the dominant channel to market in the domestic market, it is important that the industry has an on-going dialogue and work with them to improve the management of the category
- With the shift by supermarkets to central sourcing, growers are no longer able to service local markets. Given the strong interest by consumers to buy local, particularly in local areas, it is worth investigating opportunities to tap into regional markets either by working with supermarkets or building industry capability to develop other regional market channels
- It is essential that in the face of growing import competition, the industry ensures that its product consistently meets consumer expectations. As has been the case with other industries, industry standards are quickly adopted by supermarkets, which may make it more difficult for imported product to meet and which drives an improvement in local standards.

Onions are mostly marketed as an undifferentiated commodity and, as a result, they have become a low engagement category...

OUTCOME 2

Export growth achieved through market diversification and product customisation, to support and maintain domestic pricing

- It is important that the onion industry at least maintains and ideally grows export volumes. Any further volumes diverted to the domestic market would place further downward pressure on domestic pricing. The European market for Australia appears to be in decline, largely due to a loss of market share to New Zealand
- The *Vegetable Export Strategy 2016* has identified substantial potential for growth in the Asian and Middle Eastern markets. At present, Australia is a niche player in these markets but there is potential to grow market share to achieve volumes
- Because Australia is a niche market player, it is important to develop customised products to meet special needs of these niche markets, particularly in the high-end supermarket sector. It is recommended that a phased program of market research be conducted to identify opportunities to develop differentiated products for these markets, based on varieties, packaging and marketing
- With a shift in export markets away from Europe and towards Asia and the Middle East, exporters may need some support to build capability and understanding of the markets and the cultural aspects of conducting business.

OUTCOME 3

Reduced costs and improved returns to growers through improvements in business and production skills

- Poor and declining industry profitability has been identified as the most important issue affecting all of the industry, which is considered in part in this SIP
- Although the plan focuses heavily on trying to raise value through product differentiation and improved consumer engagement in the domestic market and growing export market, there also needs to be a focus on reducing product costs
- The best way to reduce costs is to improve yield to have more marketable product for the same financial input
- Pest and disease management is the biggest factor in improving yield. There needs to be ongoing work to provide cost-effective solutions to the key pest and disease challenges
- Given that chemicals are one of the greatest costs, there needs to be ongoing work on reducing chemical usage through IPM and improved soil health through a better understanding of beneficial microflora
- Another opportunity is to improve grower skills and knowledge of agronomy and disease management. The industry engagement process has identified that quality and consistency of advice from consulting agronomists could be improved; they are, perhaps, not always up to date with the latest technology. Accordingly, one of the strategies is to conduct annual skill development workshops for agronomists, possibly involving specialists from overseas
- Seed quality and the suitability of varieties for particular areas/growing conditions have been identified as a weakness where more work is needed. Similarly, work is required on the optimum fertiliser and watering programs for particular varieties
- Pack house costs are significantly affecting profitability, particularly the high labour component. This SIP includes four components to investigate opportunities to improve pack house productivity and efficiency.

OUTCOME 4

An informed, engaged industry results in a greater ability to respond to market shifts

- A consistent message to emerge from the engagement process is that a lack of industry engagement and cohesiveness affects performance, particularly the oversupply situation. Despite the investment and effort in industry communications, engagement is not at a satisfactory level for a healthy and progressive industry. An alternative approach is therefore required, not just for communication but also industry development and supply chain data sharing
- Critical to effective industry development is strong leadership. Accordingly, one of the strategies in this SIP involves funding progressive industry leaders through a professional development program in management, leadership and governance. This has proven to be highly effective for other industries
- Another proven tool to improve industry professionalism is investment of the development of young progressive, potential leaders. Funded overseas study tours have proven to be highly effective at generating new ideas and progressive thinking that will ultimately flow through to the whole industry.

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SECTION THREE

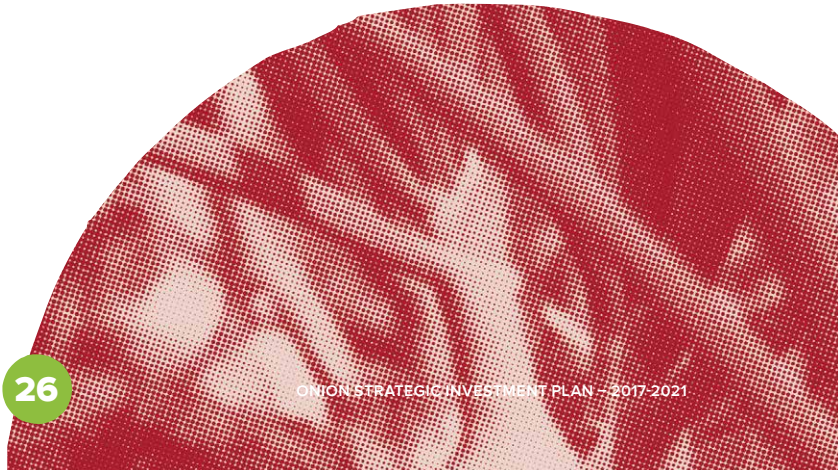
Onion industry priorities

Industry investment priorities

For reasons explained in this plan, the strategic imperative of the R&D investment needs to be on building an economically sustainable onion industry. To do this will require a multifaceted approach to SIP investment, including domestic and export market development as well as addressing profitability fundamentals.

The SIP is structured around four outcomes that directly respond to the strategic needs identified by the consultants and confirmed with the SIAP in the performance issues.

OUTCOME 1 – A combined marketing approach working in harmony to show the versatility of onions to increase consumption	
STRATEGIES	**POSSIBLE DELIVERABLES**
1.1 Develop a domestic marketing strategy with a focus on gaining a stronger understanding of consumers and increasing their engagement with the category	1. Domestic marketing plan 2. Product differentiation and value-add project(s) 3. Industry meetings with major supermarkets 4. Supply chain training module for SMEs 5. Industry quality guidelines document
1.2 Support pilot projects around the development of new, differentiated and value-added products	
1.3 Engage with supermarkets to gain a stronger understanding of consumer behaviour and issues affecting the success of the onion category	
1.4 Equip SME growers with better supply chain knowledge, and increase capability to serve local and regional market channels	
1.5 Introduce voluntary quality guidelines and processes that are aligned with consumer preferences	



OUTCOME 2 – Export growth achieved through market diversification and product customisation, to support and maintain domestic pricing	
STRATEGIES	**POSSIBLE DELIVERABLES**
2.1 Develop a five-year holistic and diversified export market development plan with a focus on Asian and Middle Eastern markets	1. Export market development plan 2. In-market trade development research 3. Export capability-building workshops targeted at onion priority markets 4. Memorandum of Understanding (MoU) with the vegetable industry on export market development collaboration
2.2 Conduct in-market trade research in high-prospect markets to identify opportunities for product differentiation or customisation	
2.3 Support exporters to build capability and capacity to understand and service the emerging markets of Asia and Middle East	
2.4 Collaborate more with the vegetable industry on inbound and outbound trade missions and trade shows	

OUTCOME 3 – Reduced costs and improved returns to growers through improvements in business and production skills	
STRATEGIES	**POSSIBLE DELIVERABLES**
3.1 Assist industry to gain a stronger understanding of costs and profitability drivers	1. A business basics program that leads to improved participation in industry benchmarking 2. Pest and disease R&D project priority list and implementation 3. Regional extension program using preferred industry extension strategies 4. Agronomist-training project 5. Supply chain best practice study tour 6. Seed quality and variety selection R&D project 7. Import-replacement project
3.2 Continue with a prioritised R&D program to manage pest and disease challenges and threats with a focus on soil health and IPM	
3.3 Develop a regional extension program using small discussion group formats to transfer R&D knowledge in a more targeted and localised manner	
3.4 Initiate an onion-specific training program for consulting agronomists to improve the knowledge transfer from R&D and new technology, with possible input from international experts	
3.5 Organise an international tour to study pack house and supply chain best practice	
3.6 Investigate issues around seed quality, availability and variety selection appropriate to regional conditions	
3.7 Explore options to replace imports by improving storage practice and/or variety selection	

OUTCOME 4 – An informed engaged industry results in greater ability to respond to market shifts	
STRATEGIES	**POSSIBLE DELIVERABLES**
4.1 Investigate ways to drive greater industry engagement, such as a local extension group project	1. Industry stakeholder engagement plan to increase effectiveness of knowledge transfer initiatives and industry communications 2. Industry leadership development scholarships 3. Young grower overseas study scholarships 4. A forum between SIAPs for onion, potato and vegetable industries to explore R&D synergies 5. New sections in *Onions Australia* magazine to cover business/financial management and supply chain best practice
4.2 Provide scholarship for participation by industry leaders in industry management and governance development programs (Pool 2)	
4.3 Introduce scholarships for young grower overseas study programs	
4.4 Encourage young growers to participate on industry committees and advisory groups	
4.5 Better leverage levy investments by increasing collaboration with potato and vegetable industries on training, industry capability building, export, and pest and disease R&D	
4.6 Include a regular business and financial management skill column in *Onions Australia* magazine	
4.7 Include a regular pack house and supply chain best practice column in *Onions Australia* magazine	

Aligning to Hort Innovation investment priorities

In establishing investment priorities, Hort Innovation analysed both historical and current levy and co-investment portfolios and priorities. From this analysis, we identified 11 cross-sectoral investment themes. We consolidated these themes further and considered their alignment with the Australian's Government's Rural RD&E Priorities and National Science and Research Priorities to arrive at five investment priorities outlined in ***Figure 11***. ***Figure 11*** also shows how each cross-sectoral investment theme relates to the five investment priorities.

Figure 11: Hort Innovation's investment priorities

The alignment of the onion SIP outcomes to the Hort Innovation investment priorities, and consequently, the Australian Government's Rural RD&E Priorities and National Science and Research Priorities is shown in ***Table 3***.

Table 3: Alignment of onion SIP outcomes to the Hort Innovation investment priorities

Hort Innovation investment priorities	Onion SIP outcomes
Support Industry efficiency and sustainability	**Outcome 3:** Reduced costs and improved returns to growers through improvements in business and production skills **Outcome 4:** An informed engaged industry results in greater ability to respond to market shifts
Improve productivity of the supply chain	**Outcome 3:** Reduced costs and improved returns to growers through improvements in business and production skills
Grow the horticulture value chain capacity	**Outcome 4:** An informed engaged industry results in greater ability to respond to market shifts
Drive long-term domestic and export growth	**Outcome 1:** A combined marketing approach working in harmony to show the versatility of onions to increase consumption **Outcome 2:** Export growth achieved through market diversification and product customisation, to support and maintain domestic pricing
Lead strategically to enhance the development of the Australian horticulture industry through operational excellence	Enabler

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SECTION FOUR

Onion industry monitoring and evaluation

Onion SIP monitoring, evaluation and reporting

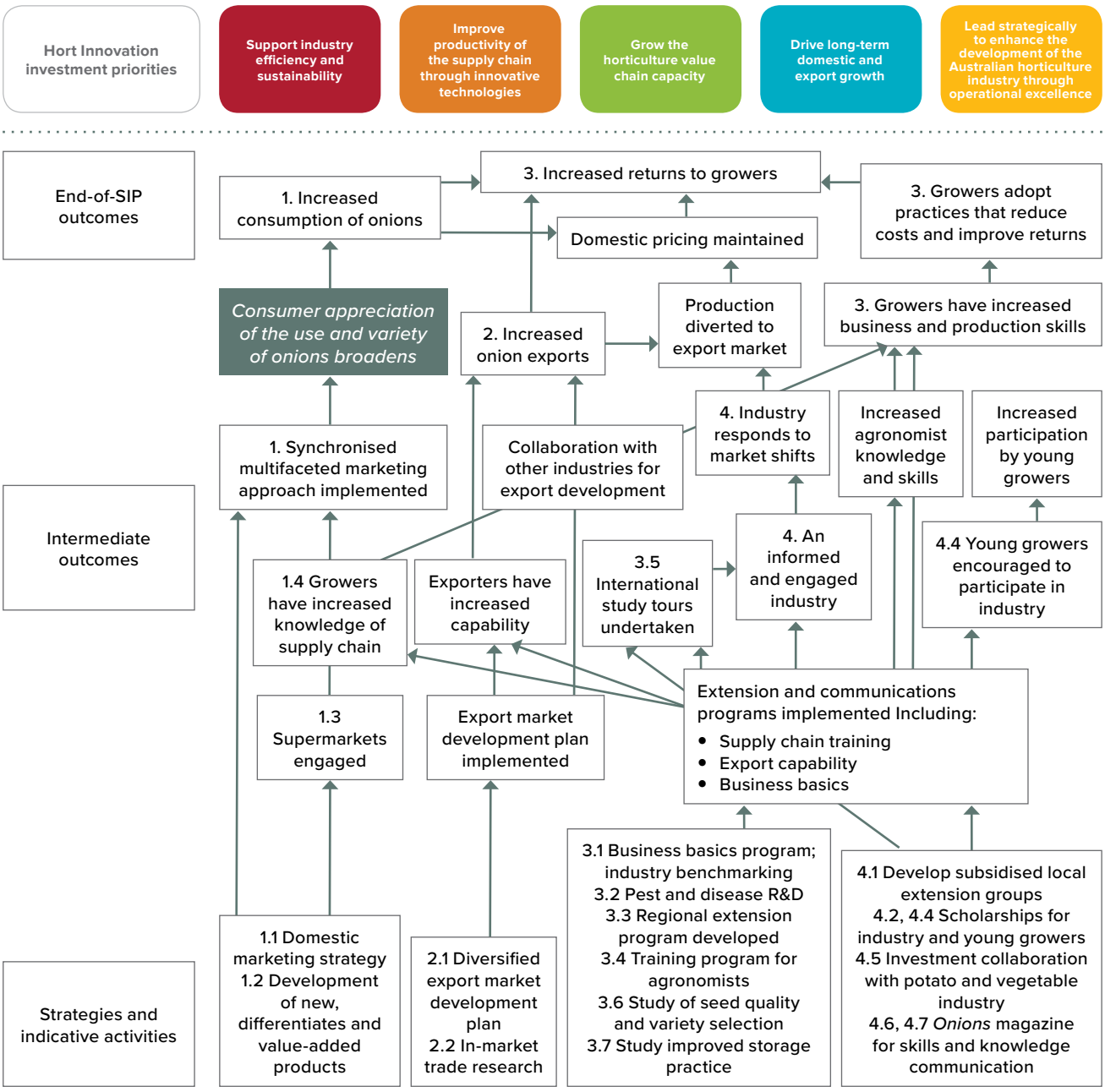
An SIP program logic and monitoring and evaluation (M&E) plan has been developed for the onion SIP. These are informed by the Hort Innovation Organisational Evaluation Framework. The logic maps a series of expected consequences of SIP investment. The M&E plan shows the performance measures to demonstrate progress against the SIP and the data to be collected. Progress against the SIP will be reported in Hort Innovation publications and at industry SIAP meetings.

The SIP outcomes and strategies will be used to inform investments in individual projects to deliver on the SIP. The results of M&E will be used to reflect on the results of investments and in decision-making. Hort Innovation will facilitate the regular review of SIPs to ensure they remain relevant to industry.

Onion SIP logic

An indicative onion SIP program logic is shown in ***Figure 12***. The logic is based on the Hort Innovation SIP logic hierarchy (***Appendix 5***). The shaded boxes are not fully explicit in the SIP but necessary conditions for the achievement of expected outcomes.

Figure 12: Onion SIP logic



Onion SIP M&E plan

The onion monitoring and evaluation (M&E) plan is shown in ***Table 4***. The table includes key performance indicators (KPIs) and data collection methods both at a macro/industry (trend) level and at more specific SIP level/s.

Table 4: Monitoring and evaluation plan for the onion SIP

Outcome	Strategies	KPIs	Data collection methods and sources
OUTCOME 1: A combined marketing approach working in harmony to show the versatility of onions to increase consumption	1.1 Develop a domestic marketing strategy with a focus on gaining a stronger understanding of consumers and increasing their engagement with the category 1.2 Support pilot projects around development of new, differentiated and value-added products 1.3 Engage with supermarkets to gain a stronger understanding of consumer behaviour and issues affecting the success of the onion category 1.4 Equip SME growers with more effective supply chain knowledge, and increase capability to serve local and regional market channels 1.5 Introduce voluntary quality guidelines and processes that are aligned with consumer preferences	1. Domestic marketing plan developed and implemented with evidence of an increase in consumption and value 2. Evidence of an increase in supply chain knowledge among SME growers and uptake of consumer insights by industry 3. Industry quality guidelines developed and evidence of uptake	• ABS data • Wholesale price data • Retail and consumer insights data • Industry benchmarking data • Industry (including retailers) feedback • R&D and marketing project records
OUTCOME 2: Export growth achieved through market diversification and product customisation, to support and maintain domestic pricing	2.1 Develop a five-year holistic and diversified export market development plan with a focus on Asian and Middle Eastern markets 2.2 Conduct in-market trade research in high-prospect markets to identify opportunities for product differentiation or customisation 2.3 Support exporters to build capability and capacity to understand and service the emerging markets of Asia and Middle East 2.4 Collaborate more with the vegetable industry on inbound and outbound trade missions and trade shows	1. Grow total exports to over 53,000 tonnes by 2020 (in line with the *Vegetable Export Development Plan 2016*) 2. Export market development plan for onions developed and implemented 3. Evidence of in-market trade research 4. Evidence of an increase in exporter capability and capacity 5. Evidence of collaboration with vegetable and potato industries	• ABS data • Trade data • R&D project records • Export market development plan • Industry/exporter feedback

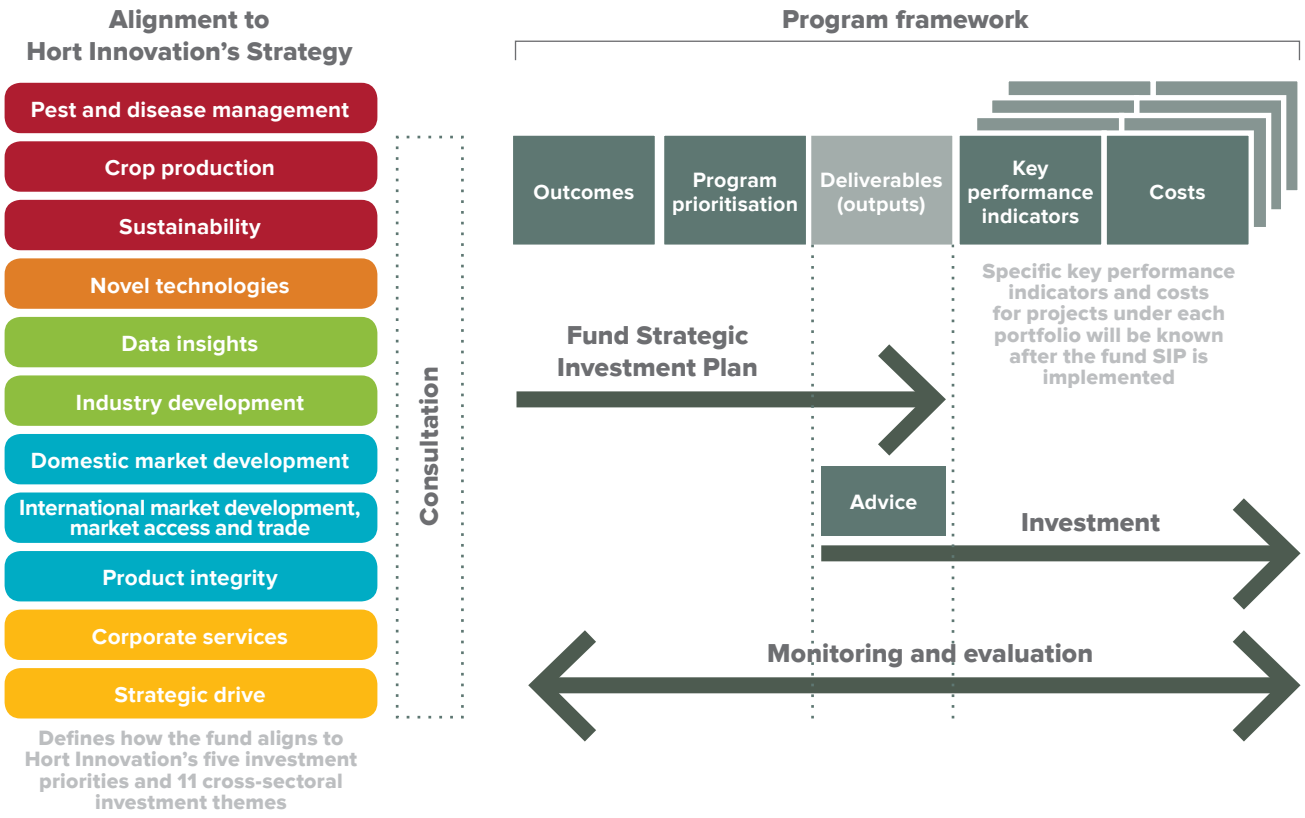
Outcome	Strategies	KPIs	Data collection methods and sources
OUTCOME 3: Reduced costs and improved returns to growers through improvements in business and production skills	3.1 Assist industry to develop a stronger understanding of costs and profitability drivers 3.2 Continue with a prioritised R&D program to manage pest and disease challenges and threats with a focus on soil health 3.3 Develop a regional extension program using small discussion group formats to transfer R&D knowledge in a more targeted and localised manner 3.4 Initiate an onion specific training program for consulting agronomists with input from international experts 3.5 Investigate issues around seed quality, availability and variety selection appropriate to regional conditions 3.6 Explore options to replace imports by improving storage practice and/or variety selection	1. Cost of production benchmarking activity is resumed in 2017 and average costs recorded for each growing region by 2021 2. Evidence of an increase in marketable yields with a reduced cost per unit sold, with a target of five per cent 3. Number of growers/ agronomists involved in extension/study tour activities with evidence of an increase in knowledge and intention to adopt R&D outputs	• ABS data • Industry benchmark records • R&D project records • Extension event/ study tour feedback surveys
OUTCOME 4: An informed and engaged industry results in greater ability to respond to market shifts	4.1 Investigate ways to drive greater industry engagement, such as local extension group project 4.1 Provide a scholarship for participation by industry leaders in industry management and governance development programs (Pool 2) 4.2 Introduce scholarships for overseas study programs for young growers 4.3 Encourage young growers to participate on industry committees and advisory groups 4.4 Leverage levy investments more effectively by increasing collaboration with potato and vegetable industries on training, industry capability building, export, and pest and disease R&D 4.5 Include a regular business and financial management skill column in *Onions Australia* magazine 4.6 Include a regular pack house and supply chain best practice column in *Onions Australia* magazine	1. Evidence of an increase in usage rate of R&D by growers, with a target of 50 per cent of production base 2. At least two participants in leader scholarship per year At least two scholarships for overseas study each year 3. Evidence of collaboration with other industries	• R&D project records • Grower/industry feedback surveys

Reporting

The program framework in ***Figure 13*** is the mechanism that links Hort Innovation's strategy and investment priorities to the investment process through the industry SIP. SIPs assist Hort Innovation to prioritise and implement the specific industry R&D, extension and marketing programs.

Hort Innovation will use dynamic reporting against our monitoring and evaluation framework to report on investment progress. The contribution of investments to each industry outcome will be reported regularly, including through industry Annual Reports, Hort Innovation's Annual Report and Hort Innovation's Annual Operating Plan.

Figure 13: Hort Innovation's program framework

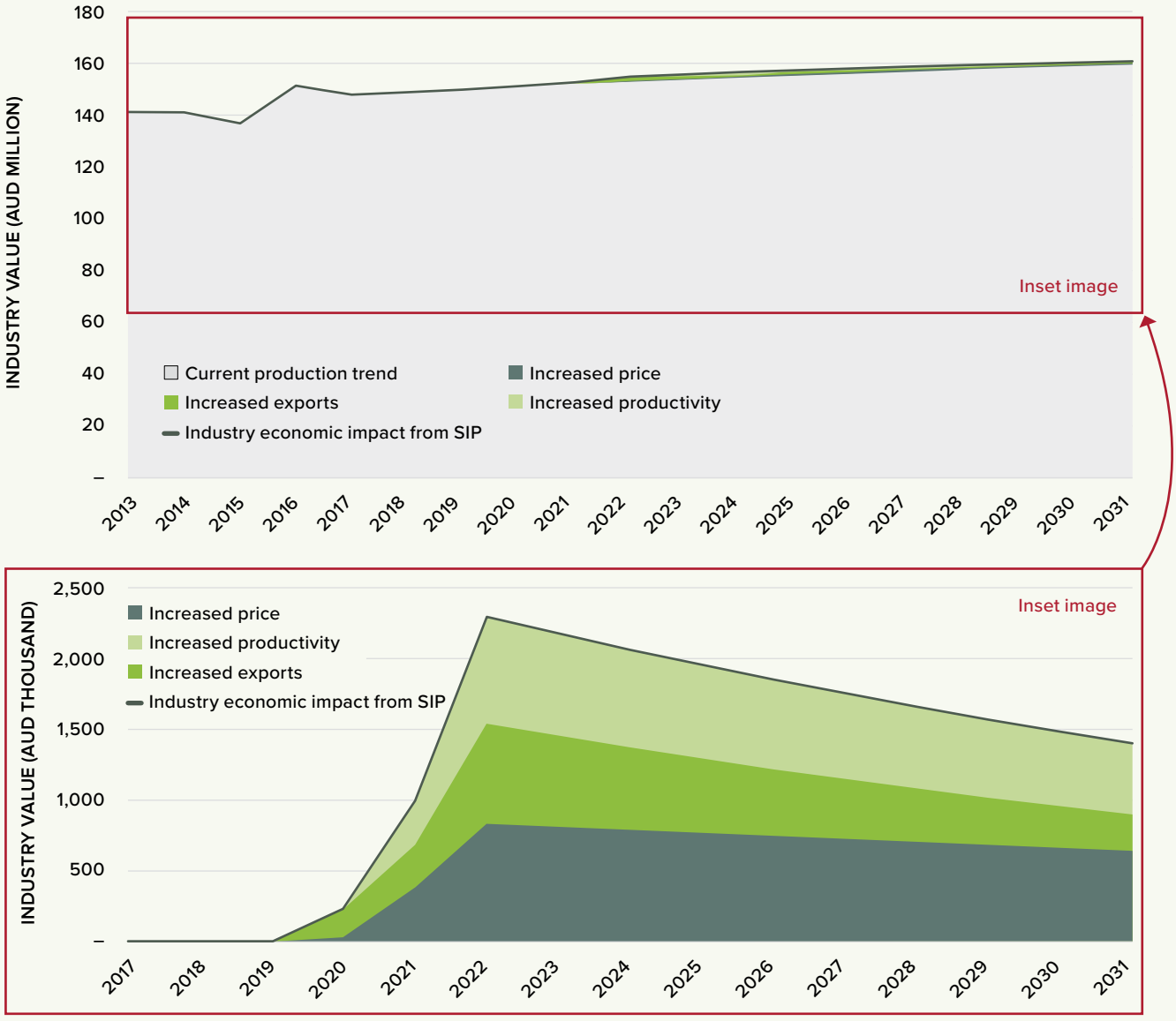


SECTION FIVE

Impact assessment

5

Figure 14: Economic benefit from investment in the onion SIP



An independent assessment of the potential economic impacts from investment into the onion SIP indicated a positive return on investment for the industry (***Figure 14***). The anticipated investment of $7.83 million over the next five years in R&D, extension and marketing activities is expected to generate $23.86 million in net benefits for the industry, representing a benefit cost ratio of 3.05 times to growers and service providers along the value chain.

The assessment draws from a wide range of available data sources, and projects economic impacts over a 15-year period starting from 2016/17. A five per cent discount rate has been applied and all values are adjusted for inflation and presented in 2016/17 dollar terms. The assessment takes a highly conservative approach and the presented figures have been adjusted to account for risks associated with achieving research outputs, expected adoption and impacts.

Table 5 provides a summary of the impacts assessed for the SIP, their corresponding outcomes, net economic benefits and benefit cost ratio.

Table 5: Overview of impacts assessed and alignment with SIP outcomes

Outcome	Expected deliverables	Anticipated SIP investment (over five years)	Net benefits (over 15 years)	Benefit cost ratio
OUTCOME 1: A combined marketing approach working in harmony to show the versatility of onions to increase consumption	• Develop a domestic marketing strategy with a focus on better understanding consumers and increasing their engagement with the category • Support pilot projects around development of new, differentiated and value added products • Engage with supermarkets to better understand consumer behaviour and issues impacting the success of the onion category • Equip SME growers with better supply chain knowledge and grow capability to service local and regional market channels • Introduce voluntary quality guidelines and processes that are aligned with consumer preferences	$2,608,682	$9,136,458	3.50
OUTCOME 2: Export growth achieved through market diversification and product customisation, to support and maintain domestic pricing	• Develop a five-year holistic and diversified export market development plan with a focus on Asian and Middle Eastern markets • Conduct in-market trade research in high-prospect markets, to identify opportunities for product differentiation or customisation • Support exporters to build capability and capacity to understand and service the emerging markets of Asia and the Middle East • Collaborate more with the vegetable industry on in-bound and out-bound trade missions and trade shows	$2,608,682	$6,943,697	2.66

Outcome	Expected deliverables	Anticipated SIP investment (over five years)	Net benefits (over 15 years)	Benefit cost ratio
OUTCOME 3: Reduced costs and improved returns to growers through improvements in business and production skills	• Assist industry to develop a stronger understanding of costs and profitability drivers • Continue with a prioritised R&D program to manage pest and disease challenges and threats withal focus on soil health and IPM • Develop a regional extension program to transfer R&D knowledge in a more targeted and localised manner • Initiate an onion-specific training program for consulting agronomists with input from international experts • Organise an international tour on pack house and supply chain best practice • Investigate issues around seed quality, availability and variety selection appropriate to regional conditions • Explore options to replace imports by improving storage practice and/ or variety selection	$2,608,682	$7,782,563	2.98
OUTCOME 4: An informed and engaged industry results in greater ability to respond to market shifts	• Industry engagement to increase R&D adoption • Leadership and training to encourage young growers to enter the industry • Increased collaboration with vegetable and potato industries to leverage benefits	Incorporated in above outcomes	Incorporated in above outcomes	Incorporated in above outcomes

The quantified impact associated with Outcome 1:

- Increased average domestic price above the baseline due to stronger demand more effectively matched by production.

The quantified impact associated with Outcome 2:

- Increased exports, particularly to more lucrative markets in the Middle East and Asian markets, which, on average, deliver a price premium above the average export price. The SIP activities will also contribute towards modest growth in other export markets.

The quantified impacts associated with Outcome 3 include:

- Increased marketable yield from adoption of strategies such as IPM
- Decreased cost of chemicals as a consequence of IPM.

Outcome 4 compliments the adoption and implementation of R&D and marketing from Outcomes 1 to 3 and thus contributes to the delivery of all quantified impacts.

6

SECTION SIX

Risk management

The purpose of this risk section is to highlight any unique or specific risks that qualify the SIP. This is not intended to be an exhaustive risk review of the industry risks that, in part, are considered in the SWOT. This is also not reflective of the general investment risks that will be considered in the project investment process.

No significant or specific risks were found that may qualify this SIP. However, there is a risk of a lost opportunity to leverage industry R&D funds more effectively if this SIP is not effectively aligned with the SIPs for other row crops, most notably potatoes, which is a common crop for many onion growers. Potatoes also have problems with disease, productivity, and soil health, in particular.

APPENDIX 1: Consultation and validation

The consultation process for the development of this SIP was as follows:

1. A project planning meeting was held with Onions Australia
2. A workshop presentation was prepared to outline a suggested approach
3. A workshop was held with the SIAP to approve the project approach and consultation reach, and discuss key trends affecting the industry
4. Industry interviews and discussion groups were held in a number of growing regions in Australia
5. A draft SIP was prepared for consideration by the SIAP
6. SIAP members provided more feedback to the draft SIP.

In addition to consultation with the onion industry SIAP and informal discussions with industry members, the following groups and individuals were consulted. Their assistance is gratefully acknowledged:

Discussion groups	
Name	**Organisation**
Brisbane 29.09.16	
Steve Rathjen	Onion SIAP panellist/Delta Produce
Andrew Moon	Onions Australia Executive/ Moonrocks Aust
Michael Williams	Onions Australia Executive/J-Tech Systems
Dean Metcalf	Onions Australia Executive/ Metcalf Biocontrol
Richard Jones	Onion SIAP panellist/Rathlyn Associates
Kees Versteeg	Onion SIAP panellist/Onions Australia Executive/ Qualipac
Peter Shadbolt	Onion SIAP panellist/Onions Australia Executive/Scotties Point Farms
Julian Shaw	Onion SIAP panellist/Agronico
Allan Thierry	Onions Australia Executive/Just Onions
Lewis Lydon	Onions Australia Executive/ Enza Zaden (Aus)
Tony Higgs	Onion SIAP panellist/Terranova Seeds
Lechelle Earl	Onions Australia CEO
South Australia 14.10.16	
Steve Rathjen	Delta Produce/RivaPak Director/Onion SIAP panellist
Darren Rathjen	Delta Produce/Onions Australia Executive
Gordon McKerlie	RivaPak Director/Pentrovect
Malcom McKerlie	Pentrovect
Phil Haby	RivaPak Director/Haby's Growers & Contractors
Aaron Haby	Haby's Growers & Contractors
Greg Dawson	RivaPak General Manager
South Australia 17.10.16	
Tony Rowett	Rowett Onions
John Ciampa	Ciampa Produce
Daniel Mead	Ciampa Produce
Brett Dolling	Dolling Produce
Tasmania 19.10.16	
David Addison	Charlton Farm Produce
James Addison	Charlton Farm Produce
Matt Ryan	Grower, Thirlstane
Stuart Greenhill	Greenhill Bros
Leigh Elphinstone	Grower, Sisters Creek
Tim Groom	Wynyon/Botanical Resources Australia
Scott Hill	Botanical Resources Australia Pty Ltd
Darren Long	MG Produce
Beau Gooch	Wisedale Pastoral
Daryl Lohrey	Lohrey Pastoral Co
Other	
Aurillo Rocca	Grower
Yvonne and Kevin Smith	Bowhill Produce
Lechelle Earl	Onions Australia
David Addison	Addison Farm Produce
Mark Kable	Harvest Moon
Jamie Roberts	Thomas Foods
Mark Pye	Parilla Premium Potatoes
Robert Hinrichsen	Kalfresh
Kees Versteeg	Qualipac

APPENDIX 2:
Reference documents

Title	Author
ABS 71210DO004_201415 Agricultural Commodities, Australia, 2014-15; Fresh Intelligence analysis	Australian Bureau of Statistics
Australian Horticulture Statistics Handbook 2014/15	Hort Innovation
Onion SARP 2014	Hort Innovation
ABS via FAOSTAT; Fresh Intelligence analysis	
Nielsen Onions Deep Dive MAT to 12/07/14	Nielsen
Onion perceptions, demand purchase & consumption, 2004	HAL and McKINNA et al.
Vegetable Export Strategy 2016	Hort Innovation, McKINNA et al.
Eurostat via *World Trade Atlas*	Eurostat
ABS data via *World Trade Atlas*	Australian Bureau of Statistics
FAOSTAT	
ITC Comtrade	
http://www.freshplaza.com/article/151778/AUOnionimportscontinuetoaffectlocal-market?utm_campaign=newsletter&utm_medium=ed5&utm_source.... 1/15/2016	Amy Bradney-George, Fresh Plaza
Fresh Intelligence analysis	
SHAFFE	
WTO Tariff Database	
Department of Foreign Affairs and Trade	
Manual of Importing Country Requirements (MICoR)	

APPENDIX 3:
Industry consultation themes

In the process of developing this SIP, the consultants conducted a comprehensive process of industry consultation that included a workshop with the SIAP at the industry annual conference in Brisbane in September 2016, plus interviews and discussion groups in key production areas. A number of consistent themes that emerged from this industry consultation process are summarised below:

- **R&D focus**: The strongest theme was the desire to focus the SIP on domestic marketing and export market development. It is felt that the industry's main issues are overwhelmingly on the demand side. Supply-side issues are minor in comparison with significant oversupply.
- **Domestic marketing**: Many felt that the marketing funds should be invested in export market development rather than in the advertising campaign in the domestic market. Growers had felt that the current campaign had not had any direct impact on their sales this season.
- **Industry profitability**: Profitability is a major issue. The returns on onions have remained stable for many years while the cost of production has gone up substantially, to the point that many businesses are not profitable. Labour was noted as the number one cost challenge – the lack of well-skilled farm managers was considered a cost risk.
- **Supermarket power**: Part of the reason that prices have not improved is domestic supermarket power, which is the major market channel for the category. Supermarkets apply their market power to drive down prices and as a consequence, growers are not getting their fair share of value. At the same time, heavy discounting has devalued and commoditised the category in consumers' minds. It is felt that the industry needs to work more closely with supermarkets to improve the way the category is managed for the benefit of all in the supply chain.
- **Oversupply**: The fundamental issue is the oversupply relative to the market demand. It is felt that the only way to rectify this is through better industry cohesion and coordination (which is largely beyond the scope of this SIP).
- **Financial management skills**: Industry asserts that part of the reason for the lack of industry profitability is that many growers do not know their costs, and are therefore prepared to operate even when it's unprofitable, which contributes to the oversupply. It was felt that if some growers better understood their costs they would leave the industry. Farm business skills generally were considered an industry weakness.
- **Cost reduction**: With regard to profitability, R&D work is needed to reduce input costs, particularly chemical inputs through better use of IPM and improvement in soil health.
- **Regulatory burden**: As well as the highest labour costs in the world, growers are burdened by increasingly demanding food safety and OH&S requirements.
- **Soil health**: Soil health and root health appeared to be strongly connected with many of the pest and disease issues facing industry. With increased chemical usage over the years, some growers were concerned about resistance and long-term soil quality. Topics such as beneficial microbes were still considered to be relatively new and unexplored across the industry.
- **Pest and disease issues are local**: The regional consultation highlighted the fact that many of the pest and disease issues are extremely localised, therefore R&D investment needs to be applied at a local level.
- **Localised variety trails**: Industry believes more work is needed on variety trials and suitability to specific areas. The aim of extending the season to reduce the need for imports requires a better understanding of which varieties grow best where and when.
- **Product quality**: Skin quality was noted continually as an area that industry felt still required further R&D – especially in red onions. Product storage was also an area where improvements to quality could be achieved.
- **Chemical access**: There is concern that many of the chemicals required to manage the pest and disease load are no longer available in Australia and that minor-use permits are not allowing access to international chemicals quickly enough. The work that industry had done on securing minor-use permits in the past had been invaluable to some growers but it was seen to be a 'band aid' solution to a bigger problem. Some growers had chemical shortages at the time of the consultation.
- **Agronomic advice**: A common theme to emerge from the engagement was the quality, consistency and independence of the agronomic advice, since the various state departments of agriculture had pulled back from extension. It was felt that the agronomists in many areas were not up with the latest thinking and their commercial interests biased much of the advice given. A need was expressed for more information and knowledge about growing from overseas experts – either via 457 visas or visiting experts.
- **R&D Return On Investment**: It was felt that much of the scientific work to emerge from previous R&D investment had not delivered value because it was not translated into practical advice communicated at the grower level. Outside the SIAP, there is low grower awareness of any of the R&D outcomes, even with the larger players in the industry.

- **Consumer engagement**: It is strongly felt that the industry needs to re-engage consumers to grow demand, particularly through product differentiation and by promoting the specific nutritional benefits of onions. Consumers in the United States and Europe consume twice as many onions as Australians.
- **Product development**: The industry has not been successful at product differentiation with the sweet onion project cited as an example where there was a great opportunity to differentiate that was not fulfilled. More emphasis is needed on product differentiation.
- **Consumer insights**: It was felt that supermarkets had conditioned consumers to expect onions to be large and a perfect shape, which resulted in a high rejection rate. It is the industry view that smaller onions are really what is demanded by consumers. More accurate consumer information is needed to change both buyer and consumer behaviour and expectation and to develop markets for all grades. A prime example of this is red onions, which now represent 50 per cent of the market value but which were once a niche market and are now imported from the United States to meet year-round demand.
- **Lack of market data**: A further issue standing in the way of a better understanding of consumers, is the lack of domestic market data. Industry feels that it is being compromised by the lack of quality market intelligence, particularly understanding of consumer behaviour.
- **Lack of export market data**: Industry also seemed to be operating with very little market data on export markets. While there was information about which markets preferred which coloured onion, there was little insight into the detail that would assist in product development to grow or retain these markets. Likewise, information about competitor supply was unclear. It was felt that Spain and New Zealand were more collaborative as industries in how they approached export markets.
- **Poor understanding of supply chains**: It is felt that there is an opportunity for small to medium enterprise growers to again supply local markets through building other supply chains. Supermarket dominance and the practice of central sourcing has broken this local connection. The closed-loop supply chains used by supermarkets are locking some mid-sized growers out of the high-volume channels and blocking access to new PBR varieties. To better understand the implications of this, industry needs to build a better understanding of the supply chain dynamics.
- **Trade development**: In light of the declining European market, industry feels that emphasis in marketing should be on building new markets in Japan, China and the Middle East. To this end, there needs to be more emphasis on trade missions both inbound and outbound.
- **Food safety/product integrity**: Some in the industry would like more emphasis on food safety and product integrity. In particular, it is felt that more scrutiny is needed over imports from China, and industry proposes mandatory MRL testing on imports. Many would like to see a minimum Australian standard and traceability requirements.
- **Industry engagement**: Some in the industry believe that lack of industry engagement is a major blocker to advancement. It is felt that the Chilean and New Zealand industries are more successful because they are more united. Most growers consulted were not familiar with the current SIP and could not mention a project from which they had derived value to date.
- **Waste utilisation**: For the larger companies and pack houses in particular, returning higher value from onion waste was an area of interest for further R&D.
- **On-farm data**: For larger growers, the proliferation in farm data was becoming difficult to manage. Lack of integration across systems limits the use of some technology.

APPENDIX 4:
Top five export market profiles

Market profile 1: Singapore[14]

MPI SCORE	MPI RANK			
53	1			
Total market size tonnes	**Market growth trend**	**Per capita consumption kilogram**	**Reliance on imports**	**Price per kilogram USD**
57,688	0.9%+	10.4	100%	$0.52
Total Australian exports	**Australian market share**	**Australian average price USD**	**Market Access**	**Tariff/quota**
1,184 tonnes	1.7%	$0.50	Unregulated	Free

Singapore market overview

Singapore is a relatively large but flat market for onions. It is highly competitive and price driven because buyers are able to source product from anywhere in the world relatively easily. Australia holds a small share of this market supplying higher end supermarkets, whose customers would prefer to buy Australian based on perceptions of quality and product integrity relative to the Chinese and Indian product. Australia is well placed to double its exports to Singapore in the near future.

Singapore competitor dynamics

Key competitors:	India, China
Australia's price competitiveness:	**96%**
Australia's competitive advantage:	• Location • Seasonality • Quality

Size of opportunity average per annum	Growth potential	Indicative strategy
2,000 tonnes	Good	Double market share

Market profile 2: Malaysia[15]

MPI SCORE	MPI RANK			
50	2			
Total market size tonnes	**Market growth trend**	**Per capita consumption kilogram**	**Reliance on imports**	**Price per kilogram USD**
461,983	6.2%+	15.2	100%	$0.41
Total Australian exports	**Australian market share**	**Australian average price USD**	**Market Access**	**Tariff/quota**
4,649 tonnes	0.9%	$0.50	Unregulated	Free

Malaysia market overview

Malaysia is currently the second largest market for Australian onions accounting for 14 per cent of exports. Like Singapore, the market is flat and price driven. Australia holds only a one per cent share in a market dominated by India and China. Australia enjoys a 25 per cent price premium based on perceived better quality, and services the higher end market outlets.

Malaysia competitor dynamics

Key competitors:	India, China
Australia's price competitiveness:	**123%**
Australia's competitive advantage:	• Quality

Size of opportunity average per annum	Growth potential	Indicative strategy
7,000 tonnes	Limited	Grow market share

14 Analysis by Fresh Intelligence from various sources, 2016
15 Analysis by Fresh Intelligence from various sources, 2016

Market profile 3: Japan[16]

MPI SCORE	MPI RANK			
49	3			
Total market size tonnes	**Market growth trend**	**Per capita consumption kilogram**	**Reliance on imports**	**Price per kilogram USD**
1,362,385	0.2%+	10.7	22%	$0.46
Total Australian exports	**Australian market share**	**Australian average price USD**	**Market Access**	**Tariff/quota**
4,587 tonnes	1.5%	$0.50	Phyto Cert.	5.1%, Nil by 2019

Japan market overview

With its relatively high per capita consumption, Japan is a very large market for onions. Japan is heavily reliant on imports, most of which are currently coming from China. Japan is the third largest market for Australian onions even though market share is only 1.5 per cent. The removal of the tariff under the recently signed free trade agreement will improve Australia's price competitiveness and should allow exporters to significantly build Australia's market share.

Japan competitor dynamics

Key competitors:	China
Australia's price competitiveness:	**109%**
Australia's competitive advantage:	• Quality • Seasonality

Size of opportunity average per annum	Growth potential	Indicative strategy
10,000 tonnes	Strong	Double market share

Market profile 4: Qatar[17]

MPI SCORE	MPI RANK			
49	4			
Total market size tonnes	**Market growth trend**	**Per capita consumption kilogram**	**Reliance on imports**	**Price per kilogram USD**
76,205	24.5%+	34.1	97%	$0.38
Total Australian exports	**Australian market share**	**Australian average price USD**	**Market Access**	**Tariff/quota**
372 tonnes	0.5%	$0.50	Phyto Cert.	Free

Qatar market overview

Qatar is a relatively large market for onions. It has a very high per capita consumption and is enjoying strong growth. Qatar is heavily reliant on imports, which are mainly coming from India. Australia holds a miniscule market share in this price-sensitive market. Australian product carries a significant price premium within the niche markets in which it operates.

Qatar competitor dynamics

Key competitors:	India
Australia's price competitiveness:	**133%**
Australia's competitive advantage:	• Quality

Size of opportunity average per annum	Growth potential	Indicative strategy
2,000 tonnes	Strong	Double market share

16 Analysis by Fresh Intelligence from various sources, 2016
17 Analysis by Fresh Intelligence from various sources, 2016

Market profile 5: Bahrain[18]

MPI SCORE	MPI RANK			
49	5			
Total market size tonnes	**Market growth trend**	**Per capita consumption kilogram**	**Reliance on imports**	**Price per kilogram USD**
36,509	5.6%+	26.5	98%	$0.45
Total Australian exports	**Australian market share**	**Australian average price USD**	**Market Access**	**Tariff/quota**
160 tonnes	0.4%	$0.50	Phyto Cert.	Free

Bahrain market overview

Bahrain is a significant market for onions because of the high consumption and strong market growth. The market is almost totally reliant on imports, which are coming from India and Asia. Australia has only a miniscule market share but enjoys a small price premium because of quality.

Bahrain competitor dynamics

Key competitors:	India, Egypt
Australia's price competitiveness:	**111%**
Australia's competitive advantage:	• Quality

Size of opportunity average per annum	Growth potential	Indicative strategy
500 tonnes	Good	Double market share

18 Analysis by Fresh Intelligence from various sources, 2016

APPENDIX 5:
Logic hierarchy

Vision			To grow the future of Australia's horticulture industries			Common for all Investment
Mission	Increased profitability of Australia's horticulture industries		Increased productivity of Australia's horticulture industries		Increased global competitiveness of Australia's horticulture industries	
Hort Innovation end-of-strategy outcomes	**Support industry efficiency and sustainability**	**Improve productivity of the supply chain**	**Grow the horticulture value chain capacity**	**Drive long-term domestic and export growth**	**Lead strategically**	
End-of-SIP outcomes	*The industry-specific outcomes of the SIP. The final desired result of SIP investment but may be achieved after the SIP time-frame. SIP investment may be just one contributing factor to the achievement of these outcomes. For example, incremental productivity, profitability and competitiveness improvements stimulated through R&D, changes in consumer awareness, marketing campaign reach and influence and increased recognition of Australian horticulture products.*					SIP specific
SIP intermediate outcomes	*Short- to medium-term changes brought about through the SIP, which will support the achievement of end-of-SIP outcomes. For example, practice changes, adoption, changes in grower knowledge, attitudes, skills and aspirations (KASA) and marketing reach.*					
SIP activities and outputs	*What is directly delivered by the SIP (R&D, extension and marketing activities and outputs, for example, products and services, and events and engagement) across the 11 horticulture cross-sectoral investment themes: Pest and Disease Management, Crop Production, Sustainability Improvements, Novel Technologies, Data Insights,Industry Development, Product Integrity, International Market Development, Market Access and Trade, Domestic Market Development, Strategic Drive and Corporate Services.*					
Foundational activities	*Preliminary or preparatory activities that are conducted before and during SIP delivery. Includes industry processes, infrastructure and resources that enable the SIP to be developed and delivered. Includes SIP planning, consultation, advisory meetings etc.*					

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